



PUBLIC WORKS DEPARTMENT

August 22, 2014



Joel Klumpp
Texas Commission on Environmental Quality
Water Supply Division, Technical Review and Oversight Team (MC-159)
P.O. Box 13087
Austin, TX 78711-3087

Re: Virus Data for Full Scale Verification Test 2

Dear Mr. Klumpp,

Please see the enclosed data containing the EPA method 1615 for total culturable viruses, Norovirus by PCR method and Enterovirus by PCR method for sample sites TCEQ-2JB and TCEQ-42J during FSVT2. Please note that the City requested and explanation from the laboratory for non-detects of total culturable virus, with detection of Enterovirus and Norovirus GII at TCEQ-2JB. The laboratory's explanation was that the total culturable virus by EPA method 1615 only detects viable cells through tissue culture, where the PCR method for Entero and Noroviruses detects both viable and non-viable cells. Because the tissue culture test for total culturable viruses did not detect any viable cells, the cells detected by PCR method were non-viable. The laboratory correspondence is attached.

This shall complete the City of Wichita Falls' testing and reporting requirements for FSVT2. Should you have any questions, please feel free to contact me.

Sincerely,

Mark Southard
Water Source/Purification Superintendent
City of Wichita Falls, TX
mark.southard@wichitafallstx.gov
Ph: 940-691-1153



BioVir Laboratories, Inc

NELAC #05234CA

EPA ID# 01401, CA-ELAP #179



685 Stone Road, Unit 6 • Benicia, CA 94510 • (707) 747-5906 • 1-800-GIARDIA • FAX (707) 747-1751 • WEB: www.biovir.com

REPORT NO.: 140699
PAGE NO.: 1 of 3
CLIENT: WICHITA FALLS
ADDRESS: PO Box 1431
WICHITA FALLS, TX 76307
CLIENT NO WIC002 **CLIENT PO:** N/A

ASSAY RESULTS:

Test: EPA 1615 Culture **Method:** EPA 1615

BioVir #	Sample ID	Site	Analyte	Result	Units
140699-001	TCEQ 40J	Transfer Pumps	Total Culturable Virus	<0.002	MPN/L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 8:35:00 AM					
ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C					
Volume: 1588.4 L Analysis Start Date: 5/20/2014 Analysis Start Time: 1203					
Analyst: ValentinaL Analysis End: 6/24/2014					
Comment					

140699-002	TCEQ 2JB	End of CCB WW Effluent	Total Culturable Virus	<0.035	MPN/L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 2:05:00 PM					
ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C					
Volume: 94.6 L Analysis Start Date: 5/20/2014 Analysis Start Time: 1206					
Analyst: ValentinaL Analysis End: 6/24/2014					
Comment					

Test: EPA 1615 PCR **Method:** EPA 1615

BioVir #	Sample ID	Site	Analyte	Result	Units
140699-001	TCEQ 40J	Transfer Pumps	Enterovirus (PCR)	0	Genomic Copies / L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 8:35:00 AM					
ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C					
Volume: 1588.4 L Analysis Start Date: 5/21/2014 Analysis Start Time: 0627					
Analyst: JHamer Analysis End: 6/2/2014					
Comment					

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ADDRESS
 PO Box 1431
 WICHITA FALLS, TX 76307
CLIENT NO WIC002 **CLIENT PO:** N/A

ASSAY RESULTS:

Test: EPA 1615 PCR

Method: EPA 1615

BioVir #	Sample ID	Site	Analyte	Result	Units
140699-001	TCEQ 40J	Transfer Pumps	Norovirus G1A (PCR)	0	Genomic Copies / L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 8:35:00 AM ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C Volume: 1588.4 L Analysis Start Date: 5/21/2014 Analysis Start Time: 0627 Analyst: JHamer Analysis End: 6/2/2014 Comment					
140699-001	TCEQ 40J	Transfer Pumps	Norovirus G1B (PCR)	0	Genomic Copies / L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 8:35:00 AM ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C Volume: 1588.4 L Analysis Start Date: 5/21/2014 Analysis Start Time: 0627 Analyst: JHamer Analysis End: 6/2/2014 Comment					
140699-001	TCEQ 40J	Transfer Pumps	Norovirus G1I (PCR)	0	Genomic Copies / L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 8:35:00 AM ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C Volume: 1588.4 L Analysis Start Date: 5/21/2014 Analysis Start Time: 0627 Analyst: JHamer Analysis End: 6/2/2014 Comment					
140699-002	TCEQ 2JB	End of CCB WW Effluent	Enterovirus (PCR)	604	Genomic Copies / L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 2:05:00 PM ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C Volume: 94.6 L Analysis Start Date: 5/21/2014 Analysis Start Time: 0627 Analyst: JHamer Analysis End: 6/2/2014 Comment					

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ADDRESS
 PO Box 1431
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CLIENT NO WIC002 **CLIENT PO:** N/A

ASSAY RESULTS:

Test: EPA 1615 PCR

Method: EPA 1615

BioVir #	Sample ID	Site	Analyte	Result	Units
140699-002	TCEQ 2JB	End of CCB WW Effluent	Norovirus GIA (PCR)	0	Genomic Copies / L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 2:05:00 PM ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C Volume: 94.6 L Analysis Start Date: 5/21/2014 Analysis Start Time: 0627 Analyst: JHamer Analysis End: 6/2/2014 Comment					
140699-002	TCEQ 2JB	End of CCB WW Effluent	Norovirus GIB (PCR)	0	Genomic Copies / L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 2:05:00 PM ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C Volume: 94.6 L Analysis Start Date: 5/21/2014 Analysis Start Time: 0627 Analyst: JHamer Analysis End: 6/2/2014 Comment					
140699-002	TCEQ 2JB	End of CCB WW Effluent	Norovirus GII (PCR)	30.7	Genomic Copies / L
Collector Blair Ramon CollectDate 5/19/2014 CollectTime: 2:05:00 PM ReceiveDate 5/20/2014 9:44:00 AM Matrix: Waste Water, treated Temp 9.6 C Volume: 94.6 L Analysis Start Date: 5/21/2014 Analysis Start Time: 0627 Analyst: JHamer Analysis End: 6/2/2014 Comment					

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. BioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.

COMPANY IS NOT AN INSURER: BioVir Laboratories is not an insurer or guarantor of the quality and/or purity of water, wastewater, biosolid or other material from which the sample was taken. BioVir offers no express or implied warranties whatsoever concerning the quality or purity of any water, wastewater, biosolid or other material which is ultimately consumed, distributed, applied or disposed.

MAINTENANCE OF RECORDS: BioVir Laboratories, Inc. shall maintain records pertaining to the historical reconstruction of client's data for a minimum of five years from the date of issuance of the final report. Records may be destroyed after that date unless a written client's request for records transfer is received by BioVir which requests otherwise. Records transfer or storage charges may apply after the 5 year period. THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF BIOVIR LABORATORIES, INC.

8/4/2014

Date:

Richard E. Davis

Signature

Quality
Checked LBarriga

Hi Blair,

I'm not sure if Nancy got back to you but she mentioned to me that you had a question on some positive results. The analyst was not in yesterday but I asked her today about it and she said that it is possible to get positive PCR results even when the tissue culture results are negative. The simple reason (because I don't understand the process very well) is that PCR detects viable and non viable results where tissue culture is only viable. I hope that makes sense and answers your question, but if you need more explanation, please call again.

Thanks,

Liz Barriga

Client Services

BioVir / IEH Laboratories & Consulting Group

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