



Pall Corporation

Sample Analysis Report

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October, 2013

Analyst Initials: SEOP
Date: 11-18-13

*version #2
added state data*

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								
4601 Park 4 inch-10-03-13-10:30-1	2	1.0						
4601 Park 6 inch-10-03-13-11:15-1	2	1.0						
5005 Jackson Rd-10-07-13-11:30-1	19	1.0						
5005 Jackson Rd-10-08-13-12:20-1	17	1.0					split with state	O
5005 Jackson Rd-10-08-13-12:20-2	22	1.0					split with state	S
Not Determined								
697 South Wagner Rd-10-07-13-11:42-1	nd	1.0						O
Miscellaneous Wells								
Bethlehem Cemetery-10-02-13-13:00-1	nd	1.0						
Extraction Wells								
C3								
DOLPH-10-31-13-08:32-1	99	10.0						O, D
TW-20-10-07-13-09:35-1	810	25.0						D
D2								
LB-1-10-07-13-08:04-1	500	10.0						D
TW-21-10-07-13-09:14-1	130	2.5						D
TW-5-10-07-13-09:20-1	850	100.0						D
TW-9-10-07-13-09:28-1	920	25.0						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)
E								
TW-11-10-07-13-09:21-1	190	5.0						D
TW-18-10-07-13-09:41-1	280	10.0						D
TW-19-10-31-13-08:40-1	940	100.0						O, D
Marshy								
PW-1-10-07-13-09:43-1	1000	100.0						D
SW								
TW-22-10-07-13-10:00-1	720	25.0						D
TW-8-10-07-13-10:01-1	670	10.0						D
Monitoring Wells								
C2								
MW-25s-10-15-13-11:55-1	680	100.0						D
C3								
MW-18d-10-11-13-13:55-1	160	5.0						D
MW-20-10-18-13-10:20-1	nd	1.0						
MW-22-10-15-13-14:35-1	1000	50.0						D
MW-32-10-11-13-13:35-1	11	1.0						
MW-34s-10-11-13-11:45-1	nd	1.0						
MW-35-10-11-13-13:15-1	7	1.0						
MW-37-10-11-13-14:20-1	320	10.0						D
MW-39s-10-18-13-09:42-1	8	1.0						
MW-75-10-16-13-10:15-1	890	100.0						D
D0								
A2 Cleaning Supply-10-01-13-11:10-1	68	1.0						
MW-41d-10-07-13-11:10-1	36	5.0						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)
MW-41s-10-07-13-11:12-1	20	1.0						
MW-53d-10-03-13-13:55-1	1	1.0						
MW-53i-10-03-13-14:40-1	35	1.0						
MW-53s-10-03-13-13:20-1	nd	1.0						
MW-61d-10-03-13-12:40-1	2	1.0						
MW-61s-10-03-13-12:55-1	17	1.0						
D2								
2819 Dexter Rd-10-10-13-11:55-1	470	25.0						D
MW-11d-10-15-13-11:30-1	94	5.0						D
MW-120s-10-29-13-11:40-1	nd	1.0						O
MW-121s-10-29-13-13:50-1	nd	1.0						O
MW-122s-10-28-13-11:30-1	87	10.0						D, O
MW-123s-10-29-13-10:15-1	nd	1.0						O
MW-126s-10-07-13-14:20-1	nd	1.0						
MW-130i-10-28-13-14:20-1	nd	1.0						O
MW-130s-10-28-13-14:35-1	nd	1.0						O
MW-131s-10-04-13-13:40-1	nd	1.0						
MW-133i-10-01-13-13:55-1	nd	1.0						
MW-133s-10-01-13-13:16-1	2	1.0						
MW-134i-10-02-13-11:05-1	10	1.0						
MW-134s-10-02-13-10:30-1	9	1.0						
MW-17-10-04-13-11:20-1	460	10.0						D
MW-34d-10-11-13-11:27-1	nd	1.0						
MW-38d-10-11-13-11:00-1	40	1.0						
MW-39d-10-18-13-10:00-1	58	10.0						O, D
MW-92-10-10-13-14:20-1	21	1.0						
MW-94s-10-18-13-11:50-1	220	20.0						O, 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)
E								
IW-2-10-10-13-10:00-1	960	50.0						D
MW-100-10-10-13-10:50-1	1800	100.0						D
MW-103s-10-08-13-10:05-1	67	5.0					Split @ State split @ state	D
MW-103s-10-08-13-10:05-2	76	5.0					Split @ State	D, S
MW-112i-10-08-13-09:45-1	7	1.0					split with state	
MW-112i-10-08-13-09:45-2	7.7	1.0					split with state	S
MW-112s-10-08-13-09:05-1	nd	1.0					split with state	
MW-112s-10-08-13-09:05-2	nd	1.0					split with state	S, E
MW-115-10-02-13-14:30-1	560	10.0						D
MW-116-10-02-13-13:50-1	480	10.0						D
MW-120d-10-29-13-12:35-1	nd	1.0						O
MW-121d-10-29-13-14:30-1	nd	1.0						O
MW-122d-10-28-13-10:55-1	nd	1.0						O
MW-123d-10-29-13-11:15-1	nd	1.0						O
MW-126d-10-07-13-13:55-1	nd	1.0						
MW-130d-10-28-13-13:45-1	nd	1.0						O
MW-131d-10-04-13-14:30-1	nd	1.0						
MW-133d-10-01-13-14:40-1	2	1.0						
MW-134d-10-02-13-10:00-1	6	1.0						
MW-30d-10-04-13-10:50-1	610	25.0						D
MW-64-10-15-13-11:05-1	47	1.0						
MW-65d-10-17-13-11:40-1	30	1.0						
MW-65i-10-17-13-10:00-1	2	1.0						
MW-66-10-15-13-10:05-1	2	1.0						
MW-72d-10-02-13-12:50-1	1800	100.0						D
MW-72s-10-02-13-12:15-1	8	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-76i-10-08-13-11:15-1	94	2.5					split with state	D
MW-76i-10-08-13-11:15-2	82	5.0					split with state	D, S
MW-76s-10-08-13-11:35-1	230	5.0					split with state	D
MW-76s-10-08-13-11:35-2	250	10.0					split with state	D, S
MW-83s-10-02-13-11:45-1	280	5.0						D
MW-84s-10-10-13-13:55-1	250	25.0						D
MW-87d-10-08-13-14:00-1	620	10.0						D
MW-87s-10-08-13-12:07-1	1100	50.0					split with state	D
MW-87s-10-08-13-12:07-2	910	20.0					split with state	D, S
MW-94d-10-18-13-11:35-1	2	1.0						O
MW-95-10-18-13-14:35-1	27	2.0						O, D
MW-96-10-18-13-13:45-1	140	10.0						O, D
SW								
MW-10d-10-16-13-14:35-1	1400	100.0						D
MW-45d-10-16-13-11:55-1	190	10.0						D
MW-45s-10-16-13-11:00-1	14	1.0						
MW-48-10-16-13-09:55-1	92	1.0						
MW-49-10-16-13-10:35-1	nd	1.0						
MW-50-10-15-13-14:10-1	940	100.0						D
MW-58s-10-15-13-13:45-1	210	5.0						D
Surface Water								
Not Applicable								
HC/HR-10-01-13-08:20-1				nd	2.0			
HC/HR-10-02-13-07:55-1				nd	2.0			
HC/HR-10-03-13-07:55-1				nd	2.0			
HC/HR-10-04-13-08:10-1				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-10-07-13-08:20-1			nd	2.0				
HC/HR-10-08-13-07:40-1			nd	2.0				
HC/HR-10-09-13-08:03-1			nd	2.0				
HC/HR-10-10-13-07:20-1			nd	2.0				
HC/HR-10-11-13-07:25-1			nd	2.0				
HC/HR-10-15-13-08:05-1			nd	2.0				
HC/HR-10-16-13-08:15-1			nd	2.0				
HC/HR-10-17-13-08:15-1			nd	2.0				
HC/HR-10-18-13-08:35-1			nd	2.0				
HC/HR-10-21-13-09:30-1			nd	2.0				
HC/HR-10-22-13-09:00-1			nd	2.0				
HC/HR-10-23-13-09:40-1			nd	2.0				
HC/HR-10-24-13-09:20-1			nd	2.0				
HC/HR-10-25-13-09:55-1			nd	2.0				
HC/HR-10-28-13-08:55-1			nd	2.0				
HC/HR-10-29-13-08:50-1			nd	2.0				
HC/HR-10-30-13-09:25-1			nd	2.0				
HC/HR-10-31-13-08:55-1			nd	2.0				
Treatment System								
OUTFALL-10-01-13-1	4	1.0						
OUTFALL-10-01-13-2			5	5.0				
OUTFALL-10-02-13-1	5	1.0						
OUTFALL-10-02-13-2			8	5.0				
OUTFALL-10-03-13-1	4	1.0						
OUTFALL-10-03-13-2			6	5.0				
OUTFALL-10-06-13-1	5	1.0						
OUTFALL-10-06-13-2			6	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-10-07-13-1	4	1.0						
OUTFALL-10-07-13-2			9	5.0				
OUTFALL-10-08-13-1	5	1.0						
OUTFALL-10-08-13-2			8	5.0				
OUTFALL-10-09-13-1	4	1.0						
OUTFALL-10-09-13-2			6	5.0				
OUTFALL-10-10-13-2			8	5.0				
OUTFALL-10-10-13-1	3	1.0						
OUTFALL-10-13-13-1	5	1.0						
OUTFALL-10-13-13-2			8	5.0				
OUTFALL-10-14-13-1	4	1.0						
OUTFALL-10-14-13-2			9	5.0				
OUTFALL-10-15-13-1	6	1.0						
OUTFALL-10-15-13-2			8	5.0				
OUTFALL-10-16-13-1	5	1.0						
OUTFALL-10-16-13-2			nd	5.0				
OUTFALL-10-17-13-1	6	1.0						
OUTFALL-10-17-13-2			nd	5.0				
OUTFALL-10-20-13-2			8	5.0				
OUTFALL-10-20-13-1	5	1.0						O
OUTFALL-10-21-13-2			6	5.0				
OUTFALL-10-21-13-1	5	1.0						O
OUTFALL-10-22-13-2			8	5.0				
OUTFALL-10-22-13-1	4	1.0						O
OUTFALL-10-23-13-2			6	5.0				
OUTFALL-10-23-13-1	4	1.0						O
OUTFALL-10-24-13-2			8	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-10-24-13-1	4	1.0						O
OUTFALL-10-27-13-2			9	5.0				
OUTFALL-10-27-13-1	4	1.0						O
OUTFALL-10-28-13-2			7	5.0				
OUTFALL-10-28-13-1	4	1.0						O
OUTFALL-10-29-13-2			9	5.0				
OUTFALL-10-29-13-1	4	1.0						O
OUTFALL-10-30-13-2			5	5.0				
OUTFALL-10-30-13-1	4	1.0						O
OUTFALL-10-31-13-2			nd	5.0				
OUTFALL-10-31-13-1	4	1.0						O
Red Pond-10-07-13-08:36-1	480	10.0						D
Red Pond-10-15-13-08:39-1	510	10.0						D
Red Pond-10-21-13-08:50-1	480	10.0						D
Red Pond-10-29-13-09:20-1	410	100.0						O, D

Qualifier Code: _____ **Qualifier Description** _____

- D** Analyte value quantified from a dilution, reporting limit is raised to reflect dilution
- O** Samples analyzed in outside laboratory
- S** Split samples: analyzed by the Department of Environmental Quality
- 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.

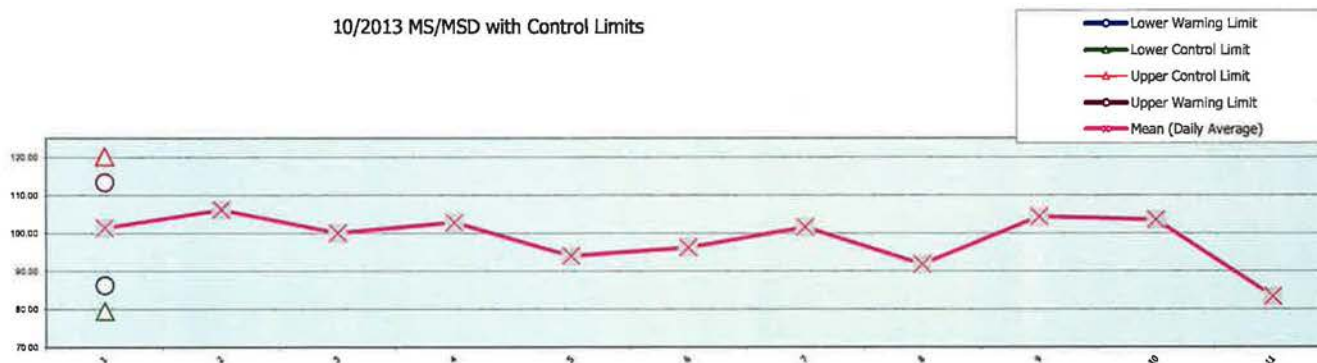
Control Chart for 10/2013 MS/MSD %Recoveries

Analyst: Susan E.O. Peters

GC/MS Data: #2
 Report Date: 11/9/2013
 Chemist: Susan E.O. Peters
 Dept: Environmental
 Analyte: 1,4-dioxane
 Start date: 10/1/2013
 End date: 10/31/2013
 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									
10/2/2013	100	110	97	99	5.48	0.42	2	101.40	99.89	9.15	6.77	79.58	120.21	86.35	113.43	99.89
10/3/2013	100	111	95	119	4.55	0.33	2	106.23								
10/4/2013	94	106			4.36	0.02	2	100.03								
10/7/2013	110	96						102.80								
10/8/2013	91	97			3.74	0.48	2	94.00								
10/10/2013	94	108	86	97				96.20								
10/15/2013	108	104	93		5.05	0.72	2	101.57								
10/16/2013	105		84	86				91.80								
10/17/2013	98	112	107	101				104.33								
10/21/2013	114	93			5.58	0.10	2	103.50								
10/22/2013	83							83.30								

10/2013 MS/MSD with Control Limits

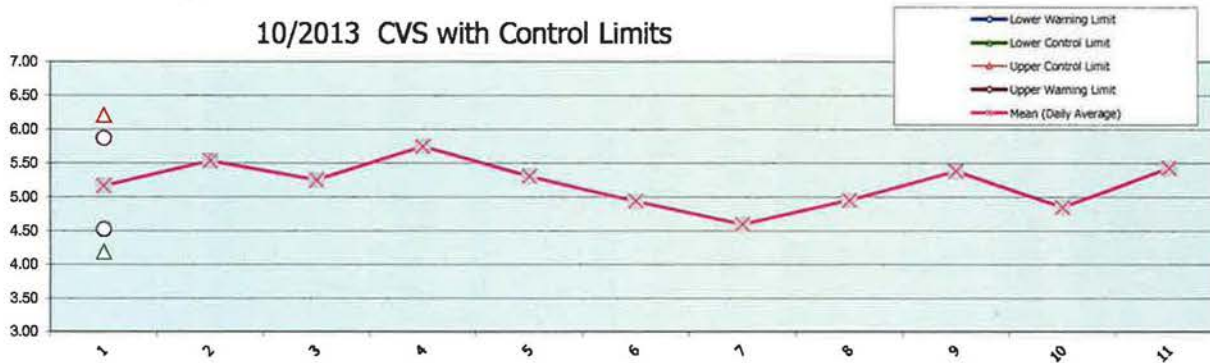


Control Chart for 10/2013 CVS

Analyst: Susan E.O. Peters

GC/MS Data: #2
Report Date: 11/9/2013
Chemist: Susan E.O. Peters
Dept: Environmental
Analyte: 1,4-dioxane
Start date: 10/1/2013
End date: 10/31/2013
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								
10/2/2013	4.73	5.72	4.94	5.28	5.17	5.20	0.43	0.34	4.19	6.21	4.53	5.87
10/3/2013	5.75	5.59	5.28	5.51	5.53	5.20	0.20					
10/4/2013	5.52	4.99			5.26	5.20	0.37					
10/7/2013	5.89	5.60			5.75	5.20	0.21					
10/8/2013	5.92	4.61	5.27	5.43	5.31	5.20	0.54					
10/10/2013	5.90	5.40	4.26	4.19	4.94	5.20	0.85					
10/15/2013	4.02	5.17			4.60	5.20	0.81					
10/16/2013	4.34	5.60	4.16	5.71	4.95	5.20	0.82					
10/17/2013	4.84	5.62	5.69		5.38	5.20	0.47					
10/21/2013	4.85				4.85	5.20	na					
10/22/2013	5.43				5.43	5.20	na					

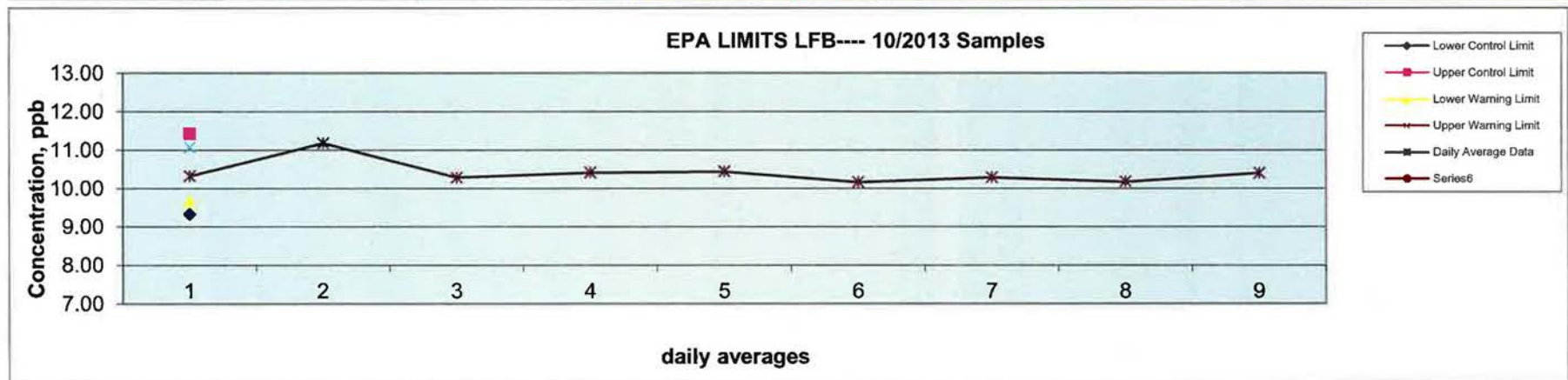


Control Chart for 10/2013 LFB

Analyst: Susan E.O. Peters

GC/MS Data: #2
Report Date: 11/9/2013
Chemist: Susan E.O. Peters
Dept: Environmental
Analyte: 1,4-dioxane
Start date: 10/1/2013
End date: 10/31/2013
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								
10/2/2013	10.94	10.46	10.45	10.27	10.42	9.42	10.33	10.38	0.50	0.35	9.33	11.43	9.68	11.08
10/3/2013	11.11	11.66	10.77				11.18	10.38	0.45					
10/4/2013	11.19	10.29	9.38				10.29	10.38	0.91					
10/7/2013	10.33	9.36	11.55				10.41	10.38	1.10					
10/8/2013	8.13	11.36	11.10	11.42	10.20		10.44	10.38	1.38					
10/10/2013	11.89	8.49	10.27	9.68	10.29	10.39	10.17	10.38	1.10					
10/15/2013	10.04	10.22	10.70	10.20			10.29	10.38	0.28					
10/16/2013	9.30	9.91	9.88	11.2	10.0	10.74	10.18	10.38	0.68					
10/17/2013	11.84	10.9	9.8	9.6	10.36	9.90	10.40	10.38	0.84					
10/21/2013	11.31	11.11	10.12				10.85	10.38	0.64					
10/22/2013	10.08	9.67					9.88	10.38	0.29					

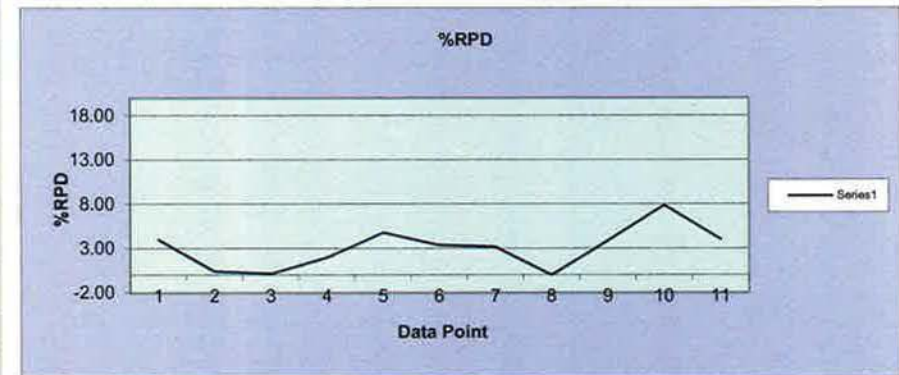
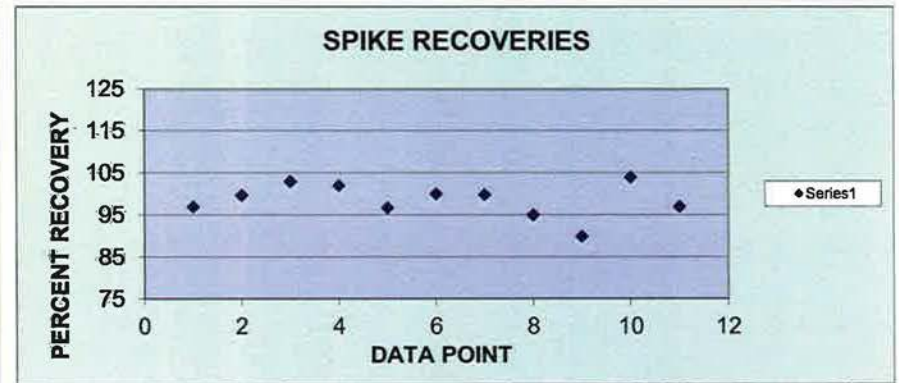


Control Chart for 10/2013 MS/MSD & Repeat %Recoveries

Analyst: Susan E.O. Peters

IC: Metrohm
Report Date: 11/9/2013
Chemist: Susan E.O. Peters
Dept: Environmental
Analyte: Bromate
Start date: 10/1/2013
End date: 10/31/2013
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 =
10/1/2013	99	95	97	4.00	3.04	0.87	0.08	2
10/2/2013	100	100	100	0.40	0.32	1.07	0.06	2
10/3/2013	103	103	103	0.15	0.14	1.60	0.25	2
10/4/2013	99	105	102	1.99	4.10	1.23	0.07	2
10/7/2013	94	99	97	4.80	3.84	1.29	0.04	2
10/11/2013	103	98	100	3.37	2.89	1.70	0.12	2
10/15/2013	102	98	100	3.20	2.60	1.50	0.01	2
10/17/2013	95	na	95	na	na	4.13	0.48	4
10/28/2013	88	92	90	3.90	2.96	1.73	0.01	2
10/30/2013	99	108	104	7.90	6.36			
10/31/2013	95	100	97	4.03	3.18	1.07	0.13	2

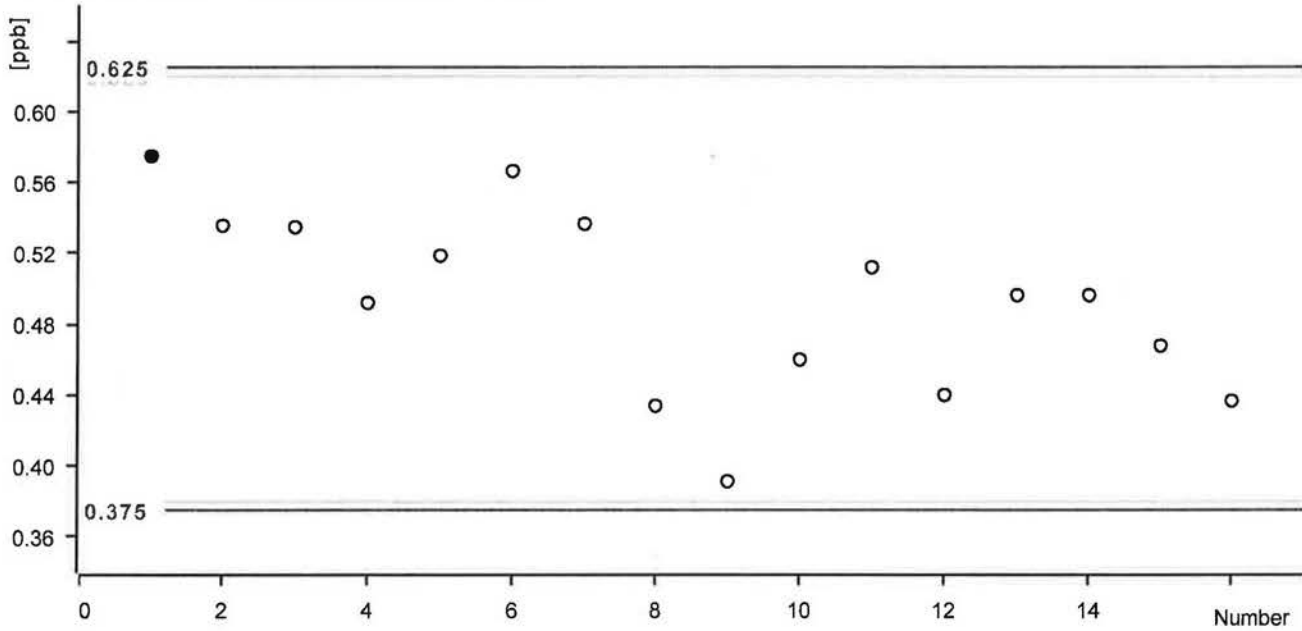


Control chart

3EOP

Comment

ppb Bromate Concentration ICCS



Statistics

Mean value:	0.493 ppb	Absolute standard deviation:	0.052 ppb
Minimum:	0.391 ppb	Relative standard deviation:	10.487 %
Maximum:	0.575 ppb	Number of determinations:	16

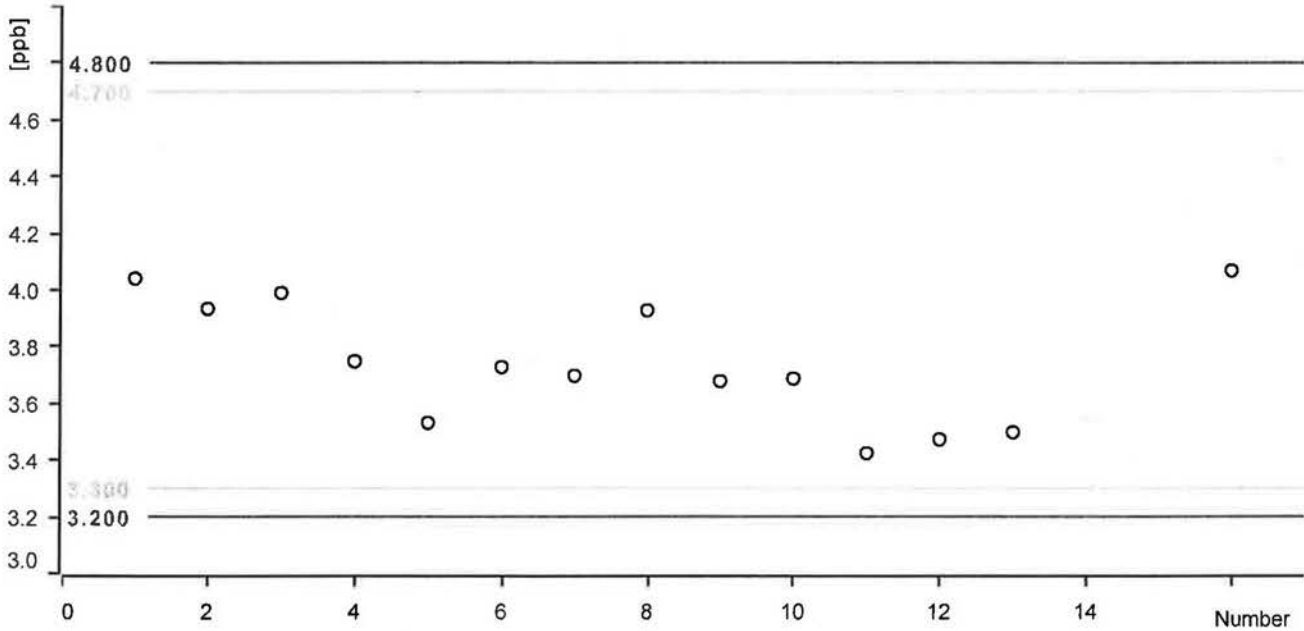
Date	Number	Ident	Sample type	Method	ppb Bromate Concentration ICCS	Statistics
2013-10-01 09:31:56 UTC-4	1	ICCS/LFB	Sample	09242013 300.1	0.575 ppb	on
2013-10-02 08:33:47 UTC-4	2	ICCS/LFB	Sample	09242013 300.1	0.535 ppb	on
2013-10-03 08:43:40 UTC-4	3	ICCS/LFB	Sample	09242013 300.1	0.535 ppb	on
2013-10-04 09:31:12 UTC-4	4	ICCS/LFB	Sample	09242013 300.1	0.492 ppb	on
2013-10-07 08:01:36 UTC-4	5	ICCS/LFB	Sample	09242013 300.1	0.519 ppb	on
2013-10-09 09:48:55 UTC-4	6	ICCS/LFB	Sample	09242013 300.1	0.566 ppb	on
2013-10-10 11:21:45 UTC-4	7	ICCS/LFB	Sample	09242013 300.1	0.537 ppb	on
2013-10-11 09:51:04 UTC-4	8	ICCS/LFB	Sample	10102013 300.1	0.434 ppb	on
2013-10-16 16:23:20 UTC-4	9	ICCS/LFB	Sample	10102013 300.1	0.391 ppb	on
2013-10-16 17:03:10 UTC-4	10	ICCS/LFB	Sample	10102013 300.1	0.460 ppb	on
2013-10-16 17:42:56 UTC-4	11	ICCS/LFB	Sample	10102013 300.1	0.512 ppb	on
2013-10-17 09:32:26 UTC-4	12	ICCS/LFB	Sample	10102013 300.1	0.440 ppb	on
2013-10-28 09:15:30 UTC-4	13	ICCS/LFB	Sample	10252013 300.1	0.496 ppb	on
2013-10-28 14:40:24 UTC-4	14	ICCS/LFB	Sample	10252013 300.1	0.456 ppb	on
2013-10-30 15:27:01 UTC-4	15	ICCS/LFB	Sample	10252013 300.1	0.458 ppb	on
2013-10-31 09:46:01 UTC-4	16	ICCS/LFB	Sample	10252013 300.1	0.437 ppb	on

Control chart

SEOP

Comment

Bromate 4 PPB concentration



Statistics

Mean value:	3.745 ppb	Absolute standard deviation:	0.217 ppb
Minimum:	3.424 ppb	Relative standard deviation:	5.806 %
Maximum:	4.068 ppb	Number of determinations:	14

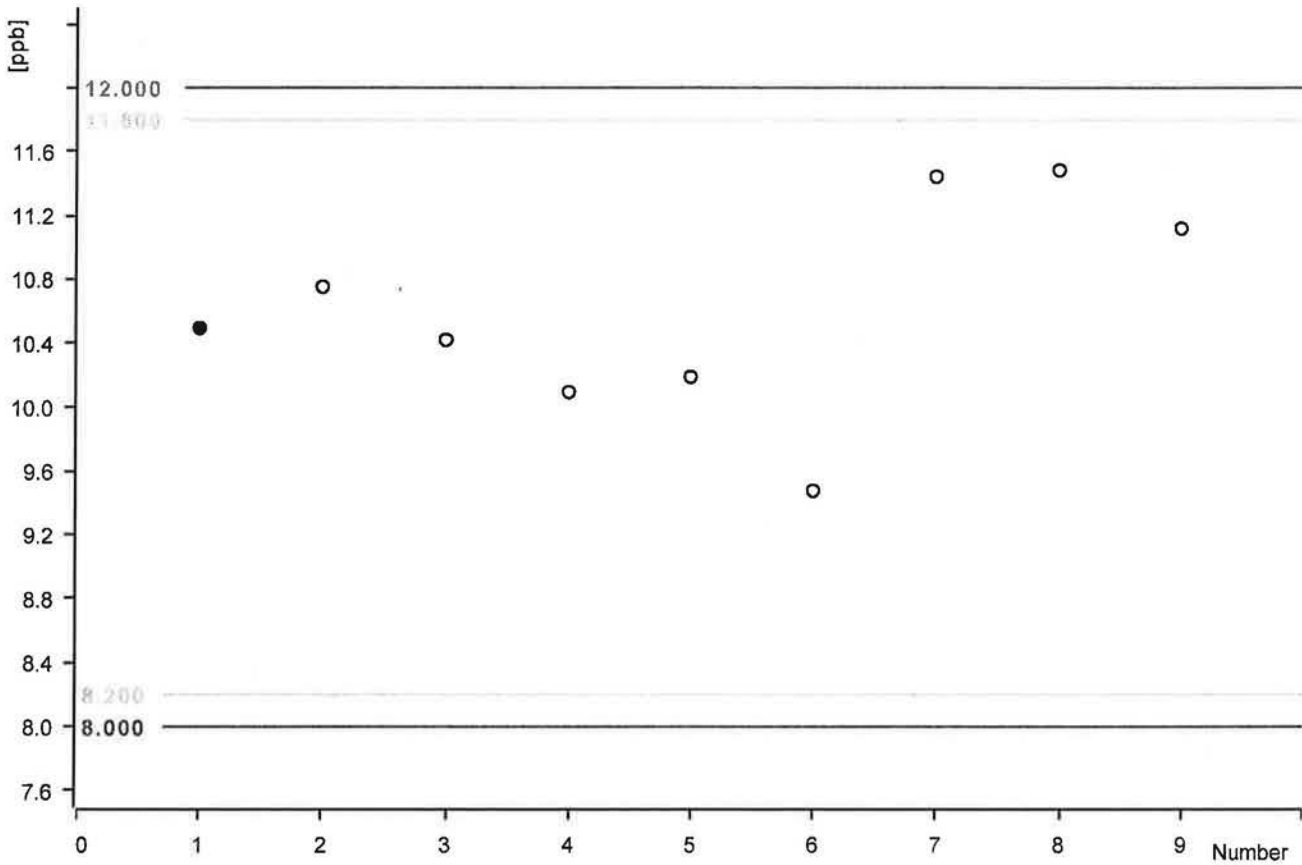
Date	Number	Ident	Sample type	Method	Bromate 4 PPB concentration	Statistics
2013-10-01 02:48:06 UTC-4	1	ECCS/CCCS	Sample	09242013 300.1	4.040 ppb	on
2013-10-01 19:48:39 UTC-4	2	ECCS/CCCS	Sample	09242013 300.1	3.933 ppb	on
2013-10-02 18:28:19 UTC-4	3	ECCS/CCCS	Sample	09242013 300.1	3.990 ppb	on
2013-10-03 22:25:26 UTC-4	4	ECCS/CCCS	Sample	09242013 300.1	3.748 ppb	on
2013-10-04 18:47:22 UTC-4	5	ECCS/CCCS	Sample	09242013 300.1	3.531 ppb	on
2013-10-07 17:57:28 UTC-4	6	ECCS/CCCS	Sample	09242013 300.1	3.728 ppb	on
2013-10-12 01:44:42 UTC-4	7	ECCS/CCCS	Sample	10102013 300.1	3.697 ppb	on
2013-10-12 08:22:02 UTC-4	8	ECCS/CCCS	Sample	10102013 300.1	3.927 ppb	on
2013-10-16 13:04:39 UTC-4	9	ECCS/CCCS	Sample	10102013 300.1	3.679 ppb	on
2013-10-17 01:39:46 UTC-4	10	ECCS/CCCS	Sample	10102013 300.1	3.688 ppb	on
2013-10-18 01:07:21 UTC-4	11	ECCS/CCCS	Sample	10102013 300.1	3.424 ppb	on
2013-10-28 21:57:32 UTC-4	12	ECCS/CCCS	Sample	10252013 300.1	3.473 ppb	on
2013-10-29 11:51:56 UTC-4	13	ECCS/CCCS	Sample	10252013 300.1	3.456 ppb	on
2013-10-30 05:35:35 UTC-4	14	ECCS/CCCS	Sample	10252013 300.1	4.251 ppb	97% Recovery 10ppb std
2013-10-30 12:48:01 UTC-4	15	ECCS/CCCS	Sample	10252013 300.1	3.718 ppb	102% Recovery 10ppb std
2013-10-31 21:37:34 UTC-4	16	ECCS/CCCS	Sample	10252013 300.1	4.068 ppb	on

Control chart

SEOP

Comment

10PPB BROMATE qcs



Statistics

Mean value:	10.607 ppb	Absolute standard deviation:	0.662 ppb
Minimum:	9.476 ppb	Relative standard deviation:	6.244 %
Maximum:	11.481 ppb	Number of determinations:	9

Date	Number	Ident	Sample type	Method	10PPB BROMATE qcs	Statistics
1 2013-10-01 04:07:32 UTC-4	1	QCS	Sample	09242013 300.1	10.493 ppb	on
2 2013-10-01 21:08:05 UTC-4	2	QCS	Sample	09242013 300.1	10.752 ppb	on
3 2013-10-02 19:47:45 UTC-4	3	QCS	Sample	09242013 300.1	10.419 ppb	on
4 2013-10-03 23:44:55 UTC-4	4	QCS	Sample	09242013 300.1	10.094 ppb	on
5 2013-10-04 20:06:49 UTC-4	5	QCS	Sample	09242013 300.1	10.188 ppb	on
6 2013-10-07 19:16:55 UTC-4	6	QCS	Sample	09242013 300.1	9.476 ppb	on
7 2013-10-10 23:57:35 UTC-4	7	QCS	Sample	10102013 300.1	11.441 ppb	on
8 2013-10-30 13:27:49 UTC-4	8	QCS	Sample	10252013 300.1	11.481 ppb	on
9 2013-10-31 22:57:01 UTC-4	9	QCS	Sample	10252013 300.1	11.117 ppb	on



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MDNRE Certified #9404
NELAC Accredited #176507

Sample Date/Time: 10/7/2013 11:42
Submit Date/Time: 10/9/2013 10:20
Report Date: 10/17/2013

Pall Corp.
600 S. Wagner
Bldg. 4
Ann Arbor, MI 48103

BA Project # **25684**
BA Sample ID **BZ01442**

Project Name: **Drinking Water Samples**
Project Number:
Sample ID: **697 S. Wagner Road**

Analyte Name	Result	Units	RL	MCL	Method Reference	Analysis Time	Analysis Date
1,4-Dioxane(SIM) 1,4-Dioxane (SIM)	Not detected	ug/L	1		EPA 1624(SIM)	15:07	10/15/2013

RL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

MCL = Maximum contaminant Levels.

Analysis not specifically identified as drinking water are for non-regulatory compliance purposes.

Released by *[Signature]*
Date 10/17/13



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 e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/20/2013
 Submit Date: 10/31/2013
 Report Date: 10/31/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: **27026**
 BA Sample ID: **BZ02634**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	5.0	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by: *Alan Topolski*
 Date: *10/31/13*



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To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

Sample Date: 10/21/2013
 Submit Date: 10/31/2013
 Report Date: 10/31/2013

BA Report Number: **27026**
 BA Sample ID: **BZ02635**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	5.0	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

Allen Topolski
 10/31/13



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To: Pall Corp.
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Ann Arbor, MI 48103

Sample Date: 10/22/2013
Submit Date: 10/31/2013
Report Date: 10/31/2013

BA Report Number: 27026
BA Sample ID: BZ02636

Project Name: October Samples
Project Number:
Sample ID: Outfall

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	4.0	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
Date:

Alan Topolski
10/31/13



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To: Pall Corp.
 600 S. Wagner
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 Ann Arbor, MI 48103

Sample Date: 10/23/2013
 Submit Date: 10/31/2013
 Report Date: 10/31/2013

BA Report Number: **27026**
 BA Sample ID: **BZ02637**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	4.0	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by: 
 Date: 10/31/13



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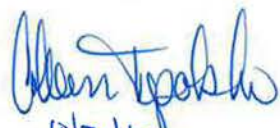
Sample Date: 10/24/2013
 Submit Date: 10/31/2013
 Report Date: 10/31/2013

BA Report Number: **27026**
 BA Sample ID: **BZ02638**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	4.0	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by: 
 Date: 10/31/13



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To: Pall Corp.
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 Ann Arbor, MI 48103

Sample Date: 10/27/2013
 Submit Date: 10/31/2013
 Report Date: 10/31/2013

BA Report Number: **27026**
 BA Sample ID: **BZ02639**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	4.0	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

Allen Topolski
 10/31/13



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To: Pall Corp.
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 Ann Arbor, MI 48103

Sample Date: 10/28/2013
 Submit Date: 10/31/2013
 Report Date: 10/31/2013

BA Report Number: **27026**
 BA Sample ID: **BZ02640**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	4.0	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

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Allen Topolski
 10/31/13



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To: Pall Corp.
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Sample Date: 10/29/2013
 Submit Date: 10/31/2013
 Report Date: 10/31/2013

BA Report Number: **27026**
 BA Sample ID: **BZ02641**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	4.0	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

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 Date:

William Topol
 10/31/13



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Sample Date: 10/30/2013
 Submit Date: 10/31/2013
 Report Date: 10/31/2013

To: Pall Corp.
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 Ann Arbor, MI 48103

BA Report Number: **27026**
 BA Sample ID: **BZ02642**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	4	ug/L	1	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by: 
 Date: 10/31/13



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Sample Date: 10/28/2013
 Submit Date: 10/31/2013
 Report Date: 11/1/2013

To: Pall Corp.
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 Ann Arbor, MI 48103

BA Report Number: **27026**
 BA Sample ID: **BZ02643**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Red Pond**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	410	ug/L	100	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

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Jeffrey Wood
 11/1/13

Elevated volatile dl due to sample matrix.



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To: Pall Corp.
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 Ann Arbor, MI 48103

Sample Date: 10/31/2013
 Submit Date: 10/31/2013
 Report Date: 11/1/2013

BA Report Number: **27026**
 BA Sample ID: **BZ02644**

Project Name: **October Samples**
 Project Number:
 Sample ID: **DOLPH**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	99	ug/L	10	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

W. Joseph
 11/1/13

Elevated volatile dl due to sample matrix.



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Sample Date: 10/31/2013
 Submit Date: 10/31/2013
 Report Date: 11/1/2013

BA Report Number: **27026**
 BA Sample ID: **BZ02645**

Project Name: **October Samples**
 Project Number:
 Sample ID: **TW-19**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	940	ug/L	100	EPA 1624(SIM)	CW	10/31/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

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W. J. Sol
 11/1/13

Elevated volatile dl due to sample matrix.



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11-1
 11-4

Sample Date: 10/31/2013
 Submit Date: 11/1/2013
 Report Date: 11/1/2013

To: Pall Corp.
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 Ann Arbor, MI 48103

BA Report Number: **27043**
 BA Sample ID: **BZ02681**

Project Name: **October Samples**
 Project Number:
 Sample ID: **Outfall**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	4	ug/L	1	EPA 1624(SIM)	CW	11/1/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

W. Kopp
 11/1/13



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Sample Date: 10/28/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: 27043
 BA Sample ID: BZ02682

Project Name: October Samples
 Project Number:
 Sample ID: MW-130d

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	Not detected	ug/L	I	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:

Date:

J Ford
 11/8/13



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Sample Date: 10/28/2013
Submit Date: 11/1/2013
Report Date: 11/8/2013

To: Pall Corp.
600 S. Wagner
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Ann Arbor, MI 48103

BA Report Number: 27043
BA Sample ID: BZ02683

Project Name: October Samples
Project Number:
Sample ID: MW-1301

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM) 1,4-Dioxane (SIM)	Not detected	ug/L	1	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
Date:

W. J. Osool
11/8/13



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Sample Date: 10/28/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
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 Ann Arbor, MI 48103

BA Report Number: **27043**
 BA Sample ID: **BZ02684**

Project Name: **October Samples**
 Project Number:
 Sample ID: **MW-130s**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	Not detected	ug/L	1	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

W. J. ...
 11/8/13



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Sample Date: 10/29/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
 600 S. Wagner
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 Ann Arbor, MI 48103

BA Report Number: **27043**
 BA Sample ID: **BZ02685**

Project Name: **October Samples**
 Project Number:
 Sample ID: **MW-120d**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	Not detected	ug/L	1	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:

Date:

W. J. P. L.
 11/13/13



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Phone: (810) 229-7575 FAX: (810) 229-8650
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Sample Date: 10/29/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: 27043
 BA Sample ID: BZ02686

Project Name: October Samples
 Project Number:
 Sample ID: MW-121s

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	Not detected	ug/L	I	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by: *[Signature]*
 Date: 11/8/13



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Sample Date: 10/29/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
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 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: 27043
 BA Sample ID: BZ02687

Project Name: October Samples
 Project Number:
 Sample ID: MW-123d

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	Not detected	ug/L	1	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

Upton
 11/8/13



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 e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/29/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: 27043
 BA Sample ID: BZ02688

Project Name: October Samples
 Project Number:
 Sample ID: MW-123s

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	Not detected	ug/L	1	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

W. J. ...
 11/8/13



Brighton Analytical, L.L.C.
 2105 Pless Drive
 Brighton, Michigan 48116
 Phone: (810) 229-7575 FAX: (810) 229-8650
 e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/29/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: 27043
 BA Sample ID: BZ02689

Project Name: **October Samples**
 Project Number:
 Sample ID: **MW-121d**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM) 1,4-Dioxane (SIM)	Not detected	ug/L	1	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

Anthony L
 11/8/13



Brighton Analytical, L.L.C.
 2105 Pless Drive
 Brighton, Michigan 48116
 Phone: (810) 229-7575 FAX: (810) 229-8650
 e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/29/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: 27043
 BA Sample ID: BZ02690

Project Name: October Samples
 Project Number:
 Sample ID: MW-120s

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	Not detected	ug/L	1	EPA 1624(SIM)	CW	11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by: *utrood*
 Date: 11/8/13



Brighton Analytical, L.L.C.
 2105 Pless Drive
 Brighton, Michigan 48116
 Phone: (810) 229-7575 FAX: (810) 229-8650
 e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/28/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: **27043**
 BA Sample ID: **BZ02691**

Project Name: **October Samples**
 Project Number:
 Sample ID: **MW-122d**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM) 1,4-Dioxane (SIM)	Not detected	ug/L	1	EPA 1624(SIM) - CW		11/4/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by: *[Signature]*
 Date: 11/8/13



Brighton Analytical, L.L.C.
 2105 Pless Drive
 Brighton, Michigan 48116
 Phone: (810) 229-7575 FAX: (810) 229-8650
 e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/28/2013
 Submit Date: 11/1/2013
 Report Date: 11/8/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: 27043
 BA Sample ID: BZ02692

Project Name: October Samples
 Project Number:
 Sample ID: MW-122s

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	87	ug/L	10	EPA 1624(SIM)	CW	11/1/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:

Date:

W. Topol
 11/8/13

Elevated dl due to sample matrix.



Brighton Analytical, L.L.C.
2105 Pless Drive
Brighton, Michigan 48116
Phone: (810) 229-7575 FAX: (810) 229-8650
e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/18/2013
Submit Date: 11/1/2013
Report Date: 11/1/2013

To: Pall Corp.
600 S. Wagner
Bldg. 4
Ann Arbor, MI 48103

BA Report Number: 27043
BA Sample ID: BZ02693

Project Name: **October Samples**
Project Number:
Sample ID: **MW-95**

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM) 1,4-Dioxane (SIM)	27	ug/L	2	EPA 1624(SIM)	CW	11/1/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
Date:

W. Ford
11/1/13

Elevated volatile dl due to sample matrix.



Brighton Analytical, L.L.C.
 2105 Pless Drive
 Brighton, Michigan 48116
 Phone: (810) 229-7575 FAX: (810) 229-8650
 e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/18/2013
 Submit Date: 11/1/2013
 Report Date: 11/1/2013

To: Pall Corp.
 600 S. Wagner
 Bldg. 4
 Ann Arbor, MI 48103

BA Report Number: 27043
 BA Sample ID: BZ02694

Project Name: **October Samples**
 Project Number:
 Sample ID: MW-94d

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	2	ug/L	1	EPA 1624(SIM)	CW	11/1/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
 Date:

W. J. J. J.
 11/1/13



Brighton Analytical, L.L.C.
2105 Pless Drive
Brighton, Michigan 48116
Phone: (810) 229-7575 FAX: (810) 229-8650
e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/18/2013
Submit Date: 11/1/2013
Report Date: 11/1/2013

To: Pall Corp.
600 S. Wagner
Bldg. 4
Ann Arbor, MI 48103

BA Report Number: 27043
BA Sample ID: BZ02695

Project Name: October Samples
Project Number:
Sample ID: MW-94s

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	220	ug/L	20	EPA 1624(SIM)	CW	11/1/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:

Date:

CW
11/1/13

Elevated volatile dl due to sample matrix.



Brighton Analytical, L.L.C.
2105 Pless Drive
Brighton, Michigan 48116
Phone: (810) 229-7575 FAX: (810) 229-8650
e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/18/2013
Submit Date: 11/1/2013
Report Date: 11/1/2013

To: Pall Corp.
600 S. Wagner
Bldg. 4
Ann Arbor, MI 48103

BA Report Number: 27043
BA Sample ID: BZ02696

Project Name: October Samples
Project Number:
Sample ID: MW-39d

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM) 1,4-Dioxane (SIM)	58	ug/L	10	EPA 1624(SIM)	CW	11/1/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
Date:

[Signature]
11/1/13

Elevated volatile dl due to sample matrix.



Brighton Analytical, L.L.C.
2105 Pless Drive
Brighton, Michigan 48116
Phone: (810) 229-7575 FAX: (810) 229-8650
e-mail: bai-brighton@sbcglobal.net

Sample Date: 10/18/2013
Submit Date: 11/1/2013
Report Date: 11/1/2013

To: Pall Corp.
600 S. Wagner
Bldg. 4
Ann Arbor, MI 48103

BA Report Number: 27043
BA Sample ID: BZ02697

Project Name: October Samples
Project Number:
Sample ID: MW-96

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,4-Dioxane(SIM)						
1,4-Dioxane (SIM)	140	ug/L	10	EPA 1624(SIM)	CW	11/1/2013

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by:
Date:

[Signature]
11/1/13

Elevated volatile dl due to sample matrix.



BRIGHTON ANALYTICAL, LLC

**QUALITY ASSURANCE/QUALITY
CONTROL**

GC/MS
VOLATILE METHOD 8260 SIM

REPRESENTATIVE BATCH PRECISION AND ACCURACY QUALITY CONTROL SUMMARY

Analysis Date: October 15, 2013

Spike Std. ID: 2185.4sec

Inst./Detec: _____

Vol 5 GC/MS

Laboratory ID: BY01443

Matrix: Water

Analyst: _____

CW

	Matrix Spike - Precision				Matrix spike - Accuracy					
	Spike 1	Spike 2	Relative Percent Difference	Spk Conc ug/L	% Recovery	% Recovery	Range (%)	Sample background	Method Blank	LCS
1,4 Dioxane	22.1	22.3	0.9	25	82	82	70-130	1.7	<1	92%

ug/L is equivalent to ppb

Comments: _____

GC/MS
VOLATILE METHOD 8260 SIM

REPRESENTATIVE BATCH PRECISION AND ACCURACY QUALITY CONTROL SUMMARY

Analysis Date: 10/31/13. Spike Std. ID: 2186 Inst./Detec: Vol 6 GC/MS
 Laboratory ID: BZ02643 Matrix: Water Analyst: CW

	Matrix Spike - Precision				Matrix spike - Accuracy					
	Spike 1	Spike 2	Relative Percent Difference	Spk Conc ug/L	% Recovery	% Recovery	Range (%)	Sample background	Method Blank	LCS
1,4 Dioxane	11.4	11.6	1.7	10	73	76	70-130	4.1	<1	93%

ug/L. is equivalent to ppb

Comments: _____

GC/MS VOLATILE METHOD 8260 SIM

REPRESENTATIVE BATCH PRECISION AND ACCURACY QUALITY CONTROL SUMMARY

Analysis Date: November 5, 2013 Spike Std. ID: 2185sec Inst./Detec: Vol 6 GC/MS
 Laboratory ID: BZ02913 Matrix: Water Analyst: CW

	Matrix Spike - Precision				Matrix spike - Accuracy					LCS
	Spike 1	Spike 2	Relative Percent Difference	Spk Conc ug/L	% Recovery	% Recovery	Range (%)	Sample background	Method Blank	
1,4 Dioxane	7.1	8.6	19.1	10	71	86	70-130	<1	<1	87%

ug/L is equivalent to ppb

Comments: _____

A

11-6-13

GC/MS
VOLATILE METHOD 8260 SIM

REPRESENTATIVE BATCH PRECISION AND ACCURACY QUALITY CONTROL SUMMARY

Analysis Date: November 6, 2013Spike Std. ID: 2185sec

Inst./Detec: _____

Vol 6 GC/MSLaboratory ID: BZ02986Matrix: Water

Analyst: _____

CW

	Matrix Spike - Precision				Matrix spike - Accuracy					
	Spike 1	Spike 2	Relative Percent Difference	Spk Conc ug/L	% Recovery	% Recovery	Range (%)	Sample background	Method Blank	LCS
1,4 Dioxane	14.6	16.3	11.0	10	73	82	70-130	<1	<1	81%

ug/L is equivalent to ppb

Comments: _____

GC/MS VOLATILE METHOD 8260 SIM

REPRESENTATIVE BATCH PRECISION AND ACCURACY QUALITY CONTROL SUMMARY

Analysis Date: November 7, 2013 Spike Std. ID: 2185sec Inst./Detec: Vol 6 GC/MS
 Laboratory ID: BZ03023 Matrix: Water Analyst: CW

	Matrix Spike - Precision				Matrix spike - Accuracy					
	Spike 1	Spike 2	Relative Percent Difference	Spk Conc ug/L	% Recovery	% Recovery	Range (%)	Sample background	Method Blank	LCS
1,4 Dioxane	9.5	9.5	0.1	10	95	95	70-130	<1	<1	110%

ug/L is equivalent to ppb

Comments: _____

STATE OF MICHIGAN



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

22 October 2013

Work Order: 1310053

Sybil Kolon
MDEQ-RRD-JACKSON
301 E. Louis Glick Highway
Jackson, MI 49201-1556
RE: GELMAN SCIENCES, INC

I certify that the analyses performed by the MDEQ Environmental Laboratory were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Sincerely,

George Krisztian
Laboratory Director



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

MDEQ-RRD-JACKSON
301 E. Louis Glick Highway
Jackson MI, 49201-1556

Project: GELMAN SCIENCES, INC
Site Code: 81000018
Project Manager: Sybil Kolon

Reported:
10/22/2013

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
112s	1310053-01	Water	10/08/2013	10/09/2013	
112i	1310053-02	Water	10/08/2013	10/09/2013	
103s	1310053-03	Water	10/08/2013	10/09/2013	
76i	1310053-04	Water	10/08/2013	10/09/2013	
76s	1310053-05	Water	10/08/2013	10/09/2013	
→ 115 MW-87s per Cozger note 10/22/13	1310053-06	Water	10/08/2013	10/09/2013	
5005 Jackson	1310053-07	Water	10/08/2013	10/09/2013	

Notes and Definitions

- Y28 1,4-dioxane analysis is performed using selective ion monitoring (SIM). Results reported below 5 ug/L (aqueous) or 1000 ug/Kg (solids) are estimated.
- ND Indicates compound analyzed for but not detected
- RL Reporting Limit
- NA Not Applicable



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: 112s
Lab ID: 1310053-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Dioxane									
123-91-1	1,4-dioxane	ND	1.0	ug/L	1	10/16/13	B3J1702	8260 Modified	Y28



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: 1121

Lab ID: 1310053-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Dioxane									
123-91-1	1,4-dioxane	7.7	1.0	ug/L	1	10/16/13	B311702	8260 Modified	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9800

Client ID: 103s

Lab ID: 1310053-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Dioxane									
123-91-1	1,4-dioxane	76	5.0	ug/L	5	10/16/13	B3J1702	8260 Modified	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: 761

Lab ID: 1310053-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Dioxane									
123-91-1	1,4-dioxane	82	5.0	ug/L	5	10/16/13	B3J1702	8260 Modified	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: 768

Lab ID: 1310053-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Dioxane									
123-91-1	1,4-dioxane	250	10	ug/L	10	10/16/13	B3J1702	8260 Modified	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: 415 **MW-87s** per *Cooper* note 10/22/13

Lab ID: 1310053-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Dioxane									
123-91-1	1,4-dioxane	910	20	ug/L	20	10/16/13	B3J1702	8260 Modified	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: 5005 Jackson

Lab ID: 1310053-07

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Dioxane									
123-91-1	1,4-dioxane	22	1.0	ug/L	1	10/16/13	B311702	8260 Modified	

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET

Lab Work Order Number 1310053	Project Name Gelman Sciences Inc	Matrix water
Site Code/Project Number 81000018	AY 	CC Email 1 to send additional reports to Coegerj@Mi.Gov
Dept. Division/District DEQ-RRD- Jackson District	Index 44401	Project TAT Days
State Project Manager Sybil Ann Kolon	FCA 30843	Sample Collector Jim Coeger
State Project Manager Email Kolon@s@mi.gov	Project 451586	Project Due Date
State Project Manager Phone 5177807937	Phase 00	Sample Collector Phone 517-780-7407
	Overflow Lab Choice 1 	Contract Firm
	Overflow Lab Choice 2 	Accept Analysis hold time codes: Yes/No
		Contract Firm Primary Contact
		Primary Contact Phone

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Conductivity Count	Comments
1	112s	10/8/13	9:05	2	
2	112i		9:45		
3	103s		10:10		
4	76i		11:20		
5	76s		11:45		1,4-D has been in the 200-300ppb range
6	115		12:10		1,4-D has been in the 500-600ppb range
7	5005 Jackson		13:00		
8					
9					
10					

ORGANIC CHEMISTRY

ON - Pesticides, PCBs
 PCBs only 1 2 3 4 5 6 7 8 9 10
 Organic Specialty Requests
 Finger Print 1 2 3 4 5 6 7 8 9 10

1,4-Dioxane (1 2 3 4 5 6 7)

Chain of Custody	Relinquished by -	Received By	Date / Time
	Print Name & Org. Jim Coeger RRD	Joshua Perry MDEQ	1054 10/9/13
	Signature: <i>Jim Coeger</i>	<i>Joshua R. Perry</i>	
	Print Name & Org. 		
Signature: 			
Print Name & Org. 			
Signature: 			