BB&E
CONSULTING ENGINEERS & PROFESSIONALS

September 27, 2017

Ms. Andrea Stone
Project Coordinator
United States Environmental Protection Agency – Region VII (AWMD/WRAP)
11201 Renner Boulevard
Lenexa, KS 66219

Subject: Collis, Inc.
Clinton, Iowa
Final Production Well Sampling Report

Dear Ms. Stone,

On behalf of Collis, Inc, BB&E, Inc. is pleased to submit a hardcopy of the *Final Production Well Sampling Report.* The final report incorporates U.S. EPA's comments provided in letter dated September 19, 2017.

If you have any questions concerning this documents, or any other issues regarding this project, please call me at (248) 489-9636, Extension 317.

Sincerely,

Cindy Lang
Project Manager

Cc: Brian Calhoun, SSW Holding Company, Inc.

RCRA
567274

RECEIVED
SEP 29 2017
AWMD/RCAP

RECEIVED

SEP 29 2017

AWMD/RCAP

BB&E
CONSULTING ENGINEERS & PROFESSIONALS

Collis, Inc. – Final Production Well Sampling

Report Date: 27 September 2017

Ms. Andrea Stone
Project Coordinator
United States Environmental Protection Agency – Region VII (AWMD/WRAP)
11201 Renner Boulevard
Lenexa, KS 66219

Site Name: Collis, Inc.
Clinton, Iowa
Corrective Measures Activities
USEPA ID #IAD047303771

Prepared by: Jim Colmer, PE, BB&E, Inc.

BB&E, Inc. (BB&E) is pleased to provide this letter report on behalf of Collis, Inc. (Collis) regarding the installation information and December 2016 sampling results of the production well located at the Collis facility located at 2005 South 19th Street in Clinton, Clinton County, Iowa (**Figure 1**). The Collis facility includes an industrial manufacturing plant and covers an area of approximately 12.5 acres.

The purpose of this report is to address comments from the USEPA in a letter dated January 26, 2017 requesting the evaluation of the potential for organic compounds from the water in the production well to volatilize directly into the air inside the Collis Facility.

This report contains a summary of the field activities conducted in December 2016, analytical data (**Attachment A**), production well drilling log and well test data (**Attachment B**), pump installation detail sheets (**Attachment C**), a recommendation letter for a replacement pump (**Attachment D**), a letter addressed to the "Chairman Sewer Committee" (**Attachment E**), a letter from the Iowa Department of Natural Resources (**Attachment F**), and Field Notes (**Attachment G**).

BACKGROUND

The Collis facility has two different water supply sources. The first source of water comes from the city water supply. This water is used for drinking and sanitary purposes only and the wastewater is discharged into the city sanitary sewer. The second source of water comes from a private production well at the facility, and provides large volumes of lower cost water to the electroplating department. This well is located on the north side of the building shown in **Figure 2.** The waste water from the electroplating department is then routed into the water treatment system. After the wastewater has been appropriately treated, it is routed to the City of Clinton Publicly Owned Treatment Works (POTW).

The production well utilizes groundwater from the Jordan Formation, the Prairie du Chien Group, or the St. Lawrence Formation Aquifer. These geologic formations are collectively identified as

the "Jordan Aquifer". This information is referenced in a letter from the Iowa Department of Natural Resources included as **Attachment F.**

PRODUCTION WELL CONSTRUCTION

The production well was installed on November 23, 1962 by Varner Well and Pump Co. The total well depth is recorded at 1633 feet below ground surface (bgs) and was initially installed with a 40 horsepower, 350 gallon per minute (GPM) pump placed inside the well at 240 feet bgs. The drilling log and well test data for the well are included in **Attachment B.** The original well pump was manufactured by Peerless and was installed on November 23, 1962. The pump installation detail sheet is included in **Attachment C.** The original pump ran continuously and was in operation until August 30, 1976, with the exception of a two month period from August to September 1975 when the original pump was not running due to maintenance issues. Once the maintenance issues were resolved, the pump resumed continuous operation until its shutdown and replacement in August of 1976. The 1975 maintenance issues are referenced in a letter addressed to the "Chairman Sewer Committee" which is included in **Attachment E**.

In January 1976, it was recommended by Varner Well and Pump Co. that the original pump be replaced in order for the plant to continue to meet its high water demands for the electroplating department. A new 60 horsepower pump was installed on August 30, 1976 and set in the well at 345 feet bgs. The new pump has a capacity of 400 GPM compared to the capacity of 350 GPM of the original pump. The replacement pump has been running continuously since August 30, 1976. The recommendation letter for the installation of the new pump is included in **Attachment D** and the replacement pump installation detail sheet is included in **Attachment C.**

DECEMBER 2016 FIELD ACTIVITIES SUMMARY

The following activities were conducted during the December 2016 field activities:

- One groundwater sample (COL-PW-01) was collected directly from the holding tank (described below) for the production well and analyzed for Volatile Organic Components (VOCs) via EPA Method 8260 and 1,4-Dioxane via EPA Method 8260SIM. The laboratory report lists the sample as COL-PW-09 while the field notes and COC list the sample as COL-PW-01. COL-PW-01 and COL-PW-09 are the same sample and will be referred to as COL-PW-01. Analytical results are shown in **Attachment A** and Field Notes are shown in **Attachment G.**

The samples were not collected using low flow sampling techniques, but rather were grab samples collected directly from a drain valve on a co-located holding tank. This was due to the inability to place tubing into the production well along with the historic static water level being approximately 150' bgs. The water stored in the holding tank is pumped directly from the production well into the tank without any exposure to the atmosphere. The turnover rate of the water in the holding tank is approximately 24 hours, indicating that the sample collected is representative of water pumped out of the performance well within 24 hours of the sample collection time.

DECEMBER 2016 ANALYTICAL RESULTS

All sample results for VOCs and 1, 4- Dioxane from COL-PW-01 were non-detect.

All samples were analyzed by ALS Laboratory Group located in Holland, Michigan (a NELAP approved lab). A complete set of laboratory results is provided in **Attachment A**.

CONCLUSIONS

The sample results from the production well showed no detections of VOCs or 1,4-Dioxane. The absence of VOCs and 1,4-Dioxane in the water sample collected (COL-PW-01) eliminates the possibility for organic compounds to volatilize directly into indoor air from this groundwater supply. This eliminates the water from the production well as a possible vapor intrusion source. The results also rule out any concern of the well being a preferential pathway for contaminants of concern to migrate down to the Jordan Aquifer.

If you have any questions or comments regarding this report, please contact me at 248-489-9636 ext. 317 or clang@bbande.com.

Sincerely,

Cindy Lang
Project Manager
BB&E, INC

cc: Mr. Brian Calhoun – Collis/SSW
Mr. Charlie Denton – Barnes & Thornburg, LLP

Enclosures:
Figure 1 – Site Location Map
Figure 2 – Site Features Map
Attachment A – Analytical Data
Attachment B – Drilling Log and Well Test Data
Attachment C – Pump Installation Detail Sheets
Attachment D – Recommendation Letter for a Replacement Pump
Attachment E – Letter addressed to the Chairman Sewer Committee
Attachment F – Letter from the Iowa Department of Natural Resources
Attachment G – Field Notes

H:\jobs\SSW\Collis, IA\02028018 - Deep Well Report\SSW Collis Deep Report_updated_final_092717.docx
Date/Time: 9/27/2017 10:29 AM
Author/Reviewer: KVB/CML

FIGURES

Figure 1

Site Location Map

Collis, Inc. Manufacturing Facility
Clinton, Iowa

NORTH

0 1,500 3,000
Feet

BB&E

JMP - 04/12/2012

Figure 2

Site Features Map

Collis, Inc. Manufacturing Facility
Clinton, Iowa

Legend:

- Production Well
- Manufacturer's Ditch
- Property Boundary (Approximate)

NORTH

0 100 200

Feet

BB&E

Document Path: H:\IT\GIS\SS\Collis\figures\2017 Deep Well\2017 Deep Well.mxd

KVB - 3/16/2017

ATTACHMENT A
ANALYTICAL DATA
Sample COL-PW-01, as referenced in this report,
is identified as COL-PW-09 within the attached Laboratory Report

03-Apr-2017

Katrice DePew
BB&E, Inc.
235 East Main Street
Suite 107
Northville, MI 48167

Re: **SSW Collis Dec 2016 Qtrly GW 02028018 task2** Work Order: **16121051**

Dear Katrice,

ALS Environmental received 16 samples on 19-Dec-2016 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 87.

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

Sincerely,

Joseph Ribar

Electronically approved by: Alex Csaszar

Joseph Ribar
Project Manager

Certificate No: IA: 403

Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental www.alsglobal.com
RIGHT SOLUTIONS RIGHT PARTNER

ALS Group, USA

Date: 03-Apr-17

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Work Order: **16121051**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
16121051-01	COL-GW-01	Groundwater		12/13/2016 13:55	12/19/2016 09:30	☐
16121051-02	COL-GW-02	Groundwater		12/13/2016 14:40	12/19/2016 09:30	☐
16121051-03	COL-GW-03	Groundwater		12/13/2016 15:10	12/19/2016 09:30	☐
16121051-04	COL-GW-04	Groundwater		12/14/2016 14:41	12/19/2016 09:30	☐
16121051-05	COL-GW-05	Groundwater		12/14/2016 14:41	12/19/2016 09:30	☐
16121051-06	COL-FB-01	Groundwater		12/14/2016 14:41	12/19/2016 09:30	☐
16121051-07	COL-GW-06	Groundwater		12/14/2016 16:53	12/19/2016 09:30	☐
16121051-08	COL-GW-07	Groundwater		12/15/2016 10:15	12/19/2016 09:30	☐
16121051-09	COL-GW-08	Groundwater		12/15/2016 10:15	12/19/2016 09:30	☐
16121051-10	COL-FB-02	Groundwater		12/15/2016 10:15	12/19/2016 09:30	☐
16121051-11	COL-GW-09	Groundwater		12/15/2016 11:30	12/19/2016 09:30	☐
16121051-12	COL-GW-10	Groundwater		12/15/2016 13:30	12/19/2016 09:30	☐
16121051-13	COL-PW-01	Groundwater		12/15/2016 14:45	12/19/2016 09:30	☐
16121051-14	COL-GW-11	Groundwater		12/15/2016 15:30	12/19/2016 09:30	☐
16121051-15	COL-GW-12	Groundwater		12/15/2016 17:05	12/19/2016 09:30	☐
16121051-16	COL-TB-01	Water		12/15/2016	12/19/2016 09:30	☐

Case Narrative

Samples for the above noted Work Order were received on 12/19/2016. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Volatile Organics:
Batch R203011, Method RSK-175, Sample 16121051-08E MS: The MS/MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: Methane

Batch R202787A, Method 8260, Sample 16121051-08A MSD: The MSD recovery was above the upper control limit. The corresponding result in the parent sample was non-detect, therefore no qualification is necessary: Iodomethane, 1,1-Dichloroethene, and Vinyl Chloride

Batch R202964a, Method 8260, Sample 16121187-08A MS: The MS recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: trans 1,4 dichloro-2-butene

Batch R202964a, Method 8260, Sample 16121187-08A MSD: The RPD between the MS and MSD was outside the control limit. The corresponding result in the parent sample should be considered estimated for this analyte: Iodomethane

Batch R202964a, Method 8260, Sample 16121187-08A MSD: The MSD recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: trans 1,4 dichloro-2-butene

Batch R202904, Method 1,4-Dioxane 8260 SIM, Sample 16121051-01A: The sample ran at a dilution due to the high concentration on non-target analytes.

No other deviations or anomalies were noted.

Extractable Organics:
No other deviations or anomalies were noted.

Metals:
Batch 96024, Method SW6020A, Sample 16121051-08B MSD: The MSD recovery was outside of the control limit. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required for this analyte: Manganese

No other deviations or anomalies were noted.

Wet Chemistry:
No other deviations or anomalies were noted.

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
WorkOrder: 16121051

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-01
Collection Date: 12/13/2016 01:55 PM

Work Order: 16121051
Lab ID: 16121051-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
GASES IN WATER			Method: **RSK-175**				Analyst: **IT**
Ethane	**7.7**		**0.32**	**2.0**	**µg/L**	1	12/22/2016 12:32
Ethene	U		0.60	2.0	µg/L	1	12/22/2016 12:32
Methane	**270**		**0.64**	**2.0**	**µg/L**	2	12/22/2016 13:13
METALS BY ICP-MS (DISSOLVED)			Method: **SW6020A**		Prep: FILTER / 12/20/16		Analyst: **RH**
Iron	**0.16**		**0.0046**	**0.080**	**mg/L**	1	12/20/2016 12:03
Manganese	**0.28**		**0.00051**	**0.0050**	**mg/L**	1	12/20/2016 12:03
1,4-DIOXANE BY ISOTOPIC DILUTION			Method: **SW8260B**				Analyst: **LSY**
1,4-Dioxane	U		1.8	6.0	µg/L	10	12/21/2016 09:59
Surr: Toluene-d8	*115*			*80-120*	*%REC*	10	12/21/2016 09:59
VOLATILE ORGANIC COMPOUNDS			Method: **SW8260B**				Analyst: **BG**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/22/2016 07:45
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/22/2016 07:45
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/22/2016 07:45
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/22/2016 07:45
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/22/2016 07:45
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/22/2016 07:45
1,1-Dichloroethene	**3.5**		**0.28**	**1.0**	**µg/L**	1	12/22/2016 07:45
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/22/2016 07:45
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/22/2016 07:45
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/22/2016 07:45
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/22/2016 07:45
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/22/2016 07:45
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/22/2016 07:45
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/22/2016 07:45
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/22/2016 07:45
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/22/2016 07:45
1,2-Dichloropropane	**0.52**	J	**0.25**	**1.0**	**µg/L**	1	12/22/2016 07:45
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/22/2016 07:4
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/22/2016 07:4
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/22/2016 07:
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/22/2016 07
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/22/2016 0
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/22/2016 (
2-Butanone	U		0.58	5.0	µg/L	1	12/22/2016
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/22/201
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/22/201
2-Hexanone	U		0.13	5.0	µg/L	1	12/22/20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-01
Collection Date: 12/13/2016 01:55 PM

Work Order: 16121051
Lab ID: 16121051-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/22/2016 07:45
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/22/2016 07:45
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/22/2016 07:45
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/22/2016 07:45
Acetone	U		0.92	10	µg/L	1	12/22/2016 07:45
Acrolein	U		2.5	10	µg/L	1	12/22/2016 07:45
Acrylonitrile	U		0.18	1.0	µg/L	1	12/22/2016 07:45
Benzene	U		0.30	1.0	µg/L	1	12/22/2016 07:45
Benzyl chloride	U		0.72	1.0	µg/L	1	12/22/2016 07:45
Bromobenzene	U		0.24	1.0	µg/L	1	12/22/2016 07:45
Bromochloromethane	U		0.20	1.0	µg/L	1	12/22/2016 07:45
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/22/2016 07:45
Bromoform	U		0.77	1.0	µg/L	1	12/22/2016 07:45
Bromomethane	U		0.38	1.0	µg/L	1	12/22/2016 07:45
Carbon disulfide	U		0.23	1.0	µg/L	1	12/22/2016 07:45
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/22/2016 07:45
Chlorobenzene	U		0.27	1.0	µg/L	1	12/22/2016 07:45
Chloroethane	U		0.29	1.0	µg/L	1	12/22/2016 07:45
Chloroform	U		0.26	1.0	µg/L	1	12/22/2016 07:45
Chloromethane	U		0.17	1.0	µg/L	1	12/22/2016 07:45
cis-1,2-Dichloroethene	**350**		**2.5**	**10**	**µg/L**	10	12/20/2016 12:56
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/22/2016 07:45
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/22/2016 07:45
Dibromomethane	U		0.25	1.0	µg/L	1	12/22/2016 07:45
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/22/2016 07:45
Ethylbenzene	U		0.40	1.0	µg/L	1	12/22/2016 07:45
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/22/2016 07:45
Hexachloroethane	U		0.27	1.0	µg/L	1	12/22/2016 07:45
Hexane	U		0.33	1.0	µg/L	1	12/22/2016 07:45
Iodomethane	U		0.22	1.0	µg/L	1	12/22/2016 07:45
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/22/2016 07:45
m,p-Xylene	U		0.98	2.0	µg/L	1	12/22/2016 07:45
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/22/2016 07:45
Methylene chloride	U		0.56	5.0	µg/L	1	12/22/2016 07:45
Naphthalene	U		0.18	5.0	µg/L	1	12/22/2016 07:45
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/22/2016 07:45
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/22/2016 07:45
o-Xylene	U		0.35	1.0	µg/L	1	12/22/2016 07:45
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/22/2016 07:45
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/22/2016 07:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-01
Collection Date: 12/13/2016 01:55 PM

Work Order: 16121051
Lab ID: 16121051-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Styrene	U		0.24	1.0	µg/L	1	12/22/2016 07:45
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/22/2016 07:45
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/22/2016 07:45
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/22/2016 07:45
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/22/2016 07:45
Toluene	U		0.37	1.0	µg/L	1	12/22/2016 07:45
trans-1,2-Dichloroethene	**8.8**		**0.28**	**1.0**	**µg/L**	1	12/22/2016 07:45
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/22/2016 07:45
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/22/2016 07:45
Trichloroethene	**230**		**3.0**	**10**	**µg/L**	10	12/20/2016 12:56
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/22/2016 07:45
Vinyl acetate	U		0.37	5.0	µg/L	1	12/22/2016 07:45
Vinyl chloride	**32**		**0.20**	**1.0**	**µg/L**	1	12/22/2016 07:45
Surr: 1,2-Dichloroethane-d4	*99.1*			*75-120*	*%REC*	10	12/20/2016 12:56
Surr: 1,2-Dichloroethane-d4	*97.4*			*75-120*	*%REC*	1	12/22/2016 07:45
Surr: 4-Bromofluorobenzene	*93.0*			*80-110*	*%REC*	10	12/20/2016 12:56
Surr: 4-Bromofluorobenzene	*98.6*			*80-110*	*%REC*	1	12/22/2016 07:45
Surr: Dibromofluoromethane	*98.8*			*85-115*	*%REC*	10	12/20/2016 12:56
Surr: Dibromofluoromethane	*99.2*			*85-115*	*%REC*	1	12/22/2016 07:45
Surr: Toluene-d8	*98.0*			*85-110*	*%REC*	10	12/20/2016 12:56
Surr: Toluene-d8	*99.6*			*85-110*	*%REC*	1	12/22/2016 07:45
CHLORIDE		Method: **A4500-CL C-97**					Analyst: **JB**
Chloride	**60**		**2.4**	**3.0**	**mg/L**	1	12/20/2016 14:00
ANIONS BY ION CHROMATOGRAPHY		Method: **SW9056A**					Analyst: **EE**
Sulfate	**110**		**4.1**	**10**	**mg/L**	10	1/4/2017 11:06
NITROGEN, NITRATE-NITRITE		Method: **E353.2 R2.0**					Analyst: **JJG**
Nitrogen, Nitrate-Nitrite	U		0.013	0.020	mg/L	1	12/20/2016 10:18
SULFIDE		Method: **SW9034**					Analyst: **BWW**
Sulfide	U		0.13	1.0	mg/L	1	12/20/2016 15:00
ORGANIC CARBON, TOTAL		Method: **SW9060A**					Analyst: **JJG**
Organic Carbon, Total	**4.9**		**0.039**	**0.50**	**mg/L**	1	12/21/2016 13:49

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-02
Collection Date: 12/13/2016 02:40 PM

Work Order: 16121051
Lab ID: 16121051-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 01:19
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 01:19
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 01:19
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 01:19
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 01:19
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 01:19
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 01:19
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 01:19
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 01:19
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 01:19
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 01:19
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 01:19
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 01:19
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 01:19
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 01:19
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 01:19
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 01:19
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 01:19
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 01:19
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 01:19
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 01:19
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 01:19
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 01:19
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 01:19
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 01:19
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 01:19
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 01:19
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 01:19
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 01:19
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 01:19
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 01:19
Acetone	**2.5**	J	**0.92**	**10**	**µg/L**	1	12/20/2016 01:19
Acrolein	U		2.5	10	µg/L	1	12/20/2016 01:19
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 01:19
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 01:19
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 01:19
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 01:19
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 01:19

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-02
Collection Date: 12/13/2016 02:40 PM

Work Order: 16121051
Lab ID: 16121051-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 01:19
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 01:19
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 01:19
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 01:19
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 01:19
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 01:19
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 01:19
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 01:19
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 01:19
cis-1,2-Dichloroethene	U		0.25	1.0	µg/L	1	12/20/2016 01:19
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 01:19
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 01:19
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 01:19
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 01:19
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 01:19
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 01:19
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 01:19
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 01:19
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 01:19
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 01:19
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 01:19
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 01:19
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 01:19
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 01:19
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 01:19
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 01:19
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 01:19
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 01:19
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 01:19
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 01:19
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 01:19
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 01:19
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 01:19
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 01:19
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 01:19
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 01:19
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 01:19
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 01:19
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 01:19
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 01:19

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-02
Collection Date: 12/13/2016 02:40 PM

Work Order: 16121051
Lab ID: 16121051-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 01:19
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 01:19
Surr: 1,2-Dichloroethane-d4	*101*			*75-120*	*%REC*	1	12/20/2016 01:19
Surr: 4-Bromofluorobenzene	*99.2*			*80-110*	*%REC*	1	12/20/2016 01:19
Surr: Dibromofluoromethane	*97.0*			*85-115*	*%REC*	1	12/20/2016 01:19
Surr: Toluene-d8	*99.2*			*85-110*	*%REC*	1	12/20/2016 01:19

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-03
Collection Date: 12/13/2016 03:10 PM

Work Order: 16121051
Lab ID: 16121051-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 01:43
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 01:43
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 01:43
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 01:43
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 01:43
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 01:43
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 01:43
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 01:43
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 01:43
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 01:43
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 01:43
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 01:43
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 01:43
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 01:43
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 01:43
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 01:43
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 01:43
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 01:43
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 01:43
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 01:43
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 01:43
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 01:43
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 01:43
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 01:43
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 01:43
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 01:43
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 01:43
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 01:43
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 01:43
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 01:43
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 01:43
Acetone	U		0.92	10	µg/L	1	12/20/2016 01:43
Acrolein	U		2.5	10	µg/L	1	12/20/2016 01:43
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 01:43
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 01:43
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 01:43
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 01:43
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 01:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-03
Collection Date: 12/13/2016 03:10 PM

Work Order: 16121051
Lab ID: 16121051-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 01:43
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 01:43
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 01:43
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 01:43
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 01:43
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 01:43
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 01:43
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 01:43
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 01:43
cis-1,2-Dichloroethene	U		0.25	1.0	µg/L	1	12/20/2016 01:43
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 01:43
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 01:43
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 01:43
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 01:43
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 01:43
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 01:43
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 01:43
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 01:43
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 01:43
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 01:43
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 01:43
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 01:43
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 01:43
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 01:43
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 01:43
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 01:43
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 01:43
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 01:43
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 01:43
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 01:43
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 01:43
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 01:43
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 01:43
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 01:43
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 01:43
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 01:43
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 01:43
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 01:43
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 01:43
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 01:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-03
Collection Date: 12/13/2016 03:10 PM

Work Order: 16121051
Lab ID: 16121051-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 01:43
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 01:43
Surr: 1,2-Dichloroethane-d4	*98.2*			*75-120*	*%REC*	1	12/20/2016 01:43
Surr: 4-Bromofluorobenzene	*97.8*			*80-110*	*%REC*	1	12/20/2016 01:43
Surr: Dibromofluoromethane	*98.2*			*85-115*	*%REC*	1	12/20/2016 01:43
Surr: Toluene-d8	*101*			*85-110*	*%REC*	1	12/20/2016 01:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-04
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-04
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 02:07
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 02:07
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 02:07
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 02:07
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 02:07
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 02:07
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 02:07
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 02:07
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 02:07
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 02:07
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 02:07
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 02:07
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 02:07
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 02:07
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 02:07
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 02:07
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 02:07
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 02:07
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:07
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:07
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 02:07
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 02:07
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 02:07
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 02:07
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 02:07
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 02:07
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 02:07
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 02:07
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 02:07
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 02:07
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 02:07
Acetone	U		0.92	10	µg/L	1	12/20/2016 02:07
Acrolein	U		2.5	10	µg/L	1	12/20/2016 02:07
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 02:07
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 02:07
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 02:07
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 02:07
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 02:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-04
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-04
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 02:07
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 02:07
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 02:07
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 02:07
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 02:07
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 02:07
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 02:07
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 02:07
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 02:07
cis-1,2-Dichloroethene	**31**		**0.25**	**1.0**	**µg/L**	1	12/20/2016 02:07
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 02:07
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 02:07
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 02:07
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 02:07
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 02:07
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 02:07
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 02:07
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 02:07
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 02:07
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 02:07
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 02:07
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 02:07
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 02:07
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 02:07
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 02:07
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 02:07
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 02:07
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 02:07
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:07
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 02:07
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 02:07
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 02:07
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 02:07
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 02:07
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 02:07
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 02:07
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 02:07
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 02:07
Trichloroethene	**3.1**		**0.30**	**1.0**	**µg/L**	1	12/20/2016 02:07
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 02:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-04
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-04
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 02:07
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 02:07
Surr: 1,2-Dichloroethane-d4	*101*			*75-120*	*%REC*	1	12/20/2016 02:07
Surr: 4-Bromofluorobenzene	*96.4*			*80-110*	*%REC*	1	12/20/2016 02:07
Surr: Dibromofluoromethane	*98.8*			*85-115*	*%REC*	1	12/20/2016 02:07
Surr: Toluene-d8	*99.8*			*85-110*	*%REC*	1	12/20/2016 02:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-05
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 02:31
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 02:31
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 02:31
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 02:31
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 02:31
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 02:31
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 02:31
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 02:31
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 02:31
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 02:31
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 02:31
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 02:31
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 02:31
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 02:31
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 02:31
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 02:31
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 02:31
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 02:31
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:31
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:31
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 02:31
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 02:31
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 02:31
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 02:31
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 02:31
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 02:31
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 02:31
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 02:31
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 02:31
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 02:31
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 02:31
Acetone	U		0.92	10	µg/L	1	12/20/2016 02:31
Acrolein	U		2.5	10	µg/L	1	12/20/2016 02:31
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 02:31
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 02:31
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 02:31
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 02:31
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 02:31

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-05
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 02:31
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 02:31
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 02:31
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 02:31
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 02:31
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 02:31
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 02:31
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 02:31
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 02:31
cis-1,2-Dichloroethene	**35**		**0.25**	**1.0**	**µg/L**	1	12/20/2016 02:31
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 02:31
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 02:31
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 02:31
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 02:31
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 02:31
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 02:31
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 02:31
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 02:31
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 02:31
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 02:31
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 02:31
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 02:31
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 02:31
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 02:31
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 02:31
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 02:31
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 02:31
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 02:31
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:31
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 02:31
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 02:31
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 02:31
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 02:31
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 02:31
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 02:31
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 02:31
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 02:31
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 02:31
Trichloroethene	**4.3**		**0.30**	**1.0**	**µg/L**	1	12/20/2016 02:31
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 02:31

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-05
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 02:31
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 02:31
Surr: 1,2-Dichloroethane-d4	*101*			*75-120*	*%REC*	1	12/20/2016 02:31
Surr: 4-Bromofluorobenzene	*95.4*			*80-110*	*%REC*	1	12/20/2016 02:31
Surr: Dibromofluoromethane	*95.5*			*85-115*	*%REC*	1	12/20/2016 02:31
Surr: Toluene-d8	*99.8*			*85-110*	*%REC*	1	12/20/2016 02:31

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-FB-01
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-06
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 02:55
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 02:55
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 02:55
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 02:55
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 02:55
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 02:55
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 02:55
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 02:55
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 02:55
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 02:55
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 02:55
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 02:55
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 02:55
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 02:55
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 02:55
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 02:55
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 02:55
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 02:55
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:55
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:55
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 02:55
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 02:55
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 02:55
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 02:55
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 02:55
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 02:55
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 02:55
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 02:55
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 02:55
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 02:55
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 02:55
Acetone	U		0.92	10	µg/L	1	12/20/2016 02:55
Acrolein	U		2.5	10	µg/L	1	12/20/2016 02:55
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 02:55
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 02:55
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 02:55
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 02:55
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 02:55

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-FB-01
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-06
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 02:55
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 02:55
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 02:55
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 02:55
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 02:55
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 02:55
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 02:55
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 02:55
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 02:55
cis-1,2-Dichloroethene	U		0.25	1.0	µg/L	1	12/20/2016 02:55
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 02:55
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 02:55
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 02:55
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 02:55
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 02:55
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 02:55
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 02:55
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 02:55
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 02:55
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 02:55
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 02:55
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 02:55
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 02:55
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 02:55
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 02:55
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 02:55
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 02:55
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 02:55
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 02:55
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 02:55
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 02:55
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 02:55
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 02:55
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 02:55
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 02:55
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 02:55
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 02:55
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 02:55
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 02:55
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 02:55

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-FB-01
Collection Date: 12/14/2016 02:41 PM

Work Order: 16121051
Lab ID: 16121051-06
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 02:55
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 02:55
Surr: 1,2-Dichloroethane-d4	*102*			*75-120*	*%REC*	1	12/20/2016 02:55
Surr: 4-Bromofluorobenzene	*93.0*			*80-110*	*%REC*	1	12/20/2016 02:55
Surr: Dibromofluoromethane	*96.6*			*85-115*	*%REC*	1	12/20/2016 02:55
Surr: Toluene-d8	*95.3*			*85-110*	*%REC*	1	12/20/2016 02:55

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-06
Collection Date: 12/14/2016 04:53 PM

Work Order: 16121051
Lab ID: 16121051-07
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
GASES IN WATER		Method: **RSK-175**					Analyst: **IT**
Ethane	U		0.32	2.0	µg/L	1	12/22/2016 12:34
Ethene	U		0.60	2.0	µg/L	1	12/22/2016 12:34
Methane	**10**		**0.32**	**1.0**	**µg/L**	1	12/22/2016 12:34
METALS BY ICP-MS (DISSOLVED)		Method: **SW6020A**			Prep: FILTER / 12/20/16		Analyst: **RH**
Iron	**0.43**		**0.0046**	**0.080**	**mg/L**	1	12/20/2016 12:08
Manganese	**0.042**		**0.00051**	**0.0050**	**mg/L**	1	12/20/2016 12:08
1,4-DIOXANE BY ISOTOPIC DILUTION		Method: **SW8260B**					Analyst: **AK**
1,4-Dioxane	U		0.18	0.60	µg/L	1	12/20/2016 22:43
Surr: Toluene-d8	*110*			*80-120*	*%REC*	1	12/20/2016 22:43
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 03:19
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 03:19
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 03:19
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 03:19
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 03:19
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 03:19
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 03:19
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 03:19
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 03:19
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 03:19
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 03:19
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 03:19
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 03:19
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 03:19
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 03:19
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 03:19
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 03:19
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 03:19
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 03:19
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 03:19
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 03:19
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 03:19
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 03:19
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 03:19
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 03:19
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 03:19
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 03:19

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-06
Collection Date: 12/14/2016 04:53 PM

Work Order: 16121051
Lab ID: 16121051-07
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 03:19
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 03:19
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 03:19
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 03:19
Acetone	U		0.92	10	µg/L	1	12/20/2016 03:19
Acrolein	U		2.5	10	µg/L	1	12/20/2016 03:19
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 03:19
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 03:19
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 03:19
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 03:19
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 03:19
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 03:19
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 03:19
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 03:19
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 03:19
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 03:19
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 03:19
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 03:19
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 03:19
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 03:19
cis-1,2-Dichloroethene	**6.7**		**0.25**	**1.0**	**µg/L**	1	12/20/2016 03:19
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 03:19
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 03:19
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 03:19
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 03:19
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 03:19
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 03:19
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 03:19
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 03:19
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 03:19
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 03:19
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 03:19
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 03:19
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 03:19
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 03:19
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 03:19
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 03:19
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 03:19
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 03:19
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 03:19

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-06
Collection Date: 12/14/2016 04:53 PM

Work Order: 16121051
Lab ID: 16121051-07
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 03:19
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 03:19
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 03:19
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 03:19
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 03:19
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 03:19
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 03:19
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 03:19
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 03:19
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 03:19
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 03:19
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 03:19
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 03:19
Surr: 1,2-Dichloroethane-d4	*99.4*			*75-120*	*%REC*	1	12/20/2016 03:19
Surr: 4-Bromofluorobenzene	*101*			*80-110*	*%REC*	1	12/20/2016 03:19
Surr: Dibromofluoromethane	*97.4*			*85-115*	*%REC*	1	12/20/2016 03:19
Surr: Toluene-d8	*101*			*85-110*	*%REC*	1	12/20/2016 03:19
CHLORIDE			Method: **A4500-CL C-97**				Analyst: **JB**
Chloride	**25**		**2.4**	**3.0**	**mg/L**	1	12/20/2016 14:00
ANIONS BY ION CHROMATOGRAPHY			Method: **SW9056A**				Analyst: **EE**
Sulfate	**42**		**2.0**	**5.0**	**mg/L**	5	1/4/2017 11:26
NITROGEN, NITRATE-NITRITE			Method: **E353.2 R2.0**				Analyst: **JJG**
Nitrogen, Nitrate-Nitrite	U		0.013	0.020	mg/L	1	12/20/2016 10:18
SULFIDE			Method: **SW9034**				Analyst: **BWW**
Sulfide	U		0.13	1.0	mg/L	1	12/21/2016 09:30
ORGANIC CARBON, TOTAL			Method: **SW9060A**				Analyst: **JJG**
Organic Carbon, Total	**0.97**		**0.039**	**0.50**	**mg/L**	1	12/27/2016 13:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-07
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-08
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
GASES IN WATER			Method: **RSK-175**				Analyst: **IT**
Ethane	**11**		**0.32**	**2.0**	**µg/L**	1	12/22/2016 12:36
Ethene	U		0.60	2.0	µg/L	1	12/22/2016 12:36
Methane	**210**		**0.64**	**2.0**	**µg/L**	2	12/22/2016 12:42
METALS BY ICP-MS (DISSOLVED)			Method: **SW6020A**		Prep: FILTER / 12/20/16		Analyst: **RH**
Iron	**0.030**	J	**0.0046**	**0.080**	**mg/L**	1	12/20/2016 12:13
Manganese	**0.35**		**0.00051**	**0.0050**	**mg/L**	1	12/21/2016 18:58
1,4-DIOXANE BY ISOTOPIC DILUTION			Method: **SW8260B**				Analyst: **AK**
1,4-Dioxane	U		0.18	0.60	µg/L	1	12/20/2016 23:06
Surr: Toluene-d8	*99.1*			*80-120*	*%REC*	1	12/20/2016 23:06
VOLATILE ORGANIC COMPOUNDS			Method: **SW8260B**				Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 03:43
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 03:43
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 03:43
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 03:43
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 03:43
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 03:43
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 03:43
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 03:43
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 03:43
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 03:43
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 03:43
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 03:43
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 03:43
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 03:43
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 03:43
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 03:43
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 03:43
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 03:43
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 03:43
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 03:43
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 03:43
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 03:43
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 03:43
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 03:43
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 03:43
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 03:43
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 03:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-07
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-08
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 03:43
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 03:43
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 03:43
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 03:43
Acetone	U		0.92	10	µg/L	1	12/20/2016 03:43
Acrolein	U		2.5	10	µg/L	1	12/20/2016 03:43
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 03:43
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 03:43
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 03:43
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 03:43
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 03:43
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 03:43
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 03:43
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 03:43
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 03:43
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 03:43
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 03:43
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 03:43
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 03:43
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 03:43
cis-1,2-Dichloroethene	**120**		**1.3**	**5.0**	**µg/L**	5	12/21/2016 12:12
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 03:43
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 03:43
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 03:43
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 03:43
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 03:43
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 03:43
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 03:43
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 03:43
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 03:43
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 03:43
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 03:43
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 03:43
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 03:43
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 03:43
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 03:43
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 03:43
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 03:43
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 03:43
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 03:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-07
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-08
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 03:43
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 03:43
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 03:43
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 03:43
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 03:43
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 03:43
trans-1,2-Dichloroethene	**3.6**		**0.28**	**1.0**	**µg/L**	1	12/20/2016 03:43
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 03:43
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 03:43
Trichloroethene	**23**		**0.30**	**1.0**	**µg/L**	1	12/20/2016 03:43
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 03:43
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 03:43
Vinyl chloride	**2.3**		**0.20**	**1.0**	**µg/L**	1	12/20/2016 03:43
Surr: 1,2-Dichloroethane-d4	*99.4*			*75-120*	*%REC*	1	12/20/2016 03:43
Surr: 1,2-Dichloroethane-d4	*98.6*			*75-120*	*%REC*	5	12/21/2016 12:12
Surr: 4-Bromofluorobenzene	*96.0*			*80-110*	*%REC*	1	12/20/2016 03:43
Surr: 4-Bromofluorobenzene	*96.2*			*80-110*	*%REC*	5	12/21/2016 12:12
Surr: Dibromofluoromethane	*94.2*			*85-115*	*%REC*	1	12/20/2016 03:43
Surr: Dibromofluoromethane	*96.4*			*85-115*	*%REC*	5	12/21/2016 12:12
Surr: Toluene-d8	*101*			*85-110*	*%REC*	1	12/20/2016 03:43
Surr: Toluene-d8	*98.6*			*85-110*	*%REC*	5	12/21/2016 12:12
CHLORIDE		Method: **A4500-CL C-97**					Analyst: **JB**
Chloride	**60**		**2.4**	**3.0**	**mg/L**	1	12/20/2016 14:00
ANIONS BY ION CHROMATOGRAPHY		Method: **SW9056A**					Analyst: **EE**
Sulfate	**68**		**2.0**	**5.0**	**mg/L**	5	1/4/2017 12:27
NITROGEN, NITRATE-NITRITE		Method: **E353.2 R2.0**					Analyst: **JJG**
Nitrogen, Nitrate-Nitrite	**0.015**	J	**0.013**	**0.020**	**mg/L**	1	12/20/2016 10:18
SULFIDE		Method: **SW9034**					Analyst: **BWW**
Sulfide	U		0.13	1.0	mg/L	1	12/22/2016 09:00
ORGANIC CARBON, TOTAL		Method: **SW9060A**					Analyst: **JJG**
Organic Carbon, Total	**4.7**		**0.039**	**0.50**	**mg/L**	1	12/27/2016 13:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-08
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-09
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
GASES IN WATER		Method: **RSK-175**					Analyst: **IT**
Ethane	**11**		**0.32**	**2.0**	**µg/L**	1	12/22/2016 12:38
Ethene	U		0.60	2.0	µg/L	1	12/22/2016 12:38
Methane	**220**		**0.64**	**2.0**	**µg/L**	2	12/22/2016 13:15
METALS BY ICP-MS (DISSOLVED)		Method: **SW6020A**			Prep: FILTER / 12/20/16		Analyst: **RH**
Iron	**0.018**	J	**0.0046**	**0.080**	**mg/L**	1	12/20/2016 12:44
Manganese	**0.38**		**0.00051**	**0.0050**	**mg/L**	1	12/20/2016 12:44
1,4-DIOXANE BY ISOTOPIC DILUTION		Method: **SW8260B**					Analyst: **AK**
1,4-Dioxane	U		0.18	0.60	µg/L	1	12/20/2016 23:31
Surr: Toluene-d8	*109*			*80-120*	*%REC*	1	12/20/2016 23:31
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 04:07
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 04:07
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 04:07
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 04:07
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 04:07
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 04:07
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 04:07
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 04:07
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 04:07
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 04:07
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 04:07
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 04:07
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 04:07
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 04:07
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 04:07
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 04:07
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 04:07
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 04:07
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:07
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:07
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 04:07
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 04:07
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 04:07
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 04:07
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 04:07
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 04:07
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 04:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-08
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-09
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 04:07
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 04:07
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 04:07
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 04:07
Acetone	U		0.92	10	µg/L	1	12/20/2016 04:07
Acrolein	U		2.5	10	µg/L	1	12/20/2016 04:07
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 04:07
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 04:07
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 04:07
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 04:07
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 04:07
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 04:07
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 04:07
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 04:07
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 04:07
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 04:07
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 04:07
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 04:07
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 04:07
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 04:07
cis-1,2-Dichloroethene	**130**		**1.3**	**5.0**	**µg/L**	5	12/21/2016 12:37
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 04:07
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 04:07
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 04:07
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 04:07
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 04:07
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 04:07
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 04:07
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 04:07
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 04:07
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 04:07
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 04:07
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 04:07
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 04:07
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 04:07
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 04:07
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 04:07
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 04:07
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 04:07
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-08
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-09
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 04:07
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 04:07
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 04:07
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 04:07
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 04:07
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 04:07
trans-1,2-Dichloroethene	**3.6**		**0.28**	**1.0**	**µg/L**	1	12/20/2016 04:07
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 04:07
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 04:07
Trichloroethene	**24**		**0.30**	**1.0**	**µg/L**	1	12/20/2016 04:07
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 04:07
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 04:07
Vinyl chloride	**2.6**		**0.20**	**1.0**	**µg/L**	1	12/20/2016 04:07
Surr: 1,2-Dichloroethane-d4	*105*			*75-120*	*%REC*	1	12/20/2016 04:07
Surr: 1,2-Dichloroethane-d4	*98.1*			*75-120*	*%REC*	5	12/21/2016 12:37
Surr: 4-Bromofluorobenzene	*93.4*			*80-110*	*%REC*	1	12/20/2016 04:07
Surr: 4-Bromofluorobenzene	*96.8*			*80-110*	*%REC*	5	12/21/2016 12:37
Surr: Dibromofluoromethane	*94.9*			*85-115*	*%REC*	1	12/20/2016 04:07
Surr: Dibromofluoromethane	*94.4*			*85-115*	*%REC*	5	12/21/2016 12:37
Surr: Toluene-d8	*98.6*			*85-110*	*%REC*	1	12/20/2016 04:07
Surr: Toluene-d8	*98.0*			*85-110*	*%REC*	5	12/21/2016 12:37
CHLORIDE		Method: **A4500-CL C-97**					Analyst: **JB**
Chloride	**42**		**2.4**	**3.0**	**mg/L**	1	12/20/2016 14:00
ANIONS BY ION CHROMATOGRAPHY		Method: **SW9056A**					Analyst: **EE**
Sulfate	**68**		**2.0**	**5.0**	**mg/L**	5	1/4/2017 12:47
NITROGEN, NITRATE-NITRITE		Method: **E353.2 R2.0**					Analyst: **JJG**
Nitrogen, Nitrate-Nitrite	U		0.013	0.020	mg/L	1	12/20/2016 10:18
SULFIDE		Method: **SW9034**					Analyst: **BWW**
Sulfide	U		0.13	1.0	mg/L	1	12/22/2016 09:00
ORGANIC CARBON, TOTAL		Method: **SW9060A**					Analyst: **JJG**
Organic Carbon, Total	**4.6**		**0.039**	**0.50**	**mg/L**	1	12/27/2016 13:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-FB-02
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-10
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
GASES IN WATER			Method: **RSK-175**				Analyst: **IT**
Ethane	U		0.32	2.0	µg/L	1	12/22/2016 13:18
Ethene	U		0.60	2.0	µg/L	1	12/22/2016 13:18
Methane	U		0.32	1.0	µg/L	1	12/22/2016 13:18
METALS BY ICP-MS (DISSOLVED)			Method: **SW6020A**		Prep: FILTER / 12/20/16		Analyst: **RH**
Iron	U		0.0046	0.080	mg/L	1	12/20/2016 13:16
Manganese	U		0.00051	0.0050	mg/L	1	12/20/2016 13:16
1,4-DIOXANE BY ISOTOPIC DILUTION			Method: **SW8260B**				Analyst: **AK**
1,4-Dioxane	U		0.18	0.60	µg/L	1	12/20/2016 23:55
Surr: Toluene-d8	*106*			*80-120*	*%REC*	1	12/20/2016 23:55
VOLATILE ORGANIC COMPOUNDS			Method: **SW8260B**				Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 04:30
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 04:30
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 04:30
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 04:30
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 04:30
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 04:30
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 04:30
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 04:30
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 04:30
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 04:30
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 04:30
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 04:30
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 04:30
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 04:30
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 04:30
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 04:30
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 04:30
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 04:30
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:30
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:30
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 04:30
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 04:30
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 04:30
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 04:30
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 04:30
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 04:30
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 04:30

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-FB-02
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-10
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 04:30
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 04:30
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 04:30
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 04:30
Acetone	U		0.92	10	µg/L	1	12/20/2016 04:30
Acrolein	U		2.5	10	µg/L	1	12/20/2016 04:30
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 04:30
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 04:30
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 04:30
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 04:30
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 04:30
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 04:30
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 04:30
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 04:30
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 04:30
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 04:30
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 04:30
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 04:30
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 04:30
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 04:30
cis-1,2-Dichloroethene	U		0.25	1.0	µg/L	1	12/20/2016 04:30
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 04:30
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 04:30
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 04:30
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 04:30
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 04:30
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 04:30
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 04:30
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 04:30
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 04:30
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 04:30
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 04:30
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 04:30
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 04:30
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 04:30
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 04:30
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 04:30
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 04:30
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 04:30
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:30

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-FB-02
Collection Date: 12/15/2016 10:15 AM

Work Order: 16121051
Lab ID: 16121051-10
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 04:30
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 04:30
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 04:30
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 04:30
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 04:30
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 04:30
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 04:30
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 04:30
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 04:30
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 04:30
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 04:30
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 04:30
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 04:30
Surr: 1,2-Dichloroethane-d4	*99.1*			*75-120*	*%REC*	1	12/20/2016 04:30
Surr: 4-Bromofluorobenzene	*96.4*			*80-110*	*%REC*	1	12/20/2016 04:30
Surr: Dibromofluoromethane	*94.8*			*85-115*	*%REC*	1	12/20/2016 04:30
Surr: Toluene-d8	*101*			*85-110*	*%REC*	1	12/20/2016 04:30
CHLORIDE		Method: **A4500-CL C-97**					Analyst: **JB**
Chloride	U		2.4	3.0	mg/L	1	12/20/2016 14:00
ANIONS BY ION CHROMATOGRAPHY		Method: **SW9056A**					Analyst: **EE**
Sulfate	U		0.41	1.0	mg/L	1	1/4/2017 13:07
NITROGEN, NITRATE-NITRITE		Method: **E353.2 R2.0**					Analyst: **JJG**
Nitrogen, Nitrate-Nitrite	U		0.013	0.020	mg/L	1	12/20/2016 10:18
SULFIDE		Method: **SW9034**					Analyst: **BWW**
Sulfide	U		0.13	1.0	mg/L	1	12/22/2016 09:00
ORGANIC CARBON, TOTAL		Method: **SW9060A**					Analyst: **JJG**
Organic Carbon, Total	**0.62**		**0.039**	**0.50**	**mg/L**	1	12/27/2016 13:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-09
Collection Date: 12/15/2016 11:30 AM

Work Order: 16121051
Lab ID: 16121051-11
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 04:54
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 04:54
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 04:54
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 04:54
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 04:54
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 04:54
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 04:54
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 04:54
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 04:54
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 04:54
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 04:54
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 04:54
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 04:54
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 04:54
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 04:54
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 04:54
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 04:54
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 04:54
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:54
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:54
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 04:54
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 04:54
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 04:54
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 04:54
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 04:54
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 04:54
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 04:54
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 04:54
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 04:54
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 04:54
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 04:54
Acetone	U		0.92	10	µg/L	1	12/20/2016 04:54
Acrolein	U		2.5	10	µg/L	1	12/20/2016 04:54
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 04:54
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 04:54
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 04:54
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 04:54
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 04:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-09
Collection Date: 12/15/2016 11:30 AM

Work Order: 16121051
Lab ID: 16121051-11
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 04:54
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 04:54
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 04:54
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 04:54
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 04:54
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 04:54
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 04:54
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 04:54
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 04:54
cis-1,2-Dichloroethene	**88**		**1.3**	**5.0**	**µg/L**	5	12/21/2016 01:01
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 04:54
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 04:54
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 04:54
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 04:54
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 04:54
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 04:54
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 04:54
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 04:54
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 04:54
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 04:54
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 04:54
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 04:54
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 04:54
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 04:54
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 04:54
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 04:54
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 04:54
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 04:54
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 04:54
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 04:54
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 04:54
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 04:54
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 04:54
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 04:54
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 04:54
trans-1,2-Dichloroethene	**3.2**		**0.28**	**1.0**	**µg/L**	1	12/20/2016 04:54
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 04:54
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 04:54
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 04:54
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 04:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-09
Collection Date: 12/15/2016 11:30 AM

Work Order: 16121051
Lab ID: 16121051-11
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 04:54
Vinyl chloride	**28**		**0.20**	**1.0**	**µg/L**	1	12/20/2016 04:54
Surr: 1,2-Dichloroethane-d4	*101*			*75-120*	*%REC*	1	12/20/2016 04:54
Surr: 1,2-Dichloroethane-d4	*100*			*75-120*	*%REC*	5	12/21/2016 01:01
Surr: 4-Bromofluorobenzene	*95.9*			*80-110*	*%REC*	1	12/20/2016 04:54
Surr: 4-Bromofluorobenzene	*98.6*			*80-110*	*%REC*	5	12/21/2016 01:01
Surr: Dibromofluoromethane	*98.4*			*85-115*	*%REC*	1	12/20/2016 04:54
Surr: Dibromofluoromethane	*97.4*			*85-115*	*%REC*	5	12/21/2016 01:01
Surr: Toluene-d8	*100*			*85-110*	*%REC*	1	12/20/2016 04:54
Surr: Toluene-d8	*98.0*			*85-110*	*%REC*	5	12/21/2016 01:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-10
Collection Date: 12/15/2016 01:30 PM

Work Order: 16121051
Lab ID: 16121051-12
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 05:18
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 05:18
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 05:18
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 05:18
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 05:18
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 05:18
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 05:18
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 05:18
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 05:18
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 05:18
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 05:18
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 05:18
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 05:18
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 05:18
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 05:18
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 05:18
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 05:18
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 05:18
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 05:18
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 05:18
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 05:18
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 05:18
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 05:18
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 05:18
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 05:18
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 05:18
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 05:18
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 05:18
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 05:18
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 05:18
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 05:18
Acetone	U		0.92	10	µg/L	1	12/20/2016 05:18
Acrolein	U		2.5	10	µg/L	1	12/20/2016 05:18
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 05:18
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 05:18
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 05:18
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 05:18
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 05:18

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-10
Collection Date: 12/15/2016 01:30 PM

Work Order: 16121051
Lab ID: 16121051-12
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 05:18
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 05:18
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 05:18
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 05:18
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 05:18
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 05:18
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 05:18
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 05:18
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 05:18
cis-1,2-Dichloroethene	U		0.25	1.0	µg/L	1	12/20/2016 05:18
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 05:18
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 05:18
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 05:18
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 05:18
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 05:18
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 05:18
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 05:18
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 05:18
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 05:18
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 05:18
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 05:18
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 05:18
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 05:18
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 05:18
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 05:18
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 05:18
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 05:18
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 05:18
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 05:18
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 05:18
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 05:18
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 05:18
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 05:18
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 05:18
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 05:18
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 05:18
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 05:18
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 05:18
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 05:18
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 05:18

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-10
Collection Date: 12/15/2016 01:30 PM

Work Order: 16121051
Lab ID: 16121051-12
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 05:18
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 05:18
Surr: 1,2-Dichloroethane-d4	*105*			*75-120*	*%REC*	1	12/20/2016 05:18
Surr: 4-Bromofluorobenzene	*96.8*			*80-110*	*%REC*	1	12/20/2016 05:18
Surr: Dibromofluoromethane	*100*			*85-115*	*%REC*	1	12/20/2016 05:18
Surr: Toluene-d8	*101*			*85-110*	*%REC*	1	12/20/2016 05:18

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-PW-01
Collection Date: 12/15/2016 02:45 PM

Work Order: 16121051
Lab ID: 16121051-13
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,4-DIOXANE BY ISOTOPIC DILUTION		Method: **SW8260B**					Analyst: **AK**
1,4-Dioxane	U		0.18	0.60	µg/L	1	12/21/2016 12:19
Surr: Toluene-d8	*95.6*			*80-120*	*%REC*	1	12/21/2016 12:19
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 05:42
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 05:42
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 05:42
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 05:42
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 05:42
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 05:42
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 05:42
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 05:42
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 05:42
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 05:42
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 05:42
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 05:42
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 05:42
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 05:42
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 05:42
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 05:42
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 05:42
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 05:42
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 05:42
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 05:42
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 05:42
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 05:42
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 05:42
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 05:42
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 05:42
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 05:42
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 05:42
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 05:42
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 05:42
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 05:42
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 05:42
Acetone	U		0.92	10	µg/L	1	12/20/2016 05:42
Acrolein	U		2.5	10	µg/L	1	12/20/2016 05:42
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 05:42
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 05:42

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-PW-01
Collection Date: 12/15/2016 02:45 PM

Work Order: 16121051
Lab ID: 16121051-13
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 05:42
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 05:42
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 05:42
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 05:42
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 05:42
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 05:42
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 05:42
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 05:42
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 05:42
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 05:42
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 05:42
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 05:42
cis-1,2-Dichloroethene	U		0.25	1.0	µg/L	1	12/20/2016 05:42
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 05:42
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 05:42
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 05:42
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 05:42
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 05:42
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 05:42
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 05:42
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 05:42
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 05:42
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 05:42
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 05:42
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 05:42
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 05:42
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 05:42
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 05:42
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 05:42
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 05:42
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 05:42
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 05:42
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 05:42
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 05:42
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 05:42
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 05:42
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 05:42
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 05:42
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 05:42
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 05:42

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-PW-01
Collection Date: 12/15/2016 02:45 PM

Work Order: 16121051
Lab ID: 16121051-13
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 05:42
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 05:42
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 05:42
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 05:42
Vinyl chloride	U		0.20	1.0	µg/L	1	12/20/2016 05:42
Surr: 1,2-Dichloroethane-d4	*105*			*75-120*	*%REC*	1	12/20/2016 05:42
Surr: 4-Bromofluorobenzene	*95.4*			*80-110*	*%REC*	1	12/20/2016 05:42
Surr: Dibromofluoromethane	*101*			*85-115*	*%REC*	1	12/20/2016 05:42
Surr: Toluene-d8	*96.0*			*85-110*	*%REC*	1	12/20/2016 05:42

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-11
Collection Date: 12/15/2016 03:30 PM

Work Order: 16121051
Lab ID: 16121051-14
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 06:06
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 06:06
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 06:06
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 06:06
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 06:06
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 06:06
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 06:06
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 06:06
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 06:06
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 06:06
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 06:06
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 06:06
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 06:06
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 06:06
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 06:06
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 06:06
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 06:06
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 06:06
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 06:06
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 06:06
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 06:06
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 06:06
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 06:06
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 06:06
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 06:06
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 06:06
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 06:06
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 06:06
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 06:06
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 06:06
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 06:06
Acetone	U		0.92	10	µg/L	1	12/20/2016 06:06
Acrolein	U		2.5	10	µg/L	1	12/20/2016 06:06
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 06:06
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 06:06
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 06:06
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 06:06
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 06:06

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-11
Collection Date: 12/15/2016 03:30 PM

Work Order: 16121051
Lab ID: 16121051-14
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 06:06
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 06:06
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 06:06
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 06:06
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 06:06
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 06:06
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 06:06
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 06:06
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 06:06
cis-1,2-Dichloroethene	**9.8**		**0.25**	**1.0**	**µg/L**	1	12/20/2016 06:06
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 06:06
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 06:06
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 06:06
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 06:06
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 06:06
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 06:06
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 06:06
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 06:06
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 06:06
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 06:06
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 06:06
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 06:06
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 06:06
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 06:06
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 06:06
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 06:06
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 06:06
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 06:06
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 06:06
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 06:06
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 06:06
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 06:06
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 06:06
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 06:06
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 06:06
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 06:06
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 06:06
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 06:06
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 06:06
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 06:06

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-11
Collection Date: 12/15/2016 03:30 PM

Work Order: 16121051
Lab ID: 16121051-14
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 06:06
Vinyl chloride	**43**		**0.20**	**1.0**	**µg/L**	1	12/20/2016 06:06
Surr: 1,2-Dichloroethane-d4	*104*			*75-120*	*%REC*	1	12/20/2016 06:06
Surr: 4-Bromofluorobenzene	*97.6*			*80-110*	*%REC*	1	12/20/2016 06:06
Surr: Dibromofluoromethane	*101*			*85-115*	*%REC*	1	12/20/2016 06:06
Surr: Toluene-d8	*99.8*			*85-110*	*%REC*	1	12/20/2016 06:06

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-12
Collection Date: 12/15/2016 05:05 PM

Work Order: 16121051
Lab ID: 16121051-15
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/20/2016 06:30
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/20/2016 06:30
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/20/2016 06:30
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/20/2016 06:30
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/20/2016 06:30
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/20/2016 06:30
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 06:30
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/20/2016 06:30
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/20/2016 06:30
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/20/2016 06:30
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 06:30
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/20/2016 06:30
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/20/2016 06:30
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/20/2016 06:30
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/20/2016 06:30
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/20/2016 06:30
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/20/2016 06:30
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/20/2016 06:30
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 06:30
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/20/2016 06:30
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/20/2016 06:30
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/20/2016 06:30
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/20/2016 06:30
2-Butanone	U		0.58	5.0	µg/L	1	12/20/2016 06:30
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/20/2016 06:30
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/20/2016 06:30
2-Hexanone	U		0.13	5.0	µg/L	1	12/20/2016 06:30
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/20/2016 06:30
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/20/2016 06:30
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/20/2016 06:30
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/20/2016 06:30
Acetone	U		0.92	10	µg/L	1	12/20/2016 06:30
Acrolein	U		2.5	10	µg/L	1	12/20/2016 06:30
Acrylonitrile	U		0.18	1.0	µg/L	1	12/20/2016 06:30
Benzene	U		0.30	1.0	µg/L	1	12/20/2016 06:30
Benzyl chloride	U		0.72	1.0	µg/L	1	12/20/2016 06:30
Bromobenzene	U		0.24	1.0	µg/L	1	12/20/2016 06:30
Bromochloromethane	U		0.20	1.0	µg/L	1	12/20/2016 06:30

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-12
Collection Date: 12/15/2016 05:05 PM

Work Order: 16121051
Lab ID: 16121051-15
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/20/2016 06:30
Bromoform	U		0.77	1.0	µg/L	1	12/20/2016 06:30
Bromomethane	U		0.38	1.0	µg/L	1	12/20/2016 06:30
Carbon disulfide	U		0.23	1.0	µg/L	1	12/20/2016 06:30
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/20/2016 06:30
Chlorobenzene	U		0.27	1.0	µg/L	1	12/20/2016 06:30
Chloroethane	U		0.29	1.0	µg/L	1	12/20/2016 06:30
Chloroform	U		0.26	1.0	µg/L	1	12/20/2016 06:30
Chloromethane	U		0.17	1.0	µg/L	1	12/20/2016 06:30
cis-1,2-Dichloroethene	**35**		**0.25**	**1.0**	**µg/L**	1	12/20/2016 06:30
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/20/2016 06:30
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/20/2016 06:30
Dibromomethane	U		0.25	1.0	µg/L	1	12/20/2016 06:30
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/20/2016 06:30
Ethylbenzene	U		0.40	1.0	µg/L	1	12/20/2016 06:30
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/20/2016 06:30
Hexachloroethane	U		0.27	1.0	µg/L	1	12/20/2016 06:30
Hexane	U		0.33	1.0	µg/L	1	12/20/2016 06:30
Iodomethane	U		0.22	1.0	µg/L	1	12/20/2016 06:30
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/20/2016 06:30
m,p-Xylene	U		0.98	2.0	µg/L	1	12/20/2016 06:30
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/20/2016 06:30
Methylene chloride	U		0.56	5.0	µg/L	1	12/20/2016 06:30
Naphthalene	U		0.18	5.0	µg/L	1	12/20/2016 06:30
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/20/2016 06:30
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/20/2016 06:30
o-Xylene	U		0.35	1.0	µg/L	1	12/20/2016 06:30
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/20/2016 06:30
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/20/2016 06:30
Styrene	U		0.24	1.0	µg/L	1	12/20/2016 06:30
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/20/2016 06:30
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/20/2016 06:30
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/20/2016 06:30
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/20/2016 06:30
Toluene	U		0.37	1.0	µg/L	1	12/20/2016 06:30
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/20/2016 06:30
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/20/2016 06:30
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/20/2016 06:30
Trichloroethene	U		0.30	1.0	µg/L	1	12/20/2016 06:30
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/20/2016 06:30

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-GW-12
Collection Date: 12/15/2016 05:05 PM

Work Order: 16121051
Lab ID: 16121051-15
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/20/2016 06:30
Vinyl chloride	**56**		**0.20**	**1.0**	**µg/L**	1	12/20/2016 06:30
Surr: 1,2-Dichloroethane-d4	*102*			*75-120*	*%REC*	1	12/20/2016 06:30
Surr: 4-Bromofluorobenzene	*95.4*			*80-110*	*%REC*	1	12/20/2016 06:30
Surr: Dibromofluoromethane	*101*			*85-115*	*%REC*	1	12/20/2016 06:30
Surr: Toluene-d8	*99.4*			*85-110*	*%REC*	1	12/20/2016 06:30

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-TB-01
Collection Date: 12/15/2016

Work Order: 16121051
Lab ID: 16121051-16
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260B**					Analyst: **LSY**
1,1,1,2-Tetrachloroethane	U		0.22	1.0	µg/L	1	12/19/2016 22:56
1,1,1-Trichloroethane	U		0.36	1.0	µg/L	1	12/19/2016 22:56
1,1,2,2-Tetrachloroethane	U		0.19	1.0	µg/L	1	12/19/2016 22:56
1,1,2-Trichloroethane	U		0.40	1.0	µg/L	1	12/19/2016 22:56
1,1,2-Trichlorotrifluoroethane	U		0.42	1.0	µg/L	1	12/19/2016 22:56
1,1-Dichloroethane	U		0.31	1.0	µg/L	1	12/19/2016 22:56
1,1-Dichloroethene	U		0.28	1.0	µg/L	1	12/19/2016 22:56
1,1-Dichloropropene	U		0.35	1.0	µg/L	1	12/19/2016 22:56
1,2,3-Trichlorobenzene	U		0.17	1.0	µg/L	1	12/19/2016 22:56
1,2,3-Trichloropropane	U		0.11	1.0	µg/L	1	12/19/2016 22:56
1,2,4-Trichlorobenzene	U		0.21	1.0	µg/L	1	12/19/2016 22:56
1,2,4-Trimethylbenzene	U		0.37	1.0	µg/L	1	12/19/2016 22:56
1,2-Dibromo-3-chloropropane	U		0.97	1.0	µg/L	1	12/19/2016 22:56
1,2-Dibromoethane	U		0.98	1.0	µg/L	1	12/19/2016 22:56
1,2-Dichlorobenzene	U		0.22	1.0	µg/L	1	12/19/2016 22:56
1,2-Dichloroethane	U		0.17	1.0	µg/L	1	12/19/2016 22:56
1,2-Dichloropropane	U		0.25	1.0	µg/L	1	12/19/2016 22:56
1,3,5-Trichlorobenzene	U		0.15	1.0	µg/L	1	12/19/2016 22:56
1,3,5-Trimethylbenzene	U		0.29	1.0	µg/L	1	12/19/2016 22:56
1,3-Dichlorobenzene	U		0.29	1.0	µg/L	1	12/19/2016 22:56
1,3-Dichloropropane	U		0.18	1.0	µg/L	1	12/19/2016 22:56
1,4-Dichlorobenzene	U		0.21	1.0	µg/L	1	12/19/2016 22:56
2,2-Dichloropropane	U		0.44	1.0	µg/L	1	12/19/2016 22:56
2-Butanone	U		0.58	5.0	µg/L	1	12/19/2016 22:56
2-Chloroethyl vinyl ether	U		10	10	µg/L	1	12/19/2016 22:56
2-Chlorotoluene	U		0.32	1.0	µg/L	1	12/19/2016 22:56
2-Hexanone	U		0.13	5.0	µg/L	1	12/19/2016 22:56
2-Methylnaphthalene	U		1.1	5.0	µg/L	1	12/19/2016 22:56
4-Chlorotoluene	U		0.28	1.0	µg/L	1	12/19/2016 22:56
4-Isopropyltoluene	U		0.31	1.0	µg/L	1	12/19/2016 22:56
4-Methyl-2-pentanone	U		0.11	1.0	µg/L	1	12/19/2016 22:56
Acetone	U		0.92	10	µg/L	1	12/19/2016 22:56
Acrolein	U		2.5	10	µg/L	1	12/19/2016 22:56
Acrylonitrile	U		0.18	1.0	µg/L	1	12/19/2016 22:56
Benzene	U		0.30	1.0	µg/L	1	12/19/2016 22:56
Benzyl chloride	U		0.72	1.0	µg/L	1	12/19/2016 22:56
Bromobenzene	U		0.24	1.0	µg/L	1	12/19/2016 22:56
Bromochloromethane	U		0.20	1.0	µg/L	1	12/19/2016 22:56

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-TB-01
Collection Date: 12/15/2016

Work Order: 16121051
Lab ID: 16121051-16
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.23	1.0	µg/L	1	12/19/2016 22:56
Bromoform	U		0.77	1.0	µg/L	1	12/19/2016 22:56
Bromomethane	U		0.38	1.0	µg/L	1	12/19/2016 22:56
Carbon disulfide	U		0.23	1.0	µg/L	1	12/19/2016 22:56
Carbon tetrachloride	U		0.31	1.0	µg/L	1	12/19/2016 22:56
Chlorobenzene	U		0.27	1.0	µg/L	1	12/19/2016 22:56
Chloroethane	U		0.29	1.0	µg/L	1	12/19/2016 22:56
Chloroform	**2.1**		**0.26**	**1.0**	**µg/L**	1	12/19/2016 22:56
Chloromethane	U		0.17	1.0	µg/L	1	12/19/2016 22:56
cis-1,2-Dichloroethene	U		0.25	1.0	µg/L	1	12/19/2016 22:56
cis-1,3-Dichloropropene	U		0.39	1.0	µg/L	1	12/19/2016 22:56
Dibromochloromethane	U		0.38	1.0	µg/L	1	12/19/2016 22:56
Dibromomethane	U		0.25	1.0	µg/L	1	12/19/2016 22:56
Dichlorodifluoromethane	U		0.13	1.0	µg/L	1	12/19/2016 22:56
Ethylbenzene	U		0.40	1.0	µg/L	1	12/19/2016 22:56
Hexachlorobutadiene	U		0.24	1.0	µg/L	1	12/19/2016 22:56
Hexachloroethane	U		0.27	1.0	µg/L	1	12/19/2016 22:56
Hexane	U		0.33	1.0	µg/L	1	12/19/2016 22:56
Iodomethane	U		0.22	1.0	µg/L	1	12/19/2016 22:56
Isopropylbenzene	U		0.31	1.0	µg/L	1	12/19/2016 22:56
m,p-Xylene	U		0.98	2.0	µg/L	1	12/19/2016 22:56
Methyl tert-butyl ether	U		0.12	1.0	µg/L	1	12/19/2016 22:56
Methylene chloride	U		0.56	5.0	µg/L	1	12/19/2016 22:56
Naphthalene	U		0.18	5.0	µg/L	1	12/19/2016 22:56
n-Butylbenzene	U		0.22	1.0	µg/L	1	12/19/2016 22:56
n-Propylbenzene	U		0.24	1.0	µg/L	1	12/19/2016 22:56
o-Xylene	U		0.35	1.0	µg/L	1	12/19/2016 22:56
p-Isopropyltoluene	U		0.14	1.0	µg/L	1	12/19/2016 22:56
sec-Butylbenzene	U		0.29	1.0	µg/L	1	12/19/2016 22:56
Styrene	U		0.24	1.0	µg/L	1	12/19/2016 22:56
tert-Butyl alcohol	U		0.57	20	µg/L	1	12/19/2016 22:56
tert-Butylbenzene	U		0.34	1.0	µg/L	1	12/19/2016 22:56
Tetrachloroethene	U		0.27	1.0	µg/L	1	12/19/2016 22:5
Tetrahydrofuran	U		0.25	1.0	µg/L	1	12/19/2016 22:'
Toluene	U		0.37	1.0	µg/L	1	12/19/2016 22
trans-1,2-Dichloroethene	U		0.28	1.0	µg/L	1	12/19/2016 2
trans-1,3-Dichloropropene	U		0.82	1.0	µg/L	1	12/19/2016 2
trans-1,4-Dichloro-2-butene	U		0.20	2.0	µg/L	1	12/19/2016 '
Trichloroethene	U		0.30	1.0	µg/L	1	12/19/2016
Trichlorofluoromethane	U		0.20	1.0	µg/L	1	12/19/201

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *03-Apr-17*

Client: BB&E, Inc.
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2
Sample ID: COL-TB-01
Collection Date: 12/15/2016

Work Order: 16121051
Lab ID: 16121051-16
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl acetate	U		0.37	5.0	µg/L	1	12/19/2016 22:56
Vinyl chloride	U		0.20	1.0	µg/L	1	12/19/2016 22:56
Surr: 1,2-Dichloroethane-d4	*101*			*75-120*	*%REC*	1	12/19/2016 22:56
Surr: 4-Bromofluorobenzene	*97.7*			*80-110*	*%REC*	1	12/19/2016 22:56
Surr: Dibromofluoromethane	*95.8*			*85-115*	*%REC*	1	12/19/2016 22:56
Surr: Toluene-d8	*99.3*			*85-110*	*%REC*	1	12/19/2016 22:56

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 03-Apr-17

Client: BB&E, Inc.

Work Order: 16121051

Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R203011** Instrument ID **GC10** Method: **RSK-175**

MBLK Sample ID: **RBLK1-161222-R203011** Units: **µg/L** Analysis Date: **12/22/2016 12:31 PM**

Client ID: Run ID: **GC10_161222A** SeqNo: **4215406** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	U	0.32	2.0								
Ethene	U	0.6	2.0								
Methane	U	0.32	1.0								

LCS Sample ID: **RLCS1-161222-R203011** Units: **µg/L** Analysis Date: **12/22/2016 12:28 PM**

Client ID: Run ID: **GC10_161222A** SeqNo: **4215405** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	36.39	0.32	2.0	36.1	0	101	75-125	0			
Ethene	37.22	0.6	2.0	33.7	0	110	75-125	0			
Methane	18.84	0.32	1.0	19.2	0	98.1	75-125	0			

MS Sample ID: **16121051-08E MS** Units: **µg/L** Analysis Date: **12/22/2016 12:46 PM**

Client ID: **COL-GW-07** Run ID: **GC10_161222A** SeqNo: **4215412** Prep Date: DF: **2**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	72.34	0.64	4.0	72.2	11	85	70-130	0			
Ethene	62.1	1.2	4.0	67.4	0	92.1	70-130	0			
Methane	205.5	0.64	2.0	38.4	209.3	-9.95	70-130	0			SO

MSD Sample ID: **16121051-08E MSD** Units: **µg/L** Analysis Date: **12/22/2016 12:47 PM**

Client ID: **COL-GW-07** Run ID: **GC10_161222A** SeqNo: **4215413** Prep Date: DF: **2**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	69.9	0.64	4.0	72.2	11	81.6	70-130	72.34	3.43	30	
Ethene	59.7	1.2	4.0	67.4	0	88.6	70-130	62.1	3.94	30	
Methane	199.9	0.64	2.0	38.4	209.3	-24.5	70-130	205.5	2.76	30	SO

The following samples were analyzed in this batch:

16121051-01E	16121051-07E	16121051-08E
16121051-09E	16121051-10E	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **96024** Instrument ID **ICPMS2** Method: **SW6020A** **(Dissolve)**

MBLK Sample ID: **MBLK-96024-96024** Units: **mg/L** Analysis Date: **12/20/2016 11:52 A**
Client ID: Run ID: **ICPMS2_161220A** SeqNo: **4211563** Prep Date: **12/20/2016** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	U	0.0046	0.080								
Manganese	U	0.00051	0.0050								

LCS Sample ID: **LCS-96024-96024** Units: **mg/L** Analysis Date: **12/20/2016 11:57 A**
Client ID: Run ID: **ICPMS2_161220A** SeqNo: **4211564** Prep Date: **12/20/2016** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	8.604	0.0046	0.080	10	0	86	80-120	0			
Manganese	0.0839	0.00051	0.0050	0.1	0	83.9	80-120	0			

MS Sample ID: **16121051-08BMS** Units: **mg/L** Analysis Date: **12/20/2016 12:18 PM**
Client ID: **COL-GW-07** Run ID: **ICPMS2_161220A** SeqNo: **4211568** Prep Date: **12/20/2016** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	8.032	0.0046	0.080	10	0.02975	80	75-125	0			

MS Sample ID: **16121051-08BMS** Units: **mg/L** Analysis Date: **12/21/2016 07:03 PM**
Client ID: **COL-GW-07** Run ID: **ICPMS2_161221A** SeqNo: **4214123** Prep Date: **12/20/2016** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	0.4282	0.00051	0.0050	0.1	0.3502	78	75-125	0			

MSD Sample ID: **16121051-08BMSD** Units: **mg/L** Analysis Date: **12/20/2016 12:39 PM**
Client ID: **COL-GW-07** Run ID: **ICPMS2_161220A** SeqNo: **4211572** Prep Date: **12/20/2016** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	8.347	0.0046	0.080	10	0.02975	83.2	75-125	8.032	3.85	20	

MSD Sample ID: **16121051-08BMSD** Units: **mg/L** Analysis Date: **12/21/2016 07:08 PM**
Client ID: **COL-GW-07** Run ID: **ICPMS2_161221A** SeqNo: **4214124** Prep Date: **12/20/2016** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	0.4249	0.00051	0.0050	0.1	0.3502	74.7	75-125	0.4282	0.774	20	S

The following samples were analyzed in this batch:

16121051-01B	16121051-07B	16121051-08B
16121051-09B	16121051-10B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202787A** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW2-161219-R202787A** Units: **µg/L** Analysis Date: **12/19/2016 10:32 PM**

Client ID: Run ID: **VMS10_161219A** SeqNo: **4209507** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	U	0.22	1.0								
1,1,1-Trichloroethane	U	0.36	1.0								
1,1,2,2-Tetrachloroethane	U	0.19	1.0								
1,1,2-Trichloroethane	U	0.4	1.0								
1,1,2-Trichlorotrifluoroethane	U	0.42	1.0								
1,1-Dichloroethane	U	0.31	1.0								
1,1-Dichloroethene	U	0.28	1.0								
1,1-Dichloropropene	U	0.35	1.0								
1,2,3-Trichlorobenzene	U	0.17	1.0								
1,2,3-Trichloropropane	U	0.11	1.0								
1,2,4-Trichlorobenzene	U	0.21	1.0								
1,2,4-Trimethylbenzene	U	0.37	1.0								
1,2-Dibromo-3-chloropropane	U	0.97	1.0								
1,2-Dibromoethane	U	0.98	1.0								
1,2-Dichlorobenzene	U	0.22	1.0								
1,2-Dichloroethane	U	0.17	1.0								
1,2-Dichloropropane	U	0.25	1.0								
1,3,5-Trichlorobenzene	U	0.15	1.0								
1,3,5-Trimethylbenzene	U	0.29	1.0								
1,3-Dichlorobenzene	U	0.29	1.0								
1,3-Dichloropropane	U	0.18	1.0								
1,4-Dichlorobenzene	U	0.21	1.0								
2,2-Dichloropropane	U	0.44	1.0								
2-Butanone	U	0.58	5.0								
2-Chloroethyl vinyl ether	U	10	10								
2-Chlorotoluene	U	0.32	1.0								
2-Hexanone	U	0.13	5.0								
2-Methylnaphthalene	U	1.1	5.0								
4-Chlorotoluene	U	0.28	1.0								
4-Isopropyltoluene	U	0.31	1.0								
4-Methyl-2-pentanone	U	0.11	1.0								
Acetone	U	0.92	10								
Acrolein	U	2.5	10								
Acrylonitrile	U	0.18	1.0								
Benzene	U	0.3	1.0								
Benzyl chloride	U	0.72	1.0								
Bromobenzene	U	0.24	1.0								
Bromochloromethane	U	0.2	1.0								
Bromodichloromethane	U	0.23	1.0								
Bromoform	U	0.77	1.0								
Bromomethane	U	0.38	1.0								
Carbon disulfide	U	0.23	1.0								
Carbon tetrachloride	U	0.31	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R202787A** Instrument ID **VMS10** Method: **SW8260B**

Chlorobenzene	U	0.27	1.0					
Chloroethane	U	0.29	1.0					
Chloroform	U	0.26	1.0					
Chloromethane	U	0.17	1.0					
cis-1,2-Dichloroethene	U	0.25	1.0					
cis-1,3-Dichloropropene	U	0.39	1.0					
Dibromochloromethane	U	0.38	1.0					
Dibromomethane	U	0.25	1.0					
Dichlorodifluoromethane	U	0.13	1.0					
Ethylbenzene	U	0.4	1.0					
Hexachlorobutadiene	U	0.24	1.0					
Hexachloroethane	U	0.27	1.0					
Hexane	U	0.33	1.0					
Iodomethane	U	0.22	1.0					
Isopropylbenzene	U	0.31	1.0					
m,p-Xylene	U	0.98	2.0					
Methyl tert-butyl ether	U	0.12	1.0					
Methylene chloride	U	0.56	5.0					
Naphthalene	U	0.18	5.0					
n-Butylbenzene	U	0.22	1.0					
n-Propylbenzene	U	0.24	1.0					
o-Xylene	U	0.35	1.0					
p-Isopropyltoluene	U	0.14	1.0					
sec-Butylbenzene	U	0.29	1.0					
Styrene	U	0.24	1.0					
tert-Butyl alcohol	U	0.57	20					
tert-Butylbenzene	U	0.34	1.0					
Tetrachloroethene	U	0.27	1.0					
Tetrahydrofuran	U	0.25	1.0					
Toluene	U	0.37	1.0					
trans-1,2-Dichloroethene	U	0.28	1.0					
trans-1,3-Dichloropropene	U	0.82	1.0					
trans-1,4-Dichloro-2-butene	U	0.2	2.0					
Trichloroethene	U	0.3	1.0					
Trichlorofluoromethane	U	0.2	1.0					
Vinyl acetate	U	0.37	5.0					
Vinyl chloride	U	0.2	1.0					
Surr: 1,2-Dichloroethane-d4	*20.22*	0	0	*20*	0	*101*	*75-120*	0
Surr: 4-Bromofluorobenzene	*18.8*	0	0	*20*	0	*94*	*80-110*	0
Surr: Dibromofluoromethane	*19.28*	0	0	*20*	0	*96.4*	*85-115*	0
Surr: Toluene-d8	*19.76*	0	0	*20*	0	*98.8*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202787A** Instrument ID **VMS10** Method: **SW8260B**

LCS Sample ID: **VLCSW2-161219-R202787A** Units: **µg/L** Analysis Date: **12/19/2016 09:44 PM**

Client ID: Run ID: **VMS10_161219A** SeqNo: **4209506** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.48	0.22	1.0	20	0	102	80-130	0			
1,1,1-Trichloroethane	19.35	0.36	1.0	20	0	96.8	75-130	0			
1,1,2,2-Tetrachloroethane	21.23	0.19	1.0	20	0	106	75-130	0			
1,1,2-Trichloroethane	21.53	0.4	1.0	20	0	108	75-125	0			
1,1-Dichloroethane	21.84	0.31	1.0	20	0	109	75-133	0			
1,1-Dichloroethene	23.13	0.28	1.0	20	0	116	70-145	0			
1,1-Dichloropropene	20.16	0.35	1.0	20	0	101	75-135	0			
1,2,3-Trichlorobenzene	20.44	0.17	1.0	20	0	102	70-140	0			
1,2,3-Trichloropropane	20.58	0.11	1.0	20	0	103	75-125	0			
1,2,4-Trichlorobenzene	20.12	0.21	1.0	20	0	101	70-135	0			
1,2,4-Trimethylbenzene	20.26	0.37	1.0	20	0	101	75-130	0			
1,2-Dibromo-3-chloropropane	17.73	0.97	1.0	20	0	88.6	60-130	0			
1,2-Dibromoethane	36.01	0.98	1.0	20	0	180	90-195	0			
1,2-Dichlorobenzene	20.59	0.22	1.0	20	0	103	70-130	0			
1,2-Dichloroethane	20.46	0.17	1.0	20	0	102	78-125	0			
1,2-Dichloropropane	20.26	0.25	1.0	20	0	101	75-125	0			
1,3,5-Trimethylbenzene	19.81	0.29	1.0	20	0	99	75-130	0			
1,3-Dichlorobenzene	21.02	0.29	1.0	20	0	105	75-130	0			
1,3-Dichloropropane	21.04	0.18	1.0	20	0	105	75-125	0			
1,4-Dichlorobenzene	20.23	0.21	1.0	20	0	101	75-130	0			
2,2-Dichloropropane	16.11	0.44	1.0	20	0	80.6	43-150	0			
2-Butanone	19.62	0.58	5.0	20	0	98.1	55-150	0			
2-Chlorotoluene	20.05	0.32	1.0	20	0	100	84-133	0			
2-Hexanone	17.49	0.13	5.0	20	0	87.4	60-135	0			
4-Chlorotoluene	20.06	0.28	1.0	20	0	100	80-125	0			
4-Isopropyltoluene	20.07	0.31	1.0	20	0	100	61-164	0			
4-Methyl-2-pentanone	21.95	0.11	1.0	20	0	110	77-178	0			
Acetone	23.15	0.92	10	20	0	116	60-160	0			
Acrylonitrile	21.77	0.18	1.0	20	0	109	60-140	0			
Benzene	20.98	0.3	1.0	20	0	105	85-125	0			
Bromobenzene	20.17	0.24	1.0	20	0	101	80-125	0			
Bromochloromethane	23.54	0.2	1.0	20	0	118	72-141	0			
Bromodichloromethane	20.41	0.23	1.0	20	0	102	75-125	0			
Bromoform	17.98	0.77	1.0	20	0	89.9	60-125	0			
Bromomethane	21.94	0.38	1.0	20	0	110	30-185	0			
Carbon disulfide	25.74	0.23	1.0	20	0	129	60-165	0			
Carbon tetrachloride	19.78	0.31	1.0	20	0	98.9	65-140	0			
Chlorobenzene	20.73	0.27	1.0	20	0	104	80-120	0			
Chloroethane	23.11	0.29	1.0	20	0	116	50-140	0			
Chloroform	21.22	0.26	1.0	20	0	106	80-130	0			
Chloromethane	25.19	0.17	1.0	20	0	126	46-148	0			
cis-1,2-Dichloroethene	21.35	0.25	1.0	20	0	107	75-134	0			
cis-1,3-Dichloropropene	18.14	0.39	1.0	20	0	90.7	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R202787A** Instrument ID **VMS10** Method: **SW8260B**

Dibromochloromethane	19.05	0.38	1.0	20	0	95.2	60-115	0
Dibromomethane	21.38	0.25	1.0	20	0	107	85-125	0
Dichlorodifluoromethane	18.36	0.13	1.0	20	0	91.8	20-120	0
Ethylbenzene	20.14	0.4	1.0	20	0	101	85-125	0
Hexachlorobutadiene	17.5	0.24	1.0	20	0	87.5	70-155	0
Hexachloroethane	17.46	0.27	1.0	20	0	87.3	50-124	0
Iodomethane	31.94	0.22	1.0	20	0	160	60-160	0
Isopropylbenzene	20.1	0.31	1.0	20	0	100	80-127	0
m,p-Xylene	39.87	0.98	2.0	40	0	99.7	75-130	0
Methyl tert-butyl ether	19.77	0.12	1.0	20	0	98.8	80-130	0
Methylene chloride	22.77	0.56	5.0	20	0	114	75-140	0
Naphthalene	20.86	0.18	5.0	20	0	104	55-160	0
n-Butylbenzene	19.49	0.22	1.0	20	0	97.4	75-145	0
n-Propylbenzene	19.78	0.24	1.0	20	0	98.9	83-135	0
o-Xylene	20.34	0.35	1.0	20	0	102	80-125	0
p-Isopropyltoluene	20.07	0.14	1.0	20	0	100	61-164	0
sec-Butylbenzene	20.18	0.29	1.0	20	0	101	80-134	0
Styrene	20.92	0.24	1.0	20	0	105	83-137	0
tert-Butylbenzene	18.92	0.34	1.0	20	0	94.6	70-130	0
Tetrachloroethene	24.08	0.27	1.0	20	0	120	68-166	0
Tetrahydrofuran	18.19	0.25	1.0	20	0	91	54-139	0
Toluene	20.66	0.37	1.0	20	0	103	85-125	0
trans-1,2-Dichloroethene	22.01	0.28	1.0	20	0	110	80-140	0
trans-1,3-Dichloropropene	18.14	0.82	1.0	20	0	90.7	56-132	0
trans-1,4-Dichloro-2-butene	13.19	0.2	2.0	20	0	66	46-118	0
Trichloroethene	20.98	0.3	1.0	20	0	105	84-130	0
Trichlorofluoromethane	23.05	0.2	1.0	20	0	115	60-140	0
Vinyl chloride	24.4	0.2	1.0	20	0	122	50-136	0
Surr: 1,2-Dichloroethane-d4	*20.12*	0	0	*20*	0	*101*	*75-120*	0
Surr: 4-Bromofluorobenzene	*19.5*	0	0	*20*	0	*97.5*	*80-110*	0
Surr: Dibromofluoromethane	*20.53*	0	0	*20*	0	*103*	*85-115*	0
Surr: Toluene-d8	*19.73*	0	0	*20*	0	*98.6*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202787A** Instrument ID **VMS10** Method: **SW8260B**

MS Sample ID: **16121051-08A MS** Units: **µg/L** Analysis Date: **12/20/2016 06:54 A**

Client ID: **COL-GW-07** Run ID: **VMS10_161219A** SeqNo: **4209523** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.63	0.22	1.0	20	0	103	80-130	0			
1,1,1-Trichloroethane	21.36	0.36	1.0	20	0	107	75-130	0			
1,1,2,2-Tetrachloroethane	23.27	0.19	1.0	20	0	116	75-130	0			
1,1,2-Trichloroethane	21.42	0.4	1.0	20	0	107	75-125	0			
1,1-Dichloroethane	24.75	0.31	1.0	20	0	124	75-133	0			
1,1-Dichloroethene	29.64	0.28	1.0	20	0	148	70-145	0			S
1,1-Dichloropropene	22.47	0.35	1.0	20	0	112	75-135	0			
1,2,3-Trichlorobenzene	19.82	0.17	1.0	20	0	99.1	70-140	0			
1,2,3-Trichloropropane	21.1	0.11	1.0	20	0	106	75-125	0			
1,2,4-Trichlorobenzene	19.55	0.21	1.0	20	0	97.8	70-135	0			
1,2,4-Trimethylbenzene	21.28	0.37	1.0	20	0	106	75-130	0			
1,2-Dibromo-3-chloropropane	16.88	0.97	1.0	20	0	84.4	60-130	0			
1,2-Dibromoethane	36.42	0.98	1.0	20	0	182	90-195	0			
1,2-Dichlorobenzene	20.5	0.22	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	22.35	0.17	1.0	20	0	112	78-125	0			
1,2-Dichloropropane	22.19	0.25	1.0	20	0	111	75-125	0			
1,3,5-Trimethylbenzene	21.32	0.29	1.0	20	0	107	75-130	0			
1,3-Dichlorobenzene	20.83	0.29	1.0	20	0	104	75-130	0			
1,3-Dichloropropane	22.03	0.18	1.0	20	0	110	75-125	0			
1,4-Dichlorobenzene	20.06	0.21	1.0	20	0	100	75-130	0			
2,2-Dichloropropane	11.29	0.44	1.0	20	0	56.4	43-150	0			
2-Butanone	23.49	0.58	5.0	20	0	117	55-150	0			
2-Chlorotoluene	21.37	0.32	1.0	20	0	107	84-133	0			
2-Hexanone	20.44	0.13	5.0	20	0	102	60-135	0			
4-Chlorotoluene	21.33	0.28	1.0	20	0	107	80-125	0			
4-Isopropyltoluene	20.99	0.31	1.0	20	0	105	61-164	0			
4-Methyl-2-pentanone	25.94	0.11	1.0	20	0	130	77-178	0			
Acetone	28.94	0.92	10	20	0	145	60-160	0			
Acrylonitrile	24.06	0.18	1.0	20	0	120	60-140	0			
Benzene	23.11	0.3	1.0	20	0	116	85-125	0			
Bromobenzene	21.21	0.24	1.0	20	0	106	80-125	0			
Bromochloromethane	26.4	0.2	1.0	20	0	132	72-141	0			
Bromodichloromethane	21.67	0.23	1.0	20	0	108	75-125	0			
Bromoform	17.17	0.77	1.0	20	0	85.8	60-125	0			
Bromomethane	17.26	0.38	1.0	20	0	86.3	30-185	0			
Carbon disulfide	28.63	0.23	1.0	20	0	143	60-165	0			
Carbon tetrachloride	21.21	0.31	1.0	20	0	106	65-140	0			
Chlorobenzene	21.83	0.27	1.0	20	0	109	80-120	0			
Chloroethane	26.66	0.29	1.0	20	0	133	50-140	0			
Chloroform	23.26	0.26	1.0	20	0	116	80-130	0			
Chloromethane	27.07	0.17	1.0	20	0	135	46-148	0			
cis-1,2-Dichloroethene	155.4	0.25	1.0	20	131.5	120	75-134	0			EO
cis-1,3-Dichloropropene	17.82	0.39	1.0	20	0	89.1	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R202787A** Instrument ID **VMS10** Method: **SW8260B**

Dibromochloromethane	18.29	0.38	1.0	20	0	91.4	60-115	0	
Dibromomethane	22.39	0.25	1.0	20	0	112	85-125	0	
Dichlorodifluoromethane	17.78	0.13	1.0	20	0	88.9	20-120	0	
Ethylbenzene	21.63	0.4	1.0	20	0	108	85-125	0	
Hexachlorobutadiene	16.39	0.24	1.0	20	0	82	70-155	0	
Hexachloroethane	16.98	0.27	1.0	20	0	84.9	50-124	0	
Iodomethane	29.25	0.22	1.0	20	0	146	60-160	0	
Isopropylbenzene	21.49	0.31	1.0	20	0	107	80-127	0	
m,p-Xylene	42.62	0.98	2.0	40	0	107	75-130	0	
Methyl tert-butyl ether	22.18	0.12	1.0	20	0	111	80-130	0	
Methylene chloride	26.06	0.56	5.0	20	0	130	75-140	0	
Naphthalene	20.42	0.18	5.0	20	0	102	55-160	0	
n-Butylbenzene	20.25	0.22	1.0	20	0	101	75-145	0	
n-Propylbenzene	21.28	0.24	1.0	20	0	106	83-135	0	
o-Xylene	21.41	0.35	1.0	20	0	107	80-125	0	
p-Isopropyltoluene	20.99	0.14	1.0	20	0	105	61-164	0	
sec-Butylbenzene	21.94	0.29	1.0	20	0	110	80-134	0	
Styrene	21.68	0.24	1.0	20	0	108	83-137	0	
tert-Butylbenzene	20.68	0.34	1.0	20	0	103	70-130	0	
Tetrachloroethene	26.21	0.27	1.0	20	0	131	68-166	0	
Tetrahydrofuran	20.51	0.25	1.0	20	0	103	54-139	0	
Toluene	21.83	0.37	1.0	20	0	109	85-125	0	
trans-1,2-Dichloroethene	28.04	0.28	1.0	20	3.55	122	80-140	0	
trans-1,3-Dichloropropene	16.96	0.82	1.0	20	0	84.8	56-132	0	
trans-1,4-Dichloro-2-butene	12.18	0.2	2.0	20	0	60.9	46-118	0	
Trichloroethene	45.1	0.3	1.0	20	23.06	110	84-130	0	
Trichlorofluoromethane	26.2	0.2	1.0	20	0	131	60-140	0	
Vinyl chloride	30.33	0.2	1.0	20	2.29	140	50-136	0	S
Surr: 1,2-Dichloroethane-d4	*20.05*	0	0	*20*	0	*100*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*19.83*	0	0	*20*	0	*99.2*	*80-110*	0	
Surr: Dibromofluoromethane	*20.27*	0	0	*20*	0	*101*	*85-115*	0	
Surr: Toluene-d8	*19.43*	0	0	*20*	0	*97.2*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202787A** Instrument ID **VMS10** Method: **SW8260B**

MSD Sample ID: **16121051-08A MSD** Units: **µg/L** Analysis Date: **12/20/2016 07:18 A**

Client ID: **COL-GW-07** Run ID: **VMS10_161219A** SeqNo: **4209524** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.02	0.22	1.0	20	0	105	80-130	20.63	1.87	30	
1,1,1-Trichloroethane	20.66	0.36	1.0	20	0	103	75-130	21.36	3.33	30	
1,1,2,2-Tetrachloroethane	22.8	0.19	1.0	20	0	114	75-130	23.27	2.04	30	
1,1,2-Trichloroethane	22.05	0.4	1.0	20	0	110	75-125	21.42	2.9	30	
1,1-Dichloroethane	24.27	0.31	1.0	20	0	121	75-133	24.75	1.96	30	
1,1-Dichloroethene	28.2	0.28	1.0	20	0	141	70-145	29.64	4.98	30	
1,1-Dichloropropene	22.52	0.35	1.0	20	0	113	75-135	22.47	0.222	30	
1,2,3-Trichlorobenzene	19.87	0.17	1.0	20	0	99.4	70-140	19.82	0.252	30	
1,2,3-Trichloropropane	21.88	0.11	1.0	20	0	109	75-125	21.1	3.63	30	
1,2,4-Trichlorobenzene	19.86	0.21	1.0	20	0	99.3	70-135	19.55	1.57	30	
1,2,4-Trimethylbenzene	21.57	0.37	1.0	20	0	108	75-130	21.28	1.35	30	
1,2-Dibromo-3-chloropropane	16.86	0.97	1.0	20	0	84.3	60-130	16.88	0.119	30	
1,2-Dibromoethane	37.55	0.98	1.0	20	0	188	90-195	36.42	3.06	30	
1,2-Dichlorobenzene	20.96	0.22	1.0	20	0	105	70-130	20.5	2.22	30	
1,2-Dichloroethane	21.43	0.17	1.0	20	0	107	78-125	22.35	4.2	30	
1,2-Dichloropropane	21.7	0.25	1.0	20	0	108	75-125	22.19	2.23	30	
1,3,5-Trimethylbenzene	21.57	0.29	1.0	20	0	108	75-130	21.32	1.17	30	
1,3-Dichlorobenzene	20.89	0.29	1.0	20	0	104	75-130	20.83	0.288	30	
1,3-Dichloropropane	22.74	0.18	1.0	20	0	114	75-125	22.03	3.17	30	
1,4-Dichlorobenzene	20.69	0.21	1.0	20	0	103	75-130	20.06	3.09	30	
2,2-Dichloropropane	10.65	0.44	1.0	20	0	53.2	43-150	11.29	5.83	30	
2-Butanone	22.14	0.58	5.0	20	0	111	55-150	23.49	5.92	30	
2-Chlorotoluene	21.35	0.32	1.0	20	0	107	84-133	21.37	0.0936	30	
2-Hexanone	19.71	0.13	5.0	20	0	98.6	60-135	20.44	3.64	30	
4-Chlorotoluene	21.16	0.28	1.0	20	0	106	80-125	21.33	0.8	30	
4-Isopropyltoluene	20.96	0.31	1.0	20	0	105	61-164	20.99	0.143	30	
4-Methyl-2-pentanone	25.77	0.11	1.0	20	0	129	77-178	25.94	0.658	30	
Acetone	27.88	0.92	10	20	0	139	60-160	28.94	3.73	30	
Acrylonitrile	22.03	0.18	1.0	20	0	110	60-140	24.06	8.81	30	
Benzene	22.83	0.3	1.0	20	0	114	85-125	23.11	1.22	30	
Bromobenzene	21.23	0.24	1.0	20	0	106	80-125	21.21	0.0943	30	
Bromochloromethane	24.87	0.2	1.0	20	0	124	72-141	26.4	5.97	30	
Bromodichloromethane	20.91	0.23	1.0	20	0	105	75-125	21.67	3.57	30	
Bromoform	17.29	0.77	1.0	20	0	86.4	60-125	17.17	0.696	30	
Bromomethane	17.79	0.38	1.0	20	0	89	30-185	17.26	3.02	30	
Carbon disulfide	28.62	0.23	1.0	20	0	143	60-165	28.63	0.0349	30	
Carbon tetrachloride	21.48	0.31	1.0	20	0	107	65-140	21.21	1.26	30	
Chlorobenzene	21.68	0.27	1.0	20	0	108	80-120	21.83	0.689	30	
Chloroethane	25.48	0.29	1.0	20	0	127	50-140	26.66	4.53	30	
Chloroform	22.76	0.26	1.0	20	0	114	80-130	23.26	2.17	30	
Chloromethane	25.91	0.17	1.0	20	0	130	46-148	27.07	4.38	30	
cis-1,2-Dichloroethene	154.9	0.25	1.0	20	131.5	117	75-134	155.4	0.348	30	EO
cis-1,3-Dichloropropene	17.64	0.39	1.0	20	0	88.2	70-130	17.82	1.02	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R202787A** Instrument ID **VMS10** Method: **SW8260B**

Dibromochloromethane	18.35	0.38	1.0	20	0	91.8	60-115	18.29	0.328	30	
Dibromomethane	22.05	0.25	1.0	20	0	110	85-125	22.39	1.53	30	
Dichlorodifluoromethane	17.69	0.13	1.0	20	0	88.4	20-120	17.78	0.507	30	
Ethylbenzene	21.75	0.4	1.0	20	0	109	85-125	21.63	0.553	30	
Hexachlorobutadiene	17.29	0.24	1.0	20	0	86.4	70-155	16.39	5.34	30	
Hexachloroethane	17.23	0.27	1.0	20	0	86.2	50-124	16.98	1.46	30	
Iodomethane	34.47	0.22	1.0	20	0	172	60-160	29.25	16.4	30	S
Isopropylbenzene	21.72	0.31	1.0	20	0	109	80-127	21.49	1.06	30	
m,p-Xylene	42.88	0.98	2.0	40	0	107	75-130	42.62	0.608	30	
Methyl tert-butyl ether	21.34	0.12	1.0	20	0	107	80-130	22.18	3.86	30	
Methylene chloride	24.83	0.56	5.0	20	0	124	75-140	26.06	4.83	30	
Naphthalene	20.85	0.18	5.0	20	0	104	55-160	20.42	2.08	30	
n-Butylbenzene	20.42	0.22	1.0	20	0	102	75-145	20.25	0.836	30	
n-Propylbenzene	21.75	0.24	1.0	20	0	109	83-135	21.28	2.18	30	
o-Xylene	21.65	0.35	1.0	20	0	108	80-125	21.41	1.11	30	
p-Isopropyltoluene	20.96	0.14	1.0	20	0	105	61-164	20.99	0.143	30	
sec-Butylbenzene	22.67	0.29	1.0	20	0	113	80-134	21.94	3.27	30	
Styrene	22.12	0.24	1.0	20	0	111	83-137	21.68	2.01	30	
tert-Butylbenzene	20.67	0.34	1.0	20	0	103	70-130	20.68	0.0484	30	
Tetrachloroethene	26.83	0.27	1.0	20	0	134	68-166	26.21	2.34	30	
Tetrahydrofuran	17.51	0.25	1.0	20	0	87.6	54-139	20.51	15.8	30	
Toluene	21.83	0.37	1.0	20	0	109	85-125	21.83	0	30	
trans-1,2-Dichloroethene	28.05	0.28	1.0	20	3.55	122	80-140	28.04	0.0357	30	
trans-1,3-Dichloropropene	17.6	0.82	1.0	20	0	88	56-132	16.96	3.7	30	
trans-1,4-Dichloro-2-butene	11.18	0.2	2.0	20	0	55.9	46-118	12.18	8.56	30	
Trichloroethene	44.99	0.3	1.0	20	23.06	110	84-130	45.1	0.244	30	
Trichlorofluoromethane	24.78	0.2	1.0	20	0	124	60-140	26.2	5.57	30	
Vinyl chloride	28.14	0.2	1.0	20	2.29	129	50-136	30.33	7.49	30	
Surr: 1,2-Dichloroethane-d4	*19.93*	0	0	*20*	0	*99.6*	*75-120*	20.05	*0.6*	*30*	
Surr: 4-Bromofluorobenzene	*20.06*	0	0	*20*	0	*100*	*80-110*	19.83	*1.15*	*30*	
Surr: Dibromofluoromethane	*19.9*	0	0	*20*	0	*99.5*	*85-115*	20.27	*1.84*	*30*	
Surr: Toluene-d8	*19.76*	0	0	*20*	0	*98.8*	*85-110*	19.43	*1.68*	*30*	

The following samples were analyzed in this batch:

16121051-01A	16121051-02A	16121051-03A
16121051-04A	16121051-05A	16121051-06A
16121051-07A	16121051-08A	16121051-09A
16121051-10A	16121051-11A	16121051-12A
16121051-13A	16121051-14A	16121051-15A
16121051-16A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202867** Instrument ID **VMS8** Method: **SW8260B**

MBLK Sample ID: **VBLKW2-161220-R202867** Units: **µg/L** Analysis Date: **12/20/2016 11:48 PM**
Client ID: Run ID: **VMS8_161220B** SeqNo: **4212585** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	U	0.25	1.0								
Surr: 1,2-Dichloroethane-d4	*19.02*	0	0	*20*	0	*95.1*	*75-120*	0			
Surr: 4-Bromofluorobenzene	*18.75*	0	0	*20*	0	*93.8*	*80-110*	0			
Surr: Dibromofluoromethane	*19.18*	0	0	*20*	0	*95.9*	*85-115*	0			
Surr: Toluene-d8	*19.56*	0	0	*20*	0	*97.8*	*85-110*	0			

LCS Sample ID: **VLCSW2-161220-R202867** Units: **µg/L** Analysis Date: **12/20/2016 10:59 PM**
Client ID: Run ID: **VMS8_161220B** SeqNo: **4212584** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	19.54	0.25	1.0	20	0	97.7	75-134	0			
Surr: 1,2-Dichloroethane-d4	*19.4*	0	0	*20*	0	*97*	*75-120*	0			
Surr: 4-Bromofluorobenzene	*19.48*	0	0	*20*	0	*97.4*	*80-110*	0			
Surr: Dibromofluoromethane	*20.27*	0	0	*20*	0	*101*	*85-115*	0			
Surr: Toluene-d8	*19.88*	0	0	*20*	0	*99.4*	*85-110*	0			

MS Sample ID: **16121051-08A MS** Units: **µg/L** Analysis Date: **12/21/2016 08:22 A**
Client ID: **COL-GW-07** Run ID: **VMS8_161220B** SeqNo: **4212604** Prep Date: DF: **5**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	225.3	1.3	5.0	100	120.7	105	75-134	0			
Surr: 1,2-Dichloroethane-d4	*98.05*	0	0	*100*	0	*98*	*75-120*	0			
Surr: 4-Bromofluorobenzene	*102*	0	0	*100*	0	*102*	*80-110*	0			
Surr: Dibromofluoromethane	*100.1*	0	0	*100*	0	*100*	*85-115*	0			
Surr: Toluene-d8	*98.9*	0	0	*100*	0	*98.9*	*85-110*	0			

MSD Sample ID: **16121051-08A MSD** Units: **µg/L** Analysis Date: **12/21/2016 08:46 A**
Client ID: **COL-GW-07** Run ID: **VMS8_161220B** SeqNo: **4212605** Prep Date: DF: **5**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	223.7	1.3	5.0	100	120.7	103	75-134	225.3	0.713	30	
Surr: 1,2-Dichloroethane-d4	*97.85*	0	0	*100*	0	*97.8*	*75-120*	98.05	*0.204*	*30*	
Surr: 4-Bromofluorobenzene	*98.3*	0	0	*100*	0	*98.3*	*80-110*	102	*3.65*	*30*	
Surr: Dibromofluoromethane	*99.45*	0	0	*100*	0	*99.4*	*85-115*	100.1	*0.651*	*30*	
Surr: Toluene-d8	*100.4*	0	0	*100*	0	*100*	*85-110*	98.9	*1.56*	*30*	

The following samples were analyzed in this batch:

16121051-01A	16121051-08A	16121051-09A
16121051-11A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202869** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW3-161220-R202869** Units: **µg/L** Analysis Date: **12/20/2016 09:55 PM**
Client ID: Run ID: **VMS10_161220A** SeqNo: **4211059** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	U	0.18	1.0								
Surr: Toluene-d8	*10.52*	0	0	*10*	0	*105*	*80-120*	0			

LCS Sample ID: **VLCSW2-161220-R202869** Units: **µg/L** Analysis Date: **12/20/2016 09:07 PM**
Client ID: Run ID: **VMS10_161220A** SeqNo: **4211058** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	38.62	0.18	1.0	40	0	96.6	80-120	0			
Surr: Toluene-d8	*10.58*	0	0	*10*	0	*106*	*80-120*	0			

MS Sample ID: **16121051-08A MS** Units: **µg/L** Analysis Date: **12/21/2016 12:43 PM**
Client ID: **COL-GW-07** Run ID: **VMS10_161220A** SeqNo: **4211067** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	39.67	0.18	1.0	40	0	99.2	80-120	0			
Surr: Toluene-d8	*9.77*	0	0	*10*	0	*97.7*	*80-120*	0			

MSD Sample ID: **16121051-08A MSD** Units: **µg/L** Analysis Date: **12/21/2016 01:07 A**
Client ID: **COL-GW-07** Run ID: **VMS10_161220A** SeqNo: **4211065** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	40.52	0.18	1.0	40	0	101	80-120	39.67	2.12	30	
Surr: Toluene-d8	*9.72*	0	0	*10*	0	*97.2*	*80-120*	9.77	*0.513*	*30*	

The following samples were analyzed in this batch:

16121051-01A	16121051-07A	16121051-08A
16121051-09A	16121051-10A	16121051-13A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202904** Instrument ID **VMS10** Method: **SW8260B**

MBLK Sample ID: **VBLKW1-161221-R202904** Units: **µg/L** Analysis Date: **12/21/2016 09:23 A**
Client ID: Run ID: **VMS10_161221A** SeqNo: **4212661** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	U	0.18	1.0								
Surr: Toluene-d8	*10.96*	0	0	*10*	0	*110*	*80-120*	0			

LCS Sample ID: **VLCSW1-161221-R202904** Units: **µg/L** Analysis Date: **12/21/2016 08:25 A**
Client ID: Run ID: **VMS10_161221A** SeqNo: **4212660** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	46.22	0.18	1.0	40	0	116	80-120	0			
Surr: Toluene-d8	*11.46*	0	0	*10*	0	*115*	*80-120*	0			

MS Sample ID: **16121051-01A MS** Units: **µg/L** Analysis Date: **12/21/2016 10:39 A**
Client ID: **COL-GW-01** Run ID: **VMS10_161221A** SeqNo: **4212663** Prep Date: DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	420.3	1.8	10	400	0	105	80-120	0			
Surr: Toluene-d8	*113.3*	0	0	*100*	0	*113*	*80-120*	0			

MSD Sample ID: **16121051-01A MSD** Units: **µg/L** Analysis Date: **12/21/2016 11:03 A**
Client ID: **COL-GW-01** Run ID: **VMS10_161221A** SeqNo: **4212664** Prep Date: DF: **10**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	434.5	1.8	10	400	0	109	80-120	420.3	3.32	30	
Surr: Toluene-d8	*117.5*	0	0	*100*	0	*118*	*80-120*	113.3	*3.64*	*30*	

The following samples were analyzed in this batch: 16121051-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202964a** Instrument ID **VMS5** Method: **SW8260B**

MBLK Sample ID: **VBLKW2-161221-R202964a** Units: **µg/L** Analysis Date: **12/21/2016 11:55 PM**

Client ID: Run ID: **VMS5_161221A** SeqNo: **4214831** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	U	0.22	1.0								
1,1,1-Trichloroethane	U	0.36	1.0								
1,1,2,2-Tetrachloroethane	U	0.19	1.0								
1,1,2-Trichloroethane	U	0.4	1.0								
1,1,2-Trichlorotrifluoroethane	U	0.42	1.0								
1,1-Dichloroethane	U	0.31	1.0								
1,1-Dichloroethene	U	0.28	1.0								
1,1-Dichloropropene	U	0.35	1.0								
1,2,3-Trichlorobenzene	U	0.17	1.0								
1,2,3-Trichloropropane	U	0.11	1.0								
1,2,4-Trichlorobenzene	U	0.21	1.0								
1,2,4-Trimethylbenzene	U	0.37	1.0								
1,2-Dibromo-3-chloropropane	U	0.97	1.0								
1,2-Dibromoethane	U	0.98	1.0								
1,2-Dichlorobenzene	U	0.22	1.0								
1,2-Dichloroethane	U	0.17	1.0								
1,2-Dichloropropane	U	0.25	1.0								
1,3,5-Trichlorobenzene	U	0.15	1.0								
1,3,5-Trimethylbenzene	U	0.29	1.0								
1,3-Dichlorobenzene	U	0.29	1.0								
1,3-Dichloropropane	U	0.18	1.0								
1,4-Dichlorobenzene	U	0.21	1.0								
2,2-Dichloropropane	U	0.44	1.0								
2-Butanone	U	0.58	5.0								
2-Chloroethyl vinyl ether	U	10	10								
2-Chlorotoluene	U	0.32	1.0								
2-Hexanone	U	0.13	5.0								
2-Methylnaphthalene	U	1.1	5.0								
4-Chlorotoluene	U	0.28	1.0								
4-Isopropyltoluene	U	0.31	1.0								
4-Methyl-2-pentanone	U	0.11	1.0								
Acetone	U	0.92	10								
Acrolein	U	2.5	10								
Acrylonitrile	U	0.18	1.0								
Benzene	U	0.3	1.0								
Benzyl chloride	U	0.72	1.0								
Bromobenzene	U	0.24	1.0								
Bromochloromethane	U	0.2	1.0								
Bromodichloromethane	U	0.23	1.0								
Bromoform	U	0.77	1.0								
Bromomethane	U	0.38	1.0								
Carbon disulfide	U	0.23	1.0								
Carbon tetrachloride	U	0.31	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R202964a** Instrument ID **VMS5** Method: **SW8260B**

Chlorobenzene	U	0.27	1.0						
Chloroethane	U	0.29	1.0						
Chloroform	U	0.26	1.0						
Chloromethane	0.47	0.17	1.0						J
cis-1,3-Dichloropropene	U	0.39	1.0						
Dibromochloromethane	U	0.38	1.0						
Dibromomethane	U	0.25	1.0						
Dichlorodifluoromethane	U	0.13	1.0						
Ethylbenzene	U	0.4	1.0						
Hexachlorobutadiene	U	0.24	1.0						
Hexachloroethane	U	0.27	1.0						
Hexane	U	0.33	1.0						
Iodomethane	U	0.22	1.0						
Isopropylbenzene	U	0.31	1.0						
m,p-Xylene	U	0.98	2.0						
Methyl tert-butyl ether	U	0.12	1.0						
Methylene chloride	U	0.56	5.0						
Naphthalene	U	0.18	5.0						
n-Butylbenzene	0.55	0.22	1.0						J
n-Propylbenzene	U	0.24	1.0						
o-Xylene	U	0.35	1.0						
p-Isopropyltoluene	U	0.14	1.0						
sec-Butylbenzene	1.16	0.29	1.0						
Styrene	U	0.24	1.0						
tert-Butyl alcohol	U	0.57	20						
tert-Butylbenzene	U	0.34	1.0						
Tetrachloroethene	U	0.27	1.0						
Tetrahydrofuran	U	0.25	1.0						
Toluene	U	0.37	1.0						
trans-1,2-Dichloroethene	U	0.28	1.0						
trans-1,3-Dichloropropene	U	0.82	1.0						
trans-1,4-Dichloro-2-butene	U	0.2	2.0						
Trichlorofluoromethane	U	0.2	1.0						
Vinyl acetate	U	0.37	5.0						
Vinyl chloride	U	0.2	1.0						
Surr: 1,2-Dichloroethane-d4	*19.28*	0	0	*20*	0	*96.4*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*19.74*	0	0	*20*	0	*98.7*	*80-110*	0	
Surr: Dibromofluoromethane	*19.98*	0	0	*20*	0	*99.9*	*85-115*	0	
Surr: Toluene-d8	*20.16*	0	0	*20*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202964a** Instrument ID **VMS5** Method: **SW8260B**

LCS Sample ID: **VLCSW2-161221-R202964a** Units: **µg/L** Analysis Date: **12/21/2016 11:03 PM**

Client ID: Run ID: **VMS5_161221A** SeqNo: **4214830** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.34	0.22	1.0	20	0	102	80-130	0			
1,1,1-Trichloroethane	19.99	0.36	1.0	20	0	100	75-130	0			
1,1,2,2-Tetrachloroethane	20.06	0.19	1.0	20	0	100	75-130	0			
1,1,2-Trichloroethane	20	0.4	1.0	20	0	100	75-125	0			
1,1-Dichloroethane	20.27	0.31	1.0	20	0	101	75-133	0			
1,1-Dichloroethene	21	0.28	1.0	20	0	105	70-145	0			
1,1-Dichloropropene	19.31	0.35	1.0	20	0	96.6	75-135	0			
1,2,3-Trichlorobenzene	22.44	0.17	1.0	20	0	112	70-140	0			
1,2,3-Trichloropropane	19.45	0.11	1.0	20	0	97.2	75-125	0			
1,2,4-Trichlorobenzene	22.4	0.21	1.0	20	0	112	70-135	0			
1,2,4-Trimethylbenzene	19.73	0.37	1.0	20	0	98.6	75-130	0			
1,2-Dibromo-3-chloropropane	21.1	0.97	1.0	20	0	106	60-130	0			
1,2-Dibromoethane	24.42	0.98	1.0	20	0	122	90-195	0			
1,2-Dichlorobenzene	20.48	0.22	1.0	20	0	102	70-130	0			
1,2-Dichloroethane	18.83	0.17	1.0	20	0	94.2	78-125	0			
1,2-Dichloropropane	19.46	0.25	1.0	20	0	97.3	75-125	0			
1,3,5-Trimethylbenzene	20.17	0.29	1.0	20	0	101	75-130	0			
1,3-Dichlorobenzene	21.35	0.29	1.0	20	0	107	75-130	0			
1,3-Dichloropropane	19.95	0.18	1.0	20	0	99.8	75-125	0			
1,4-Dichlorobenzene	20.06	0.21	1.0	20	0	100	75-130	0			
2,2-Dichloropropane	16.29	0.44	1.0	20	0	81.4	43-150	0			
2-Butanone	20.64	0.58	5.0	20	0	103	55-150	0			
2-Chlorotoluene	21.54	0.32	1.0	20	0	108	84-133	0			
2-Hexanone	19.48	0.13	5.0	20	0	97.4	60-135	0			
4-Chlorotoluene	21.46	0.28	1.0	20	0	107	80-125	0			
4-Isopropyltoluene	27.7	0.31	1.0	20	0	138	61-164	0			
4-Methyl-2-pentanone	26.89	0.11	1.0	20	0	134	77-178	0			
Acetone	20.93	0.92	10	20	0	105	60-160	0			
Acrylonitrile	19.7	0.18	1.0	20	0	98.5	60-140	0			
Benzene	20.4	0.3	1.0	20	0	102	85-125	0			
Bromobenzene	20.34	0.24	1.0	20	0	102	80-125	0			
Bromochloromethane	19.04	0.2	1.0	20	0	95.2	72-141	0			
Bromodichloromethane	19.99	0.23	1.0	20	0	100	75-125	0			
Bromoform	19.92	0.77	1.0	20	0	99.6	60-125	0			
Bromomethane	17.91	0.38	1.0	20	0	89.6	30-185	0			
Carbon disulfide	19.84	0.23	1.0	20	0	99.2	60-165	0			
Carbon tetrachloride	15.69	0.31	1.0	20	0	78.4	65-140	0			
Chlorobenzene	20.44	0.27	1.0	20	0	102	80-120	0			
Chloroethane	19.08	0.29	1.0	20	0	95.4	50-140	0			
Chloroform	19.58	0.26	1.0	20	0	97.9	80-130	0			
Chloromethane	20.52	0.17	1.0	20	0	103	46-148	0			
cis-1,3-Dichloropropene	19.98	0.39	1.0	20	0	99.9	70-130	0			
Dibromochloromethane	19.92	0.38	1.0	20	0	99.6	60-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R202964a** Instrument ID **VMS5** Method: **SW8260B**

Dibromomethane	19.59	0.25	1.0	20	0	98	85-125	0	
Dichlorodifluoromethane	14.89	0.13	1.0	20	0	74.4	20-120	0	
Ethylbenzene	21.53	0.4	1.0	20	0	108	85-125	0	
Hexachlorobutadiene	22.41	0.24	1.0	20	0	112	70-155	0	
Hexachloroethane	15.66	0.27	1.0	20	0	78.3	50-124	0	
Iodomethane	17.33	0.22	1.0	20	0	86.6	60-160	0	
Isopropylbenzene	22.74	0.31	1.0	20	0	114	80-127	0	
m,p-Xylene	43.76	0.98	2.0	40	0	109	75-130	0	
Methyl tert-butyl ether	19.1	0.12	1.0	20	0	95.5	80-130	0	
Methylene chloride	20.25	0.56	5.0	20	0	101	75-140	0	
Naphthalene	20.15	0.18	5.0	20	0	101	55-160	0	
n-Butylbenzene	22.31	0.22	1.0	20	0	112	75-145	0	
n-Propylbenzene	22.03	0.24	1.0	20	0	110	83-135	0	
o-Xylene	21.83	0.35	1.0	20	0	109	80-125	0	
p-Isopropyltoluene	27.7	0.14	1.0	20	0	138	61-164	0	
sec-Butylbenzene	20.49	0.29	1.0	20	0	102	80-134	0	B
Styrene	22.98	0.24	1.0	20	0	115	83-137	0	
tert-Butylbenzene	22.15	0.34	1.0	20	0	111	70-130	0	
Tetrachloroethene	20.74	0.27	1.0	20	0	104	68-166	0	
Tetrahydrofuran	19.52	0.25	1.0	20	0	97.6	54-139	0	
Toluene	20.82	0.37	1.0	20	0	104	85-125	0	
trans-1,2-Dichloroethene	20.1	0.28	1.0	20	0	100	80-140	0	
trans-1,3-Dichloropropene	20.04	0.82	1.0	20	0	100	56-132	0	
trans-1,4-Dichloro-2-butene	15.09	0.2	2.0	20	0	75.4	46-118	0	
Trichlorofluoromethane	19.8	0.2	1.0	20	0	99	60-140	0	
Vinyl chloride	19.41	0.2	1.0	20	0	97	50-136	0	
Surr: 1,2-Dichloroethane-d4	*18.66*	0	0	*20*	0	*93.3*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*20.44*	0	0	*20*	0	*102*	*80-110*	0	
Surr: Dibromofluoromethane	*19.57*	0	0	*20*	0	*97.8*	*85-115*	0	
Surr: Toluene-d8	*20.05*	0	0	*20*	0	*100*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202964a** Instrument ID **VMS5** Method: **SW8260B**

MS Sample ID: **16121187-08A MS** Units: **µg/L** Analysis Date: **12/22/2016 09:03 A**

Client ID: Run ID: **VMS5_161221A** SeqNo: **4214850** Prep Date: DF: **200**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	3708	44	200	4000	0	92.7	80-130	0			
1,1,1-Trichloroethane	3774	72	200	4000	0	94.4	75-130	0			
1,1,2,2-Tetrachloroethane	3586	37	200	4000	0	89.6	75-130	0			
1,1,2-Trichloroethane	3700	80	200	4000	0	92.5	75-125	0			
1,1-Dichloroethane	3838	62	200	4000	0	96	75-133	0			
1,1-Dichloroethene	4076	55	200	4000	0	102	70-145	0			
1,1-Dichloropropene	3648	71	200	4000	0	91.2	75-135	0			
1,2,3-Trichlorobenzene	3392	33	200	4000	0	84.8	70-140	0			
1,2,3-Trichloropropane	3484	22	200	4000	0	87.1	75-125	0			
1,2,4-Trichlorobenzene	3438	43	200	4000	0	86	70-135	0			
1,2,4-Trimethylbenzene	7664	74	200	4000	4342	83	75-130	0			
1,2-Dibromo-3-chloropropane	3472	190	200	4000	0	86.8	60-130	0			
1,2-Dibromoethane	4460	200	200	4000	0	112	90-195	0			
1,2-Dichlorobenzene	3546	44	200	4000	0	88.6	70-130	0			
1,2-Dichloroethane	3536	33	200	4000	0	88.4	78-125	0			
1,2-Dichloropropane	3622	50	200	4000	0	90.6	75-125	0			
1,3,5-Trimethylbenzene	4570	57	200	4000	1214	83.9	75-130	0			
1,3-Dichlorobenzene	3608	58	200	4000	0	90.2	75-130	0			
1,3-Dichloropropane	3766	37	200	4000	0	94.2	75-125	0			
1,4-Dichlorobenzene	3432	43	200	4000	0	85.8	75-130	0			
2,2-Dichloropropane	2338	89	200	4000	0	58.4	43-150	0			
2-Butanone	3644	120	1,000	4000	0	91.1	55-150	0			
2-Chlorotoluene	4242	65	200	4000	0	106	84-133	0			
2-Hexanone	3442	25	1,000	4000	0	86	60-135	0			
4-Chlorotoluene	3878	57	200	4000	0	97	80-125	0			
4-Isopropyltoluene	4696	62	200	4000	0	117	61-164	0			
4-Methyl-2-pentanone	4660	23	200	4000	0	116	77-178	0			
Acetone	3954	180	2,000	4000	0	98.8	60-160	0			
Acrylonitrile	3628	35	200	4000	0	90.7	60-140	0			
Benzene	4274	61	200	4000	392	97	85-125	0			
Bromobenzene	3598	48	200	4000	0	90	80-125	0			
Bromochloromethane	3800	39	200	4000	0	95	72-141	0			
Bromodichloromethane	3716	47	200	4000	0	92.9	75-125	0			
Bromoform	3252	150	200	4000	0	81.3	60-125	0			
Bromomethane	3420	75	200	4000	0	85.5	30-185	0			
Carbon disulfide	3718	46	200	4000	0	93	60-165	0			
Carbon tetrachloride	3226	62	200	4000	0	80.6	65-140	0			
Chlorobenzene	3726	54	200	4000	0	93.2	80-120	0			
Chloroethane	3736	58	200	4000	0	93.4	50-140	0			
Chloroform	3704	51	200	4000	0	92.6	80-130	0			
Chloromethane	3944	34	200	4000	0	98.6	46-148	0			
cis-1,3-Dichloropropene	3434	78	200	4000	0	85.8	70-130	0			
Dibromochloromethane	3504	75	200	4000	0	87.6	60-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R202964a** Instrument ID **VMS5** Method: **SW8260B**

Dibromomethane	3650	50	200	4000	0	91.2	85-125	0	
Dichlorodifluoromethane	2708	27	200	4000	0	67.7	20-120	0	
Ethylbenzene	8220	81	200	4000	4234	99.6	85-125	0	
Hexachlorobutadiene	3412	48	200	4000	0	85.3	70-155	0	
Hexachloroethane	2668	53	200	4000	0	66.7	50-124	0	
Iodomethane	2366	45	200	4000	0	59.2	60-160	0	S
Isopropylbenzene	4194	63	200	4000	222	99.3	80-127	0	
m,p-Xylene	23250	200	400	8000	15510	96.7	75-130	0	
Methyl tert-butyl ether	3472	23	200	4000	0	86.8	80-130	0	
Methylene chloride	3908	110	1,000	4000	0	97.7	75-140	0	
Naphthalene	4168	35	1,000	4000	1086	77	55-160	0	
n-Butylbenzene	3810	44	200	4000	0	95.2	75-145	0	
n-Propylbenzene	4386	49	200	4000	630	93.9	83-135	0	
o-Xylene	9426	71	200	4000	5522	97.6	80-125	0	
p-Isopropyltoluene	4696	29	200	4000	0	117	61-164	0	
sec-Butylbenzene	3510	59	200	4000	0	87.8	80-134	0	B
Styrene	4314	48	200	4000	0	108	83-137	0	
tert-Butylbenzene	3790	69	200	4000	0	94.8	70-130	0	
Tetrachloroethene	3636	55	200	4000	0	90.9	68-166	0	
Tetrahydrofuran	3524	50	200	4000	0	88.1	54-139	0	
Toluene	10330	73	200	4000	6548	94.6	85-125	0	
trans-1,2-Dichloroethene	3858	56	200	4000	0	96.4	80-140	0	
trans-1,3-Dichloropropene	3366	160	200	4000	0	84.2	56-132	0	
trans-1,4-Dichloro-2-butene	1804	39	400	4000	0	45.1	46-118	0	S
Trichlorofluoromethane	3832	40	200	4000	0	95.8	60-140	0	
Vinyl chloride	3880	41	200	4000	0	97	50-136	0	
Surr: 1,2-Dichloroethane-d4	*3860*	0	0	*4000*	0	*96.5*	*75-120*	0	
Surr: 4-Bromofluorobenzene	*4050*	0	0	*4000*	0	*101*	*80-110*	0	
Surr: Dibromofluoromethane	*3942*	0	0	*4000*	0	*98.6*	*85-115*	0	
Surr: Toluene-d8	*4030*	0	0	*4000*	0	*101*	*85-110*	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202964a** Instrument ID **VMS5** Method: **SW8260B**

MSD Sample ID: **16121187-08A MSD** Units: **µg/L** Analysis Date: **12/22/2016 09:29 A**

Client ID: Run ID: **VMS5_161221A** SeqNo: **4214851** Prep Date: DF: **200**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	3632	44	200	4000	0	90.8	80-130	3708	2.07	30	
1,1,1-Trichloroethane	3794	72	200	4000	0	94.8	75-130	3774	0.529	30	
1,1,2,2-Tetrachloroethane	3518	37	200	4000	0	88	75-130	3586	1.91	30	
1,1,2-Trichloroethane	3774	80	200	4000	0	94.4	75-125	3700	1.98	30	
1,1-Dichloroethane	3982	62	200	4000	0	99.6	75-133	3838	3.68	30	
1,1-Dichloroethene	4144	55	200	4000	0	104	70-145	4076	1.65	30	
1,1-Dichloropropene	3566	71	200	4000	0	89.2	75-135	3648	2.27	30	
1,2,3-Trichlorobenzene	3550	33	200	4000	0	88.8	70-140	3392	4.55	30	
1,2,3-Trichloropropane	3432	22	200	4000	0	85.8	75-125	3484	1.5	30	
1,2,4-Trichlorobenzene	3666	43	200	4000	0	91.6	70-135	3438	6.42	30	
1,2,4-Trimethylbenzene	7990	74	200	4000	4342	91.2	75-130	7664	4.17	30	
1,2-Dibromo-3-chloropropane	3364	190	200	4000	0	84.1	60-130	3472	3.16	30	
1,2-Dibromoethane	4470	200	200	4000	0	112	90-195	4460	0.224	30	
1,2-Dichlorobenzene	3466	44	200	4000	0	86.6	70-130	3546	2.28	30	
1,2-Dichloroethane	3598	33	200	4000	0	90	78-125	3536	1.74	30	
1,2-Dichloropropane	3708	50	200	4000	0	92.7	75-125	3622	2.35	30	
1,3,5-Trimethylbenzene	4680	57	200	4000	1214	86.6	75-130	4570	2.38	30	
1,3-Dichlorobenzene	3550	58	200	4000	0	88.8	75-130	3608	1.62	30	
1,3-Dichloropropane	3764	37	200	4000	0	94.1	75-125	3766	0.0531	30	
1,4-Dichlorobenzene	3408	43	200	4000	0	85.2	75-130	3432	0.702	30	
2,2-Dichloropropane	2404	89	200	4000	0	60.1	43-150	2338	2.78	30	
2-Butanone	3480	120	1,000	4000	0	87	55-150	3644	4.6	30	
2-Chlorotoluene	4192	65	200	4000	0	105	84-133	4242	1.19	30	
2-Hexanone	3350	25	1,000	4000	0	83.8	60-135	3442	2.71	30	
4-Chlorotoluene	3824	57	200	4000	0	95.6	80-125	3878	1.4	30	
4-Isopropyltoluene	4892	62	200	4000	0	122	61-164	4696	4.09	30	
4-Methyl-2-pentanone	4550	23	200	4000	0	114	77-178	4660	2.39	30	
Acetone	3550	180	2,000	4000	0	88.8	60-160	3954	10.8	30	
Acrylonitrile	3514	35	200	4000	0	87.8	60-140	3628	3.19	30	
Benzene	4336	61	200	4000	392	98.6	85-125	4274	1.44	30	
Bromobenzene	3552	48	200	4000	0	88.8	80-125	3598	1.29	30	
Bromochloromethane	3862	39	200	4000	0	96.6	72-141	3800	1.62	30	
Bromodichloromethane	3724	47	200	4000	0	93.1	75-125	3716	0.215	30	
Bromoform	3284	150	200	4000	0	82.1	60-125	3252	0.979	30	
Bromomethane	3640	75	200	4000	0	91	30-185	3420	6.23	30	
Carbon disulfide	3778	46	200	4000	0	94.4	60-165	3718	1.6	30	
Carbon tetrachloride	3238	62	200	4000	0	81	65-140	3226	0.371	30	
Chlorobenzene	3660	54	200	4000	0	91.5	80-120	3726	1.79	30	
Chloroethane	3890	58	200	4000	0	97.2	50-140	3736	4.04	30	
Chloroform	3784	51	200	4000	0	94.6	80-130	3704	2.14	30	
Chloromethane	4076	34	200	4000	0	102	46-148	3944	3.29	30	
cis-1,3-Dichloropropene	3470	78	200	4000	0	86.8	70-130	3434	1.04	30	
Dibromochloromethane	3528	75	200	4000	0	88.2	60-115	3504	0.683	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202964a** Instrument ID **VMS5** Method: **SW8260B**

Dibromomethane	3714	50	200	4000	0	92.8	85-125	3650	1.74	30	
Dichlorodifluoromethane	2692	27	200	4000	0	67.3	20-120	2708	0.593	30	
Ethylbenzene	8506	81	200	4000	4234	107	85-125	8220	3.42	30	
Hexachlorobutadiene	3542	48	200	4000	0	88.6	70-155	3412	3.74	30	
Hexachloroethane	2738	53	200	4000	0	68.4	50-124	2668	2.59	30	
Iodomethane	3242	45	200	4000	0	81	60-160	2366	31.2	30	R
Isopropylbenzene	4182	63	200	4000	222	99	80-127	4194	0.287	30	
m,p-Xylene	24590	200	400	8000	15510	114	75-130	23250	5.63	30	
Methyl tert-butyl ether	3602	23	200	4000	0	90	80-130	3472	3.68	30	
Methylene chloride	3964	110	1,000	4000	0	99.1	75-140	3908	1.42	30	
Naphthalene	4212	35	1,000	4000	1086	78.2	55-160	4168	1.05	30	
n-Butylbenzene	3886	44	200	4000	0	97.2	75-145	3810	1.98	30	
n-Propylbenzene	4418	49	200	4000	630	94.7	83-135	4386	0.727	30	
o-Xylene	9968	71	200	4000	5522	111	80-125	9426	5.59	30	
p-Isopropyltoluene	4892	29	200	4000	0	122	61-164	4696	4.09	30	
sec-Butylbenzene	3570	59	200	4000	0	89.2	80-134	3510	1.69	30	B
Styrene	4302	48	200	4000	0	108	83-137	4314	0.279	30	
tert-Butylbenzene	3942	69	200	4000	0	98.6	70-130	3790	3.93	30	
Tetrachloroethene	3506	55	200	4000	0	87.6	68-166	3636	3.64	30	
Tetrahydrofuran	3280	50	200	4000	0	82	54-139	3524	7.17	30	
Toluene	10890	73	200	4000	6548	108	85-125	10330	5.22	30	
trans-1,2-Dichloroethene	3902	56	200	4000	0	97.6	80-140	3858	1.13	30	
trans-1,3-Dichloropropene	3434	160	200	4000	0	85.8	56-132	3366	2	30	
trans-1,4-Dichloro-2-butene	1584	39	400	4000	0	39.6	46-118	1804	13	30	S
Trichlorofluoromethane	3842	40	200	4000	0	96	60-140	3832	0.261	30	
Vinyl chloride	3854	41	200	4000	0	96.4	50-136	3880	0.672	30	
Surr: 1,2-Dichloroethane-d4	*3820*	0	0	*4000*	0	*95.5*	*75-120*	3860	*1.04*	*30*	
Surr: 4-Bromofluorobenzene	*4018*	0	0	*4000*	0	*100*	*80-110*	4050	*0.793*	*30*	
Surr: Dibromofluoromethane	*3872*	0	0	*4000*	0	*96.8*	*85-115*	3942	*1.79*	*30*	
Surr: Toluene-d8	*4000*	0	0	*4000*	0	*100*	*85-110*	4030	*0.747*	*30*	

The following samples were analyzed in this batch: 16121051-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202832** Instrument ID **WETCHEM** Method: **A4500-Cl C-97**

MBLK Sample ID: **WBLKW1-161220-R202832** Units: **mg/L** Analysis Date: **12/20/2016 02:00 PM**
Client ID: Run ID: **WETCHEM_161220N** SeqNo: **4210374** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	2.4	3.0								

LCS Sample ID: **WLCSW1-161220-R202832** Units: **mg/L** Analysis Date: **12/20/2016 02:00 PM**
Client ID: Run ID: **WETCHEM_161220N** SeqNo: **4210375** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	51.98	2.4	3.0	50	0	104	80-120	0			

MS Sample ID: **16121051-08BMS** Units: **mg/L** Analysis Date: **12/20/2016 02:00 PM**
Client ID: **COL-GW-07** Run ID: **WETCHEM_161220N** SeqNo: **4210379** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	115	2.4	3.0	50	59.98	110	75-125	0			

MSD Sample ID: **16121051-08BMSD** Units: **mg/L** Analysis Date: **12/20/2016 02:00 PM**
Client ID: **COL-GW-07** Run ID: **WETCHEM_161220N** SeqNo: **4210380** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	112.5	2.4	3.0	50	59.98	105	75-125	115	2.2	20	

The following samples were analyzed in this batch:

16121051-01B	16121051-07B	16121051-08B
16121051-09B	16121051-10B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202840** Instrument ID **LACHAT2** Method: **E353.2 R2.0**

MBLK Sample ID: **MBLK-R202840** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: Run ID: **LACHAT2_161220B** SeqNo: **4210486** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	U	0.013	0.020								

LCS Sample ID: **LCS-R202840** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: Run ID: **LACHAT2_161220B** SeqNo: **4210487** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	4.72	0.013	0.020	5	0	94.4	80-120	0			

MS Sample ID: **1612869-02D MS** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: Run ID: **LACHAT2_161220B** SeqNo: **4210522** Prep Date: DF: **5**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	28.15	0.065	0.10	5	24.6	70.9	75-125	0			SO

MS Sample ID: **1612992-05A MS** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: Run ID: **LACHAT2_161220B** SeqNo: **4210541** Prep Date: DF: **2**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	10.29	0.026	0.040	5	5.783	90.2	75-125	0			

MSD Sample ID: **1612869-02D MSD** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: Run ID: **LACHAT2_161220B** SeqNo: **4210523** Prep Date: DF: **5**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	27.96	0.065	0.10	5	24.6	67.1	75-125	28.15	0.677	20	SO

MSD Sample ID: **1612992-05A MSD** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: Run ID: **LACHAT2_161220B** SeqNo: **4210542** Prep Date: DF: **2**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	10.31	0.026	0.040	5	5.783	90.5	75-125	10.29	0.136	20	

The following samples were analyzed in this batch: 16121051-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202841** Instrument ID **LACHAT2** Method: **E353.2 R2.0**

MBLK Sample ID: **MBLK-R202841** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: Run ID: **LACHAT2_161220C** SeqNo: **4210550** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	U	0.013	0.020								

LCS Sample ID: **LCS-R202841** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: Run ID: **LACHAT2_161220C** SeqNo: **4210551** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	4.766	0.013	0.020	5	0	95.3	80-120	0			

MS Sample ID: **16121051-08CMS** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: **COL-GW-07** Run ID: **LACHAT2_161220C** SeqNo: **4210554** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	4.774	0.013	0.020	5	0.01533	95.2	75-125	0			

MSD Sample ID: **16121051-08CMSD** Units: **mg/L** Analysis Date: **12/20/2016 10:18 A**
Client ID: **COL-GW-07** Run ID: **LACHAT2_161220C** SeqNo: **4210555** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate-Nitrite	4.751	0.013	0.020	5	0.01533	94.7	75-125	4.774	0.483	20	

The following samples were analyzed in this batch:

16121051-07C	16121051-08C	16121051-09C
16121051-10C		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202862** Instrument ID **WETCHEM** Method: **SW9034**

MBLK Sample ID: **MB-R202862-R202862** Units: **mg/L** Analysis Date: **12/20/2016 03:00 PM**

Client ID: Run ID: **WETCHEM_161220U** SeqNo: **4211035** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	0.13	1.0								

LCS Sample ID: **LCS-R202862-R202862** Units: **mg/L** Analysis Date: **12/20/2016 03:00 PM**

Client ID: Run ID: **WETCHEM_161220U** SeqNo: **4211036** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	8.52	0.13	1.0	10.75	0	79.3	60-140	0			

The following samples were analyzed in this batch: 16121051-01D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R202949B** Instrument ID **WETCHEM** Method: **SW9034**

MBLK Sample ID: **MBLK-R202949B** Units: **mg/L** Analysis Date: **12/21/2016 09:30 A**

Client ID: Run ID: **WETCHEM_161221M** SeqNo: **4213649** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	0.13	1.0								

LCS Sample ID: **LCS-R202949B** Units: **mg/L** Analysis Date: **12/21/2016 09:30 A**

Client ID: Run ID: **WETCHEM_161221M** SeqNo: **4213650** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	8.76	0.13	1.0	10.75	0	81.5	60-140	0			

The following samples were analyzed in this batch: 16121051-07D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R203003** Instrument ID **WETCHEM** Method: **SW9034**

MBLK Sample ID: **MB-R203003-R203003** Units: **mg/L** Analysis Date: **12/22/2016 09:00 A**
Client ID: Run ID: **WETCHEM_161222H** SeqNo: **4215229** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	0.13	1.0								

MBLK Sample ID: **MB-R203003-R203003** Units: **mg/L** Analysis Date: **12/22/2016 09:00 A**
Client ID: Run ID: **WETCHEM_161222H** SeqNo: **4215280** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	0.13	1.0								

MBLK Sample ID: **MB-R203003-R203003** Units: **mg/L** Analysis Date: **12/22/2016 09:00 A**
Client ID: Run ID: **WETCHEM_161222H** SeqNo: **4215283** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	U	0.13	1.0								

LCS Sample ID: **LCS-R203003-R203003** Units: **mg/L** Analysis Date: **12/22/2016 09:00 A**
Client ID: Run ID: **WETCHEM_161222H** SeqNo: **4215230** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	8.76	0.13	1.0	10.75	0	81.5	60-140	0			

LCS Sample ID: **LCS-R203003-R203003** Units: **mg/L** Analysis Date: **12/22/2016 09:00 A**
Client ID: Run ID: **WETCHEM_161222H** SeqNo: **4215281** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	8.76	0.13	1.0	10.75	0	81.5	60-140	0			

LCS Sample ID: **LCS-R203003-R203003** Units: **mg/L** Analysis Date: **12/22/2016 09:00 A**
Client ID: Run ID: **WETCHEM_161222H** SeqNo: **4215284** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	8.76	0.13	1.0	10.75	0	81.5	60-140	0			

MS Sample ID: **16121051-08DMS** Units: **mg/L** Analysis Date: **12/22/2016 09:00 A**
Client ID: **COL-GW-07** Run ID: **WETCHEM_161222H** SeqNo: **4215232** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	16.56	0.13	1.0	21.5	0	77	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R203003** Instrument ID **WETCHEM** Method: **SW9034**

MSD Sample ID: **16121051-08DMSD** Units: **mg/L** Analysis Date: **12/22/2016 09:00 A**

Client ID: **COL-GW-07** Run ID: **WETCHEM_161222H** SeqNo: **4215233** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	16.32	0.13	1.0	21.5	0	75.9	50-150	16.56	1.46	30	

The following samples were analyzed in this batch:

16121051-08D	16121051-09D	16121051-10D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R203013A** Instrument ID **TOC3** Method: **SW9060A**

MBLK Sample ID: **MBLK-R203013A** Units: **mg/L** Analysis Date: **12/21/2016 01:49 PM**

Client ID: Run ID: **TOC3_161221A** SeqNo: **4215428** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	0.126	0.039	0.50								J

LCS Sample ID: **LCS-R203013A** Units: **mg/L** Analysis Date: **12/21/2016 01:49 PM**

Client ID: Run ID: **TOC3_161221A** SeqNo: **4215429** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	5.117	0.039	0.50	5	0	102	91-110	0			

The following samples were analyzed in this batch: 16121051-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R203206A** Instrument ID **TOC3** Method: **SW9060A**

MBLK Sample ID: **MBLK-R203206A** Units: **mg/L** Analysis Date: **12/27/2016 01:01 PM**
Client ID: Run ID: **TOC3_161227A** SeqNo: **4220520** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	0.04	0.039	0.50								J

LCS Sample ID: **LCS-R203206A** Units: **mg/L** Analysis Date: **12/27/2016 01:01 PM**
Client ID: Run ID: **TOC3_161227A** SeqNo: **4220521** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	5.103	0.039	0.50	5	0	102	91-110	0			

MS Sample ID: **16121051-08CMS** Units: **mg/L** Analysis Date: **12/27/2016 01:01 PM**
Client ID: **COL-GW-07** Run ID: **TOC3_161227A** SeqNo: **4220524** Prep Date: DF: **4**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	25.03	0.16	2.0	20	4.708	102	87-120	0			

MSD Sample ID: **16121051-08CMSD** Units: **mg/L** Analysis Date: **12/27/2016 01:01 PM**
Client ID: **COL-GW-07** Run ID: **TOC3_161227A** SeqNo: **4220525** Prep Date: DF: **4**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	25	0.16	2.0	20	4.708	101	87-120	25.03	0.112	10	

The following samples were analyzed in this batch:

16121051-07C	16121051-08C	16121051-09C
16121051-10C		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, Inc.
Work Order: 16121051
Project: SSW Collis Dec 2016 Qtrly GW 02028018 task2

QC BATCH REPORT

Batch ID: **R203608** Instrument ID **IC4** Method: **SW9056A**

MBLK Sample ID: **CCB/MBLK-R203608** Units: **mg/L** Analysis Date: **1/4/2017 12:13 AM**
Client ID: Run ID: **IC4_170103B** SeqNo: **4231409** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	U	0.41	1.0								

LCS Sample ID: **LCS-R203608** Units: **mg/L** Analysis Date: **1/4/2017 12:33 AM**
Client ID: Run ID: **IC4_170103B** SeqNo: **4231410** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	9.248	0.41	1.0	10	0	92.5	85-110	0			

MS Sample ID: **16121051-08B MS** Units: **mg/L** Analysis Date: **1/4/2017 01:27 PM**
Client ID: **COL-GW-07** Run ID: **IC4_170103B** SeqNo: **4231438** Prep Date: DF: **20**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	278.3	8.1	20	200	67.76	105	75-125	0			

MSD Sample ID: **16121051-08B MSD** Units: **mg/L** Analysis Date: **1/4/2017 01:48 PM**
Client ID: **COL-GW-07** Run ID: **IC4_170103B** SeqNo: **4231439** Prep Date: DF: **20**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	276.1	8.1	20	200	67.76	104	75-125	278.3	0.797	20	

The following samples were analyzed in this batch:

16121051-01B	16121051-07B	16121051-08B
16121051-09B	16121051-10B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511 | Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 42153

Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

ALS Project Manager: | ALS Work Order #: 1612105

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	SSW Collis Dec 2016 Qtrly GW	A	VOCs
Work Order		Project Number	02028018 task 2	B	1,4-Dioxane (8260SIM)
Company Name	BB&E, LLC	Bill To Company	BB&E, LLC	C	Cl, SO4, Dissolved Fe & Mn
Send Report To	KVB/KDP/Cindy Lang	Invoice Attn	Kacie Van Buskirk	D	Nitate/Nitrite
Address	235 East Main Street Suite 107	Address	235 East Main Street Suite 107	E	Sulfide
				F	Methane, Ethane, and Ethene
City/State/Zip	Northville, MI 48167	City/State/Zip	Northville, MI 48167	G	TOC
Phone	(248) 489-9636	Phone	(248) 489-9636	H	
Fax	(248) 489-9646	Fax	(248) 489-9646	I	
e-Mail Address	Katrice/Kacie/Cindy	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	COL-GW-01	12/13/16	1355	GW	1,3,4	11	X	X	X	X	X	X	X				
2	COL-GW-02	12/13/16	1440	GW	1	3	X										
3	COL-GW-03	12/13/16	1510	GW	1	3	X										
4	COL-GW-04	12/14/16	1441	GW	1	3	X										
5	COL-GW-05	12/14/16	1441	GW	1	3	X										
6	COL-FB-01	12/14/16	1441	GW	1	3	X										
7	COL-GW-06	12/14/16	1653	GW	1,3,4	11	X	X	X	X	X	X	X				
8	COL-GW-07	12/15/16	1015	GW	1,3,4	11	X	X	X	X	X	X	X				
9	COL-GW-08	12/15/16	1015	GW	1,3,4	11	X	X	X	X	X	X	X				
10	COL-GW-07 MS/MSD	12/15/16	1015	GW	1,3,4	11	X	X	X	X	X	X	X				

Sampler(s) Please Print & Sign: Katrice Degen, Kat Degen

Shipment Method: FedEx

Turnaround Time in Business Days (BD): ☐ 10 BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD ☒ Other Standard

Results Due Date:

Relinquished by: Katrice Degen | Date: 12/15/16 | Time: 1800 | Received by:

Relinquished by: | Date: 12/19/16 | Time: 930 | Received by (Laboratory): [signature]

Logged by (Laboratory): MB | Date: 12/19/16 | Time: 1100 | Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp
	2.6
	SL2 pH2

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Date ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other _____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2012 by ALS Environmental.

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511 | Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168
Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page 2 of 2

COC ID: 42152

ALS Project Manager:

ALS Work Order #: 1C0121051

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	SSW Collis Dec 2016 Qtrly GW	A	VOCs
Work Order		Project Number	02028018 task 2	B	1,4-Dioxane (8260SIM)
Company Name	BB&E, LLC	Bill To Company	BB&E, LLC	C	Cl, SO4, Dissolved Fe & Mn
Send Report To	KVB/KDP/Cindy Lang	Invoice Attn	Kacie Van Buskirk	D	Nitate/Nitrite
Address	235 East Main Street Suite 107	Address	235 East Main Street Suite 107	E	Sulfide
				F	Methane, Ethane, and Ethene
City/State/Zip	Northville, MI 48167	City/State/Zip	Northville, MI 48167	G	TOC
Phone	(248) 489-9636	Phone	(248) 489-9636	H	
Fax	(248) 489-9646	Fax	(248) 489-9646	I	
e-Mail Address	Katrice/Kacie/Cindy	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	COL-FB-02	12/15/16	1015	GW	1,3,4	11	X	X	X	X	X	X	X				
2	COL-GW-04	12/15/16	1130	GW	1	3	X										
3	COL-GW-10	12/15/16	1330	GW	1	3	X										
4	COL-PW-01	12/15/16	1445	GW	1	6	X	X									
5	COL-GW-11	12/15/16	1530	GW	1	3	X										
6	COL-GW-12	12/15/16	1705	GW	1	3	X										
7	COL-TB-01	12/15/16	—	W	1	1	X										
8																	
9																	
10																	

Sampler(s) Please Print & Sign: [signature]

Shipment Method: Fedex

Turnaround Time in Business Days (BD): ☐ 10 BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD ☑ Other STANDARD

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
[signature]	12/15/16	1800	
Relinquished by:	Date:	Time:	Received by (Laboratory):
	12/19/16	930	[signature]
Logged by (Laboratory): MB	Date: 12/19/16	Time: 1100	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp
	2C
	SR2 pH2

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Date ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2012 by ALS Environmental.

ALS Group, USA

Sample Receipt Checklist

Client Name: **BBE** Date/Time Received: **19-Dec-16 09:30**

Work Order: **16121051** Received by: **MBB**

Checklist completed by Meghan Broadbent (eSignature) 19-Dec-16 (Date) Reviewed by: Joseph Ribar (eSignature) 19-Dec-16 (Date)

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.6/2.6	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	12/19/2016 11:21:00 AM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ATTACHMENT B
DRILLING LOG AND WELL TEST DATA

DATE STARTED 7/17/62 DATE COMPLETED 11/23/62

TOTAL DEPTH 1633'

LOCATION Collis Plant, Clinton, Iowa

DIAMETERS: 24" Surface to 40'
17" from 40' to 404'
12" from 404' to 832'
10" from 832' to 1633'

CASING RECORD: 18" O.D. pipe with shoe from surface to 40'
12" I.D. pipe surface to 404'(50 lb. per foot) cement grouted in place w/403 bags cement.
10" I.D. liner from 719'3" to 832' w/shoe on top.

STRATA RECORD

From	To	Thickness	Description of Beds
0	10	10	No record
10	12	2	Lime, mud, rock
12	14	2	Brown lime
14	21	7	Lime
21	45	24	Yellow lime
45	55	10	Lime
55	67	12	Yellow lime
67	80	13	Lime-crevices 75 to 80'
80	84	4	Lime-some shale streaks
84	90	6	Lime-crevices
90	95	5	Lime
95	105	10	Lime-crevices
105	110	5	Brown lime-broken
110	120	10	Brown lime
120	139	19	Gray lime
139	146	7	White lime
146	164	18	White lime-hard
164	167	3	White lime-shale streak
167	290	123	Shale-top of shale at 167'
290	295	5	Shale w/lime shells
295	325	30	Shale
325	328	3	Shale-getting tough
328	330	2	Lime-very hard
330	345	15	Lime-shale streaks
345	365	20	Lime-shale breaks
365	385	20	Lime-broken shale
385	396	11	Shale w/ lime streaks
396	404	8	Lime-very hard
404	448	44	Brown lime
448	475	27	Lime-sandy
475	564	89	Brown lime
564	605	41	Brown sandy lime

COLLIS CO. CLINTON, IOWA

Pump Air into Gauge 11-12-70
Inside Reading-65
Outside Reading-270

From	To	Thickness	Description of Beds
605	696	91	Brown lime-hard
696	700	4	Brown lime & dolomite
700	714	14	Blue lime-hard
714	730	16	Gray lime-very hard
730	736	6	Shale-top of shale at 730'
736	745	9	Green shale
745	748	3	Sand & shale
748	795	47	Sand
795	800	5	Shale
800	810	10	Lime-hard
810	940	130	Lime-brown-hard
940	962	22	Sandy lime
962	1005	43	Lime-very hard
1005	1036	31	Lime, dolomite, chert-hard
1036	1040	4	Sandy white lime
1040	1070	30	Lime, dolomite-very hard
1070	1117	47	Lime-hard
1117	1261	144	Gray lime-very hard
1261	1287	27	Gray lime-sandy-hard
2187	1327	40	Brown lime-hard
1327	1347	20	Brown lime-sandy
1347	1385	38	Brown lime
1385	1393	8	Pink lime
1393	1398	5	Brown lime
1398	1409	11	Lime w/shale streaks
1409	1425	16	Gray shale
1425	1430	5	Shale w/lime streaks
1430	1479	49	Lime-some shale
1479	1499	20	Lime & pink shale
1499	1633	134	Sand-hard

STATIC WATER LEVELS

From	To	Level
0	55	No record
55	475	15'
475	1633	140'
		146' after drilling was completed and the hole was bailed.

Pump air into Gauge 10-12-78
inside Reading 25
outside Reading 230

VAI NER WELL & PUMP CO.

DEEP WELL PUMP INSTALLATION SHEET

By Harlan Shireman

Date December 12, 1962

Customer Name Collins Mfg. Co. Mail Address

City Clinton, Iowa Person In Charge Harold Bussing

WELL DETAIL

Well No. 1 Well Depth 1617' Casing Size at Top 12" 1st Reduction 10" liner at 719'3"

Static Level 145' Pumping Level Drawdown G.P.M. G.P.F. D.D.

PUMP DESCRIPTION

Pump Setting 240' Pump Capacity 350 GPM Head Design of Pump 342'

Pump Serial Number 146395 Pump Manufacturer Peerless

Motor Mfg. Fairbanks-Morse Motor Serial No. F446684 Frame No. 365UP Thrust Brg. A01312

Radial Brg. A02220 Horsepower 40 Type KZKV3 Volts 220/440 Phase 3

Cycle 60 R.P.M. 1765 Spec. 1450-1

Discharge Head Type Size 8x8x16½ Peer. std. Discharge Flange 6" Top Column Flg. 6" tsped

Column Size O.D. 6-5/8" Column Kind Water Lube Column Coated yes X & No.

Tube Size O.D. Tube Kind Tube Coated Yes No

Shaft Size 1-3/16" Shaft Kind S.S. & ~~CS~~ sleeved Cplg. Size 1-3/16" Cplg. Kind S.S. & C.S.

Suction Size O.D. 6-5/8" Suction Length 10' Suction Kind Coated Yes X No

Airline Size ¼" Nylon Airline Length 240' Gauge—Direct Reading X Altitude

REMARKS: 1-3/16" head shaft 101"

PUMP BOWL DESCRIPTION

Stages 12 Type 10 1A R.P.M. 1760 Bronze C.I. X

Sheet No. 2812565 Curve No. 1 Trim Imp. No. T84391 Bowl No. T84221

G.P.M.	Head	Efficiency	B.H.P.	
				Laboratory
				Losses
				Field
Motor Eff.	Overall			

VARNER WELL & PUMP CO.

DUBUQUE, IOWA

WELL TEST DATA SHEET

Job: Collis Co.

Location: Clinton, Iowa

Date tested: January 3, 1963

Tested by: A. Shireman & E. Teal

Dia. of well: 12" to 719' - 10" bottom

Pump used:

Driver: 40 hp F.M.

Depth of well: 1633'

Column and shaft: 240'-6" x 1-3/16"

Length of airline: 240'

Bowls:

Non-pumping level: 146'

Manufacturer:

Orifice size: 6" x 4"

Serial No.:

TIME	PIZOMETER READING (IN.)	G. P. M.	AIR GAUGE READING (FEET)	PUMPING LEVEL	DRAWDOWN	DISCH. PRESSURE LBS.	DISCH. PRESSURE FEET	TOTAL PUMPING HEAD	° TEMP. F	REMARKS
7:00AM	0	0	94		0		0			START OF TEST
7:30										Started
7:45	16"	253	58	182	36		Amps	95-95-96		Milky
8:00	16	253	57	183	57				59½	Milky
30	15-5/8	250	56	184	38				60	Milky
9:00	15-3/4	252	56	184	38			95a	60.5	Almost clear
9:30	15-5/8	290	56	184	38		Opened	valve	60.5	Clear
10:00	22	298	46	194	48			98a	60.5	Clear
10:30	22	298	46	194	48			99a		Clear
11:00	22+	298	46	194	48			Some sand	60.5	Clear
11:30	22+	298	46	194	48		Opened	valve		Clear
Noon 12:00	40	400	24	216	70			94a		Milky
12:30	40-	400-	22	218	72		Some	fine sand	60.5	Milky
1:00	39-3/4	400-	22	218	72		Changed	gauge		Clear
1:30	39-3/4	400-	21	219	73		Opened	valve	60.5	Clear
2:00	43-3/4	420		223	77				60.5	Clear
2:30	43-1/2	418		224	78				60.5	Clear
00	43-1/2	418		224	78				60.5	Clear
3:30	43-1/2	418		224	78		Shut	down valve	60.5	Clear
4:00	29-3/4	350		214	68				60.5	Clear

VARNER WELL & PUMP CO.

DUBUQUE, IOWA

WELL TEST DATA SHEET

Job Collis Co.

Location Clinton, Iowa

Date tested January 3, 1963

Tested by H. Shireman & S. Teal

Dia. of well 12" to 719'-10" Bottom

Depth of well 1633'

Length of airline 240'

Non-pumping level 146'

Orifice size 6" x 4"

Pump used: Driver 40 hp F.M.

Column and shaft 240'-6" x 1-3/16"

Bowls

Manufacturer

Serial No.

TIME	PIZOMETER READING (IN.)	G. P. M.	AIR GAUGE READING (FEET)	PUMPING LEVEL	DRAWDOWN	DISCH. PRESSURE LBS.	DISCH. PRESSURE FEET	TOTAL PUMPING HEAD	TEMP. °F	REMARKS
	0	0			0		0			START OF TEST
4:30	30	350		212	66				60.5	Clear
5:00	30	350		212	66				60.5	Clear
5:30	30	350		212	66				60.5	Clear
00	30	350		211	65				60.5	Clear
6:30	30	350		211	65				60.5	Clear
7:00	30	350		211	65				60.5	Clear
7:30	30	350		211	65				60.5	Clear
				SHUT DOWN						
Recovery:										
7:35	170'									
7:40	165'									
7:45	160'									

ATTACHMENT C
PUMP INSTALLATION DETAIL SHEETS

VAI_NER WELL & PUM_P CO.

DEEP WELL PUMP INSTALLATION SHEET

By Harlan Shireman

Date December 12, 1962

Customer Name Collis Mfg. Co. Mail Address

City Clinton, Iowa Person in Charge ~~Harold Bassing~~ Roy Wright

WELL DETAIL

Well No. 1 Well Depth 1617' Casing Size at Top 12" 1st Reduction 10" liner at 719'3"

Static Level 146' Pumping Level Drawdown G.P.M. G.P.F. D.D.

PUMP DESCRIPTION

Pump Setting 240' Pump Capacity 350 GPM Head Design of Pump 342'

Pump Serial Number 146395 Pump Manufacturer Peerless

Motor Mfg. Fairbanks-Morse / Motor Serial No. F446684 Frame No. 365UP Thrust Brg. A01312

Radial Brg. A32220 Horsepower 40 Type KZKV3 Volts 220/440 Phase 3

Cycle 60 R.P.M. 1765 SPes. 1450-1

Discharge Head Type Size 8x8x16½ Peer. std. Discharge Flange 6" Top Column Flg. 6"

Column Size O.D. 6-5/8" Column Kind Water Lube Column Coated yes X & taped / No.

Tube Size O.D. ---- Tube Kind ------ Tube Coated Yes ---- No ----

Shaft Size 1-3/16" Shaft Kind S.S. & sleeved ~~CS~~ Cplg. Size 1-3/16" Cplg. Kind S.S. & C.S.

Suction Size O.D. 6-5/8" Suction Length 10' Suction Kind Coated Yes X No

Airline Size ¼" Nylon Airline Length 240' Gauge—Direct Reading X Altitude

REMARKS: 1-3/16" head shaft 101"

PUMP BOWL DESCRIPTION

Stages 12 Type 10 LA R.P.M. 1760 Bronze C.I. X

Sheet No 2812565 Curve No. 1 Trim Imp. No. T84391 Bowl No. T84221

G.P.M.	Head	Efficiency	B.H.P.	
				Laboratory
				Losses
				Field
Motor Eff.	Overall			

MILLER WELL AND PUMP CO.
MILWAUKEE, WIS. WAUSAU, WIS.

VARNER WELL AND PUMP CO.
WELL CONTRACTORS SINCE 1906
DUBUQUE, IOWA

J. P. MILLER ARTESIAN WELL CO.
BROOKFIELD, ILLINOIS

DEEP WELL PUMP INSTALLATION SHEET

By Jim Sass

Date 8/30/76

Customer Name Collis Company Mail Address

City Clinton, Iowa Person in Charge Bob Wright

WELL DETAIL

Well No. 1 Well Depth 1633 Casing Size at Top 12" 1st Reduction 719'-10"

Static Level 256' Pumping Level 305 Drawdown G.P.M. 450 G.P.F. D.D.

PUMP DESCRIPTION

Pump Setting 345' Pump Capacity 400 Head Design of Pump 426

Pump Serial Number Pump Manufacturer Peerless

Motor Mfg. U.S. Motor Serial No. Frame No. 365 Thrust Brg.

Radial Brg. Horsepower 60 Type RU Volts 220/460 Phase 3

Cycle 60 R.P.M. 1800

Discharge Head Type F-M Size 8x8x16½ Discharge Flange 8" Top Column Flg. 6"

Column Size O.D. 6" Column Kind T & C Column Coated yes No. X

Tube Size O.D. 2" Tube Kind Peerless Tube Coated Yes Taped No

Shaft Size 1-3/16" Shaft Kind C.S. Cplg. Size 1-3/16" Cplg. Kind C.S.

Suction Size O.D. 6" Suction Length 20' Suction Kind T & C Coated Yes No

Airline Size ¼" Airline Length 345' Gauge—Direct Reading X Altitude

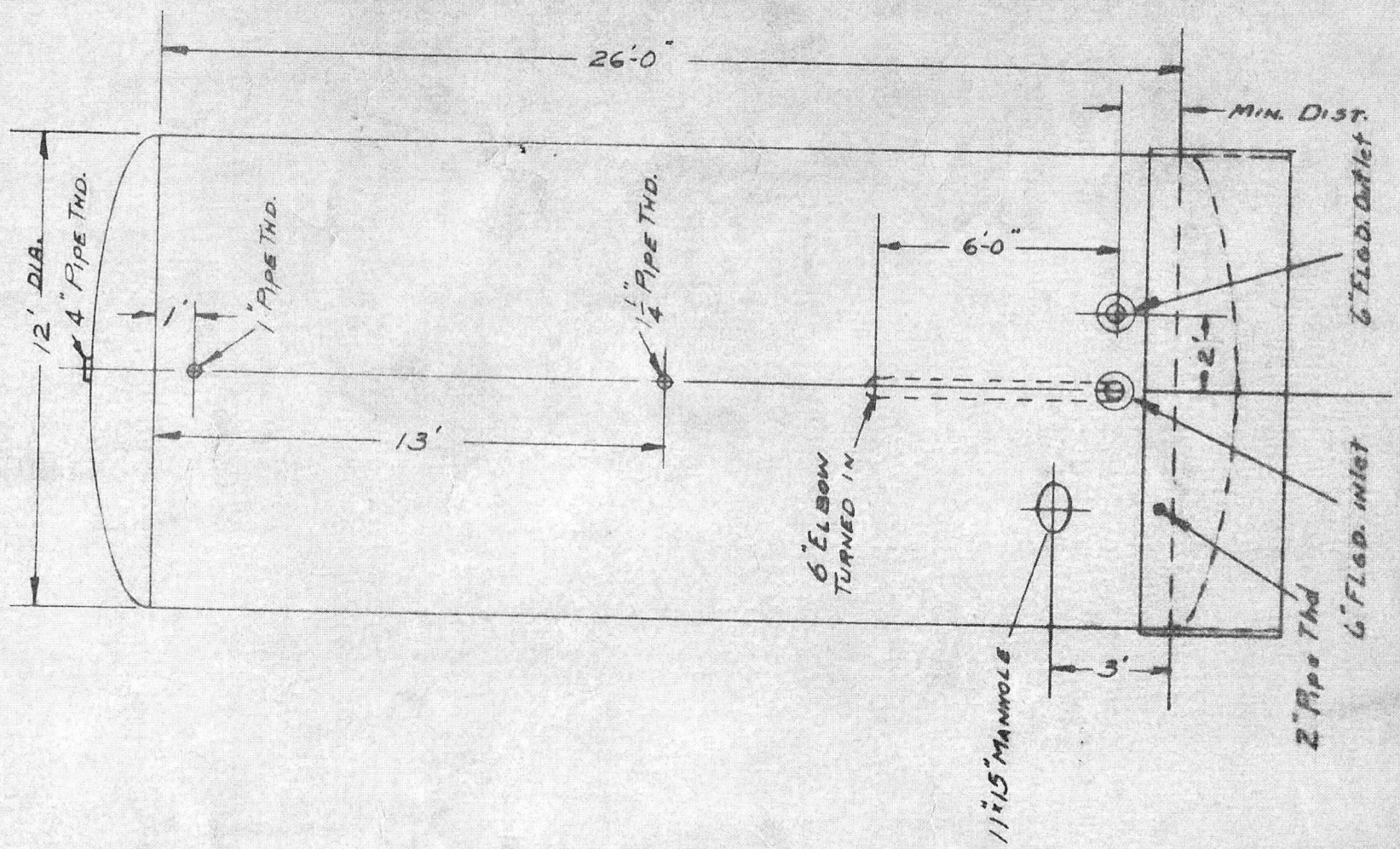
REMARKS:

PUMP BOWL DESCRIPTION

Stages 10 Type 10LB R.P.M. 1760 Bronze C.I. X

Sheet No. 2842669 Curve No. 1 Trim No Imp. No. 2625032 Bowl No. 2625030

G.P.M.	Head	Efficiency	B.H.P.	
400	426	81	53.1	Laboratory
350	477	80	52.7	Losses
				Field
Motor Eff.	Overall			



DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
FRACTIONAL DIMENSIONS ± 1/32
ANGLE DIMENSIONS ± 1/2 DEGREE
DECIMALS AS SPECIFIED

				MODEL	REQ'D	MATERIAL–
E						
D						
C						20,000 Gal. ASME Code Tank 125# W.P.
B						
A						

THE COLLIS COMPANY
MANUFACTURERS — CLINTON, IOWA

DR.	DATE	A-297
CH.	SCALE	

DIETZGEN NO. 199M AGEPROOF

ATTACHMENT D
RECOMMENDATION LETTER FOR A REPLACEMENT PUMP

VARNER WELL AND PUMP CO. *Established 1906*

WATER WELLS - DEEP WELL PUMPS - WELL REPAIRS - SOUNDINGS

Contractors

TELEPHONE: AREA CODE 319 583-8226
P. O. BOX 237 — 121 E. 4TH STREET
DUBUQUE, IOWA 52001

September 11, 1975

Collis Co.
Clinton, IA 52732

ATTN: Virgil Showerman

Gentlemen:

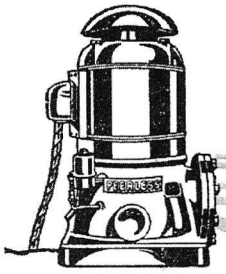
We are writing in regards to the recent remedial work performed by Varner Well and Pump Co. on your deep well and pump. We find the following: The well had an original static level of 145'. In April, 1975, the static level was 213', and in August the static level was 222'. The present bowl was designed for 400 GPM at 344' total head with a 42.7 brake horsepower load. Presently this bowl is producing approximately 350 GPM. It is the writer's opinion that static levels will continue to drop in the deep sandstone aquifer in the Clinton area, expecially at your plant, due to the close proximity to Clinton Water Works Well #9. We make the following recommendations.

We recommend that Collis Co. purchase a new bowl assembly designed to pump 400 GPM at 420' of head.

We also recommend that Collis Co. purchase a new 60 H.P. vertical hollowshaft motor.

By purchasing this new equipment, we would be able to pump the required demands of your plant for the foreseeable future. We could provide this service for the lump sum of $4,780.00. This would include the new bowl assembly, 60 H.P. motor, new head shaft required, and all labor. If a new motor was purchased at this time, it would save the expense of repairing your present 40 H.P. motor. This savings would be the $300 to $400 which

CONTINUED



would be required presently to remove the motor and install the two new thrust bearings.

Trusting that our recommendations will receive your serious consideration, we remain,

Yours truly,

VARNER WELL AND PUMP CO.

James Sass

James Sass
Geologist

mw

ATTACHMENT E
LETTER ADDRESSED TO THE CHAIRMAN SEWER COMMITTEE

48

Resolution

Whereas the Chamberlain Manufacturing Corp., Collis Division, has requested a credit for sewer rental billings in August and September, 1975 for process water not discharged to the City sewer system, and

WHEREAS the Sewer Committee has investigated this matter and recommended that said request be denied, but further recommended that any future similar billings be reduced when said company provides a means to measure the volume of sewage discharged to the City sewer system, therefore

Be it resolved by the City Council of the City of Clinton, Iowa, that said report is hereby approved, and

BE IT FURTHER RESOLVED THAT any future sewer rental billings be based on actual volumes of wastewater discharged to the City system when said company installs metering equipment to measure said discharge or water supply.

RECEIVED
APR 8 1976
THE COLLIS COMPANY
CLINTON, IOWA

Adopted APR 5 1976 19__ R E Meyers, Mayor

Copy To Collis

Chamberlain

Chamberlain Manufacturing Corporation
Collis Division
2005 South 19th Street
P. O. Box 231, Clinton, Iowa 52732
Telephone (319) 242-7731
Telex 468-493

January 22, 1976

Thomas F. Kennedy
Chairman Sewer Committee
City Council,City Hall
Clinton, Iowa

Dear Councilman Kennedy:

In the normal operation of its business Chamberlain Manufacturing Corp., Collis Division, uses City water for drinking water and sanitary use only. This water is then discharged into the City sewer. During the month of April, May, June and July of 1975, we used an average of 177 C cu. ft. of water per month.

Collis Division has its own well to furnish very large volumnes of water used in its electroplating department. This water is pumped from the wells into the plating department and then into our water treatment system and then flows into the drainage ditch which flows into Mill Creek. This water of course never sees the City sewer.

During the month of August and September we had some maintenance problems with the well and had to use City water during this period for our plating department. This water was then discharged through our normal water treatment system and into Mill Creek. Our water usage for August was 4,272 C cu. ft and for September it was 2,410 C cu. ft. We feel that the excess water above 177 C cu. ft. per month all went into our water treatment system and did not go into the City sewer. Because of the present sewer regulations Collis was charged at a rate of 65 cents per C cu. ft. for all of the water and this is normal procedure, since most water used does go into the sewer.

We feel that these sewer charges are excessive and we would appreciate an opportunity to review these charges with you and anyone else that you feel necessary to resolve this problem.

On the following page is a chart showing the facts which I have mentioned above and the excess costs which we were charged in August and which we expect will be charged for September.

Chamberlain Manufacturing Corporation
Collis Division
2005 South 19th Street
P. O. Box 231, Clinton, Iowa 52732
Telephone (319) 242-7731
Telex 463-493

	Average / Mo. April thru July	August	September
Usage (C cu. ft.)	177	4,272	2,410
Cost at .65/C cu. ft.	$115	$2,777.	$1,567.
Excess Cost Above average	____	$2,662.	$1,452.

Please advise as to when we can get together and discuss this situation.

Sincerely,

R. A. Bell
Division Vice President

cc - Bruce Johanson, City Attorney
Ed Piehl, Manager Data Processing

RAB/ks

ATTACHMENT F
LETTER FROM THE IOWA DEPARTMENT OF NATURAL RESOURCES

Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

Monday, August 25, 2014

Water Use Permit: 1290

Collins
~~COLLINS~~ INC CLINTON DIV
MARK STEELE
PO BOX 2962
CLINTON IA, 52733-2962

Dear Sir or Madam,
As part of an effort to obtain more accurate information on the Jordan aquifer in Iowa, the Iowa Department of Natural Resources (IDNR) is completing an inventory of all Water Use wells utilizing the Jordan aquifer in Iowa.

According to IDNR Water Use records, your facility has one active water use well currently utilizing the Jordan Formation, the Prairie du Chien Group, or the St. Lawrence Formation aquifer(s). These geologic formations are collectively identified as the "Jordan aquifer" as per IAC 567 Chapter 52.4(3). Included with this letter is a map, table, and form listing the information IDNR has regarding your wells. We request that you verify and, if needed, correct any flawed information from the Water Use program database, as populated on the enclosed document.

Of primary significance are 1) accurate well locations, 2) accurate well depths, 3) recent static and pumping water levels, 4) pump yield, and 5) well construction information. The information this survey yields is intended to help IDNR Water Use Program permit functions, as well as assisting other local, state and federal agencies to better understand and manage the Jordan aquifer for the benefit of the citizens of Iowa.

We also request information regarding the type of seal used in each of your submersible well pump motors. There are environmental concerns with the use of mercury seals in well pump installations. The mercury from these seals can be spilled when a seal fails or when pump maintenance is being performed. This causes both groundwater and soil contamination and requires additional actions by you and state and federal regulators. The cost of cleanup for a mercury spill can be very expensive, particularly in deep wells. There are alternatives to mercury seals and nationwide. Please help reduce your liability and provide protection to the water supply by replacing your mercury seals with safe, modern mechanical seals.

Please complete and/or correct the attached document and return it to the IDNR in the included self- addressed stamped envelope no later than September 30, 2014.

Contact myself or Deb Williams at deborah.williams@dnr.iowa.gov, 515-725-0290, if you have any questions.

Thank you,

Chad Fields

Chad Fields
chad.fields@dnr.iowa.gov
Phone 515-725-3407

ATTACHMENT G
FIELD NOTES

DAY 4 12/15/16 4 of

Cal check equipment
0800 KVB/KMD onsite
0950 Commence purge @ MW-34
1015 Sampled COL-GW-07, COL-GW-08 (Dupes), COL-GW-07 MS/MSD, COL-GW-02, for MNA, 1,4-Dioxane, VOCs,
1120 Commence purge @ MW-38
1130 Sampled COL-GW-09 for VOCs
1305 Commence Purge @ MW-43
1330 Sampled COL-GW-10 for VOCs
1445 Sampled the Deep well for VOCs and 1-4, dioxane named COL-PW-01.
1450 Commence purge @ MW50s
1530 Sampled COL-GW-11 for VOCs.
1610 Commence purge @ MW50
1705 Sampled COL-GW-12 for VOCs
1800 Cal Check equipment
Package all samples to send via Fedex

BB&E

235 E. Main St, Suite 107
Northville, MI 48167
248.489.9636