

## **CASE NARRATIVE**

### **Monthly Data Pall Life Sciences**

### **Project: 1,4-Dioxane Remediation**

**Date: October 2019**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Gelman Sciences, Inc. d/b/a Pall Life Sciences (PLS) attests to the validity of the laboratory data generated by PLS's Ann Arbor, Michigan Environmental Laboratory facilities reported herein. All analyses performed by PLS's Environmental Laboratory facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. PLS's Environmental group has reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The samples requiring analysis for 1,4-dioxane were split between Pall Corporation's Environmental Laboratory and Ann Arbor Technical Services (ATS) due to vacation time taken in October. All Outfall bromate samples were analyzed at Pall Corporation's Environmental Laboratory. The HC/HR Surface water samples were analyzed for bromate at ATS. All test results in this report meet all NELAP requirements for parameters for which accreditation are required or available. Any exceptions to NELAP requirements are noted in this report. All exceptions are noted per laboratory standard operating procedure based on EPA Method 1624c. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

The delay in sample analysis was due to a catastrophic autosampler failure that took considerable time to isolate and fix. The manufacturer's representative made major repairs only to find out that these repairs did not entirely fix the problems. Samples were sent out to ATS for analysis after the service engineer was unable to eliminate all problems during his service call.

Calculations are performed before rounding to avoid round-off errors in calculated results. The odd even rule is used for rounding. Holding times were met for all samples analyzed. Proper preservation was observed on all samples unless otherwise detailed in the individual sections below.

## **RECEIPT/ STORAGE**

The samples were received on the days noted in the report for the Month; the samples arrived in good condition, properly preserved and on ice when necessary. Samples that require 1,4-dioxane analysis are collected in hydrochloric HCl acid-preserved vials to a pH of  $\leq 2$ , with the exception of the Pall ozone treatment samples. These samples have chemicals that, when mixed with the HCl acid, cause interferences and trap damage. Every attempt is made to analyze these samples within 24 hours of receipt.

Samples that require Bromate analysis are collected and preserved in the laboratory with ethylene di-amine and refrigerated.

Samples that are delivered to the laboratory the same day as they are collected are likely not to have reached a fully chilled temperature. This is acceptable as long as there is evidence that chilling has begun. All samples are iced or refrigerated at 4°C ( $\pm 2^\circ\text{C}$ ) from the time of collection until sample preparation or analysis.

## 1,4-Dioxane (GC-MS)

All ground water and treated water samples were analyzed for 1,4-Dioxane (GC-MS) in accordance with EPA 1624C, which has been modified to enhance detection limits. Samples that were diluted to bring them within the calibrated range of the instrument are noted with a "D" under the Qualifier Code section of the data report. Reporting limits were adjusted based on each dilution.

Reporting limit for undiluted samples is 1.0ppb (part per billion, micrograms per liter, µg/L). All quality control parameters were within the acceptance limits. All data is reported with two significant figures.

## Bromate (Ion Chromatography)

All surface water and treated samples were analyzed for Bromate (Ion Chromatography) in accordance with EPA 300.1. Surrogates are added to all samples. All quality control parameters were within the acceptance limits with the balance of sample analyzed.

The reporting limit for treated samples is 5.0ppb and for surface samples is 2.0ppb. All data is reported with 2 significant figures.

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## Qualifiers

### 1,4-Dioxane Qualifier Codes:

<u>Qualifier Code</u>	<u>Description</u>
nd:	The compound was analyzed for, but was not detected at or above the detection limit indicated.
D:	Analyte value quantified from a dilution, reporting limit is raised to reflect dilution.
E:	The compound result is greater than the upper quantitation limit in the associated calibration curve, reported as estimate.
B:	The sample vials contained air bubbles larger than 5mm, which may affect compound results.
J:	The compound was positively identified; the associated numerical value is the approximate concentration.
M:	Matrix effects, sample required dilution.
R:	The reported value is unusable and rejected due to variance from quality control criteria.
V:	The reported value is considered estimated due to variance from quality control criteria.
H:	Sample was analyzed past 14 day hold time, but within 45 days.
O:	Samples analyzed in outside laboratory.
S:	Samples split with DEQ.

### Bromate Qualifier Codes:

<u>Qualifier Code</u>	<u>Description</u>
nd:	The compound was analyzed for, but was not detected at or above the detection limit indicated.
E:	The compound result is greater than the upper quantitation limit in the associated calibration curve.
J:	The compound was positively identified; the associated numerical value is the approximate concentration.
R:	The reported value is unusable and rejected due to variance from quality control criteria.
V:	The reported value is considered estimated due to variance from quality control criteria.
H:	Sample was analyzed past 28 day hold time

Analyst: Susan E.O. Peters



Date: 11/7/19

Report Checked by: Laurel Beyer



Date: 11/7/19

# Sample Analysis Report

October, 2019

642 South Wagner Road  
Ann Arbor, MI 48103-9019 US  
734.436.4025 phone

Analyst Initials: SEOP  
Date: 11-7-19

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>Residential Wells</b>								
<b>Not Determined</b>								
697 South Wagner Rd-10-18-19-14:50-1	nd	1.0						O
<b>Extraction Wells</b>								
<b>C3</b>								
DOLPH-10-02-19-09:15-1	120	2.0						D
TW-1-10-02-19-10:16-1	38	1.0						
TW-10-10-02-19-10:08-1	380	10.0						D
TW-14-10-02-19-10:03-1	17	1.0						
TW-20-10-02-19-09:33-1	880	25.0						D, H
TW-3-10-02-19-10:24-1	39	1.0						
<b>D2</b>								
LB-4-10-02-19-08:35-1	460	10.0						D
TW-21-10-02-19-08:55-1	210	10.0						D
TW-5-10-02-19-09:57-1	710	10.0						D
TW-9-10-02-19-09:50-1	530	10.0						D
<b>E</b>								
TW-11-10-02-19-10:00-1	180	10.0						D
TW-17-10-02-19-10:06-1	330	10.0						D
TW-18-10-02-19-09:10-1	250	10.0						D
TW-19-10-02-19-08:10-1	590	10.0						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)
TW-23-10-02-19-08:13-1	440	10.0						D
<b>Marshy</b>								
PW-1-10-02-19-09:23-1	630	10.0						D
<b>SW</b>								
TW-22-10-02-19-09:42-1	460	10.0						D
TW-28-10-02-19-09:38-1	630	10.0						D
<b>Monitoring Wells</b>								
<b>C3</b>								
MW-125-10-21-19-15:21-1	220	20.0						O, D
MW-127s-10-21-19-10:26-1	nd	1.0						O
MW-128s-10-22-19-10:58-1	nd	1.0						O
MW-18d-10-30-19-09:44-1	52	1.0						
MW-22-10-30-19-13:26-1	500	10.0						D
MW-2d-10-16-19-13:47-1	37	1.0						O
MW-32-10-24-19-14:02-1	22	1.0						O
MW-34s-10-28-19-10:41-1	nd	1.0						
MW-35-10-24-19-11:35-1	2	1.0						O
MW-37-10-22-19-12:16-1	220	10.0						O, D
MW-75-10-30-19-14:52-1	560	10.0						D
<b>D0</b>								
A2 Cleaning Supply-10-03-19-16:53-1	81	1.0						
MW-53d-10-03-19-13:28-1	nd	1.0						
MW-53i-10-03-19-15:48-1	36	1.0						
MW-53s-10-03-19-14:38-1	nd	1.0						
<b>D2</b>								
2819 Dexter Rd-10-07-19-10:26-1	180	2.0						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)
456 Clarendon-10-16-19-15:13-1	590	10.0						O, D
HZ-S-10-02-19-10:30-1	880	25.0						D
MW-107-10-09-19-11:30-1	710	10.0						O, D
MW-113-10-09-19-09:44-1	86	2.0						O, D
MW-117-10-10-19-09:38-1	nd	1.0						
MW-11d-10-28-19-12:31-1	340	10.0						D
MW-121s-10-15-19-09:32-1	nd	1.0						O
MW-124s-10-16-19-12:11-1	nd	1.0						O
MW-129i-10-15-19-12:38-1	nd	1.0						O
MW-129s-10-15-19-13:51-1	nd	1.0						O
MW-133i-10-17-19-11:30-1	2	1.0						O
MW-133s-10-17-19-10:16-1	2	1.0						O
MW-17-10-18-19-12:44-1	240	10.0						O, D
MW-34d-10-28-19-09:14-1	nd	1.0						
MW-4d-10-28-19-14:44-1	350	10.0						D
<b>E</b>								
MW-101-10-08-19-14:48-1	120	2.0						O, D
MW-103d-10-04-19-12:42-1	9.0	1.0						
MW-103s-10-04-19-13:53-1	78	1.0						H
MW-104-10-08-19-12:09-1	20	1.0						
MW-110-10-08-19-13:29-1	92	2.0						O, D
MW-112d-10-04-19-08:59-1	nd	1.0						
MW-112i-10-04-19-11:24-1	10	1.0						
MW-112s-10-04-19-10:12-1	nd	1.0						
MW-115-10-09-19-14:42-1	530	10.0						O, D
MW-116-10-09-19-13:09-1	430	5.0						O, D
MW-119-10-10-19-11:09-1	37	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-121d-10-15-19-10:45-1	nd	1.0						O
MW-124d-10-16-19-10:50-1	nd	1.0						O
MW-127d-10-21-19-09:14-1	nd	1.0						O
MW-128d-10-22-19-09:45-1	nd	1.0						O
MW-129d-10-15-19-15:03-1	2	1.0						O
MW-133d-10-17-19-13:04-1	3	1.0						O
MW-30d-10-17-19-14:44-1	180	5.0						O, D
MW-66-10-24-19-10:00-1	2	1.0						O
MW-72d-10-18-19-11:16-1	800	100.0						O, D
MW-72s-10-18-19-10:00-1	nd	1.0						O
MW-76i-10-07-19-13:08-1	92	2.0						O, D
MW-76s-10-07-19-14:25-1	240	50						O, D
MW-84s-10-07-19-11:45-1	41	1.0						
MW-85-10-10-19-12:50-1	570	10.0						O, D
Saginaw Forest Cabin #1-10-21-19-12:57-1	nd	1.0						O
Saginaw Forest Cabin #2-10-21-19-11:43-1	nd	1.0						O
<b>SH</b>								
MW-2s-10-16-19-13:10-1	2	1.0						O
<b>SW</b>								
MW-10d-10-30-19-11:32-1	490	10.0						D
MW-46-10-29-19-11:07-1	93	1.0						
MW-49-10-29-19-09:22-1	nd	1.0						
MW-50-10-29-19-14:34-1	940	10.0						D
MW-52s-10-29-19-12:41-1	220	10.0						D
MW-58d-10-22-19-13:41-1	16	1.0						O
MW-58s-10-22-19-14:51-1	190	10.0						O, D
MW-78-10-21-19-14:09-1	25	1.0						O



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-10-01-19-2			6.0	5.0				
OUTFALL-10-01-19-1	5.6	1.0						
OUTFALL-10-02-19-1	5.8	1.0						
OUTFALL-10-02-19-2			7.2	5.0				
OUTFALL-10-03-19-1	5.2	1.0						
OUTFALL-10-03-19-2			6.0	5.0				
OUTFALL-10-06-19-2			6.8	5.0				
OUTFALL-10-06-19-1	5.4	1.0						H
OUTFALL-10-07-19-2			5.6	5.0				
OUTFALL-10-07-19-1	5.4	1.0						
OUTFALL-10-08-19-2			5.6	5.0				
OUTFALL-10-08-19-1	5.1	1.0						
OUTFALL-10-09-19-2			6.1	5.0				
OUTFALL-10-09-19-1	5.0	1.0						
OUTFALL-10-10-19-2			6.1	5.0				
OUTFALL-10-10-19-1	5.9	1.0						
OUTFALL-10-13-19-2			5.5	5.0				
OUTFALL-10-13-19-1	7	1.0						O
OUTFALL-10-14-19-2			7.7	5.0				
OUTFALL-10-14-19-1	7	1.0						O
OUTFALL-10-15-19-2			6.6	5.0				
OUTFALL-10-15-19-1	6	1.0						O
OUTFALL-10-16-19-2			6.0	5.0				
OUTFALL-10-16-19-1	4	1.0						O
OUTFALL-10-17-19-2			6.4	5.0				
OUTFALL-10-17-19-1	6	1.0						O
OUTFALL-10-20-19-1	5	1.0						O



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-10-20-19-2			6.0	5.0				
OUTFALL-10-21-19-1	5	1.0						O
OUTFALL-10-21-19-2			6.0	5.0				
OUTFALL-10-22-19-1	nd	1.0						O
OUTFALL-10-22-19-2			7.5	5.0				
OUTFALL-10-23-19-1	nd	1.0						O
OUTFALL-10-23-19-2			6.6	5.0				
OUTFALL-10-24-19-1	5	1.0						O
OUTFALL-10-24-19-2			6.2	5.0				
OUTFALL-10-27-19-2			5.9	5.0				
OUTFALL-10-27-19-1	5.9	1.0						
OUTFALL-10-28-19-2			5.7	5.0				
OUTFALL-10-28-19-1	6.2	1.0						
OUTFALL-10-29-19-2			5.9	5.0				
OUTFALL-10-29-19-1	6.4	1.0						
OUTFALL-10-30-19-2			7.3	5.0				
OUTFALL-10-30-19-4	6.6	1.0						
OUTFALL-10-31-19-2			6.6	5.0				
OUTFALL-10-31-19-1	5.8	1.0						
Red Pond-10-07-19-08:50-1	380	10.0						D
Red Pond-10-14-19-08:23-1	340	10.0						D
Red Pond-10-21-19-09:07-1	360	10.0						D
Red Pond-10-28-19-10:30-1	360	10.0						D
<b>Not Applicable</b>								
<b>E</b>								
TW-12-10-02-19-09:01-1	14	1.0						

**PLS Qualifier Codes:**

nd: The compound was analyzed for, but was not detected at or above the detection limit indicated.  
D: Analyte value quantified from a dilution, reporting limit is raised to reflect dilution.  
H: Sample was analyzed past 14 day hold time, but within 45 days used by ATS for same method with EPA approval.  
O: Samples analyzed in outside laboratory, Ann Arbor Technical Services (ATS).



290 South Wagner Road  
Ann Arbor, Michigan 48103  
Tel. 734/995-0995 Fax. 734/995-3731  
Michigan Laboratory ID: 9604  
Wisconsin Laboratory ID: 998321720

## Data Transmittal Cover Page

Project Name: Pall Corporation  
ATS Project Number: G001-002  
ATS Report Number(s): SRF\_1014191 through 1025191

Project Description: This data report contains the results of 62 water samples, received by ATS between 10/14/19 and 10/25/19, to be analyzed for 1,4-Dioxane and Bromate.

We certify that the sample analyses for this report have been conducted in accordance with guidelines provided in the referenced standard test method, and are consistent with detailed procedures described in a written Standard Operating Procedure specific to the ATS Laboratories, as required by USEPA. Laboratory data sheets, SOPs, and QA/QC information are available for inspection and audit at the laboratory upon request. Unless specifically noted on the data report, all applicable sample preservation and holding time requirements have been met.

Recipient: Ms. Sue Peters Email: [Sue\\_Peters@Pall.com](mailto:Sue_Peters@Pall.com)  
FAX Number:

No. of Pages (including cover pg.): 107

From: Sarah Stubblefield Email: [Sarah.Stubblefield@AnnArborTechnicalServices.com](mailto:Sarah.Stubblefield@AnnArborTechnicalServices.com)  
Senior Chemist / Lab Manager FAX Number: 734-995-3731

Additional Message:

Date: 10/31/19 Signed:

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## LABORATORY OPERATIONS CASE NARRATIVE

ATS Project Number: G001-002  
Report Date: 10/29/19  
SRF / SDG Numbers: 1014191, 1015191, 1015192, 1016191, 1016192, 1017191, 1017192, 1018191, 1018192, 1021191, 1021192, 1022191, 1022192, 1023191, 1024191, 1024192, 1025191

### Case Narrative Summary

This case narrative applies to the following 62 samples that were received at Ann Arbor Technical Services, Inc. (ATS) between 10/14/19 and 10/25/19, and associated matrix-specific QA/QC:

#### Samples

Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
Received 10/14/19				
Outfall 001	10/13/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/14/19	Urgent	Bromate	Surface Water
Received 10/15/19				
Outfall 001	10/14/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/15/19	Urgent	Bromate	Surface Water
2819 Dexter Rd.	10/7/19	Standard	1,4-Dioxane	Ground Water
MW-76I	10/7/19	Standard	1,4-Dioxane	Ground Water
MW-76S	10/7/19	Standard	1,4-Dioxane	Ground Water
MW-110	10/8/19	Standard	1,4-Dioxane	Ground Water
MW-101	10/8/19	Standard	1,4-Dioxane	Ground Water
MW-113	10/9/19	Standard	1,4-Dioxane	Ground Water
MW-107	10/9/19	Standard	1,4-Dioxane	Ground Water
MW-116	10/9/19	Standard	1,4-Dioxane	Ground Water
MW-115	10/9/19	Standard	1,4-Dioxane	Ground Water
MW-85	10/10/19	Standard	1,4-Dioxane	Ground Water
MW-121S	10/15/19	Standard	1,4-Dioxane	Ground Water
MW-121D	10/15/19	Standard	1,4-Dioxane	Ground Water
MW-129I	10/15/19	Standard	1,4-Dioxane	Ground Water
MW-129S	10/15/19	Standard	1,4-Dioxane	Ground Water
MW-129D	10/15/19	Standard	1,4-Dioxane	Ground Water
Received 10/16/19				
Outfall 001	10/15/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/16/19	Urgent	Bromate	Surface Water
MW-124D	10/16/19	Standard	1,4-Dioxane	Ground Water

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Consultants in Chemistry & Environmental Science  
290 South Wagner Road, Ann Arbor, Michigan 48103 Tel 734/995-0995 Fax 734/995-3731

Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
MW-124S	10/16/19	Standard	1,4-Dioxane	Ground Water
MW-2S	10/16/19	Standard	1,4-Dioxane	Ground Water
MW-2D	10/16/19	Standard	1,4-Dioxane	Ground Water
456 Clarendon	10/16/19	Standard	1,4-Dioxane	Ground Water
Received 10/17/19				
Outfall 001	10/16/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/17/19	Urgent	Bromate	Surface Water
MW-133S	10/17/19	Standard	1,4-Dioxane	Ground Water
MW-133I	10/17/19	Standard	1,4-Dioxane	Ground Water
MW-133D	10/17/19	Standard	1,4-Dioxane	Ground Water
MW-30D	10/17/19	Standard	1,4-Dioxane	Ground Water
Received 10/18/19				
Outfall 001	10/17/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/18/19	Urgent	Bromate	Surface Water
MW-72S	10/18/19	Standard	1,4-Dioxane	Ground Water
MW-72D	10/18/19	Standard	1,4-Dioxane	Ground Water
MW-17	10/18/19	Standard	1,4-Dioxane	Ground Water
697 South Wagner Rd.	10/18/19	Standard	1,4-Dioxane	Drinking Water
Received 10/21/19				
Outfall 001	10/20/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/21/19	Urgent	Bromate	Surface Water
MW-127D	10/21/19	Standard	1,4-Dioxane	Ground Water
MW-127S	10/21/19	Standard	1,4-Dioxane	Ground Water
Saginaw Forest Cabin #2	10/21/19	Standard	1,4-Dioxane	Ground Water
Saginaw Forest Cabin #1	10/21/19	Standard	1,4-Dioxane	Ground Water
MW-78	10/21/19	Standard	1,4-Dioxane	Ground Water
MW-125	10/21/19	Standard	1,4-Dioxane	Ground Water
Received 10/22/19				
Outfall 001	10/21/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/22/19	Urgent	Bromate	Surface Water
MW-128D	10/22/19	Standard	1,4-Dioxane	Ground Water
MW-128S	10/22/19	Standard	1,4-Dioxane	Ground Water
MW-37	10/22/19	Standard	1,4-Dioxane	Ground Water
MW-58D	10/22/19	Standard	1,4-Dioxane	Ground Water
MW-58S	10/22/19	Standard	1,4-Dioxane	Ground Water
Received 10/23/19				
Outfall 001	10/22/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/23/19	Urgent	Bromate	Surface Water
Received 10/24/19				
Outfall 001	10/23/19	Urgent	1,4-Dioxane	Ground Water
HC/HR	10/24/19	Urgent	Bromate	Surface Water
MW-66	10/24/19	Standard	1,4-Dioxane	Ground Water

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Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
MW-35	10/24/19	Standard	1,4-Dioxane	Ground Water
MW-32	10/24/19	Standard	1,4-Dioxane	Ground Water
Received 10/25/19				
Outfall 001	10/24/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/25/19	Urgent	Bromate	Surface Water

Upon receipt, samples were scheduled for the following analyses:

#### Analysis

- 1,4-Dioxane by US EPA 1624
- Bromate by ATS 300.1 MOD

#### Number of Samples

- 52 + 10 Matrix Spike / 10 Matrix Spike Duplicate
- 10 + 10 Matrix Spike / 10 Matrix Spike Duplicate

### Sample Receipt and Chain of Custody Records

Samples were delivered directly to ATS by Pall Corporation staff. Samples were received with proper chain of custody records included. Sample condition and anomalies, if any, are presented in the "Chain of Custody and Sample Receipt Documentation" section of this report.

### Data Review and Approval

All data contained in this report have been generated in accordance with guidelines provided in the referenced standard test method, and are consistent with detailed procedures described in a written standard operating procedures (SOPs) specific to the ATS Laboratory, as required by US EPA. All data are peer and management reviewed to ensure compliance with the above referenced SOP's and project specifications. In addition all data conform to the laboratory's Quality Assurance / Quality Control Manuals.

A single QA/QC batch is defined as no more than 20 samples excluding method blanks (MB, LRB), fortified blanks (BS, LFB, LCS), matrix spikes (MS, SPK), and duplicates whether spiked or native (MSD, SPK DUP, DUP, LR).

### Data Deliverables

This data package constitutes a Level II package; other data report packages (Level I, Level IV DVP, EPA R5 EDD) are available upon request. There were no hardcopy data summary sheets generated for this project.

G001-002.19/CN\_1014,1015,1016,1017,1018,1021,1022,1023,1024,1025.doc



## Sample Analysis

**1,4-Dioxane Analysis (GC/MS):** Samples were analyzed in accordance with US EPA method 1624 (Volatile Organic Compounds by Isotope Dilution Gas Chromatography – Mass Spectrometry). An initial calibration with at least five levels was used to quantitate 1,4-Dioxane. Samples were reported to project specific reporting limits.

**Bromate Analysis (IC):** Samples were analyzed in accordance with ATS modified method 300.1 (Determination of Inorganic Anions in Drinking Waters by Ion Chromatography). An initial calibration with at least five levels was used to quantitate Bromate. Samples were reported to project specific reporting limits.

### Anomalies Noted:

- None

## Analytical QA/QC Summary

### Calibration Verification

Method calibration was verified through the running of a mid-level initial calibration verification (CV) standard at a frequency of every 24 hours (1,4-Dioxane) or 10 samples (bromate). All verification standards met the acceptance criteria with the following exceptions:

- None

### Instrument Blanks

Instrument blanks were analyzed at a frequency of every 24 hours (1,4-Dioxane) or 10 samples (bromate). All blanks met the acceptance criteria with the following exceptions:

- None

## QA/QC Batch Summary

### Laboratory Reagent Blanks

A laboratory reagent blank (LRB) was analyzed with each QA/QC batch. The LRB's met the acceptance criteria with the following exceptions:

- None

### Laboratory Fortified Blanks and Matrix Spikes

A laboratory fortified blank (LFB) / laboratory control sample (LCS) was analyzed with each QA/QC batch. The LCS/LFB's met the acceptance criteria with the following exceptions:

- None

A matrix spike (MS) and matrix spike duplicate (MSD) was analyzed with each QA/QC batch. The MS/MSD met the acceptance criteria with the following exceptions:

Sample ID	Constituent	Percent Recovery	Acceptance Limits
Outfall 10/15/19 Matrix Spike	1,4-Dioxane	77.6	80-120%
MW-125 10/21/19 Matrix Spike	1,4-Dioxane	122.1	80-120%
HC/HR 10/21/19 Matrix Spike	Bromate	68.9	70-130%

G001-002.19/CN\_1014,1015,1016,1017,1018,1021,1022,1023,1024,1025.doc



## Matrix Duplicates

A replicate analysis was analyzed with each QA/QC batch. All replicates met the acceptance criteria with the following exceptions:

Sample ID	Constituent	Percent Difference	Acceptance Limits
HC/HR 10/17/19	Bromate	22.5	<20%

## Sample Dilutions

Samples containing compounds at concentrations above the initial calibration curve were diluted and reanalyzed for those compounds. The following samples were diluted for 1,4-Dioxane:

- 2819 Dexter Road 10/7/19
- MW-110 10/8/19
- MW-107 10/9/19
- MW-85 10/10/19
- MW-72D 10/18/19
- MW-37 10/22/19
- MW-76I 10/7/19
- MW-101 10/8/19
- MW-116 10/9/19
- 456 Clarendon 10/16/19
- MW-17 10/18/19
- MW-58S 10/22/19
- MW-76S 10/7/19
- MW-113 10/9/19
- MW-115 10/9/19
- MW-30D 10/17/19
- MW-125 10/21/19

/ October 31, 2019

Mark T. DeLong (Quality Assurance Coordinator)

/ October 31, 2019

Philip B. Simon (Laboratory Director)

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1,4-Dioxane Analysis

Sample ID	Sample Date	Sample Time	Result (mg/L)	Sample ID	Sample Date	Sample Time	Result (mg/L)
Outfall 001	10/13/19	na	0.007	HCHR	10/14/19	8:05	<0.002
Outfall 001	10/14/19	na	0.007	HCHR	10/15/19	7:30	<0.002
Outfall 001	10/15/19	na	0.006	HCHR	10/16/19	8:27	<0.002
Outfall 001	10/16/19	na	0.004	HCHR	10/17/19	8:35	<0.002
Outfall 001	10/17/19	na	0.006	HCHR	10/18/19	8:05	<0.002
Outfall 001	10/20/19	na	0.005	HCHR	10/21/19	7:55	<0.002
Outfall 001	10/21/19	na	0.005	HCHR	10/22/19	8:25	<0.002
Outfall 001	10/22/19	na	0.006	HCHR	10/23/19	7:30	<0.002
Outfall 001	10/23/19	na	0.006	HCHR	10/24/19	8:00	<0.002
Outfall 001	10/24/19	na	0.005	HCHR	10/25/19	9:00	<0.002

Bromate Analysis

X:\6001-002.19\14DX\_BRO3\_Spreadsheet

REV 10/29/19



## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/25/19 Updated 10/29/19  
ATS SRF: 1025191 (Urgent)

Sample Identification: Outfall 001

Sample Date: 10/24/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/25/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.005	0.001	10/25/19	11:13	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-107

Sample Date: 10/9/19  
Sample Time: 11:30 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.71	0.01	10/16/19	22:05	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/22/19 Updated 10/29/19  
ATS SRF: 1022191 (Urgent)

Sample Identification: Outfall 001

Sample Date: 10/21/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/22/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.005	0.001	10/22/19	12:20	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/14/19 Updated 10/29/19  
ATS SRF: 1014191 (Urgent)

Sample Identification: Outfall 001

Sample Date: 10/13/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/14/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.007	0.001	10/14/19	15:44	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
Sample analyzed at native pH.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/15/19 Updated 10/29/19  
ATS SRF: 1015191 (Urgent)

### Sample Identification: Outfall 001

Sample Date: 10/14/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.007	0.001	10/15/19	10:38	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/16/19 Updated 10/29/19  
ATS SRF: 1016191 (Urgent)

### Sample Identification: Outfall 001

Sample Date: 10/15/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/16/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.006	0.001	10/16/19	10:26	JEB

#### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
Sample analyzed at native pH.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/17/19 Updated 10/29/19  
ATS SRF: 1017191 (Urgent)

### Sample Identification: Outfall 001

Sample Date: 10/16/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/17/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.004	0.001	10/17/19	10:45	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/18/19 Updated 10/29/19  
ATS SRF: 1018191 (Urgent)

### Sample Identification: Outfall 001

Sample Date: 10/17/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/18/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.006	0.001	10/18/19	10:50	JEB

#### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
Sample analyzed at native pH.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/21/19 Updated 10/29/19  
ATS SRF: 1021191 (Urgent)

### Sample Identification: Outfall 001

Sample Date: 10/20/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/21/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.005	0.001	10/21/19	11:07	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/23/19 Updated 10/29/19  
ATS SRF: 1023191 (Urgent)

### Sample Identification: Outfall 001

Sample Date: 10/22/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/23/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.006	0.001	10/23/19	10:40	JEB

#### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
Sample analyzed at native pH.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/24/19 Updated 10/29/19  
ATS SRF: 1024191 (Urgent)

### Sample Identification: Outfall 001

Sample Date: 10/23/19  
Sample Time: na  
Sampled By: Client  
Laboratory Receipt Date: 10/24/19  
Sample Matrix: Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.006	0.001	10/24/19	10:23	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

### Sample Identification: 2819 Dexter Road

Sample Date: 10/7/19  
Sample Time: 10:26 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.15	0.002	10/17/19	13:06	JEB

#### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
Sample analyzed at native pH.



## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-76I

Sample Date: 10/7/19  
Sample Time: 1:08 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.092	0.002	10/16/19	20:35	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-76S

Sample Date: 10/7/19  
Sample Time: 2:25 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.24	0.05	10/16/19	19:17	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-110

Sample Date: 10/8/19  
Sample Time: 1:29 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.092	0.002	10/16/19	19:59	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-101

Sample Date: 10/8/19  
Sample Time: 2:48 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.12	0.002	10/16/19	20:41	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

### Sample Identification: MW-113

Sample Date: 10/9/19  
Sample Time: 9:44 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.086	0.002	10/16/19	21:23	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

### Sample Identification: MW-116

Sample Date: 10/9/19  
Sample Time: 1:09 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.43	0.005	10/16/19	22:47	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

### Sample Identification: MW-115

Sample Date: 10/9/19  
Sample Time: 2:42 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.53	0.01	10/16/19	23:29	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

### Sample Identification: MW-85

Sample Date: 10/10/19  
Sample Time: 12:50 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.57	0.01	10/17/19	12:11	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-121S

Sample Date: 10/15/19  
Sample Time: 9:32 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/16/19	3:04	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-121D

Sample Date: 10/15/19  
Sample Time: 10:45 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/16/19	15:46	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-129I

Sample Date: 10/15/19  
Sample Time: 12:38 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/16/19	16:28	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

Sample Identification: MW-129S

Sample Date: 10/15/19  
Sample Time: 1:51 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/16/19	17:10	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1015192

### Sample Identification: MW-129D

Sample Date: 10/15/19  
Sample Time: 3:03 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.002	0.001	10/16/19	17:52	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1016192

### Sample Identification: MW-124D

Sample Date: 10/16/19  
Sample Time: 10:50 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/16/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/17/19	13:49	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1016192

### Sample Identification: MW-124S

Sample Date: 10/16/19  
Sample Time: 12:11 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/16/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/17/19	14:31	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1016192

### Sample Identification: MW-2S

Sample Date: 10/16/19  
Sample Time: 1:10 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/16/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.002	0.001	10/17/19	15:13	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.



## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1016192

### Sample Identification: MW-2D

Sample Date: 10/16/19  
Sample Time: 1:47 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/16/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.037	0.001	10/17/19	15:55	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1016192

### Sample Identification: 456 Clarendon

Sample Date: 10/16/19  
Sample Time: 3:13 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/16/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.59	0.01	10/17/19	16:37	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1017192

### Sample Identification: MW-133S

Sample Date: 10/17/19  
Sample Time: 10:16 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/17/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.002	0.001	10/18/19	11:33	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1017192

### Sample Identification: MW-133I

Sample Date: 10/17/19  
Sample Time: 11:30 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/17/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.002	0.001	10/18/19	13:39	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1017192

Sample Identification: MW-133D

Sample Date: 10/17/19  
Sample Time: 1:04 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/17/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.003	0.001	10/18/19	14:21	JEB

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1017192

Sample Identification: MW-30D

Sample Date: 10/17/19  
Sample Time: 2:44 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/17/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.18	0.005	10/18/19	15:03	JEB

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1018192

Sample Identification: MW-72S

Sample Date: 10/18/19  
Sample Time: 10:00 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/18/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/21/19	15:04	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1018192

Sample Identification: MW-72D

Sample Date: 10/18/19  
Sample Time: 11:16 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/18/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.8	0.1	10/22/19	16:04	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1018192

### Sample Identification: MW-17

Sample Date: 10/18/19  
Sample Time: 12:44 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/18/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.24	0.01	10/21/19	15:47	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1018192

### Sample Identification: 697 South Wagner Road

Sample Date: 10/18/19  
Sample Time: 2:50 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/18/19  
Sample Matrix: Drinking Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/21/19	14:22	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1021192

### Sample Identification: MW-127D

Sample Date: 10/21/19  
Sample Time: 9:14 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/21/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/25/19	13:35	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1021192

### Sample Identification: MW-127S

Sample Date: 10/21/19  
Sample Time: 10:26 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/21/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/25/19	14:17	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

**Organic Analysis  
Data Summary Sheet**

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1021192

**Sample Identification:** Saginaw Forest Cabin #2

Sample Date: 10/21/19  
Sample Time: 11:43 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/21/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/25/19	12:52	SLS

**Organic Analysis  
Data Summary Sheet**

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1021192

**Sample Identification:** Saginaw Forest Cabin #1

Sample Date: 10/21/19  
Sample Time: 12:57 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/21/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/25/19	12:10	SLS

**Comments**

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

**Organic Analysis  
Data Summary Sheet**

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1021192

**Sample Identification:** MW-78

Sample Date: 10/21/19  
Sample Time: 2:09 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/21/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.025	0.001	10/25/19	14:59	SLS

**Organic Analysis  
Data Summary Sheet**

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1021192

**Sample Identification:** MW-125

Sample Date: 10/21/19  
Sample Time: 3:21 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/21/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.22	0.02	10/25/19	16:27	SLS

**Comments**

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.



## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1022192

### Sample Identification: MW-128D

Sample Date: 10/22/19  
Sample Time: 9:45 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/22/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/22/19	18:53	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1022192

### Sample Identification: MW-128S

Sample Date: 10/22/19  
Sample Time: 10:58 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/22/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	10/22/19	19:35	SLS

#### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1022192

### Sample Identification: MW-37

Sample Date: 10/22/19  
Sample Time: 12:16 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/22/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.22	0.01	10/22/19	21:41	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1022192

### Sample Identification: MW-58D

Sample Date: 10/22/19  
Sample Time: 1:41 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/22/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.016	0.001	10/22/19	20:17	SLS

#### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1022192

### Sample Identification: MW-58S

Sample Date: 10/22/19  
Sample Time: 2:51 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/22/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.19	0.01	10/22/19	20:59	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1024192

### Sample Identification: MW-66

Sample Date: 10/24/19  
Sample Time: 10:00 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/24/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.002	0.001	10/24/19	16:42	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1024192

### Sample Identification: MW-35

Sample Date: 10/24/19  
Sample Time: 11:35 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/24/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.002	0.001	10/24/19	18:49	SLS

## Organic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19  
ATS SRF: 1024192

### Sample Identification: MW-32

Sample Date: 10/24/19  
Sample Time: 2:02 PM  
Sampled By: Client  
Laboratory Receipt Date: 10/24/19  
Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.022	0.001	10/24/19	19:31	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.



## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/14/19 Updated 10/29/19  
ATS SRF: 1014191 (Urgent)

Sample Identification: HC/HR

Sample Date: 10/14/19  
Sample Time: 8:05 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/14/19  
Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/14/19	14:51	SLS

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/15/19 Updated 10/29/19  
ATS SRF: 1015191 (Urgent)

Sample Identification: HC/HR

Sample Date: 10/15/19  
Sample Time: 7:30 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/15/19  
Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/15/19	9:17	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
\*Elevated reporting limit due to matrix interference.

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/16/19 Updated 10/29/19  
ATS SRF: 1016191 (Urgent)

Sample Identification: HC/HR

Sample Date: 10/16/19  
Sample Time: 8:27 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/16/19  
Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/16/19	11:04	SLS

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/17/19 Updated 10/29/19  
ATS SRF: 1017191 (Urgent)

Sample Identification: HC/HR

Sample Date: 10/17/19  
Sample Time: 8:35 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/17/19  
Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/17/19	11:55	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
\*Elevated reporting limit due to matrix interference.

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/18/19 Updated 10/29/19  
ATS SRF: 1018191 (Urgent)

### Sample Identification: HC/HR

Sample Date: 10/18/19  
Sample Time: 8:05 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/18/19  
Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/18/19	10:40	SLS

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/21/19 Updated 10/29/19  
ATS SRF: 1021191 (Urgent)

### Sample Identification: HC/HR

Sample Date: 10/21/19  
Sample Time: 7:55 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/21/19  
Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/21/19	10:57	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
\*Elevated reporting limit due to matrix interference.

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/22/19 Updated 10/29/19  
ATS SRF: 1022191 (Urgent)

### Sample Identification: HC/HR

Sample Date: 10/22/19  
Sample Time: 8:25 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/22/19  
Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/22/19	10:50	SLS

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
Pall Corporation  
642 South Wagner Road  
Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
Report Date: 10/23/19 Updated 10/29/19  
ATS SRF: 1023191 (Urgent)

### Sample Identification: HC/HR

Sample Date: 10/23/19  
Sample Time: 7:30 AM  
Sampled By: Client  
Laboratory Receipt Date: 10/23/19  
Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analized By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/23/19	11:33	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.  
na - Indicates not available / applicable.  
\*Elevated reporting limit due to matrix interference.

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
 Pall Corporation  
 642 South Wagner Road  
 Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
 Report Date: 10/24/19 Updated 10/29/19  
 ATS SRF: 1024191 (Urgent)

Sample Identification: HC/HR

Sample Date: 10/24/19  
 Sample Time: 8:00 AM  
 Sampled By: Client  
 Laboratory Receipt Date: 10/24/19  
 Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/24/19	10:14	SLS

## Inorganic Analysis Data Summary Sheet

For: Ms. Sue Peters  
 Pall Corporation  
 642 South Wagner Road  
 Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002  
 Report Date: 10/25/19 Updated 10/29/19  
 ATS SRF: 1025191 (Urgent)

Sample Identification: HC/HR

Sample Date: 10/25/19  
 Sample Time: 9:00 AM  
 Sampled By: Client  
 Laboratory Receipt Date: 10/25/19  
 Sample Matrix: Surface Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Inorganic Analysis							
Bromate	ATS 300.1 MOD	mg/L	<0.002	0.002*	10/25/19	11:23	SLS

### Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

\*Elevated reporting limit due to matrix interference.

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101419

Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/13/19 Matrix Spike	0.017 mg/L	0.016 mg/L	0.016 mg/L	5.5

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.011 mg/L	113.0
Outfall 10/13/19 Matrix Spike	0.007 mg/L	0.010 mg/L	0.017 mg/L	101.1
Outfall 10/13/19 Matrix Spike Duplicate	0.007 mg/L	0.010 mg/L	0.016 mg/L	91.9

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.

### Control Limits:

#### Recoveries

Laboratory Control Sample Recovery (85 - 115%)

Matrix Spike Recovery (80 - 120%)

#### Relative Range

Replicates (<20%)

G001-002.19\SRF\_1014191 through 1025191

rev 10/29/19

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101519

Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/14/19 Matrix Spike	0.016 mg/L	0.015 mg/L	0.016 mg/L	8.4

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	109.6
Outfall 10/14/19 Matrix Spike	0.007 mg/L	0.010 mg/L	0.016 mg/L	97.7
Outfall 10/14/19 Matrix Spike Duplicate	0.007 mg/L	0.010 mg/L	0.015 mg/L	84.5

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.

### Control Limits:

#### Recoveries

Laboratory Control Sample Recovery (85 - 115%)

Matrix Spike Recovery (80 - 120%)

#### Relative Range

Replicates (<20%)

X:\G001-002.19\SRF\_1014191 through 1025191

rev 10/29/19



## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101619  
Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/15/19 Matrix Spike	0.014 mg/L	0.016 mg/L	0.015 mg/L	9.3

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	98.9
Outfall 10/15/19 Matrix Spike	0.006 mg/L	0.010 mg/L	0.014 mg/L	77.6*
Outfall 10/15/19 Matrix Spike Duplicate	0.006 mg/L	0.010 mg/L	0.016 mg/L	91.4

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.  
\*Outside standard control limits.

#### Control Limits:

Recoveries  
Laboratory Control Sample Recovery (85 - 115%)  
Matrix Spike Recovery (80 - 120%)  
Relative Range  
Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101719  
Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/16/19 Matrix Spike	0.023 mg/L	0.024 mg/L	0.023 mg/L	4.5

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	87.4
Outfall 10/16/19 Matrix Spike	0.004 mg/L	0.020 mg/L	0.023 mg/L	91.7
Outfall 10/16/19 Matrix Spike Duplicate	0.004 mg/L	0.020 mg/L	0.024 mg/L	96.9

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.

#### Control Limits:

Recoveries  
Laboratory Control Sample Recovery (85 - 115%)  
Matrix Spike Recovery (80 - 120%)  
Relative Range  
Replicates (<20%)



## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101819  
Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 MW-133S 10/17/19 Matrix Spike	0.012 mg/L	0.013 mg/L	0.012 mg/L	14.8

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	93.8
MW-133S 10/17/19 Matrix Spike	0.002 mg/L	0.010 mg/L	0.012 mg/L	99.5
MW-133S 10/17/19 Matrix Spike Duplicate	0.002 mg/L	0.010 mg/L	0.013 mg/L	118.1

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.

#### Control Limits:

Recoveries  
Laboratory Control Sample Recovery (85 - 115%)  
Matrix Spike Recovery (80 - 120%)  
Relative Range  
Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102119  
Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/20/19 Matrix Spike	0.015 mg/L	0.014 mg/L	0.015 mg/L	5.7

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.011 mg/L	106.0
Outfall 10/20/19 Matrix Spike	0.005 mg/L	0.010 mg/L	0.015 mg/L	98.1
Outfall 10/20/19 Matrix Spike Duplicate	0.005 mg/L	0.010 mg/L	0.014 mg/L	89.6

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.

#### Control Limits:

Recoveries  
Laboratory Control Sample Recovery (85 - 115%)  
Matrix Spike Recovery (80 - 120%)  
Relative Range  
Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102219  
Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 MW-72D 10/18/19 Matrix Spike	1.6 mg/L	1.7 mg/L	1.7 mg/L	3.8

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	91.1
MW-72D 10/18/19 Matrix Spike	0.8 mg/L	1.0 mg/L	1.6 mg/L	85.9
MW-72D 10/18/19 Matrix Spike Duplicate	0.8 mg/L	1.0 mg/L	1.7 mg/L	92.3

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.

#### Control Limits:

Recoveries  
Laboratory Control Sample Recovery (85 - 115%)  
Matrix Spike Recovery (80 - 120%)  
Relative Range  
Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102319  
Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation #G001-002  
Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/22/19 Matrix Spike	0.026 mg/L	0.027 mg/L	0.027 mg/L	3.3

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	100.0
Outfall 10/22/19 Matrix Spike	0.006 mg/L	0.020 mg/L	0.026 mg/L	101.6
Outfall 10/22/19 Matrix Spike Duplicate	0.006 mg/L	0.020 mg/L	0.027 mg/L	106.0

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.

#### Control Limits:

Recoveries  
Laboratory Control Sample Recovery (85 - 115%)  
Matrix Spike Recovery (80 - 120%)  
Relative Range  
Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102419

Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 MW-66 10/24/19 Matrix Spike	0.013 mg/L	0.013 mg/L	0.013 mg/L	2.0

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	91.9
MW-66 10/24/19 Matrix Spike	0.002 mg/L	0.010 mg/L	0.013 mg/L	112.6
MW-66 10/24/19 Matrix Spike Duplicate	0.002 mg/L	0.010 mg/L	0.013 mg/L	110.1

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.

### Control Limits:

Recoveries

Laboratory Control Sample Recovery (85 - 115%)

Matrix Spike Recovery (80 - 120%)

Relative Range

Replicates (<20%)

X:\G001-002.19\SRF\_1014191 through 1025191

rev 10/29/19

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102519

Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 MW-125 10/21/19 Matrix Spike	0.66 mg/L	0.71 mg/L	0.68 mg/L	7.4

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	96.4
MW-125 10/21/19 Matrix Spike	0.20 mg/L	0.40 mg/L	0.66 mg/L	109.5
MW-125 10/21/19 Matrix Spike Duplicate	0.20 mg/L	0.40 mg/L	0.71 mg/L	122.1*

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.

\*Outside standard control limits.

### Control Limits:

Recoveries

Laboratory Control Sample Recovery (85 - 115%)

Matrix Spike Recovery (80 - 120%)

Relative Range

Replicates (<20%)

X:\G001-002.19\SRF\_1014191 through 1025191

rev 10/29/19

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101419

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/14/19 Matrix Spike	0.009 mg/L	0.008 mg/L	0.009 mg/L	7.0

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	103.8
HC/HR 10/14/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.009 mg/L	89.5
HC/HR 10/14/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.008 mg/L	83.2

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.

\*\* Elevated reporting limit due to matrix interference.

### Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%)

Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

rev 10/29/19

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101519

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/15/19 Matrix Spike	0.011 mg/L	0.012 mg/L	0.012 mg/L	11.6

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	96.3
HC/HR 10/15/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	110.4
HC/HR 10/15/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	124.0

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.

\*\* Elevated reporting limit due to matrix interference.

### Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%)

Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

rev 10/29/19



## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101619

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/16/19 Matrix Spike	0.009 mg/L	0.010 mg/L	0.010 mg/L	15.6

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	100.9
HC/HR 10/16/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.009 mg/L	87.5
HC/HR 10/16/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.010 mg/L	102.3

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.

\*\* Elevated reporting limit due to matrix interference.

### Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%)

Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

rev 10/29/19

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101719

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/17/19 Matrix Spike	0.009 mg/L	0.011 mg/L	0.010 mg/L	22.5*

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	95.1
HC/HR 10/17/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.009 mg/L	86.4
HC/HR 10/17/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	108.3

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.

\*\* Elevated reporting limit due to matrix interference.

\*Outside standard control limits.

### Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%)

Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

rev 10/29/19

X:\G001-002.19\SRF\_1014191 through 1025191

X:\G001-002.19\SRF\_1014191 through 1025191



## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101819  
 Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation #G001-002  
 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/18/19 Matrix Spike	0.012 mg/L	0.012 mg/L	0.012 mg/L	4.8

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	97.8
HC/HR 10/18/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	120.7
HC/HR 10/18/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	115.0

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.  
 \*\* Elevated reporting limit due to matrix interference.

#### Control Limits:

Recoveries  
 Laboratory Control Sample Recovery (80 - 120%)  
 Matrix Spike Recovery (70 - 130%)  
 Relative Range  
 Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102119  
 Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation #G001-002  
 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/21/19 Matrix Spike	0.007 mg/L	0.008 mg/L	0.008 mg/L	19.1

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.008 mg/L	84.5
HC/HR 10/21/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.007 mg/L	68.9*
HC/HR 10/21/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.008 mg/L	83.4

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.  
 \*\* Elevated reporting limit due to matrix interference.  
 \*Outside standard control limits.

#### Control Limits:

Recoveries  
 Laboratory Control Sample Recovery (80 - 120%)  
 Matrix Spike Recovery (70 - 130%)  
 Relative Range  
 Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102219  
 Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation #G001-002  
 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/22/19 Matrix Spike	0.010 mg/L	0.012 mg/L	0.011 mg/L	19.5

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	95.7
HC/HR 10/22/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.010 mg/L	100.6
HC/HR 10/22/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	122.3

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.  
 \*\* Elevated reporting limit due to matrix interference.

#### Control Limits:

Recoveries  
 Laboratory Control Sample Recovery (80 - 120%)  
 Matrix Spike Recovery (70 - 130%)  
 Relative Range  
 Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102319  
 Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation #G001-002  
 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/23/19 Matrix Spike	0.011 mg/L	0.011 mg/L	0.011 mg/L	0.9

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	100.5
HC/HR 10/23/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	108.0
HC/HR 10/23/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	107.1

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

#### Comments:

Calculations performed prior to rounding.  
 \*\* Elevated reporting limit due to matrix interference.

#### Control Limits:

Recoveries  
 Laboratory Control Sample Recovery (80 - 120%)  
 Matrix Spike Recovery (70 - 130%)  
 Relative Range  
 Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102419  
 Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation #G001-002  
 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/24/19 Matrix Spike	0.012 mg/L	0.012 mg/L	0.012 mg/L	1.6

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.012 mg/L	116.7
HC/HR 10/24/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	120.7
HC/HR 10/24/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	122.6

### BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.  
 \*\* Elevated reporting limit due to matrix interference.

### Control Limits:

Recoveries  
 Laboratory Control Sample Recovery (80 - 120%)  
 Matrix Spike Recovery (70 - 130%)  
 Relative Range  
 Replicates (<20%)

## Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG102519  
 Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation #G001-002  
 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

### REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/25/19 Matrix Spike	0.011 mg/L	0.011 mg/L	0.011 mg/L	0.7

### SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	90.7
HC/HR 10/25/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	110.4
HC/HR 10/25/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	111.1

### BLANK ANALYSIS

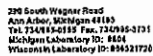
Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

### Comments:

Calculations performed prior to rounding.  
 \*\* Elevated reporting limit due to matrix interference.

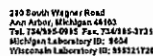
### Control Limits:

Recoveries  
 Laboratory Control Sample Recovery (80 - 120%)  
 Matrix Spike Recovery (70 - 130%)  
 Relative Range  
 Replicates (<20%)



## Page 1

PROJECT ID / NUMBER				LABORATORY INFORMATION				SHIPPING INFORMATION: SHIPPER (Track one) / TRACKING NUMBER(S) (if applicable)																																																																																																																																																																																																																																														
<b>Pall Corporation</b> <small>SAMPLE CUSTODIAN (print &amp; sign)</small>								<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Date</td><td>Feed Ex</td><td>UPS</td><td>DHL</td><td>Courier</td><td>Tracking Number</td> </tr> <tr> <td>Date</td><td>Feed Ex</td><td>UPS</td><td>DHL</td><td>Courier</td><td>Tracking Number</td> </tr> <tr> <td>Date</td><td>Feed Ex</td><td>UPS</td><td>DHL</td><td>Courier</td><td>Tracking Number</td> </tr> <tr> <td>Date</td><td>Feed Ex</td><td>UPS</td><td>DHL</td><td>Courier</td><td>Tracking Number</td> </tr> </table>												Date	Feed Ex	UPS	DHL	Courier	Tracking Number	Date	Feed Ex	UPS	DHL	Courier	Tracking Number	Date	Feed Ex	UPS	DHL	Courier	Tracking Number	Date	Feed Ex	UPS	DHL	Courier	Tracking Number																																																																																																																																																																																																											
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<small>RELINQUISHED BY (print &amp; sign)</small> <i>Zachary Shultz</i>				<small>DATE / TIME</small> 10/14/19 0921		<small>RECEIVED BY (print &amp; sign)</small> <i>Wski</i>		<small>DATE / TIME</small> RELINQUISHED BY (print & sign)				<small>DATE / TIME</small> RECEIVED BY (print & sign)				<small>DATE / TIME</small>																																																																																																																																																																																																																																						
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PROJECT ID / NUMBER		LABORATORY INFORMATION		SHIPPING INFORMATION: SHEPHER (Check one) / TRACKING NUMBER(S) (if applicable)							
SAMPLE CUSTODIAN (print & sign)		Should be underscore		Date	Fed Ex	UPS	DHL	Carrier	Tracking Number		
Pall/Gelman, Please Send emails to: Sue_Peters@Pall.com and Laurel.Bayer@Pall.com				Date	Fed Ex	UPS	DHL	Carrier	Tracking Number		
RELINQUISHED BY (print & sign)		DATE / TIME	RECEIVED BY (print & sign)	DATE / TIME	RELINQUISHED BY (print & sign)				DATE / TIME	RECEIVED BY (print & sign)	DATE / TIME
RELINQUISHED BY (print & sign)		DATE / TIME	RECEIVED BY (print & sign)	DATE / TIME	RELINQUISHED BY (print & sign)				DATE / TIME	RECEIVED BY (print & sign)	DATE / TIME
COMMENTS (Preservation, etc.)		std turn around, if data is reported before 10/28 pls send to Laure and Sue									
S/N		BAR CODE	DATE	TIME	COMP.	SEAL	ANALYSIS				MATRIX
1.		2819 Dexter Rd	10/7/19	10:26			1,4-dioxane				Indicate Sol/Water/ Sediment/Sludge Extract
2.		MW-761	10/7/19	13:08			X				
3.		MW-765	10/7/19	14:25			X				
4.		MW-110	10/8/19	13:29			X				
5.		MW-101	10/8/19	14:48			X				
6.			10/9/19	9:44			X				
7.			10/9/19	11:30			X				
8.			10/9/19	13:09			X				
9.			10/9/19	14:42			X				
10.			10/10/19	12:50			X				
11.			10/15/19	9:32			X				
12.			10/15/19	10:45			X				
13.			10/15/19	12:38			X				
14.			10/15/19	13:51			X				
15.			10/15/19	15:03			X				
16.											
17.											
18.											
19.											
20.											



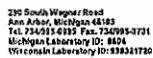
PROJECT ID / NUMBER		LABORATORY INFORMATION		SHIPPING INFORMATION: SHEPHER (Check one) / TRACKING NUMBER(S) (if applicable)							
Pall Corporation				Date	Fed Ex	UPS	DHL	Carrier	Tracking Number		
SAMPLE CUSTODIAN (print & sign)		Keith Patterson(keith_patterson@pall.com)(734-320-3010)		Date	Fed Ex	UPS	DHL	Carrier	Tracking Number		
RELINQUISHED BY (print & sign)		DATE / TIME	RECEIVED BY (print & sign)	DATE / TIME	RELINQUISHED BY (print & sign)				DATE / TIME	RECEIVED BY (print & sign)	DATE / TIME
RELINQUISHED BY (print & sign)		DATE / TIME	RECEIVED BY (print & sign)	DATE / TIME	RELINQUISHED BY (print & sign)				DATE / TIME	RECEIVED BY (print & sign)	DATE / TIME
COMMENTS (Preservation, etc.)		Bromate: EDA, please call or e-mail results a.s.a.p. Thanks									
S/N		BAR CODE	DATE	TIME	COMP.	SEAL	ANALYSIS				MATRIX
1.			10-15-19		X		1,4-dioxane				Indicate Sol/Water/ Sediment/Sludge Extract
2.			10-16-19		X		Bromate				<8ppb n.d.
3.											
4.											
5.											
6.											
7.											
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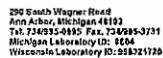
PROJECT ID / NUMBER <b>Pall Corporation</b>		LABORATORY INFORMATION		SHIPPER INFORMATION: SHEPHER (Track and) TRACKING NUMBER(S) (If applicable)																	
SAMPLE CUSTODIAN (print & sign) <b>Keith Patterson(keith_patterson@pall.com)(734-320-3010)</b>				Date	Fed Ex	LPE	DHL	Courier	Tracking Number	Date	Fed Ex	LPE	DHL	Courier	Tracking Number						
RELINQUISHED BY (Print & Sign) <b>Brian Patterson Brian S. Patterson</b>		DATE / TIME <b>10-16-19 9:25</b>	RECEIVED BY (Print & Sign) <b>[Signature]</b>	Date	Fed Ex	LPE	DHL	Courier	Tracking Number	Date	Fed Ex	LPE	DHL	Courier	Tracking Number						
RELINQUISHED BY (Print & Sign)		DATE / TIME	RECEIVED BY (Print & Sign)	DATE / TIME	RELINQUISHED BY (Print & Sign)				DATE / TIME	RECEIVED BY (Print & Sign)				DATE / TIME							
COMMENTS (Print & Sign, etc.) <b>Bromate! EDA, please call or e-mail results a.s.a.p. Thanks</b>				ANALYSIS																	
LINE NO.	BAR CODE	DATE	TIME	SAMPLE	CONC.	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	PRIORITY NUMBER	1,4-dioxane	Bromate											MATRIX (Include Solvent(s), Reagents, etc.)
1.		10-19-19		X		Outfall 001	4		X												<Bppb
2.		10-16-19	8:27	X		HC/HR	1		X												n.d.
3.																					
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
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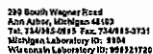
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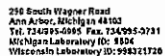
Mitchell's Cell: 248 227 8595

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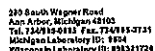


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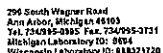
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220 South Wagner Road  
Ann Arbor, Michigan 48105  
Tel: 734/293-6395 Fax: 734/293-6391  
Michigan Laboratory ID: M04  
Watershed Laboratory ID: 991311728

# CHAIN OF CUSTODY RECORD

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Pall Corporation				Date	Fed Ex	UPS	DHL	Carrier	Tracking Number				
SAMPLE CUSTOMER (Print Name)				Date	Fed Ex	UPS	DHL	Carrier	Tracking Number				
Keith Patterson(keith_patterson@pall.com)(734-320-3010)				Date	Fed Ex	UPS	DHL	Carrier	Tracking Number				
RELINQUISHED BY (Print Name)		DATE / TIME	RECEIVED BY (Print Name)	DATE / TIME	RELINQUISHED BY (Print Name)				DATE / TIME	RECEIVED BY (Print Name)			
Zachary Shultz		10-23-11 9:05	10-23-11										
RELINQUISHED BY (Print Name)		DATE / TIME	RECEIVED BY (Print Name)	DATE / TIME	RELINQUISHED BY (Print Name)				DATE / TIME	RECEIVED BY (Print Name)			
COMMENTS (Preservation, etc.)		ANALYSIS											
Bromate: EDA, please call or e-mail results a.s.a.p. Thanks													
LINE	SAR CODE	DATE	TIME	CHAMP	CHAMP	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	PRIORITY NUMBER	1,4-dioxane	Bromate			ANALYST
1.		10-23-11		X		Outfall001	34		X				<8ppb
2.		10-23-11	0730	X		HC/HR	1		X				n.d.
3.													
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220 South Wagner Road  
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Michigan Laboratory ID: M04  
Watershed Laboratory ID: 991311728

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SAMPLE CUSTOMER (Print Name)				Date	Fed Ex	UPS	DHL	Carrier	Tracking Number				
Keith Patterson(keith_patterson@pall.com)(734-320-3010)				Date	Fed Ex	UPS	DHL	Carrier	Tracking Number				
RELINQUISHED BY (Print Name)		DATE / TIME	RECEIVED BY (Print Name)	DATE / TIME	RELINQUISHED BY (Print Name)				DATE / TIME	RECEIVED BY (Print Name)			
Zachary Shultz		10-24-11 9:35	10-24-11										
RELINQUISHED BY (Print Name)		DATE / TIME	RECEIVED BY (Print Name)	DATE / TIME	RELINQUISHED BY (Print Name)				DATE / TIME	RECEIVED BY (Print Name)			
COMMENTS (Preservation, etc.)		ANALYSIS											
Bromate: EDA, please call or e-mail results a.s.a.p. Thanks													
LINE	SAR CODE	DATE	TIME	CHAMP	CHAMP	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	PRIORITY NUMBER	1,4-dioxane	Bromate			ANALYST
1.		10-23-11		X		Outfall001	34		X				<8ppb
2.		10-24-11	0800	X		HC/HR	1		X				n.d.
3.													
4.													
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Pall/Gelman, Please Send emails to: Sue_Peters@Pall.com and Laurel_Beyer@Pall.com		Should be under seal		Date		Fed Ex	UPS	DHL	Courier	Tracking Number	
RELINQUISHED BY (print & sign)		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME	
RELINQUISHED BY (print & sign)		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME	
COMMENTS (Preparation, etc.)											
std turn around, if data is reported before 10/28 pls send to Laure and Sue											
ANALYSIS											
MATRIX: Indicate Spill/Water/Air/Sediment/Solid/Extr											
1,4-dioxane											
4											
2											



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SAMPLE CUSTODIAN (print & sign)		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME	
Pall Corporation		Keith Patterson(keith_patterson@pall.com)(734-320-3010)		Date		Fed Ex	UPS	DHL	Courier	Tracking Number	
RELINQUISHED BY (print & sign)		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME	
RELINQUISHED BY (print & sign)		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME		DATE / TIME	
COMMENTS (Preparation, etc.)											
Bromate: EDA, please call or e-mail results a.s.a.p. Thanks											
ANALYSIS											
MATRIX: Indicate Spill/Water/Air/Sediment/Solid/Extr											
1,4-dioxane											
Bromate											
4											
1											