NPDES Compliance Sampling Inspection Report

Cruz Bay Wastewater Treatment Facility
Contant Road; Adjacent to Enighed Pond
St. John, USVI 00830

NPDES/TPDES #: VI0040835

Inspection Dates: October 28-29, 2021

Report Prepared by:

THUAN TRAN Digitally signed by THUAN TRAN Date: 2021.12.02 08:20:10 -05'00'

Thuan Tran; Physical Scientist

Date: _____

Report Approved by:

PHILIP COCUZZA Digitally signed by PHILIP COCUZZA Date: 2021.12.01 06:20:34 -05'00'

Phil Cocuzza, Chief
Monitoring Operations Section

Date: _____

1.0 OBJECTIVE

On October 28-29, 2021, at the request of Jaime Geliga of the Caribbean Environmental Protection Division (CEPD), the United States Environmental Protection Agency (USEPA) conducted a National Pollutant Discharge Elimination System (NPDES)/Territorial Pollutant Discharge Elimination System (TPDES) Compliance Sampling Inspection (CSI) at the Cruz Bay Wastewater Treatment Facility (WWTF) located on Contant Road, adjacent to Enighed Pond in St. John, United States Virgin Island (USVI), 00830. The objective of the CSI was to gather information necessary to determine if the facility is in compliance with the requirements and limitations of the permit, VI0040835.

2.0 KEY PARTICIPANTS

Listed below are key inspection participants and contact information, grouped by organization.

U.S. Environmental Protection Agency
Thuan Tran; Physical Scientist, Lead Inspector
732-321-4455 and tran.thuan@epa.gov
Robert Morrell, Geologist

Cruz Bay Wastewater Treatment Facility
Elroy S. Hector, Plant Operator/O&M Supervisor
ehector@viwma.org

3.0 FACILITY DESCRIPTION

3.1 General Information

Cruz Bay WWTF is located on Contant Road, adjacent to Enighed Pond, St. John, USVI and began operations approximately in 2000 with EPA construction grant funds. The facility is owned and operated by the Virgin Islands Waste Management Authority (VIWMA). Cruz Bay WWTF has a designed capacity of 0.225 MGD with two Extended Aeration Packaged Plants and is categorized under Standard Industrial Classification (SIC) 4952 - Sewerage Systems and/or North American Industry Classification System (NAICS) 221320 – Sewage Treatment Facilities. Cruz Bay WWTF employs 3 personnel and operates 8 hours per day, Monday-thru- Friday from 7:00AM to 3:00PM. Three pump stations in Powerboyd, Pondmouth and Cruz Bay Ejector Station assisted commercial and domestic wastewater flow to the treatment plant through the sewer collection system in the Town of Cruz Bay and the surrounding neighborhoods of Enighed, Powerboyd and Contant. The pump stations are power by the Water and Power Authority (WAPA). Pondmouth and Cruz Bay Ejector Stations do have back-up generators. Powerboyd pump station does not.

Major operating equipment that are out-of-service at least since Hurricane Irma/Maria during September 2017 consist of the grit removal system, two of the 3 influent wet well pumps, influent and effluent flow measuring devices, one of the 2 packaged plants, process control monitoring devices (such as sensors for pH, DO, Temperature, etc..), receiving service pump station, clarifier skimmer arm, three of the 5 air blowers, influent and effluent refrigerated

automatic composite samplers, collapsed air-supply line, clogged sludge lines, and the sludge drying beds. Other equipment is kept in-service by scavenging parts from out-of-service equipment to keep the wastewater treatment plant running. In addition, the facility is receiving and storing accumulated septic sludge in the out-of-service packaged plant.

3.2 Process Information

Incoming waste streams converged from surrounding neighborhoods are collected in the influent wet well. The influent wet well pump operates on flow-control to deliver the wastewater from the wet well to the grit removal system followed by the manual bar screen. The wastewater passes the bar screen and continues downstream of the influent channel that conveys the wastewater into a junction box to be diverted into the packaged plants.

The wastewater enters the package plant in the extended aeration chamber where Return Activated Sludge (RAS) from the circular clarifier is mixed in to assist the biological activity in consuming, removing and/or converting pollutants from the wastewater. The Mixed Liquid Suspended Solids (MLSS) in the extended aeration chamber is directed into the circular clarifier where retention time is allowed for phase separation. All the settled sludge is pumped into the extended aeration chamber. The effluent overflows the clarifer weirs into the effluent trough and is directed into the effluent box. At the head of the effluent box, aeration and chlorination are provided to increase oxygen level and disinfection. The effluent continues in the effluent box where the flow is monitored with a 90° V-Notch Weir and an ultrasonic flow sensor. The effluent free-fall from the V-Notch weir into the effluent pipe that runs for approximately 2,702 feet offshore at a depth of 45 feet before discharging via Outfall 001 into Cruz Bay.

Under normal operation, some of the sludge from the clarifier is directed to the extended aeration chamber as RAS. The remaining sludge is pumped to the sludge digester chamber as Waste Activated Sludge (WAS). The digested sludge would be pumped to the sludge drying beds to further increase solid content. The dried sludge cake would be disposed of. Filtrate from the sludge drying beds would flow to the treatment plant for processing.

Grit from the grit removal system and screenings from the manual bar screen would be removed from the wastewater treatment process and disposed of.

3.3 Facility Self-Monitoring Information

Cruz Bay WWTF operators are responsible for collecting grab and on-site permit compliance samples. On-site compliance samples are collected and analyzed by the operators at the treatment facility for pH, Dissolved Oxygen (DO), Temperature, and Total Residual Chlorine (TRC).

Unpreserved sample containers are provided by Mrs. Marcella Jennings, Laboratory Coordinator/Technician at the Mangrove Lagoon WWTF. Compliance samples are

collected, chilled, and delivered by the operator to the Mangrove Lagoon WWTF laboratory located at #1A Estate Bovoni, St. Thomas, USVI 00802. Samples are analyzed for 5-Day Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS), Fecal Coliforms, Enterococci, Phosphorus, Turbidity, and Oil & Grease (O&G).

4.0 EPA SAMPLING/INSPECTION ACTIVITIES

4.1 Sampling Activities

An ISCO automatic composite sampler was programmed to take 96 sample aliquots during the 24-hour sampling event from the effluent monitoring location. The 24-hour composite sample was collected and analyzed for 5-Day Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS). Grab samples were collected for Phosphorus, Oil & Grease (O&G), Turbidity, Fecal Coliforms and Enterococci.

On-site grab samples were collected and analyzed for pH, Temperature, Dissolved Oxygen (DO), and Total Residual Chlorine (TRC).

In addition, an ISCO automatic composite sampler was programmed to take 96 sample aliquots during the 24-hour sampling event from the influent wet well where incoming wastewater enters the treatment plant. The 24-hour composite sample was collected and analyzed for BOD_5 and TSS.

All sample containers, preservation techniques and holding times were in accordance with USEPA requirements specified in 40 CFR Part 136. Signed and dated custody seals were placed across the lids and along the sides of the sample containers. The custody sealed sample containers were placed inside plastic sample bags and sealed up. All samples were shipped on ice via United Parcel Services (UPS) to the USEPA Laboratory in Edison, New Jersey for analysis, except for Fecal Coliforms and Enterococci. These analytes were contracted to Ocean Systems Laboratory on St. Thomas, USVI, to analyze due to the short holding time. Chain-of-custodies were maintained for all samples. EPA Laboratory Analytical Data and Ocean Systems Laboratory Analytical Data are attached.

Effluent flow monitoring data were not obtained from Cruz Bay WWTF instrumentation because the equipment has been out-of-service since Hurricane Irma/Maria during September 2017. According to the operator, the last calibration of the flow monitoring instrumentation was performed in January 2017. The flow data obtained for this inspection was based on the operator's estimate.

Split samples were collected and given to the facility representative. The exception were samples for fecal coliforms and enterococci.

4.2 Inspection Activities

A NPDES/TPDES Compliance Sampling Inspection (CSI) at Cruz Bay WWTF was conducted on October 28-29, 2021. The inspectors met with Mr. Elroy Hector, Plant Operator/O&M Supervisor. Inspector's credentials were presented, and business cards were

provided. Mr. Hector was aware of the inspection but was explained that the inspection with supporting on-site activities was to determine if the facility is in compliance with their NPDES/TPDES permit.

Supporting on-site activities consists of collecting samples from the influent and effluent monitoring locations, observing and evaluating the monitoring locations, observing and evaluating the flow monitoring equipment, observing and evaluating the facility's sampling equipment, touring and evaluating the wastewater treatment process units and operation, and interviewing the facility's representatives.

Mr. Hector was briefed on the inspection activities during the closing conference. On-site sampling and operation concerns discovered or observed during the inspection were communicated to Mr. Hector on the responsibilities to comply with the Federal and Territory Regulations; as well as, the limitations, general and specific conditions, and the requirements of the NPDES/TPDES permit.

4.3 Deviations and/or Environmental Conditions

Overgrown vegetation had completely taken over the walkway leading to the stairway to the bar screen and the property premise. With the collapsed unground air-supply pipe, a temporary above-ground air-supply line was connected to the air blower building to provide needed air to the operating packaged plant, as a result, compromising the stairway and rail. In addition, the incoming flow through the bar screen was restricted due to accumulated rags and large matters leading to very low flow volume after the bar screen when the influent pump is turned on. As a result of the short-duration in flow and the depth of the waste stream when flow after the bar screen, the out-of-service receiving service pump and safety issues, a professional judgement was made to set the influent composite sampler at the influent wet well.

EPA contracted with Ocean Systems Laboratory in St. Thomas, USVI to analyze fecal coliform and enterococcus samples for this inspection. Ocean Systems Laboratory provided five (5), 500-milliliters sterilized plastic containers with sodium thiosulfate.

5.0 ANALYTICAL RESULTS

Cruz Bay Wastewater Treatment Facility
Inspection Dates: October 28-29, 2021

Parameter	Units	Permit Limit	EPA Result
Flow	MGD	0.225*	0.187 (estimated)
BOD_5	mg/L	</= 45 (Weekly Avg.)	17.7 J
BOD_5	mg/L	</= 30 (Monthly Avg.)	17.7 J
% BOD5 Removal	%	>/= 85	95
TSS	mg/L	</= 45 (Weekly Avg.)	**62.0**
TSS	mg/L	</= 30 (Monthly Avg.)	**62.0**
% TSS Removal	%	>/= 85	**33**
Phosphorus	mg/L	Optional	5.90

Parameter	Units	Permit Limit	EPA Result
Fecal Coliforms	#/100-ml	</= 70** (Monthly Avg.)	**5,391** J
Enterococci	#/100-ml	</= 104 (Daily Max.)	**971** J
Enterococci	#/100-ml	</= 35** (Monthly Avg.)	**971** J
Dissolved Oxygen	mg/L	>/= 5.5	R1: **3.1** R2: **3.2**
Temperature	°C	</= 32 (Daily Max.)	32
pH	SU	</= 9.0 (Daily Max.)	7.18
pH	SU	>/= 6.0 (Minimum)	7.18
TRC***	mg/L	Optional	R1: 1.22 R2: 0.05
O&G	mg/L	Non-Detect	U
Turbidity	NTU	</= 3	**3.40** J

NOTES: J = Estimated Value (USEPA Analytical Data Qualifier)
J= Estimated concentration above the adjusted method detection limit and below the adjusted reporting from OSL Analytical Data Qualifier for Fecal Coliforms and Enterococci)
R1 = 1st Run
R2 = 2nd Run
Turbidity = sample exceeded the 48-hr holding time
BOD_5 = samples exceeded the 48-hr holding time

6.0 FINDINGS

6.1 Sampling Result Findings

Although Cruz Bay WWTF permit expired on April 30, 2020, the facility is still required to continue operating within the limitations, conditions and requirements of their permit as stipulated in USVI Code Title 12 – Chapter 7- Water Pollution Control § 184 (V.I. Code tit. 12, § 184) Permit System (e) Duration of Permits and 40 Code of Federal Regulations (CFR) Part 122.6 Continuation of Expiring Permits.

The EPA analytical results obtained during this inspection show the following parameter(s) as being outside of the acceptable limits:

6.1.1 According to the permit, Total Suspended Solids (TSS) discharge concentration weekly average limitation is less than or equal to 45 milligrams per liter (mg/l) and the discharge concentration monthly average limitation of less than or equal to 30 mg/l. The analytical result for TSS was determined to be 62 mg/l.

6.1.2 According to the permit, the Percent (%) TSS Removal discharge concentration limitation must be greater than or equal to 85%. The calculation based on the analytical results for % TSS Removal was determined to be 33%.

6.1.3 According to the permit, fecal coliform has a discharge concentration monthly average geometric (log) mean limit of 70 fecal coliforms per 100 milliliters (counts/100-ml). Although the analytical data for fecal coliform were accompanied with a qualifier, the geometric (log) mean of the 5 grab samples for fecal coliforms was determined to be 5,391 counts/100-ml.

6.1.4 According to the permit, enterococci have a discharge concentration daily maximum limitation of 104 counts/100-ml and a monthly average geometric (log) mean limit of 35 counts/100-ml. Although a qualifier accompanied the results, the geometric (log) mean of the 5 grab samples for enterococci was determined to be 971 counts/100-ml.

6.1.5 According to the permit, dissolved oxygen (DO) has a minimum discharge concentration limitation of 5.5 mg/l. The results for DO were determined to be 3.1 and 3.2 mg/l.

6.1.6 According to the permit, turbidity has a discharge concentration daily maximum limitation of 3 Nephelometric Turbidity Unit (NTU). Although the sample exceeded the holding time, the analytical result for turbidity was determined to be 3.4 NTU.

6.2 Inspection Findings

In addition to the sampling, an inspection of the facility operations was conducted as discussed in Section 4.2 above. During this inspection the following observations were noted which may contravene the requirements of the permit or the applicable regulations:

6.2.1 The grit removal system, one of the 2 packaged plants, two of the 3 influent wet well pumps, receiving service pump station, clarifier skimmer arm, process control monitoring devices (such as sensors for pH, DO, Temperature, etc...), influent and effluent flow measuring devices, three of the 5 air blowers, collapsed air-supply line, clogged sludge lines, and the sludge drying beds are important equipment/treatment operating units that are out-of-service since Hurricane Irma/Maria during September 2017. According to 40 CFR Part 122.41 (e) – Operation and Maintenance, it states, "*The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are e installed by a permittee only when operation is necessary to achieve compliance with the conditions of the permit*." Furthermore, V.I. Code Tit. 12 § 184 (2019) Power and Duties, it states, "*The Department shall have and may exercise the following powers and duties:*

> *(g) To establish and operate appropriate devices, methods, systems and procedures necessary to monitor, collect, update and disseminate information relating to the quality of navigable waters and ground waters and to water pollution and the prevention, control and abatement thereof, and to submit such information in the required form, to the Administrator of the United States Environmental Protection Agency in accordance with section 305(b) of the Federal Water Pollution Control Act, as amended;*
>
> *(o) To require proper maintenance and operation of disposal systems."*

6.2.2 The effluent flow meter was last calibrated in January 2017. The flow meter should be calibrated at least once a year to ensure flow measurements are accurately recorded.

According to 40 CFR Part 122.41(e) – Proper Operation and Maintenance, it states, "*The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit."* In addition, V.I. Code tit. 12, § 189 (2019) - Monitoring, Recording and Reporting, it states, "*The Commissioner may by regulation, order, permit or otherwise, require the owner or operator of any source of a discharge of pollutants or of any source which is an industrial user or publicly owned treatment works to:*

> *(3) install, calibrate, use and maintain such monitoring equipment or methods (including, where appropriate, biological monitoring methods)"*

6.2.3 The approaching distance from the head of the effluent box to the weir is inadequate. The approaching flow is not free of turbulence and waves and is not evenly distributed across the channel. According to 40 CFR Part 122.48 – Requirements for Recording and Reporting of Monitoring Results: "*All permits shall specify:*

> *(a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);*
> *(b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring;"*

In addition, V.I. Code tit. 12, § 189 (2019) - Monitoring, Recording and Reporting, it states, "*The Commissioner may by regulation, order, permit or otherwise, require the owner or operator of any source of a discharge of pollutants or of any source which is an industrial user or publicly owned treatment works to:*

> *(3) install, calibrate, use and maintain such monitoring equipment or methods (including, where appropriate, biological monitoring methods)"*

6.2.4 Total Suspended Solids (TSS) and 5-Day Biochemical Oxygen Demand (BOD_5) are collected as grab samples at the influent and effluent monitoring locations because the refrigerated automatic composite samplers are out-of-service. Under "*Sample Type*" column of "*A. REQUIRED EFFLUENT LIMITATIONS – TABLE I Outfall Serial Number 001*," BOD_5 and TSS samples are to be collected as "*24-hour Composite*" samples. Furthermore, 40 CFR Part 122.41(j)(1) states, "*Monitoring and Records - Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity."* In addition, V.I. Code Tit. 12 § 189 (2019) - Monitoring, Recording and Reporting, it states, "*The Commissioner may by regulation, order, permit or otherwise, require the owner or operator of any source of a discharge of pollutants or of any source which is an industrial user or publicly owned treatment works to:*

> *(4) sample such discharges (in accordance with such methods at such locations, at such intervals, in such manner as the Commissioner shall prescribe); and"*

6.2.5 Sludge bulking was observed covering the entire surface of the clarifier. In addition, vegetative growth was observed thriving and growing on top of the sludge blanket. Furthermore, leaks through the weirs are allowing sludge and pin floc to discharge from the clarifier into the effluent trough. According to 40 CFR part 122.41 (e) – Operation and Maintenance, it states, "*The permittee shall at all times properly operate and maintain all*

facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are e installed by a permittee only when operation is necessary to achieve compliance with the conditions of the permit."

6.2.6 The operator is collecting samples for fecal coliforms and enterococci at the end-of-pipe discharge outfall by boat. According to the footnote under " *A. REQUIRED EFFLUENT LIMITATIONS – TABLE 1 Outfall Serial Number :001*" of the permit, it states, " *Samples collected in compliance with the monitoring requirements specified in Table 1A shall be taken at any point after the treatment process has commenced but prior to being discharged into the receiving waters*."

6.2.7 Under "*MEASUREMENT FREQUENCY*" column in Table 1 of the permit, phosphorus is collected and analyzed twice per month. Phosphorus is not analyzed by the Mangrove Lagoon WWTF Laboratory due to a broken exhaust fan to the laboratory hood since June 2021. According to Section B (10)(d) for Monitoring and Records of the permit, it states, "*Monitoring shall be conducted according to test procedures approved und 40 CFR Part 136."*

6.2.8 Sludge was observed overflowing the effluent box into the discharged pipe which leads to Cruz Bay. According to "B – General Conditions #15 Removed substances" of the permit, it states, "(a) *Solids, sludge's, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters*."

7.0 ATTACHMENTS

Attachment #1. An overview schematic shows the location of each treatment unit of the Cruz Bay Wastewater Treatment Facility.

Attachment #2. Chain-of-Custody for Fecal Coliforms and Enterococci Samples was submitted and received by Ocean Systems Laboratory in St. Thomas, USVI, on Thursday, October 28, 2021.

Attachment #3. Analytical Data for Fecal Coliforms and Enterococci from Ocean Systems Laboratory for the Cruz Bay WWTF sampling inspection was reissued on Tuesday, November 30, 2021.

Attachment #4. Chain-of-Custody for Samples was submitted and received by EPA Laboratory in Edison, NJ, on Monday, November 01, 2021.

Attachment #5. Analytical Data from the EPA Laboratory for the Cruz Bay WWTF sampling inspection was reissued on Tuesday, November 16, 2021.

8.0 PHOTOGRAPHS

Photo #1. A professional judgement was made to collect the influent composite sample at the influent wet well with overgrown vegetation.

Photo #2. The grit removal system has been out-of-service since Hurricane Maria/Irma in September 2017.

Photo #3. Screenings in the manual bar screen are restricting incoming flow from the influent wet well to the influent channel.

Photo #4. Overgrown vegetation has taken over the walkway to the bar screen.

Photo #5. Vegetation is observed in the circular clarifier and inside the sludge digester chamber.

Photo #6. Out-of-service packaged plant is not operational but receives septic sludge.

Photo #7. Flow monitoring devices are out-of-service and sludge was observed discharging for the effluent box to the discharge pipe.

Photo #8. The facility's effluent composite sampler has been out-of-service since 2017.

Photo #9. The temporary air-supply line provides air to the operating packaged plan since 2017.

Photo #10. The sludge drying beds are out-of-service due to clogged sludge pipes and the temporary air-supply line which prohibits the transfer of sludge for drying.

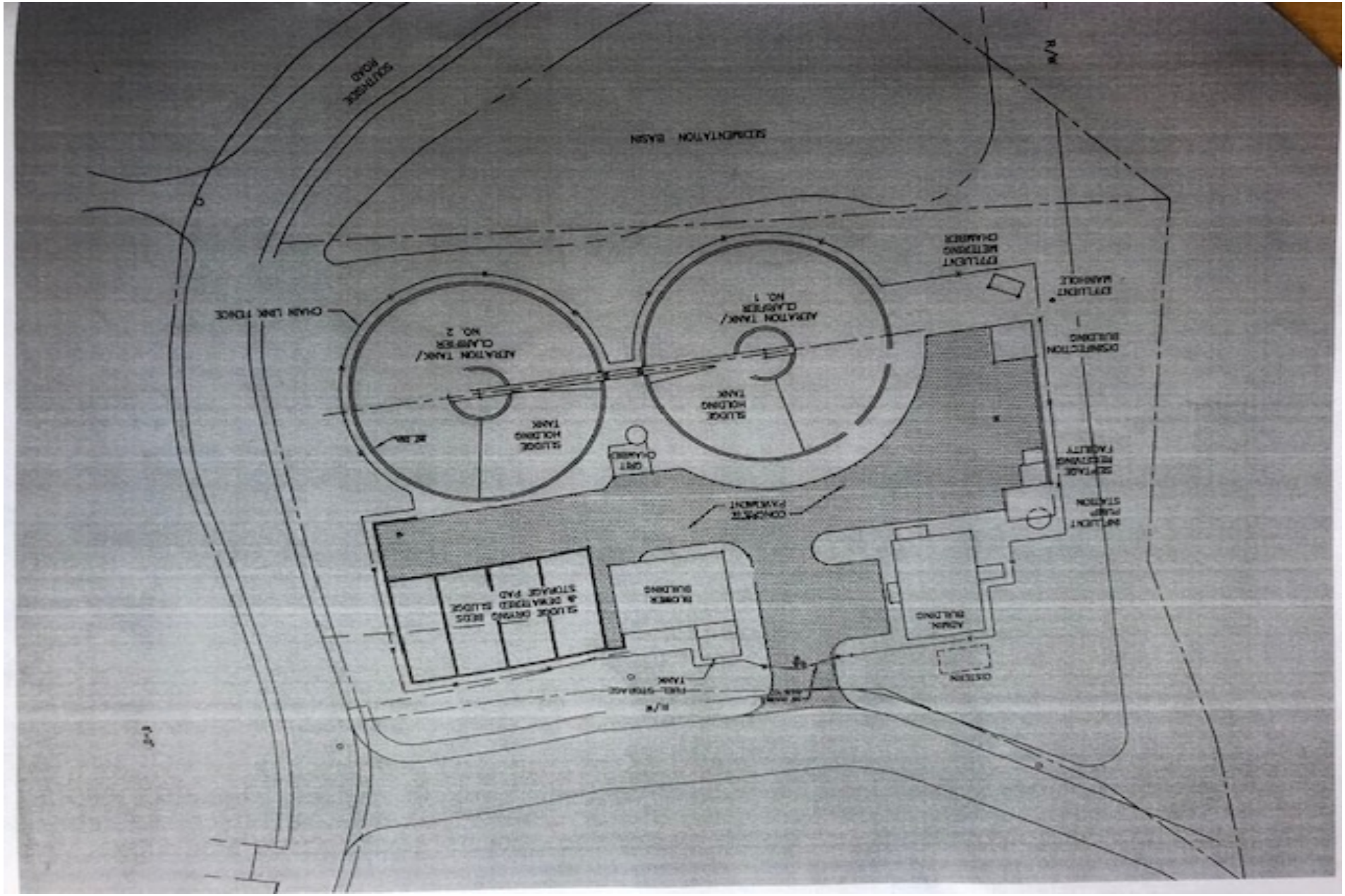
Photo #11. Accurate flow monitoring cannot be obtained in the effluent box due to turbulence and waves, and uneven distribution across the channel.

Photo #12. Access to the packaged plants platform is limited due to the collapsed walkway.

Photo #13. Overgrown vegetation is observed in the clarifier and along the walkway.

7.0 Attachments

Attachment #1. Wastewater and Solids are treated at the Cruz Bay WWTF on St. John USVI.



Attachment #2. Samples for Fecal Coliform and Enterococci were submitted to Ocean Systems Laboratory in St. Thomas, USVI.

US EPA REGION 2 LABORATORY

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CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY EPA-CB WWTP | PROJECT LEADER Thuan Tran

PROGRAM: SF ☐ | SITE ID | OPERABLE UNIT | PROGRAM RESULTS CODE

Decision	RCRA ☐	RCRA ENF ☐	NPDES ☒	SDWA ☐	AM ☐	CAA ☐	TSCA ☐	OD ☐	FIFRA ☐	CRIMINAL ENF ☐
Unit Code	Y206	D210	D307	B304	C215	B224	A305	L306	B253	

Permit #: **TPDES: VI0040835**

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Outfall 001 - CB WWTP	5	B	☐	1, 500 -ml sterilized plastic: F. Coliforms/Entero: Grab 1	☐	0 1 2 3 4 5 6 7 8 9 10		10:21	10/28/2021
			☐	1, 500 -ml sterilized plastic: F. Coliforms/Entero: Grab 2	☐	0 1 2 3 4 5 6 7 8 9 10		10:36	10/28/2021
			☐	1, 500 -ml sterilized plastic: F. Coliforms/Entero: Grab 3	☐	0 1 2 3 4 5 6 7 8 9 10		10:51	10/28/2021
			☐	1, 500 -ml sterilized plastic: F. Coliforms/Entero: Grab 4	☐	0 1 2 3 4 5 6 7 8 9 10		11:06	10/28/2021
		V	☐	1, 500 -ml sterilized plastic: F. Coliforms/Entero: Grab 5	☐	0 1 2 3 4 5 6 7 8 9 10		11:21	10/28/2021
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			

10/28/21

COMMENTS & SPECIAL REQUIREMENTS:

2°C

TRC: 1.22 mg/L

Temperature!

Preservative Added & Checked

0=ice	7=FAS
1=H2SO4 pH<2	8=ZnAc
2=HNO3 pH<2	9=NaOH pH>12
3=HCl pH<2	10=NH4Cl
4=Na2S2O3	
5=NaOH pH>9	
6=Ascorbic Acid	

	Time	Date
Person Assuming Responsibility for Sample(s):	12:38	10/28/21
Relinquished By: / Received By: S Fahie	12:38	10/28/21
Relinquished By: / Received By:		
Relinquished By: / Received By:		

Matrix:

A=aqueous	F=multiphasic
B=aqueous (chlorinated)	G=solvent
C=soil	H=biota
D=sediment	I=oil
E=sludge	J=other

Survey Complete? Y ☐ N ☒

revised 10/25/2004

Attachment #3. Reissued analytical data from Ocean Systems Laboratory was received on Tuesday, 11/30/21.

Ocean Systems Laboratory
6194 Estate Frydenhoj
St. Thomas, VI 00802
(340) 714 – 1911

Qualifiers

Definition:

ICP: in the cooling process
MPN: most probable number
MF: Membrane Filtration
J: Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

Date: November 24, 2021

Ocean Systems Laboratory, INC

6194 Estate Frydenhoj # 43, St. Thomas, US VIRGIN 00802-1402

info@oceansystemslab.com

340-714-1911

LAB ID: VI000609

CERTIFICATE OF ANALYSIS

Fecal /Enterococci Report

WWTP Identification: **EPA-CB WWTP Effluent**	
Date of Sample: **10-28-2021**	Sampler:
Client: **CB WWTP / Permit # VI 0040835**	
Sample Description: **Fecal-Enterococci Sample Collection**	

Arrival at the Laboratory

Sample Location	Date/Time Taken	Date/Time Received	Date/Time Run	Condition	Received by
EFF – Grab # 1	**10-28-21 @ 1021**	**10-28-21 @ 1238**	**10-28-21 @ 1400**	Temp. **2.0°C**	**SF**
EFF – Grab # 2	**10-28-21 @ 1036**	**10-28-21 @ 1238**	**10-28-21 @ 1400**	Temp. **2.0°C**	**SF**
EFF – Grab # 3	**10-28-21 @ 1051**	**10-28-21 @ 1238**	**10-28-21 @ 1400**	Temp. **2.0°C**	**SF**
EFF-Grab # 4	**10-28-21 @ 1106**	**10-28-21 @ 1238**	**10-28-21 @ 1400**	Temp. **2.0°C**	**SF**
EFF – Grab # 5	**10-28-21 @ 1121**	**10-28-21 @ 1238**	**10-28-21 @ 1400**	Temp. **2.0°C**	**SF**
Note: TRC: 1.22 mg/L					

RESULTS

Outfall 001- CB	Fecal Count /100mL	Enterococci Count /100 mL
OSL # 8042: Grab 1	**1000 J** CFU/100mL	**160 J** CFU /100mL
OSL # 8043: Grab 2	**9000 J** CFU/100mL	**1300 J** CFU /100mL
OSL # 8044: Grab 3	**9400 J** CFU/100mL	**2700** CFU / 100mL
OSL # 8045: Grab 4	**11,700 J** CFU/100mL	**2200** CFU / 100mL
OSL # 8046: Grab 5	**4600** CFU/100mL	**700 J** CFU / 100mL
Method: MF EPA 1600	Dilutions: 100mL, 10mL, & 1mL	

Analyst	GC

Approval: _____

Gretchen M. Concepcion-Connor

Date: November 18, 2021

Qualifiers: ICP: in the cooling process
MPN: most probable number
MF: Membrane Filtration
J: Judgement (applied calculation)

Methods: Enterococci: EPA Method 1600

Attachment #4. Samples were shipped via UPS to USEPA Region 2 Laboratory in Edison, NJ on Friday, 10/29/2021.

US EPA REGION 2 LABORATORY

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CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY Cruz Bay WWTF

PROJECT LEADER Thuan Tran

PROGRAM: SF ☐ : SITE ID _____ OPERABLE UNIT _____ PROGRAM RESULTS CODE _____

Decision	RCRA ☐	RCRA ENF ☐	NPDES ☐	SDWA ☐	AM ☐	CAA ☐	TSCA ☐	OD ☐	FIFRA ☐	CRIMINAL ENF ☐
Unit Code Y206	D210	D307	B304 X	C215	B224	A305	L306	B253		

Permit #: TPDES: VI0040835

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Outfall 001 - Comp	3	B	☐	2, 1-Liter plastic bottles: BOD5: 24-Hr Comp.	211018-01 ☐	0	10:59	10:44	10/28-29/21
		↓	☐	1, 500-ml plastic bottle: TSS: 24-HR Comp.	-01 ☐	0	↓	↓	10/28-29/21
Outfall 001 - Grab	5	B	☐	1, 125-ml plastic bottle: Phosphorus: Grab	-02 ☐	01		11:03	10/29/2021
		↓	☐	1, 250-ml plastic bottle: Turbidity: Grab	-02 ☐	0		↓	10/29/2021
		↓	☐	3, 1-Liter clear WM glasses: O&G: Grab	-02 ☐	0		↓	10/29/2021
Influent - Comp	2	A	☐	1, 1-Liter plastic bottle: BOD5: 24-Hr Comp.	-03 ☐	0	10:59	10:44	10/28-29/21
			☐	1, 250-ml plastic bottle: TSS: 24-Hr Comp.	-03 ☐	0	↓	↓	10/28-29/21
			☐		☐	012345678910			
			☐		☐	012345678910			
			☐		☐	012345678910			

11/1/21

10/29/21

COMMENTS & SPECIAL REQUIREMENTS:

Notes: BOD5 & Turbidity have short holding time (48-hours)

Preservative Added & Checked

0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

	Time	Date
Person Assuming Responsibility for Sample(s):	14:30	10/29/21
Received By:	9:50	11/1/21
Relinquished By:		
Received By:		
Relinquished By:		
Received By:		

Matrix:
A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☑ N ☐

Temp = 0.9°C on ICE 11/1/21

revised 10/25/2004

Attachment #5. EPA Analytical Data was reissued on Tuesday, 11/16/2021.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory
2890 Woodbridge Avenue
Edison , New Jersey 08837
732-906-6886 Phone
732-906-6165 Fax

November 16, 2021

Thuan Tran
Monitoring & Assessment Branch
LSASD/MAB
Edison, NJ 08837

RE: Cruz Bay WWTF - 2110018

Enclosed are the results of analyses for samples received by the laboratory on 11/01/2021. The signature below reflects the laboratory's approval of the reported results. If you have any questions concerning this report, please refer to Project Number 2110018 and contact the laboratory.

Sincerely,

Ness Tirol
Acting Chief, LSASD/LB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: Cruz Bay WWTF - 2110018

Project Number: 2110018

Project Narrative:

The National Environmental Laboratory Accreditation Conference Institute (TNI) is a voluntary environmental laboratory accreditation association of State and Federal agencies. TNI established and promoted a National Environmental Laboratory Accreditation Program (NELAP) that provides a uniform set of standards for the generation of environmental data that are of known and defensible quality. The EPA Region 2 Laboratory is NELAP accredited. The Laboratory tests that are accredited have met all the requirements established under the TNI Standards.

Condition Comments

Turbidity Analysis, Sample 2110018-02: The Laboratory received the samples past the established holding time of 48 hours due to shipping company delay. The results were qualified with a “J” to indicate an estimated value.

Biochemical Oxygen Demand- Samples were received past the holding time. The sample results were qualified with a "J" as an estimated value.

Oil and Grease analysis - Due to a power outage in the lab, the residue weighings were done the morning after the extractions for the MS sample. There sample result was below the reporting limit so no action was taken.

Comment(s):

The "Sample Analysis Date and Time" is included in the results section for any analyte with a prescribed holding time of 72 hours or less.

Data Qualifier(s):

U- The analyte was not detected at or above the Reporting Limit.
J- The identification of the analyte is acceptable; the reported value is an estimate.
K- The identification of the analyte is acceptable; the reported value may be biased high.
L- The identification of the analyte is acceptable; the reported value may be biased low.
NJ- There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate.

Final Report

Project: Cruz Bay WWTF - 2110018

Project Number: 2110018

Reporting Limit(s):

The Laboratory was able to achieve the appropriate limit for each analyte requested.

SUMMARY REPORT FOR SAMPLES

Field ID	Laboratory ID	Matrix	Date Sampled	Date Received
Outfall 001 - Comp	2110018-01	Aqueous	10/29/2021 10:44	11/01/2021 09:50
Outfall 001 - Grab	2110018-02	Aqueous	10/29/2021 11:03	11/01/2021 09:50
Influent - Comp	2110018-03	Aqueous	10/29/2021 10:44	11/01/2021 09:50

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: Cruz Bay WWTF - 2110018

Project Number: 2110018

SUMMARY REPORT FOR METHODS

Analysis	Method	Certification	Matrix
Biochemical Oxygen Demand	SM 5210B SOP C-21 Rev 2.7	NELAP	Aqueous
Oil & Grease	EPA 1664A SOP C-126 Rev 1.6	NELAP	Aqueous
Phosphorus	EPA 365.1 SOP C-68 Rev 2.7	NELAP	Aqueous
Residue, Non-Filterable	SM 2540D SOP C-33 Rev 3.7	NELAP	Aqueous
Turbidity	EPA 180.1 SOP C-81 Rev 2.7	NELAP	Aqueous

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: Cruz Bay WWTF - 2110018

Project Number: 2110018

Analyte	Result	Qualifier	Reporting Limit	Units	Date and Time of Analysis*
Field ID: Outfall 001 - Comp			Sample ID: 2110018-01		
Sanitary					
Biochemical Oxygen Demand	17.7	J	2.00	mg/L	11/1/2021 12:28:00PM
Residue, Non-Filterable	62.0		10.0	mg/L	
Field ID: Outfall 001 - Grab			Sample ID: 2110018-02		
GC - Sanitary					
Oil & Grease	---	U	5.70	mg/L	
Sanitary					
Phosphorus	5.90		0.500	mg/L	
Turbidity	3.40	J	0.100	NTU	11/1/2021 10:35:00AM
Field ID: Influent - Comp			Sample ID: 2110018-03		
Sanitary					
Biochemical Oxygen Demand	367	J	2.00	mg/L	11/1/2021 12:28:00PM
Residue, Non-Filterable	92.0		10.0	mg/L	

8.0 Photographs

Photo #1. The automatic composite sampler was set-up at the influent wet well.

Photo #2. The Grit Removal System has been out-of-service since the 2017 hurricane.

Photo #3. Screenings in the bar screen are restricting downstream flow.

Photo #4. The walkway to the bar screen is covered with vegetative growth.

Photo #5. Vegetative growth can be seen in the sludge digester, the circular clarifier & walkway.

Photo #6. The second packaged plant is out-of-service but receives septic sludge.

Photo #7. Cruz Bay WWTF effluent discharges into Cruz Bay.

Photo #8. The plant effluent automatic composite sampler has been out-of-service since 2017.

Photo #9. The temporary air-supply line has been in place since 2017.

Photo #10. The Sludge Drying Beds have been out-of-service since the clogged sludge line.

Photo #11. Flow is not recorded because the flow monitoring equipment are not operating.

Photo #12. The walkway to the packaged plants landing collapsed during the 2017 hurricane.

Photo #13. Overgrown vegetation was observed in the circular clarifier and along the walkway.