THE RITZ-CARLTON

ST. THOMAS

Supplemental Environmental Project

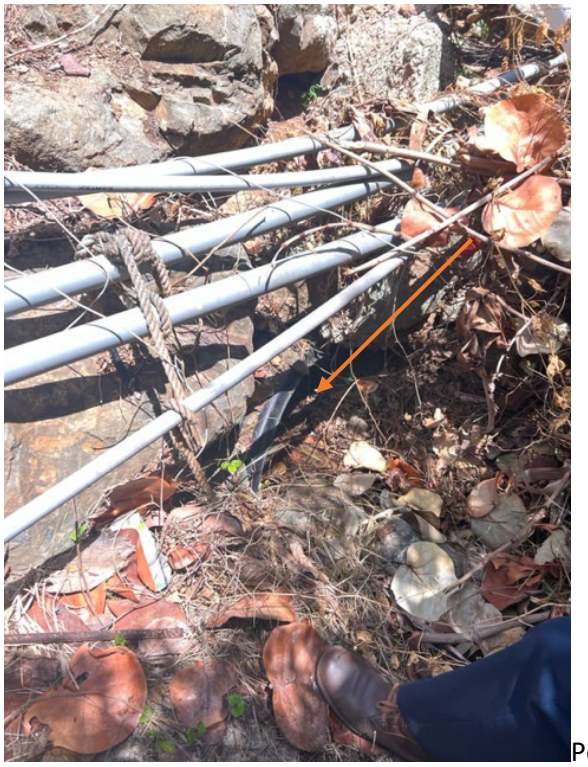
The Ritz-Carlton St. Thomas is proposing a supplement environmental project to improve surface water quality by minimizing impacts due to rainfall runoff from the site. Runoff water from the hotel property primarily discharges directly into two water bodies, into a 0.92 acres wetland located in the center of the property south of the pools and beach restaurant and into Turquoise Bay an embayment within Great Bay.

Figure 1. Discharge points at the Ritz-Carlton Hotel.

The wetland is a white mangrove (*Laguncularia racemosa*) dominated wetland which serves as a wildlife habitat and acts as a water quality treatment by allowing for the settlement of sediments and uptake of nutrients. Runoff from most of the northern portion of the property (6.5acres) flows through a 24-inch culvert into this pond. Runoff entering the pond is being collected from grassy lawns, sidewalks, and porches and from flowerbeds and landscaped areas where sediments are eroded. The property is proposing to install a sediment trap at the point of discharge to minimize the discharge of sediment (and debris) into the pond and to slow its gradual filling due to sediment deposition. A sediment trap would be constructed and maintained by the hotel. The catchment would be designed to be of sufficient size to handle the existing flows and allow for the settling of sediments. The trap would need to be cleaned on a periodic basis, and after all periods of heavy rainfall.



Dense white mangroves and a few buttonwood mangrove (*Conocarpus erectus*) densely colonize the wetland. *Lemna sp*. is found in this freshwater wetland.


Point of discharge.

The wetland typically has standing water and only discharges to the sea during significant rain events. During significant sea storms water overtops the beach to enter the pond. The pond acts as sediment trap and overtime if left unabated the pond will gradually be filled with sediment especially since there is no natural method by which sediments are periodically purged from the pond. There is a delta of sediment off the discharge culvert.

Samples will be taken prior to the installation of the sediment trap to document the sediment load that is being introduced into the pond after heavy rainfalls (½"). Total Suspended Solids (TSS) samples will be taken quarterly after rainfalls of ½" to document the reduction of sediment entering the pond. For the pre-installation samples, the sample will be taken at the end of the 24" galvanized pipe, during the first flush since this will be the period of the greatest sediment load. The sample will be taken with 30 minutes of the start of the rainfall. Post installation of the sediment trap the

sample will be taken at the discharge from the sediment trap where the stormwater discharges into the pond.. The sample point will be marked with a sign. This is approximately at 18.319428° -64.841794°.

Figure 2. Topography of the area around the pond.

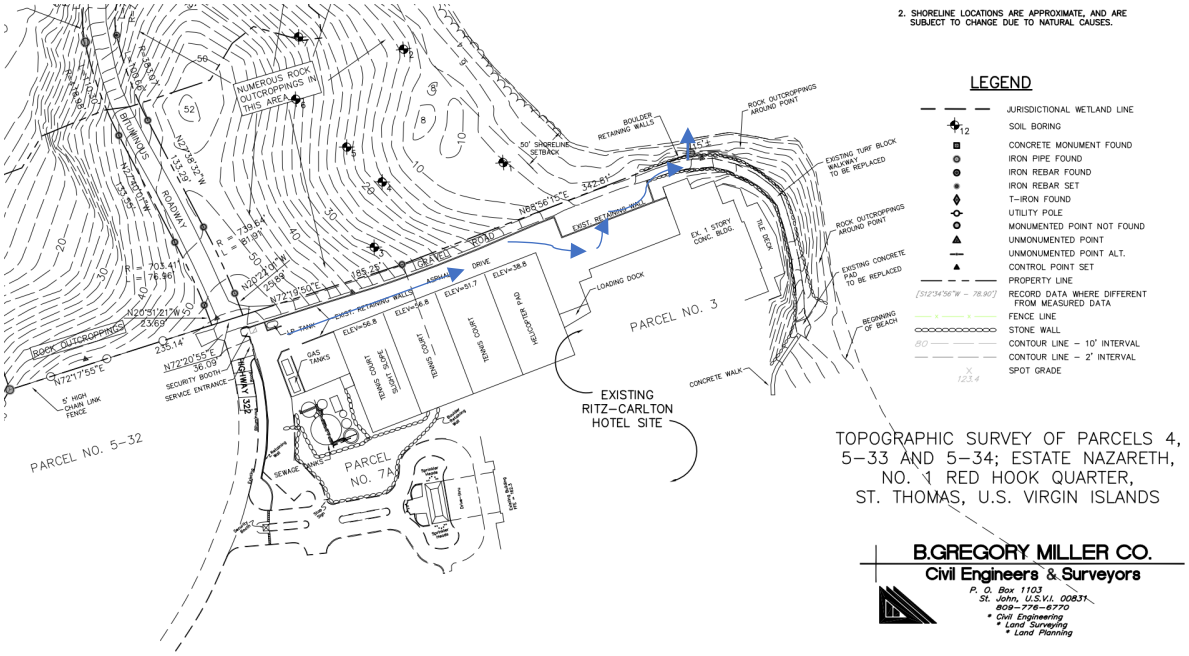
On the northern side of the property there is a steep concrete drive which collects water along the drive, the area of oil and fuel storage, the area with the trash compactor, an area where vehicles are parked and where large trucks deliver goods and carry way refuse. Runoff from about 1.5acres of paved surfaces including a portion of the upper roadway drains through a 6" pipe onto a lower roadway, across the roadway and into an area of sand and soil with some small riprap stones and into Turquoise Bay. The facilities are well maintained, but small releases do occur from vehicles and equipment and accidental spills. There is obvious hydrocarbon staining where the pipe discharges into the lower beach parking and along the edge of the roadway where the discharge flows. The hotel is proposing to install an oil and water separator and sediment trap to abate the discharge of sediment and oil laden water into the marine environment. Again, as with the sediment trap for the wetland, the oil water separator and sediment trap will be adequately sized to treat the runoff volumes coming down the roadway. Samples for Oil and Grease (O/G) and TSS would be taken from the discharge point prior to installation after a rainfall greater than ½" and then would be taken on a quarterly basis for three years to show the reduction of contaminants and sediment in the discharge water post installation. Proir to installation the sample will be taken at the discharge point from the stormwater pipe onto the lower parking area. Post installation the sample will be taken from the same discharge pipe where it discharges into the lower parking area. The sampling point will be marked with a sign. Samples both before and after installation of the oil water separator will be

taken within 30 minutes of the start of the runoff event (first flush) to capture the period of greatest potential contamination.

The Ritz-Carlton, St. Thomas has contacted, a local licensed engineer, The Green Piece, Engineering and Environment, and supplier OTL to size the oil water separators/sediment traps and install.

The Ritz-Cartlon St. Thomas will contract with an EPA laboratory (Ocean Systems Laboratory) to collect and analyze the oil and grease and TSS samples.

The property will engage with an engineer as soon as the SEP is approved and will have the oil water separators and sediment traps install within 120 days of approval.



Flow of water along the drive and into the sea along the northern portion of the property.

The projected cost associated with SEP **$27,000.00**

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(with annual sampling cost updated May 7, 2023)

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Director of Engineering
The Ritz-Carlton Hotel, St. Thomas
6900 Great Bay, St. Thomas USVI 00802

Re: Special Environmental Project.

Dear Mr. Dominique,

Thank you for reaching out to Bioimpact, Inc. in regard to your environmental project. We truly believe that the installation of sediment traps and oil water separators is an excellent proposal for improving water quality both in your salt pond and in the offshore marine environment.

Below we have provided an estimate of the cost associated with implementing this project. Except for the cost of developing the plan and the sample collection, the cost for the hydrology (calculation on runoff) and installation are estimates from speaking with the engineering company, and the cost of purchase of the equipment to be installed is a range since the equipment cannot be determine without the volume calculations. For both the sediment trap and oil water separator these would be purchased form the manufacture and installed by the contractor. Both will require monthly maintenance and maintenance after periods of heavy rainfall. This cost is not shown here as it also depends on the size that can be installed due to site constraints as well as the volume that will behandled.

Item	Estimated Cost	3 years	
Plan Development	$1,250.00		Completed Bioimpact, Inc.
Design/Hydrology	$6,000		Estimate The Green Piece
Intallation	$12,000 to $15,000		Estimate OTL - Depends on Size
			O/W Separator Biostorm or ABT, Inc
Sampling	$2600/year	$7,800.00	TSS $66.50 collected x 3 (2 Samples & Duplicate)$200per Quarter
			O/G $ 150 collected (2 Samples & Duplicate) $450 per Quarter

Schedule:

After approval, pre-samples will be taken an analyzed to provide existing runoff conditions. Samples will be taken during first flush.

As soon as approved the engineer will be hired to determine the amount/velocity of runoff flowing into the discharge area, this should be completed in less than 30 days.

As soon as the volume/velocity is known the equipment will be selected based on volume/velocity and site constraints, this should be completed in less than 7 days.

The equipment will be ordered and installed due to shipping times and availability this should be completed within 45 to 60 days.

Post runoff sample will be collected as soon as the first rainfall significant enough to produce runoff occurs during the first flush.

Samples will be the collected at least once a quarter as per the plan.

Please do not hesitate to contact us if you have any question or concerns at bioimpact@islands.vi.

Respectfully submitted,

Amy Claire Dempsey, M.A.
President, Bioimpact, Inc.