13530 Dulles Technology Drive
Suite 300
Herndon, VA 20171
Main: 703-742-5700
wspgroup.com/usa
pbworld.com/usa

VIA FEDERAL EXPRESS

March 8, 2016

Erich Weissbart, P.G.
Land and Chemicals Division
U.S. Environmental Protection Agency, Region III
701 Mapes Road
Fort Meade, MD 20755

Re: Quarterly Status Report No. 8
Former Kop-Flex Facility Site, Hanover, Maryland

Dear Erich:

On behalf of EMERSUB 16 LLC, a subsidiary of Emerson Electric Co., WSP Corp. is submitting this status report describing the investigation and remediation activities conducted in the fourth quarter 2015 at and near the former Kop-Flex, Inc. facility property in Hanover, Maryland. The report also describes the activities planned for the first quarter 2016. If you have any questions, please do not hesitate to contact us at 703-709-6500.

Sincerely yours,

Robert E. Johnson, PhD.
Senior Technical Manager

REJ:kjb
k:\emerson\kop-flex\reporting\status reports\mde reports\2016\progress report 8\3705_030816_kopflex_progress_rpt_8_final

cc: Mr. Stephen Clarke, Emerson Electric Co. (Electronic copy only)
Ms. Richelle Hanson, Maryland Department of the Environment
Mr. Raymond Goins, Trammell Crow Company (Electronic copy only)

Progress Report No. 8

Former Kop-Flex Facility

October 2015 through December 2015

Site Name:	Former Kop-Flex Facility
Site Address:	7565 Harmans Road Hanover, Maryland 21076
Consultant:	WSP Corp.
Address:	13530 Dulles Technology Drive, Suite 300 Herndon, Virginia 20171
Phone No.:	(703) 709-6500
Site Coordinator:	Eric Johnson
Alternate:	Jim Bulman

1.0 Onsite Activities

The following activities were conducted during the Fourth Quarter 2015.

- The Maryland Department of Environment (MDE) approved the revised Response Action Plan (RAP), Revision 2.0, in an October 9, 2015, correspondence to EMERSUB 16, LLC (EMERSUB 16) and TC Harmans Road, LLC. Upon MDE approval of the revised RAP, EMERSUB 16 increased the amount of the existing performance bond (No. 104775256) for the response action activities at the site from $65,000 to $225,000.

- WSP and EMERSUB 16 initiated discussions with representatives of Williams Scotsman Inc. and Verizon, who own the properties to the east and north of the site, respectively, to obtain the necessary access to conduct groundwater profiling and well installation activities in accordance with the approved RAP.

- WSP and its subcontractors started preparing the detailed engineering design for the hydraulic containment systems to be implemented as part of the site response action. In December 2015, a geotechnical investigation was conducted to evaluate the subsurface conditions in the area of the proposed building for the treatment equipment.

2.0 Offsite Activities

- On October 9, 2015, a water sample was collected from the potable well at 7740 Twin Oaks Road. This well is included in the semi-annual residential well monitoring program, however, it was not sampled in September 2015 with other residential wells in the monitoring program due to the inability to arrange access with the homeowner.

  The analytical results for this well sample were received the week of October 18th, 2015. A copy of the laboratory analytical report is included in Enclosure A. Trace to very low levels of site-related chlorinated volatile organic compounds (VOCs) and 1,4-dioxane were detected in the sample, with concentrations comparable to data from previous sampling events. None of the chlorinated VOCs detected in the sample were above the applicable groundwater quality standards. In addition, the 1,4-dioxane concentration was below the risk-based level in drinking water developed by MDE.

- MDE approved the revised Offsite Groundwater Monitoring Plan, Revision 1.0, in an October 13, 2015, correspondence Emerson Electric Co.

- Pursuant to a request from MDE, WSP developed a website for the Former Kop-Flex Facility Site as part of the community involvement plan. The website (http://www.formerkopflexhanovermd.com) was made available to the public in mid-October 2015. As approved by MDE, a flyer notifying local residents of the website's availability was distributed in the Hanover-Severn, Maryland area by WSP staff the weeks of October 18th, 2015, and November 1st, 2015.

- WSP conducted a detailed field reconnaissance and subsurface utility survey at the locations of monitoring wells to be installed in public right-of ways (ROW). The ROW permit application for all five monitoring well locations was submitted to the Anne Arundel County Department of Public Works (AAC DPW) in early January 2016.

3.0 Planned Activities for Next Reporting Period (January 2016 – March 2016)

3.1 Onsite Activities

- Complete the detailed engineering design for the hydraulic containment systems and begin process for selection of a qualified contractor for the system installation. Construction of the remedial system will begin within 90 days of issuance of the necessary permits from AAC and MDE.

- Update the existing Site Health and Safety Plan to include planned construction oversight and operation, maintenance, and monitoring activities, and submit the revised plan to MDE for review.

- Abandon existing monitoring wells and piezometers pursuant to the Groundwater Monitoring Plan in the MDE-approved RAP.

- Execute access agreements with the property owners; then conduct profiling and well installation activities at locations on the Williams Scotsman facility to the east of the site and Verizon facility to the north.

3.2 Offsite Activities

- Communicate with AAC DPW regarding the ROW permit applications for the installation of the additional groundwater monitoring wells.

- Continue the quarterly sampling of the offsite monitoring wells in the residential areas south of Maryland Route 100.

- Collect semi-annual water samples from the following potable wells in the Severn, Maryland area:
  - 7932 Andorick Drive
  - 7740 Twin Oaks Road
  - 854 Reece Road

4.0 Key Personnel/Facility Changes

- There were no changes to key project personnel during the reporting period.

- On February 23, 2016, the former Kop-Flex facility property was conveyed by EMERSUB 16, LLC to TC Harmans Road, LLC. The appropriate permit notifications were provided to the applicable MDE divisions.

Enclosure A – Laboratory Report for October 2015 Residential Well Sample (7740 Twin Oaks Road)

New Jersey
ACCUTEST
LABORATORIES

10/26/15

Technical Report for

WSP

090149-04, Kop-Flex, Hanover, MD

39196

Accutest Job Number: JC5994

Sampling Date: 10/09/15

Report to:

WSP
11190 Sunrise Valley Drive Suite 300
Reston, VA 20190
eric.johnson@wspgroup.com

ATTN: Eric Johnson

Total number of pages in report: **33**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Mayur Patel 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TN, TX, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4 5

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Sample Summary

WSP

Job No: JC5994

090149-04, Kop-Flex, Hanover, MD
Project No: 39196

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC5994-1	10/09/15	11:23	RJW	10/10/15	AQ	Ground Water	RW-7740TO-100915
JC5994-2	10/09/15	11:23	RJW	10/10/15	AQ	Trip Blank Water	TRIPBLANK

Summary of Hits

Job Number: JC5994
Account: WSP
Project: 090149-04, Kop-Flex, Hanover, MD
Collected: 10/09/15

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC5994-1	**RW-7740TO-100915**					
Chloromethane		0.32 J	0.50	0.044	ug/l	EPA 524.2 REV 4.1
1,1-Dichloroethane		0.11 J	0.50	0.039	ug/l	EPA 524.2 REV 4.1
1,1-Dichloroethylene		2.6	0.50	0.054	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane		0.37 J	0.50	0.050	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane		1.4 J	2.0	1.0	ug/l	SW846 8260C BY SIM
JC5994-2	**TRIPBLANK**					
Acetone		2.2 J	5.0	0.91	ug/l	EPA 524.2 REV 4.1

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: RW-7740TO-100915
Lab Sample ID: JC5994-1
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: 090149-04, Kop-Flex, Hanover, MD

Date Sampled: 10/09/15
Date Received: 10/10/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100139.D	1	10/15/15	MD	n/a	n/a	V1B4739
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.035	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.088	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.030	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.074	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.045	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	0.32	0.50	0.044	ug/l	J
95-49-8	o-Chlorotoluene	ND	0.50	0.045	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.073	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	0.11	0.50	0.039	ug/l	J
75-35-4	1,1-Dichloroethylene	2.6	0.50	0.054	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.053	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.078	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.031	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.041	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.067	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.046	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.054	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.046	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-7740TO-100915
Lab Sample ID: JC5994-1
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: 090149-04, Kop-Flex, Hanover, MD

Date Sampled: 10/09/15
Date Received: 10/10/15
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.052	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.034	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.073	ug/l	
110-54-3	Hexane	ND	0.50	0.094	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.062	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.030	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
91-20-3	Naphthalene	ND	0.50	0.084	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.061	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	0.37	0.50	0.050	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.024	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.047	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.035	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.031	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.041	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.057	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l	
	m,p-Xylene	ND	0.50	0.13	ug/l	
95-47-6	o-Xylene	ND	0.50	0.029	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.029	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		78-114%
460-00-4	4-Bromofluorobenzene	96%		77-115%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-7740TO-100915
Lab Sample ID: JC5994-1
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: 090149-04, Kop-Flex, Hanover, MD

Date Sampled: 10/09/15
Date Received: 10/10/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C124119.D	1	10/13/15	PS	n/a	n/a	V3C5669
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	1.4	2.0	1.0	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	113%		36-149%
460-00-4	4-Bromofluorobenzene	113%		34-135%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TRIPBLANK
Lab Sample ID: JC5994-2
Matrix: AQ - Trip Blank Water
Method: EPA 524.2 REV 4.1
Project: 090149-04, Kop-Flex, Hanover, MD

Date Sampled: 10/09/15
Date Received: 10/10/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B100140.D	1	10/15/15	MD	n/a	n/a	V1B4739
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.2	5.0	0.91	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.035	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.088	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.030	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.074	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.045	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.045	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.073	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.053	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.078	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.031	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.041	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.067	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.046	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.054	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.046	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TRIPBLANK
Lab Sample ID: JC5994-2
Matrix: AQ - Trip Blank Water
Method: EPA 524.2 REV 4.1
Project: 090149-04, Kop-Flex, Hanover, MD

Date Sampled: 10/09/15
Date Received: 10/10/15
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.052	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.034	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.073	ug/l	
110-54-3	Hexane	ND	0.50	0.094	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.062	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.030	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
91-20-3	Naphthalene	ND	0.50	0.084	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.061	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.024	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.047	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.035	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.031	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.041	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.057	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l	
	m,p-Xylene	ND	0.50	0.13	ug/l	
95-47-6	o-Xylene	ND	0.50	0.029	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.029	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		78-114%
460-00-4	4-Bromofluorobenzene	94%		77-115%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

New Jersey ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

AO

CHAIN OF CUSTODY

PAGE 1 OF 1

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking # 6255 6349 4282 | Bottle Order Control #
Accutest Quote # | Accutest Job # JC5994

Client / Reporting Information

Company Name: WSP-Parsons BrinckerhoffStreet Address: 13530 Dulles Technology Drive #300
City: Herndon State: VA Zip: 20171
Project Contact: Eric Johnson E-mail: Eric.Johnson@WSPgroup.com
Phone #: 703-709-6500 Fax #:
Sampler(s) Name(s): Rob Wallace Phone #: 571-205-8058

Project Information

Project Name: Kop-Flex
Street: 7565 Harman's Rd
City: Hanover State: MD
Project #: 39196
Client Purchase Order #:
Project Manager: Eric Johnson

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

VOCs (8260) (524.2)
1,4-Dioxane (8260 W/SIM)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	VOCs (8260) (524.2)	1,4-Dioxane (8260 W/SIM)	LAB USE ONLY
-1	RW-7740TD-100915		10/9/15	1123	BOU	Aq	6	X								X	X	V437
-2	Trip Blank		10/9/15	1200	RTW	Aq	2	X								X		

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

INITIAL ASESSMENT 3B Dom
LABEL VERIFICATION JK

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		10/9/15 1500	FX	FX	10/10/15 10:45	
2	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3						
4	Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not intact	Preserved where applicable
5						On Ice ✓ Cooler Temp. 3.1C

JC5994: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JC5994 **Client:** **Project:**

Date / Time Received: 10/10/2015 10:45:00 AM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (3.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com

JC5994: Chain of Custody
Page 2 of 2

New Jersey ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B4739-MB	1B100125.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	0.91	ug/l	
78-93-3	2-Butanone	ND	5.0	0.57	ug/l	
71-43-2	Benzene	ND	0.50	0.057	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.035	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.088	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.082	ug/l	
75-25-2	Bromoform	ND	0.50	0.046	ug/l	
74-83-9	Bromomethane	ND	0.50	0.077	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.030	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.074	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.045	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.028	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.027	ug/l	
75-00-3	Chloroethane	ND	0.50	0.037	ug/l	
67-66-3	Chloroform	ND	0.50	0.031	ug/l	
74-87-3	Chloromethane	ND	0.50	0.044	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.045	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.073	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.074	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.039	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.054	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.053	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.078	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.031	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.034	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.082	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.041	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.067	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.042	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.046	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.054	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.046	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.052	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.034	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.039	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.081	ug/l	

Method Blank Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B4739-MB	1B100125.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.063	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.033	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.033	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.073	ug/l	
110-54-3	Hexane	ND	0.50	0.094	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.084	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.062	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.047	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.030	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.27	ug/l	
91-20-3	Naphthalene	ND	0.50	0.084	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.061	ug/l	
100-42-5	Styrene	ND	0.50	0.028	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.028	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.050	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.035	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.052	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.024	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.047	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.035	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.031	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.041	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.091	ug/l	
108-88-3	Toluene	ND	0.50	0.044	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.024	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.057	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.032	ug/l	
	m,p-Xylene	ND	0.50	0.13	ug/l	
95-47-6	o-Xylene	ND	0.50	0.029	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.029	ug/l	

CAS No.	Surrogate Recoveries		Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%	78-114%

Method Blank Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B4739-MB	1B100125.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	95%	77-115%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C5669-MB	3C124113.D	1	10/13/15	PS	n/a	n/a	V3C5669

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC5994-1

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	87%	36-149%
460-00-4	4-Bromofluorobenzene	90%	34-135%

Blank Spike Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B4739-BS	1B100126.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	16.7	84	70-130
78-93-3	2-Butanone	20	18.1	91	70-130
71-43-2	Benzene	5	5.3	106	70-130
108-86-1	Bromobenzene	5	4.9	98	70-130
74-97-5	Bromochloromethane	5	5.2	104	70-130
75-27-4	Bromodichloromethane	5	5.0	100	70-130
75-25-2	Bromoform	5	4.1	82	70-130
74-83-9	Bromomethane	2	2.0	100	70-130
104-51-8	n-Butylbenzene	5	4.8	96	70-130
135-98-8	sec-Butylbenzene	5	5.0	100	70-130
98-06-6	tert-Butylbenzene	5	4.9	98	70-130
75-15-0	Carbon disulfide	5	5.3	106	70-130
108-90-7	Chlorobenzene	5	5.2	104	70-130
75-00-3	Chloroethane	2	2.1	105	70-130
67-66-3	Chloroform	5	5.3	106	70-130
74-87-3	Chloromethane	2	1.9	95	70-130
95-49-8	o-Chlorotoluene	5	5.0	100	70-130
106-43-4	p-Chlorotoluene	5	5.0	100	70-130
56-23-5	Carbon tetrachloride	5	5.2	104	70-130
75-34-3	1,1-Dichloroethane	5	5.4	108	70-130
75-35-4	1,1-Dichloroethylene	5	5.2	104	70-130
563-58-6	1,1-Dichloropropene	5	5.5	110	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	4.3	86	70-130
106-93-4	1,2-Dibromoethane	5	4.9	98	70-130
107-06-2	1,2-Dichloroethane	5	5.3	106	70-130
78-87-5	1,2-Dichloropropane	5	5.2	104	70-130
142-28-9	1,3-Dichloropropane	5	5.1	102	70-130
594-20-7	2,2-Dichloropropane	5	4.6	92	70-130
124-48-1	Dibromochloromethane	5	4.5	90	70-130
74-95-3	Dibromomethane	5	5.2	104	70-130
75-71-8	Dichlorodifluoromethane	2	1.5	75	70-130
541-73-1	m-Dichlorobenzene	5	5.0	100	70-130
95-50-1	o-Dichlorobenzene	5	5.0	100	70-130
106-46-7	p-Dichlorobenzene	5	4.9	98	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.9	98	70-130
156-59-2	cis-1,2-Dichloroethylene	5	5.1	102	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B4739-BS	1B100126.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.6	92	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.5	90	70-130
100-41-4	Ethylbenzene	5	5.1	102	70-130
87-68-3	Hexachlorobutadiene	5	4.8	96	70-130
110-54-3	Hexane	5	4.2	84	70-130
591-78-6	2-Hexanone	20	17.2	86	70-130
98-82-8	Isopropylbenzene	5	5.1	102	70-130
99-87-6	p-Isopropyltoluene	5	5.0	100	70-130
75-09-2	Methylene chloride	5	5.0	100	70-130
1634-04-4	Methyl Tert Butyl Ether	10	9.7	97	70-130
108-10-1	4-Methyl-2-pentanone	20	18.2	91	70-130
91-20-3	Naphthalene	5	5.0	100	70-130
103-65-1	n-Propylbenzene	5	5.2	104	70-130
100-42-5	Styrene	5	4.9	98	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	4.9	98	70-130
71-55-6	1,1,1-Trichloroethane	5	5.1	102	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	5.0	100	70-130
79-00-5	1,1,2-Trichloroethane	5	5.1	102	70-130
87-61-6	1,2,3-Trichlorobenzene	5	5.0	100	70-130
96-18-4	1,2,3-Trichloropropane	5	5.1	102	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.9	98	70-130
95-63-6	1,2,4-Trimethylbenzene	5	5.3	106	70-130
108-67-8	1,3,5-Trimethylbenzene	5	5.0	100	70-130
127-18-4	Tetrachloroethylene	5	7.7	154* [a]	70-130
108-88-3	Toluene	5	5.2	104	70-130
79-01-6	Trichloroethylene	5	5.4	108	70-130
75-69-4	Trichlorofluoromethane	2	2.0	100	70-130
75-01-4	Vinyl chloride	2	1.9	95	70-130
	m,p-Xylene	10	10.6	106	70-130
95-47-6	o-Xylene	5	5.3	106	70-130
1330-20-7	Xylenes (total)	15	15.9	106	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%	78-114%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B4739-BS	1B100126.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	98%	77-115%

(a) High percent recoveries and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C5669-BS	3C124114.D	1	10/13/15	PS	n/a	n/a	V3C5669

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC5994-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	50	44.4	89	44-138

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	79%	36-149%
460-00-4	4-Bromofluorobenzene	82%	34-135%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC5982-1MS	1B100130.D	1	10/15/15	MD	n/a	n/a	V1B4739
JC5982-1	1B100127.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Compound	JC5982-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
67-64-1	Acetone	ND		20	18.2	91	41-142
78-93-3	2-Butanone	ND		20	20.4	102	55-129
71-43-2	Benzene	ND		5	4.9	98	53-138
108-86-1	Bromobenzene	ND		5	4.6	92	54-138
74-97-5	Bromochloromethane	ND		5	5.2	104	55-140
75-27-4	Bromodichloromethane	ND		5	4.9	98	57-147
75-25-2	Bromoform	ND		5	4.4	88	47-137
74-83-9	Bromomethane	ND		2	2.1	105	40-162
104-51-8	n-Butylbenzene	ND		5	3.9	78	45-144
135-98-8	sec-Butylbenzene	ND		5	4.0	80	46-145
98-06-6	tert-Butylbenzene	ND		5	4.2	84	48-141
75-15-0	Carbon disulfide	ND		5	3.7	74	35-127
108-90-7	Chlorobenzene	ND		5	4.8	96	54-135
75-00-3	Chloroethane	ND		2	2.2	110	38-153
67-66-3	Chloroform	0.14	J	5	5.0	97	57-151
74-87-3	Chloromethane	ND		2	2.2	110	39-165
95-49-8	o-Chlorotoluene	ND		5	4.4	88	55-142
106-43-4	p-Chlorotoluene	ND		5	4.6	92	55-139
56-23-5	Carbon tetrachloride	ND		5	3.9	78	49-170
75-34-3	1,1-Dichloroethane	ND		5	5.0	100	55-149
75-35-4	1,1-Dichloroethylene	ND		5	3.9	78	42-142
563-58-6	1,1-Dichloropropene	ND		5	4.2	84	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND		5	4.8	96	48-141
106-93-4	1,2-Dibromoethane	ND		5	5.1	102	57-135
107-06-2	1,2-Dichloroethane	ND		5	5.3	106	59-166
78-87-5	1,2-Dichloropropane	ND		5	5.0	100	53-142
142-28-9	1,3-Dichloropropane	ND		5	5.0	100	58-143
594-20-7	2,2-Dichloropropane	ND		5	3.8	76	38-165
124-48-1	Dibromochloromethane	ND		5	4.6	92	55-138
74-95-3	Dibromomethane	ND		5	5.2	104	61-144
75-71-8	Dichlorodifluoromethane	ND		2	1.3	65	23-172
541-73-1	m-Dichlorobenzene	ND		5	4.6	92	53-138
95-50-1	o-Dichlorobenzene	ND		5	4.6	92	54-140
106-46-7	p-Dichlorobenzene	ND		5	4.6	92	53-137
156-60-5	trans-1,2-Dichloroethylene	ND		5	4.3	86	47-148
156-59-2	cis-1,2-Dichloroethylene	ND		5	4.6	92	51-146

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC5982-1MS	1B100130.D	1	10/15/15	MD	n/a	n/a	V1B4739
JC5982-1	1B100127.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Compound	JC5982-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND		5	4.4	88	51-136
10061-02-6	trans-1,3-Dichloropropene	ND		5	4.5	90	54-142
100-41-4	Ethylbenzene	ND		5	4.5	90	51-138
87-68-3	Hexachlorobutadiene	ND		5	3.8	76	40-154
110-54-3	Hexane	ND		5	3.7	74	22-142
591-78-6	2-Hexanone	ND		20	18.5	93	53-128
98-82-8	Isopropylbenzene	ND		5	4.3	86	49-139
99-87-6	p-Isopropyltoluene	ND		5	4.1	82	45-141
75-09-2	Methylene chloride	ND		5	4.8	96	54-137
1634-04-4	Methyl Tert Butyl Ether	ND		10	9.6	96	53-143
108-10-1	4-Methyl-2-pentanone	ND		20	19.4	97	58-127
91-20-3	Naphthalene	ND		5	4.8	96	44-140
103-65-1	n-Propylbenzene	ND		5	4.4	88	50-142
100-42-5	Styrene	ND		5	4.3	86	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND		5	4.7	94	57-144
71-55-6	1,1,1-Trichloroethane	ND		5	4.1	82	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND		5	5.1	102	58-138
79-00-5	1,1,2-Trichloroethane	ND		5	5.1	102	59-139
87-61-6	1,2,3-Trichlorobenzene	ND		5	4.7	94	47-141
96-18-4	1,2,3-Trichloropropane	ND		5	5.1	102	56-148
120-82-1	1,2,4-Trichlorobenzene	ND		5	4.7	94	46-137
95-63-6	1,2,4-Trimethylbenzene	ND		5	4.6	92	41-138
108-67-8	1,3,5-Trimethylbenzene	ND		5	4.3	86	45-138
127-18-4	Tetrachloroethylene	ND		5	3.9	78	45-145
108-88-3	Toluene	ND		5	4.6	92	52-134
79-01-6	Trichloroethylene	ND		5	4.5	90	54-143
75-69-4	Trichlorofluoromethane	ND		2	1.7	85	36-167
75-01-4	Vinyl chloride	ND		2	1.8	90	35-162
	m,p-Xylene	ND		10	9.2	92	49-135
95-47-6	o-Xylene	ND		5	4.7	94	49-134
1330-20-7	Xylenes (total)	ND		15	13.9	93	50-134

CAS No.	Surrogate Recoveries	MS	JC5982-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%	96%	78-114%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC5982-1MS	1B100130.D	1	10/15/15	MD	n/a	n/a	V1B4739
JC5982-1	1B100127.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Surrogate Recoveries	MS	JC5982-1	Limits
460-00-4	4-Bromofluorobenzene	98%	92%	77-115%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC5932-5MS [a]	3C124116.D	1	10/13/15	PS	n/a	n/a	V3C5669
JC5932-5MSD [a]	3C124117.D	1	10/13/15	PS	n/a	n/a	V3C5669
JC5932-5 [a]	3C124118.D	1	10/13/15	PS	n/a	n/a	V3C5669

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC5994-1

CAS No.	Compound	JC5932-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	ND		50	53.5	107	50	41.2	82	26	18-178/34

CAS No.	Surrogate Recoveries	MS	MSD	JC5932-5	Limits
2037-26-5	Toluene-D8	88%	71%	91%	36-149%
460-00-4	4-Bromofluorobenzene	89%	74%	92%	34-135%

(a) (pH= 7) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC5982-2DUP	1B100131.D	1	10/15/15	MD	n/a	n/a	V1B4739
JC5982-2	1B100128.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Compound	JC5982-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
67-64-1	Acetone	1.5	J	1.2	J	22* [a]	10
78-93-3	2-Butanone	ND		ND		nc	12
71-43-2	Benzene	ND		ND		nc	10
108-86-1	Bromobenzene	ND		ND		nc	10
74-97-5	Bromochloromethane	ND		ND		nc	10
75-27-4	Bromodichloromethane	ND		ND		nc	10
75-25-2	Bromoform	ND		ND		nc	10
74-83-9	Bromomethane	ND		ND		nc	10
104-51-8	n-Butylbenzene	ND		ND		nc	10
135-98-8	sec-Butylbenzene	ND		ND		nc	10
98-06-6	tert-Butylbenzene	ND		ND		nc	10
75-15-0	Carbon disulfide	ND		ND		nc	19
108-90-7	Chlorobenzene	ND		ND		nc	10
75-00-3	Chloroethane	ND		ND		nc	10
67-66-3	Chloroform	ND		ND		nc	12
74-87-3	Chloromethane	ND		ND		nc	10
95-49-8	o-Chlorotoluene	ND		ND		nc	10
106-43-4	p-Chlorotoluene	ND		ND		nc	10
56-23-5	Carbon tetrachloride	ND		ND		nc	10
75-34-3	1,1-Dichloroethane	ND		ND		nc	10
75-35-4	1,1-Dichloroethylene	ND		ND		nc	10
563-58-6	1,1-Dichloropropene	ND		ND		nc	10
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND		nc	10
106-93-4	1,2-Dibromoethane	ND		ND		nc	10
107-06-2	1,2-Dichloroethane	ND		ND		nc	10
78-87-5	1,2-Dichloropropane	ND		ND		nc	10
142-28-9	1,3-Dichloropropane	ND		ND		nc	10
594-20-7	2,2-Dichloropropane	ND		ND		nc	10
124-48-1	Dibromochloromethane	ND		ND		nc	10
74-95-3	Dibromomethane	ND		ND		nc	10
75-71-8	Dichlorodifluoromethane	ND		ND		nc	10
541-73-1	m-Dichlorobenzene	ND		ND		nc	10
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	ND		ND		nc	10
156-60-5	trans-1,2-Dichloroethylene	ND		ND		nc	10
156-59-2	cis-1,2-Dichloroethylene	ND		ND		nc	10

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC5982-2DUP	1B100131.D	1	10/15/15	MD	n/a	n/a	V1B4739
JC5982-2	1B100128.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Compound	JC5982-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	10
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	10
100-41-4	Ethylbenzene	ND		ND		nc	10
87-68-3	Hexachlorobutadiene	ND		ND		nc	10
110-54-3	Hexane	ND		ND		nc	10
591-78-6	2-Hexanone	ND		ND		nc	10
98-82-8	Isopropylbenzene	ND		ND		nc	10
99-87-6	p-Isopropyltoluene	ND		ND		nc	10
75-09-2	Methylene chloride	ND		ND		nc	10
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	10
108-10-1	4-Methyl-2-pentanone	ND		ND		nc	10
91-20-3	Naphthalene	ND		ND		nc	10
103-65-1	n-Propylbenzene	ND		ND		nc	10
100-42-5	Styrene	ND		ND		nc	10
630-20-6	1,1,1,2-Tetrachloroethane	ND		ND		nc	10
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	10
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	10
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	10
87-61-6	1,2,3-Trichlorobenzene	ND		ND		nc	10
96-18-4	1,2,3-Trichloropropane	ND		ND		nc	10
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	10
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	10
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	10
127-18-4	Tetrachloroethylene	ND		ND		nc	10
108-88-3	Toluene	ND		ND		nc	10
79-01-6	Trichloroethylene	ND		ND		nc	10
75-69-4	Trichlorofluoromethane	ND		ND		nc	10
75-01-4	Vinyl chloride	ND		ND		nc	10
	m,p-Xylene	ND		ND		nc	10
95-47-6	o-Xylene	ND		ND		nc	10
1330-20-7	Xylenes (total)	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JC5982-2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	98%	98%	78-114%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC5982-2DUP	1B100131.D	1	10/15/15	MD	n/a	n/a	V1B4739
JC5982-2	1B100128.D	1	10/14/15	MD	n/a	n/a	V1B4739

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC5994-1, JC5994-2

CAS No.	Surrogate Recoveries	DUP	JC5982-2	Limits
460-00-4	4-Bromofluorobenzene	95%	93%	77-115%

(a) Outside in house control limits.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample: V1B4734-BFB
Lab File ID: 1B99989.D
Instrument ID: GCMS1B
Injection Date: 10/10/15
Injection Time: 12:59

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	3091	17.8		Pass
75	30.0 - 80.0% of mass 95	7754	44.8		Pass
95	Base peak, 100% relative abundance	17318	100.0		Pass
96	5.0 - 9.0% of mass 95	1305	7.54		Pass
173	Less than 2.0% of mass 174	46	0.27	(0.37) [a]	Pass
174	50.0 - 120.0% of mass 95	12278	70.9		Pass
175	5.0 - 9.0% of mass 174	947	5.47	(7.71) [a]	Pass
176	95.0 - 101.0% of mass 174	12022	69.4	(97.9) [a]	Pass
177	5.0 - 9.0% of mass 176	923	5.33	(7.68) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B4734-IC4734	1B99990.D	10/10/15	13:38	00:39	Initial cal 0.2
V1B4734-IC4734	1B99991.D	10/10/15	14:10	01:11	Initial cal 0.5
V1B4734-IC4734	1B99992.D	10/10/15	14:41	01:42	Initial cal 1
V1B4734-IC4734	1B99993.D	10/10/15	15:12	02:13	Initial cal 2
V1B4734-IC4734	1B99994.D	10/10/15	15:42	02:43	Initial cal 5
V1B4734-ICC4734	1B99995.D	10/10/15	16:12	03:13	Initial cal 10
V1B4734-IC4734	1B99996.D	10/10/15	16:43	03:44	Initial cal 20
V1B4734-IC4734	1B99997.D	10/10/15	17:15	04:16	Initial cal 40
V1B4734-IC4734	1B99998.D	10/10/15	17:46	04:47	Initial cal 80
V1B4734-ICV4734	1B100001.D	10/10/15	20:19	07:20	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Sample: V1B4739-BFB
Lab File ID: 1B100122.D
Instrument ID: GCMS1B
Injection Date: 10/14/15
Injection Time: 19:18

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	3046	17.6		Pass
75	30.0 - 80.0% of mass 95	8208	47.4		Pass
95	Base peak, 100% relative abundance	17300	100.0		Pass
96	5.0 - 9.0% of mass 95	1198	6.92		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	12599	72.8		Pass
175	5.0 - 9.0% of mass 174	903	5.22	(7.17) [a]	Pass
176	95.0 - 101.0% of mass 174	12114	70.0	(96.2) [a]	Pass
177	5.0 - 9.0% of mass 176	804	4.65	(6.64) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B4739-CC4734	1B100123.D	10/14/15	20:28	01:10	Continuing cal 10
V1B4739-MB	1B100125.D	10/14/15	21:29	02:11	Method Blank
V1B4739-BS	1B100126.D	10/14/15	21:59	02:41	Blank Spike
JC5982-1	1B100127.D	10/14/15	22:30	03:12	(used for QC only; not part of job JC5994)
JC5982-2	1B100128.D	10/14/15	23:00	03:42	(used for QC only; not part of job JC5994)
ZZZZZZ	1B100129.D	10/14/15	23:30	04:12	(unrelated sample)
JC5982-1MS	1B100130.D	10/15/15	00:01	04:43	Matrix Spike
JC5982-2DUP	1B100131.D	10/15/15	00:32	05:14	Duplicate
ZZZZZZ	1B100132.D	10/15/15	01:02	05:44	(unrelated sample)
ZZZZZZ	1B100133.D	10/15/15	01:32	06:14	(unrelated sample)
ZZZZZZ	1B100134.D	10/15/15	02:03	06:45	(unrelated sample)
ZZZZZZ	1B100135.D	10/15/15	02:34	07:16	(unrelated sample)
ZZZZZZ	1B100136.D	10/15/15	03:04	07:46	(unrelated sample)
ZZZZZZ	1B100137.D	10/15/15	03:35	08:17	(unrelated sample)
JC5994-1	1B100139.D	10/15/15	04:36	09:18	RW-7740TO-100915
JC5994-2	1B100140.D	10/15/15	05:06	09:48	TRIPBLANK

Volatile Surrogate Recovery Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Method: EPA 524.2 REV 4.1 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC5994-1	1B100139.D	100	96
JC5994-2	1B100140.D	96	94
JC5982-1MS	1B100130.D	100	98
JC5982-2DUP	1B100131.D	98	95
V1B4739-BS	1B100126.D	101	98
V1B4739-MB	1B100125.D	97	95

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichlorobenzene-d4	78-114%
S2 = 4-Bromofluorobenzene	77-115%

Volatile Surrogate Recovery Summary

Job Number: JC5994
Account: ESCVAR WSP
Project: 090149-04, Kop-Flex, Hanover, MD

Method: SW846 8260C BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC5994-1	3C124119.D	113	113
JC5932-5MS	3C124116.D	88	89
JC5932-5MSD	3C124117.D	71	74
V3C5669-BS	3C124114.D	79	82
V3C5669-MB	3C124113.D	87	90

Surrogate Compounds	Recovery Limits
S1 = Toluene-D8	36-149%
S2 = 4-Bromofluorobenzene	34-135%