Rec 7/21/15
put on BRRTS
7/22/15
(99)

Richard, Philip E - DNR

From: Ree, Timothy <Tim.Ree@ghd.com>
Sent: Tuesday, July 21, 2015 4:55 PM
To: Richard, Philip E - DNR
Cc: Frehner, Ron; Storlie, Pete
Subject: Penta Wood - WPDES Compliance Sampling 7/8/2015 and 7/14/2015 ~COR-086165~
Attachments: Lab Report-240-52980-1-086165-01-09-2015-07-17.pdf; Lab Report-240-53197-1-086165-01-07-2015-07-21.pdf

Phil,

Please find attached the results for the effluent samples collected at the Penta Wood site on 7/8/2015 and 7/14/2015. PCP was detected in the 7/8/2015 effluent sample at a concentration of 0.11 ug/L, which exceeds the permit criteria of 0.1 ug/L. PCP was detected in the 7/14/2015 effluent sample at a concentration of 0.087 ug/L (estimated), which is below the permit criteria. The average effluent concentration for the three samples collected in July 2015 is 0.109 ug/L but does not represent a non-compliance with the substantive WPDES permit criteria since additional weekly effluent samples are required to be collected this month.

The 7/8/2015 effluent sample was also analyzed for other constituents required on a quarterly basis. These constituent concentrations met the applicable substantive permit criteria.

An influent sample was collected on 7/8/2015, and PCP was detected at a concentration of 1,100 ug/L, which is higher than previously detected in June 2015 (550 ug/L). GHD plans to reduce the pumping rate at well EW06 and increase the pumping rates at the other extraction wells slightly in an attempt to reduce the overall influent concentration. We plan to collect another influent sample the week of 8/3/2015.

A sample was also collected between the carbon units on 7/14/2015 to assess the timing of a carbon exchange. PCP was detected in this sample at a concentration of 0.18 ug/L, which is higher than the sample collected in June (0.027 ug/L). This indicates that a carbon exchange is not necessary yet but may be in the near future. We plan to collect another sample between the carbon units the week of 8/3/2015.

GHD recommends that we continue to operate the system and re-assess following the pumping changes and receipt of future subsequent sample results.

Please update Kathy Bartilson (WDNR) and Linda Martin (USEPA).

Tim Ree

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-52980-1
Client Project/Site: 86165-01-01, Penta Wood

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson

Denise D Heckler

Authorized for release by:
7/17/2015 12:50:57 PM

Denise Heckler, Project Manager II
(330)966-9477
denise.heckler@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
*	LCS or LCSD is outside acceptance limits.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 240-52980-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: GHD Services Inc.

Project: 86165-01-01, Penta Wood

Report Number: 240-52980-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have 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 test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 07/09/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.0 C.

SEMIVOLATILE ORGANIC COMPOUNDS (GCMS)

Sample W-150708-TB-QE (240-52980-1) was analyzed for semivolatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/10/2015 and analyzed on 07/12/2015.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

WISCONSIN DRO

Sample W-150708-TB-QE (240-52980-1) was analyzed for Wisconsin DRO in accordance with Wisconsin DNR Modified DRO. The samples were prepared on 07/10/2015 and analyzed on 07/13/2015.

WI Diesel Range Organics (C10-C28) failed the recovery criteria high for LCS 240-188664/3-A. This analyte was biased high in the LCS

Job ID: 240-52980-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

and was not detected in the associated sample; therefore, the data has been reported. The RPD between the LCS/LCSD was within control limits.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORINATED HERBICIDES

Samples W-150708-TB-QE (240-52980-1) and W-150708-TB-MI (240-52980-2) were analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 07/10/2015 and analyzed on 07/15/2015 and 07/16/2015.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

Sample W-150708-TB-MI (240-52980-2)[4000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 180-147441.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL RECOVERABLE METALS (ICPMS)

Sample W-150708-TB-QE (240-52980-1) was analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 07/10/2015 and analyzed on 07/13/2015.

Copper was detected in method blank MB 240-188688/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Arsenic was detected in method blank MB 240-188688/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS

Sample W-150708-TB-QE (240-52980-1) was analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 07/10/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-52980-1

Method	Method Description	Protocol	Laboratory
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8151A	Herbicides (GC)	SW846	TAL PIT
WI-DRO	Wisconsin - Diesel Range Organics (GC)	WI-DRO	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
300.0	Anions, Ion Chromatography	MCAWW	TAL CAN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
WI-DRO = "Modified DRO: Method For Determining Diesel Range Organics", Wisconsin DNR, Publ-SW-141, September, 1995.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Sample Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-52980-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-52980-1	W-150708-TB-QE	Water	07/08/15 11:45	07/09/15 09:20
240-52980-2	W-150708-TB-MI	Water	07/08/15 12:15	07/09/15 09:20

Detection Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-52980-1

Client Sample ID: W-150708-TB-QE — Lab Sample ID: 240-52980-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.11		0.098	0.015	ug/L	4		8151A	Total/NA
Arsenic	1.1	J B	5.0	0.18	ug/L	1		6020	Total Recoverable
Copper	1.4	J B	2.0	0.75	ug/L	1		6020	Total Recoverable
Manganese	780		5.0	1.1	ug/L	1		6020	Total Recoverable
Zinc	7.3	J	20.0	7.3	ug/L	1		6020	Total Recoverable
Chloride	15.1		1.0	0.41	mg/L	1		300.0	Total/NA

Client Sample ID: W-150708-TB-MI — Lab Sample ID: 240-52980-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	1100		97	15	ug/L	4000		8151A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: W-150708-TB-QE

Date Collected: 07/08/15 11:45
Date Received: 07/09/15 09:20

Lab Sample ID: 240-52980-1

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.061		0.20	0.061	ug/L		07/10/15 09:00	07/12/15 12:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*29 - 110*	*07/10/15 09:00*	*07/12/15 12:17*	*1*
2-Fluorophenol (Surr)	*37*		*15 - 110*	*07/10/15 09:00*	*07/12/15 12:17*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*21 - 128*	*07/10/15 09:00*	*07/12/15 12:17*	*1*
Nitrobenzene-d5 (Surr)	*70*		*31 - 110*	*07/10/15 09:00*	*07/12/15 12:17*	*1*
Phenol-d5 (Surr)	*21*		*10 - 110*	*07/10/15 09:00*	*07/12/15 12:17*	*1*
Terphenyl-d14 (Surr)	*75*		*31 - 115*	*07/10/15 09:00*	*07/12/15 12:17*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	**0.11**		0.098	0.015	ug/L		07/10/15 16:10	07/15/15 16:25	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*75*	*^c*	*32 - 140*	*07/10/15 16:10*	*07/15/15 16:25*	*4*

Method: WI-DRO - Wisconsin - Diesel Range Organics (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
WI Diesel Range Organics (C10-C28)	<0.050	*	0.10	0.050	mg/L		07/10/15 09:08	07/13/15 20:07	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.1**	**J B**	5.0	0.18	ug/L		07/10/15 10:01	07/13/15 11:13	1
Copper	**1.4**	**J B**	2.0	0.75	ug/L		07/10/15 10:01	07/13/15 11:13	1
Iron	<16.0		100	16.0	ug/L		07/10/15 10:01	07/13/15 11:13	1
Manganese	**780**		5.0	1.1	ug/L		07/10/15 10:01	07/13/15 11:13	1
Zinc	**7.3**	**J**	20.0	7.3	ug/L		07/10/15 10:01	07/13/15 11:13	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15.1**		1.0	0.41	mg/L			07/10/15 15:32	1

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-52980-1

Client Sample ID: W-150708-TB-MI
Date Collected: 07/08/15 12:15
Date Received: 07/09/15 09:20

Lab Sample ID: 240-52980-2
Matrix: Water

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1100		97	15	ug/L		07/10/15 16:10	07/16/15 12:18	4000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*0*	*X ^c D*	*32 - 140*	*07/10/15 16:10*	*07/16/15 12:18*	*4000*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-52980-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	TBP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(29-110)	(15-110)	(21-128)	(31-110)	(10-110)	(31-115)
240-52980-1	W-150708-TB-QE	73	37	72	70	21	75
LCS 240-188660/17-A	Lab Control Sample	70	56	76	69	39	77
MB 240-188660/16-A	Method Blank	81	75	77	80	60	95

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPA1	DCPA2
Lab Sample ID	Client Sample ID	(32-140)	(32-140)
240-52980-1	W-150708-TB-QE	72	75 ^c
240-52980-2	W-150708-TB-MI	0 X ^c D	0 X ^c D
LCS 180-147441/2-A	Lab Control Sample	67	75
LCSD 180-147441/3-A	Lab Control Sample Dup	69	80
MB 180-147441/1-A	Method Blank	41	50

Surrogate Legend

DCPA = 2,4-Dichlorophenylacetic acid

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-188660/16-A
Matrix: Water
Analysis Batch: 188809

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 188660

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.063		0.20	0.063	ug/L		07/10/15 09:00	07/12/15 10:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*29 - 110*	*07/10/15 09:00*	*07/12/15 10:17*	*1*
2-Fluorophenol (Surr)	*75*		*15 - 110*	*07/10/15 09:00*	*07/12/15 10:17*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*21 - 128*	*07/10/15 09:00*	*07/12/15 10:17*	*1*
Nitrobenzene-d5 (Surr)	*80*		*31 - 110*	*07/10/15 09:00*	*07/12/15 10:17*	*1*
Phenol-d5 (Surr)	*60*		*10 - 110*	*07/10/15 09:00*	*07/12/15 10:17*	*1*
Terphenyl-d14 (Surr)	*95*		*31 - 115*	*07/10/15 09:00*	*07/12/15 10:17*	*1*

Lab Sample ID: LCS 240-188660/17-A
Matrix: Water
Analysis Batch: 188809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188660

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	20.0	12.2		ug/L		61	52 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*70*		*29 - 110*
2-Fluorophenol (Surr)	*56*		*15 - 110*
2,4,6-Tribromophenol (Surr)	*76*		*21 - 128*
Nitrobenzene-d5 (Surr)	*69*		*31 - 110*
Phenol-d5 (Surr)	*39*		*10 - 110*
Terphenyl-d14 (Surr)	*77*		*31 - 115*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 180-147441/1-A
Matrix: Water
Analysis Batch: 147792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147441

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.016		0.10	0.016	ug/L		07/10/15 16:10	07/15/15 16:01	4

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*50*		*32 - 140*	*07/10/15 16:10*	*07/15/15 16:01*	*4*

Lab Sample ID: LCS 180-147441/2-A
Matrix: Water
Analysis Batch: 147792

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147441

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	5.00	4.50		ug/L		90	40 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*75*		*32 - 140*

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCSD 180-147441/3-A
Matrix: Water
Analysis Batch: 147792

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147441

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol			5.00	4.86		ug/L		97	40 - 140	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*80*		*32 - 140*

Method: WI-DRO - Wisconsin - Diesel Range Organics (GC)

Lab Sample ID: MB 240-188664/2-A
Matrix: Water
Analysis Batch: 188949

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 188664

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
WI Diesel Range Organics (C10-C28)	<0.050		0.10	0.050	mg/L		07/10/15 09:08	07/13/15 19:12	1

Lab Sample ID: LCS 240-188664/3-A
Matrix: Water
Analysis Batch: 188949

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 188664

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
WI Diesel Range Organics (C10-C28)			0.500	0.584	*	mg/L		117	75 - 115		

Lab Sample ID: LCSD 240-188664/4-A
Matrix: Water
Analysis Batch: 188949

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 188664

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
WI Diesel Range Organics (C10-C28)			0.500	0.572		mg/L		114	75 - 115	2	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-188688/1-A
Matrix: Water
Analysis Batch: 188936

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 188688

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.568	J	5.0	0.18	ug/L		07/10/15 10:01	07/13/15 10:30	1
Copper	2.03		2.0	0.75	ug/L		07/10/15 10:01	07/13/15 10:30	1
Iron	<16.0		100	16.0	ug/L		07/10/15 10:01	07/13/15 10:30	1
Manganese	<1.1		5.0	1.1	ug/L		07/10/15 10:01	07/13/15 10:30	1
Zinc	<7.3		20.0	7.3	ug/L		07/10/15 10:01	07/13/15 10:30	1

Lab Sample ID: LCS 240-188688/2-A
Matrix: Water
Analysis Batch: 188936

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 188688

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			1000	991.3		ug/L		99	80 - 120		

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 240-188688/2-A
Matrix: Water
Analysis Batch: 188936

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 188688

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	1000	1062		ug/L		106	80 - 120
Iron	10000	10220		ug/L		102	80 - 120
Manganese	1000	1008		ug/L		101	80 - 120
Zinc	1000	1031		ug/L		103	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-188753/3
Matrix: Water
Analysis Batch: 188753

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.41		1.0	0.41	mg/L			07/10/15 11:49	1

Lab Sample ID: LCS 240-188753/4
Matrix: Water
Analysis Batch: 188753

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	53.82		mg/L		108	90 - 110

QC Association Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-52980-1

GC/MS Semi VOA

Prep Batch: 188660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total/NA	Water	3510C	
LCS 240-188660/17-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-188660/16-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 188809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total/NA	Water	8270C	188660
LCS 240-188660/17-A	Lab Control Sample	Total/NA	Water	8270C	188660
MB 240-188660/16-A	Method Blank	Total/NA	Water	8270C	188660

GC Semi VOA

Prep Batch: 147441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total/NA	Water	8151A	
240-52980-2	W-150708-TB-MI	Total/NA	Water	8151A	
LCS 180-147441/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 180-147441/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	
MB 180-147441/1-A	Method Blank	Total/NA	Water	8151A	

Analysis Batch: 147792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total/NA	Water	8151A	147441
LCS 180-147441/2-A	Lab Control Sample	Total/NA	Water	8151A	147441
LCSD 180-147441/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	147441
MB 180-147441/1-A	Method Blank	Total/NA	Water	8151A	147441

Analysis Batch: 147926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-2	W-150708-TB-MI	Total/NA	Water	8151A	147441

Prep Batch: 188664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total/NA	Water	3520C	
LCS 240-188664/3-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 240-188664/4-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 240-188664/2-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 188949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total/NA	Water	WI-DRO	188664
LCS 240-188664/3-A	Lab Control Sample	Total/NA	Water	WI-DRO	188664
LCSD 240-188664/4-A	Lab Control Sample Dup	Total/NA	Water	WI-DRO	188664
MB 240-188664/2-A	Method Blank	Total/NA	Water	WI-DRO	188664

Metals

Prep Batch: 188688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 188688 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-188688/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-188688/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 188936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total Recoverable	Water	6020	188688
LCS 240-188688/2-A	Lab Control Sample	Total Recoverable	Water	6020	188688
MB 240-188688/1-A	Method Blank	Total Recoverable	Water	6020	188688

General Chemistry

Analysis Batch: 188753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-52980-1	W-150708-TB-QE	Total/NA	Water	300.0	
LCS 240-188753/4	Lab Control Sample	Total/NA	Water	300.0	
MB 240-188753/3	Method Blank	Total/NA	Water	300.0	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-52980-1

Client Sample ID: W-150708-TB-QE

Lab Sample ID: 240-52980-1

Date Collected: 07/08/15 11:45
Matrix: Water
Date Received: 07/09/15 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			188660	07/10/15 09:00	CS	TAL CAN
Total/NA	Analysis	8270C		1	188809	07/12/15 12:17	JMG	TAL CAN
Total/NA	Prep	8151A			147441	07/10/15 16:10	CBY	TAL PIT
Total/NA	Analysis	8151A		4	147792	07/15/15 16:25	JMO	TAL PIT
Total/NA	Prep	3520C			188664	07/10/15 09:08	JDR	TAL CAN
Total/NA	Analysis	WI-DRO		1	188949	07/13/15 20:07	DEB	TAL CAN
Total Recoverable	Prep	3005A			188688	07/10/15 10:01	WAL	TAL CAN
Total Recoverable	Analysis	6020		1	188936	07/13/15 11:13	AS1	TAL CAN
Total/NA	Analysis	300.0		1	188753	07/10/15 15:32	LKG	TAL CAN

Client Sample ID: W-150708-TB-MI

Lab Sample ID: 240-52980-2

Date Collected: 07/08/15 12:15
Matrix: Water
Date Received: 07/09/15 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			147441	07/10/15 16:10	CBY	TAL PIT
Total/NA	Analysis	8151A		4000	147926	07/16/15 12:18	JMO	TAL PIT

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Certification Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-52980-1

Laboratory: TestAmerica Canton

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	999518190	08-31-15 *

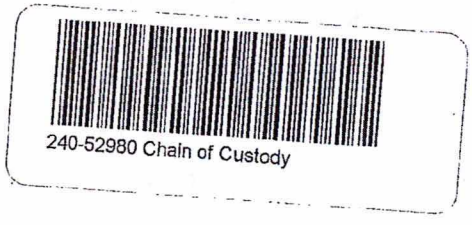
Laboratory: TestAmerica Pittsburgh

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	998027800	08-31-15

* Certification renewal pending - certification considered valid.

CHAIN OF CUSTODY
AND
RECEIVING DOCUMENTS



4101 Shuffel Street, N.W. North Canton, OH 44720 tel 330.497.9396 fax 330.497.0772 www.testamericainc.com

1.0/C20

CHAIN OF CUSTODY RECORD

COC NO.: SP-01664

PAGE 1 OF 1

(See Reverse Side for Instructions)

CONESTOGA-ROVERS & ASSOCIATES

1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States
Phone: (651) 639-0913 Fax: (651) 639-0923

Project No/ Phase/Task Code: 086165-01	**Laboratory Name:** NORTH CANTON	**Lab Location:** TEST AMERICA	**SSOW ID:**
Project Name: PENTAWOOD	**Lab Contact:**	**Lab Quote No:**	**Cooler No:**
Project Location: SIREN, WI			**Carrier:**
Chemistry Contact: GRANT ANDERSON GANDERSON@CRAWORLD.COM			**Airbill No:**
Sampler(s): T. BRAUN			**Date Shipped:**

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	Analysis Requested: PCP-8151	Naphthalene	WI DRO	Chloride	Total Recoverable Metals	MS/MSD Request	Comments/ Special Instructions
1	W-150708-TB-QE	07/08/15	11:45	W	G	5	2	1						8	X	X	X	X	X		~~STANDARD TAT~~
2	W-150708-TB-MI	07/08/15	12:15	W	G	2								2	X						
3																					CONTACT GRANT ANDERSON
4																					
5																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Page 20 of 23

TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☒ Other: SEE ABOVE RIGHT

Total Number of Containers: 10

All Samples In Cooler must be on COC

Notes/ Special Requirements:

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1. Tim Braun	CRA	7/8/15	1500	1.	TA	7-9-15	920
				2.			
				3.			

7/7/2015

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT — ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE — Fully Executed Copy (CRA) YELLOW — Receiving Laboratory Copy PINK — Shipper GOLDENROD — Sampling Crew

CRA Form: COC-10A (20110804)

TestAmerica Canton Sample Receipt Form/Narrative Login # : 52980
Canton Facility

Client CRA Site Name

Cooler Received on 7-9-15 Opened on 7-9-15

Cooler unpacked by:

FedEx: 1st Grd ~~Exp~~ UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # Foam Box ~~Client Cooler~~ Box Other

Packing material used: ~~Bubble Wrap~~ Foam Plastic Bag None Other

COOLANT: ~~Wet Ice~~ Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# A (CF +1.0 °C) Observed Cooler Temp. 1.0 °C Corrected Cooler Temp. 2.0 °C

~~IR GUN# 4 (CF +0.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~

~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~

☐ See Multiple Cooler Form

IR GUN# 8 (CF -1.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 ~~Yes~~ No
   -Were custody seals on the outside of the cooler(s) signed & dated? ~~Yes~~ No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes ~~No~~
3. Shippers' packing slip attached to the cooler(s)? ~~Yes~~ No
4. Did custody papers accompany the sample(s)? ~~Yes~~ No
5. Were the custody papers relinquished & signed in the appropriate place? ~~Yes~~ No
6. Was/were the person(s) who collected the samples clearly identified on the COC? ~~Yes~~ No
7. Did all bottles arrive in good condition (Unbroken)? ~~Yes~~ No
8. Could all bottle labels be reconciled with the COC? ~~Yes~~ No
9. Were correct bottle(s) used for the test(s) indicated? ~~Yes~~ No
10. Sufficient quantity received to perform indicated analyses? ~~Yes~~ No
11. Were sample(s) at the correct pH upon receipt? ~~Yes~~ No NA pH Strip Lot# HC432654
12. Were VOAs on the COC? Yes ~~No~~
13. Were air bubbles >6 mm in any VOA vials? Yes No ~~NA~~
14. Was a trip blank present in the cooler(s)? Trip Blank Lot # Yes ~~No~~

Contacted PM Date by via Verbal Voice Mail Other

Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container.

Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.

Time preserved: Preservative(s) added/Lot number(s):

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
W-150708-TB-QE	240-52980-B-1	Plastic 500ml - with Nitric Acid	<2		
W-150708-TB-QE	240-52980-G-1	Amber Glass 1 liter - Hydrochloric	<2		
W-150708-TB-QE	240-52980-H-1	Amber Glass 1 liter - Hydrochloric	<2		

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 240-52980-1

Login Number: 52980
List Number: 2
Creator: Lonzo, Michael A

List Source: TestAmerica Pittsburgh
List Creation: 07/10/15 03:51 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-53197-1
Client Project/Site: 86165-01-01, Penta Wood

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson

Denise D Heckler

Authorized for release by:
7/21/2015 9:15:37 AM

Denise Heckler, Project Manager II
(330)966-9477
denise.heckler@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 240-53197-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: GHD Services Inc.

Project: 86165-01-01, Penta Wood

Report Number: 240-53197-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have 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 test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 07/15/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.2 C.

CHLORINATED HERBICIDES

Samples W-150714-PS-WE (240-53197-1) and W-150714-PS-GAC (240-53197-2) were analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 07/16/2015 and analyzed on 07/17/2015.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 180-147971.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Sample Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-53197-1	W-150714-PS-WE	Water	07/14/15 10:40	07/15/15 10:10
240-53197-2	W-150714-PS-GAC	Water	07/14/15 10:45	07/15/15 10:10

Detection Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

Client Sample ID: W-150714-PS-WE — Lab Sample ID: 240-53197-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.087	J	0.094	0.015	ug/L	4		8151A	Total/NA

Client Sample ID: W-150714-PS-GAC — Lab Sample ID: 240-53197-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.18		0.095	0.015	ug/L	4		8151A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

Client Sample ID: W-150714-PS-WE
Date Collected: 07/14/15 10:40
Date Received: 07/15/15 10:10

Lab Sample ID: 240-53197-1
Matrix: Water

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.087	J	0.094	0.015	ug/L		07/16/15 16:15	07/17/15 17:36	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*70*		*32 - 140*	*07/16/15 16:15*	*07/17/15 17:36*	*4*

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

Client Sample ID: W-150714-PS-GAC
Date Collected: 07/14/15 10:45
Date Received: 07/15/15 10:10

Lab Sample ID: 240-53197-2
Matrix: Water

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.18		0.095	0.015	ug/L		07/16/15 16:15	07/17/15 18:01	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*76*		*32 - 140*	*07/16/15 16:15*	*07/17/15 18:01*	*4*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPA1	DCPA2
Lab Sample ID	Client Sample ID	(32-140)	(32-140)
240-53197-1	W-150714-PS-WE	70	60
240-53197-2	W-150714-PS-GAC	76	60
LCS 180-147971/2-A	Lab Control Sample	65	57
LCSD 180-147971/3-A	Lab Control Sample Dup	65	57
MB 180-147971/1-A	Method Blank	51	45

Surrogate Legend

DCPA = 2,4-Dichlorophenylacetic acid

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 180-147971/1-A
Matrix: Water
Analysis Batch: 148071

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147971

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.016		0.10	0.016	ug/L		07/16/15 16:15	07/17/15 16:48	4

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*51*		*32 - 140*	*07/16/15 16:15*	*07/17/15 16:48*	*4*

Lab Sample ID: LCS 180-147971/2-A
Matrix: Water
Analysis Batch: 148071

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147971

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	1.00	0.861		ug/L		86	40 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*65*		*32 - 140*

Lab Sample ID: LCSD 180-147971/3-A
Matrix: Water
Analysis Batch: 148071

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147971

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	1.00	0.932		ug/L		93	40 - 140	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*65*		*32 - 140*

QC Association Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

GC Semi VOA

Prep Batch: 147971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53197-1	W-150714-PS-WE	Total/NA	Water	8151A	
240-53197-2	W-150714-PS-GAC	Total/NA	Water	8151A	
LCS 180-147971/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 180-147971/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	
MB 180-147971/1-A	Method Blank	Total/NA	Water	8151A	

Analysis Batch: 148071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-53197-1	W-150714-PS-WE	Total/NA	Water	8151A	147971
240-53197-2	W-150714-PS-GAC	Total/NA	Water	8151A	147971
LCS 180-147971/2-A	Lab Control Sample	Total/NA	Water	8151A	147971
LCSD 180-147971/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	147971
MB 180-147971/1-A	Method Blank	Total/NA	Water	8151A	147971

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

Client Sample ID: W-150714-PS-WE

Lab Sample ID: 240-53197-1

Date Collected: 07/14/15 10:40
Matrix: Water
Date Received: 07/15/15 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			147971	07/16/15 16:15	CBY	TAL PIT
Total/NA	Analysis	8151A		4	148071	07/17/15 17:36	JMO	TAL PIT

Client Sample ID: W-150714-PS-GAC

Lab Sample ID: 240-53197-2

Date Collected: 07/14/15 10:45
Matrix: Water
Date Received: 07/15/15 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			147971	07/16/15 16:15	CBY	TAL PIT
Total/NA	Analysis	8151A		4	148071	07/17/15 18:01	JMO	TAL PIT

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Certification Summary

Client: GHD Services Inc.
Project/Site: 86165-01-01, Penta Wood

TestAmerica Job ID: 240-53197-1

Laboratory: TestAmerica Canton

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	999518190	08-31-15 *

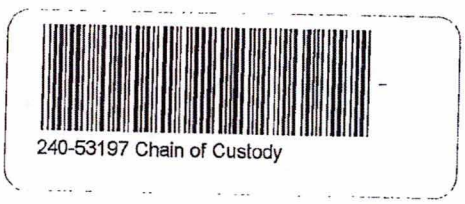
Laboratory: TestAmerica Pittsburgh

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	998027800	08-31-15

* Certification renewal pending - certification considered valid.

CHAIN OF CUSTODY
AND
RECEIVING DOCUMENTS



4101 Shuffel Street, N.W. North Canton, OH 44720 tel 330.497.9396 fax 330.497.0772 www.testamericainc.com

TestAmerica Canton 3.2 | 04.2

4101 Shuffel Street, N. N.

North Canton, OH 44720
Phone: 330.497.9396 Fax: 330.497.0772

Chain of Custody Record

032159

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

ganderson@craworld.com

Client Contact	Project Manager: Tim Ree	Site Contact:	Date: 7-14-15	COC No:
Company Name: CRA GHD-086165-01-01	Tel/Fax:	Lab Contact:	Carrier: Fed Ex	1 of 1 COCs
Address: 1801 Old Hwy 8	Analysis Turnaround Time			Sampler:
City/State/Zip: St. Paul, MN 55112	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 651-639-0913	TAT if different from Below: Standard			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Penta Wood	☐ 1 week			
Site: 086165-01-01	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	PCP 8151	Sample Specific Notes:
W-150714-PS-WB	7-14-15	1040	G	W	2	N	N	X	Weekly Effluent
W-150714-PS-GAC	7-14-15	1045	G	W	2	N	N	X	Influent.

Page 16 of 19

Preservation Used: (1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____		Therm ID No.:
Relinquished by:	Company: CRA	Date/Time: 7-14-15/1300	Received by:	Company: TA Can	Date/Time: 7/15/15 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

7/21/2015

TestAmerica Canton Sample Receipt Form/Narrative Login # : 52197
Canton Facility

Client GHD Site Name Pentawood

Cooler Received on 7/15/15 Opened on 7/15/15

Cooler unpacked by: Gary Burns

FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # A736 Foam Box Client Cooler Box Other

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# A (CF +1.0 °C) Observed Cooler Temp. 3.2 °C Corrected Cooler Temp. 4.2 °C

~~IR GUN# 4 (CF +0.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~

~~IR GUN# 5 (CF +0.4 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~

~~See Multiple Cooler Form~~

IR GUN# 8 (CF -1.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 2 (Yes) No
   -Were custody seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes (No)
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels be reconciled with the COC? (Yes) No
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. Sufficient quantity received to perform indicated analyses? (Yes) No
11. Were sample(s) at the correct pH upon receipt? Yes No (NA) pH Strip Lot# HC432654
12. Were VOAs on the COC? Yes (No)
13. Were air bubbles >6 mm in any VOA vials? Yes No (NA)
14. Was a trip blank present in the cooler(s)? Trip Blank Lot # Yes (No)

Contacted PM Date by via Verbal Voice Mail Other
Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 240-53197-1

Login Number: 53197
List Number: 2
Creator: Lonzo, Michael A

List Source: TestAmerica Pittsburgh
List Creation: 07/16/15 03:55 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 240-53197-1

Login Number: 53197
List Number: 3
Creator: Lonzo, Michael A

List Source: TestAmerica Pittsburgh
List Creation: 07/16/15 03:55 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	