Lauridsen, Keld B - DNR

From:	Glander, Nick <nick.glander@foth.com></nick.glander@foth.com>
Sent:	Thursday, March 30, 2017 1:41 PM
То:	Lauridsen, Keld B - DNR
Cc:	Kozicki, Sharon V F
Subject:	Better Brite WTP End of Year Documentation
Attachments:	Better Brite 2016&2017.pdf; 40146455_frc.pdf; 40137547_frc (2).pdf

Hello Keld;

In total, Foth processed 31 batches in the contract year - April 2016 through March 2017. An attached Better Brite WTP Summary Packet contains the following:

- A summary page showing the total volume of water treated per month in table & graph format with drum fill and analytical sample collection dates
- The tabulated WTP Process Log provides the individual batch detail
- Table showing when drums were filled and disposed of
- Summary table of the analytical results.

Also attached are both the August and March Pace Laboratory Analytical Reports.

Thank you;

Nick Glander, Project Environmental Scientist Foth Infrastructure & Environment, LLC 2121 Innovation Court, Suite 300 P.O. Box 5126 De Pere, WI 54115-5126 Ph: (920) 496-6758 / Fax (920) 497-8516 Cell: (920) 362-8744 <u>http://www.foth.com</u>

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Better Brite 2016/2017 Treatment

Month	Gallons Treated	Batches Ran
April	22000	4
May	11000	2
June	16500	3
July	5500	1
Aug	11000	.2
Sept	11000	2
Oct	5500	1
Nov	5625	1
Dec	16500	3
Jan	27500	5
Feb	- 16500	3
Mar	22000	4
	TOTAL	31

Drum #	Date Filled
1	
2	
	al in 2017

* 0 drum picked up in 2017

Total Chrome Analytical Samples Collection Dates

Sample Rd	Date Collected
1	8/30/2016
2	3/7/2017







Better-Brite WTP Processing Log 2016/2017

16W004

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Date	Operator	Batch #	Gal Processed	H2SO4 - pH reduction to (s.u.)	NaHSO3 - ORP reduction to (mv)	Mg(OH)2/NaOH -	Polymer feed (sec)	Batch Test Results	Press Run Time	Recycled Water	Sludge drum fille or Press cleaned / Comments
04/04/16	AXP5	1	5500	3,37	303	8,65	30	0.02	26	350	· ·
04/08/16	AXP5	2	5500	3.29	298	8.63	30	0,02	28	350	
04/14/16	NMGI	3	5500	3,11	300	8.62	30	0.00	29	350	NWIC Class
04/18/16	NMGI	4	5500	3.32	296	8.63	30	0.00	28	350	Calibrated Sensors
05/02/16	NMGI	5	5500	3,00	290	8.65	30	0.01	30	350	
05/19/16	NMGI	6	5500	3.24	. 300	8.59	30	0.00	35	350	· · · · · · · · · · · · · · · · · · ·
06/03/16	NMG1	7.	5500	3.26	300	8.54	30	0.02	28	350	Cienned Press
06/17/16	AXP5	8	5500	3.41	300	8.51	30	0.02	28	350	
06/30/16	NMG1	9	5500	3.35	300	8.65	30	0.00	30	350	
07/14/16	NMGI	10	\$500	3.13	300	8.60	30	0.01	30	350	
08/03/16	NMGI	11	5500	3.23	302	8.36	30	0,01	28	350	Calibrated Sensors
08/30/16	NMGI	12	\$500	3.18	297	8.57	30	0.02	30	350 _	Cleaned Press / T. Chrome Samples Collected
09/16/16	NMGI	13	5500	3.13	300	8.59	30	0.01	30	350	
09/28/16	NMGI	14	5500	3.23	301	8.65	30	0.00	30	350	
10/06/16	NMGI	15	5500	3.20	298 -	8.58	30	0.01	35	350	······································
11/16/16	NMG1	16	5625	3.34	301	8.68	30	0.01	35	350	
12/01/16	NMG1	17	5500	3.09	300	8.54	30	0.00	35	350	
12/15/16	NMG1	18	5500	3.25	300	8.67	30	0.00	35	350	
12/27/16	NMG1	19	5500	3.13	305	8.61	30	0.01	28	350	Cleaned Press
01/09/17	NMG1	20	5500	3.04	296	8.59	30	0,00	30	350	Calibrated Sensors
01/11/17	NMG1	21	5500	3.21	300	.8.68	30	0.00	30	350	
01/13/17	NMG1	22	5500	3.07	308	8.66	30	0.01	30	350	
01/19/17	NMGI	23	5500	3.33	300	8.61	30	0.00	30	350 `	
01/27/17	NMGI	24	5500	3.45	302	8.64	30	0.03	32	350	
02/01/17	NMGI	25	5500	3.41	310	8.63	30	0.03	26	350	Cleaned Press
02/21/17	AXP5	26	5500	3.28	304	8.65	30	0,01	26	350	Colibrated Sensors
02/28/17	NMGI	27	5500	3.18	300	8.56	30	0.00	27	350	

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Better-Brite WTP Processing Log 2016/2017

16W004

Date	Operator	Batch #	Gal Processed	H2SO4 - pH reduction to (s.u.)	NaHSO3 - ORP reduction to (mv)	Mg(OH)2/NaOH - pH raised to (s.u.)	Polymer feed (sec)	Batch Test Results Cr+6	Press Run Time (min)	Recycled Water (gal)	Sludge drum fille or Press cleaned / Comments
03/07/17	NMGI	28	5500	3,05	300	8.64	30	0.02	28	350 -	T. Chrome Samples Collected.
03/10/17	NMGI	29	5500	3.31	300	8.61	30	0.03	30	350	
03/17/17	NMGI	30	5500	3.07	300	8,70	30	. 0.02	30	350	
03/28/17	NMG1	31	5500	3.48	305	8.67	30	0,01	35	350	
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Better-Brite Sludge Generation Data Calendar Year 2016

						Date	; ·	Small Q +
MONTH		Drum(s) Filled		Date Filled		Transported	ŀ	180 days
] -]] .	
January	1	0].		1	
February	ŀ	1		2/26/2016		3/4/2016		8/24/2016
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March		0			1	•	ŀ	
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August	-	U	•		1		•	
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October	- <u> </u> .	0		-				
Octobel		0						
November	-	0					÷	
reveniber	-ŀ		ŀ				•	
December	-	0					ŕ	
Desember					ŀ			
TOTAL	1:1	1		· · · · ·	1		•	

Notes - One drum filled on 2/26/2016 were transported for disposal on 3/4/2016 were included in the 2015/2016 contract.

Sample ID	Date	Total Chromium (ug/L)	Total Zinc (ug/L)	Total Cyanide (mg/L)	Hexavalent Chromium (mg/L)
Lot Trench	11/12/2010	4,380	NS	NS	NS
Grass Trench	11/12/2010	17,100	NS	NS	· NS
Influent	06/23/2011	4,520	34.0 J	0.34	4.4
Effluent	06/23/2011	231	1.8 J	0.32	<0.0039
Influent	06/27/2011	4,810	21.2 J	0.30	4.4
Effluent	06/27/2011	· 974	2.5 J	0.21	<0.0039
Influent	06/28/2011	4,460	16.9 J	0.31	4.1
Effluent	06/28/2011	1,070	<1.6	0.25	<0.0039
Influent	06/29/2011	4,230	10.7 J	0.29	3.9
Effluent	06/29/2011	998	<1.6	0.23	<0.039
Influent	12/23/2011	6,850	NS	NS	NS
Effluent	12/23/2011	765	NS	NS	NS
Influent	08/03/2012	7,220	NS	NS	NS
Effluent	08/03/2012	513	NS	NS	NS
Influent	02/08/2013	7,140	NS	NS	NS
Effluent	02/08/2013	876	NS	NS	NS
Influent	08/29/2013	5,810	NS	NS	• NS
Effluent	08/29/2013	1,190	' NS	NS	NS
Influent	03/03/2014	9,050	NS	NS	NS
Effluent	03/03/2014	901	NS	NS	NS
Influent	08/07/2014	8,190	NS	NS	NS
Effluent	08/07/2014	1,110	NS	NS	NS
Influent	03/11/2015	7,430	NS	NS	NS
Effluent	03/11/2015	900	NS	NS	NS
Influent	07/30/2015	10,300	NS	NS	NS
Effluent	07/30/2015	934	NS	NS	NS
Influent	02/03/2016	7,050	NS	NS	NS
Effluent	02/03/2016	1,310	NS	NS	NS
Influent	08/30/2016	7,580	NS	NS	NS
Effluent	08/30/2016	1,910	NS	NS	NS
Influent	03/07/2017	4,150	NS	NS	NS
Effluent	03/07/2017	727	NS	NS	NS

Summary of Effluent and Influent Analytical Data Better Brite Waste Treatment Plant De Pere, WI 54115

Notes:

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

NS = No Sample

Prepared By: NMG1 Checked By: SVF

C:\pw_workdir\pw_ie\nmg1\d0130387\Summary of Effluent & Influent Analytical Data 2015-16.docx



March 14, 2017

Nick Glander Foth Infrastructure & Environment, LLC 2121 Innovation Court Suite 300 De Pere, WI 54115

RE: Project: 16W004 BETTER BRITE Pace Project No.: 40146455

Dear Nick Glander:

Enclosed are the analytical results for sample(s) received by the laboratory on March 08, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod holtemeyor

Tod Noltemeyer tod.noltemeyer@pacelabs.com (920)469-2436 Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

CERTIFICATIONS

Project:16W004 BETTER BRITEPace Project No.:40146455

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www.nacelehs.com

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky UST Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334 New York Certification #: 12064 North Dakota Certification #: R-150 Virginia VELAP ID: 460263 South Carolina Certification #: 83006001 Texas Certification #: T104704529-14-1 Wisconsin Certification #: 405132750 Wisconsin DATCP Certification #: 105-444 USDA Soil Permit #: P330-16-00157 Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

ace Analytical www.pacelebs.com

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Pace Analytical Services, LLC 1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

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SAMPLE SUMMARY

Project:	16W004 BETTER BRITE
Pace Project No.:	40146455

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
40146455001	INFLUENT_201703	Water	03/07/17 14:15	03/08/17 08:30	
40146455002	EFFLUENT_201703	Water	03/07/17 16:30	03/08/17 08:30	

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project:	16W004 BETTER BRITE	
Pace Project No.:	40146455	

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40146455001	INFLUENT_201703	EPA 6010	DLB	. 1	PASI-G
40146455002	EFFLUENT_201703	EPÅ 6010	• . DLB	1	PASI-G

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Pace Project No.:	16W004 BETTER BRITE 40146455	۰,				
Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40146455001	INFLUENT_201703	•				
EPA 6010	Chromium	4150	ug/L	10.0	03/09/17 15:52	
40146455002 EPA 6010	EFFLUENT_201703 Chromium	727	ug/L	10.0	03/09/17 15:55	

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: 16W004 BETTER BRITE

Pace Project No.: 40146455

Method: EPA 6010

 Description:
 6010 MET ICP

 Client:
 FOTH INFRASTRUCTURE & ENVIRONMENT

 Date:
 March 14, 2017

General Information:

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS



ANALYTICAL RESULTS

Project: 16W004 BETTER BRITE

Pace Project No.: 40146455

Sample: INFLUENT_201703	Lab ID: 40146455001		Collected	: 03/07/ 17	/ 14:15	Received: 03	03/08/17 08:30 Matrix: Water			
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.		
6010 MET ICP	Analytical	Method: EPA 6	010 Prepar	ation Metho	od: EPA	3010				
Chromium	4150	ug/L	10.0	2.5	1	03/09/17 08:15	6 03/09/17 15:52	7440-47-3		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 16W004 BETTER BRITE

Pace Project No.: 40146455

Sample: EFFLUENT_201703	Lab ID:	40146455002	Collected	: 0 3/07/1 7	16:30	Received: 03/	08/17 08:30 Ma	atrix: Water	
Parameters	Results	Units			DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical	Method: EPA 6	010 Prepara	ation Method	I: EPA	3010			
Chromium	727	ug/L	10.0	2.5	1	03/09/17 08:15	03/09/17 15:55	7440-47-3	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project:	16W004 BETTER	BRITE							•			
Pace Project No.:	40146455								•			
QC Batch:	249922		Analys	is Method:		EPA 6010						
QC Batch Method: EPA 3010			Analys	is Descripti	on:	6010 MET						
Associated Lab Samples: 40146455001, 40146455002			14			•						
METHOD BLANK:	1475378		N	Matrix: Wate	er			_				
Associated Lab Samp	oles: 40146455	001, 40146455002					•					
·			Blank	k Re	porting							
Parame	eter	Units	Resu	t	Limit	Analyz	zed	Qualifiers				
Chromium		ug/L		<2.5	10.	0 _. 03/09/17	15:29					
						•						
LABORATORY CON	TROL SAMPLE:	1475379										
Darama	Mar	Linite	Spike	LCS		LCS % Rec	% Red		alifiers		•	
Chromium		ug/L	500		487	<u>97</u>	80)-120		-		
MATRIX SPIKE & MA	TRIX SPIKE DUF	PLICATE: 147538	30		1475381	I .			-	<u> </u>		
			MS	MSD								
Parameter	Un	40146425001 its Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium		/L <2.5	500	500	48	5 501	97	100	75-125	3	20	
	•											
		• •					•					

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

QUALIFIERS

Project:	16W004 BETTER BRITE
Pace Project No .:	40146455

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for _ each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	16W004 BETTER BRITE
Pace Project No .:	40146455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40146455001	INFLUENT_201703	EPA 3010	249922	EPA 6010	249982
40146455002	EFFLUENT_201703	EPA 3010	249922	EPA 6010	249982

REPORT OF LABORATORY ANALYSIS

	(Please Print Clearly)]								UPPER	MIDWE	EST RE	GION		Page 1	of ෆ
Company Nam	ne: Forth			/							MN: 61	2-607	700	NI: 920-469-2436			5
Branch/Locati	Ion: DE REZE		1 /		ace	Anal	iytic					V	Ø			401	16455
Project Conta	st: Alik Glander		1 /			www.pa	celads.	00111				Q	ſ	Quote #:			Pag
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Project Name:	Better Brite	····	FILTE	RED?	N.C.	7		r								dean	
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	A Level IV NOT needed on S = your sample SI =	Soil Sludge	WW = Wast WP = Wipe	e Water	fen	41								CLIENT	LAB C	OMMENTS	Profile #
PACE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX		10								COMMENTS	(Lab l	Jse Only)	
001	Influent- 201703	8/7/1	1415	GIN		X									1-2:	50 mlp	D
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	Sample Condition Upon Receipt	Pace Analytical Services, In 1241 Bellevue Street, Suite
Pace Analytical		Green Bay, WI 5430
Client Name: Foth	Project #: WO #	
Courier: Fed Ex F UPS Client F P	Pace Other:	
Custody Seal on Cooler/Box Present:	4014645	כנ
Custody Seal on Samples Present:	P no Seals intact: r yes no	
Packing Material: T Bubble Wrap T B	ubble Bags / None Cother	
Thermometer Used	Type of Ice: Wer Blue Dry None T Samp	les on ice, cooling process has begun
Cooler Temperature Uncorr: RDT /Com	Biological Tissue is Frozen: ye	S
Temp Blank Present: 🔽 yes 🏹 no	∫ no	Person examining contents:
Temp should be above freezing to 6°C for all sample Frozen Biota Samples should be received ≤ 0°C.	except Biota. Comments:	Initials:
Chain of Custody Present:		
Chain of Custody Filled Out:	Yes DNO DN/A 2.	
Chain of Custody Relinquished:	ØYes □No □N/A 3.	
Sampler Name & Signature on COC:	Øyes DNo DN/A 4.	
Samples Arrived within Hold Time:		
- VOA Samples frozen upon receipt	□Yes □No Date/Time:	
Short Hold Time Analysis (<72hr):	□Yes ØNo □N/A 6.	
Rush Turn Around Time Requested:	□Yes □N/A 7.	
Sufficient Volume:		
Correct Containers Used:	Øyes □No □N/A 9.	· · · · · · · · · · · · · · · · · · ·
-Pace Containers Used:		*
-Pace IR Containers Used:	Dyes DNo DAVA	
Containers Intact:	Øyes 🛛 No 🖾 N/A 10.	
Filtered volume received for Dissolved tests	□Yes □No 12/1/A 11.	
Sample Labels match COC:	Tryes DNg DN/A 12.	
All containers needing preservation have been checke		
Non-Compliance noted in 13.)		14 j Nauri j Naur + Znact
Containers needing preservation are round to be in compliance with EPA recommendation. HTOD, H2SO4C2, NaOH+ZnAct ≥9, NaOH ≥12)		· · ·
xceptions: VOA, coliform, TOC, TOX, TOH, 3&G, WIDRDW, Phenolics, OTHER:	□Yes □No Initial when ↓ Lab Std #iD of completed ↓ Definitial when ↓ Lab Std #iD of preservative	Date/ Time:
leadspace in VOA Vials (>6mm):	 □Yes □No ØN/A 14.	
rip Blank Present:	□Yes □No. ØN/A 15.	
Trip Blank Custody Seals Present		
Pace Trip Blank Lot # (if purchased):	/	
Client Notification/ Resolution:	If checked, see a	attached form for additional comments
Comments/ Resolution:	Date/1me:	-
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September 07, 2016

Nick Glander Foth Infrastructure & Environment, LLC 2121 Innovation Court Suite 300 De Pere, WI 54115

RE: Project: 16W004 BETTER BRITE Pace Project No.: 40137547

Dear Nick Glander:

Enclosed are the analytical results for sample(s) received by the laboratory on August 31, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod holtemeyor

Tod Noltemeyer tod.noltemeyer@pacelabs.com Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 16W004 BETTER BRITE · Pace Project No.: 40137547

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334 Virginia VELAP ID: 460263 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 Texas Certification #: T104704529-14-1 US Dept of Agriculture #: S-76505 Virginia VELAP Certification ID: 460263 Virginia VELAP ID: 460263 Wisconsin Certification #: 405132750 Wisconsin DATCP Certification #: 105-444

REPORT OF LABORATORY ANALYSIS

Pace Analytical www.pacelabs.com

SAMPLE SUMMARY

Project: Pace Project No.:	16W004 BETTER BRITE 40137547					•	
Lab ID	Sample ID	Matrix	Date Collected	Date Received	·····		
40137547001	INFLUENT_201608	Water	08/30/16 13:50	08/31/16 15:35			
40137547002	EFFLUENT_201608	· Water	08/30/16 16:25	08/31/16 15:35			

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project:	16W004 BETTER BRITE
Pace Project No.:	40137547

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40137547001	INFLUENT_201608	EPA 6010	DLB	1	PASI-G
40137547002	EFFLUENT_201608	EPA 6010	DLB	1	PASI-G

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Pace Project No.:	16W004 4013754	BETTER BRITE	<i>(</i>				
Lab Sample ID Method		Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40137547001 EPA 6010		INFLUENT_201608 Chromium	7580	ug/L	- 10.0	09/02/16 17:51	
40137547002 EPA 6010		EFFLUENT_201608 Chromium	1910	ug/L	10.0	09/02/16 17:53	

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: 16W004 BETTER BRITE

Pace Project No.: 40137547

Method: EPA 6010

 Description:
 6010 MET ICP

 Client:
 FOTH INFRASTRUCTURE & ENVIRONMENT

 Date:
 September 07, 2016

General Information:

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

Pace Analytical[®]

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ANALYTICAL RESULTS

Project: Pace Project No.:	40137547				, •			ĩ		
Sample: INFLUEN	T_201608	Lab ID:	40137547001	Collecte	ed: 08/30/16	13:50	Received: 08	/31/16 15:35 N	latrix: Water	
Parame	ters ·	Results	Units	LOQ		DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytica	I Method: EPA 6	010 Prepa	aration Metho	od: EPA	3010			
Chromium		7580	⁻ ug/L	10.0	1.5	1	09/02/16 09:37	09/02/16 17:51	7440-47-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Sample: EFFLUENT	_201608	Lab ID:	40137547002	Collected	d: 08/30/16	16:25	Received: 08/	31/16 15:35 Ma	atrix: Water	
Paramete	'S	Results	Units		LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical	Method: EPA 6	010 Prepa	ration Metho	od: EPA	3010			
Chromium		1910	ug/L	10.0	1.5	1	09/02/16 09:37	09/02/16 17:53	7440-47-3	
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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project:	16W004 BETTER	BRITE										•	
Pace Project No.:	40137547												
QC Batch:	233992		Analys	is Me	ethod:	El	PA 6010						
QC Batch Method:	EPA 3010		Analys	is De	escription:	60)10 MET					·	
Associated Lab Sar	nples: 40137547	001, 40137547002			•								
METHOD BLANK:	1386210		N	Aatrix	: Water		•						
Associated Lab Sar	nples: 40137547	001, 40137547002											
			Blank	5	Reportin	ġ							
Parar	neter	Units	Resul	t	Limit		Analyz	ed	Qualifie	rs			
Chromium		ug/L		<1.5	j. ·	0.0	09/02/16	16:54					
LABORATORY COI	NTROL SAMPLE:	1386211	· ·										
			Spike		LCS		LCS	% Re	ec			•	
Paran	neter	Units	Conc.	•	Result	0	% Rec	Limit	S	Qualifiers	_		
Chromium		ug/L	500		486		97	8	0-120		_		
MATRIX SPIKE & M	ATRIX SPIKE DUP	PLICATE: 13862	12	•	13862	13							
			MS	MS	D								
		40137596001	Spike	Spi	ke MS		MSD	MS	MSD	% Rec	•	Max	
Paramete	r Un	its Result	Conc.	Cor	nc. Resu	lt	Result	% Rec	% Rec	Limits	RPD	RPD	Qual

Chromium ug/L	0.0026J ma/L	500	500	485	484	96	96	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Date: 09/07/2016 02:18 PM

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QUALIFIERS

Project:	16W004 BETTER BRITE
Pace Project No .:	40137547

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1.2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:16W004 BETTER BRITEPace Project No.:40137547

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40137547001	INFLUENT_201608	EPA 3010	233992	EPA 6010	234059
40137547002	EFFLUENT_201608	EPA 3010	233992	EPA 6010	234059

REPORT OF LABORATORY ANALYSIS

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Branch/Locatio	on: 7	E PERF			1	Pace	Ana	IYTIC			, X	•		_			4013754	<u>1 5</u>
Project Contact	t: /	Link GLANH	FIC		/		www.pa	Cenana.c	A ATT		PU				Quote #:			Pag
Phone:	- a	70/496-67	572		' (CHA	IN	OF	: Cl	JSI	ΓΟ	DY			Mail To Contact:	Niek	GlAnder	2
Project Numbe	r:	1/1/1004			=None Br	HCI C=	12504	Preserve D=HNO3	tion Code	is Vater F:	=Methano	N G=Na	он		Mail To Company:	NI		
Project Name:	7	HONOUT HON ROT	to	-1 12	=Sodium Blsu	Ifate Soluti	on	I=Sodiun	n Thiosulfa	ite J=	Other			Ì	Mail To Address:	CC .	51	
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(billeb	vie)	On your sample	e A = Air B = Biota	W = W/ DW = C	iter rinking Water											<u> </u>		
	Level III	(billable) NOT needed o	C = Charcos n O = Oil	t GW = 0 SW = S	iround Water urface Water		12						1		Invoice To Phone:			
		your sample	S = Soli Si = Sludge	WW = V WP = V	Vaste water /lpe	- X	12								CLIENT			Profile #
PACE LAB #	CL	IENT FIELD ID	DAT	T TH	E MATRD	·									COMMENTS	(Lab t		
ω	Influe	nt_201608	8/30	<u>4,6 /3</u>	<u>so Gw</u>		ĻΧ		· ·							1-2º	Smp-	
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Pace Analytical				Project # ^{, F}		40407547
Client Name: Fith				r rojuden.	₩O # :	4013/54/
Courier: Fed Ex F UPS F Client R	cè Other		-			
Tracking #:					40137547]
Custody Seal on Cooler/Box Present: 1 yes		Seals	intact:			
Packing Material: T Bubble Wrap T Bu	T ^{illo} bble Bac	is P				
Thermometer Used SR41	Type	of ice:	Wet	Blue Dry None	NC Samples of	n ice, cooling process has begun
Cooler Temperature Uncorr: 2,5 /Corr:	2.5		Biolo	gical Tissue is Fro	zen: 🔽 yes	
Temp Blank Present: Tyes 📈 no					r no	Person examining contents:
Temp should be above freezing to 6°C for all sample e Frozen Biota Samples should be received ≤ 0°C.	xcept Biota). 		Comments:		
Chain of Custody Present:		□No		1	·	<u></u>
Chain of Custody Filled Out:	X Ves	□No		2.		·
Chain of Custody Relinquished:	Res	□No		3.		<u> </u>
Sampler Name & Signature on COC:	- Styres			4.		<u> </u>
Samples Arrived within Hold Time:	A yes			5.		
- VOA Samples frozen upon receipt	□Yes			Date/Time:	· .	
Short Hold Time Analysis (<72hr):	□ Yes			6.		
Rush Turn Around Time Requested:	□Yes	N		7.		
Sufficient Volume:	De las			8.		
Correct Containers Used:	Speces		⊡n/A	9.		
-Pace Containers Used:	(Spees	⊡No	⊡n/A			
-Pace IR Containers Used:	OYes	⊡No	DO A			
Containers Intact:) Øes			10.	<u></u>	······································
Filtered volume received for Dissolved tests	Yes	0No	B AAA	11.		
Sample Labels match COC:	Xyes	⊡no /	⊡n/a	12.		·
-Includes date/time/IU/Analysis Matrix: All containers needing preservation have been checked	<u> </u>				F 1100.04	
(Non-Compliance noted in 13.)				13. 771103	H2504	
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	l ⊠\$Pes			•		
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	QYes	6		Initial when Completed TC p	ab Std #ID of preservative	Time:
Headspace in VOA Vials (>6mm):	QYes			14.		
Trip Blank Present:	Dyes			15.		
Trip Blank Custody Seals Present	□Yes		TANA			
Pace Trip Blank Lot # (if purchased):						· · · · · · · · · · · · · · · · · · ·
Client Notification/ Resolution: . Person Contacted:			Date/	lf c Time:	hecked, see attac	hed form for additional comments
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