EPA REGULATORY RESPONSE

NOV response for St. Croix Renaissance Group
Ref No CEPD-RCRA-06-3007-3008-018
EPA I.D. No. VID090302084

Prepared for:
St. Croix Renaissance Group
P.O Box 1525
Kingshill, St. Croix
U.S. Virgin Islands 00802-1525

December 2006

MAGUIRE GROUP INC. was founded in 1938, and since that time has grown to become one of the nations leading Architectural, Engineering, Planning and Construction Management firms. Over 330 professionals and support staff, located in 12 offices throughout the Northeast and the U.S. Virgin Islands, provide a full complement of services. For more information about Maguire, please visit our Web site at www.maguiregroup.com. For more information about this report, please contact: Thomas B. Hevner, P.E., L.S.P. – Principal Engineer. Phone 800-899-9219, Ext. 387 or email thevner@maguiregroup.com.

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December 8, 2006

Mr. Eduardo R. Gonzalez, PE, MBA
Response & Remediation Branch
U.S. Environmental Protection Agency – Region 2
Caribbean Environmental Protection Division
Centro Europa Building, Suite 417
1492 Ponce De Leon, Stop 22
San Juan, PR 00907-4127

RE: Notice of Violation Response
St. Croix Renaissance Park (Virgin Islands Alumina LLC)
Ref No. CEPD-RCRA-06-3007-3008-018
EPA ID No. VID 090302084
St. Croix, U.S. Virgin Islands

Dear Mr. Gonzalez:

Maguire Group Inc. (Maguire) has been contracted by St. Croix Renaissance Group LLLP to provide a response to the Notice of Violation issued for the above-referenced property (hereinafter the "site") on September 29, 2006. The Notice of Violation is based on an inspection of the site that was conducted on or about June 29, 2006. The purpose of this response, as outlined in Attachment II of the Notice of Violation, is to provide information to the United States Environmental Protection Agency to enable a determination of compliance for the site.

We trust that this response fulfills the requirements of the request. The Notice of Violation Response is based on information provided by the St. Croix Renaissance Group and is detailed in the attached report. A certification by an authorized officer of St. Croix Renaissance Group is provided in Section 7.0 of this submittal. If you have any additional questions or require further clarification, please do not hesitate to contact the undersigned at 800-899-9219 Ext 387.

Sincerely,
MAGUIRE GROUP INC.

(Electronic Signature)
Thomas B. Hevner, P.E.
Principal Environmental Engineer

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1.0 INTRODUCTION

Maguire Group Inc. (Maguire) has been contracted by St. Croix Renaissance Group (SCRG) to provide a response to the Notice of Violation issued for the above-referenced property (hereinafter the "site") on September 29, 2006. The Notice of Violation is based on an inspection of the site that was conducted on or about June 29, 2006. The purpose of this response, as outlined in Attachment II of the Notice of Violation, is to provide information to the United States Environmental Protection Agency to enable a determination of compliance for the site.

To accomplish this objective, the following tasks have been completed:

1. A meeting was held at the SCRG facility during October 2006. Subsequent to a review of the subject Notice of Violation and authorization of a proposal, Maguire was contracted by SCRG on November 20, 2006.

2. A site visit was conducted during November 30 and December 1, 2006 to further evaluate conditions.

3. SCRG engaged Dixon Environmental, an environmental consultant who was responsible for the preparation of the PSD Permit for the facility and is presently involved in the preparation of Title V Operating Permit Application. It is expected that the PSD Permit will require a minor (Administrative) modification to facilitate one or more solutions for the Notice of Violation.

4. A response to the Notice of Violation was prepared within the scope and meaning of the Resource Conservation and Recovery Act (RCRA), 42 USC §§ 6901 et seq, and 40 CFR Parts 260-279.

2.0 SITE OVERVIEW

The St. Croix Renaissance Park located at Plot No. 1 Estate Annaberg and Shannon Grove in Kings Quarter, St. Croix, U.S. Virgin Islands is referred to as the "site." The site is approximately 1,244 acres in area and is zoned in I-1 (Heavy Industry). This surrounding area is comprised of primarily industrial, heavy commercial and major utility areas and the activities associated with these industries.

The site is located at the terminus of the Krause Lagoon Channel along the south central coast of St. Croix in the U.S. Virgin Islands. To the north, the site is bounded by residential properties. To the east, the site is bounded by the HOVENSA LLC Refinery. To the west, the site is bounded by a waste water treatment plant and the Anguilla Landfill beyond which is the Henry E. Rohlsen Airport. The Krause Lagoon Channel bisects the southern portion of the site, and the Caribbean Sea abuts the Site to the south.

A USGS Locus Map and Site Plan are provided for reference as Figure 1 respectively. Site photographs are included in Appendix A.

2.1 PROPERTY PARAMETERS

Acreage: The site is approximately 1,244 acres.

Assessors' Designation: According to the Christiansted Assessors' Office, the site is illustrated on DPNR Drawing No. 4541 as Plot No.1 Estate Annaberg & Shannon Grove; Plot No. 2 Estate Annaberg & Shannon Grove; Plot No. 1 Estate Spanish Town; and Plot No. 1 Estate Anguilla.

Ownership: According to the St. Croix Government Office , the current owner of the Property is the St. Croix Renaissance Group LLLP (P.C. 810 Page 488 No. 2747/2006).

Coordinates: The site is located at the following coordinates:

Latitude 17º 42' 36" N	Longitude 64º 46' 11"W
UTM 1,958,872 Meters N	312,321 Meters E (Zone 20)

Utilities: SCRG owns and operates a seawater desalination plant on the site, and water from this plant is used for site operations. The power plant located on site generates electricity for the facility. Wastewater is treated on site through two types of wastewater treatment: septic tanks with percolation fields for treating domestic sewage, and a cooling pond system that reduces turbidity from discharged seawater and rainfall runoff from the plant site. All future site development would utilize these existing property utilities.

Property Access/ Barriers: Access to the site is from the Melvin Evans Highway to the north through an open gate and through East Airport Road to the west. The gate to the race track parcel to the West is kept locked. A gate to the Containerport Road to the East is also kept locked, as is a gate to a road running along the East side of the ship channel to the Molasses Dock.

Surface Water: The Krause Lagoon Channel bisects the southern portion of the site, and the Caribbean Sea abuts the Site to the south. Other surface water bodies were not observed within a 1-mile radius of the Site.

3.0 BACKGROUND

Notice of Violation

On June 29, 2006 the U.S. Environmental Protection Agency (EPA) conducted a compliance evaluation inspection at the SCRG site.

In response to the NOV, Maguire has prepared this document which outlines the answers to the questions in Attachment II of the NOV. All documentation which could be obtained from SCRG is included in the appendices of this document. The NOV has received high priority attention from SCRG to correct the environmental compliance issues.

4.0 RESPONSE

For presentation purposes, questions or issues from USEPA are presented in *italics* and the response is presented in regular text.

Question 1
With regard to the violations cited in the above Notice of Violation (Enclosure 1), please provide the following:

- *a. A description of the actions taken, or that will be taken, to correct the violations cited in items 1 through 7. Be specific (e.g., when were actions started and finished?);*
- *b. Documentation verifying that the violations have been corrected, including photographs, where applicable; and,*
- *c. An account of changes in facility management practices sufficient to prevent a recurrence of the violations.*

Item 1 (a) (b) (c) (d) (e) sited by EPA inspectors during the site visit referenced red mud storage and containment areas. These are the areas referenced in the NOV as the Bauxite Warehouse Storage Area, Red Mud Adjustment Area, Blowdown Tank Area, Flocculation Tank Area, and Unit 6-D.

SCRG purchased the former alumina processing plant and adjoining acreage from St. Croix Alumina LLC (SCA) in June 2002. An outstanding issue with the DPNR was related to water contamination in run-off from the red mud (bauxite) pile on the property. An Administrative Order was issued by DPNR in June 2002 to SCA for violation of the Virgin Islands Water Pollution Control Act. On April 2003, a subsequent Administrative Order was issued to include SCRG as owner of the property, requesting corrective action for the red mud water contamination hazard. To avoid the burdens and uncertainties of litigation, SCA and SCRG agreed to remedy the problem as outlined in a DPNR Consent Agreement dated April 2, 2004. Thereafter, SCRG agreed to vegetate the red mud pile following SCA's completion of a contour of the pile under "the Garver Plan." Though attempted, the proposed remedial approach under the Garver Plan was unworkable and DPNR's Division of Environmental Protection halted any further work on the pile until a viable proposal was submitted for approval. SCRG, in accordance with Consent Agreement clause 4 (page 5) cannot conduct any work or remedial activity on the red mud pile until authorized by the Division of Environmental Protection. Three years later, SCA has yet to produce an alternative strategy for resolution of the water pollution hazard. Further documentation regarding this issue is attached in Appendix B.

Item 1 (f) referred to 39 gas cylinders containing oxygen and acetylene gases. Gas cylinders noted by inspectors were picked up by the party (unrelated to SCRG) that had placed them there. A picture of the removal of the gas cylinder by trucks and associated documentation is presented in Appendix C.

Item 1 (g) in the NOV referenced different areas containing oil filled drums which were

improperly labeled or handled, specifically the garage shop area. The drummed oil in these areas will be correctly labeled and logged. The drummed used oil will be batched with similar contents, and blended with virgin fuel oil for burning on site in accordance with the facility's Title 5 permit, which is currently being updated and submitted by SCRG. The estimated volume of waste oil generated at the site is approximately 30,000 gallons per year. Based on the allowable thresholds and volumes for oil burning under the existing PSD and subject to pending regulatory approval of the PSD modification, it is estimated that the waste oil stored currently at the site will require less than three months to burn.

Item 1 (h) refers to the storage of batteries found in a parking area on site. SCRG has contacted several waste management consultants for quotes on battery removal. Once quotes have been received from the contractors, SCRG will select a qualified contractor to remove the batteries from the site.

Items 2 and 3 reference the Universal Waste Requirements for the handling and disposal of fluorescent light bulbs. The fluorescent light bulbs are being batched onto pallets and wrapped in plastic for off-site disposal by an authorized hazardous waste management firm. Future discarded lamps will be properly stored in containers to prevent breakage and will be properly labeled "Used Lamps" and disposed of off site by an authorized hazardous waste management firm.

Items 4, 5, and 6 reference Used Oil Management in specific areas of the facility. Specifically the Garage shop area and the Mechanic shop. EPA noted that these areas contained drums filled with used oil and other drums containing used oily rags and other solid waste material, including used oil filters. SCRG has labeled the drums noted in the area and logged them in a central register. Copies of the storage logs are provided in Appendix D. Used oil filters will be hot drained and taken off site for disposal at a licensed facility.

Item 7 refers to a release of oil on site. It is unclear as to where the spill was observed. Verbal communication with SCRG staff, noted that the spill was possibly viewed within the area subject to the cease and desist order (issued by DPNR) south of the coal handling area. This order is preventing any further activity in the area until DPNR has cleared it. SCRG has drafted a letter and sent it to DPNR requesting that small remediation activities be granted for the area. The oil spill release will be cleaned up when the cease and desist order has been lifted and a letter stating that the SCRG can proceed with correction activities is issued. Once the Corrective Action Work Plan is approved by DPNR, follow up correspondence will be provided to demonstrate regulatory closure for the release.

Hand written logs related to drum storage used oil and solid waste are presented in Appendix D. These log books demonstrate the action SCRG has taken to remediate the violation issues with the containment vessels. Corrective actions SCRG is undertaking include changes in facility management policy such as generating log books for the handling of all drums or containers on site and strict monitoring of waste being produced and batched on site. A Used Oil Management Policy for the facility will be prepared for future use and modification. SCRG has contracted a qualified firm to perform in service oil tank inspections to ensure structural integrity of the tanks. The results of the tank evaluations are attached as Appendix

E.

SCRG has taken other steps to correct, improve, and maintain compliance with applicable standards and regulations for environmental compliance. Specifically:

i) SCRG has also instituted a new labeling procedure to accompany the log book documentation of handling waste generated on site.
ii) New Standard Operating Procedures (SOP) for the disposal process of waste oil, handling of fluorescent lamps, and hazardous waste handling and disposal have been implemented as verbal policy at the facility.
iii) A Hazardous Waste Handling and Disposal Plan will be prepared to formalize these requirements and will be forwarded to EPA under separate cover.
iv) SCRG is in the process of implementing management review process, operator training and awareness, environmental compliance, and commitment policies on the corporate level.
v) SCRG is in the process of preparing a submittal for a terminal license with DPNR which includes a Spill Prevention Control and Countermeasure (SPCC) plan in accordance with 40 CFR 112.
vi) An application for a used oil permit to generate, store, and dispose of used oil will also be prepared for submittal to DPNR.
vii) At a minimum, SCRG intends to hold weekly review meeting for employees and creation of a specific task force groups to ensure the improvement and continued compliance with environmental policy is enforced on a corporate level.

Question 2

a. *Please describe each activity conducted at St. Croix Renaissance Group that has generated solid and/or hazardous wastes (as defined in 40 CFR Part 261) during the time period June 30, 2002, to the present.*

b. *Please list the solid and/or hazardous wastes generated from each activity indicated in response to Question 2(a), above (i.e., discarded product wastes, spent solvents, corrosive, toxic, and/or flammable characteristics, absorbent materials with spent solvents, spent absorbent materials with used oil, solid wastes containing aluminum, lead, mercury, cadmium, chromium or other metals, slurry process waste, waste paints containing flammable solvents, spent solvents from parts washer/cleaning equipment, and waste generated from the alumina manufacturing process). Please indicate the monthly quantity of each such waste in kilograms generated during the time period June 30, 2002, to the present.*

At present the activities conducted on site include the running and maintenance of large and small diesel generators, desalinization processes, power plant “lay-up” activities and machine shop and garage operations. There has been no alumina production or processing conducted on site since January 2000. A letter from Mr. Jehangir Zakaria of SCRG is presented as Appendix F regarding current activities conducted on the SCRG site.

SCRG has also indicated that municipal solid waste generated on site is removed through local waste removal services and brought to the local landfill.

SCRG has submitted for approval a TPDES permit to USEPA during January 2006. Specific chemicals expected to occur within the current and proposed operations at the SCRG facility are summarized in item V of the Effluent Characterization of NPDES Form 2D. This table was included as part of Attachment A-3 in Appendix A of the January 2006 permit application and is attached as Appendix G of this NOV response. Specific additives expected to occur within the current and proposed operations at the SCRG facility are summarized in Table C-1 of Appendix C of the 2006 permit application and is included in Appendix H of this NOV response.

Question 3

a. *For each waste indicated in response to Question 2(b), above, that was determined to be a hazardous waste, please indicate the EPA and/or U.S. Virgin Island hazardous waste number and describe how the waste was determined to be a hazardous waste. For each such waste please include copies of all analytical results and/or documentation used in determining that the waste was a hazardous waste. If generator knowledge of the waste(s) was used to determine that the waste was a hazardous waste, please provide a narrative which details the knowledge employed in such determination.*

b. *For each waste indicated in response to Question 2(b), above, that was determined not to be a hazardous waste, please describe how the waste was determined not to be a hazardous waste. For each such waste please include copies of all analytical results and/or documentation used in determining that the waste was not a hazardous waste. If generator knowledge of the waste(s) was used to determine that the waste was not a hazardous waste, please provide a narrative which details the knowledge employed in such determination.*

c. *For each waste indicated in response to Question 2(b), above, that was determined to be a hazardous waste, please provide copies of manifests or shipping papers used for each shipment of hazardous waste to a Treatment, Storage, and Disposal facility.*

The current USEPA hazardous waste number for the site is EPA ID No. VID090302084.

According to information provided by SCRG, the only waste produced or shipped off site from the SCRG facility has been asbestos (EPA number CASRN 1332-21-4). SCRG retained Southern Global Safety Services to conduct the asbestos monitoring and removal services for a section of steam piping. The services which they provided were air quality monitoring for asbestos and asbestos removal. A copy of the waste manifest and a copy of the report from Southern Global Safety Services are attached in Appendix I. The purpose was to eliminate the potential for inadvertent exposures to asbestos and nuisance dust which might be generated during demolition. The asbestos was collected and disposed through Virgin Island Regulated Waste Management (VIRWM). VIRWM removed the asbestos debris off-site on October 9, 2006. They received one 20-foot long container of four pallets.

The waste was transported by VIRWM and Crowley Liner Service. It was shipped to EQ Florida Inc in Tampa, Florida for further processing. A copy of the manifest and scope of services from Southern Global Safety Services have been attached in Appendix I.

Information provided by SCRG indicates that other than asbestos, no other hazardous waste has been generated on site. SCRG has also indicated that municipal solid waste generated on site is removed through local waste removal services and brought to the local landfill.

To aid in the hazardous waste determination, sampling has been or is being conducted in accordance with the Notice of Violation. All solid waste and waste streams will be considered non-hazardous unless they exhibit characteristics of hazardous waste as defined within 40 CFR 261.20 and are not excluded from regulation as a hazardous waste under 40 CFR 261.4(b). Additionally, all waste streams with a measured pH greater than 12.5 will be buffered with sea water to lower the pH prior to final discharge to cooling and sedimentation ponds in accordance with the January 2006 TPDES permit application submittal for the site.

Question 4

Please indicate, for each box, container, and drum of potential hazardous waste observed during June 29, 2006, including but not limited to fuel oil generated by the spill incident and the sulfuric acid tank spill, the date of generation, the date the waste was placed into storage, the duration of storage, and the date of any treatment or disposal.

An estimated 35,000 gallons of sulfuric acid was released from tank T-26-1 on November 15, 2001 prior to the acquisition of the site by SCRG and during the operation of the site by St. Croix Alumina. The release was reported to DPNR and EPA, and an immediate response was initiated. Members from EPA, SCA, and DPNR were all on site during the initial release. Further response was required by the EPA from SCA. A closure report which stated there was no further action required at the site was generated from an independent contractor on behalf of SCA and was submitted to the EPA. The remainder of the 97,000 gallons of sulfuric acid had been removed from tank T-26-1 and was transferred to another on-site tank. The sulfuric acid was then shipped off island for disposal. All available information pertaining to the sulfuric acid spill is presented as Appendix J.

Question 5

In regards to the alumina manufacturing process material, please provide the following:

- *a. A detailed description of how wastes were managed (i.e., alumina slurry waste) in each step of the manufacturing process from the bauxite storage to the red mud landfill and/or sedimentation pond. In your description, please include the following information for each:*
  - *i. the exact location (i.e. by maps, figures, photos of the units) and a detailed description of the unit process including the solid waste generated and the product produced, and any alumina recovery process areas;*
  - *ii. the procedures for disposing of the wastes in each location including supporting units such as coal fired boilers, desalinization plant, machine and/or garage shop, paint and chemical building, and other*

storage facilities (i.e., slurry waste, old/out-of-date chemicals, spent solvents, off-specification products, fuel oils, waste oils and sludge from storage tanks, used oils, scrap metals, solid wastes, waste paints, and corrosive solvent waste, sludge or liquid wastewater waste);

iii. *any permit or documentation for the disposal of alumina waste, slurry waste, solid waste and other solvents;*

iv. *a detailed description of the processes implemented for the decommissioning and cleaning procedures for each manufacturing unit once they were taken out of service. Please provide a narrative which details the cleaning process and closure inspection undertaken throughout the facility, and the knowledge employed for the disposition of wastes generated from each decommissioned and/or cleaned unit; including the waste materials abandoned in each unit tan;*

v. *a detailed inventory of the waste material still present in each tank, pipeline, process unit, storage building; and,*

vi. *a detailed description of any measures taken to determine whether the wastes identified above were hazardous wastes. Please provide copies of all documentation of such hazardous waste determinations, including any analytical results obtained.*

The alumina plant was shut down in January 2000. A description of the Bayer process is attached in Appendix K along with amounts of waste generated by the previous owners. This information is the only information that the SCRG has concerning the alumina process and the waste which was generated through it. Further information concerning the information gap can be obtained by contacting SCA.

Currently, the only activities conducted on site are the running and maintenance of large and small diesel generators and desalinization processes, power plant "lay-up" activities and machine shop and garage operations. A letter from Mr. Jehangir Zakaria of SCRG is also presented as Appendix F and details current activities conducted on the SCRG site.

Question 6

With respect to the red mud landfill and the sedimentation pond, please describe the types and quantities of wastes and/or wastewater disposed of in each unit (i.e., on a monthly basis), and how each wastestream was disposed (i.e., connected to building pipeline, dumped down the drain and/or sinks, treated and mixed with other solvents, etc.). Also provide a detailed description of any measures taken to determine whether the wastestreams identified were hazardous wastes. Please provide copies of all documentation including associated operational permits for each unit, and any analytical results obtained for the waste and/or wastewater disposed of in each unit.

The red mud pile is the subject of an unresolved Consent Order Agreement between DPNR, SCRG, and SCA. An order states that no further stockpiling of mud will be allowed until the Agreement issues have been resolved. Currently the facility does not generate any red mud.

Red mud is considered a solid waste as defined by 40 CFR § 261.4. SCRG may not alter the red mud piles until the DPNR has approved the work to be accomplished by SCA; DPNR has not deemed SCA's work complete. Therefore, SCRG may not store red mud (i.e. which is removed from the inactive Bayer Process units) on the red mud piles.

Desalinization processes are conducted on site, requiring electricity for desalination unit operations. Large and small diesel generators on site produce electricity for the site and generate power for the desalinization process. The desalinization process creates brine as one of the products of the desalinization. This brine is pumped to cooling ponds where it is allowed to cool and evaporate. The fresh water which is produced is sold off or used on-site. Production amounts from 2002 to the present and amounts of brine production are attached in Appendix L.

Question 7

With respect to the oil spill incident at the Tank Farm, specifically tank T-30-1, which occurred during refurnished of the tank which use to be used for the storage of bunker C -No. 6 fuel oil. Please provide a detailed description of repair operations undertaken by Chicago Bridge Inc. (CBI)Contractors, the intended future use of such tank, and the characterization, and extent of the spill contamination of the fuel oil. Provide a detailed narrative about the corrective measures taken to avoid further fuel oil contamination and migration including clean-up procedures, and how the contaminated material with fuel oil was managed as a hazardous waste. Please provide a narrative which details the knowledge employed in such determination, and provide copies of manifests or shipping papers used for each shipment of hazardous waste to a Treatment, Storage, and Disposal facility.

A letter requesting permission to clean up a spill which was contained underneath tank T-30-1 was issued to the DPNR on July 14, 2006 from SCRG. A response to this letter was sent by DPNR on August 8, 2006 and approved the scope of work to remediate the spill. SCRG hired VI Regulated Waste Management (VIRWM) to clean up the spill and disposed of the waste.. A scope of work and a summary of the work preformed on site are attached in Appendix M.

A response letter dated November 2, 2006 was received by the SCRG from the EPA and is attached in Appendix M. This letter states that an inspection originally conducted on July 29, 2006 found that there might have been a release around tank T-30-1. Further documentation from the SCRG was requested and sent to EPA. EPA conducted a reconnaissance inspection on September 14, 2006. This inspection found that there was no visible discharge of pollutants coming from the containment structure nor were there any structural integrity problems associated with tank T-30-1. EPA stated that there was no violation of the Federal Oil Pollution Act and potential for such occurrence was minimal.

Question 8

Based upon EPA's determination, potential threats were identified throughout the facility, during the June 29, 2006. In regards to the abandoned boxes, containers, drums, leaking waste streams from secondary containment, abandoned waste material in tanks and pipelines, and waste streams running off the facility premises as observed at the time of the

inspection that were required by EPA to be characterized and disposed of appropriately. Please describe the subsequent handling of each waste, including details on shipment, treatment, and/or disposal. Include copies of Uniform Hazardous Waste Manifests, including Land Disposal Restriction Form, as applicable, for each subsequent shipment.

All known abandoned boxes, containers, drums have been removed from the site. The recently submitted TPDES permit application accounts for over 41 MGD of effluent to the cooling and sedimentation ponds on an average daily basis. For the daily maximum, approximately 49 MGD of effluent will potentially be conveyed to the cooling and sedimentation ponds. The daily maximum includes allowances of approximately 0.14 MGD of effluent for stormwater runoff and streams that originate in the red mud-settling and alumina hydrate precipitation areas of the former process area. The streams are produced by heavy rainfall. According to information provided by SCRG and Advent Environmental (who prepared the January 2006 TPDES permit application submittal), the liquid streams and rainfall runoff are accounted for within the 0.14 MGD daily maximum for effluent. For the majority of the site, there have been no effluent overflows from secondary containment areas, which appear to be sized appropriately. On an on-going basis, inspection and confirmation that an oil sheen is not present, the effluent has been manually pumped to the drainage system (the cooling and sedimentation ponds). If an oil sheen is present, the water is passed through an oil water separator before disposal. For the precipitation area, which is part of the former Bayer Process facility area,. SCRG will formulate a policy to increase the inspection frequency to facilitate manual pump outs as necessary.

7.0 CERTIFICATION

As specified in Attachment IV of the Notice of Violation, a Certification of Answers to Responses to Request for Information is provided below by a responsible officer of St. Croix Renaissance Group.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response to EPA Request for information) and all documents submitted herewith, that the submitted information is true, accurate and complete, and that all documents submitted herewith are complete and authentic, unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Myron A. Allick

Name (Print or Type)

Vice President of Operations

Title (Print or Type)

Signature

12/7/06

Date

8.0 LIMITATIONS

The conclusions expressed by Maguire in this report are based solely on the references cited. Observations were made under the conditions stated. Information provided by Federal, Territory, and local agencies contacted was relied upon as complete. The purpose of this document was to provide by way of a limited scope of work a response on behalf of the St. Croix Renaissance Group to a Notice of Violation that was issued by the USEPA. This report represents Maguire's opinion relative to such evidence and is based on information provided by our Client. Unless otherwise specified in the scope of work, Maguire accepts no responsibility for client performance of recommendations as may be offered in this report. No attempt was made to investigate site owner or operator compliance with Federal, Territory, or local laws and regulations in connection with Site usage.

Should additional information become available concerning this Site or neighboring properties in the future, that information should be made available to Maguire for review so that the conclusions presented in this report may be modified as necessary.

9.0 REFERENCES

EPA, 2006 — EPA Notice of Violation. Ref No. CEPD-RCRA-06-3007-3008-018. September 29, 2006.

EPA, 2002 — EPA Title 40 Volume 22. From the U.S. Government Printing Office. Revised July 1, 2002. 40 CFR 261

NRCS, 2002 — Natural Resources Conservation Service. *Soil Survey of the United States Virgin Islands*. United States Department of Agriculture NRCS in cooperation with the Virgin Islands Department of Planning and Natural Resources, the Virgin Islands Cooperative Extension Service, and the U.S. Department of Interior, National Park Service. 2002.

Renaissance, 2006 — Personal communication. Myron Allick and Jehangir Zakaria. Renaissance Group LLLP. October through December 2006.

TPDES, 2006 — TPDES Application for St. Croix Renaissance Group. Prepared by Advent-Environ. January 2006

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10.0 GLOSSARY

ACM	Asbestos Containing Material
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
COC	Contaminant of Concern
CZM	Coastal Zone Management
DPNR	Department of Planning and Natural Resources
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
NOV	Notice of Violation
Maguire	Maguire Group Inc.
Mg/kg	Milligrams Per Kilogram
MGD	Million Gallons Daily
PCB	Polychlorinated Biphenyl
PE	Professional Engineer
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation Recovery Information System
SCA	St. Croix Alumina
SCRG	St. Croix Renaissance Group
SPCC	Spill Prevention Control and Countermeasure
TPDES	Territory Pollutant Discharge Elimination System
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VIRWM	Virgin Island Waste Management

****

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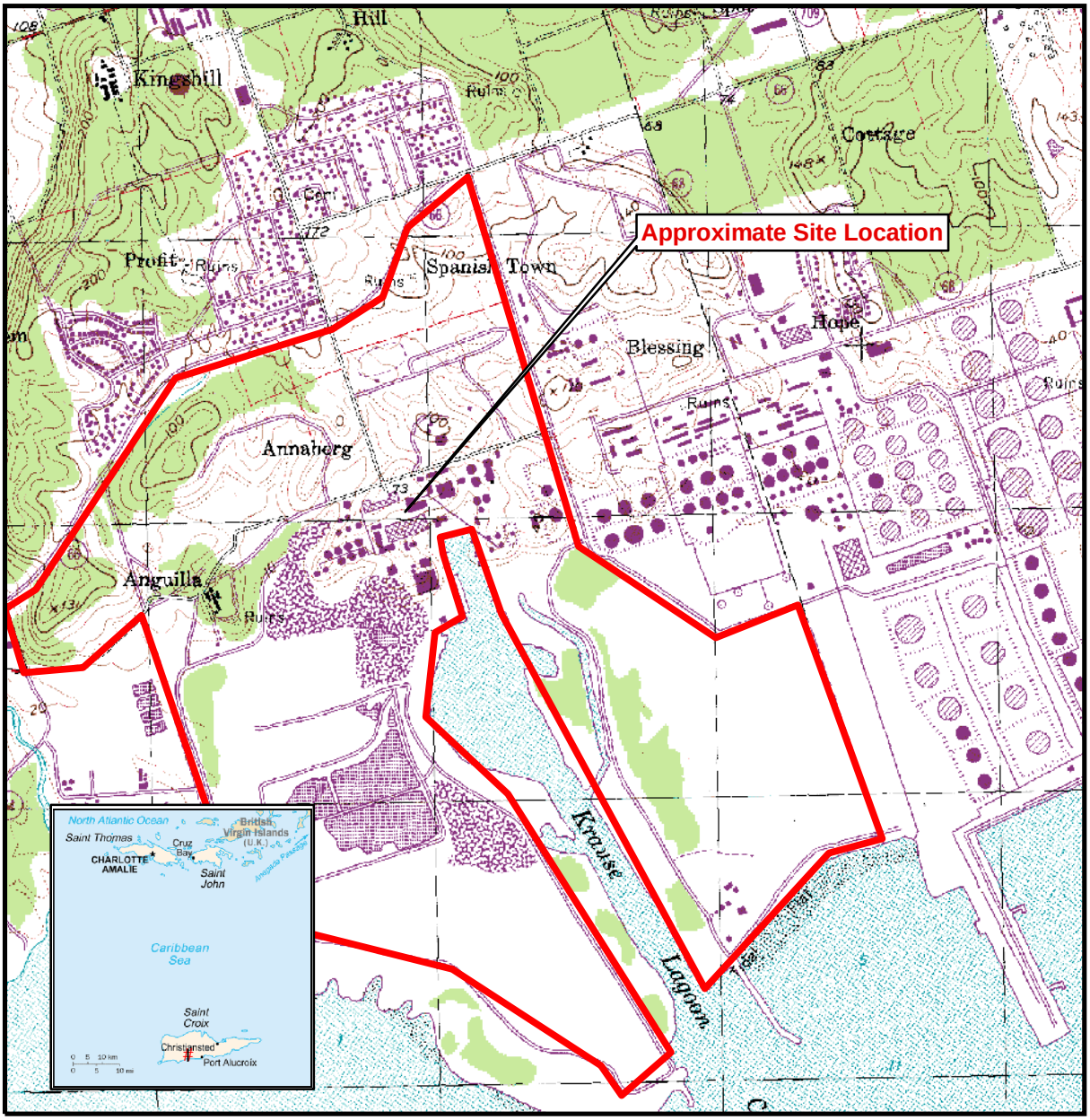
Figure 1
USGS Locus Map
Plot No.1 Estate Annaberg
and Shannon Grove
St. Croix, U.S.V.I.



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science for a changing world

1:24,000

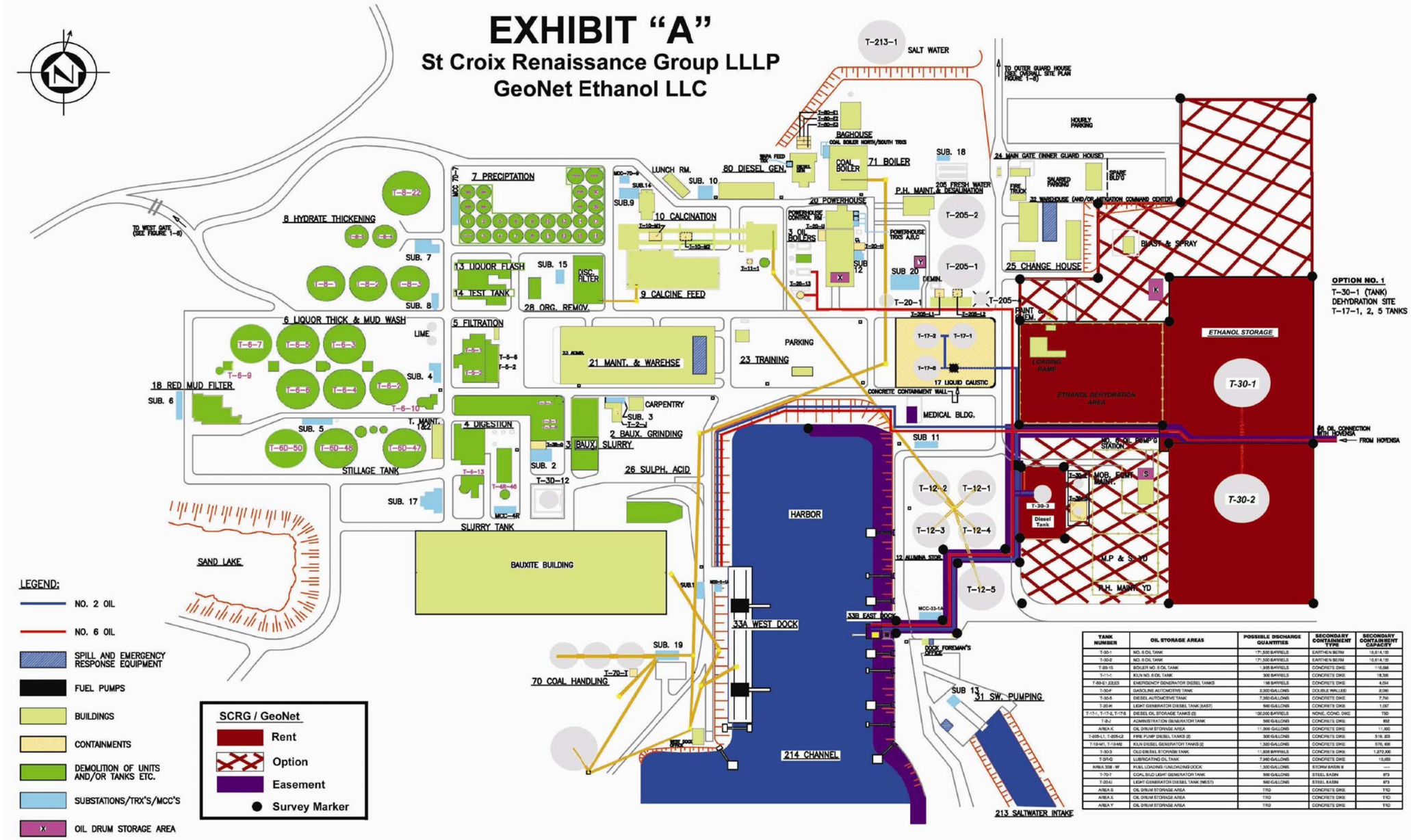
0 625 1,250 2,500 3,750 5,000 Feet

NOTE: INFORMATION AVAILABLE FROM USGS, CHRISTIANSTED, V.I. QUAD MAP, 1982.

Site Location
Latitude: 17 42' 36" N
Longitude: 64 46' 11" W

EXHIBIT "A"

St Croix Renaissance Group LLLP
GeoNet Ethanol LLC



TANK NUMBER	OIL STORAGE AREAS	POSSIBLE DISCHARGE QUANTITIES	SECONDARY CONTAINMENT TYPE	SECONDARY CONTAINMENT CAPACITY
T-30-1	NO. 6 OIL TANK	171,500 BARRELS	EARTHEN BERM	16,614,150
T-30-2	NO. 6 OIL TANK	171,500 BARRELS	EARTHEN BERM	16,614,150
T-20-13	BOILER NO. 6 OIL TANK	1,905 BARRELS	CONCRETE DIKE	116,688
T-11-1	KILN NO. 6 OIL TANK	300 BARRELS	CONCRETE DIKE	18,396
T-69-E1,E2,E3	EMERGENCY GENERATOR DIESEL TANKS	198 BARRELS	CONCRETE DIKE	4,054
T-30-F	GASOLINE AUTOMOTIVE TANK	2,000 GALLONS	DOUBLE WALLED	8,096
T-30-E	DIESEL AUTOMOTIVE TANK	7,950 GALLONS	CONCRETE DIKE	7,790
T-20-H	LIGHT GENERATOR DIESEL TANK (EAST)	560 GALLONS	CONCRETE DIKE	1,087
T-17-1, T-17-2, T-17-5	DIESEL OIL STORAGE TANKS (3)	100,000 BARRELS	NONE, COND. DIKE	TBD
T-8-J	ADMINISTRATION DEHUMIDIFIER TANK	560 GALLONS	CONCRETE DIKE	852
AREA K	OIL DRUM STORAGE AREA	11,000 GALLONS	CONCRETE DIKE	11,800
T-205-L1, T-205-L2	FIRE PUMP DIESEL TANKS (2)	300 GALLONS	CONCRETE DIKE	519,303
T-10-M1, T-10-M2	KILN DIESEL GENERATOR TANKS (2)	1,320 GALLONS	CONCRETE DIKE	576,400
T-30-3	OLD DIESEL STORAGE TANK	11,938 BARRELS	CONCRETE DIKE	1,272,200
T-3-H-G	LUBRICATING OIL TANK	7,940 GALLONS	CONCRETE DIKE	15,859
AREA S,T,W	FUEL LOADING / UNLOADING DOCK	1,320 GALLONS	STORM BASIN S	----
T-70-1	COAL SILO LIGHT GENERATOR TANK	560 GALLONS	STEEL BASIN	873
T-20-H	LIGHT GENERATOR DIESEL TANK (WEST)	560 GALLONS	STEEL BASIN	873
AREA S	OIL DRUM STORAGE AREA	TBD	CONCRETE DIKE	TBD
AREA X	OIL DRUM STORAGE AREA	TBD	CONCRETE DIKE	TBD
AREA Y	OIL DRUM STORAGE AREA	TBD	CONCRETE DIKE	TBD

REFERENCE:
ST. CROIX RENAISSANCE GROUP, LLLP
FIGURE 1-11: SCRG LEASE EXHIBIT A
SEPT. 21, 2005
UPDATED FEB. 24, 2006

0 100 200
SCALE: 1"=100'

Maguire Group Inc.
Architects/Engineers/Planners
1142 King Street, P.O. Box 223039
Christiansted, St. Croix, USVI 00822

PROJECT NO.: 18176
DRAWN BY: SRP
CHK'D BY: TBH
DATE: 12/06/06

SITE PLAN
ST. CROIX RENAISSANCE PARK
ST. CROIX, U.S. VIRGIN ISLANDS

SHEET TITLE:
SCALE: AS NOTED

SHEET NO.:
FIG. 2
SHEET 1 OF 1

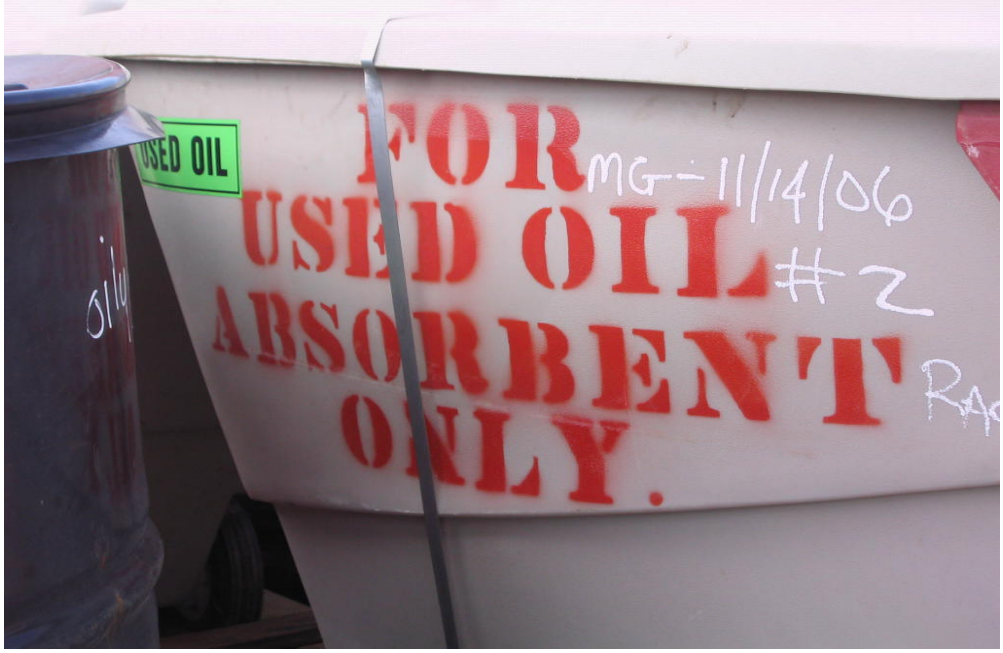
Appendix A

Site Photographs

Photograph Log

Project Name: St. Croix Renaissance Park
Site Location: Plot 1 Estate Annaberg and Shannon Grove
St. Croix, U.S. Virgin Islands
Project Number: 18176
Date: December 1, 2006

Picture 1: View of the labeled Used Oil Drums.



Picture 2: View of labeled absorbent material storage container.

Photograph Log

Project Name: St. Croix Renaissance Park
Site Location: Plot 1 Estate Annaberg and Shannon Grove
St. Croix, U.S. Virgin Islands
Project Number: 18176
Date: December 1, 2006

Picture 3: A view labeled and documented drums stored on site.

Picture 4: View of cease and desist area. Area cannot be changed until Order is lifted.

Photograph Log

Project Name: St. Croix Renaissance Park
Site Location: Plot 1 Estate Annaberg and Shannon Grove
St. Croix, U.S. Virgin Islands
Project Number: 18176
Date: December 1, 2006

Picture 5: View of cease and desist area, south of the coal handling area.

Picture 6: View showing no visible sign of oil spills in the cease and desist area.

Appendix B

Red Mud Area Documentation

Building Permit #_____ Stop Work Order # 007-06

STOP WORK ORDER

DEPARTMENT OF PLANNING AND NATURAL RESOURCES
STX DISTRICT DIVISION OF PERMITS

Telephone: (340) 778-2994 Fax: (340) 778-4620

NOTICE OF VIOLATION

Pursuant to Title 29, Section 297 of the Virgin Islands Code, **YOU ARE HEREBY ORDERED TO IMMEDIATELY STOP THE FOLLOWING WORK:**

- [ ] General Construction
- [X] V.I. Code [X] ~~UBC~~ IBC
- [ ] Plumbing Construction
- [X] Electrical Construction

[ ] **Partial Stoppage:** Work in these specific areas must be stopped immediately:

[X] **Full Stoppage:** All work must be stopped immediately

This STOP WORK ORDER has been issued for the following reasons: Code Section (s) T.29 §294 (a)(1)(2)
Brief Description of Violation: Removal of any building or structure or appurtenances connected or attached to such buildings or structures.

Immediate Corrective Action (s) Required: _____

EXCEPT FOR ANY IMMEDIATE CORRECTIVE ACTIONS ORDERED ABOVE, DO NOT PROCEED WITH FURTHER WORK, UNLESS AUTHORIZED IN WRITING BY THE COMMISSIONER OR DESIGNEE.

You may request a hearing within 10 days to discuss all issues concerning this STOP WORK ORDER. Requests must be made in writing to the Commissioner with copies addressed to the Director of Permits. A request for a hearing does not act as a stay of enforcement of the Order unless so directed by the Commissioner or Designee.

You have 45 days in which to make all necessary corrections to bring this building into full compliance with the Virgin Islands Building Code, Pursuant to V. I. Code Title 29 Chapter 5, Subsection 312 (e)

Please be aware that if the needed corrections are not made, you will be subject to additional enforcement actions, including permit revocation and referral to the Attorney General's Office for further investigation, possible prosecution and civil or criminal penalties.

Permittee's Name: St. Croix Renaissance Group, LLLP Location: Estate Anguilla

Date Issued: 6/12/06 Date Posted: _____ Time Posted: 10:15

Person Presented To: [signature] Designation : _____

Inspector's Name: _____ Inspector's Signature: _____

[signature]
for Commissioner or Designee
Department of Planning and Natural Resources

GOVERNMENT OF THE VIRGIN ISLANDS
BEFORE THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES
DIVISION OF COASTAL ZONE MANAGEMENT

VIRGIN ISLANDS COASTAL ZONE MANAGEMENT COMMISSION	)	
	)	**CEASE AND DESIST ORDER**
COMPLAINANT,	)	
	)	**NO. VCZX-05-06**
V.	)	
ST. CROIX RENAISSANCE GROUP, LLLP	)	
BENNINGTON GROUP, LLC	)	
J&S DEVELOPMENT, CORP.	)	
BRADFORD WELDING & TRUCKING	)	
RESPONDENTS.	)	

CEASE AND DESIST ORDER
FOR VIOLATIONS OF THE
COASTAL ZONE MANAGEMENT ACT

Pursuant to Section 913(b)(6) of the Virgin Islands Coastal Zone Management Act, Title 12, Virgin Islands Code, you are hereby notified that the Virgin Islands Department of Planning and Natural Resources Coastal Zone Management Division is issuing this Order to **Cease and Desist all development activities on Plots 1 and 2 Estate Annaberg and Shannon Grove and Plot 1 Estate Anguilla that are referenced in the Factual Basis contained herein.**

Failure to comply with the Virgin Islands Coastal Zone Management Act, its Rules and Regulation and this Order within the time specified herein will result in DPNR-CZM initiating an administrative action, including the assessment of a civil fine not to exceed ten thousand ($10,000.00) or any other applicable remedy as provided for in Section 913(b)(7) of the Coastal Zone Management Act. Compliance with this Order does not preclude DPNR-CZM from pursuing penalties for the violations cited in this Order.

The Virgin Islands Code requires an administrative hearing before the Commissioner or his designee within seven (7) working days of issuance of this Order. The purpose of this hearing is to determine the facts related to the alleged violation of the Act and to determine an appropriate remedy, if the Commissioner or his designee determines that a violation has occurred. The hearing in the above-entitled matter is scheduled for **Tuesday June 20, 2006, at 11:00 a.m. in the Coastal Zone Management Division of the Department of Planning and Natural Resources, No. 45 Estate Mars Hill, Frederiksted, St. Croix.** If you fail to appear, the hearing will be conducted in your absence. You may, however, request a postponement prior

to the hearing date. The hearing may be cancelled if the violation is remedied prior to the date of the hearing.

Factual Basis

1. St. Croix Renaissance Group, LLLP is the owner of Plot 1 Annaberg and Shannon Grove, Plot 1 Anguilla, and Plot 2 Annaberg and Shannon Grove (hereinafter "the properties")

2. The properties are located in the first tier of the Virgin Islands Coastal Zone.

3. On March 7, 2006, St. Croix Renaissance Group LLLP ("SCRG") applied for Major Coastal Zone Management (CZM) Permit No. CZX 31-06(L) to demolish existing processor units, boiler and associated stacks.

4. On May 15, 2006, SCRG's application was deemed complete. Attached to the letter deeming the application complete was a list of 15 concerns of the Department of Planning and Natural Resources that SCRG was directed to address prior to the CZM St. Croix Committee's public hearing on this application.

5. On June 13, 2006 staff from the Division of Building Permits conducted an inspection of the properties and observed that the demolition activities referenced in SCRG's application for Major CZM Permit CZX 31-06(L) had commenced and issued a "Stop Work Order," because no Building Permit had been issued for these activities.

6. On June 13, 2006, staff from the Divisions of Environmental Enforcement and Coastal Zone conducted an inspection of the St. Croix Renaissance facility, guided by SCRG personnel.

7. Staff observed that demolition activities had taken place with respect to the processing units on No 1 Anguilla and No 1 Annaberg and Shannon Grove. Staff also observed that land clearing activities had taken place with respect to the scrap metal storage area, Plot No 1 Anguilla.

8. One of the Department's concerns attached to the letter deeming SCRG's application complete was the scrap metal storage area, immediately adjacent to Krause Lagoon. That concern states:

   Section 6.03, Scrap Metal Stockpile, indicates, "No erosion and sedimentation control devices are planned for implementation in this area." The existing scrap metal pile is adjacent to mangroves and the turning basin. Because there will be a dramatic increase in the amount of vehicular traffic in the area, and there is likely to be significant disturbance to the soil, it is recommended that erosion control measures be established on the turning basin side of the roadway and scrap metal pile. It is further recommended that the applicant consider moving the pile west of its current position.

This action would direct any runoff to the cooling ponds instead of the Krause Lagoon channel.

Upon inspection of the scrap metal stockpile, staff observed heavy equipment tracks indicating increase in the vehicular traffic in the area which resulted in significant disturbance to the soil. There are no sedimentation control devices to mitigate the flow of loose dirt and oil into Krause Lagoon.

9. Staff observed open oxygen tanks being stored and heard the tanks releasing oxygen in the scrap metal storage area. Staff observed that no fire suppression devices had been deployed in this area, or anywhere else that development activities had been taking place.

10. At the demolitions site, staff observed standing oil that had leaked from a tank that is part of the processing units being dismantled.

11. Staff also observed that oil had leaked onto the ground from motors and gears that, once dismantled from the processing units, were being stored in the scrap metal stockpile area immediately adjacent to Krause Lagoon.

12. Myron Allick, managing partner of SCRG, stated that SCRG contracted the demolition work out to Bennington Group, LLC, who then subcontracted the demolition out to J&S Development Corp. and Bradford Welding & Trucking. Mr. Allick further stated that the development activities cited herein are being conducted by these subcontractors.

13. Mr. Allick stated that SCRG instructed Bennington Group's subcontractors to stop these activities, but these subcontractors barricaded the portion of SCRG's property containing the processing units and continued to demolish these structures, despite being instructed to cease these activities.

14. Mr. Allick admitted that off-island personnel working for one or both of these subcontractors are residing on SCRG's property.

Based on the foregoing, there is reason to believe that Respondents caused development to be undertaken in the first tier of the coastal zone without a CZM permit. This activity constitutes a violation of Section 910(a)(1) of the CZM Act, Title 12, Chapter 21 of the Virgin Islands Code.

Orders for Corrective Action

1. Within 24 hours of receipt of this Order, Respondents shall immediately relocate all equipment from the scrap metal stockpile area and the SCRG's facility to the northeastern parking lot of the SCRG's facility.

2. Within 72 hours of receipt of this Order Respondents shall install sediment control devices, to be approved by staff from the Division of Coastal Zone Management, around those portions of the scrap metal stockpile area that are adjacent to Krause Lagoon.

3. Within 48 hours of receipt of this Order, all personnel associated with any or all Respondents shall cease utilizing the premises as living quarters.

Dated this 15TH day of June 2006.

for

John H. Beagles
Chairman, St. Croix CZM Committee,
for
The Coastal Zone Management Commission

CERTIFICATE OF SERVICE

I hereby certify that I caused the foregoing Cease and Desist Order VCZX 05-06, *Virgin Islands Coastal Zone Management Commission v. ST. Croix Renaissance Group LLLP, Bennington Group LLC, J&S Development Corp. and Bradford Welding and Trucking* to be served upon Respondent St. Croix Renaissance Group LLLP by certified mail, return receipt requested to Myron Allick, ST. Croix Renaissance Group LLLP, 1 Estate Anguilla, P.O. Box 1525, Kingshill, VI 00851-1525 and that I have sent a copy Cease and Desist Order VCZX 05-06 via facsimile to St. Croix Renaissance Group LLLP at 778-1400.

6/16/06
Date

SENT BY:VIDINR/DEP Watergut ; 4- 2- 4 ; 2:47PM ; VIDINR/DEP Watergut 040 770 0400;# 2/10

CONSENT AGREEMENT

This Consent Agreement (the "Agreement") is entered into as of March ___, 2004 by and between the Department of Planning and Natural Resources (the "DPNR"), Division of Environmental Protection, on behalf of the Government of the Virgin Islands, with an address of 45 Mars Hill, Frederiksted, St. Croix, U.S. Virgin Islands 00840-4474 (the "DEP") and St. Croix Renaissance Group, L.L.L.P., with an address of 1 Estate Anguilla, Kingshill, U.S. Virgin Islands 00851 ("Renaissance").

RECITALS

A. The Commissioner of the DPNR (the "Commissioner") issued an Administrative Order, dated April 29, 2003 in Action No. C-03-002 pursuant to Title 12, Chapter 7, Section 188(d) of the Virgin Islands Code, the Virgin Islands Water Pollution Control Act (the "Administrative Order") concerning certain matters described below. A copy of the Administrative Order is attached hereto and hereby incorporated herein.

B. In the Administrative Order, the Commissioner found that a water pollution emergency existed requiring immediate action to protect the public welfare and that:

(i) During April, 2002, St. Croix Alumina L.L.C. ("SCA") responded to a discharge of red mud into a ditch on the western portion of the facility SCA then owned (the "Site") and the near-shore marine environment from red mud piles at the Site by constructing a berm to prevent further discharges.[1]

(ii) The DEP issued an Administrative Order on June 18, 2002 directing SCA to remove the red mud from the ditch, reconstruct a temporary containment system and submit a plan for a permanent containment system.

(iii) SCA responded that the reinforced berm/containment system was sufficient to contain any future releases until an engineered structure could be put in place by SCA.

(iv) DEP relied on SCA's representations and assurances that the containment system would prevent future releases of red mud until a permanent structure was constructed.

[1] As set forth in the DPNR's Administrative Order of June 18, 2002, this discharge of red mud was "due to the re-working of the red mud piles by St. Croix Alumina, LLC".

(v) On January 21, 2003, a settlement concerning the June 18, 2002 Administrative Order was reached wherein SCA agreed to submit plans for the engineered structure to the Coastal Zone Management Division of DEP.

(vi) On January 28, 2003, Dr. Ken Haines of Renaissance, which purchased the Site following the spill event, reported to DEP that on or about January 9, 2003, a new breach had occurred.

(vii) The breach allowed significant quantities of red mud and high pH liquid that had accumulated behind the berm to again flow into the West Ditch (the "Ditch").

(viii) Mr. Haines stated the SCA Site Manager, Mr. Eric Black, inspected the Site on January 13, 2003.

(ix) On January 31, 2003 and February 11, 2003, personnel from DEP inspected the Site and observed Site conditions related to the known releases of red mud and high pH liquid.

(x) On March 7, 2003, DEP personnel performed an inspection of the Ditch and found it contained a substantial quantity of red mud with pH ranging from 9-11.

(xi) Red mud and high pH liquid was observed in the mangrove area at the south side of the Ditch discharge pipe.

(xii) On March 13, 2003, DEP sent a letter to SCA, with a copy to Renaissance, describing the findings of the January-March 2003 DEP inspections, providing notice of the violations of the regulations and requesting that SCA perform specific remedial actions in response to the continuing discharges.

(xiii) SCA's lawyers responded in a March 19, 2003 letter that the discharges were Renaissance's responsibility.

(xiv) Renaissance did not respond.

(xv) In April, 2003, due to heavy rains over the preceding days, red mud and red mud laden swamp water flowed out of the red mud storage areas at the Site and into the drainage way that runs along the western boundary of the property.

(xvi) DEP personnel inspected the Site with a representative of Renaissance during April, 2003 following these releases.

(xvii) New accumulations of red mud were observed and measured by DEP personnel.

C. Due to the conditions commencing with the first release at the Site on or about March and April, 2002 as described above and in those orders subsequently issued by the DEP setting forth the corrective action required by the DEP to correct, clean up, minimize, mitigate or otherwise cure the initial release and subsequent related conditions, the DEP issued the Administrative Order on April 29, 2003 setting forth those corrective actions then required by the DEP. Renaissance was included as a Respondent for the first time in the Administrative Order.

D. DEP filed a Supplemental Motion in Support of Administrative Order on February 20, 2004.

E. Renaissance filed a Response to the DEP's Supplemental Motion on February 27, 2004.

F. SCA filed its Response to DEP's Supplemental Motion on March 1, 2004.

G. DEP filed its Reply in Support of the Administrative Order on March 2, 2004.

H. The DEP and Renaissance wish to settle all claims between them regarding the matters described above and in the Administrative Order and wish to avoid the burdens and uncertainties of litigation concerning any such claims and the Administrative Order. Further, it is the mutual conviction of the DEP and Renaissance that it is in the public interest, and in their own best interest, not to expend the considerable resources and time that would be involved in litigating in any adjudicatory or any other proceeding the matters set forth above, but instead to utilize those resources and that time to undertake the programs and activities provided for in this Agreement within the time periods set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the DEP and Renaissance agree as follows:

1. Submission of R&D Plan: Renaissance shall within thirty (30) days of its execution of this Agreement submit to the DEP a Research and Development Plan concerning Renaissance's responsibility to vegetate the bauxite residue disposal areas at the Site (the "R&D Plan"). The R&D Plan shall be designed to evaluate and select a methodology to vegetate the red mud piles at the Site.

The R&D Plan shall include, without limitation, the selection of an area of the red mud piles at the Site that is not to be disturbed by work to be performed by SCA and the performance in that area of no fewer than five test studies of different methodologies to vegetate the red mud piles at the Site.

2. Completion of Vegetation Work Plan: Based on the results of the test studies to be performed pursuant to the R&D Plan, as soon as SCA's work has been completed and has been reviewed and approved by the DEP and the St. Croix Committee of the Virgin Islands Coastal Zone Management Commission, Renaissance will commence and diligently prosecute until completion the selected Vegetation Work Plan (which shall specifically include a completion date) and any supplemental contouring of the bauxite residue disposal areas at the Site; provided, however, that Renaissance may request an extension of the completion date of the Vegetation Work Plan based on demonstrated unforeseen failures regarding the Vegetation Work Plan. Renaissance agrees that if SCA's work within the berm at the Site has been completed prior to the final completion of SCA's work, then Renaissance will commence implementation of the Vegetation Work Plan at that time (provided that the R&D Plan is completed). The Vegetation Work Plan may provide that certain areas of the bauxite residue disposal area will not be vegetated, either because vegetation in those areas is not necessary for erosion control or because Renaissance may need access to the red mud in those areas.

3. Reporting Requirements

(a) Renaissance will submit weekly written reports (when field activities are being conducted by or on behalf of SCA and/or Renaissance) to be faxed to the DEP, to include tasks completed and projected accomplishments for the following week (if known to Renaissance). Monthly reports are sufficient when no field activities are being conducted.

(b) DEP must be kept informed via telephone for all significant unplanned activities, changes in the R&D Plan and/or the schedule of work to be performed by Renaissance. Emergency phone calls will be placed to notify DEP within 24 hours upon discovery of unanticipated events that may pose danger to health or the environment or that are likely to result in material delays in the work. (DEP contact persons: Hollis Griffin, Director, or Natural Resources Consultants, Inc. ("NRCI") personnel).

(c) Periodic progress reports shall be submitted to DEP at the conclusion of each significant phase of the tasks identified above. These progress reports may be submitted with the weekly reports noted above. A final report shall be submitted within 30 days of the completion of the work described in the R&D Plan.

A10

4. Additional Requirements. No work pursuant to the R&D Plan shall be carried out without a representative of DEP at the work site unless such work has been authorized in advance by DEP or DEP's representative, NRCI. Available photographic/video records of the work performed shall be submitted to DEP by Renaissance as part of the report at the completion of the work described in the R&D Plan.

5. Oversight and Monitoring.

(a) Renaissance shall be in regular contact with NRCI, DEP's selected environmental consultant/monitor for all activities at the Site that are the subject of this Agreement. NRCI shall represent DEP and be under the direct supervision of DEP, and shall have the delegated authority to make decisions on behalf of the Commissioner on all matters concerning work at the Site associated with this Agreement. Renaissance must further insure that NRCI:

(i) Is provided 24 hours notice of all work to be carried out at the Renaissance facility by or on behalf of Renaissance that is associated with the subject matter of this Agreement.

(ii) Is given prior notification of all project progress meetings or briefings of which Renaissance is aware to enable NRCI to be present at such meetings or briefings.

(iii) Is transmitted all documentary information, reports, plans, or other correspondence of any kind associated with the work to be performed for or on behalf of Renaissance pursuant to this Agreement.

(iv) Has available to it any and all records reasonably available to Renaissance concerning the subject matter of this Agreement including but not limited to red mud disposal/storage areas, spill reports, historic and current plant construction diagrams and building plans related to the storage, transport use and disposal of red mud particulate materials at the Site.

(b) Renaissance shall provide funding for and reach agreement with NRCI concerning the terms of reasonable compensation (net 30 days) for NRCI's services to be provided to DEP associated with activities undertaken as a result of this Agreement. Said agreement shall be documented in the form of a written proposal prepared by NRCI and agreed to in writing by Renaissance (the "NRCI Agreement"). Any invoices submitted by NRCI to Renaissance pursuant to the NRCI Agreement shall be paid by Renaissance within thirty (30) days of receipt of such invoices by Renaissance, unless Renaissance objects to some or all of the costs described in such invoices. Renaissance shall pay any undisputed portion of such invoices within such thirty (30) day timeframe. With regard to any disputed portion of such invoices, Renaissance and

NRCI shall meet and attempt to negotiate an agreement concerning such disputed invoices within forty (40) days of the date of such invoices. If Renaissance and NRCI cannot reach agreement before the expiration of such forty (40) day period, then within an additional ten (10) day period both Renaissance and NRCI shall send written notice to DEP concerning the same, referencing this Agreement and the process set forth in this Paragraph, relevant contact information, and a summary of the issues involved. DEP shall within ten (10) days of receiving such written submittals from Renaissance and NRCI decide to what extent the disputed invoices shall be paid by Renaissance. The NRCI Agreement, including said terms of compensation, shall remain in effect until it has been determined by DEP that the services to be performed by NRCI concerning this Agreement are no longer necessary.

(c) Renaissance shall pay to NRCI within thirty (30) days of the full execution of this Agreement, as compensation for NRCI's previous (unpaid) services that were provided to DEP and that were associated with the Site, an amount not to exceed the sum of $45,000 (the "NRCI Services Payment"), the exact amount of the NRCI Services Payment being determined by subtracting from $45,000 the amount SCA may pay to NRCI within thirty (30) days of the full execution of this Agreement, such payment by SCA being for NRCI's previous (unpaid) services that were provided to DEP and that were associated with the Site. By way of example, if SCA shall so pay $5,000 to NRCI, then the amount of the NRCI Services Payment shall be $40,000.

(d) By its execution of this Agreement, DEP acknowledges receipt of the sum of ten thousand dollars ($10,000) from Renaissance as reimbursement for oversight services performed, and Past Response Costs (hereinafter defined) incurred, by DEP concerning activities at the Site that are the subject of this Agreement. For the purposes of this Agreement, the term "Past Response Costs" shall include all response costs incurred by DEP in connection with the matters that are the subject of this Agreement that were incurred before the date of this Agreement.

6. Submission of Master Plan. Within six (6) months of the execution of this Consent Agreement by the Commissioner of DPNR, Renaissance shall submit a Master Plan to CZM that will include conceptual plans for the entire Site, addressing grading, drainage, wetlands areas and natural systems restoration, as well as commercial and industrial uses of the Site. Upon approval of the Master Plan, Renaissance shall commence work in accordance with the Master Plan.

7. Stipulated Payment for Violations of this Agreement.

If Renaissance violates a provision of this Agreement applicable to Renaissance, then the parties agree that the penalty for such violation shall be that Renaissance shall pay a stipulated amount to DEP in accordance with the following schedule:

Period of Violation	Amount Per Day
1st - 15th day	$100 per day
16th - 30th day	$250 per day
31st day – 6 months	$500 per day
Greater than 6 months	$1,000 per day

The payment of any stipulated amount by Renaissance shall not alter in any way the obligations of Renaissance pursuant to this Agreement; provided, however, all of the provisions of this Paragraph 7 are subject to the provisions of Paragraph 13 below concerning force majeure.

8. Covenants Not to Sue

(a) In consideration of the actions that will be performed and the payments that will be made by Renaissance under the terms of this Consent Agreement, and except as specifically provided in Paragraph 9 of this Agreement, DEP covenants not to sue or take any administrative action against Renaissance with respect to the work mandated by the April 29, 2003 Administrative Order and/or for recovery of any Past Response Costs.

(b) DEP finds that the red mud releases described in the April 29, 2003 Administrative Order were caused by the acts and/or omissions of SCA and/or Alcoa Worldwide Alumina, LLC ("Alcoa"), which acts and/or omissions include the gross regrading of the red mud piles and the breeching of the containment berm at the Site in 2002, the failure of SCA and/or Alcoa to carry out the corrective actions as mandated in the Administrative Order of June 18, 2002 relating to the releases of red mud which took place in March and April of 2002. DEP will not assert that acts or omissions of Renaissance caused the releases described in the April 29, 2003 Administrative Order.

(c) Provided that SCA and/or Alcoa are proceeding with the corrective work mandated by DEP in the June 18, 2002 and the April 29, 2003 Administrative Orders, and such further Orders of DEP, DPNR or other governmental agencies regarding the red mud releases, DEP covenants not to sue or take any administrative action against Renaissance, nor shall Renaissance be liable for red mud releases that may occur during SCA's and/or Alcoa's performance of the corrective work, except if caused by the direct actions of Renaissance. In the event, however, that SCA and/or Alcoa shall abandon the performance of the above-described corrective work prior to completion of the same (to the satisfaction of DEP and the applicable governmental agencies), then

Renaissance agrees to take such actions as are reasonably necessary to prevent the unlawful release of red mud into waters of the USVI. SCA and/or Alcoa will be deemed to have abandoned the performance of such corrective work if:

(i) SCA and/or Alcoa notifies DEP and/or Renaissance in writing that it is ceasing the performance of corrective work at the Site; or

(ii) SCA and/or Alcoa fails to notify Renaissance in writing that it has not abandoned the performance of the work within 48 hours of a written request for such confirmation by Renaissance to SCA and/or Alcoa.

(d) These covenants not to sue shall take effect upon the receipt of DEP of the payments required by Paragraph 5. These covenants not to sue are conditioned upon the complete and satisfactory performance by Renaissance of its obligations under this Consent Agreement. These covenants not to sue extend only to Renaissance and do not extend to any other person.

For purposes of this Paragraph 8, Renaissance shall include Renaissance and its respective shareholders, members, managers, partners, employees, directors, agents, and officers.

9. Reservations of Rights

DEP reserves, and this Agreement is without prejudice to, all rights against Renaissance with respect to all matters not expressly included within the covenants not to sue in Paragraph 8. Notwithstanding any other provision of this Agreement, DEP reserves all rights against Renaissance, and this Agreement is without prejudice to, all rights against Renaissance with respect to:

(a) liability for failure of Renaissance to meet a requirement of this Agreement;
(b) subject to the provisions of Paragraph 8, liability for costs incurred or to be incurred by the Government of the U.S. Virgin Islands that are not within the definition of Past Response Costs;
(c) liability for injunctive relief or administrative order enforcement under Section 106 of CERCLA, 42 U.S.C. § 9606;
(d) criminal liability;
(e) liability for damages for injury to, destruction of, or loss of natural resources, and for costs of any natural resource damage assessments;
(f) conditions at the Site, previously unknown to DEP and due solely to an act or omission of Renaissance, which are discovered after the date of this Agreement and which together with any other relevant information indicate that the corrective action taken by or on behalf of Renaissance is not protective of human health or the environment; and

(g) information, previously unknown to DEP and solely concerning an act or omission of Renaissance, which together with any other relevant information indicates that the corrective action taken by or on behalf of Renaissance is not protective of human health or the environment.

10. Nothing in this Agreement is intended to be or shall be construed as a release, covenant not to sue, or compromise of any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or in equity, which the United States and/or the Government of the U.S. Virgin Islands may have against any person, firm, corporation or other entity not a signatory to this Agreement.

11. This Agreement is entered into by Renaissance voluntarily, without any admission or acknowledgement of any allegation of fact or law or responsibility for any liability asserted under or connection with the Site, the Administrative Order or otherwise.

12. Notice. Whenever under this Consent Agreement a provision is made for notice of any kind, it shall be deemed sufficient service thereof if such notice is in writing, addressed to the respective party to this Consent Agreement at the address shown below, deposited in the mail with postage prepaid and, additionally, faxed to the respective party with a confirmation receipt obtained in the ordinary course, as follows:

IF TO DEP:

Hollis L. Griffin
Department of Planning & Natural Resources
Division of Environmental Protection
45 Mars Hill
Frederiksted, St. Croix, USVI 00840-4474
Telephone: (340) 773-1082
Fax: (340) 773-9310

WITH A COPY TO:

Ann Cecile O'Neill, Legal Counsel
Department of Planning & Natural Resources
Division of Environmental Protection
45 Mars Hill
Frederiksted, St. Croix, USVI 00840-4474
Telephone: (340) 773-1082
Fax: (340) 773-9310

IF TO RENAISSANCE:

M.A.

Myron Allick
#1 Estate Anguilla
PO Box 1525 Kingshill
St. Croix, VI 00851-1525
Telephone: (340) 778-2323
Fax: (340) 778-8742

WITH A COPY TO:

Todd H. Newman
1131 King Street, #204
Christiansted
St. Croix, VI 00820
Telephone: (340) 773-3200
Fax: (340) 773-3409

13. Force Majeure. Renaissance shall not be responsible or liable for any breach of, or default or stipulated payment under, this Agreement for delays in and/or limitations on its performance of work described in this Agreement for which Renaissance is responsible, which delays and/or limitations are attributed to acts of God, delays in receiving or the failure to receive necessary permits or approvals from governmental agencies, acts of third parties, weather which is not reasonably foreseeable or which, even if foreseeable, impedes or prevents or delays the performance of the work, work stoppages, a shortage of materials, intervention of public authorities, and/or other conditions or events which are beyond the reasonable control of Renaissance (each, a "Delay"), provided Renaissance shall have given 24 hours verbal notice to the DEP upon the occurrence of any Delay with written notice to be provided within five (5) days thereafter. Such notice shall include the reasonably anticipated length and understood cause of the Delay and a timetable for implementing any measures that may be required as a result of or in connection with the Delay. Upon receipt of such written notice, DEP will have a period of five (5) days to accept such Delay in writing. In the absence of such written acceptance, Renaissance will not be relieved from performance of its obligations under this Agreement. DEP shall not unreasonably withhold, condition, or delay its acceptance of a Delay. The schedule for the work to be performed by or on behalf of Renaissance pursuant to the terms of this Agreement shall be extended for a period of time equal to the duration of any accepted Delay.

14. Status Report to Third Parties. Recognizing that Renaissance may find it necessary to establish to third parties, such as accountants, banks, mortgagees, or the like, the then current status of performance pursuant to the terms of this Agreement, DEP in response to a written request of Renaissance made from time to time shall within fifteen (15) days of receipt of such request furnish a

Ao

M-A-

written statement concerning the status of any matter pertaining to this Agreement, including without limitation a statement from the DEP that specific tasks required of Renaissance pursuant to this Agreement have been completed.

15. Termination. This Consent Agreement shall remain in effect until all of the activities to be performed by or on behalf of Renaissance pursuant to the terms and conditions of this Agreement have been completed and Renaissance has been so notified in writing by the DEP (a "Termination Notice"), it being understood and agreed by the parties hereto that the second and last sentence of Paragraph 6 of this Agreement means that (a) Renaissance shall commence the work described in that sentence and (b) the DEP shall not require that the work described in the Master Plan referred to in said Paragraph 6 is completed before notifying Renaissance that the activities to be performed by or on behalf of Renaissance pursuant to the terms and conditions of this Agreement have been completed. Renaissance may request in writing that DEP provide a Termination Notice once Renaissance believes that all of the activities to be performed by or on behalf of Renaissance pursuant to the terms and conditions of this Agreement have been completed. Any Termination Notice to be provided on behalf of the DEP shall be executed by the Commissioner. The DEP shall not unreasonably withhold, delay, or condition its sending of any Termination Notice.

16. Headings. The heading contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

17. Amendments. This Agreement may be modified, amended, supplemented or extended only by written instrument signed by the DEP and Renaissance, which specifically references this Agreement.

18. Entire Agreement. This Agreement represents the entire agreement between the parties hereto with respect to the subject matter hereof.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement under seal as of the date first written above.

THE DIVISION OF ENVIRONMENTAL PROTECTION
DEPARTMENT OF PLANNING AND NATURAL RESOURCES

By: [signature]
for
Hollis L. Griffin, Director
Division of Environmental Protection

GSDOCS-1342195-1
3/25/2004 11:47 AM

Department of Planning and Natural Resources

ST. CROIX RENAISSANCE GROUP, L.L.L.P.,
a Delaware limited liability partnership

By: _____
Name: Myron Allick
Title: General Partner

SO entered this 2nd day of April, 2004.

THE DIVISION OF ENVIRONMENTAL PROTECTION
DEPARTMENT OF PLANNING AND NATURAL RESOURCE

By: _____
The Honorable Dean C. Plaskett, Esquire
Commissioner

3/25/04
JC:\JAN\JAN\CLIENTS R-T\STX RENAISSANCE GROUP\DPNR\CONSENT AGREEMENT.FINAL.FINAL.DOC

GSDOCS-1342195-1
3/25/2004 11:47 AM

GOVERNMENT OF THE VIRGIN ISLANDS
BEFORE THE DEPARTMENT OF PLANNING AND NATURAL RESOURCES
DIVISION OF COASTAL ZONE MANAGEMENT

VIRGIN ISLANDS COASTAL ZONE MANAGEMENT COMMISSION **COMPLAINANT,** **V.** **ST. CROIX RENAISSANCE GROUP, LLLP, BENNINGTON GROUP, LLC, J&S DEVELOPMENT CORP., BRADFORD WELDING & TRUCK EQUIPMENT, INC.,** **RESPONDENTS.**	**NOVA-05-06-STX** **NOTICE OF VIOLATION NOTICE OF ASSESSMENT OF CIVIL PENALTY AND NOTICE OF OPPORTUNITY FOR HEARING**

TO: **St. Croix Renaissance Group, LLLP**
NICHOLS NEWMAN, LOGAN D'ERAMO & GREY, P.C.
Todd H. Newman, Esquire
1131 King Street
Christiansted, VI 00820

Bennington Group, LLC
MACAY & HODGE, LLC
Derek Hodge, Esquire
19A-20 Kongens Gade
P.O. Box 303678
St. Thomas, VI 00803

J&S Development Corp.
Mr. John Divicenzo
146 Corliss Hill Road
Haverhill, Mass 01830

Bradford Welding
Mr. James Allen
16 Ridgewood Road
Plastow, NH 03865

PROCEEDING UNDER V.I. CODE ANN. TIT. 12, SECTION 913(6)

Consistent with the policy of the United States Virgin Islands, as declared in V.I. Code Ann. tit. 12, Section 903(b)(1), to protect, maintain, preserve and, where feasible, enhance and restore the overall quality of the environment in the coastal zone, the natural and man-made resources therein, and the scenic and historic resources of the coastal zone for the benefit of residents and visitors of the Virgin Islands, the Virgin Islands Coastal Zone Management Commission issues this NOTICE OF VIOLATION, NOTICE OF

ASSESSMENT OF CIVIL PENALTY ORDER FOR CORRECTIVE ACTION and NOTICE OF OPPORTUNITY FOR HEARING, in accordance with the authority conferred upon ~~him~~ by V.I. Code Ann. tit. 12, Section 913(b)(6).

I. STATEMENT OF LAW

"Any person[1] wishing to perform or undertake any development[2] in the first tier of the coastal zone[3] ... shall obtain a coastal zone permit in addition to obtaining any other permit required by law from any public agency prior to performing or undertaking any development." 12 V.I.C. §910(a)(1). Failure to obtain a coastal zone permit prior to undertaking development in the first tier of the coastal zone will result in a violation of the Coastal Zone Management Act, Title 12, Chapter 21 of the Virgin Islands Code.

Pursuant to V.I. Code Ann. tit. 12, § 913(c) (1), "[a]ny person who violates any provision of this chapter, or any regulation or order issued hereunder, shall be subject to a civil fine of not to exceed ten thousand ($10,000) dollars." "In addition to any other penalties provided by the law, any person who intentionally and knowingly performs any development in violation of this chapter shall be subject to a civil fine of not less than one thousand dollars nor more than ten thousand dollars per day for each day during which such violation occurs." V.I. Code Ann. tit. 12, § 913(c) (3)

The Virgin Islands Coastal Zone Management Commission has the authority to assess civil penalties by means of the administrative procedure set forth in the V.I. Rules and Regulations, Chapter 21, Subchapter 913. *See* V.I. Code Ann. tit. 12, § 913(c)(5). In accordance with those provisions, the Commission~~er~~ hereby makes the following findings of fact, conclusions of law and assesses the following civil penalty:

II. FINDINGS OF FACT

1. St. Croix Renaissance Group LLLP ("SCRG") is the owner of Plots 1 and 2 Annaberg and Shannon Grove and Plot 1 Anguilla (hereinafter "the property").

2. The properties are in the first tier of the Virgin Islands Coastal Zone.

3. In March of 2006, SCRG entered into a contract with Bennington Group LLC, among others, in which Bennington Group purchased scrap metal from SCRG. This scrap metal consisted of the existing processing units on the property. Pursuant to this agreement, Bennington Group was responsible for dismantling and removing the processing units in order to obtain the scrap metal. Bennington Group LLC hired J&S

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[1] The Coastal Zone Management Act defines "person," in pertinent part, as "any individual, organization, partnership, association, corporation or other entity...." 12 V.I.C. §902(v).

[2] The Coastal Zone Management Act defines "development," in pertinent part, as "the placement, erection, or removal of any fill, solid material or structure on land, in or under the water; discharge or disposal of any dredged material or of any liquid or solid waste; grading, removing, dredging, mining, or extraction of any materials, including mineral resources; subdivision of land pursuant to Title 29, chapter 3," of (the Virgin Islands) Code; construction, reconstruction, removal, demolition or alteration of the size of any structure; or removal or harvesting of vegetation, including coral..." 12 V.I.C. § 902(l)

[3] The Coastal Zone Management Act defines "first tier" as "that area extending landward from the outer limit of the territorial sea, including all offshore islands and cays, to distances inland as specified in the maps incorporated by reference in section 908, subsection (a)" of V.I. Code. Ann. Title 12. 12 V.I.C. § 902(r).

Development Corp. and Bradford Welding & Truck Equipment Inc. to dismantle the processing units. Abul Shah was the project manager overseeing these activities on behalf of Bennington Group, LLC.

4. On or around April 2, 2006, employees of J & S Development Corp. and Bradford Welding and Trucking arrived at the Renaissance facility and, with SCRG's knowledge and consent, began performing what the parties call "pre-demolition" work at the facility without any permits from the Department of Planning and Natural Resources, including a Coastal Zone Management (CZM) permit from the St. Croix CZM Committee. These "pre-demolition" activities consisted of removing motors and wires from the processing units in preparation for the demolition work. This "pre-demolition" work also entailed cutting pipes and removing portions of the processing units. All parties were aware that no permits from the Government of the Virgin Islands, Department of Planning and Natural Resources had been obtained.

5. On or about April 26, 2006, following an inspection by the Division of Building Permits, SCRG was advised that permits were needed in order to undertake the "pre-demolition" activities and instructed to stop the work.

6. The employees of J&S Development Corp and Bradford Welding and Truck Equipment Inc. stopped working for approximately three weeks. When they didn't receive a written Cease and Desist Order, they resumed working, despite the fact that permits allowing the "pre-demolition" activities had not been granted, disregarding the instructions of the property owner, SCRG.

7. After Bennington Group, J&S Development Corp. and Bradford Welding & Truck Equipment, Inc. did not comply with his instructions, Mr. Myron Allick, managing partner of SCRG contacted the Department of Planning and Natural Resources to report the violations taking place.

8. On June 13, 2006 staff from the Division of Building permits conducted another inspection of the property and observed that the dismantling activities were still taking place and issued a "Stop Work Order," because no Building Permit had been issued for these activities.

9. On June 13, 2006, staff from the Divisions of Environmental Enforcement and Coastal Zone Management conducted an inspection of the St. Croix Renaissance facility, guided by SCRG personnel.

10. CZM Staff observed that demolition activities had taken place with respect to the processing units on No 1 Anguilla and No 1 Annaberg and Shannon Grove. Staff also observed that land clearing activities had taken place with respect to the scrap metal storage area, Plot No 1 Anguilla. Staff reported its observations and conclusions to the St. Croix Committee of the CZM Commission in the Factual Basis for the issuance of Cease and Desist Order VCZX 05-06, and those observations are incorporated herein.

III. CONCLUSIONS OF LAW

1. The "pre-demolition" activities cited in the Findings of Fact constitute the alteration of a structure in the first tier of the coastal zone, which constitutes "development" pursuant to Title 12, Chapter 21 Section 902 (l) of the Virgin Islands Code and requires a coastal zone permit pursuant to Title 12, Chapter 21 Section 910(a). Therefore, the parties' undertaking of the pre-demolition activities without a CZM permit violated the Virgin Islands Coastal Zone Management Act.

2. St. Croix Renaissance Group

Respondent SCRG owns the property. SCRG authorized the initial development activities to be undertaken without a CZM permit and have therefore caused development to be undertaken in the first tier of the coastal zone without a CZM permit, in violation of 12 V.I.C. §910(a) and is subject to enforcement action pursuant to 12 V.I.C. § 913.

3. Bennington Group, LLC, J&S Development Corp, Bradford Welding and Trucking

It is the responsibility of any person or entity doing business in the Virgin Islands to be aware of, and comply with, the laws of the Virgin Islands. As previously stated, altering the size of a structure in the first tier of the Coastal Zone without a Coastal Zone Permit is a violation of the Virgin Islands Coastal Zone Management Act. Despite knowing that there were no permits for the "pre-demolition" work, Bennington Group LLC instructed the employees working on behalf of J&S Development Corp and Bradford Welding & Truck Equipment, Inc. to commence these activities. Despite knowing that there was no permit for these activities, J&S Development Corp and Bradford Welding and Truck Services, Inc. performed these development activities, in violation of the Virgin Islands Coastal Zone Management Act. Therefore, Bennington Group LLC, who managed the development activities in question and directed the employees of J&S Group and Bradford Welding, along with J& S Development Corp. and Bradford Welding & Truck Equipment Inc., whose employees actually undertook the illegal development activities, are subject to civil penalties under 12 V.I.C. §913.

IV. DETERMINATION

The Respondents' actions have subjected the Virgin Islands Coastal Zone to unreasonable and unnecessary risk. Therefore, enforcement action is reasonable and required under 12 V.I.C. §913 in order to attain the goals and policies of the Coastal Zone Management Program and to protect the public health, welfare and the environment.

V. NOTICE OF PENALTY ASSESSMENT AND ORDERS FOR CORRECTIVE ACTION

1. Pursuant to V.I. Code Ann. tit. 12, § 913(c) (1) Respondent St Croix Renaissance Group is hereby ORDERED to pay a civil penalty in the amount of **Ten Thousand Dollars ($10,000.00).**

2. Pursuant to V.I. Code Ann. tit. 12, § 913(c) (1) Respondents Bennington Group, LLC, J&S Development Corp., and Bradford Welding and Truck Equipment, Inc.

are hereby ORDERED to pay a civil penalty in the amount of **Ten Thousand Dollars ($10,000.00)**. Respondents Bennington Group, J&S Development Corp and Bradford Welding and Truck Equipment, Inc. are jointly and severally liable for the penalty assessed in this paragraph.

3. No Respondent may continue with the development activities referenced herein on the property until Cease and Desist Order No. VCZX-05-06 is lifted as it applies to each Respondent.

4. SCRG shall move all materials presently located in the existing scrap metal storage area (laydown yard) at least seventy (70) feet inland.

5. SCRG shall submit an inventory of materials in the existing scrap metal storage area (laydown yard) that may require further processing prior to removal to CZM staff. CZM staff must approve this inventory prior to any further materials being processed at the existing scrap metal storage area (laydown yard).

6. Once the existing materials presently located in the existing scrap mental storage area (laydown yard) have been removed, no additional materials may be stored in that area.

7. Sediment control devices installed pursuant to Cease and Desist Order VCZX -05-06 shall remain in place.

The VI CZM Commission assesses this total proposed penalty in accordance with V. I. Code Ann. tit. 12, § 913(c)(1) and (3).

VI. OPPORTUNITY TO REQUEST A HEARING

You have a right to request a formal administrative hearing pursuant to V. I. R. & Regs., tit. 12, § 913-3(g)(5). Your request may be mailed to or personally served upon Virgin Islands Coastal Zone Management Commission at No. 45 Mars Hill, Frederiksted, St. Croix 00840-4474. This request must be received by the Commission within thirty (30) days after you are served in order to preserve your right to a hearing. You should include a copy of this Notice of Violation and Assessment (hereinafter, "NOVA") or refer to the case number contained in the caption. If you choose not to request a hearing, you may take one of the following actions:

(a) Accept the penalty by taking the actions described in Section VII.

(b) Seek to have this NOVA Amended, Modified or Rescinded pursuant to V. I. R. & Regs. tit. 12, § 913 (g) (2); or

(c) Take no action, in which case this NOVA becomes a final administrative decision after the 30th day after service.

Your request for hearing may include an answer in which you clearly and directly admit, deny, or explain each of the factual allegations in the NOVA of which you have knowledge. In addition, your answer should contain (1) a definite statement of the facts that constitute the grounds for your defense, and (2) a statement of the facts that you intend to place in issue at the Hearing. Should you decline to file a written Answer within thirty (30) days of receipt of this NOVA, such inaction will be construed to constitute an admission of all facts alleged in the NOVA and a waiver of your right to a Formal Hearing and grounds for the imposition of the assessed penalty without any further proceedings. Further details of the applicable administrative procedures can be found in the attached copy of the rules and regulations governing the administrative assessment of civil fines and penalties.

VII. INFORMAL SETTLEMENT CONFERENCE

Whether or not you request a Formal Hearing, it is the policy of DPNR to promote early resolution of environmental actions through settlement. An informal conference provides a forum in which you may comment on the allegations made in the Notice of Violation. You may also present any additional information you consider relevant to the disposition of this matter, including actions you have taken to mitigate the violation, and any special circumstances you care to raise. DPNR is empowered to modify the amount of the assessed penalty under appropriate circumstances to reflect any settlement agreement reached in an informal settlement conference.

Any request for an informal settlement conference or any questions you may have relating to this Notice and Order may be directed to Dalila E. Patton, Esq., Legal Counsel, Division of Coastal Zone Management at the St. Croix address listed in Section VI of this Notice, or by telephone at (340) 773-1082 ext 2229.

Please take notice that a request for an informal settlement conference does not extend the thirty (30) day period during which a written Answer and request for a Hearing must be submitted. The informal conference procedure may be pursued either as an alternative to or simultaneously with the adjudicatory hearing procedures. Please take further notice that participation in a settlement conference does not constitute assurance of penalty remission. Any settlement that may be reached as a result of the conference will be memorialized in a Consent Order to be issued by the VI Coastal Zone Management Commission of DPNR. The signing of a Consent Order constitutes a waiver of the right to request a hearing on any matter stipulated therein.

VIII. PAYMENT OF PENALTY

You may choose to pay the penalty assessed in Section V. The payment should be made by sending a cashier's or certified check payable to the Department of Planning and Natural Resources in the full amount of the penalty assessed in this Order to the following address: Department of Planning and Natural Resources, Division of Coastal Zone Management No. 45 Mars Hill, Frederiksted, St. Croix, Virgin Islands 00840-4474. Should you elect to pay the penalty in this manner, a copy of your letter transmitting the

check should be sent to the attention of Dalila E. Patton, Esq. Legal Counsel, Division of Coastal Zone Management.

IX. CAVEAT

Failure to comply with any of the terms of this Order will subject you to additional enforcement action. Compliance with the terms of this Order does not constitute a waiver of your responsibility to comply with all other applicable territorial and federal laws and regulations.

SO ORDERED THIS 27 DAY OF July 2006

Tyrone Seales

TYRONE V. SEALES on behalf of the
ST. CROIX COMMITTEE OF THE
VIRGIN ISLANDS COASTAL ZONE MANAGEMENT COMMISSION

CERTIFICATE OF SERVICE

I hereby certify that I caused the foregoing NOVA-05-06-STX in the matter of Cease and Desist Order VCZX 05-06, *Virgin Islands Coastal Zone Management Commission v. St. Croix Renaissance Group LLLP, Bennington Group LLC, J&S Development Corp. and Bradford Welding and Trucking* to be served upon by certified mail, return receipt requested, and via facsimile to the following:

J&S Development Corp
John Divicenzo
146 Corliss Hill Road
Haverhill Massachusetts 01830
Fax (978) 373-6611

Bennington Group
Macay & Hodge, LLC
Derek Hodge, Esq.
19A-20 Kongens Gade
P.O. Box 303678
St. Thomas, VI 00803
Fax (305) 418-7505

Bradford Welding and Trucking
James Allen
16 Ridgewood Road
Plastow, New Hampshire 03865
Fax (978) 372-5620

St. Croix Renaissance Group, LLLP
Nichols, Newman Logan D'eramo & Grey P.C.,
Todd H. Newman, Esq.
1131 King St., Christiansted
St. Croix U.S. Virgin Islands 00820
Fax (340) 773-3409

Norma Jackson

7/28/06
Date

Appendix C

Gas Cylinder Removal

ST. CROIX RENAISSANCE

July 26, 2006

This is to certify that on Wednesday, July 26, 2006 a representative of General Gases Received and removed from the St. Croix Renaissance Site 41 ea. Gas cylinders belonging to General Gases. Cylinders were rented by Metal Munchers, LLC who have authorized removal of cylinders.

Tony has a Photo of the Truck w/cylinders

Received By: [signature]

Date: 7/26/06

ST. CROIX RENAISSANCE GROUP, LLLP
1 Estate Anguilla • P.O. Box 1525 • Kingshill • St. Croix • US Virgin Islands 00851 - 1525
Phone (340) 778-2323 • Fax: (340) 778-1400 / (340) 778-8742

102873 471364
178020 019860
637548 998840
139297 864536
645656 262889
812792 225460
847496 106720
870382 852899
225932

Full Oxygen

811165 037311
053236 007900
796875 792594
649074 183679
045624 344370
300926 329584
366889 315400

Oxygen & Acetylene

MX

List of cylinders removed

651567
193208
934194

Liquid Oxygen

390549
9986
386820
344028
333433
441635
496804
387401

Full Acetylene

Jessie Black

7/26/06

TRANSMISSION VERIFICATION REPORT

TIME : 07/20/2006 22:59
NAME : BRADFORD WELDING
FAX : 9783725620
SER.# : BROL5F737131

DATE,TIME	07/20 22:59
FAX NO./NAME	913407781400
DURATION	00:00:18
PAGE(S)	01
RESULT	OK
MODE	STANDARD ECM

To: General Gases, and Myron Allick Fax number: 13407787183	Metal Munchers LLC 2 So Grove St Bradford Mass 01385 978-372-5620
Date: 7/21/2006	

Regarding: General Gases equipment rentals

Comments: I authorize St Croix Renaissance to release all rentals belonging to General Gases (cylinders) Please send receipt of items released 978-372-5620

Thank You

Copy: sent to Myron Allick per his request at 340-778-1400

OXYGEN
OXYGEN
FLAMMABLE GAS 2
OXYGEN 2

FLAMMABLE GAS 2
NON-FLAMMABLE GAS 2

OXYGEN 2
FLAMMABLE GAS 2

Appendix D

Drum Storage Log Books

1

Aci) Pad (Containment) 11 2006

PH - 08/30/05 - 1 → (11) Numbered TESTED by SGS
USED oil, (FROM POWER HOUSE NE OF GENERATORS).

HB - 10/31/06 - 1 - (18) USED TRANSFORMER
MINERAL oil, (FROM Hydrate Bld).

PH - 10/30/06 - 1 - (2) USED oil (FROM WEST
OF 500K GEN.

MS - 10/30/06 - 1 - USED oil (FROM MACHINE SHOP

Unit 6 - 11/09/06 - 1 USED oil (FROM 6.) PAD).
MA 1/14

MG - 11/14/06 - 1 USED oil FILTERS

PH - 10/30/06 - 1 - (3) USED RAGS

PH - 11/15/06 - 1 USED oil

PH - 10/30/06 - 1 USED oily RAGS

PH 11/15/06 - 1 USED RAGS

in PM Containment

Numbered

PM - 08/30/05 - 1 → 21 TESTED by SGS

PM - 10/30/06 - 1 - 3 oily Rags

PM - 10/30/06 - 1 - 2 oily used Filters

PM - 10/30/06 - 1 - 10 used oil

OG - 08/30/05 - 1 - 12 #6 oil TESTED by SGS

OG - 10/30/06 1 - 2 used oil.

MS Fab Side! -

MS 10/30/06 used Coolant 1

Mechanical Garage! -

MG - 10/30/06 - 1 used oil Crucked Filters

MG - 10/30/06 - 1 - 29 used oil. N.E

MG - 10/30/06 - 1 used oil not full in P.A. 1/2 full

MG - 10/30/06 - 1 South used oil ~ 1/2 full / [illegible] not full

Numbered

MG - 10/30/06 - 1 → 2 used crushed filters
~~South.~~ full in containment

MG - 10/30/06 - 1 - oily rags South.

Acid containment
MG - 11/15/06 - 1 - 5 used oily rags & pampers. In Acid Cont.

MG - 11/21/06 - 1 - 2 used oil from South generator in PWSA.

4

Not Filled
PH - 11/15/06 #1 Rags & oil

unit 6 - 11/09/06 #1 used oil

Numbered
MG - 10/30/06 #1 → 2 used oil Filters

MG - 10/30/06 #1 oily Rags

MG - 10/30/06 #1 used oil

oily / Solids
Full MG - 10/30/06 # 3 & 4 (rubber bins)

Add to list

(rubber bins)
Full MG - 10/30/06 # 30, 31, 32, 33 ~~(suspect)~~
Solids / oil from #6 oil

Full MG - 10/30/06 # 34 used oil (rubber bins)
Drums T-30-2 #1-37 Tank Bottom sludge
MT Drums

MG - 15 MT Drums

PH - 6 MT Generators North Bldg.
Drums

Appendix E

Tank Inspection Results

IN SERVICE
ATMOSPHERIC STORAGE TANK

INSPECTION REPORT
Tank T-11-1

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

INTRODUCTION

St. Croix Renaissance Group contracted with Acuren Inspection Inc. to provide inspection services for Tank T-11-1. The tank is located at the Client Facility in St. Croix, USVI

This report documents the findings of the examinations performed on 11-28-06 and provides an evaluation of the inspection results per the applicable criteria of API Standard 653 (current edition).

Due to the lack of construction information, past inspection reports / history it is recommended that the tank be taken out of service at the earliest convenience for a complete out-of-service inspection.

Acuren Inspection Inc. provided the following personnel:

.

John W. Carter API-653 # 20681

API 653 In-Service Inspection Report
For
St. Croix Renaissance Group
Tank T–11-1
St.Croix, USVI

ACUREN

John Baptiste Level II UT Technician
Steve Sobers Level II UT Technician

API 653 In-Service Inspection Report
For
St. Croix Renaissance Group
Tank T–11-1
St.Croix, USVI

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DESCRIPTION

GENERAL:

TANK NUMBER:	T-11-1
OWNER:	St. Croix Renaissance Group
DESIGN STD:	NDA
TANK LOCATION:	St. Croix, USVI
MANUFACTURER:	NDA
PRODUCT:	NDA
CATHODIC PROT.:	No Data Avail.
DATA PLATE PRESENT:	Yes

DIMENSIONS:

DIAMETER:	NDA
HEIGHT:	NDA
GROSS CAPACITY:	No Data Avail.
FILLING HEIGHT:	NDA
NOMINAL CAPACITY:	12,600 Gallons

GEOMETRY:

FOUNDATION:	Concrete Pad
BOTTOM:	Lap Welded
SHELL:	Butt Welded
FIXED ROOF:	Lap Welded (Umbrella Roof)
FLOATING ROOF:	N/A
PRIMARY SEAL:	N/A
SECONDARY SEAL:	N/A

DATES:

YEAR BUILT:	NDA
LAST COATED:	1990
LAST INSPECTION:	N/A

ACCESS:

FIXED ROOF:	Vertical Ladder
FLOATING ROOF:	N/A

COATINGS:

BOTTOM:	N/A
SHELL:	Grey Paint
FIXED ROOF:	Grey Paint
FLOATING ROOF:	N/A

NDA = No data available (no construction information or data plate)

SUMMARY AND REPAIR RECOMMENDATIONS

SUMMARY

An In-Service inspection was performed on the above mentioned Above Ground Storage Tank.

REPAIR RECOMMENDATIONS

FOUNDATION: The foundation has areas of minor cracking and spalling (See Pictures). Consideration should be given to sealing the cracks and repairing the spalled areas to prevent further degradation of the foundation.

The containment area has ponding water present. Recommend Installing a drain to prevent the ponding of the water(See Pictures).

There is a layer of a tar like substance covering the Bottom Projection (See Pictures). Recommend removing the tar like substance so that the bottom projection and the bottom to shell weld are visible at all times (API 653, Para. 4.3.1.3).

The containment walls have areas of moderate cracking and severe spalling with rebar showing (See Pictures).Recommend sealing the cracks and repairing the spalled areas to prevent further degradation of the containment walls

SHELL: The roof access ladder and cage have coating failure to Moderate active corrosion (See Pictures). Recommend cleaning, repairing as needed and re-coating.

The access ladder does not have re-enforcing pads where the supports are welded to the shell (See Pictures). Recommend installing repads at these locations.

The tank shell has coating failure throughout (See Pictures). Recommend cleaning the tank external and re-coating.

The tank does not have a ground system. Consideration should be given to installing a tank ground system in accordance with API RP 2003.

The tank currently does not have cathodic protection. Consideration should be given to installing a cathodic protection system as a method to achieve corrosion control (Ref. API 651, Cathodic Protection of Aboveground Petroleum Storage Tanks).

The tank does not have a name / data plate attached to the shell. Recommend installing a name / data plate above the manway.

NOZZLES AND APPURTENANCES: All nozzles have coating failure to moderate active corrosion on there necks, flanges and bolting. Recommend cleaning and re-coating.

The manway re-enforcing plate has a telltale hole that is plugged, API 650, Paras. 3.7.5.1 and 3.7.6.1 indicate reinforcing plates should be installed with telltale holes left open to the atmosphere. This plug should be removed and the telltale hole should then be left open to the atmosphere.

FIXED ROOF: The fixed roof manway is missing bolts and nuts and has severe active corrosion on the cover (See Pictures). Recommend installing the missing hardware and cleaning, repairing as needed and re-coating the cover.

The fixed roof has coating failure throughout the roof plates and nozzles (See Pictures). Recommend cleaning and re-coating.

The handrails and midrails have coating failure to severe active corrosion(See Pictures). Recommend cleaning, repairing as needed and re-coating.

There is trash / debris on the fixed roof(See Pictures). Recommend removing all trash / debris.

The center vent does not have a bird screen on it. Recommend installing a bird screen.

INSPECTION REPORT

FOUNDATION

FOUNDATION INSPECTION CHECKLIST

✓	#	DESCRIPTION	COMMENTS
✓	1	Type of foundation.	Concrete Pad
✓	2	Inspect foundation for damage.	See repair recs
✓	3	Search for indications of bottom leakage.	None found
✓	4	List all locations of cavities around foundation.	None found
✓	5	Inspect for vegetation under and around foundation.	None found
✓	6	Check for proper water runoff and drainage away from the tank.	Ponding water – see repair recs
✓	7	Check for grade or other material covering the shell-to-bottom junction. Detail findings.	See repair recs.
✓	8	Check for settlement around the perimeter of the tank.	See settlement graph
✓	9	General condition of dike area.	See repair recs

API 653 In-Service Inspection Report
For
St. Croix Renaissance Group
Tank T–11-1
St.Croix, USVI

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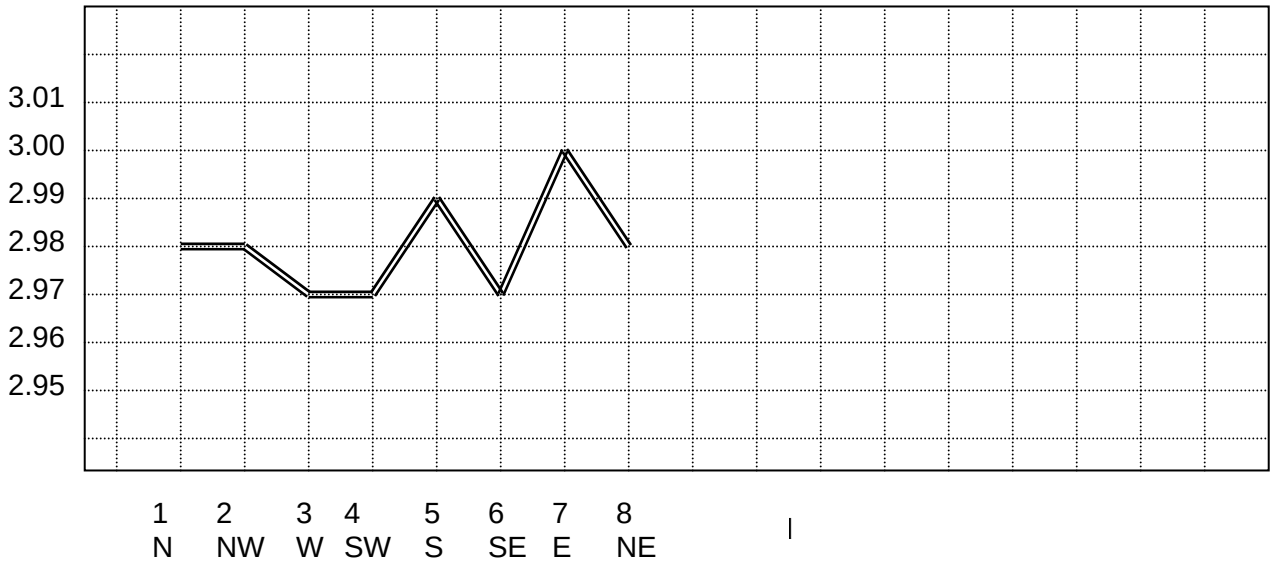
FOUNDATION SETTLEMENT SURVEY TABLE

Sta.		Shell
1	North	2.98
2		2.98
3		2.97
4		2.97
5		2.99
6		2.97
7		3.00
8		2.98

All settlement stations are measured circumferentially from North counterclockwise

Shell Settlement (Survey Data)



SHELL

✓	#	DESCRIPTION	COMMENTS
✓	1	Inspect shell ladders, stairways, platforms and walkways. Record all findings.	See repair recs
✓	2	Visually inspect shell for significant distortions and/or buckling.	None Found
✓	3	Visually inspection shell for out-of-roundness and plumbness.	None found
✓	4	Check support welds to shell for corrosion or defects.	See repair recs
✓	5	Inspect windgirder for corrosion or damage.	N/A
✓	6	Inspect shell surface for leaks or corrosion.	None found
✓	7	Inspect exterior shell-to-bottom weld area for corrosion, defects and thinning on weld, shell or bottom.	See repair recs
✓	8	Inspect for coating failure.	See repair recs
✓	9	Inspect internal and external shell for pitting, corrosion, rubbing and/or grooving.	None found
✓	10	Inspect horizontal and vertical seams for weld or rivet joint details and record findings.	Acceptable
✓	11	Inspect shell overflows for corrosion and screening.	See repair recs
✓	12	Check for any lap patches.	None found
✓	13	Check for grounding.	None -See repair recs
✓	14	Is data plate present	No – see repair recs

NOZZLES AND APPURTENANCES

✓	#	DESCRIPTION	COMMENTS
✓	1	Inspect nozzle flanges and bolting for leaks and corrosion.	See repair rocs
✓	2	Inspect nozzles for pipe misalignment or strain.	Acceptable
✓	3	Check piping and valves for leaks, thermal relief or signs of damage.	See repair rocs
✓	4	Describe and verify operability of gauging devices, if applicable.	N/A
✓	5	Inspect mixer and gaskets for leakage and defects.	N/A
✓	6	Inspect for signs of corrosion or other defects around all manways, nozzles, and attachments.	See repair rocs
✓	7	Verify presence of telltale holes on all reinforcing plates.	See repair rocs
✓	8	Check for adequate reinforcement around nozzles and appurtenances.	Acceptable
✓	9	Verify adequate weld spacing around nozzles and appurtenances.	Acceptable
✓	10	Check for internal welds on all nozzles.	N/A
✓	11	Check reinforcement pads for adequate fillet welds.	Acceptable
✓	12	Visually inspect welds for defects on all nozzles and appurtenances.	Acceptable

API 653 In-Service Inspection Report
For
St. Croix Renaissance Group
Tank T-11-1
St.Croix, USVI

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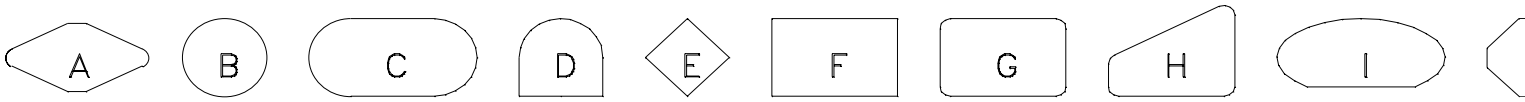

FIXED ROOF

✓	#	DESCRIPTION	COMMENTS
✓	1	Conduct Visual Inspection of roof coating system.	See repair rocs
✓	2	Visually inspect low spots on roof for external corrosion. Locate on layout.	None found
✓	3	Conduct Visual Inspection of roof nozzles and appurtenances. Locate on layout.	See repair rocs
✓	4	Conduct Visual Inspection of internal roof supports, rafters, columns, and bases. Record sizes and locate supports on layout.	N/A
✓	5	Verify open roof vents have screens and covers.	See repair rocs
✓	6	Describe condition of handrails and tie-off supports.	See repair rocs
✓	7	Describe any significant bulges in roof plates. Record measurements and locate on layout.	None found

API 653 In-Service Inspection Report
For
St. Croix Renaissance Group
Tank T-11-1
St.Croix, USVI

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FLOATING ROOF

3.2.1 FLOATING ROOF INSPECTION CHECKLIST

✓	#	DESCRIPTION	COMMENTS
	1	Describe floating roof type.	Steel pan floater
	2	Describe type and condition of seals.	See 2.0
	3	Describe condition of coating.	None
	4	Inspect roof drain system.	Acceptable
	5	Inspect ladder assembly.	Acceptable
	6	Check for corrosion, wear, pivot bar operation, stairway treads and repads on rolling ladder systems.	N/A
	7	Check for grounding cable on rolling ladder.	N/A
	8	Describe condition of roof outer rim, including rim vents.	Acceptable
	9	Conduct Visual Inspection of plates and welds, or bolts and fasteners, with special attention to product interface areas.	Acceptable
	10	Inspect for signs of product, water or residue on pontoon or double deck roofs.	See 2.0
	11	Check for presence of lock-down attachments on pontoon covers.	N/A
	12	Hammer test and visually inspect aluminum pontoons, with special attention to pontoon brackets.	N/A
	13	Inspect vacuum breaker system. Record number and size. Locate on layout.	Acceptable
	14	Inspect roof support legs, sleeves and pins. Record sizes and locate on layout.	Acceptable
	15	Check for presence of notches in each floating roof leg support for product drainage.	Acceptable
	16	Inspect gasket material around fixed roof support columns, ladder assembly, gauge guides, etc., on internal floating roofs.	Acceptable
	17	Measure seal gaps at regular intervals and record any visible seal damage.	See 2.0
	18	Measure and record annular space at 30-foot spacing.	

API 653 In-Service Inspection Report **For** **St. Croix Renaissance Group** **Tank T-11-1** **St.Croix, USVI**	**ACUREN**

API 653 In-Service Inspection Report **For** **St. Croix Renaissance Group** **Tank T-11-1** **St.Croix, USVI**	**ACUREN**

4 NDE INSPECTION SCOPE

The following Nondestructive Examinations (NDE) were conducted to evaluate the physical characteristics of the tank:

MFL Magnetic Flux Leakage

UT Ultrasonic Test
VT Visual Test

✓	INSPECTION PERFORMED	DESCRIPTION
✓	MFL Floorscan of bottom	Complete (Limited inspection)
✓	B-Scan of bottom 2' x 2' areas	Complete (see below)
✓	Random UT on bottom plates	Complete
✓	Quantitative UT readings of MFL indications	N/A
✓	UT readings on shell courses	Complete
✓	UT readings on Course 1 plates	Complete
✓	Random UT readings on roof plates	Complete
✓	VT of bottom	Complete
✓	VT of bottom lap welds	Complete
✓	VT of internal shell-to-bottom weld	Complete
✓	VT of shell and welds	Complete
✓	VT of roof	Complete
	Limitations on MFL floorscan	
	Adjacent to all floor lap welds	
	Adjacent to all internal piping reinforment pads	
	Adjacent to the shell to bottom weld (chime)	

* All 5 B-Scan areas proved to be in the approx. thickness range as the area shown. The files on the remaining 4 areas were corrupt and could not be printed. They were witnessed by John W. Carter…..lead inspector on the job.

API 653 In-Service Inspection Report **For** **St. Croix Renaissance Group** **Tank T-11-1** **St.Croix, USVI**	**ACUREN**

API 653 In-Service Inspection Report **For** **St. Croix Renaissance Group** **Tank T-11-1** **St.Croix, USVI**	**ACUREN**

T-11-1

Severe Active Corrosion **Coating Failure On Shell** **Plugged Tell tale hole**

T-11-1

Tar like substance
Covering bottom projection

Coating Failure
On nozzle neck
And valve

Coating Failure
On nozzle neck
And valve

Severe Spalling of
Concrete containment wall
With exposed rebar

Moderate Cracking of
Concrete containment wall

T-11-1

Coating failure On fixed roof

Missing bird Screen on vent

Failed handrails / midrails And toe guards On fixed roof

Coating Failure to moderate active corrosion On ladder and cage

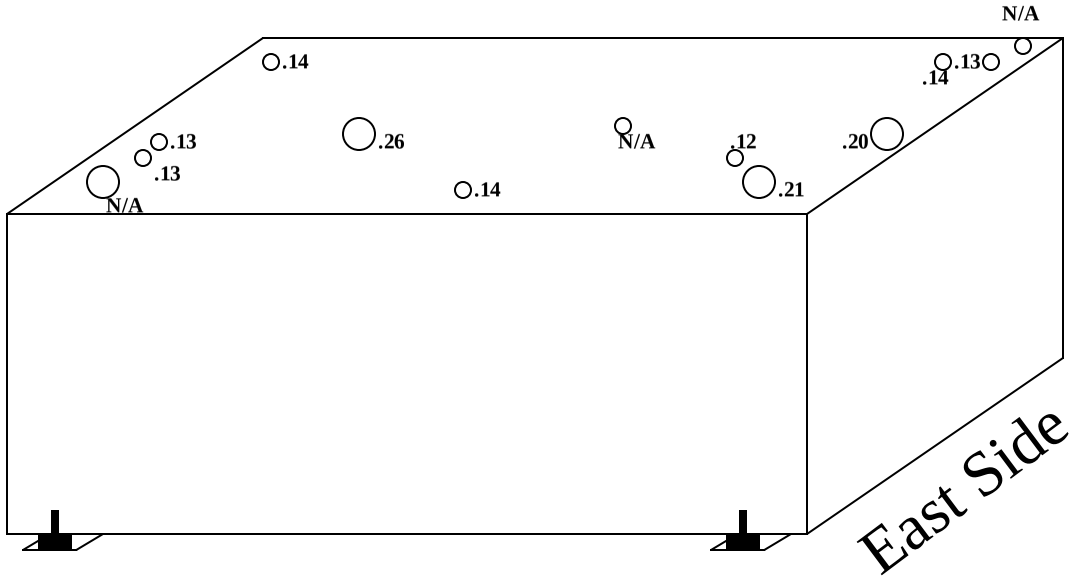
IN SERVICE
STORAGE TANK

INSPECTION REPORT
Fuel Tank

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

Fuel Tank



South Side

.18	.17	.18	.18
.18	.18	.18	.18
.18	.18	.18	.18

South Side

.17	.17	.18
.18	.18	.18
.18	.18	.18

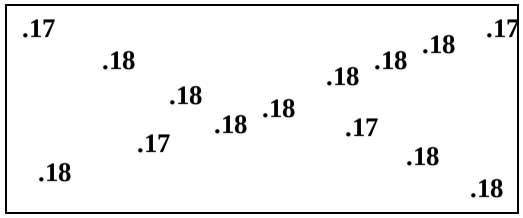
East Side

.17	.17	.18	.18
.18	.18	.18	.18
.17	.18	.18	.17

North Side

.17	.16	.18
.18	.18	.18
.18	.18	.17

West Side



Top

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Tank #: Fuel Tank
Service:Fuel
Date: 11-28-06
Inspected By:J. Carter - VT
Inspected By:Jn Baptiste - UT
Drawn By:J. Carter

Tank #: Fuel Tank	**DATE: 12-2-06**	
Client: St. Croix Ren. Group	**INSPECTOR: J. Carter / Jn. Baptiste**	**SERVICE: Fuel**

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

NOTES

1	Coating Failure throughout shell and nozzles. Recommend cleaning and re-coating.
2	There is moderate active corrosion on the footings. Recommend cleaning and re-coating.

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J. BAPTISTE

Company Na St. Croix Ren. Group
Location: St. Croix
Inspection Date: Nov. 06
Inspection Method: UT
Tank: T-60-5

UT READINGS

TML	T	TE	E	BE	B	BW	W	TW	COMMENTS
1	0.24	0.21	0.23	0.22	0.22	0.23	0.24	0.23	
2	0.22	0.23	0.24	0.22	0.22	0.22	0.23	0.23	
3	0.23	0.22	0.23	0.23	0.24	0.23	0.22	0.25	
4	0.22	0.23	0.22	0.24	0.23	0.25	0.22	0.23	
5	0.22	0.23	0.22	0.24	0.25	0.23	0.24	0.23	
	T	M	B	W	E				
6	0.22	0.22	0.23	0.24	0.22				
7	0.22	0.23	0.24	0.25	0.22				

Fuel Tank

Coating Failure

Moderate Active Corrosion

IN SERVICE
ATMOSPHERIC STORAGE TANK

INSPECTION REPORT
Tank T-20-13

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

INTRODUCTION

St. Croix Renaissance Group contracted with Acuren Inspection Inc. to provide inspection services for Tank T-20-13. The tank is located at the Client Facility in St. Croix, USVI

This report documents the findings of the examinations performed on 11-28-06 and provides an evaluation of the inspection results per the applicable criteria of API Standard 653 (current edition).

Due to the lack of construction information, past inspection reports / history it is recommended that the tank be taken out of service at the earliest convenience for a complete out-of-service inspection.

Acuren Inspection Inc. provided the following personnel:

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John W. Carter API-653 # 20681
John Baptiste Level II UT Technician
Steve Sobers Level II UT Technician

DESCRIPTION

GENERAL:

TANK NUMBER:	T-20-13
OWNER:	St. Croix Renaissance Group
DESIGN STD:	NDA
TANK LOCATION:	St. Croix, USVI
MANUFACTURER:	NDA
PRODUCT:	#6 Fuel Oil
CATHODIC PROT.:	No Data Avail.
DATA PLATE PRESENT:	Yes

DIMENSIONS:

DIAMETER:	NDA
HEIGHT:	NDA
GROSS CAPACITY:	No Data Avail.
FILLING HEIGHT:	NDA
NOMINAL CAPACITY:	81,270 Gallons

GEOMETRY:

FOUNDATION:	Concrete Pad
BOTTOM:	Lap Welded
SHELL:	Butt Welded
FIXED ROOF:	Lap Welded
FLOATING ROOF:	N/A
PRIMARY SEAL:	N/A
SECONDARY SEAL:	N/A

DATES:

YEAR BUILT:	NDA
LAST COATED:	1990
LAST INSPECTION:	N/A

ACCESS:

FIXED ROOF:	Vertical Ladder
FLOATING ROOF:	N/A

COATINGS:

BOTTOM:	N/A
SHELL:	Grey Paint
FIXED ROOF:	Grey Paint
FLOATING ROOF:	N/A

NDA = No data available (no construction information or data plate)

SUMMARY AND REPAIR RECOMMENDATIONS

SUMMARY

An In-Service inspection was performed on the above mentioned Above Ground Storage Tank.

REPAIR RECOMMENDATIONS

FOUNDATION:

The containment area has ponding water present. Recommend Installing a drain to prevent the ponding of the water(See Pictures).

There is a layer of a tar like substance covering the Bottom Projection (See Pictures). Recommend removing the tar like substance so that the bottom projection and the bottom to shell weld are visible at all times (API 653, Para. 4.3.1.3).

SHELL: The roof access ladder and cage have coating failure to complete failure of the cage (See Pictures). Recommend cleaning, repairing as needed and re-coating.

The access ladder does not have re-enforcing pads where the supports are welded to the shell . Recommend installing repads at these locations.

The tank shell has coating failure throughout (See Pictures). Recommend cleaning the tank external and re-coating.

The tank currently does not have cathodic protection. Consideration should be given to installing a cathodic protection system as a method to achieve corrosion control (Ref. API 651, Cathodic Protection of Aboveground Petroleum Storage Tanks).

The tank does not have a name / data plate attached to the shell. Recommend installing a name / data plate above the manway.

NOZZLES AND APPURTENANCES: All nozzles have coating failure to Light active corrosion on there necks, flanges and bolting (See Pictures). Recommend cleaning and re-coating.

All shell nozzle re-enforcing plates have telltale holes that are plugged (See Pictures), API 650, Paras. 3.7.5.1 and 3.7.6.1 indicate reinforcing plates should be installed with telltale holes left open to the atmosphere. The plugs should be removed and the telltale holes should then be left open to the atmosphere.

Nozzles N-2 and N-3 have a weld spacing between their reinforcing plates and the shell-to-bottom joint less than that required by API 650, Para. 3.7.3. (See Pictures). Such practices result in areas of increased stress concentration and possible accelerated corrosion. Visual inspection of these nozzles did not identify any such corrosion at this time. It is recommended that these weld spaces be corrected at the next out-of-service inspection.

The manway has a weld spacing between the reinforcing plate and the shell-to-bottom joint less than that required by API 650, Para. 3.7.3. (See Pictures). Such practice results in areas of increased stress concentration and possible accelerated corrosion. Visual inspection of these nozzles did not identify any such corrosion at this time. It is recommended that these weld spaces be corrected at the next out-of-service inspection.

FIXED ROOF: The fixed roof manway has coating failure to severe active corrosion (See Pictures). Recommend cleaning, repairing as needed and re-coating.

The fixed roof has coating failure throughout the roof plates and nozzles (See Pictures). Recommend cleaning and re-coating.

The handrails and midrails have coating failure to severe active corrosion(See Pictures). Recommend cleaning, repairing as needed and re-coating.

There is trash / debris / product on the fixed roof(See Pictures). Recommend removing all trash / debris.

The center vent does not have a bird screen on it. Recommend installing a bird screen.

INSPECTION REPORT

FOUNDATION

FOUNDATION INSPECTION CHECKLIST

✓	#	DESCRIPTION	COMMENTS
✓	1	Type of foundation.	Concrete Pad
✓	2	Inspect foundation for damage.	See repair recs
✓	3	Search for indications of bottom leakage.	None found
✓	4	List all locations of cavities around foundation.	None found
✓	5	Inspect for vegetation under and around foundation.	Slight veg. in cont. area
✓	6	Check for proper water runoff and drainage away from the tank.	Ponding water – see repair recs
✓	7	Check for grade or other material covering the shell-to-bottom junction. Detail findings.	See repair recs.
✓	8	Check for settlement around the perimeter of the tank.	See settlement graph
✓	9	General condition of dike area.	See repair recs

API 653 In-Service Inspection Report
For
St. Croix Renaissance Group
Tank T–20-13
St.Croix, USVI

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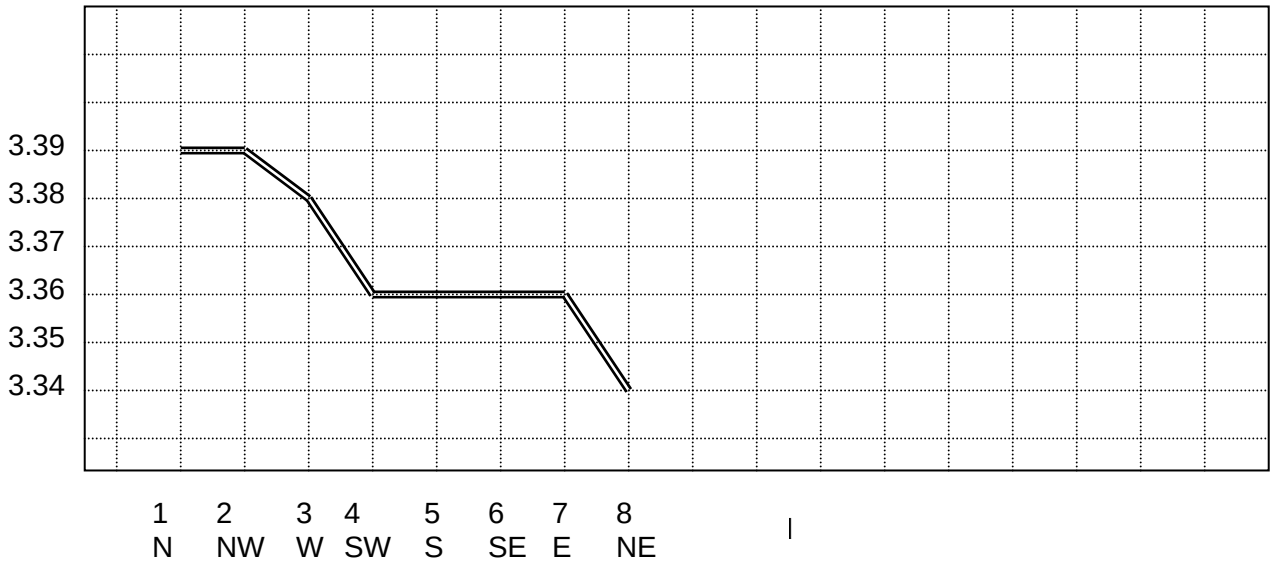
FOUNDATION SETTLEMENT SURVEY TABLE

Sta.		Shell
1	North	3.39
2		3.39
3		3.38
4		3.36
5		3.36
6		3.36
7		3.36
8		3.34

All settlement stations are measured circumferentially from North counterclockwise

Shell Settlement (Survey Data)



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Tank T–20-13
St.Croix, USVI

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API 653 In-Service Inspection Report
For
St. Croix Renaissance Group
Tank T–20-13
St.Croix, USVI

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SHELL

✓	#	DESCRIPTION	COMMENTS
✓	1	Inspect shell ladders, stairways, platforms and walkways. Record all findings.	See repair recs
✓	2	Visually inspect shell for significant distortions and/or buckling.	None Found
✓	3	Visually inspection shell for out-of-roundness and plumbness.	None found
✓	4	Check support welds to shell for corrosion or defects.	See repair recs
✓	5	Inspect windgirder for corrosion or damage.	N/A
✓	6	Inspect shell surface for leaks or corrosion.	None found
✓	7	Inspect exterior shell-to-bottom weld area for corrosion, defects and thinning on weld, shell or bottom.	See repair recs
✓	8	Inspect for coating failure.	See repair recs
✓	9	Inspect internal and external shell for pitting, corrosion, rubbing and/or grooving.	None found
✓	10	Inspect horizontal and vertical seams for weld or rivet joint details and record findings.	Acceptable
✓	11	Inspect shell overflows for corrosion and screening.	See repair recs
✓	12	Check for any lap patches.	None found
✓	13	Check for grounding.	Acceptable
✓	14	Is data plate present	No – see repair recs

API 653 In-Service Inspection Report
For
St. Croix Renaissance Group
Tank T–20-13
St.Croix, USVI

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NOZZLES AND APPURTENANCES

✓	#	DESCRIPTION	COMMENTS
✓	1	Inspect nozzle flanges and bolting for leaks and corrosion.	See repair rocs
✓	2	Inspect nozzles for pipe misalignment or strain.	Acceptable
✓	3	Check piping and valves for leaks, thermal relief or signs of damage.	Acceptable
✓	4	Describe and verify operability of gauging devices, if applicable.	N/A
✓	5	Inspect mixer and gaskets for leakage and defects.	N/A
✓	6	Inspect for signs of corrosion or other defects around all manways, nozzles, and attachments.	See repair rocs
✓	7	Verify presence of telltale holes on all reinforcing plates.	See repair rocs
✓	8	Check for adequate reinforcement around nozzles and appurtenances.	Acceptable
✓	9	Verify adequate weld spacing around nozzles and appurtenances.	See repair recs
✓	10	Check for internal welds on all nozzles.	N/A
✓	11	Check reinforcement pads for adequate fillet welds.	Acceptable
✓	12	Visually inspect welds for defects on all nozzles and appurtenances.	Acceptable

GENERAL:

TANK NUMBER:
OWNER:
DESIGN STD:
TANK LOCATION:
MANUFACTURER:
PRODUCT:
CATHODIC PROT.:
DATA PLATE PRESENT:

DIMENSIONS:

DIAMETER:
HEIGHT:
GROSS CAPACITY:
FILLING HEIGHT:
NOMINAL CAPACITY:

GEOMETRY:

FOUNDATION:
BOTTOM:
SHELL:
FIXED ROOF:
FLOATING ROOF:
PRIMARY SEAL:
SECONDARY SEAL:

DATES:

YEAR BUILT:
LAST COATED:
LAST INSPECTION:

ACCESS:

FIXED ROOF:
FLOATING ROOF:

COATINGS:

BOTTOM:
SHELL:
FIXED ROOF:
FLOATING ROOF:

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

FOUNDATION: The concrete foundation is covered with a tar like substance preventing a complete inspection (see pictures). Consideration should be given to removing the tar like substance so that a complete inspection can be performed and then re-coating.

SHELL: The shell has coating failure throughout (see pictures). Recommend sandblasting clean and re-coating.
The access ladder to the fixed roof has severe active corrosion causing failure of the containment cage around it (see pictures). Recommend repairing the access ladder and re-coating.

NOZZLES AND APPURTENANCES: All shell nozzle repads have there telltale hole plugged with paint/ debris (see pictures). Recommend removing the obstructions and leaving open to the atmosphere.

FIXED ROOF:

1. INSPECTION REPORT

FOUNDATION

FOUNDATION INSPECTION CHECKLIST

	#	DESCRIPTION	COMMENTS
	1	Type of foundation.	
	2	Inspect foundation for damage.	
	3	Search for indications of bottom leakage.	
	4	Check for proper water runoff and drainage away from the tank.	
	5	Inspect for vegetation under and around foundation.	
	6	Check for grade or other material covering the shell-to-bottom junction. Detail findings.	
	7	Check for settlement around the perimeter of the tank.	

FOUNDATION SETTLEMENT SURVEY TABLE

					Distance From Shell (FT.)						
Sta.	SHELL	R (FT.)	R READING	3	10	20	30	50	40	60	CENTER
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											

All settlement stations are measured circumferentially from manway “A” counterclockwise

BOTTOM INSPECTION CHECKLIST

	#	DESCRIPTION	COMMENTS
	1	Conduct Visual Inspection of bottom plate lap welds. Record all findings.	
	2	Perform Vacuum Box Bubble Test inspection of lap welds. Record all findings.	
	3	Conduct Visual Inspection of internal shell-to-bottom weld. Record all findings.	
	4	Conduct Magnetic Flux Leakage inspection of bottom. Quantify all findings.	
	5	Perform Magnetic Particle Inspection or Vacuum Box Bubble Test of the internal shell-to-bottom weld. Record all findings.	
	6	Conduct random Ultrasonic Thickness readings of bottom plates. Record all data.	
	7	Conduct Visual Inspection of reinforcement.	
	8	Indicate the number and condition of sumps.	
	9	Describe type and condition of coating.	
	10	Conduct Visual Inspection of striker plates beneath vacuum breakers and floating roof legs.	
	11	Conduct Visual Inspection of roof support column assemblies and lateral clips.	

SHELL

SHELL INSPECTION CHECKLIST

	#	DESCRIPTION	COMMENTS
	1	Inspect shell ladders, stairways, platforms and walkways. Record all findings.	
	2	Visually inspect shell for significant distortions and/or buckling.	
	3	Visually inspection shell for out-of-roundness and plumbness.	
	4	Check support welds to shell for corrosion or defects.	
	5	Inspect stiffener ring for corrosion or damage.	
	6	Inspect shell surface for leaks or corrosion.	
	7	Inspect exterior shell-to-bottom weld area for corrosion, defects and thinning on weld, shell or bottom.	
	8	Inspect for coating failure.	
	9	Inspect internal and external shell for pitting, corrosion, rubbing and/or grooving.	
	10	Inspect horizontal and vertical seams for weld or rivet joint details and record findings.	
	11	Inspect shell overflows for corrosion and screening.	
	12	Check for any lap patches.	
	13	Check for grounding.	
	14	Is data plate present	

NOZZLES AND APPURTENANCES

NOZZLE AND APPURTENANCE INSPECTION CHECKLIST

	#	DESCRIPTION	COMMENTS
	1	Inspect nozzle flanges and bolting for leaks and corrosion.	
	2	Inspect nozzles for pipe misalignment or strain.	
	3	Check piping and valves for leaks, thermal relief or signs of damage.	
	4	Describe and verify operability of gauging devices, if applicable.	
	5	Inspect mixer and gaskets for leakage and defects.	
	6	Inspect for signs of corrosion or other defects around all manways, nozzles, and attachments.	
	7	Verify presence of tell-tale holes on all reinforcing plates.	
	8	Check for adequate reinforcement around nozzles and appurtenances.	
	9	Verify adequate weld spacing around nozzles and appurtenances.	
	10	Check for internal welds on all nozzles.	
	11	Check reinforcement pads for adequate fillet welds.	

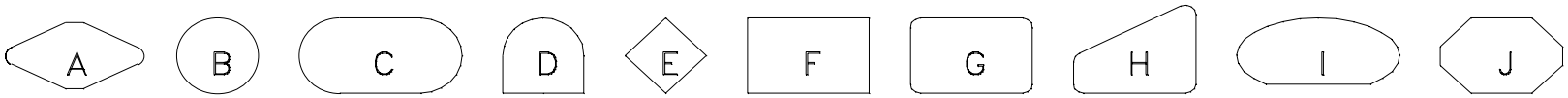
	12	Visually inspect welds for defects on all nozzles and appurtenances.	

NOZZLE AND APPURTENANCE TABLE

Item	Description	Size (in.)	Station* (ft)	CL Elev. (in.)	Reinforcing Plate Shape	Reinforcing Plate Height (in.)	Reinforcing Plate Width (in.)	Reinforcing Plate Thick. (in.)	Neck Thick	Flng Thick (in.)	Cover Thick (in.)	Weld Space (in.)	Comments
A	MANWAY												
B													
C													
D													
E													
F													
G													
H													
I													
J													
K													
L													
M													
N													
O													
P													
Q													
R													
S													
T													
U													
W													
X													
Y													

*The stations are measured circumferentially counterclockwise from Manway A.

Shape



FIXED ROOF

FIXED ROOF INSPECTION CHECKLIST

	#	DESCRIPTION	COMMENTS
	1	Conduct Visual Inspection of Fixed roof coating system.	
	2	Visually inspect low spots on roof for external corrosion. Locate on layout.	
	3	Conduct Visual Inspection of roof nozzles and appurtenances. Locate on layout.	
	4	Conduct Visual Inspection of internal roof supports, rafters, columns, and bases. Record sizes and locate supports on layout.	
	5	Verify open roof vents have screens and covers.	
	6	Describe condition of hand rails and tie-off supports.	
	7	Describe any significant bulges in roof plates. Record measurements and locate on layout.	

FIXED ROOF NOZZLE TABLE

Item	Description	Size (in.)	Plate No.	Neck Thick (in.)		Comments
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
K						
L						
M						
N						

FLOATING ROOF

FLOATING ROOF INSPECTION CHECKLIST

✓	#	DESCRIPTION	COMMENTS
	1	Describe floating roof type.	
	2	Describe type and condition of seals.	
	3	Describe condition of coating.	
	4	Inspect roof drain system.	
	5	Inspect ladder assembly.	
	6	Check for corrosion, wear, pivot bar operation, stairway treads and repads on rolling ladder systems.	
	7	Check for grounding cable on rolling ladder.	
	8	Describe condition of roof outer rim, including rim vents.	
	9	Conduct Visual Inspection of plates and welds, or bolts and fasteners, with special attention to product interface areas.	
	10	Inspect for signs of product, water or residue on pontoon or double deck roofs.	
	11	Check for presence of lock-down attachments on pontoon covers.	
	12	Hammer test and visually inspect aluminum pontoons, with special attention to pontoon brackets.	
	13	Inspect vacuum breaker system. Record number and size. Locate on layout.	
	14	Inspect roof support legs, sleeves and pins. Record sizes and locate on layout.	
	15	Check for presence of notches in each floating roof leg support for product drainage.	
	16	Inspect gasket material around fixed roof support columns, ladder assembly, gauge guides, etc., on internal floating roofs.	
	17	Measure seal gaps at regular intervals and record any visible seal damage.	
	18	Measure and record annular space at 30-foot spacing.	

NDE INSPECTION SCOPE

The following Nondestructive Examinations (NDE) were conducted to evaluate the physical characteristics of the tank:

MFL Magnetic Flux Leakage

UT Ultrasonic Test
VT Visual Test

	INSPECTION PERFORMED	DESCRIPTION
	MFL Floorscan of bottom	
	B-Scan of bottom 2’ x 2’ areas	
	Random UT on bottom plates	
	Quantitative UT readings of MFL indications	
	UT readings on shell courses	
	UT readings on Course 1 plates	
	Random UT readings on roof plates	
	VT of bottom	
	VT of bottom lap welds	
	VT of internal shell-to-bottom weld	
	VT of shell and welds	
	VT of roof	
	Limitations on MFL floorscan	**Limitations on Visual inspection**

T-20-13

Plugged Telltale Hole

Coating Failure

Weld Spacing

Ponding Water

Covered Bottom Projection

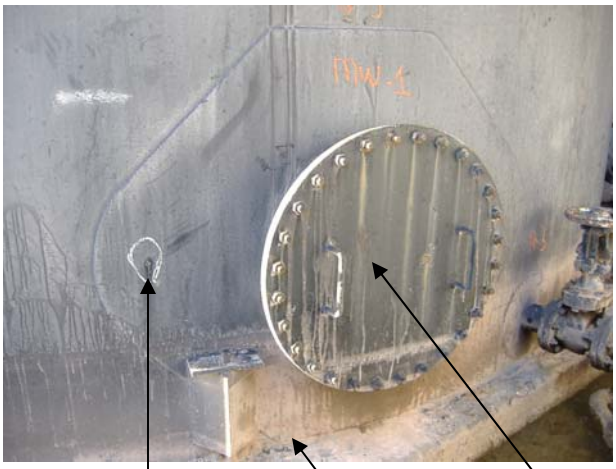
Plugged Telltale Hole

Coating Failure

Severe Active Corrosion on Ladder Cage

Failing Ladder Cage supports

T-20-13



Plugged Telltale Hole **Coating Failure**

Weld Spacing

Plugged Telltale Hole **Weld Spacing**

Coating Failure **Weld Spacing**

T-20-13

Center vent missing bird screen

Severe active corrosion on center vent

Trash / Debris / Product on roof

Failing Ladder Cage supports / Handrails

Failing Ladder Cage supports / Handrails

Failing Ladder Cage supports / Handrails

IN SERVICE
STORAGE TANK

INSPECTION REPORT
Diesel Fuel Tank
Fire Pump #1

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

Tank #: Fire Pump #1 Diesel Tank	**DATE: 12-2-06**	
Client: St. Croix Ren. Group	**INSPECTOR: J. Carter / Jn. Baptiste**	**SERVICE: Diesel**

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

NOTES

1	Severe Coating Failure throughout shell (see Pictures). Recommend cleaning and re-coating.
2	There is a hole in the top of the tank covered with tape. Recommend repairing the hole
3	There is moderate active corrosion on the support legs at the water line. Recommend cleaning, repairing as needed and re-coating.
4	There is ponding water in the containment area. Recommend installing a drain to promote positive drainage from the containment area.
*****	Due to the lack of construction information, inspection records / history it is recommended that the tank be opened for a complete internal inspection at the earliest convenience

ACUREN

J. BAPTISTE

Company Na St. Croix Ren. Group
Location: St. Croix
Inspection Date: Nov. 06
Inspection Method: UT
Tank: Deisel Fuel tank #1 Fire Pump

UT READINGS

TML	T	TN	N	BN	B	BS	S	TS	COMMENTS
1	0.09	0.10	0.10	0.12	0.11	0.15	0.13	0.13	
2	0.11	0.14	0.09	0.10	0.10	0.11	0.10	0.10	
3	0.13	0.14	0.13	0.13	0.12	0.14	0.13	0.12	
	T	M	B						
4	0.15	0.15	0.16						
5	0.14	0.14	0.13						

11-30-06

Diesel Fuel Tank
Fire Pump #1

Moderate Active Corrosion
At water line

Hole in tank
With tape over it

Severe Coating Failure

Ponding Water

IN SERVICE
STORAGE TANK

INSPECTION REPORT
Diesel Fuel Tank
Fire Pump #2

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

Tank #: Fire Pump #2 Diesel Tank	**DATE: 12-2-06**	
Client: St. Croix Ren. Group	**INSPECTOR: J. Carter / Jn. Baptiste**	**SERVICE: Diesel**

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

NOTES

1	Severe Active Corrosion on top of shell (see Pictures). Recommend cleaning and re-coating.
2	Coating Failure throughout. Recommend cleaning and re-coating.
3	There is ponding water in the containment area. Recommend installing a drain to promote positive drainage from the containment area.
*****	Due to the lack of construction information, inspection records / history it is recommended that the tank be opened for a complete internal inspection at the earliest convenience

ACUREN

J. BAPTISTE

Company Nai St. Croix Ren. Group
Location: St. Croix
Inspection Date: Nov. 06
Inspection Method: UT
Tank: Deisel Fuel tank #2 Fire Pump

UT READINGS

TML	T	TN	N	BN	B	BS	S	TS	COMMENTS
1	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	
2	0.11	0.12	0.10	0.11	0.11	0.12	0.12	0.11	
3	0.10	0.10	0.12	0.11	0.12	0.10	0.12	0.13	
	T	M	B						
4	0.11	0.12	0.12						
5	0.10	0.11	0.11						

Diesel Fuel Tank
#2

Severe Active Corrosion

Coating Failure Throughout

Ponding Water

IN SERVICE
STORAGE TANK

INSPECTION REPORT
T-60-5

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

Tank #: T-60-5	**DATE: 12-2-06**	
Client: St. Croix Ren. Group	**INSPECTOR: J. Carter / Jn. Baptiste**	**SERVICE: Fuel**

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

NOTES

1	The supports, saddles access ladder and catwalk have coating failure to moderate active corrosion (see Pictures). Recommend cleaning, Repairing as needed and re-coating.
2	The catwalk and supports on the south side have severe active corrosion throughout (se pictures). Recommend cleaning, repairing as needed and re-coating.
3	There is ponding water in the containment area. Recommend installing a drain to promote positive drainage from the containment area.
*****	Due to the lack of construction information, inspection records / history it is recommended that the tank be opened for a complete internal inspection at the earliest convenience

ACUREN

J. BAPTISTE

Company Na St. Croix Ren. Group
Location: St. Croix
Inspection Date: Nov. 06
Inspection Method: UT
Tank: T-60-5

UT READINGS

TML	T	TE	E	BE	B	BW	W	TW	COMMENTS
1	0.24	0.21	0.23	0.22	0.22	0.23	0.24	0.23	
2	0.22	0.23	0.24	0.22	0.22	0.22	0.23	0.23	
3	0.23	0.22	0.23	0.23	0.24	0.23	0.22	0.25	
4	0.22	0.23	0.22	0.24	0.23	0.25	0.22	0.23	
5	0.22	0.23	0.22	0.24	0.25	0.23	0.24	0.23	
	T	M	B	W	E				
6	0.22	0.22	0.23	0.24	0.22				
7	0.22	0.23	0.24	0.25	0.22				

T-60-5

Coating Failure With
Moderate Active Corrosion

Severe Active Corrosion

IN SERVICE
STORAGE TANK

INSPECTION REPORT
Tank T-20-18

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

Tank #: T-20-18	**DATE: 12-2-06**	
Client: St. Croix Ren. Group	**INSPECTOR: J. Carter / Jn. Baptiste**	**SERVICE: Used Oil**

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

NOTES

1	Coating Failure throughout (see Pictures). Recommend cleaning and re-coating.
2	The concrete containment wall has areas of minor spalling (see Pictures). Recommend repairing the spalled areas to prevent further degradation of the containment wall
3	The containment has areas of product build-up preventing a complete inspection**(see** Pictures**).** Recommend removing the product so the containment is visible at all times.
4	The catwalk has coating failure **(**see Pictures**).** Recommend cleaning and re-coating.
5	
*****	Due to the lack of construction information, inspection records / history it is recommended that the tank be opened for a complete internal inspection at the earliest convenience

ACUREN

J. BAPTISTE

Company Name: St. Croix Ren. Group
Location: St. Croix
Inspection Date: Nov. 06
Inspection Method: UT
Tank: T-20-18 Used Oil

UT READINGS

TML	TOP	MIDDLE	BOTTOM						COMMENTS
1	0.26	0.24	0.24						
2	0.22	0.25	0.24						
3	0.25	0.25	0.24						
4	0.25	0.25	0.24						
5	0.24	0.24	0.25						
6	0.26	0.26	0.26						
7	0.25	0.25	0.24						
8	0.24	0.23	0.23						
9	0.25	0.25	0.24						
10	0.24	0.25	0.24						
11	0.24	0.25	0.23						
12	0.24	0.24	0.24						
13	0.26	0.26	0.26						
14	0.24	0.24	0.24						

T-20-18
Used Oil Tank

Coating Failure

Spalling of concrete
Containment wall

Product Build-up

IN SERVICE
STORAGE TANK

INSPECTION REPORT
Tank T-80-E1

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

Tank #: T-80-E1	**DATE: 12-2-06**	
Client: St. Croix Ren. Group	**INSPECTOR: J. Carter / Jn. Baptiste**	**SERVICE:**

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

NOTES

1	Coating Failure throughout shell (see Pictures). Recommend cleaning and re-coating.
2	The concrete supports have areas of minor spalling (see Pictures). Recommend repairing the spalled areas to prevent further degradation of the supports.
3	The catwalk has coating failure **(**see Pictures**).** Recommend cleaning and re-coating.
4	The west head has an area of severe active corrosion(see pictures) Recommend cleaning, repairing as needed and re-coating.
*****	Due to the lack of construction information, inspection records / history it is recommended that the tank be opened for a complete internal inspection at the earliest convenience

ACUREN

J. BAPTISTE

Company Na St. Croix Ren. Group
Location: St. Croix
Inspection Date: Nov. 06
Inspection Method: UT
Tank: T-80-E1

UT READINGS

TML	T	TN	N	BN	B	BS	S	TS	COMMENTS
1	0.24	0.25	0.26	0.26	0.26	0.26	0.26	0.26	
2	0.25	0.26	0.25	0.26	0.26	0.27	0.26	0.26	
3	0.24	0.26	0.26	0.26	0.27	0.27	0.27	0.27	
4	0.27	0.26	0.27	0.26	0.27	0.26	0.27	0.27	
	T	M	B	N	S				
5	0.25	0.25	0.25	0.26	0.25				
6	0.25	0.25	0.25	0.25	0.24				

T-80-E1

Coating Failure

Spalling of concrete supports

Coating Failure on Catwalk

Severe Active Corrosion on west head

IN SERVICE
STORAGE TANK

INSPECTION REPORT
Tank T-80-E2

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

Tank #: T-80-E2	**DATE: 12-2-06**	
Client: St. Croix Ren. Group	**INSPECTOR: J. Carter / Jn. Baptiste**	**SERVICE:**

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

NOTES

1	Coating Failure throughout shell (see Pictures). Recommend cleaning and re-coating.
2	The concrete supports have areas of minor spalling (see Pictures). Recommend repairing the spalled areas to prevent further degradation of the supports.
3	The catwalk has coating failure **(**see Pictures**).** Recommend cleaning and re-coating.
4	There is a dent in the shell on the bottom west side (see pictures) Recommend evaluating from the internal at the next time the tank is opened for inspection.
*****	Due to the lack of construction information, inspection records / history it is recommended that the tank be opened for a complete internal inspection at the earliest convenience

ACUREN

J. BAPTISTE

Company Na St. Croix Ren. Group
Location: St. Croix
Inspection Date: Nov. 06
Inspection Method: UT
Tank: T-80-E2

UT READINGS

TML	T	TN	N	BN	B	BS	S	TS	COMMENTS
1	0.20	0.18	0.18	0.19	0.17	0.17	0.18	0.18	
2	0.19	0.19	0.19	0.18	0.18	0.20	0.18	0.18	
3	0.19	0.18	0.18	0.19	0.19	0.19	0.19	0.19	
4	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.17	
	T	M	B	N	S				
5	0.19	0.19	0.18	0.19	0.19				
6	0.18	0.18	0.18	0.18	0.19				

T-80-E2

Spalling of concrete supports

Coating Failure

Severe Active Corrosion on west head

Coating Failure on Catwalk

IN SERVICE
STORAGE TANK

INSPECTION REPORT
Tank T-80-E3

ACUREN

Report Prepared By:
John W. Carter
API-653 Cert # 20681
Acuren Inspection Inc.

Tank #: T-80-E3	**DATE: 12-2-06**	
Client: St. Croix Ren. Group	**INSPECTOR: J. Carter / Jn. Baptiste**	**SERVICE:**

SIGNIFICANT FINDINGS AND REPAIR RECOMMENDATIONS

NOTES

1	Coating Failure with light active corrosion throughout shell (see Pictures). Recommend cleaning and re-coating.
2	The concrete supports have areas of minor spalling (see Pictures). Recommend repairing the spalled areas to prevent further degradation of the supports.
3	The catwalk has coating failure **(**see Pictures**).** Recommend cleaning and re-coating.
4	There is severe active corrosion at all support to shell interfaces. Recommend cleaning, repairing as needed and re-coating.
*****	Due to the lack of construction information, inspection records / history it is recommended that the tank be opened for a complete internal inspection at the earliest convenience

ACUREN

J. BAPTISTE

Company Na St. Croix Ren. Group
Location: St. Croix
Inspection Date: Nov. 06
Inspection Method: UT
Tank: T-80-E3

UT READINGS

TML	T	TN	N	BN	B	BS	S	TS	COMMENTS
1	0.20	0.19	0.18	0.18	0.18	0.18	0.18	0.18	
2	0.20	0.20	0.20	0.16	0.18	0.18	0.18	0.18	
3	0.20	0.20	0.20	0.20	0.17	0.19	0.18	0.19	
4	0.20	0.20	0.20	0.17	0.18	0.18	0.17	0.17	
	T	M	B	N	S				
5	0.19	0.19	0.19	0.18	0.19				
6	0.18	0.18	0.19	0.18	0.18				

T-80-E3

11-30-06

Severe Active Corrosion

Severe Active Corrosion

Spalling of concrete supports

Coating Failure

Appendix F

SCRG Alumina Production Cessation and Current Activities Letter

ST. CROIX RENAISSANCE

December 6, 2006

Eduardo R. Gonzalez, PE, MBA, Enforcement Officer
Response & Remediation Branch
Caribbean Environmental Protection Division
U.S. Environmental Protection Agency – Region 2
1492 Ponce De Leon Avenue
Centro Europa Building - Suite 417
Santurce, PR 00907-4127

Re: St. Croix Renaissance Park Scope of Activities since June 2002

Dear Officer Gonzalez:

In response to the Information Request made under EPA Notice of Violation CEPD-RCRA-06-3007-3008-018, following is a listing of all activities undertaken by St. Croix Renaissance Group (SCRG) on premises since the date of purchase in June 2002:

- Operation and maintenance of large and small bore diesel engines for supplying power on site;
- Operation and maintenance of seawater desalination units #3 and 4 for supplying fresh water on site and for sales to trucks, WAPA and HOVENSA;
- Maintenance of air compressor in the turbine building's basement;
- Maintenance of high voltage electrical systems;
- Lay-up of coal and oil boilers #1 and 3;
- Inspections and maintenance of oil boiler system;
- Maintenance, inspections and operations of instrumentation and control systems;
- Inspection of seawater desalination units #3 and 4;
- Operation and maintenance of seawater pump;
- Operation of desalinated water tanks (T 205-1, 2) and pumps;
- Operation of truck loading pumps for desalinated water;
- Operation of tower tank T 205-4;
- Maintenance of oil boiler demineralizer system;
- Operation of seawater treatment chemical systems;
- Maintenance and operation of miscellaneous air conditioning systems;
- Maintenance, repairs and operations of miscellaneous site vehicles and heavy equipment;
- Routine maintenance of site buildings;

ST. CROIX RENAISSANCE GROUP, LLLP
1 Estate Anguilla • P.O. Box 1525 • Kingshill • St. Croix • US Virgin Islands 00851 - 1525
Phone (340) 778-2323 • Fax: (340) 778-1400 / (340) 778-8742

- Abatement of Asbestos from oil boiler #2 connecting piping;
- Inspection of oil boiler burner system;
- Operation of site sump pumps for drainage control;
- Small pipe leak repairs in turbine building;
- Inspection of condensers on steam turbine generator STG#3;
- Inspection of STG#3 excitation system;
- Maintenance of STG#3 condensate return pumps;
- Maintenance and repairs of connecting seawater piping to STG#3 condenser;
- Flushing of piping to test connecting line with HOVENSA;
- Inspections of firewater pump system;
- Operation of the machine shop for contract work;
- Potable water storage for WAPA; and
- Sale of #6 oil from Tank T-30-1 for bunker unto ship.

Should you have any questions concerning the above-listed activities at St. Croix Renaissance Park, please contact me so that I may consider and address your concerns. My contact number is 340-778-2323, ext. 672. I may also be reached by e-mail at jzakaria@stxrenaissance.com.

Sincerely,

Jehangir Zakaria

Jehangir Zakaria, P.E., DEE
Vice President of Energy and Engineering

TPDES Attachment A-3

Attachment A-3

U.S. EPA Form 2D

Please type or print in the unshaded areas only	EPA ID Number *(Copy from Item 1 of Form 1)*	*Form Approved OMB No. 2040-0086 Approval expires 7-31-88*

Form **2D** NPDES

New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

I. Outfall Location

For this outfall, list the latitude and longitude, and name of the receiving water(s)

Outfall Number *(list)*	Latitude			Longitude			Receiving Water *(name)*
	Deg	Min	Sec	Deg	Min	Sec	
001	***N 17***	***42***	***0***	***W 64***	***46***	***9***	***Krause Lagoon Channel (Port St. Croix)***

II. Discharge Date *(When do you expect to begin discharging?))*
May 2005

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of (1) all operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) the average flow contributed by each operation; and (3) the treatment received by the wastewater. Continue on additional sheets if necessary.

Outfall Number	1. Operations Contributing Flow *(list)*	2. Average Flow *(include units)*	3. Treatment *(Description of list Codes from Table 2D-1)*
001	***Demineralization Backwash (A01)***	***0.0113 MGD***	***1U***
001	***Boiler Blowdown (A01)***	***0.0139 MGD***	***1U***
001	***Lab Sink Drain (A01)***	***Intermittent***	***1U***
001	***Once-through Cooling Water (B01)***	***31.9825 MGD***	***1U***
001	***Chemical Metal Cleaning (C01)***	***0.0072 MGD (batch)***	***1U***
001	***Coal Pile Runoff (D01)***	***0 MGD (emergency only)***	***1U***
001	***EDF Process Effluent (E01)***	***0.0173 MGD***	***1U***
001	***EDF Boiler Blowdown***	***0.0025 MGD***	***1U***
001	***EDF Cooling Tower Blowdown***	***0.0444 MGD***	***1U***
	Please note that EDF Process Effluent (E01) will be used as make-up to the EDF Cooling Tower, and therefore the sum of the these flows will not be equivalent to the total average flow to the Krause Lagoon Channel from Outfall 001.		

B. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item III-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

C. Except for storm runoff, leaks, or spills, will any of the discharges described in Item III-A be intermittent or seasonal?

☒ Yes *(complete the following table)* ☐ No *(go to Item IV)*

Outfall Number	1. Frequency		2. Flow		
	a. Days Per Week *(specify average)*	b. Months Per Year *(specify) average)*	a. Maximum Daily Flow Rate *(in mgd)*	b. Maximum Total Volume *(specify with units)*	c. Duration *(in days)*

Certain operations (e.g., chemical metal cleaning) will be performed on a batch basis. Other operations (e.g., operations that may be discharged to lab drain such as process water chemistry analysis) will be performed depending on process requirements. Figures 4 and 5 provide expected maximum and average conditions based on operation of the plant at full output. Subsequent operations, frequency, and flow data will be provided in EPA Form 2C based on actual operations.

IV. Production

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not designed), expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet)

Year	a. Quantity Per Day	b. Units of Measure	c. Operation, Product, Material, etc *(specify)*
			Not applicable

 CONTINUE ON NEXT PAGE

	EPA ID Number *(cop from Item 1 of Form 1)*	Outfall Number **001**

V. Effluent Characteristics

A and B. These items require you to report estimated amounts *(both concentration and mass)* of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instruction for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions *(See Table 2D-2 for Pollutants)*

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value *(include units)*	3. Average Daily Value *(include units)*	4. Source *(see instructions)*
BOD (5)	*2.3 mg/L*	*2.3 mg/L*	*4 – Best professional estimates*
COD	*3.7 mg/L*	*3.8 mg/L*	*4 – Best professional estimates*
TOC	*6.2 mg/L*	*6.4 mg/L*	*4 – Best professional estimates*
TSS	*9.2 mg/L*	*9.4 mg/L*	*4 – Best professional estimates*
Ammonia (as N)	*0.05 mg/L*	*0.05 mg/L*	*4 – Best professional estimates*
Temperature (winter)	*30.0 deg C*	*30.0 deg C*	*4 – Best professional estimates*
Temperature (summer)	*40.0 deg C*	*40.0 deg C*	*4 – Best professional estimates*
pH	*6.0 to 9.0*	*6.0 to 9.0*	*4 – Best professional estimates*
Total Residual Chlorine	*<0.1 mg/L*	*<0.1 mg/L*	*4 – Best professional estimates*
Fecal Coliform	*13 #/ml*	*14 #/ml*	*4 – Best professional estimates*
Fluoride (total)	*1.4 mg/L*	*1.5 mg/L*	*4 – Best professional estimates*
Oil & Grease	*<10.0 mg/L*	*<10.0 mg/L*	*4 – Best professional estimates*
Phosphorus as total P	*<0.5 mg/L*	*<0.5 mg/L*	*4 – Best professional estimates*
Sulfate (total)	*58 mg/L*	*21 mg/L*	*4 – Best professional estimates*
Iron (total)	*6,798 ug/L*	*27 ug/L*	*4 – Best professional estimates*
Manganese (total)	*218 ug/L*	*10 ug/L*	*4 – Best professional estimates*
Arsenic (total)	*10 ug/L*	*9 ug/L*	*4 – Best professional estimates*
Cadmium (total)	*5 ug/L*	*5 ug/L*	*4 – Best professional estimates*
Chromium (total)	*12 ug/L*	*12 ug/L*	*4 – Best professional estimates*
Copper (total)	*23 ug/L*	*14 ug/L*	*4 – Best professional estimates*
Lead (total)	*Believed absent*	*Believed absent*	*4 – Best professional estimates*
Mercury (total)	*0.08 ug/L*	*<0.05 ug/L*	*4 – Best professional estimates*
Nickel (total)	*39 ug/L*	*9 ug/L*	*4 – Best professional estimates*
Selenium (total)	*8 ug/L*	*7 ug/L*	*4 – Best professional estimates*
Zinc (total)	*76 ug/L*	*24 ug/L*	*4 – Best professional estimates*
Cyanide (total)	*Believed absent*	*Believed absent*	*4 – Best professional estimates*
Acrylonitrile	*Believed absent*	*Believed absent*	*4 – Best professional estimates*
Benzene	*Believed absent*	*Believed absent*	*4 – Best professional estimates*

 CONTINUE ON NEXT PAGE

CONTINUED	EPA ID Number *(cop from Item 1 of Form 1)*		Outfall Number **001**
V. Effluent Characteristics			
1. Pollutant	2. Maximum Daily Value *(include units)*	3. Average Daily Value *(include units)*	4. Source *(see instructions)*
Carbon Tetrachloride	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Chlorobenzene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Chloroethane	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Chloroform	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,1-Dichloroethane	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,2-Dichloroethane	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,1-Dichloroethylene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,2-Dichloropropane	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,3-Dichloropropylene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Ethylbenzene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Methyl Chloride	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Methylene Chloride	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Tetrachloroethylene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Toluene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,2-trans-Dichloroethylene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,1,1-Trichloroethane	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,1,2-Trichloroethane	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Trichloroethylene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Vinyl Chloride	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
2,4-Dimethylphenol	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
4,6-Dinitro-o-cresol	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
2,4-Dinitrophenol	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
2-Nitrophenol	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
4-Nitrophenol	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Phenols	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Acenaphthene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Acenaphthylene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Anthracene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Benzo(a)anthracene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
3,4-Benzofluoranthene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Benzo(a)pyrene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Benzo(k)fluoranthene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Bis(2-ethylhexyl)phthalate	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Chrysene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,2-Dichlorobenzene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***

 CONTINUE ON NEXT PAGE

CONTINUED	EPA ID Number *(cop from Item 1 of Form 1)*		Outfall Number **001**
V. Effluent Characteristics			
1. Pollutant	2. Maximum Daily Value *(include units)*	3. Average Daily Value *(include units)*	4. Source *(see instructions)*
1,3-Dichlorobenzene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,4-Dichlorobenzene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Diethyl Phthalate	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Dimethlyl Phthalate	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Di-n-butyl Phthalate	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Fluoranthene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Fluorene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Hexachlorobenzene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Hexachlorobutadiene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Hexachloroethane	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Naphthalene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Nitrobenzene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Phenanthrene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
Pyrene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***
1,2,4-Trichlorobenzene	***Believed absent***	***Believed absent***	***4 – Best professional estimates***

CONTINUED FROM THE FRONT	EPA ID Number *(cop from Item 1 of Form 1)*	

C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge
None	

VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

☐ Report Available ☒ No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location
No facilities with similar configuration found.	

 CONTINUE ON NEXT PAGE

EPA ID Number *(cop from Item 1 of Form 1)*

VII. Other Information *(Optional)*

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

SCRG has implemented Best Management Practices (BMPs) to control the quality of storm water including runoff to the upper and lower cooling ponds. Consequently, the presence of iron, copper, lead, and zinc above intake levels (based on mass) would be as a result of corrosion.

BOD, TOC, and COD above intake levels would likely be due to the introduction and decay of natural/native fauna/flora since the BOD from the EDF Process Effluent of only 10 gpm will be discharged below the new source performance standards. In addition, fecal coliform may be present due to the use of the upper and lower cooling ponds and drainage areas by wildlife.

Please see Appendix C for a summary of the proposed chemical additives.

VIII. Certification

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name and Official Title *(type or print)*	B. Phone No.
Myron A. Allick, Partner	***(240) 778-2323***
C. Signature	D. Date Signed

Table C-1 of Appendix C of TPDES Application

TABLE C-1. PROPOSED ADDITIVE COMPOUNDS
TPDES INDIVIDUAL PERMIT APPLICATION FOR DISCHARGE OF PROCESS WASTEWATER AND STORMWATER
ST. CROIX RENAISSANCE GROUP, ST. CROIX, U.S.V.I.

POI	Manufacturer	Trade Name (1)	Function or Family Name	Maximum Target Concentration in Process Stream mg/L	Frequency of Injection
Seawater Intake					
A	GE Betz	Spectrus CT1300	Barnacle, Mollusk Control	3.0	Once per week
A	GE Betz	Clam-Trol CT-1 (2)	Barnacle, Mollusk Control	3.0	Once per week
Desalination Units					
B	GE Betz	Aquamax AF	Antifoam Agent	1.0	Once per Week
B	GE Betz	Aquamax LT19	Scale Inhibitor	6.0	Once per Week
B	---	Sodium Hypochlorite (3)	Bacterial Control	0.5	Continuous
Boiler System					
C	GE Betz	Cortrol OS7700	Corrosion Inhibitor, Oxygen Scavenger	2.0	Continuous
C,E	GE Betz	Steamate PAS4010	Neutralizing Amine	2.0	Continuous
C	GE Betz	Optisperse HP54354	Internal Boiler Treatment	15.0	Continuous
C	GE Betz	Optisperse HP54701	Internal Boiler Treatment	15.0	Continuous
Brine and Cooling Water Discharge					
D	GE Betz	Spectrus DT1404 (3)	Hypochlorite Reduction	1.5	Continuous
EDF Boiler System					
E	GE Betz	Cortrol IS3000	Corrosion Inhibitor, Oxygen Scavenger	2.4	Continuous
E	GE Betz	Optisperse HP54611	Internal Boiler Treatment	13.3	Continuous
EDF Cooling Tower					
F	GE Betz	Depositrol BL5302	Scale Inhibitor	9.0	Continuous
F	GE Betz	Dianodic DN2250	Corrosion Inhibitor	27.0	Continuous
F	GE Betz	Spectrus BD1501	Bacterial Control	10.0	Continuous
F	GE Betz	Foamtrol AF1441	Antifoam Agent	1.0	Once per Week
F	—	Sodium Hypochlorite	Bacterial Control	83.0	As Needed
F	GE Betz	Spectrus NX1100	Bacterial Control	30.0	As Needed

LEGEND: POI = Point of Injection as referenced on Figure C-1

NOTES:
1. Please see Attachment C-1 for Material Safety Data Sheets for these additives.
2. Currently Clam-Trol CT-1 is on site, but will be replaced by Spectrus CT1300 for all future purchases.
3. May not be required depending on operation options.

Appendix I

Asbestos Abatement Documentation

INNOVA, INCORPORATED
RENAISSANCE GROUP, LLLP.
ST. CROIX VIRGIN ISLANDS

BOILER TWO 1 ½" AND 12" PIPING ABATEMENT
ASBESTOS AIR MONITORING SERVICES

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SECTION II	DAILY PROJECT LOGS
SECTION III	I.H. SAMPLING DATA SHEETS
SECTION IV	LABORATORY ANALYSIS
SECTION V	CERTIFICATIONS AND INSURANCE

SOUTHERN GLOBAL SAFETY SERVICES, INC.

NATIONAL SERVICE CENTER – COMMITTED TO SAFETY

2986 COUNTY ROAD 180
ALVIN, TX 77511
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PREPARED FOR

INNOVA, INCORPORATED
RENAISSANCE GROUP, LLLP
ST. CROIX VIRGIN ISLANDS

PROJECT SUMMARY REPORT

BOILER TWO 1 ½" AND 12" PIPING ABATEMENT
ASBESTOS AIR MONITORING SERVICES

PROFESSIONAL SERVICES PROVIDED BY

SOUTHERN GLOBAL SAFETY SERVICES, INC.
ASBESTOS ABATEMENT CONSULTING SERVICES, PROJECT MANAGEMENT, AND INDUSTRIAL HYGIENE SAMPLING DATA

JULY 24, 2006

PREPARED BY
ARTIE YATES III
PROJECT MANAGER
SGSS PROJECT #44-00648-C

SOUTHERN GLOBAL SAFETY SERVICES, INC.
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INTRODUCTION

Southern Global Safety Services, Inc. (SGSS) was retained by Innova, Inc. to assist in personnel and area air monitoring during the abatement of two lines attached to Boiler Two at Renaissance Group LLLP Facility, St. Croix Operations. Exposure Monitoring was conducted during glovebag removal of insulation on piping consisting of one 1 ½" line approximately 45 feet long and one 12" line approximately 38 feet long. The employee assigned to the project was Artie Yates III, Texas Department of State Health Services (DSHS) Licensed Asbestos Consultant. This project was requested by Renaissance Group, LLLP to assist the demolition contractor with cutting and removing piping during demolition. The integrity of the insulation and mild steel was compromised due to years of operation.

PURPOSE

The purpose of the work performed was to eliminate the potential for inadvertent exposures to Asbestos and nuisance dust that is generated during the demolition procedures The internal components inside of Boiler Two have become deteriorated.

ENGINEERING CONTROLS

Prior to disturbing Boiler 2, the condition of all associated materials were evaluated by a Department of State Health Services (DSHS) Licensed Asbestos Inspector. The work area was regulated utilizing danger barricade tape and demarcated with danger signs to help in the prevention of unauthorized entry into the immediate work area. This area was properly isolated with all access properly marked with Danger Asbestos signs. The bagging of asbestos waste was performed inside of the regulated area. The waste bags were then loaded in wooden crates created by Renaissance employees and nailed shut for transport to the U.S.A. mainland for disposal.

WORK PRACTICES

The project consisted of six 10-hour workdays. The crew consisted of two asbestos workers, a supervisor, an air-monitoring technician, and a manager. The contaminated disposable clothing, project consumables, and the dust and debris generated during the remedial procedures were placed directly into an approved disposable container, located adjacent to the regulated work area.

ENVIRONMENTAL CONTROLS

The Regulated Area was cleared of all visual dust and debris utilizing approved/specified methods and equipment. The work area was inspected further to comply with all Federal standards. Plastic drop cloths and disposable clothing were disposed of in the approved containers.

ADMINISTRATIVE CONTROLS

Personnel directly and indirectly associated with this environmental project were notified of the scheduled tasks and procedures being conducted. The Hazard Communication for the remediation to be performed was provided by Innova, Inc. employees through verbal communications.

PERSONNEL PROTECTION

Personal Protective Equipment required inside of the regulated area was tyvek suits, disposable cloth gloves, hard hats, Z87 rated safety glasses and steel-toed boots. Personnel working inside the regulated area utilized negative pressure half face respirators equipped with HEPA filters, disposable clothing, foot covers, disposable cloth gloves, hard hats and steel-toed boots.

PROJECT MONITORING DURATION

Environmental air monitoring was performed throughout the duration of this project. The remediation process was performed in six 10-hour shifts from July 24, 2006 through July 29, 2006. Personnel samples were acquired on fifty percent of the abatement workers performing glove bagging, gasket removal, and HEPA vacuuming stack bottom. Area samples were acquired downwind and upwind in all regulated work areas as regulated by Local, State, and Federal Regulatory Standards.

ENVIRONMENTAL AIR MONITORING

AIR SAMPLE COLLECTION - Air samples were collected to document ambient airborne fiber concentrations of Asbestos Dust in the areas potentially affected by any remediation procedures. Area samples were collected during removal activities. Area air samples were collected at a flow rate of 2.0 liters per minute (lpm) in accordance with the National Institute of Occupational Safety and Health (NIOSH) 0600 Method. Industrial Hygiene Data Sheets documenting the time, volume, flow rate, sample duration and locations are documented in this report.

Air samples were collected with a three-piece cassette. The filter is composed of a 0.8 Micron Cellulose Ester (MCE) filter. Low volume pumps were utilized to secure the personnel and area samples. Each pump was calibrated previous to sample acquisition and post calibrated after sample acquisition was completed. This is compliant to Regulatory Standards.

Air Sample Analysis – Upon completion of the sample collection period, the samples were sent to APEX Laboratories, a Department of State Health Services (DSHS) Licensed and National Voluntary Laboratory Accreditation Program (NVLAP) Laboratory. All samples were analyzed in accordance with NIOSH 7400, a method utilized to determine the content of each sample. Copies of current laboratory certifications are located in the Certifications and Licensing Section.

These samples will be useful for reference purposes for Occupational Safety and Health Administration (OSHA), DSHS and compliance issues and may be utilized in the future, as historical data. A summary of the air sampling results is shown on the following table. Laboratory analytical results are included in the Lab Results section.

SAMPLE OVERVIEW

SAMPLE NUMBER	DESCRIPTION/LOCATION	DATE	TIME (MINUTES)	VOLUME (LITERS)	RESULTS (F/CC)
648-001	Jose D. Lopez XXX-XX-4070 Glove bagging	7-24-06	144	288	0.003
648-002	Area sample fifth level boiler 2 Downwind	7-24-06	152	304	0.003
648-003	Area sample fifth level boiler 2 Upwind	7-24-06	153	306	0.003
648-004	Blank	7-24-06	0	0	N/A
648-005	Blank	7-24-06	0	0	N/A
648-006	Felipe Gonzalez XXX-XX-4252 Glove bagging 12" line	7-25-06	453	906	0.026
648-007	Area sample fifth level boiler 2 Downwind	7-25-06	564	1128	0.003
648-008	Area sample fifth level boiler 2 Upwind	7-25-06	564	1128	0.003
648-009	Blank	7-25-06	0	0	N/A
648-010	Blank	7-25-06	0	0	N/A
648-011	Jose D. Lopez XXX-XX-4070 Glove bagging and wrapping insulation. Boiler 2	7-26-06	485	970	0.003
648-012	Area sample fifth level boiler 2 Downwind	584	1168		<.001
648-013	Area sample fifth level boiler 2 Upwind	7-26-06	584	1168	<.001
648-014	Blank	7-26-06	0	0	N/A
648-015	Blank	7-26-06	0	0	N/A
648-016	Felipe Gonzalez XXX-XX-4252 Glove bagging and HEPA vacuum debris in stack bottom.	332	664		0.005
648-017	Area sample fifth level and ground level boiler 2 Downwind	7-27-06	439	878	0.001
648-018	Area sample fifth level and ground level boiler 2 Upwind	7-27-06	438	876	0.005
648-019	Blank	7-27-06	0	0	N/A
648-020	Blank	7-27-06	0	0	N/A
648-021	Jose D. Lopez XXX-XX-4070 Glove bagging 12" line boiler 2	7-28-06	381	762	0.004

SAMPLE OVERVIEW - CONTINUED

SAMPLE NUMBER	DESCRIPTION/LOCATION	DATE	TIME (MINUTES)	VOLUME (LITERS)	RESULTS (F/CC)
648-022	Area sample fifth level boiler 2 Downwind	7-28-06	546	1092	0.001
648-023	Area sample fifth level boiler 2 Upwind	7-28-06	545	1090	<.001
648-024	Blank	7-28-06	0	0	N/A
648-025	Blank	7-28-06	0	0	N/A
648-026	Felipe Gonzalez XXX-XX-4252 Glove Bagging 12" line boiler 2	7-29-06	258	516	0.001
648-027	Area sample fifth level boiler 2 Downwind	7-29-06	533	1066	<.001
648-028	Area sample fifth level boiler 2 Upwind	7-29-06	533	1066	<.001
648-029	Blank	7-29-06	0	0	N/A
648-030	Blank	7-29-06	0	0	N/A

DISCUSSION AND CONCLUSIONS

Results from area samples indicate the fiber concentrations in the ambient air were detectable; however, they did not exceed the OSHA eight-hour Permissible Exposure Limit (PEL). The results from personal air monitoring show the airborne level inside the work area did not exceed the PEL, as measured over an eight hour Time-Weighted Average (TWA). The respiratory protection provided to the abatement workers provides a protection factor of 10 and will protect workers from exposure to asbestos particulates as high as 1 f/cc calculated as an 8 hour TWA or 10 f/cc calculated as a STEL sample. Based on the aforementioned, the workers were provided respiratory protection exceeding regulatory requirements for the class of work being performed.

LIMITATIONS

This report and review are limited in scope. Some information presented in this report was based on data supplied by others. We have no reason to suspect or believe that the information provided is inaccurate. However, Southern Global Safety Services, Inc. cannot be held responsible for information provided by others. Therefore, the data obtained is clear and accurate only to the degree implied by the sources and methods used. Care and skills normally exercised by the members of the Environmental Health, Industrial Hygiene, and Safety Profession, currently practicing under similar conditions in this field were utilized. No other warrant, expressed or implied, opinions are made nor offered in this report.

Southern Global Safety Services, Inc.

Daily Project Log

Project Name: Renaissance Group LLLP SGSS Project #: 44-00648-C

Professional: Artie Yates III Date: 7/24/2006

Time	Observations
745	Arrive on Jobsite-All Locked up
750	Lady comes in and unlocks office areas. No one here yet. Continue to wait
800	Renaissance personnel arrive. We find equipment an I take pumps to office to
	charge. Crew unloads palletts & move to work area.
1030	Workers set up decon, and set up area to begin abatement.
1200	Break for Lunch
1230	Return to work. Begin placing glovebags.
1400	Start area pumps.
1411	Start Personnel pumps. Abatement begins.
1530	Abatement continues, all is going good.
1600	Crew abating elbow (12") overloaded glovebag, didn't put disposal bag on
	bottom of glovebag. Instead dropped glovebag in an open state. Discussed
	situation with Mr Miller. He said would discuss with crew.
1645	Crew to decon, rinsing face hands & neck with 5 gal. bucket of water.
1730	Depart jobsite.

Signature: Artie Yates III Page: 1 of 1

Southern Global Safety Services, Inc.

Daily Project Log

Project Name: Renaissance Group LLLP. SGSS Project #: 44-00648-C

Professional: Artie Yates III Date: 7/25/2006

Time	Observations
700	Arrive Jobsite. Await for someone to unlock doors to office.
705	Doors unlocked. Calibrate pumps
715	Start area pumps
735	Place personnel pump. Return to office to do paperwork.
800	Crew glovebags the 1-1/2" line @ the 5th level.
900	D. Miller checks top of boiler 2. Instructs D. Rodriguiez after crew finishes
	cleaning top horizontal piping to begin glovebags on piping on top of boiler.
	They will cut the 1-1/2" line & lower to the ground to complete the abatement.
	The 12" line will remain in place until demo contractor can lower it to the
	ground.
1100	Crew moving glovebags and accessories to top of boiler to begin removal.
1200	Break for lunch.
1230	Return to work
1300	Replace personnel pumps. Crew to begin abatement on 12" line above boiler 2
1500	Crew continues on 12" line, will complete shortly & glovebag 1-1/2 " line for
	cutting and removing in 2 pieces.
1640	Gather pumps, crew to Decon.
1730	Depart jobsite.

Signature: Artie Yates III Page: 1 of 1

Southern Global Safety Services, Inc.

Daily Project Log

Project Name: Renaissance Group LLLP. SGSS Project #: 44-00648-C

Professional: Artie Yates III Date: 7/26/2006

Time	Observations
645	Arrive Jobsite. Calibrate pumps.
700	Place area pumps. Crew gathering materials needed for today.
730	Place personnel pump. Crew to wrap piping with insulation in poly & glovebag small area isolated on bare piping.
830	Sawing in progress, hacksaw needs attention with some parts. Glovebagging on small area complete.
930	Hacksaw repaired. Cutting 1-1/2" line now to lower to 5th level.
1215	Break for lunch.
1245	Return to work. Crew to glovebag 1-1/2" line on 5th level.
1400	OSHA representative onsite. He reviews work area and then requests conversation with me as Air Monitoring Tech. He comes to office & reviews all equipment & paperwork. All seems fine. He leaves with no problems. Crew continues glovebagging.
1500	OSHA offsite. Crew continues working.
1645	1-1/2" line abated, gathered pumps, went to office & did paperwork.
1700	Crew cleaning up work area.
1715	Crew to Decon
1730	Depart Jobsite

Signature: Artie Yates III

Page: 1 of 1

Southern Global Safety Services, Inc.

Daily Project Log

Project Name: Renaissance Group LLLP. SGSS Project #: 44-00648-C

Professional: Artie Yates III Date: 7/27/2006

Time	Observations
700	Arrive on jobsite, awaiting someone to unlock doors.
800	Doors opened, calibrated pumps. Set area & personnel pumps. Crew to do glovebagging on top of boiler 2, 1-1/2" line. Will go to boiler stack and clean (hepa vacuum) bottom of stack.
1030	Move from top of boiler 2 to 4th level gasket removal.
1200	Break for Lunch
1230	Return to work. Crew moving equipment from machine shop.
1315	Crew suits out & begins stack bottom clean out.
1500	Crew continues on stack bottom.
1615	Crew completed stack bottom. They return to top of boiler 2 to hang glovebags on 12" piping. Renaissance has been building scaffolding today for access to 12" piping from 5th level.
1715	Crew completes glovebags on top of boiler 2. Goes to Decon.
1730	Depart jobsite.

Signature: Artie Yates III Page: 1 of 1

Southern Global Safety Services, Inc.

Daily Project Log

Project Name: Renaissance Group LLLP.

SGSS Project #: 44-00648-C

Artie Yates III

Date: 7/28/2006

Time	Observations
700	Arrive at jobsite. Calibrate pumps. Crew to decon to suit up.
745	Crew to holding area to load box to be shipped for disposal. Boxes are 3X3X4 all wood crates. One piece of wrapped piping too long to fit box. Crew will glovebag part of insulation so they can hacksaw pipe to length able to fit in box. Scaffold builders continue erecting scaffolding.
920	Finished large piping. Stop pumps. Scaffolding erecton continues.
930	Set area pumps at boiler #2.
1100	Scaffold builders continue erecting scaffolding. Break for lunch.
1130	Return to jobsite. Gather additional materials needed for this PM activities.
1205	Scaffolding complete. Abatement begins. Start personnel pumps.
1345	Work on top of boiler 2 continues.
1430	Crew to horizontal 12" piping approx. 14' above 5th level.
1530	Horizontal pipe insulation removal continues.
1630	Horizontal 12" piping complete to vertical level. Crew lining disposal box and placing bags in box.
1655	Disposal box filled & personnel pump removed.
1715	Crew to Decon
1730	Depart jobsite.

Signature: Artie Yates III

Page: 1 of 1

Southern Global Safety Services, Inc.

Daily Project Log

Project Name: Renaissance Group LLLP. SGSS Project #: 44-00648-C

Professional: Artie Yates III Date: 7/29/2006

Time	Observations
700	Arrive jobsite, calibrate pumps. Raining this AM.
720	Set area pumps.
730	Set personnel pumps. Ask D. Rodriquez how he was going to tape wet glovebags to seal them for removal. No answere. He finally said may have to wait until rain stops.
800	Workers Attempting to seal glovebags with glue and tape.
940	Rain coming down very hard.
1030	Work continues, everything wet.
1200	Break for lunch.
1230	Return to work, loading bags in boxes. Felipe Gonzoles didn't suit out after lunch.
1500	Glovebagging continues, bags in box now.
1700	Glovebagging complete. Crew to wood workshop for inventory.
1830	Job Complete. Leave air pumps with Trevor to give to Tony on Monday. Depart jobsite.

Signature: Artie Yates III Page: 1 of 1

APEX PRECISION ANALYTICAL SERVICES, INC.

AN INDEPENDENT LABORATORY PROVIDING CONVENTIONAL AND ON-SITE ANALYSIS

PCM (Air) – Total Fiber Concentration Report

APASI Analytical Method: NIOSH Method 7400 Issue 2, August 1994 (Phase Contrast Microscopy)

Client:
Southern Global Safety Services, Inc.
2986 County Road 1810
Alvin, TX 77511
281-331-3667
Contact:
Artie Yates

Date Samples Collected:
July 24-29, 2006

Date of Report:
August 4, 2006

Date Samples Received:
August 1, 2006

APASI project reference #:
0106-1542

Client project name / P.O. #:
44-00648C

Turn-around time:
72 Hours

Client Sample Number	Lab Sample Number	Sample Description / Location / Personnel Information	Total Sample Volume (Liters)	Sample Results Fibers/cc TWA	LOD F/CC	Sample Results Fibers F/mm2	Sample Results F/CC
648-001	0106-1542-01	PERSONNEL- JOSE D LOPEZ	288		0.001	2.55	0.003
648-002	0106-1542-02	AREA- DOWNWIND	304		0.001	2.55	0.003
648-003	0106-1542-03	AREA- UPWIND	306		0.001	2.55	0.003
648-004	0106-1542-04	BLANK	-0-		N/A	0.00	N/A
648-005	0106-1542-05	BLANK	-0-		N/A	0.00	N/A
648-006	0106-1542-06	PERSONNEL- FILEPE GONZALEZ	906		0.001	62.42	0.026
648-007	0106-1542-07	AREA- DOWNWIND	1128		0.001	7.64	0.003
648-008	0106-1542-08	AREA-UPWIND	1128		0.001	10.19	0.003
648-009	0106-1542-09	BLANK	-0-		N/A	0.00	N/A
648-010	0106-1542-10	BLANK	-0-		N/A	0.00	N/A

Analyst

Laboratory Manager / QA/QC Coordinator
Gary Simmons

Notes: The results of this analysis are by visual estimation only. This report cannot be used to represent conditions at any other location, date or time and does not imply that this space is free from these or any other contaminants. Apex Precision Analytical Services, Inc. can not interpret the data for our clients. No responsibility or liability is assumed for the manner in which the results are used or interpreted. This must not be used to claim product endorsement by NVLAP or any government agency of the U.S. Government. This analysis report relates only to samples tested. This report cannot be reproduced except in full and with written permission by Apex Precision Analytical Services, Inc.

AIHA IHPAT Participant Lab #: 162279 (PCM)

TDSHS Asbestos Lab License#: 30-0312 PLM/PCM

3526 F.M. 528, Suite 100, Friendswood, Texas 77546 Office (281)648-9918/Fax (281)648-9595

APEX PRECISION ANALYTICAL SERVICES, INC.

AN INDEPENDENT LABORATORY PROVIDING CONVENTIONAL AND ON-SITE ANALYSIS

PCM (Air) – Total Fiber Concentration Report

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281-331-3667
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August 1, 2006

APASI project reference #:
0106-1542

Client project name / P.O. #:
44-00648C

Turn-around time:
72 Hours

Client Sample Number	Lab Sample Number	Sample Description / Location / Personnel Information	Total Sample Volume (Liters)	Sample Results Fibers/cc TWA	LOD F/CC	Sample Results Fibers F/mm2	Sample Results F/CC
648-011	0106-1542-11	PERSONNEL- JOSE D LOPEZ	970		0.001	8.92	0.003
648-012	0106-1542-12	AREA- DOWNWIND	1168		0.001	1.27	<.001
648-013	0106-1542-13	AREA- UPWIND	1168		0.001	1.27	<.001
648-014	0106-1542-14	BLANK	-0-		N/A	0.00	N/A
648-015	0106-1542-15	BLANK	-0-		N/A	0.00	N/A
648-016	0106-1542-16	PERSONNEL- FILEPE GONZALEZ	664		0.001	8.92	0.005
648-017	0106-1542-17	AREA- DOWNWIND	878		0.001	2.55	0.001
648-018	0106-1542-18	AREA- UPWIND	876		0.001	11.46	0.005
648-019	0106-1542-19	BLANK	-0-		N/A	0.00	N/A
648-020	0106-1542-20	BLANK	-0-		N/A	0.00	N/A

Analyst

Laboratory Manager / QA/QC Coordinator
Gary Simmons

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0106-1542

Client project name / P.O. #:
44-00648C

Turn-around time:
72 Hours

Client Sample Number	Lab Sample Number	Sample Description / Location / Personnel Information	Total Sample Volume (Liters)	Sample Results Fibers/cc TWA	LOD F/CC	Sample Results Fibers F/mm2	Sample Results F/CC
648-021	0106-1542-21	PERSONNEL- JOSE D LOPEZ	762		0.001	8.92	0.004
648-022	0106-1542-22	AREA- DOWNWIND	1092		0.001	3.82	0.001
648-023	0106-1542-23	AREA- UPWIND	1090		0.001	1.27	<.001
648-024	0106-1542-24	BLANK	-0-		N/A	0.00	N/A
648-025	0106-1542-25	BLANK	-0-		N/A	0.00	N/A
648-026	0106-1542-26	PERSONNEL- FILEPE GONALEZ	516		0.001	1.27	0.001
648-027	0106-1542-27	AREA- DOWNWIND	1066		0.001	0.00	<.001
648-028	0106-1542-28	AREA- UPWIND	1066		0.001	0.00	<.001
648-029	0106-1542-29	BLANK	-0-		N/A	0.00	N/A
648-030	0106-1542-30	BLANK	-0-		N/A	0.00	N/A

Analyst

Laboratory Manager / QA/QC Coordinator
Gary Simmons

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3526 F.M. 528, Suite 100, Friendswood, Texas 77546 Office (281)648-9918/Fax (281)648-9595

4-006480

National Service Center

APASI #0106-1542

Sample Information

Sample Number	Sample Location 72hr	Volume (LPM)
648-001	Jose D Lopez 4070 Glovebagging	288
002	downwind	304
003	upwind	306
004	Blank	0
005	Blank	0
006	Filepe Gonzalez 4252 Glovebagging	906
007	downwind	1128
008	upwind	1128
009	Blank	0
010	Blank	0
011	Jose D Lopez 4070 Glovebagging	970
012	Downwind	1168
013	Upwind	1168
014	Blank	0
015	Blank	0
016	Filepe Gonzalez 4252 glovebagging	664
017	Downwind	878
018	Upwind	876
019	Blank	0
020	Blank	0
021	Jose D. Lopez 4070 glovebagging	762
022	Downwind	1092
023	Upwind	1090
024	Blank	0
025	Blank	0
026	Filepe Gonzalez 4252 glovebagging	516
027	Downwind	1066
028	Upwind	1066
029	Blank	0
030	Blank	0

7-24-06
7-25-06
7-26-06
7-27-06
7-28-06
7-29-06

	Signature	Date	Time
Samples Relinquished	[signature]	8-1-06	8:50
Samples Received	Mandi [signature]	8/1/06	09:00
Samples Relinquished			
Samples Received			

GLOBAL SAFETY SERVICES INC.
A PROFESSIONAL FIRM

CHAIN OF CUSTODY
PAGE ____ OF ____

Professional Environmental Training

Awards this Certificate to

ARTIE YATES, III

Certificate No. MR-2036
DL# 05512708

For the completion of the

4-HOUR TRAINING COURSE AND IS REACCREDITED
AS A MANAGEMENT PLANNER FOR ASBESTOS
In Accordance with the EPA Model Accreditation Plan, 40 CFR 763 App. C to Subpart E,
Interim Final Rule, under TSCA Title II.

August 31, 2005
Date of Class

August 31, 2006
Expiration Date

August 31, 2005
Date of Examination

9001 Airport Blvd. Suite 510
Houston, Texas 77061

713-921-8921

Vice President

Instructor, Fredy Polanco

Professional Environmental Training

Awards this Certificate to

ARTIE YATES, III

Certificate No. PR-2036
DI # 05512208

For the completion of the

PROJECT DESIGNER REACCREDITATION TRAINING—8 HOURS
As required by AHERA 40 CFR 763, Appendix C to Subpart E, EPA Model Accreditation Plan, Interim Final Rule, under TSCA Title II and contains all required training as specified by the NESHAP Requirements 40 CFR 61 Subpart M as revised November 20, 1990.

September 1, 2005
Date of Class

September 1, 2006
Expiration Date

September 1, 2005
Date of Examination

9001 Airport Blvd. Suite 510
Houston, Texas 77061

713-921-8921

Vice President

Instructor, Fredy Polanco

Professional Environmental Training

Awards this Certificate to

ARTIE YATES, III

Certificate No. AR-2036

For the completion of the

4-HOUR TRAINING COURSE AND IS REACCREDITED
IN AIR MONITORING TECHNIQUES FOR AIR MONITORING TECHNICIANS
In Accordance with the Texas Asbestos Health Protection rules 25 TAC 295.

September 2, 2005
Date of Class

September 2, 2006
Expiration Date

September 2, 2005
Date of Examination

9001 Airport Blvd. Suite 510
Houston, Texas 77061

713-921-8921

Vice President

Instructor, Fredy Polanco

Professional Environmental Training

Awards this Certificate to

ARTIE YATES, III

Certificate No. IR-2036
DL# 05512209

For the completion of the

4-HOUR TRAINING COURSE AND IS REACCREDITED
AS BUILDING INSPECTOR FOR ASBESTOS
In accordance with the EPA Model Accreditation Plan, 40 CFR 763 App. C to Subpart E,
Interim Final Rule, under TSCA Title II.

August 31, 2005
Date of Class

August 31, 2006
Expiration Date

August 31, 2005
Date of Examination

9001 Airport Blvd. Suite 510
Houston, Texas 77061

713-921-8721

Vice President

Instructor, Fredy Polance

Virgin Islands Regulated Waste Management, Inc.
P.O. Box 2994, Christiansted, St. Croix, U.S.V.I. 00822
Phone: 340-773-9121 Fax: 340-778-0855
e-mail marcia@oneales.com

June 27, 2006

waste offsite - 30 DAYS After project

V.I. Regulated Waste 773-9121

Mr. David Miller
Innova, Inc.
P.O. Box 1423
Friendswood, TX 77549
713-455-0368
832-385-3105 cellular

RE: Asbestos Transportation/Disposal Quotation

Dear Mr. Miller:

Thank you for considering Virgin Islands Regulated Waste Management, Inc. (VIRWM) to fulfill your waste management needs. Our firm is prepared to submit the following cost to you for the transportation and disposal of Non Friable Asbestos Containing Material (ACM). The DOT regulations require that the asbestos material must be double-wrapped, double-bagged, labeled ASBESTOS along with the name, address and phone number of the generator of the waste. The bags must be crated in 3x3x3 or 4x4x4 crates for off-island transportation. One hundred percent (100%) payment required prior to shipping any waste.

Waste Stream	Quantity	Disposal Cost
Asbestos Containing Material	3x3x3 or 4x4x4 T-Packs	$1,298.00/each

additional cost ~~x4~~ x5 = $6,500

OR

Waste Stream	Quantity	Disposal Cost
Asbestos Containing Material	(1) 20ft container Maximum wt: 35,000 lbs	$11,993.45/20 ft container

All disposal costs include loading-off-loading labor, local and off-island transportation, ocean freight, documentation fees, customs brokerage and the disposal of the materials at an EPA Certified Facility. A certificate of disposal will be submitted to you, once an EPA Certified Facility has disposed of your waste. If shipping containers, containers are spotted on day of loading for shipment. A demurrage charge of $50.00 per day will be assessed if the container is kept beyond five (5) days. All demurrage must be paid in full before the container is accepted for shipment. The container will be weighed prior to shipment. If it is over weight, the customer will be responsible any off-loading to meet weight limits. Please sign below to acknowledge acceptance of these terms. Should you have any questions or concerns feel free to contact me at (340) 773-9121.

Sincerely,

Marcia Richards- O'Neale
General Manager
Myron Allech
Myron Allech
Customer Signature

8/21/06
Date

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE 07/11/2006

PRODUCER
Independent Insurance Counselors
112 S. Gordon
P. O. Box 1286
Alvin TX 77512

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Southern Global Safety Services
2986 Cty Rd 180
Alvin TX 77511

INSURERS AFFORDING COVERAGE

INSURER A: Texas Mutual Insurance Company
INSURER B: The Hartford
INSURER C: Everest Indemnity Insurance Company
INSURER D:
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE X OCCUR X Pollution Liability X ProfLiab-ClaimsMade GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC	4000001326-061	06/13/2006	06/13/2007	EACH OCCURRENCE	$ 5000000
					FIRE DAMAGE (Any one fire)	$ 50000
					MED EXP (Any one person)	$ 5000
					PERSONAL & ADV INJURY	$ 5000000
					GENERAL AGGREGATE	$ 500000
					PRODUCTS - COMP/OP AGG	$ 500000
	AUTOMOBILE LIABILITY X ANY AUTO X ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS	61UENAG5527 61UENAG5528	05/01/2006	05/01/2007	COMBINED SINGLE LIMIT (Ea accident)	$ 1000000
					BODILY INJURY (Per person)	$
					BODILY INJURY (Per accident)	$
					PROPERTY DAMAGE (Per accident)	$
	GARAGE LIABILITY ANY AUTO				AUTO ONLY - EA ACCIDENT	$
					OTHER THAN AUTO ONLY EA ACC	$
					AGG	$
	EXCESS LIABILITY OCCUR CLAIMS MADE DEDUCTIBLE RETENTION $				EACH OCCURRENCE	$
					AGGREGATE	$
						$
						$
						$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	SBP0001107526	07/15/2006	07/15/2007	X WC STATUTORY LIMITS OTHER	
					E.L. EACH ACCIDENT	$ 1000000
					E.L. DISEASE - EA EMPLOYEE	$ 1000000
					E.L. DISEASE - POLICY LIMIT	$ 1000000
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Certificate Holder named as Additional Insured as primary cover for work performed at the St Croix Alumina Plant

CERTIFICATE HOLDER

ADDITIONAL INSURED; INSURER LETTER: X

St Croix Renaissance Group LLLP
#1 East Anguilla
P O Box 1525
Kingshill, St Croix 00851

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE Michael J Lansford

© ACORD CORPORATION 1988

VIRGIN ISLANDS REGULATED WASTE MANAGEMENT, INC.
Post Office Box 222994. Christiansted, St. Croix
U.S. Virgin Islands 00822
Tel: 340-773-9121 • Fax: 340-778-0855

Via US First Class Mail

Date: November 29, 2006

Generator Name: Mr. Tony Figueroa
Renaissance Group
P.O. Box 1525
Kingshill, St. Croix, U.S.V.I. 00851

Waste Stream: Asbestos Containing Thermal System Insulation
Quantity (gallons): (1) 20ft container of 4 pallets
Acceptance Date: 10/9/06
Manifest Number: #06126
(Transferred to Perma Fix manifest 00001)

Please find enclosed herewith copies of the manifest(s) and/or disposal certificate(s), documenting that Virgin Islands Regulated Waste Management, Inc. (VIR.WM), picked up and disposed of the waste from your facility as described above.

Should you have any questions or concerns feel free to contact me at (340) 773-9121.

Sincerely,

Marcia Richards O'Neale

Marcia Richards- O'Neale
General Manager

16 06 02:06P
1/13/2006 13:18 FAX 1 [illegible]

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: G E S O G
Manifest Doc. No.: 0 0 0 0 1
2. Page 1 of 1

3. Generator's Name and Mailing Address:
ST. CROIX RENAISSANCE GROUP
P.O. BOX 1525 KINGSHILL
ST. CROIX, USVI 00851

4. Generator's Phone: (340) 778-2323

5. Transporter 1 Company Name: A.R. PAQUETTE & CO., INC.
6. US EPA ID Number: F L D 9 8 2 1 0 5 8 8 4
A. Transporter's Phone: (800) 348-3103

7. Transporter 2 Company Name:
8. US EPA ID Number:
B. Transporter's Phone:

9. Designated Facility Name and Site Address:
PERMA-FIX OF FLORIDA, INC.
1940 NW 67TH PLACE
GAINESVILLE, FL 32653
10. US EPA ID Number: F L D 9 8 0 7 1 1 0 7 1
C. Facility's Phone: (352)373-6066

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-REGULATED WASTE (THERMAL SYSTEM INSULATION) RQ, ASBESTOS, 9, NA2212, PGIII (FRIABLE TSI)	001	CM	00010	P
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above:
11A: PF# 43388
CONTAINER #CMCU2106358

E. Handling Codes for Wastes Listed Above:

15. Special Handling Instructions and Additional Information:
MAIL MANIFEST/INVOICE TO:
ENVIRONMENTAL PROTECTION SERVICES, INC.
10048 103RD STREET
JACKSONVILLE, FL 32210
ATTN: TOM PHILLIPS

INFOTRAC AT 800-535-5053
PERMA-FIX OF FLORIDA MUST BE NAMED AS REGISTRANT

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: Marcia O'Neale
Signature: Marcia O'Neale
Month Day Year: 11 10 06

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Allen Paquette
Signature: Allen Paquette
Month Day Year: 11 10 06

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space:

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year: 11 10 06

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

Manifest Document No. 06123 | 2. Page 1 of 2

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. VICESQG

3. Generator's Name and Mailing Address
ST. CROIX RENAISSANCE GROUP
P.O. BOX 1525 KINGSHILL
ST. CROIX VI 00851

PLEASE MAIL ALSO TO
V.I. REGULATED WASTE MGMT
P.O. BOX 222994, C'STED
ST. CROIX VI 00822

4. Generator's Phone (340) 778-4323

5. Transporter 1 Company Name
V.I. REGULATED WASTE MGMT

6. US EPA ID Number VI0000597823

7. Transporter 2 Company Name
CROWLEY LINER SERVICES

8. US EPA ID Number PRD005559360

9. Designated Facility Name and Site Address
EQ FLORIDA INC
2002 N. ORIENT ROAD
TAMPA FL 33619

10. US EPA ID Number PID981932494

A. State Transporter's ID
B. Transporter 1 Phone 340-773-9121
C. State Transporter's ID
D. Transporter 2 Phone 340-778-2299
E. State Facility's ID
F. Facility's Phone 813-623-5302

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON REGULATED WASTE (THERMAL SYSTEM INSULATION) ED. ASBESTOS, S, NA2212, PGIII (FRIABLE TSI)	04	CRATES	2400	LBS
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
SHIPPING CONTAINER CMCU 2106358

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
EMERGENCY RESPONSE 3E COMPANY 1-800-451-8346

PAGE 2/2 FOR TRANSPORTATION PURPOSES ONLY

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: TONY FIGUEROA /RENAISSANCE GROUP | Signature: X | Date: Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: MARCIA RICHARDS-O'NEALE/ VIRGM | Signature | Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: NORTON BURT, SR. /CLS | Signature | Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
Printed/Typed Name | Signature | Date: Month Day Year

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: V I C E S Q G

Manifest Document No.: 0 5 1 2 3

2. Page 1 of 2

3. Generator's Name and Mailing Address:
ST. CROIX RENAISSANCE GROUP
P.O. BOX 1525 KINGSHILL
ST. CROIX VI 00851

PLEASE ALSO MAIL TO:
V.I. REGULATED WASTE MGMT
P.O. BOX 222994, C'STED
ST. CROIX VI 00822

4. Generator's Phone: 340 778-2323

5. Transporter 1 Company Name: DANA TRANSPORT

6. US EPA ID Number: FLR 000035873

7. Transporter 2 Company Name: [illegible]

8. US EPA ID Number: [illegible]

9. Designated Facility Name and Site Address: EG [illegible] INC. [illegible]

10. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone: [illegible]

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

F. Facility's Phone: [illegible]

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. See page 1 line 11a				
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

SHIPPING CONTAINER # [illegible]

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

EMERGENCY RESPONSE: 3E COMPANY 1-800-451-8346

PAGES TWO OF TWO FOR TRANSPORTATION PURPOSES ONLY

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name | Signature | Date (Month Day Year)

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date (Month Day Year)

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name | Signature | Date (Month Day)

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE

VIRGIN ISLANDS REGULATED WASTE MANAGEMENT, INC.
Post Office Box 222994. Christiansted, St. Croix
U.S. Virgin Islands 00822
Tel: 340-773-9121 • Fax: 340-778-0855

Via US First Class Mail

Date: November 29, 2006

Generator Name: Mr. Tony Figueroa
Renaissance Group
P.O. Box 1525
Kingshill, St. Croix, U.S.V.I. 00851

Waste Stream: Asbestos Containing Thermal System Insulation
Quantity (gallons): (1) 20ft container of 4 pallets
Acceptance Date: 10/9/06
Manifest Number: **#06126**
(Transferred to Perma Fix manifest 00001)

Please find enclosed herewith copies of the manifest(s) and/or disposal certificate(s), documenting that Virgin Islands Regulated Waste Management, Inc. (VIR.WM), picked up and disposed of the waste from your facility as described above.

Should you have any questions or concerns feel free to contact me at (340) 773-9121.

Sincerely,

Marcia Richards O'Neale

Marcia Richards- O'Neale
General Manager

16 06 02:06P
1/13/2006 13:18 FAX 1 352 373 6066

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: G E S O G
Manifest Doc. No.: 0 0 0 0 1
2. Page 1 of 1

3. Generator's Name and Mailing Address:
ST. CROIX RENAISSANCE GROUP
P.O. BOX 1525 KINGSHILL
ST. CROIX, USVI 00851

4. Generator's Phone: (340) 778-2323

5. Transporter 1 Company Name: A.R. PAQUETTE & CO., INC.
6. US EPA ID Number: F L D 9 8 2 1 0 5 8 8 4
A. Transporter's Phone: (800) 348-3103

7. Transporter 2 Company Name:
8. US EPA ID Number:
B. Transporter's Phone:

9. Designated Facility Name and Site Address:
PERMA-FIX OF FLORIDA, INC.
1940 NW 67TH PLACE
GAINESVILLE, FL 32653
10. US EPA ID Number: F L D 9 8 0 7 1 1 0 7 1
C. Facility's Phone: (352)373-6066

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-REGULATED WASTE (THERMAL SYSTEM INSULATION) RQ, ASBESTOS, 9, NA2212, PGIII (FRIABLE TSI)	001	CM	00010	Y
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
11A: PF# 43388
CONTAINER #CMCU2106358

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
MAIL MANIFEST/INVOICE TO:
ENVIRONMENTAL PROTECTION SERVICES, INC.
10048 103RD STREET
JACKSONVILLE, FL 32210
ATTN: TOM PHILLIPS

INFOTRAC AT 800-535-5053
PERMA-FIX OF FLORIDA MUST BE NAMED AS REGISTRANT

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: Marcia O'Neale
Signature: Marcia O'Neale
Month Day Year: 11 10 06

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Allen Paquette
Signature: Allen Paquette
Month Day Year: 11 10 06

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible]
Signature: [illegible]
Month Day Year: 11 10 06

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

Manifest Document No 06123 | 2. Page 1 of 2

1. Generator's US EPA ID No. V I C E S Q G

PLEASE MAIL ALSO TO
V.I. REGULATED WASTE MGMT
P.O. BOX 222994, C'STED
ST. CROIX VI 00822

3. Generator's Name and Mailing Address
ST. CROIX RENAISSANCE GROUP
P.O. BOX 1525 KINGSHILL
ST. CROIX VI 00851

4. Generator's Phone (340) 778-2323

5. Transporter 1 Company Name
V.I. REGULATED WASTE MGMT

6. US EPA ID Number V I 0 0 0 0 5 9 7 8 2 3

7. Transporter 2 Company Name
CROWLEY LINER SERVICES

8. US EPA ID Number P R D 0 9 0 5 5 9 3 6 0

9. Designated Facility Name and Site Address
EQ FLORIDA INC
2002 N. ORIENT ROAD
TAMPA FL 33619

10. US EPA ID Number F L D 9 8 1 9 3 2 4 9 4

A. State Transporter's ID
B. Transporter 1 Phone 340-773-9121
C. State Transporter's ID
D. Transporter 2 Phone 340-778-2299
E. State Facility's ID
F. Facility's Phone 813-623-5302

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON REGULATED WASTE (THERMAL SYSTEM INSULATION) RQ, ASBESTOS, 9, NA2212, PGIII (FRIABLE TSI)	04	CRATES	2400	LBS
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
SHIPPING CONTAINER CMCU 210638

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
EMERGENCY RESPONSE 3E COMPANY 1-800-451-8346

PAGE 2/2 FOR TRANSPORTATION PURPOSES ONLY

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name TONY ZIGUEROA /RENAISSANCE GROUP | Signature X | Date Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name MARCIA RICHARDS-O'NEALE/ VIRGM | Signature | Date Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name NORTON BURT, SR. /CLS | Signature | Date Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 18.
Printed/Typed Name | Signature | Date Month Day Year

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: VICESQG

Manifest Document No.: 05123

2. Page 1 of 2

3. Generator's Name and Mailing Address:
ST. CROIX RENAISSANCE GROUP
P.O. BOX 1525 KINGSHILL
ST. CROIX VI 00851

PLEASE ALSO MAIL TO:
V.I. REGULATED WASTE MGMT
P.O. BOX 222994, C'STED
ST. CROIX VI 00822

4. Generator's Phone (340) 778-2323

5. Transporter 1 Company Name: DANA TRANSPORT

6. US EPA ID Number: FLR 000035873

7. Transporter 2 Company Name: [redacted]

8. US EPA ID Number: [redacted]

9. Designated Facility Name and Site Address: EQ FLORIDA INC. [illegible]

10. US EPA ID Number: [illegible]

A. State Transporter's ID

B. Transporter 1 Phone: [redacted]

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

F. Facility's Phone: [illegible]

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. See page 1 line 11a				
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

SHIPPING CONTAINER # [illegible]

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

EMERGENCY RESPONSE: 3E COMPANY 1-800-451-8346

PAGES TWO OF TWO FOR TRANSPORTATION PURPOSES ONLY

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Printed/Typed Name | Signature | Date (Month Day Year)

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date (Month Day Year)

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name | Signature | Date (Month Day Year)

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE

Appendix J

Sulfuric Acid Spill Documentation

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES

Department of Planning & Natural Resources
Division of Environmental Protection
45 Mars Hill
Frederiksted, St. Croix, U.S.V.I. 00840-4474

Telephone (340) 773-1082
Fax. (340) 773-9310
(340) 692-9794

To: St. Croix Alumina, L.L.C.
c/o Thomas G. Russell, Manager
P.O. Box 1525 Kingshill
St. Croix, Virgin Islands 00851

In the Matter of St. Croix Alumina, L.L.C.
St. Croix, Virgin Islands

ORDER

Pursuant to the authority vested in me by Title 12, Chapter 7, of the Virgin Islands Code, the Virgin Islands Water Pollution Control Act, and based upon the following findings of fact, and in accordance with Title 12 V.I.C. §188(d) of the Virgin Islands Code, I, in my capacity as the Commissioner of the Department of Planning and Natural Resources do hereby find:

(1) that an emergency exists in that a pollutant source presenting imminent and substantial endangerment to the health of persons, or to the welfare of persons and the environment, is present at the St. Croix Alumina (SCA) facility due to the discharge and threatened continuing discharge of pollutants, specifically sulfuric acid, into the waters of the Virgin Islands;

(2) that on Thursday, November 15, 2001 at approximately 10:20 a.m., it was reported to the Department of Planning and Natural Resources-Division of Environmental Protection (DPNR-DEP), that a seal on the flange of a tank (T26-1), located at the SCA facility, containing approximately 97,000 gallons of 96%-98.5% pure sulfuric acid failed, resulting in the leakage of an estimated 25,000 to 35,000 gallons of the sulfuric acid into the environment;

(3) that the leaking flange deposited acid onto the tank's concrete pad, which failed to direct the acid to the tank's secondary containment pond due to cracks and

separations in the concrete, resulting in the acid spilling onto and seeping into the subsurface soil below the tank pad, into a storm drain, and into the sea;

(4) that on the night of November 15, in an effort to empty the leaking tank, an unknown amount of acid was transferred by SCA employees into the plastic lined earthen containment pond adjacent to the tank, which resulted in the failure of the plastic liner, additional acid being deposited into the subsurface soil under the pond, as well as onto a concrete truck pad which then overflowed its containment onto the ground, into an adjacent storm drain, and finally into the sea;

(5) that the visible leakage of the sulfuric acid was abated at or around 8:30 a.m., Sunday November 18, 2001, by the transfer of the remaining retrievable product from the failed tank into two other tanks on the St. Croix Alumina facility;

(6) that there was a clearly observable physical impact to the environment as a result of the acid having been discharged, including burnt vegetation, killed mangrove(s), visible white clouds in the water, bleaching occurring to the benthic community, shoreline rocks covered in white precipitate, and white plumes congregating on the bottom of the seawater extending to the south;

(7) that on Thursday November 15, 2001, the Commissioner of Planning and Natural Resources issued a verbal order to SCA closing the entire complex from the public, including the recreational field and running track, and the closure of the northern portion of the SCA ship channel;

(8) that the discharge into the waters of the Virgin Islands from the SCA facility consists of pollutants and hazardous wastes as defined by Title 12 V.I.C. §182, and ;

(9) that due to the nature and purity of the acid, and the possible existence of pockets of acid in the environment, there continues to be a threat of damage to the shoreline and marine environment, and that all hazardous material threats have yet to be completely alleviated.

THEREFORE, IT IS HEREBY ORDERED THAT St. Croix Alumina, L.L.C., its agents and representatives immediately adhere to the following responsive, remedial and reporting requirements set forth by the Commissioner of Planning and Natural Resources:

1. Submittal of a daily written report to be faxed to the DPNR-DEP, to include tasks completed, and projected accomplishments for the following day.

2. Orally communicated updates on field activities, to be transmitted daily to DPNR-DEP at 8:00 a.m., 12 noon, and 5:00 p.m.. Additionally, DPNR-DEP must be kept in communication via emergency phone calls concerning unanticipated

events that may pose an imminent danger to health or the environment. (DPNR-DEP contact person: Aaron Hutchins or Hollis Griffin).

3. All standard safety procedures for the handling of hazardous materials must be followed when conducting recovery, transfer and transport operations, including the use of Occupational and Safety Administration safety precautions, equipment and procedures for personnel, equipment and for environmental protection.

4. Immediate site assessment goals to be achieved are as follows:
   1. Analysis of spill characteristics (pH or acid content to determine composition of the liquid (% of acid).
   2. Partition of spill into remedial units based on the percentage of sulfuric acid.
   3. Neutralization of the acid.

5. Recovered product must not be diluted with water. Acid resistant pumps and hoses must be used in the transfer of acid into tanks for trucking. Tanks used for storage and/or trucking must be acid resistant. At least 24 hours prior to the transfer of product into tanker trucks for transport to HOVENSA, DPNR-DEP must be contacted to ensure DPNR-DEP personnel presence during the transfer/transport process.

6. Additional reporting:
   1. Weekly reports and a final report on acid neutralization must be submitted to DPNR-DEP, to include all field notes and analytical data.
   2. A detailed disposal plan for waste materials must be provided to DPNR-DEP prior to implementation.

7. Mid- and Long Term Remedial Requirements:
   a. Submit to DPNR-DEP for approval prior to implementation, a soil/groundwater assessment plan for the impacted soils and groundwater.
   b Submit to DPNR-DEP for approval prior to implementation, a marine/coastal assessment plan for damage assessment of the marine/coastal areas.

IT IS FURTHER ORDERED that this and all prior orders shall remain in effect until such time as St. Croix Alumina has obtained written approval from the Commissioner of Planning and Natural Resources to be released from the terms, and that compliance with this Order does not foreclose any option of the Government of the Virgin Islands from further action, including but not limited to further administrative, civil or criminal action.

This Order will be effective upon receipt.

DATED: November 21, 2001

Dean C. Plaskett, Esquire
Commissioner
Department of Planning and Natural Resources

RECIEVED BY:

ST. CROIX ALUMINA, LLC

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES

Department of Planning & Natural Resources
Division of Environmental Protection
45 Mars Hill
Frederiksted, St Croix, U.S.V.I 00840-4474

Telephone: (340) 773-1082
Fax: (340) 773-9310
(340) 692-9794

To: St. Croix Alumina, L.L.C.
c/o Thomas G. Russell, Manager
P.O. Box 1525 Kingshill
St. Croix, Virgin Islands 00851

December 4, 2001

In the Matter of St. Croix Alumina, L.L.C.
St. Croix, Virgin Islands

SUPPLEMENTAL ORDER

Pursuant to the authority vested in me by Title 12, Chapter 7, of the Virgin Islands Code, the Virgin Islands Water Pollution Control Act, and based upon the following findings of fact, and in accordance with Title 12 V.I.C. §188(d) of the Virgin Islands Code, I, in my capacity as the Commissioner of the Department of Planning and Natural Resources do hereby find the following:

1. That the Department of Planning and Natural Resources-Division of Environmental Protection (DPNR-DEP) is in receipt of St. Croix Alumina's (SCA) Conceptual Work Plan dated November 21, 2001, for addressing the recent release into the environment of sulphuric acid. Said plan, which contains a chronology of short and long term work tasks, is in the process of review by DPNR-DEP and its environmental consultant, and comments will be provided thereto shortly;

2. That the Department of Planning and Natural Resources-Division of Environmental Protection (DPNR-DEP) is also in receipt of SCA's Draft Acid Containment Remediation Plan Revision, dated November 28, 2001. Said plan has been reviewed and comments thereto are incorporated into this Order below;

3. That HOVENSA has changed its plans and will no longer be receiving from SCA the recovered sulfuric acid as initially intended;

4. That the SCA facility is a terminal facility as defined by Title 12 VIC §703(9) and therefore subject to the provisions of Title 12 VIC §§701 et seq., the Oil Spill Prevention and Pollution Control Act.

THEREFORE IT IS HEREBY ORDERED that St. Croix Alumina, L.L.C. its agent and its representatives adhere to the following requirements:

1. Based on DPNR-DEP's review of the Proposed Containment Remediation Plan at the Secondary Containment Pit, SCA shall submit an amended document incorporating the following comments and requirements as part of the remedial plan:

General Format

i. A work plan must be submitted that is in a detailed, standardized, narrative format. The work plan must include, but not be limited to, site drawings, diagrams, photographs, full descriptions of equipment, methodologies, safety procedures/precautions and personnel involved in the work to be performed.

ii. A full report shall be submitted to DPNR-DEP including, but not be limited to, all activities performed during the work, chain of custody forms, laboratory qualifications, sampling and analyses data, etc. within 30 days of the completion of the work.

Hypalon Liner (45 mil) Handling

i. Provide to DPNR-DEP a total of three (3) one square foot samples of the liner, one (1) each from the secondary containment basin liner sidewall, bottom (with cross seam, and bottom (with a hole or breach from acid damage.)

Solids Handling

i. Estimates must be based on 98% equivalent acid.

ii. A complete sampling analyses procedure is required for the subgrade evaluation.

iii. A contingency procedure must be provided for evaluating the potential impacts of the breaching of the packed caliche liner substrate.

Sampling and Analysis

i. Provide a detailed description of the specific sampling and analyses method to be utilized.

ii. Analyses of the grab sample must be based on a mathematical composite of individual samples.

iii. A mathematical composite must be utilized for the ten (10) composite samples from the bottom of the secondary container's subgrade for determination and confirmation of a successful cleanup of subsoils.

Additional Comments

opportunity

i. No work pursuant to the plan shall be performed without a representative of DPNR-DEP at the work site. Photographic/video records of the work performed shall be submitted to DPNR-DEP by SCA as part of the report at the termination of the work.

ii. Submit to DPNR-DEP, a Quality Assurance Project Plan (QAPP), prior to the commencement of the project. A copy of the Environmental Protection Agency's guidance on preparing an acceptable QAPP is submitted herewith as Attachment 1.

iii. Submit to DPNR-DEP Standard Operating Procedures (SOP). The SOP must detail any work being conducted for the duration of the project. In this instance, the following SOPs would apply:

Sample collection, transport, and analysis of all samples.

Equipment operation and decontamination

Attachment 2 provided herewith provides guidance for preparing an acceptable SOP.

iv. In addition, a verification that the laboratory conducting analyses is certified to evaluate the parameters of interest should be made available.

2. Immediately make contact with Natural Resource Consultant's Inc., (NRCI) DPNR-DEP's selected environmental consultant/monitor for all responsive and remedial activities at the site. NRCI shall represent DPNR-DEP and be under the direct supervision of the agency, and shall have the delegated authority to make decisions

on behalf of the Commissioner on all matters concerning work at the site associated with the spill of sulfuric acid. SCA must further ensure that NRCI:

a. Is provided 24 hour notice of all remedial, restoration and recovery operations to be carried out at the SCA facility associated with the spill of sulfuric acid.
b. Is provided with 24 hour notice of all field investigation activities to be carried out associated with the spill of sulfuric acid.
c. Is given prior notification of all project progress meetings or briefings to enable NRC to be present at such meetings or briefings.
d. Is transmitted all documentary information, reports, plans, or other correspondence of any kind associated with the spill of sulfuric acid.

3. Provide funding for and arrange with NRC, the terms of compensation for services to be provided to DPNR-DEP associated with the spill of sulfuric acid. Said terms of compensation shall remain in effect until such time it has been determined by DPNR-DEP, that the services to be performed by NRC associated with the spill of sulfuric acid, are no longer necessary.

4. Adhere to the following requirements with respect to wells located on SCA facilities/properties:

a. Cease and desist all plans to seal any wells located controlled by SCA;
b. Identify and submit a listing of all existing production, monitoring, recovery, and/or observation wells located at the SCA facility.
c. Provide well/drilling logs, water quality data, water level data, and any other pertinent information on wells at the SCA facility.
d. Inspect and repair all wells and/or well heads (install locking caps, inspect and repair [if necessary] well pads, protective casings, etc.) to insure that wells are inaccessible and are protected from vandalism or entry from unauthorized personnel.

5. Submit to DPNR-DEP a complete Spill Prevention, Containment and Countermeasures Plan (SPCC) pursuant to 40 CFR 112, and Title 12 VIC Chapter 17, a complete Facility Response Plan (FRP) or its equivalent, and a Plant Closure Plan (PCP), within 1 week of the receipt of this Order.

6. Submit to DPNR-DEP all information on the maintenance, structural integrity testing and test results of the tank T26-1, including but not limited to record of tank-tightness test dates, the results of those tests, as well as the contractor(s) or personnel that performed the testing. Additionally, submit all information on the age, construction,

and maintenance of the secondary containment system (the tank pad, concrete wall, and channels leading from tank pad to the containment pond, and the containment pond).

7. Immediately initiate and submit to DPNR-DEP, an comprehensive environmental assessment of the lateral and vertical extent of the impacts of the spill into the subsurface/groundwater, to include an estimated duration of release, rate of release, volume of release, and rate of percolation into the subsurface/groundwater. The environmental assessment shall be submitted within 60 days of the receipt of this Order.

8. Immediately initiate and submit to DPNR-DEP, a comprehensive multimedia environmental assessment of the effected area, and submit to DPNR-DEP, a Damage Assessment Restoration Plan for the resources found to have been adversely impacted as a result of the acid spill. Said assessment must include but not be limited to , an analysis of the benthic community, shoreline habitats, as well as air, surface water and groundwater quality. The multimedia environmental assessment shall be submitted within 60 days of the receipt of this Order.

9. Provide an inventory of all hazardous and other materials stored at the SCA facility to include location of storage vessels, identification and volume of materials, and a map depicting the above to include layout of piping and valves attendant to said storage vessels.

10. Submit to DPNR-DEP a detailed plan for the disposal of the recovered product and other hazardous materials to include but not limited to, safety measures, storage containers and other equipment, materials and procedures for personnel, and environmental protection to be used during the handling of the product, as well as timetables for the disposal operation.

IT IS FURTHER ORDERED that this and all prior orders shall remain in effect until such time as St. Croix Alumina, LLC, has obtained written approval from the Commissioner of the Department of Planning and Natural Resources to be released from the terms or when the Commissioner otherwise releases SCA from the terms, and that compliance with this Order does not foreclose any option of the Government of the Virgin Islands from further action, including but not limited to further administrative, civil or criminal action.

Failure to comply with any of the terms of this Supplemental Order will subject you to additional enforcement action. Compliance with this Supplemental Order does not constitute waiver of your responsibility to comply with all other applicable territorial and federal laws and regulations or previous orders issued herefrom.

This Order is effective upon receipt.

DATED: December 4, 2001

Dean C. Plaskett, Esquire
Commissioner
Department of Planning and Natural Resources

Received by:

St. Croix Alumina, LLC.

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES

Department of Planning & Natural Resources
Division of Environmental Protection
45 Mars Hill
Frederiksted, St. Croix, U.S.V.I. 00840-4474

Telephone: (340) 773-1082
Fax: (340) 773-9310
(340) 692-9794

December 6, 2001

Mr. Thomas G. Russell, Plant Manager
St. Croix Alumina, L.L.C.
Box 1525 Kingshill, St. Croix
Virgin Islands

VIA FAX: 778.1400
778.8758

Dear Mr. Russell:

On December 5, 2001, the Department of Planning and Natural Resources-Division of Environmental Protection, served St. Croix Alumina (SCA) with a Supplemental Order dated December 4, 2001. On page 2, item 1 of the Order, SCA was required to submit an amended remediation plan for the secondary containment area, incorporating specific DPNR comments.

DPNR, on the afternoon of December 5, 2001, received a faxed cover letter and and document entitled Amended T-26-1 Secondary Containment Remediation Plan. The letter requested that DPNR review and approve the amended plan. The amended document differed little from the original one, and did not incorporate any of the specifics required by the Supplemental Order. As such, it was preliminarily deemed inadequate.

Concurrently, DPNR was contacted by Jeff Garrision of the Environmental Protection Agency-Caribbean Environmental Protection Division. He expressed concern with what he characterized as the potential threat of further contamination as a result of a possible containing release in and around the secondary containment area.. He urged DPNR to relax its ordered requirement for a full blown plan, in the interest of time, so that process of implementing the secondary containment remedial plan can be implemented.

DPNR, in the meantime, transmitted the amended plan to its environmental consultant NRCI. NRCI expressed the lack of detail, as but one of the reasons for the inadequacy of the plan. NCRI also expressed the need for direct contact with SCA in order to clarify certain points in the amended plan. DPNR feels such direct contact can only facilitate the review process requested by SCA. SCA, as directed in the Supplemental Order, has yet to initiate that contact.

Therefore, DPNR again directs that SCA, **as per the Supplemental Order of December 4, 2001,** immediately contact DPNR's environmental consultant NRCI. As of early this afternoon, NRCI reported there has been no contact from SCA. Contrary to the statements of SCA's Environmental and Safety Manager, Eric Black, faxed contact does not suffice to meet the specific requirements of the Supplemental Order. SCA must arrange to meet with NRCI as soon as possible to discuss the plan and other important matters. Only when SCA makes direct contact with NRCI, can DPNR be in a position to make a decision on approval of the Amended T-26-1 Secondary Containment Remediation Plan.

The Supplemental Order is clear and specific as to why such contact needs to be made. The order is also clear as to the ramifications of noncompliance with its terms. DPNR hopes SCA is clear on what is expected.

FOR

Dean C. Plaskett, Esq.
Commissioner
Department of Planning and Natural Resources

AND THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986

DATE OF ISSUANCE:	NAME & TITLE OF NOTICE RECIPIENT:
December 11, 2001	Mr. Erik Black, EH&S
ADDRESSEE: St. Croix Alumina LLC Bayamon, Puerto Rico 00956	NAME OF RESPONSIBLE PARTY: Mr. Tom Russell, Plant Manager

The United States Environmental Protection Agency (EPA) hereby notifies you that you may be liable under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §9601 et seq., (CERCLA) for the release and/or threatened release of pollutants, contaminations and/or hazardous substances as defined by CERCLA.

The release and/or threatened release noticed herein, has occurred on November 15, 2001, and is located within your facility at St Croix Alumina LLC., and consists of sulfuric acid released as a result of a leak in the supply line to the acid storage tank T-26. In addition, approximately 55,000 gallons of sulfuric acid are still currently stored in containers not specifically designed for long term acid storage.

The EPA hereby requests that by Monday, December 16, 2001, that you report to the EPA, Region II, at the address and telephone number indicated below, those removal activities, in conformance with 42 U.S.C. §9601(23), which you have performed and/or those removal activities which you plan to perform immediately, to prevent, correct, clean up, minimize or mitigate the above-described threatened release related to the temporary storage of the remaining sulfuric acid in Kelly tank T13-7. The preferable option being removal, as soon as possible, using approved transport containers, to an off-site location, where it can be used as virgin product.

You are hereby notified that upon your failure to perform immediate and proper removal activities with regard to the above-described release and/or threatened release, EPA, pursuant to 42 U.S.C. §9604, may perform such removal activities, and EPA will hold you liable for all costs of removal and for damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss, if you are determined to be a responsible party.

If you deny responsibility for the above-described release and/or threatened release, you are requested to immediately advise EPA at the address and telephone number indicated below of the specific basis for your denial of responsibility.

FOR THE REGIONAL ADMINISTRATOR EPA REGION II	EPA ADDRESS AND TELEPHONE NUMBER:
NAME: Geoffrey M. Garrison TITLE: On-Scene Coordinator	U.S. EPA, Region II Enforcement and Superfund Branch 1492 Ponce De Leon Ave., Suite 417 San Juan, Puerto Rico 00907-4127 (787) 977-5820, or 5821 (Business Hours) (787) 309-7634, or 8834 Cell Phones

Region 2 FORM 8900-1 (REV. 3-84) 1987-713-691

rec 12/11/01
Eric Black

Superfund

NRC1: Contractor Bruce Green works for Sub-contracts to DPNR

ST. CROIX ALUMINA, L.L.C. DPNR
ACID RECOVERY PROJECT
FINAL REPORT
SUMMARY

Background

St. Croix Alumina, L.L.C., (SCA) had suspended it's operations in January 2001. A small, caretaker staff of approximately 14 people remained on the site.

On November 15, 2001, at approximately 0858 hours, a sulphuric acid leak was discovered at Tank T 26-1 (see section 01. Site Map). Close observation of the leak indicated the flanged-stub that connects the loading piping and valve to T 26-1 (see section 14, photo No. 8. Leaking Stub), was leaking between the stub-flange and the tank wall of T 26-1. A small hole had developed at the very top of the stub (see section 18. Metallurgy Report).. At this location the tank truck loading line crosses over the stub, directly over the small hole in the stub. Because of the narrow space between the flange, the loading line, and tank wall, this small leak proved very difficult to patch. By 1017 hours emergency telephone reporting had occurred to the National Response Center (NRC), the local U.S. Coast Guard Office, and to the St. Croix Office of the Virgin Islands Department of Planning and Natural Resources (DPNR). By 1120 hours, DPNR and the Coast Guard were on-site, and by 1700 hours, Environmental Protection Agency (EPA) had arrived on-site, having come from Puerto Rico.

During early attempts to stop the leak, freshwater was applied to the acid in an attempt to raise the pH of acid that was escaping the designed secondary containment wall of T 26-1. The column of sulphuric acid contained in T 26-1 was estimated to be approximately 14 feet in height, which caused the release of sulphuric acid through the hole to be emitted in a stream approximately the same height. By 0935 hours initial mitigation efforts were successful in confining the leak to within the perimeter of the secondary containment wall. It is believed that although most of the acid was confined within the walls of T 26-1's secondary containment, some acid escaped through holes in the containment wall (see section 14, photo No. 12. Wall Hole). These holes were placed to allow rainwater to drain, and appeared to be plugged, but they allowed acid to seep through. The acid then drained down the concrete face of the hill upon which T 26-1 sits (see section 14. Photographs, photo no. 4. Hillside). The diluted acid found its way to a culvert south of the acid tank, which discharged into the Port Alucroix Channel. At the suggestion of DPNR personnel present at the time, the flow of diluted acid was allowed to continue southward toward two more discharge points (see section 08. Environmental Assessment, photograph 1 of that report). It was DPNR's belief that three discharge points would further dilute the acid, therefore, minimizing potential environmental impact. After observing unaffected sealife near the southern most discharge point, DPNR personnel then suggested a return to a single, northernmost discharge point strategy. A larger supply of seawater for the purpose of neutralizing escaping acid was installed and continued to flow seawater for the duration of the incident.

By 1930 hours the decision was made to completely discharge the contents of T 26-1 into a contiguous, hypalon-lined containment pit. This containment pit is fully enclosed within and intended to function as, secondary containment for T 26-1 (see section 02. Acid Containment Pit Drawing). Within an hour, large "bubbles" appeared to be lifting up the liner in several locations. These "bubbles" indicated that sulphuric acid might be collecting under the liner and reacting with the compacted caleche (essentially, limestone) layer, or water contained under the liner. At this point draining of T 26-1 into the hypalon lined containment pit was suspended. Draining was attempted at 2300 hours but was again suspended by 2400 hours due to more "bubble" formation.

Mitigation efforts on 11/16/2001 were concentrated on installing a pipeline that would tie T 26-1 into process piping, and ultimate storage in another suitable vessel on-site. During its many years of operation the facility had deliberately not piped sulphuric acid into the process for process control and safety purposes. The Bayer process uses high pH liquids under pressure in some steps of the process. Isolating T 26-1 from process piping prevented the accidental introduction of sulphuric acid into the Bayer process where the potential for a violent reaction between the process's high pH liquids and sulphuric acid existed. Sulphuric acid therefore, was limited for use by the simple fact that only small quantities, under careful control and consideration, could be removed from the storage tank on any one occasion. Construction of the transfer pipeline was not complete until 0130 hours on 11/17/2001. The first acid transfer, from T 26-1 to tank T 4D-6 began at approximately 0215 hours on 11/17/2001. Pumping operations continued, but were interrupted on a few occasions due to minor, time-consuming difficulties. Continuous pumping from T 26-1 to T 4D-6 was resumed at 0400 hours 11/18/2001 and the leak at T 26-1 stopped at 0510 hours the same morning. Another line from T 4D-6 to T 13-7 was installed and T 13-7 began receiving acid at 0545 hours 11/18/2001. Efforts over the next two days centered on moving the last of the product in T 26-1, now no longer leaking, to T 13-7 (see section 16. T 13-7 Schematic).

On 11/21/2001, DPNR issued the first in a series of Administrative Orders and Supplemental Orders addressing the incident of 11/15/2001 (see section 03. DPNR Administrative Orders). In summary, SCA would be required to comply with the following:

1. Submit a daily written report to DPNR.
2. Determine the amount of acid spilled.
3. Submit and implement an environmental assessment plan (marine environment).
4. Submit and implement a groundwater investigation plan.
5. Keep DPNR informed as to the ultimate disposition of the remaining sulphuric acid.

SCA's efforts to comply with the sulphuric acid release-related Administrative Order and Supplements were implemented in a continuous process from November 2001 until approximately April 30, 2002. By then, all field activity related to the 11/15/2001 incident had ceased. The supporting documents of this Final Report consist of submittals required by the Administrative Order, and the submittals provide detailed results of complying with the aforementioned DPNR orders. This report summary stands as merely a synopsis of the acid recovery project as a whole.

1. Submit a daily written report to DPNR.

The daily reports submitted in writing to DPNR from 11/21/01 through 4/26/2002 are published in this Final Report. After receiving verbal authorization from DPNR, SCA commenced submitting weekly written reports on 4/26/2002. In section 03., the reader will find an accurate chronological listing of events, activities, milestones, beginnings, and endings. The DPNR daily written reports also provide the sequencing of tasks involved in completing the acid recovery project.

2. Determine the amount of acid spilled.

In the final analysis, out of approximately 97,000 gallons of sulphuric acid contained in T 26-1 at the time the leak was discovered, approximately 24,000 gallons of sulphuric acid was unaccounted for (see section 11. Acid Recovery Calculations).

3. Submit and implement an environmental assessment plan (marine environment).

A comprehensive environmental assessment, concentrating on shoreline and benthic habitats was conducted over a three-month period (see section 08. Environmental Assessment). In summary, the environmental assessment found minimal impact to the shoreline and benthic communities. The environmental assessment also substantiates that full recovery has occurred, or at least is expected shortly in the impacted areas without the need for remedial intervention. The environmental assessment did uncover a section of shoreline rock along the east bank of the Port Alucroix Channel that appears to be "soft" or "crumbly" to the touch. Samples of the affected rock were twice obtained and analyzed. The results of these analyses are "inconclusive". While it is a fact that sulphuric acid can react with rock such as the limestone that lines the Port Alucroix Channel, it is difficult to establish a causal relationship between the acid spill and the condition of the aforementioned rock. The largest area of affected rock may be located too far north of the northern sulphuric acid discharge point, to have been affected to this extent, by the sulphuric acid discharge of November 15-18, 2001.

4. Submit and implement a groundwater investigation plan

During the month of March 2002 a groundwater assessment plan was implemented (see section 14. Photographs, photo No. 67 Drilling Bore Holes). The plan required installing three monitoring wells and obtaining approximately 28 soil borings. All analytical results associated with the groundwater investigation conclusively establish that the sulphuric acid released in November 2001 did not affect sub-surface soils, or groundwater under the site. Complete information can be found in section "06. Groundwater Investigation Plan", and section "07. Groundwater Investigation Report".

5. Keep DPNR informed as to the ultimate disposition of the remaining sulphuric acid.

Tanks bottoms remaining after T 26-1 was emptied as much as practical, were pH adjusted using high pH liquids obtained from tank bottoms on-site (see section 14, photographs 50, 51 and 52).

According to plans filed with and approved by DPNR (see section 09. T-26-1 Secondary Containment Remediation Plan), the hypalon liner was removed from the containment pit and decontaminated. Sulphuric acid, and acid contaminated sludge remaining in the containment pit, was stabilized with caleche that lined the pit (see section 14. Photographs, photo nos. 29-32, and 42-45), and some added caleche. Water was added and the materials were mixed thoroughly using a trac hoe. These efforts brought the pH of the materials remaining in the acid containment pit, up to a level approximately in the "7.5" range. For the detailed sampling plan and laboratory results of stabilized pit materials, refer to section 10, "Sampling and Analysis Plan (QAPP)". After stabilization, acid containment pit materials were placed in and mixed with the red mud cells, as per authorization of DPNR.

Sulphuric acid that was transferred out of T 26-1 and transferred ultimately to T 13-7 was loaded into sulphuric acid compatible shipping container tanks. Other acid recovered from outside T 26-1, such as acid recovered from the containment pit, were also transferred to T 13-7 and this acid was also shipped out in the shipping tanks. On December 14, 2001 12 of these containers were loaded with a total of 38,241 gallons of sulphuric acid. On December 15, 2001 these tanks were loaded onto the M/V Marlin for shipment to **SURALCO** in the country of Suriname (see section 14. Photographs, photo no. 49). For a complete listing of shipping containers and their contents, see section "13. EUROTAINERS Work Plan". For a detailed breakdown of recovered acid by quantity and location, see section 11, "Acid Recovery Calculations".

Conclusion

In light of the scientific data and daily observations provided in this report, it is St. Croix Alumina's conclusion that any damage to the marine environment which may have occurred due to the sulphuric acid spill on November 18, 2001, has fully recovered without the need for remedial intervention. St. Croix Alumina further believes that the groundwater investigation conducted in March 2002 clearly indicates that not only the source of potential groundwater impact has been removed, but that no groundwater impact has occurred due to the aforementioned sulphuric acid release. This final report then represents the full and total compliance with the DPNR Administrative Order of 11/21/2001, and subsequent supplemental orders through 01/28/2002.

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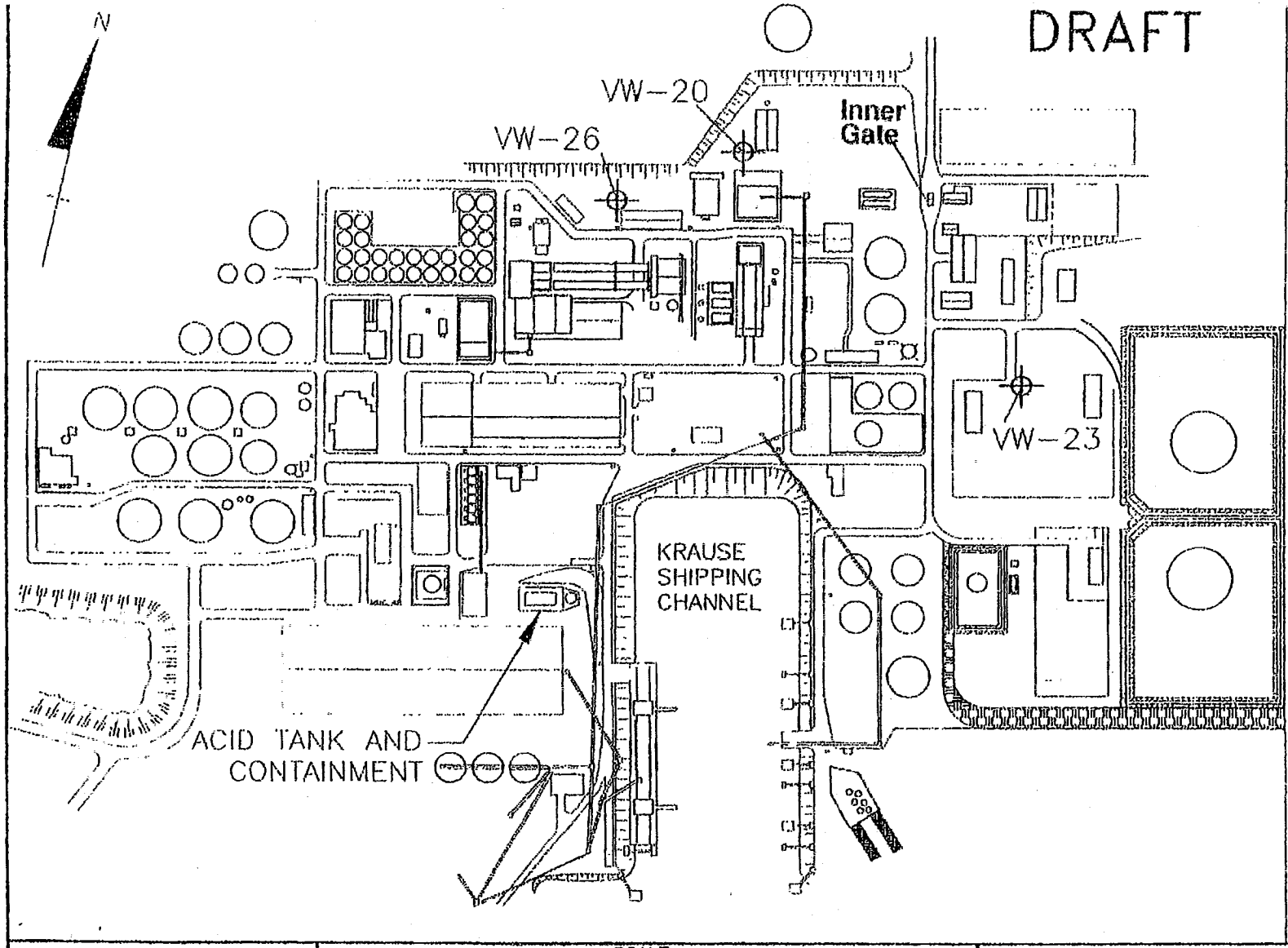
09. T-26-1 Secondary Containment Remediation Plan
10. Sampling and Analysis Plan (QAPP)
11. Acid Recovery Calculations
12. Sulphuric Acid Transfer Plan of 12/13/2001
13. EUROTAINERS Work Plan
14. Photographs
15. T-26-1 Schematic
16. T-13-7 Schematic
17. EPA – Pollution Report
18. Metallurgy Report

01. Site Map



LEGEND:

⊕ EXISITING MONITORING W LOCATION

NOTES:

1. SITE FEATURES ADAPTED FROM FACILITY'S ELECTRONI DWG: PLANT00.DWG.

2. APPROXIMATE LOCATION OF MONITORING WELLS SHOWN TAKEN FROM LEVINE-FRICKE-RECO FIGURE 9, "GROUNDWATER ELEVATION CONTOUR MAP, APRIL 1-JULY 2 1996", PROJ #6199.

consulting scientists and engineers

SCALE

400 0 400 FEET

REV:	
PROJ NO:	120170
DATE:	1/11/02
PCP/PC2:	
DRAWN BY:	

ALCOA, INC.
ST. CROIX, U.S. VIRGIN ISLANDS

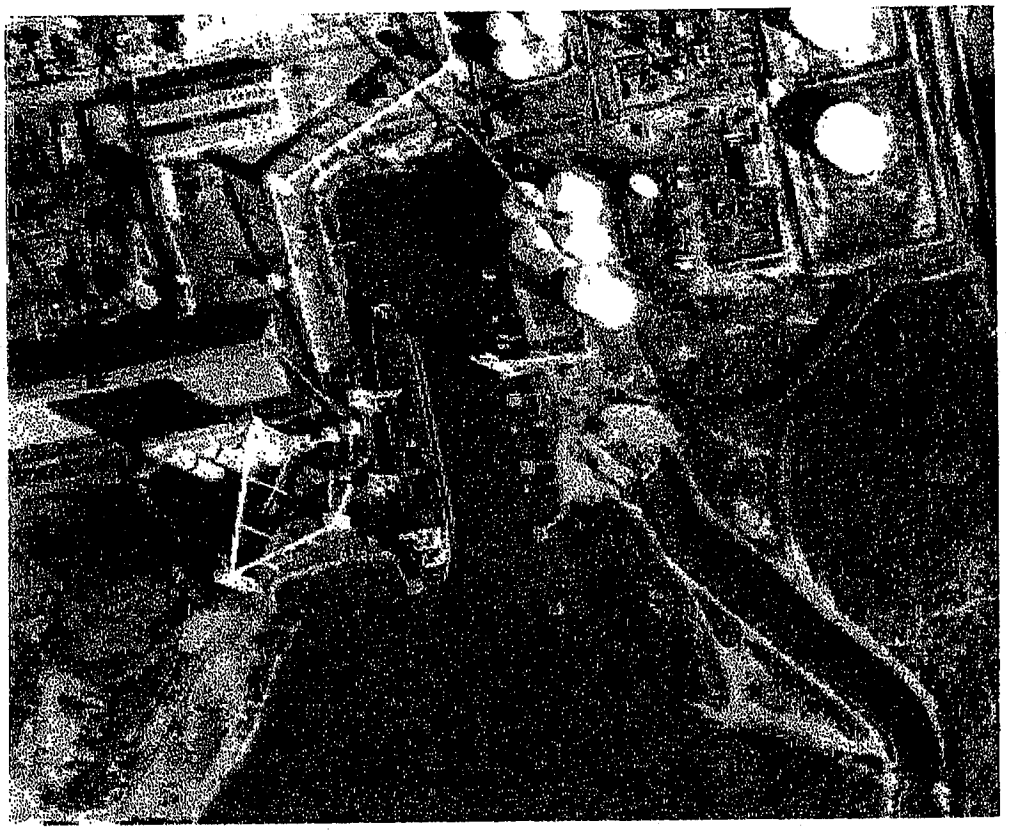
FIGURE 1
SITE PLAN

THE INFORMATION PROVIDED ON THIS DRAWING WAS PRODUCED USING BOTH TECHNICAL INFORMATION AND KNOW HOW. ANY

DRAWING NO

SITE ASSESSMENT
FOR THE SULFURIC ACID SPILL
AT THE ST. CROIX ALUMINA, L.L.C. FACILITY
ST. CROIX U.S.V.I.

THROUGH MARCH 15, 2002



PREPARED FOR
ST. CROIX ALUMINA, L.L.C.
ESTATE ANGUILLA
ST. CROIX, U.S. VIRGIN ISLANDS

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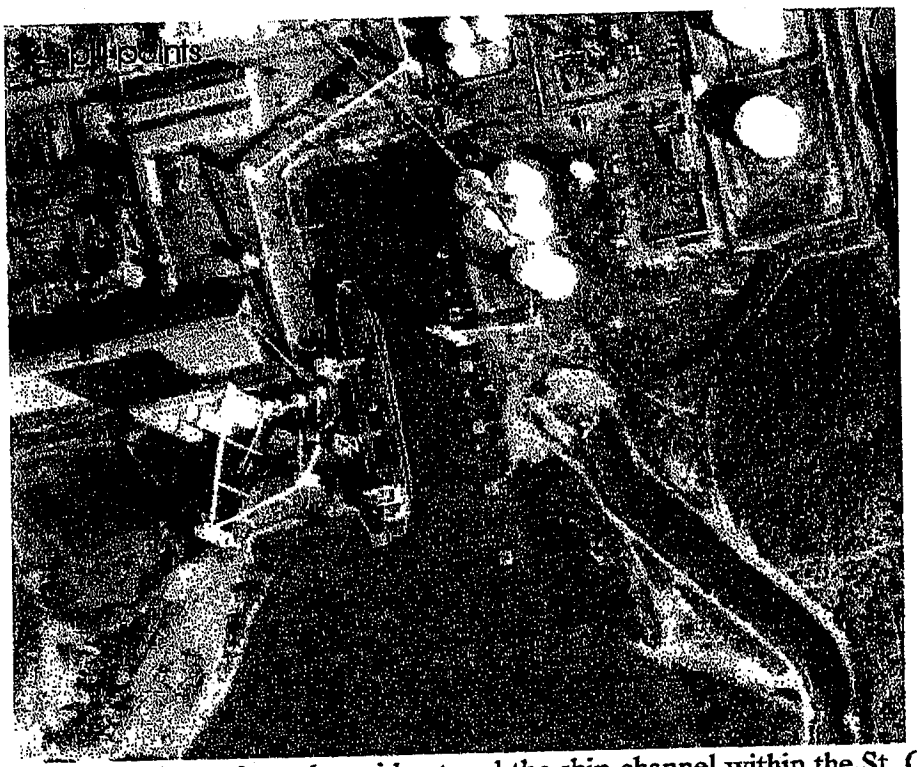
SITE ASSESSMENT OF THE IMPACTS ASSOCIATED WITH THE SULFURIC ACID SPILL AT ST. CROIX ALUMINA, LLC. THROUGH MARCH 15, 2002

Introduction

This report represents the results of the terrestrial surveys that were conducted on February 28, March 7, and March 13, 2002 and a marine survey which was conducted on March 13, 2002 to assess site conditions and the continuing recovery of the communities after a sulfuric acid spill on November 15, 2001 at St. Croix Alumina's plant on St. Croix. The scope of work was developed to assess the initial impact of the spill and to document the recovery of the effected biological systems.

Immediately upon discovering the acid leak, temporary salt water lines (hoses) were installed to dilute and neutralize the escaping acid.

The acid flowed into the ship channel at three locations shown in the photograph below. At the center point the acid flowed under the western dock that is historically devoid of terrestrial vegetation and had no colonization by marine organisms, and therefore this spill site had the least impact. At both the northern point and the southern point the acid flowed across the shoreline vegetative communities and into areas colonized by marine organisms.



Photograph 1. Locations where the acid entered the ship channel within the St. Croix Alumina, LLC facility. (NOAA Aerial, 1999)

SURVEY METHODS

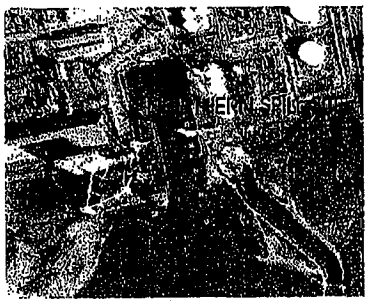
TERRESTRIAL

At the three spill points an inventory was made of the terrestrial flora in an area of 10 meters surrounding the spill site. Assessments were made of the condition of the plants, and their state of recovery. Based on observations made during the initial reconnaissance and subsequent surveys, re-colonization of these areas is occurring rapidly and naturally, without the need for remedial intervention.

Maps identifying terrestrial resources at the spill site and areas of impact have been developed. Video and still digital photography have been used to document the status of the shoreline plants.

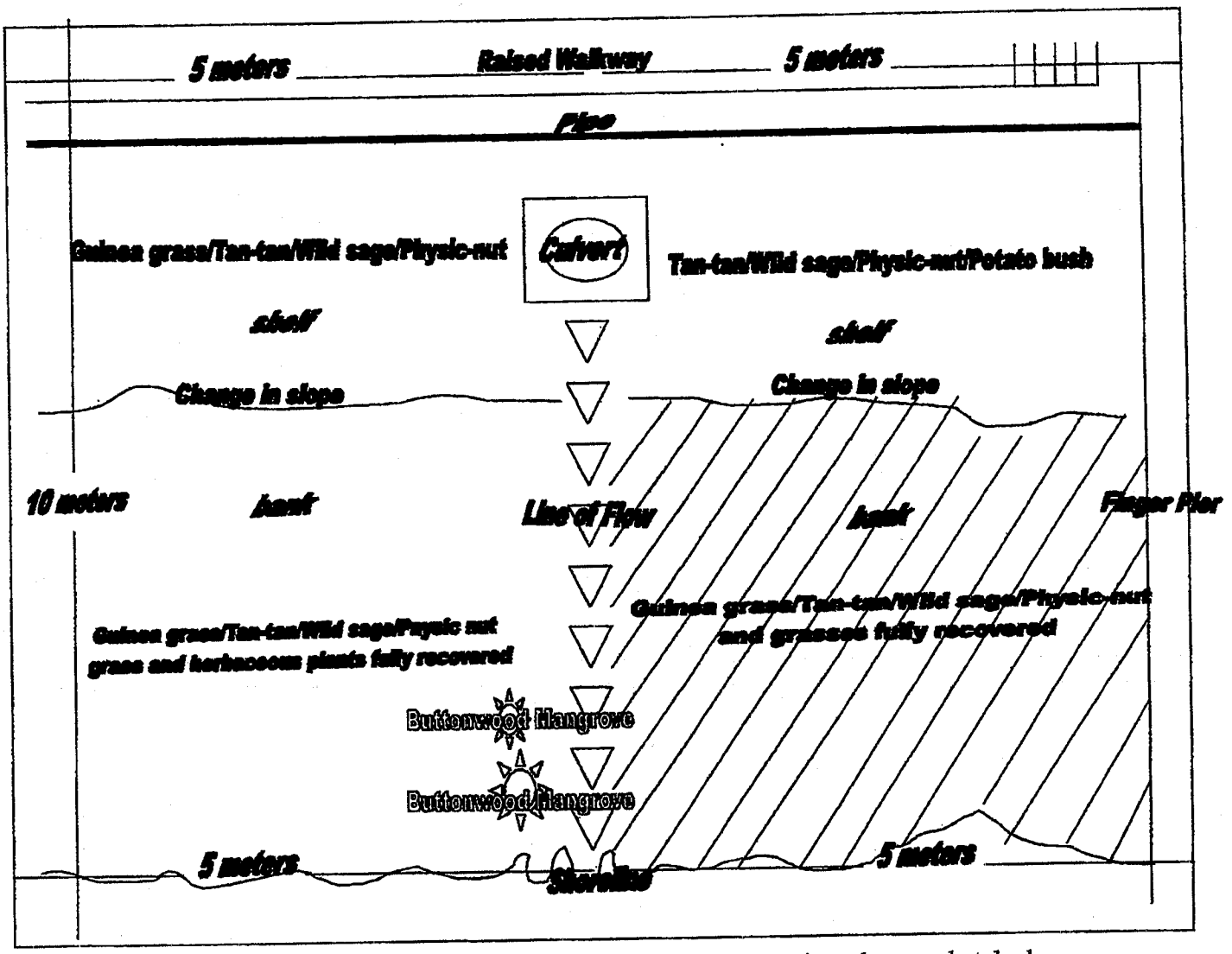
TERRESTRIAL SURVEY

NORTHERN SPILL AREA



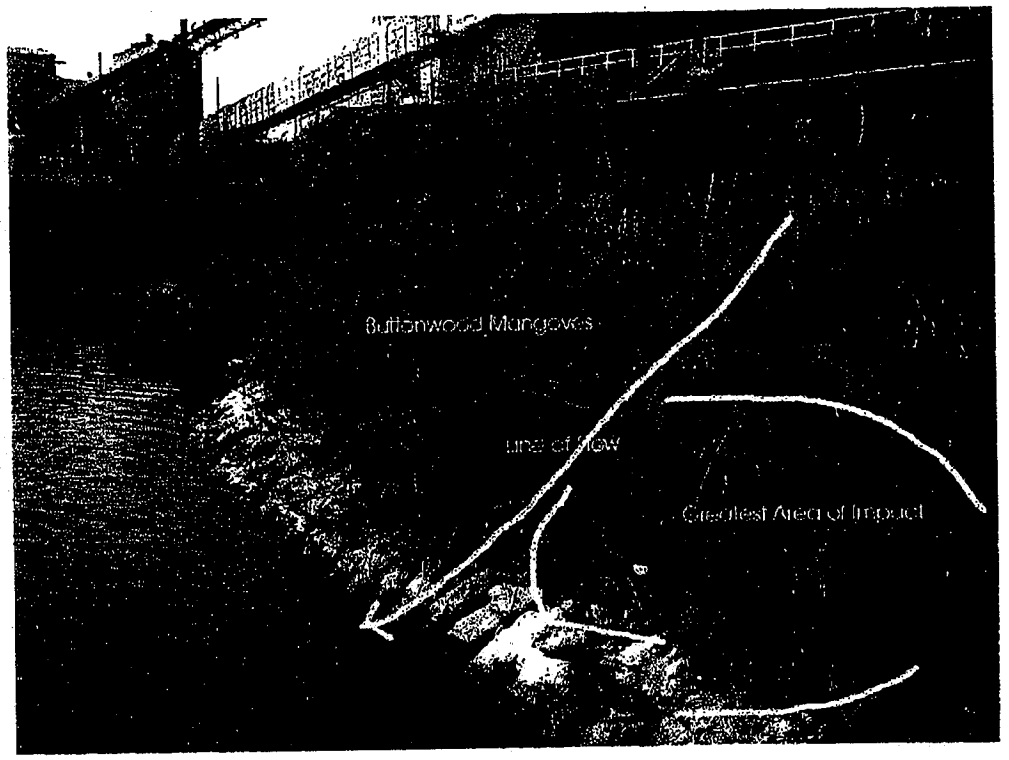
The spill occurred from a culvert located below a raised concrete walkway. The acid flowed over the limestone embankment into the channel. There is a shelf approximately 5 to 10 ft. wide immediately below the walkway, and then the terrain slopes steeply down to the shoreline. The acid spill eroded the rock and created a deep gully across the shelf and down the bank. The shoreline area around the channel is colonized by tan-tan, wild sage (*Croton sp.*), Physic nut, Potato bush (*Pluchea* sp.), guinea grass (*Panicum maxima)* buttonwood (*Conocarpus erectus*) and red mangroves (*Rhizophora mangle*). *Sesuvium*, a succulent, is found in patchy abundance along the shoreline. Within the area of the spill there were tan-tan, wild sage, physic nut, potato bush, guinea grass and two buttonwood mangrove.

To the south of the spill flow line, the acid spill impact was limited to those plants immediately along the bank of the eroded gully. Several tan-tan, and limited amounts of guinea grass and the two buttonwood mangroves all turned brown. To the north of the flow line the plants below the shelf break on the bank were most affected.

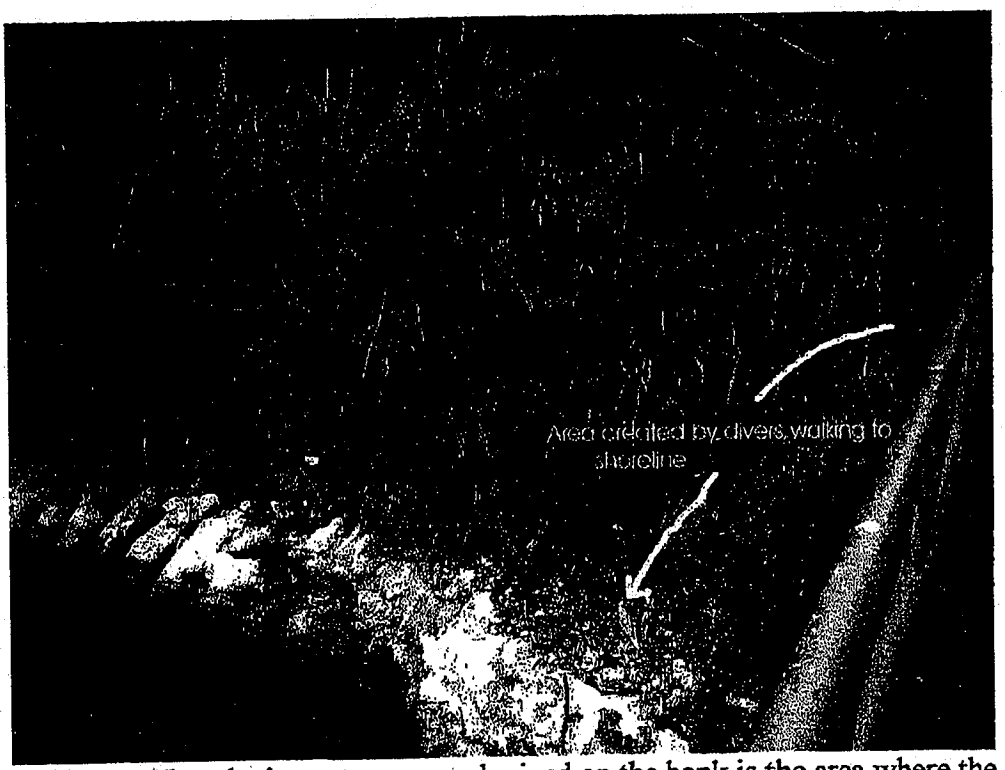


Map 1. The northern spill site showing the distribution of vegetation, the crosshatched area was the area of greatest vegetative impact. As of March 2002, the terrestrial vegetation within the area has completely recovered and re-colonized.

By mid-March the two buttonwood mangroves are covered in leaves and only a few branches still have brown leaves which have not yet fallen off. There is growth at the base of many of the brown tan-tans and new tan-tans, potato bushes, sages, guinea grass and physic nut plants have re-colonized. There appears to be no type of residual contaminant in the soil impeding the re-colonization of the vegetation. The area has no more brown vegetation than areas that were not impacted by the acid spill.

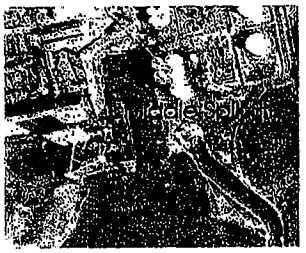


Photograph N1. The area of the northern spill showing the area that had been previously impacted, also notice the uninterrupted distribution of the algae along the shoreline.

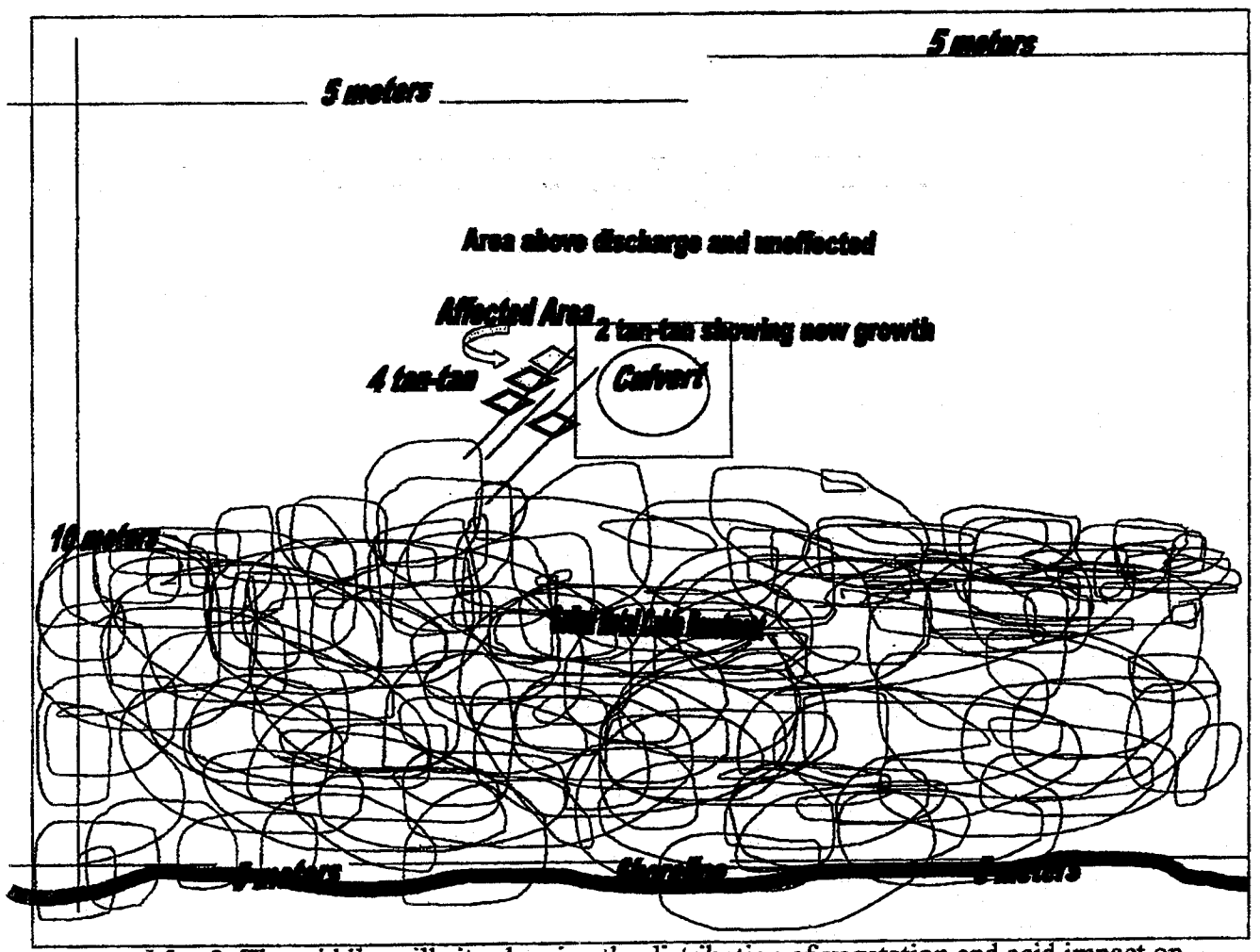


Photograph N2. Now the largest area uncolonized on the bank is the area where the divers access the water.

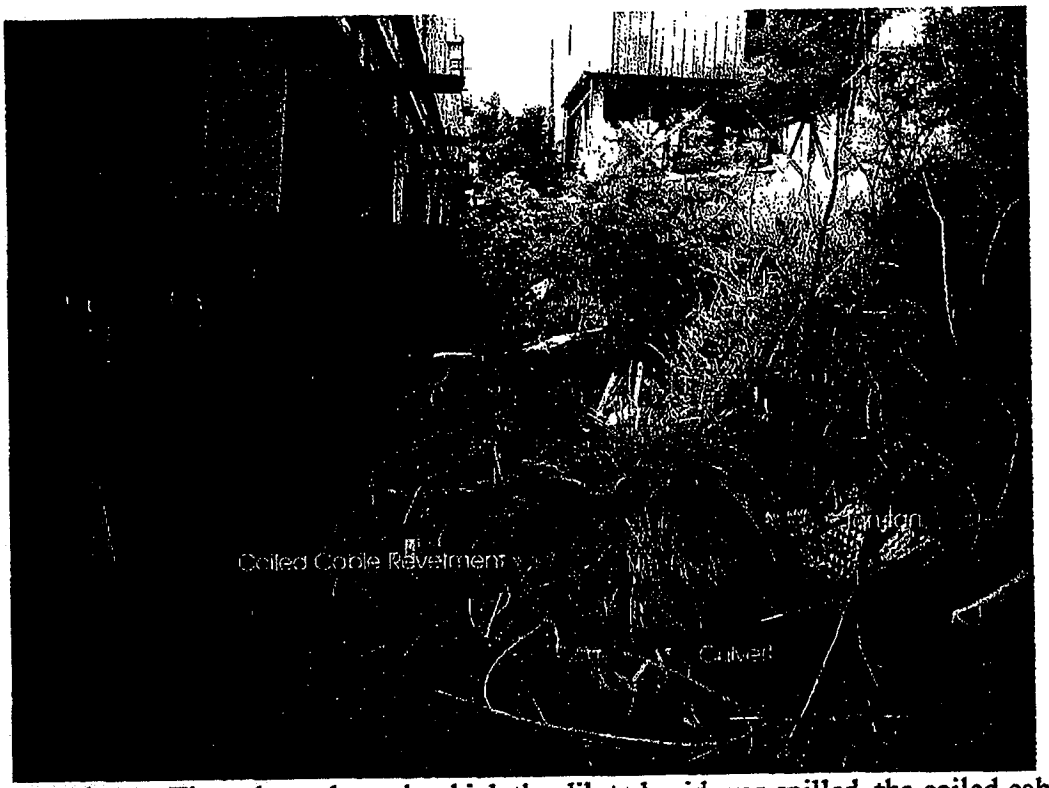
MIDDLE SPILL SITE



The middle spill site was under the bauxite loading dock. The culvert through which the diluted acid spilled flows out onto a shoreline revetment made of steel cable. This steel cable revetment is made of flat, but thick loops of cable laid directly on the rock slope of the shore, and covers the entire length of the bauxite dock. There is no vegetation immediately along the shoreline. In the dirt along the southern side of the culvert at the upper edge of the cable, there were 4 tan-tan that lost their leaves and turned brown due to the acid spill. Two of these tan-tan recovered and two of the tan-tan did not.



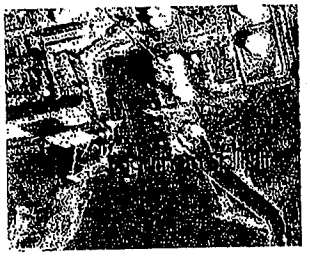
Map 2. The middle spill site showing the distribution of vegetation and acid impact on vegetation.



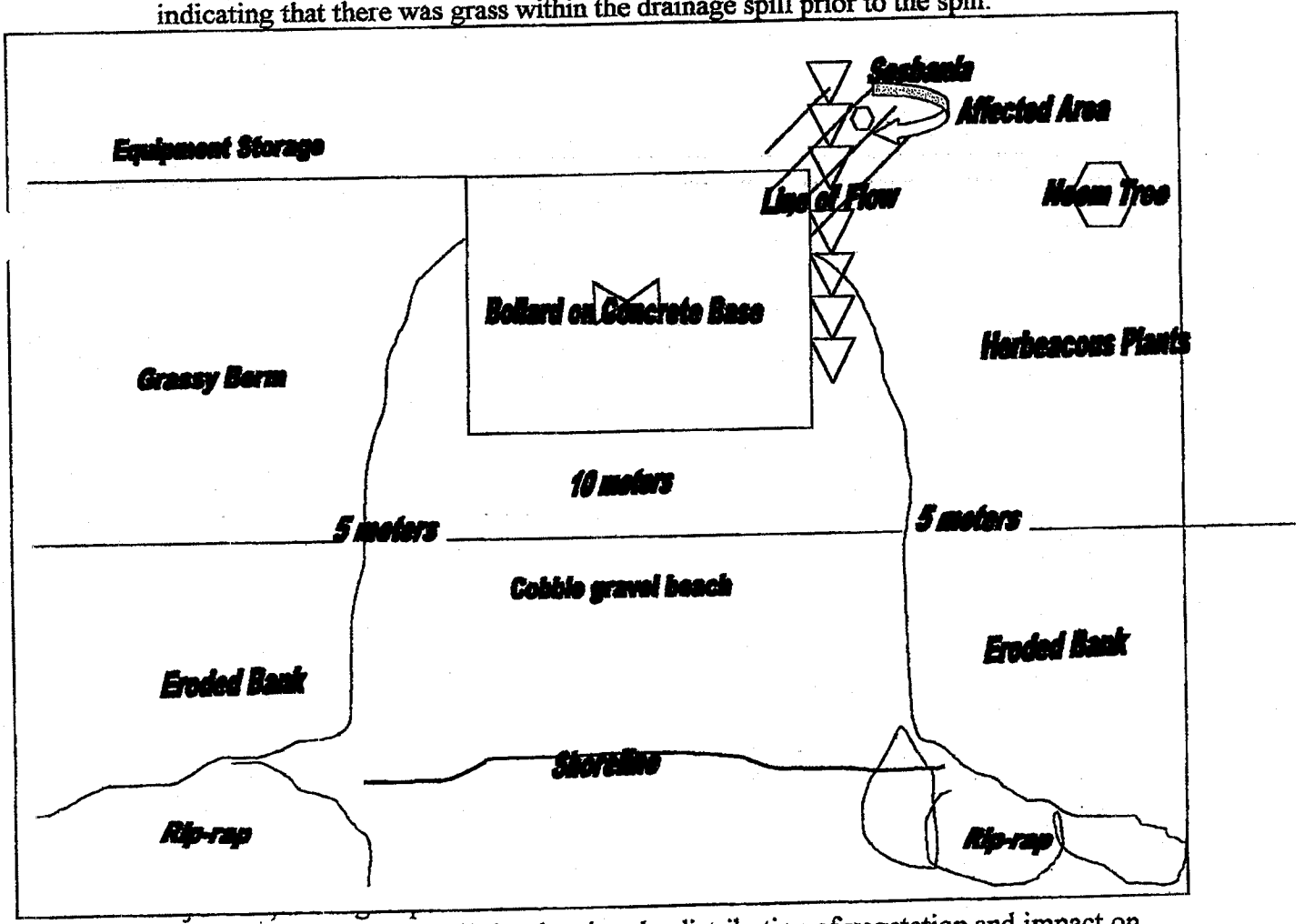
Photograph M1. The culvert through which the diluted acid was spilled, the coiled cable revetment, and the tan-tans which were impacted.

Photograph M2. Two of the tan-tan are re-growing from their bases although the upper portions of the plants are remaining bare.

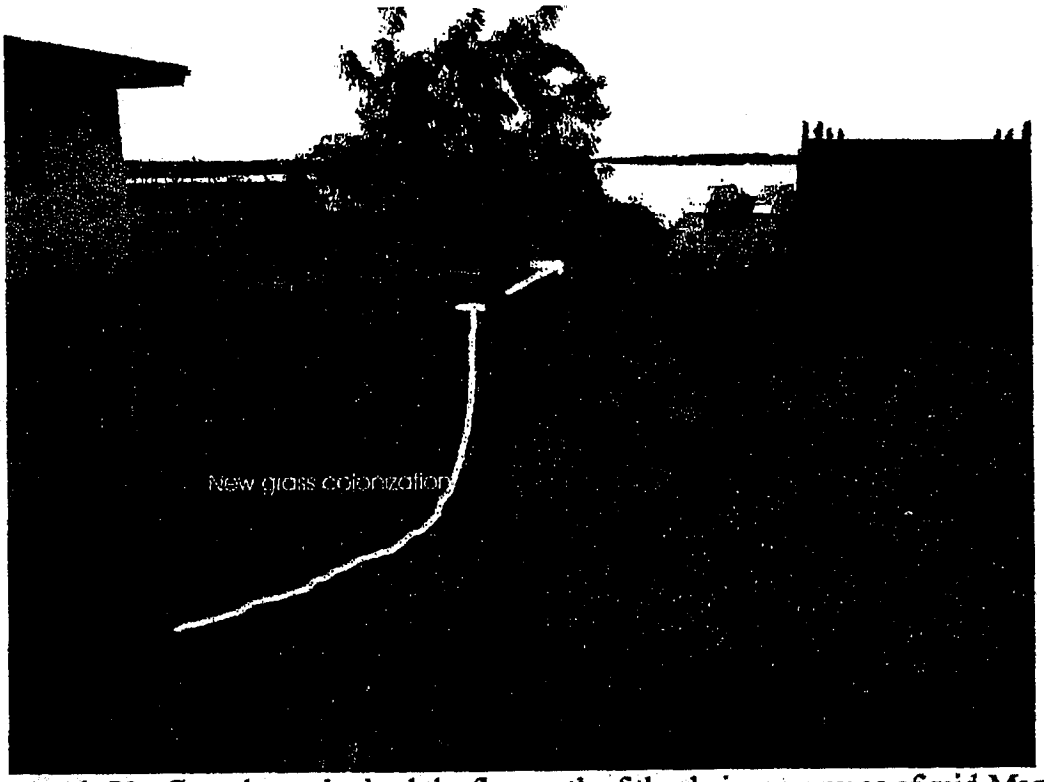
SOUTHERN SPILL SITE



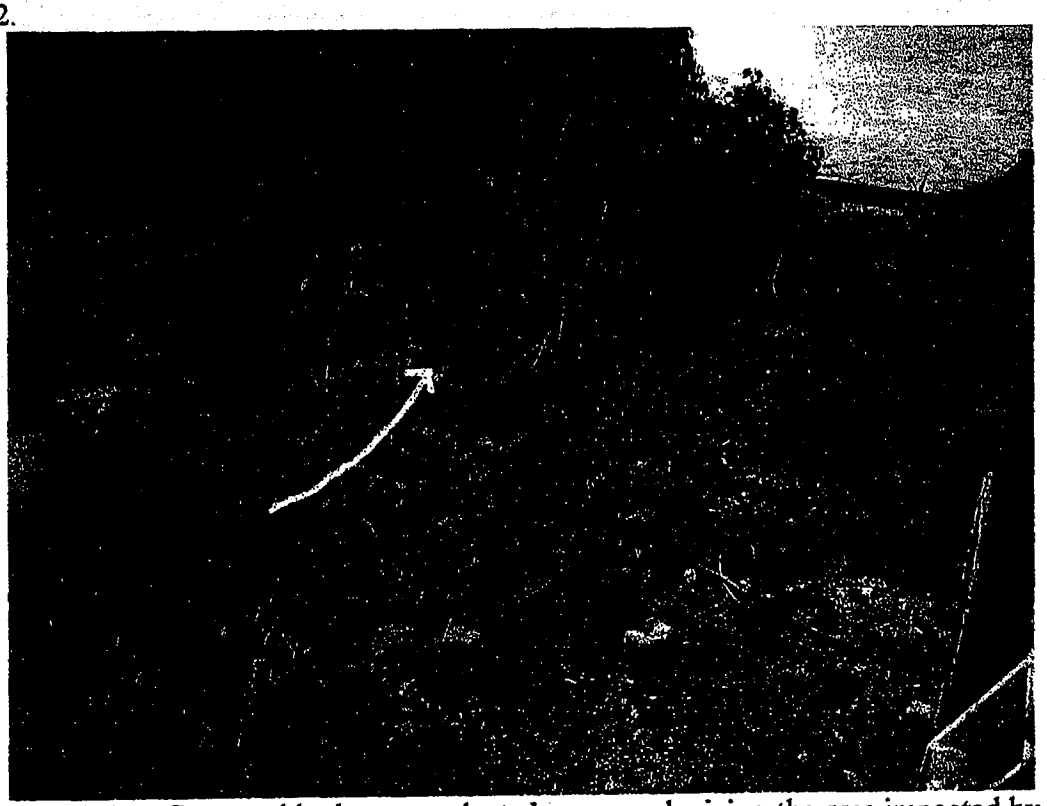
Diluted acid flowed along a shallow drainage swell and discharged through an existing drainage course adjacent to a bollard set in a concrete block. The acid affected an area of vegetation approximately 1 meter wide along the drainage. One *Sesbania*, a disturbed area colonizer usually found in ditches and drainage ways, was killed. The large neem tree (*Melia azadiarachta*) to the east of the drainage way was not affected, and none of the vegetation to either the east or west of the drainage was impacted. Since the beginning of the surveys in December grass has been re-colonizing the drainage way indicating that there was grass within the drainage spill prior to the spill.



Map 3. The southern spill site showing the distribution of vegetation and impact on vegetation.



Photograph S1. Grass has colonized the flow path of the drainage way as of mid-March 2002.



Photograph S2. Grass and herbaceous plants have re-colonizing the area impacted by the acid.

TERRESTRIAL IMPACTS OF THE ACID SPILL

The northern spill site had the greatest terrestrial impact due to the acid spill. The impacts in the northern area consisted of the loss of guinea grass, tan-tan and wild sage on the steep embankment primarily to the north of the spill point. The area of loss was approximately 5.5 meters in width and 3 meters up the bank. The two buttonwood mangroves which lost their leaves as a result of the spill have recovered. Some of the herbaceous plants that were originally impacted have also recovered. The area has completely recovered with the same species as are found surrounding the unaffected portions of the channel banks.

At the middle site the spill occurred into the coiled cable revetment along the shoreline below the dock. Four tan-tan were initially impacted. Two of these plants recovered, two of these did not. New vegetation is noted to be recruiting in the area.

The southern spill site initially had an area of lost grass approximately 1 meter wide along the flow path of the spill and one *Sesbania*, a herbaceous plant was lost. New grass and herbaceous plants have completely colonized the impacted area.

No long-term terrestrial impacts at the spill points have been noted, no trees were lost, and many of the herbaceous plants have recovered. In those areas where the individual herbaceous plants did not recover, new plants have colonized the area.

In total there was a short-term impact to approximately 16.5 sq. meters of herbaceous plants at the northern spill point, and a short term loss of leaves off of two buttonwood mangroves. There was the loss of two tan-tan (herbaceous plants) at the mid spill point. There was a short-term impact to approximately 20 sq. meters of grass and herbaceous plants at the southern spill site drainage way and the loss of 1 *Sesbania*. All areas are showing new growth and there is no indication that there is any residual sustenance in the soil that is affecting the terrestrial community.

BENTHIC COMMUNITY

Within the channel at the northern spill site there is a small shallow shelf and then the sides of the channel are fairly vertical to the channel bottom. The middle spill site is below the dock and a coiled cable revetment protects the channel sides. At the southern site within the turning basin, the slope is less dramatic and gradually slopes into the basin.

At the northern site transects were established extending 5 meters to either side of the spill point. These transects run along depth contours starting on the very shallow shelf at less than 1 ft. of water depth. Transect lines were established on the channel sides at 3 meters (~9ft.), at 6 meters (~18 ft.) and at 9 meters (~27ft.). Deeper transects were attempted on both December 27, 2001 and January 12, 2002 but visibility became zero at the 9 meter depth on both days. During the laying of the initial transect lines on December 27, 2001 the tide was flowing into the channel visibility was such that the 9

meter transect line could be placed. But when photographic sampling was attempted, the amount of particulate material in the water, made the video and the photographs unusable. An attempt to document the 9 meter transect line was made on January 24, 2002, and again in the March 15, 2002 again on both dives visibility fell to zero immediately below the 6 meters in depth.

These transects are marked with large nails and a bright pink line is stretched between the end points. A full meter square quadrat is used at either end of the transect line and one at the centerline of the spill to help establish percent cover by algal species Photographs are taken of the quadrat using a 35mm Nikonos underwater camera with a 15mm lens and strobe. Each transect is videoed with a Sony digital video camera in an underwater housing and the videos are narrated pointing out all evidence of impact.

The middle spill location is under the dock and through a coiled cable revetment of the shoreline that extends at some length down into the channel. No benthic organisms were noted immediately along the shoreline to almost the end of the dock structure in both directions, well beyond any potential impact of the spill. No sessile benthic organisms were noted to a depth of 3 meters along the length of the dock and no colonization was noted on the near shore pilings. Because of the lack of colonization, quadrats were established immediately below the water line showing the lack of colonization and video's were made at the center of the spill site. No changes at the site were noted in the surveys through the end of January and no changes were noted February, therefore no additional sampling was conducted of the site in March. Because of the lack of benthic organisms, no long-term impacts to the area were discernible.

At the southern site, transect lines are established extending 5 meters to either side of the spill point. These transects run along depth contours starting on the very shallow bank. A transect was established at less than 1 ft. (<0.3m), and then because the slope is much gentler in this area, every 3 meters seaward to a depth of 6 meters (18ft.). At 6 meters the visibility is greatly diminished and all movement in the water creates huge plumes of sediment making photography impossible so no deeper transects are conducted. Again full meter square quadrats were used to assess benthic colonization and assess impact.

A reconnaissance dive was attempted on February 28, 2002 but upon preparation to dive a strong sewage like odor was encountered, and the color of the water was noted to be grayish. It was decided to postpone the dive until the following week for diver safety. These marine conditions had no apparent cause related to any activity underway at the St. Croix Alumina property and were probably related to by passes at the public sewer pump station.

On February 28, 2002 a small crack was noted in the limestone shelf to the north of the finger pier.

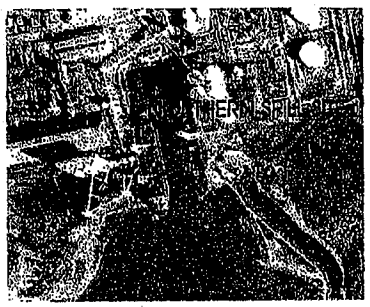
On March 7, 2002 another attempt at diving the site was made. At this time the crack to the north of the finger pier had gotten much larger and there appeared to be some type of

powdery solid being deposited within the area of the crack. Because of the potential hazard to divers, again the dive was postponed a week.

On March 13, 2002, divers made the determination to go ahead and make the dives and at that time investigated the area to the north of the finger pier as well. The situation to the north of the mooring dolphin will be discussed following the discussion of the survey of the established transect lines.

BENTHIC SURVEY

NORTHERN SPILL AREA



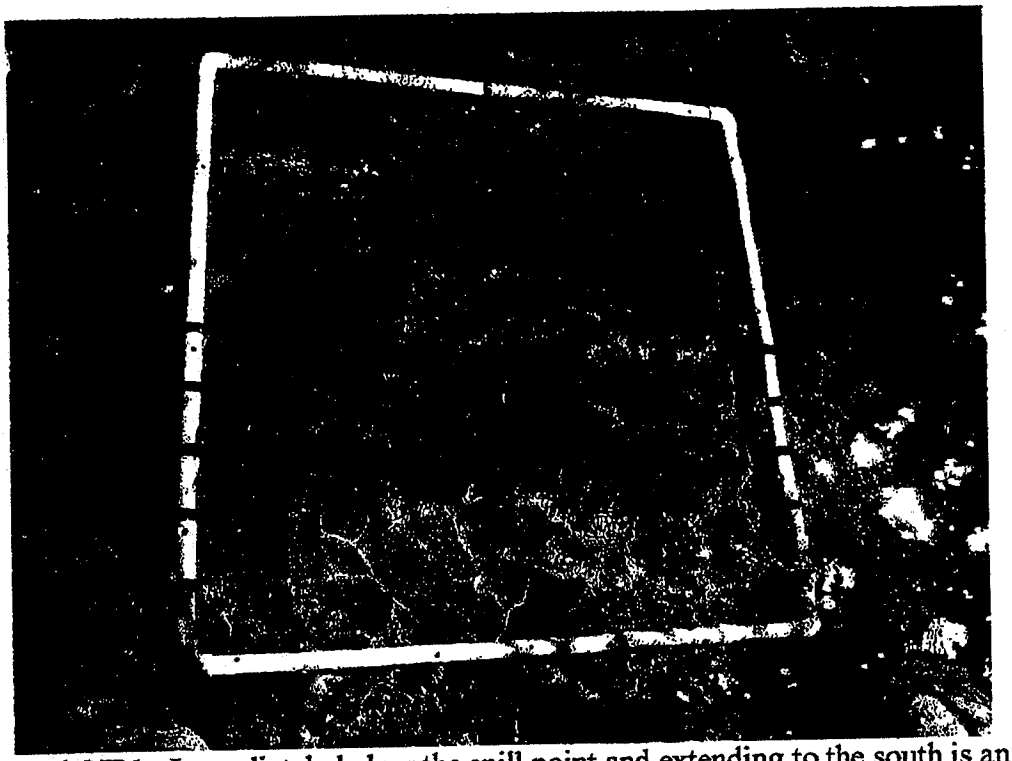
The northern spill site is within the channel north of the loading dock. The area has a shallow limestone shelf that varies in width form 2ft. to 6 ft. This shelf along the edge of the channel is heavily colonized by three species of green algae, *Enteromorpha flexuosa*, *Chaetomorpha sp.* and *Ulva sp.* The acid impacted the algal species at the point of the spill. The acid eroded an area immediately below the discharge and created a small depression in the limestone shelf, this depression is now filled with sand and gravel. This shallow ledge has now become fully recolonized with all three species of algae, except in the area that now is covered with gravel and sand. Most of the gravel and sand is not suitable as substrate for algal colonization.

Along the shallow limestone shelf several additional species of algae appeared over the first two months of surveys, were encountered on the initial survey, *Laurencia papillosa* and *Dictyopteris sp.* are now both present in limited abundance along the shallow shelf. The algal abundance appears to be similar to that found in unaffected areas of the shelf within the ship channel.

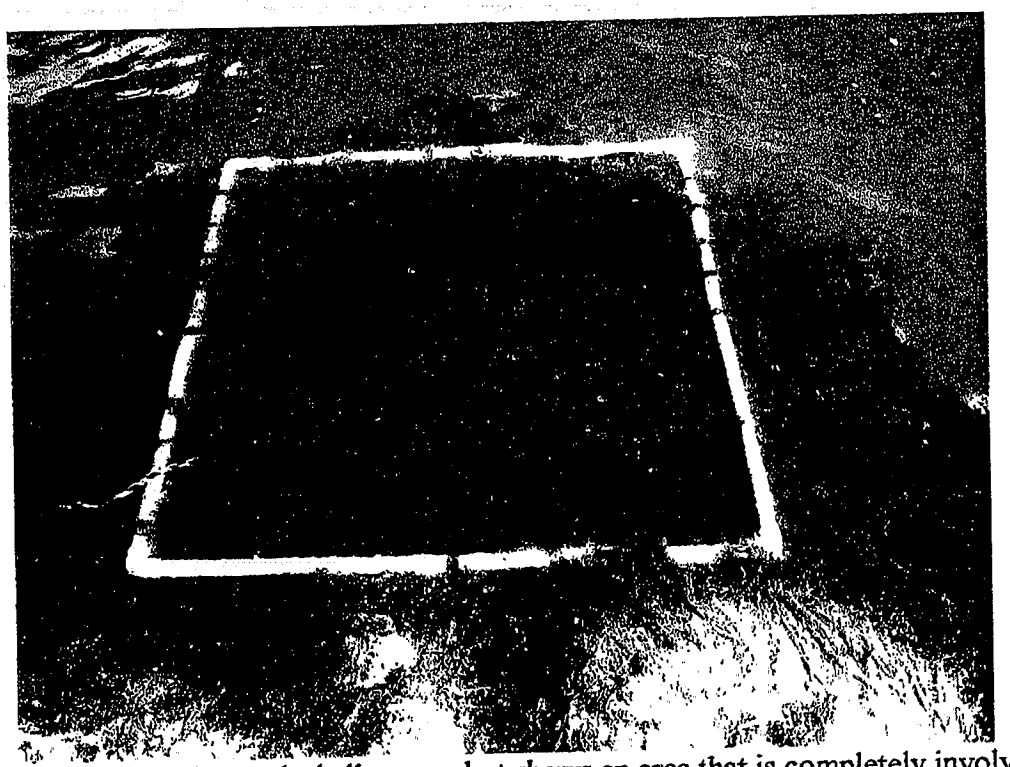
At the edge of the ledge in a crevice near the northern end of the transect is a cluster of anemones which appear to be *Aiptasia sp.* These anemones are found sparsely scattered in shallow crevices along the edge of the channel.

Towards the end of February a small patch of oysters, presumably of the species *Isognomon* were noted towards the northern end of the shallow transect.

No new species were noted between the end of February and mid-March.

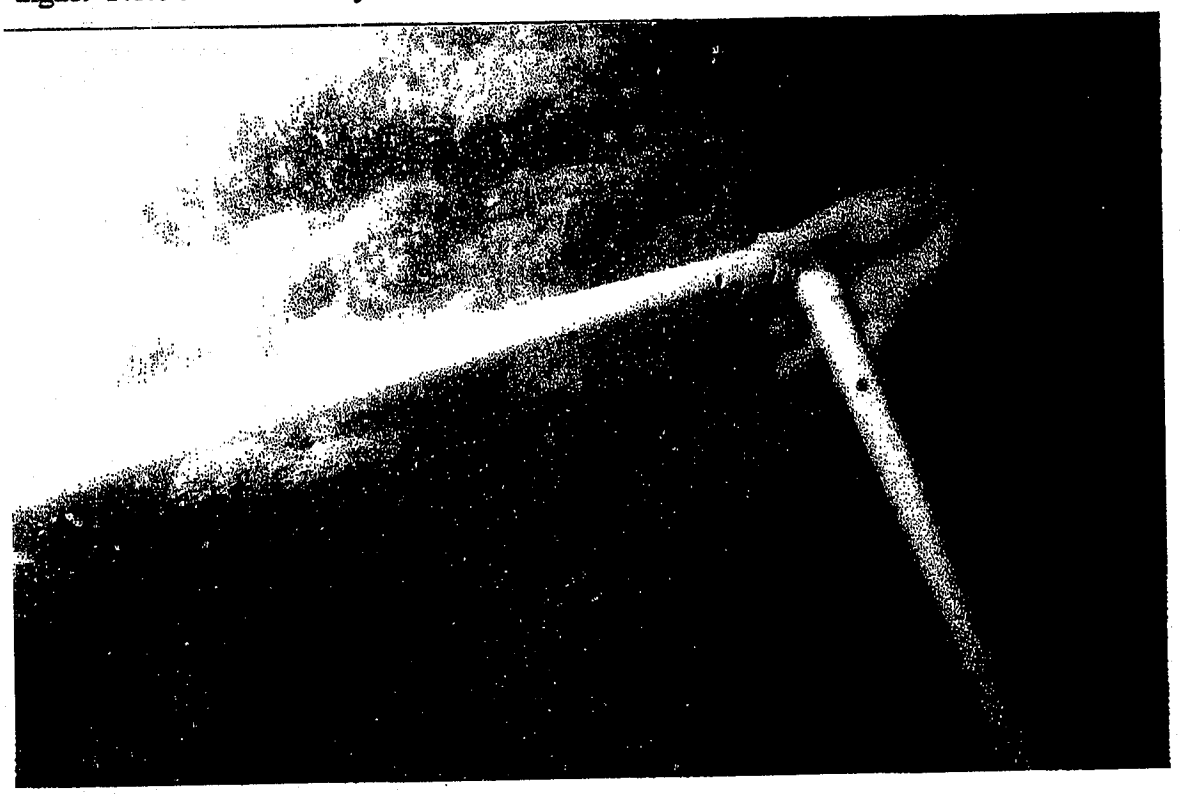


Photograph NB1. Immediately below the spill point and extending to the south is an area of gravel and sand accumulation that is not suitable for colonized by algal species.

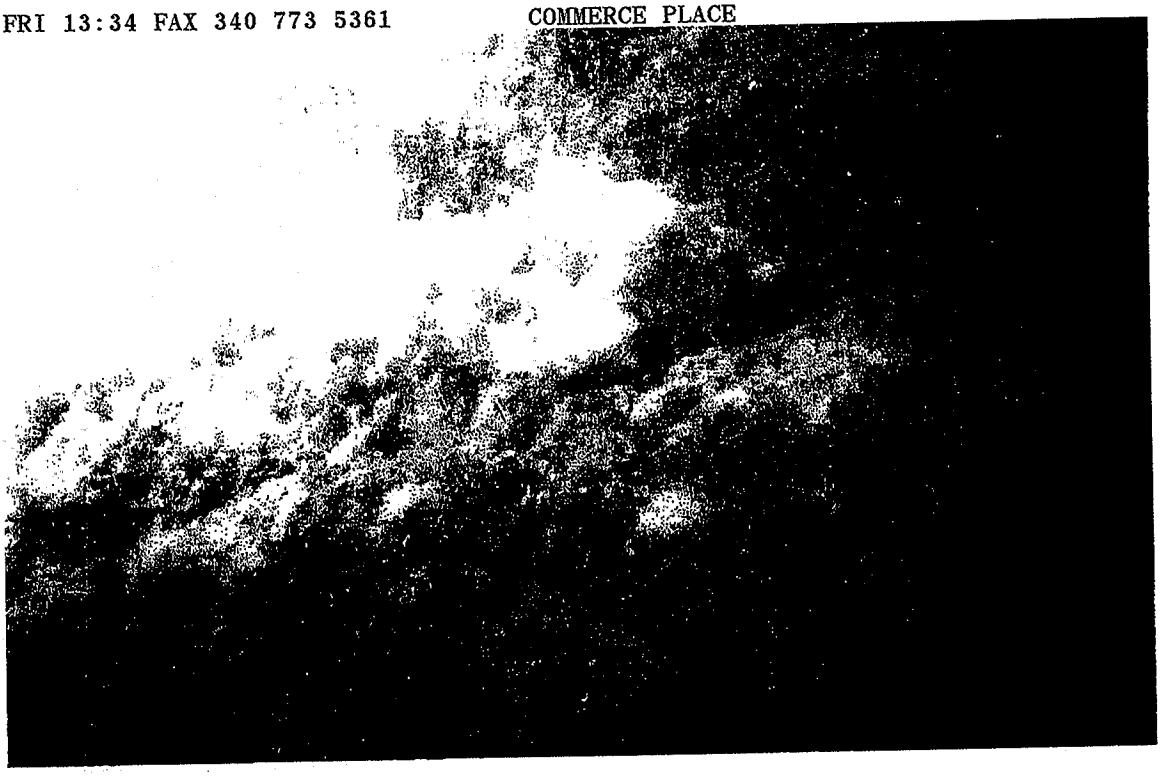


Photograph NB2. The north shallow quadrat shows an area that is completely involved with algae. The light colored algae at the low right had area of the photograph is bleached due to being exposed during low tide.

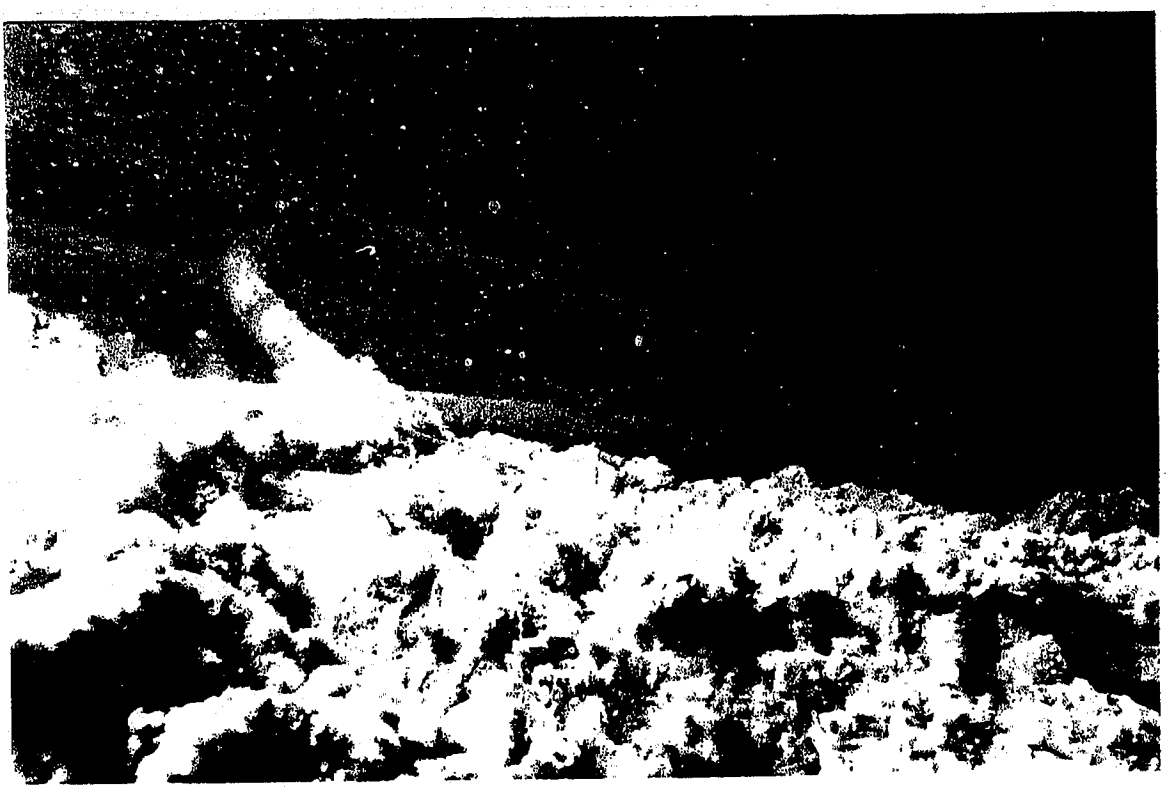
Photograph 3 NB. The northern end of the 3 meter transect is completely colonized with algae. Note the white flaky material raining down from below the shallow shelf.



Photograph NB4. The northern end of the 6 meter transect again shows dense colonization of turf algae.



Photograph 5 NB. The coral along the 6 meter transect line has now recovered tissue color on more than 50% of its surface area.



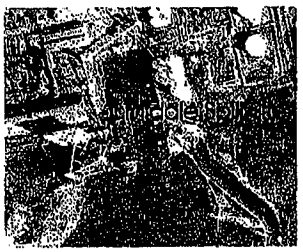
Photograph C1. The area under the pier remains unchanged and uncolonized as it was before the acid spill.

The next transect was conducted at 3 meters or approximately 9 ft. of water depth. Below the shallow shelf the sides of the channel recess back creating small caves and overhangs. Turf algae, *Batophora sp.* and *Laurencia papillosa* colonize the steep uneven slope. Immediately to the south of the first transect line a starlet coral *Siderastrea siderea* remains healthy. The coral is only located 6.5 meters south of the point of the spill. Along the 3 -meter transect line, the algae colonization is uniform throughout the transect line. During the conducting of the transect it was noted that some new areas of white soft rock were appearing immediately below the shallow shelf. These were new areas – the older areas of white material on the rock have flaked off or become colonized by algal species. There are still some areas where the original streaking is visible on the rocks. There was a notable amount of white flaky powder on the slope immediately below the 3-meter transect, but this was due to the disturbance of the new areas under the shallow shelf.

The next transect line was at 6 meters or approximately 18 ft. of water depth and again the slopes were heavily colonized with algae. No difference in density of algae was noted along the transect line. The streaking on the rocks was almost completely covered by algae, and no white flaky material was present.

Approximately 3 meters in from the southern end of the transect (2 meters south of the spill point) the *S. siderea* has recovered its color on more than ½ of its tissue, only about 1/3 of the coral tissue appears to have died, and with the dramatic recovery of tissue color over the last month it can be assumed that the coral will survive.

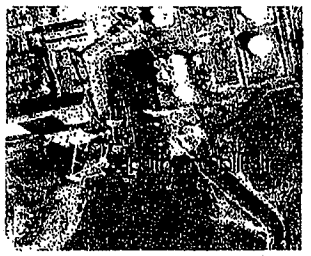
MIDDLE SPILL SITE



The center spill site is immediately under the loading dock and the spill occurred into and through the coiled cable shoreline revetment. There is a narrow band of white material between 2 ft. and 5 ft. wide at the waters edge, and this rock like substance supports almost no growth throughout the area under the dock. These conditions appear to pre-date the acid spill.

No colonization by opportunistic or disturbed-area organisms has occurred in this area subsequent to the spill to indicate that any organisms may have been there to be impacted.

SOUTHERN SPILL SITE



The southern spill flowed to the east of an existing concrete block with a bollard, down an eroded bank, across a cobble and gravel beach and into the water. The area has a shallow bank and then slopes gentle to the basin bottom. The seagrass *Thalassia testudinum* is found at both ends of the first transect which was conducted in less than 1 ft. of water depth. The seagrass is present along the transect line except for the center 4 meters immediately below the drainage. The grass had initially had been only found at the very ends of transect line. The grass distribution has not changed over the last month. The feather duster worm *Bispira* sp. is found scattered along this shallow transect.

Colonization of algae was unchanged from the last survey. No new growth of algal species was noted. Only one large upside down jellyfish *Cassiopea frondosa* was present in the area. This is due to seasonal change and is not related to the acid spill.

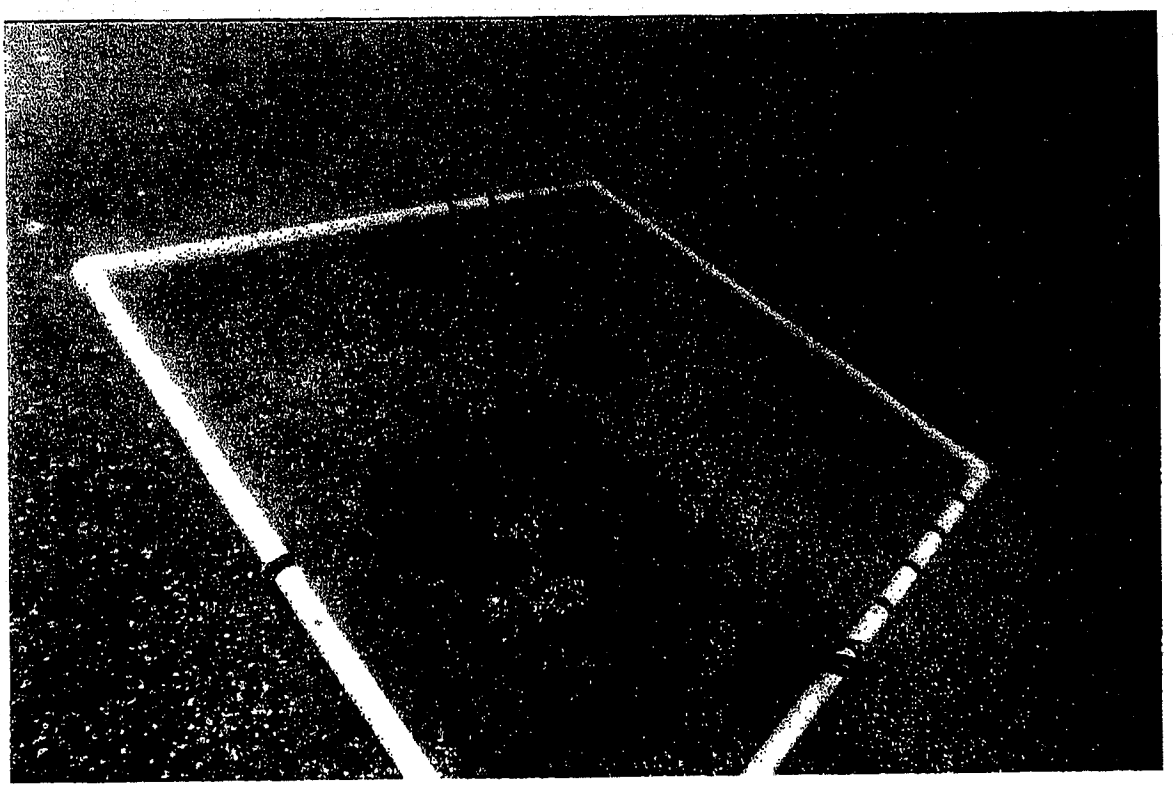
BENTHIC IMPACTS OF THE ACID SPILL

At the northern spill site there were impacts to several algal species on the shallow shelf and down the slope to a depth of 6 meters. A few anemones and oysters have reappeared on the shallow shelf edge since the time of the spill. These species may have been present before the spill but have recently re-colonized the area. It is also possible that these species were not present prior to the spill but are taking advantage of available space. A *Siderastrea siderea* at a depth of 6 meters was found to be bleached as a result of the acid spill on the first reconnaissance of the site. This coral had totally bleached but retained viable tissue around its edges, and over the last several months the coral has regained more than 50% of its tissue color and only a fraction of the coral tissue will be lost.

The middle spill site has basically no benthic community and therefore was not impacted by the spill.

At the southern site, both seagrasses and alga species were impacted by the acid spill; it appears that an area approximately 9 meters across in the shallows extending to a depth of 6 meters was impacted by the acid spill. The area of impact narrowed with depth and the impacted area was slightly less than 30 sq. meters. The grass and the algal species have re-colonized this area.

Photograph 1 SB. Seagrass and algae are present at in the areas 3 meters to either end of the shallowest transect.



Photograph SB2. The distribution of seagrass and algae has remained unchanged over the last month.

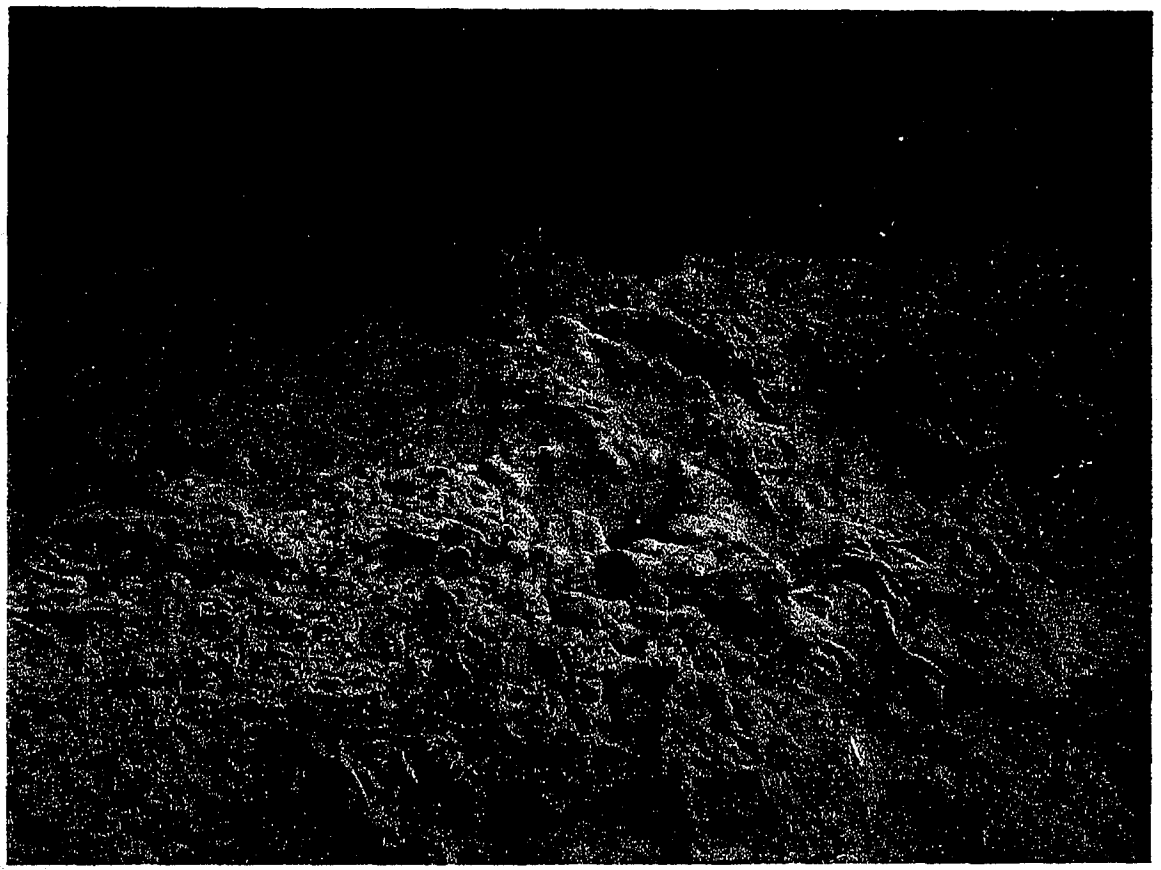
RECENT CHANGES ALONG THE SHALLOW SHELF

As noted above in the description of the benthic surveys, it was noted that a crack was observed in the limestone shelf to the north of the mooring pier on February 28, 2002 and that on the following week this crack was noted to be much larger and appeared to be leaching. The crack appeared to have a white precipitate along the edges and the underlying rock was soft. The algae in the immediate vicinity of the crack were bleaching, and were of a markedly different consistency from the algae that was being bleached by the sun. The *Ulva* that is exposed to the sun becomes bleached white and becomes paper-thin and has a consistency of tissue paper. The algae in the area of the crack was bleached white and appeared to have some type of precipitate on its surface and was very thick and brittle. There was also some orange streaking in the white precipitate on the rock. Several spots were noted in the limestone rock surface with the white precipitate and orange streaking. It appeared as though the limestone was dissolving.

Picture I1. The crack with its associated white precipitate.

On March 13, 2002 the crack again appeared to be larger and the area which the precipitate had been scraped from the week before were again covered. A dive was made to observe what was going on below the surface. A large area of soft white material was found all along the area below the crack. This area was not present in December 2001 or January 2002. During December 2001 the entire area had been surveyed to delineate the

area of impact of the acid spill and algae uniformly colonized this area. On both dives in January 2002, divers had clear views of this area and no white uncolonized soft rock was present.



Photograph I2. The outer edge of the crack where the algae has been impacted.

The limestone rock is very soft and crumbles when touched. Below the surface the rock feels warm. From an area approximately 2 meters to the north of the mooring pier to the north for a distance of approximately 10 to 12 meters a majority of the area immediately off the shallow shelf edge is white and soft. Several isolated patches of white material were noted further to the north and several isolated patches of white were noted as discussed above in the area of the northern spill site. The isolated patches are small and are right below the first limestone shelf. Below the crack the area of soft rock is as deep as 1.5 meters.

Samples were taken of this material on March 7, 2002 from within the crack itself and from below the shelf in the soft rock on March 13, 2002. A sample of limestone in the channel from a remote site was also sampled as a control.

These results can also be compared to those taken of the white flaky material on January 24, 2002.

The video accompanying this report provides documentation of the extent of the impacted limestone, and shows taking one of the marine samples. The rock is so soft on the shelf that the glass jar could literally be pushed into the rock. The sampling for the control required a hammer and chisel and breaking of the rock was difficult.

RESULTS OF SAMPLE ANALYSIS

All sample results are included in their entirety at the end of this section. A table has been provided for ease of comparison of the samples.

The first samples taken on January 24, 2002 were only analyzed for alkalinity by ion chromatography. The sediment sample containing the white flaky material contained too great a volume of water so only the white flaky material straight off the rock surface was analyzed.

The total alkalinity for the white rock surface was 2000 mg/L.

One of the samples taken on March 7, 2002 was broken in transit to the stateside lab the cooler was actually crushed. The surviving sample was scraped from rock broken from the edge of the crack.

The samples taken on March 13, 2002 were analyzed for alkalinity/acidity, anions and cations, and metals. Sample 1 was taken of the limestone shelf to the south of the pier in the vicinity of the original northern acid spill on the underside of the ledge. Sample 2 was taken of the limestone shelf immediately below the mooring pier. Sample 3 was taken of the limestone shelf immediately below the crack to the north of the mooring pier. Sample 4 was broken. Sample C, the background control sample was taken of a piece of limestone shelf remote from the area of the spill or the more recent crack. The chemical make up of seawater is also provided in the following table.

The sample results are inconclusive at this point and cannot be directly associated with a specific cause. This new phenomena is does not appear to be directly related to the acid spill which occurred in November of 2001.

17. EPA – Pollution Report

United States Environmental Protection Agency
Region II

Pollution Report

I. HEADING

Date: November 19, 2001

Subject: **St. Croix Alumina, St. Croix, USVI**

From: Geoffrey Garrison, On-Scene Coordinator,
U.S. Environmental Protection Agency,
Caribbean Environmental Protection Division

To: R. Caspe, ERRD
C. Soderberg, CEPD
J. Font, CEPD
C. O'Neill, 2CEPD
W. McCabe, ERRD
B. Bellow, CD
C. O'Neill, CEPD-ESB
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J. Daloia, ERRD-RPB
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R. Mayoral, CEPD
T. Johnson, 5202G
J. Witkowski, 2ERRD-RAB
B. Dease, 2ERRD-RPB
RST
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Data Base Manager, EPA
P. Simon, ORC-NYCSF
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R. Byrnes, OIG
W. Lometti, CID
T. Riverso, OPM
L. Guarneiri, ERRD-RPB
District 7th Captain W. Fels
USCG Gulf Strike Team
MSO-CMDR. J. Servidio
A. Block, CDC-ATSDR
J. Lee, DOI
D, Plaskett, DPNR
C. Farchette, DPNR
LEPC
A. Zownir, ERT

Polrep No.: One (1)

II. BACKGROUND

Site No:	N/A
Response Authority:	CERCLA
NRC No:	586037
CERCLIS No:	N/A
NPL Status:	Non NPL
State Notification:	November 15, 2001
Action Memo Approval:	N/A
RST Date:	November 15, 2000
Demobe Date:	N/A
Completion Date:	N/A

A. **Incident Category:**

Incident Category: Emergency Response. On November 15, 2001, EPA received a National Response Center Flash Fax communication notifying the release of 900 gallons of Sulfuric acid at the site. The material was released from a broken flange on a loading pipeline to the storage tank and sprayed over the containment wall and entered a storm sewer which discharges into the dredged channel serving the loading dock at St. Croix Alumina.

B. **Site Description**

1. Site Location

The Virgin Island Alumina Corporation L. L. C. site is located on 1 Estate Anguilla, St. Croix, VI, with a size of over 1,000 acres. The facility has been out of operation since January 2001, and it is not expected to restart operations due to current market pressures. The parent company Alcoa, has plans to sell assets of the facility via auction. The facility (while in operation) processed bauxite into alumina. The production of alumina from bauxite is carried out by the use of the Bayer process, an extractive hydrometallurgical process. The process involves dissolution of the alumina hydrates in the bauxite with caustic soda at elevated temperature and pressures; separation and clarification of the alumina from impurities and precipitation of the alumina. The product of the operation is a white powder known as calcinated alumina. This is then shipped off the island to be further processed into aluminum.

The facility is self-sufficient producing its own steam, power, and water. The port facility consists of the harbor and loading/unloading facilities at three docks. There are several large capacity tanks for different process chemicals including #6 fuel oil, Bauxite, Liquid Caustic, Alumina, and sulfuric acid. The sulfuric acid was utilized to clean the interior of the facility 's piping system.

The Site covers in excess of 1,000 acres on an industrial zone to the south of the island, approximately 1 mile east of the Airport .

2. Description of threat

There was a an initial release of an estimated 900 gallons, with an eventual release of between 20,000 to 30,000 gal (the PRP is in the process of estimating more exact figures) of sulfuric acid, a corrosive, pungent chemical which reacts violently with water through an exothermic chemical reaction which releases high amounts of heat. The sulfuric acid is very toxic to the environment and humans. The sulfuric acid tank (T- 26), has a 210,000 gallon capacity and was approximately 44% full with 97,000 gallons of commercially pure (98%) acid when the release started. The flow rate was initially estimated at 5 gallons/minute, however the flow rate was observed to be increasing as the release continued. The threat of a complete breakage of the

[illegible], the majority of the contents would reach the channel, bypassing the secondary containment due to the location of the flange in respect to the containment wall. Should a large amount of the sulfuric acid be suddenly released (as opposed to the low rate through the flange), and react with the nearby sea water or rain water, it could create an acid plume (H2SO4 carried by condensed water vapor, SO2, SO3,) that could affect down-wind communities. The release of sulfuric acid in large quantities could also have a severe impact on shore line vegetation and marine life including threatened species such as the green turtle and brown pelican. A release through the secondary containment liner could adversely impact ground water..

3. Preliminary Assessment/Site Inspection Results

On November 15, 2001, at approximately 0845 hours, the facility 's Heath, Safety and Environmental Manager discovered a release while conducting a walk through the site. The spill was reported coming from the Sulfuric acid tank. The spill in a form of a spray, was specifically coming from a broken flange on a loading pipeline to the storage tank and sprayed over the containment wall, gaining access to the sea through the storm sewer near the Krouse Lagoon Channel where the facility loading/unloading dock is located.

IV. RESPONSE INFORMATION

A. Situation

On November 15, 2001, EPA was activated to an emergency response of a 900 gallon sulfuric acid spill. EPA responded to the site to conduct a site assessment. At the site, EPA met with the Potential Responsible Party (PRP), Department of Planning and Natural Resources (DPNR), Local Emergency Planing Committee (LEPC) and Fish & Wildlife Department (F&W) representatives to go over the events and to determine an action plan to deal with the ongoing release. Following is a list of events and actions taken to deal with the situation. This is a preliminary list of actions taken, a more complete list will follow in subsequent Polreps.

The initial response was taken by personnel from St. Croix Alumina which had a skeleton staff present due to their closed status, and HOVENSA (which assisted in the response through participation as a member of the LEPC), also on site was DPNR. The leak appeared to be from a break in the weld between the pipe and the flange, however, the exact location of this break will have to analyzed after the tank is emptied. The first responders made the determination that a repair or stoppage of the leak was not possible while the line was pressurized, they wrapped acid resistant material over the flange area to prevent the spray pattern from flowing over the containment wall. The leaking sulfuric acid was also escaping through the containment wall itself, either through seams/cracks in the concrete or through channels it created as it reacted with the concrete. The responders also covered the storm drain which is a direct conduit to the channel and set up hoses to dilute the sulfuric acid seeping through the base of the containment wall. They also placed acid resistant material in the area where the acid was dripping from the wrap to canalize the flow as much as possible to the lined portion of the

The PRP started constructing a pipe line using acid resistant pipe from the affected tank (T-26) to other process tanks, it also started pumping rain water out of the secondary containment area using pumps instead of the standard drain mechanism which was clogged. Once the rain water was pumped out, the PRP opened a valve from the tank T-26, to allow sulfuric acid to drain directly into the lined portion of the secondary containment (which had been replaced recently and believed to be in good condition) in order to relieve the head pressure on the flange. Approximately 18,000 gal had been placed in the secondary containment when DPNR observed that the chemical was escaping from secondary containment through the drainage system into the containment area of the vehicle loading ramp. The leak mechanism out of the secondary containment was stopped, however, no further material was placed into the secondary containment due to the severe bulging (from trapped air pockets) of the liner, which indicated a possible failure of the liner.

On 16 November, 2001, EPA signed a statement of agreement with the USCG Marine Safety Office San Juan for the EPA FOSC to formally assume full FOSC responsibilities in accordance with the National Oil and Hazardous Substances Contingency Plan (40 CFR part 300).

The response remained as a PRP lead with DPNR and EPA oversight. EPA requested that the PRP construct a tertiary berm in case of a catastrophic failure and start the process on obtaining acid trailers for possible transportation of the material to HOVENSA. Both DPNR and EPA expressed concern to the PRP as to the initial lack of resources at the site. The manpower resource situation was eased somewhat when contractual issues with HOVENSA were finalized and more personnel were brought on board.

On the morning of Nov 17, the pipeline was finished and 21,000 gal were pumped from the acid storage tank T-26 to another acid storage tank 4R-66 (max capacity 21,000 gal), this further reduced the pressure head on the flange which had dropped from 14 ft to 9 ft. Further pipeline was constructed and or inspected with the intent of neutralizing the remaining acid in tank T-22 (max capacity 1.2 million gal) by pumping the acid into 520,000 gal of caustic "Bayer Liquor." The initial attempt to neutralize the remaining acid using this method was conducted on the afternoon of the 17th but was immediately suspended when it was observed that the reaction was creating a plume. Although the winds were from the North, causing the plume to go over open water away from populated areas. Neutralization will not be attempted until detailed calculations are obtained as to the exact composition of the plume and the methodology/instrumentation is in place to monitor the operation. On the Morning of the 18th the lines to another storage tank (Kelly tank) T13-7 were completed and the remaining sulfuric acid (above the flange) was pumped to the Kelly tank (max capacity 71,000 gal. EPA requested that the material in the vehicle loading ramp containment be extracted by vacuum trailer, this material was then neutralized in small quantities using caustic liquor without creating a plume, this neutralization was completed by the morning of the 18th. By 0830, 18 Nov 2001, the threat of release of major quantities of sulfuric acid had been diminished to the point where it no longer posed danger to the public health and welfare, or to the environment.

The PRP is continuing its attempts to ship tanker trailers (none available on St. Croix) to transfer the material to HOVENSA for safe long term storage and use. The latest information from the PRP is that there are two sets of tanker trailers inbound (for redundancy in case there are shipping delays) – two from Jacksonville departing 23 Nov, arriving St. Croix 27 Nov, and two tanker trailers departing Puerto Rico on 25 Nov, arriving St. Croix on 26 Nov. HOVENSA has informed the PRP that due to possible contamination and dilution of the sulfuric acid, that it will no longer treat it as a virgin product and therefore they plan to store it in another tank, not the tank that they originally intended. This tank (they call it a recycle tank) is suitable for long term storage but does not normally accept loads from tanker trailers. The preparations by HOVENSA for receiving the tanker trailers from St. Croix Alumina, will be completed within 10 days from this Friday, i.e. by 30 Nov.

EPA and DPNR are concerned about the integrity of the Kelly tank. PRP has provided literature on the suitability of the Kelly tank for temporary storage of the sulfuric acid. Based on the purity of the product 96.5% and the composition of the tank, the PRP 's technical staff contends that this is an acceptable temporary storage solution. EPA asked the PRP to further analyze the integrity of the tank using thickness testers, preliminary results show adequate thickness. The PRP will conduct further testing. Charts for calculation of corrosive effects based on tank construction, thickness, acid concentration and temperature, show that this tank would last over 25 years under current conditions.

PRP will remove remaining sulfuric acid from secondary containment starting on 22 Nov for neutralization in the same manner as was previously conducted for the neutralization of the sulfuric acid that was collected from the vehicle loading containment area. They will use tanks similar to the 400 gal trailer (two trailer mounted tanks of 500 gal each) – no plume is expected.

ERT has been contacted to assist in the calculation of the exact constituents of the acid plume that would be created in case neutralization of the remaining acid is necessary. This calculation, in addition to training of EPA/RST personnel in the use of SO2 monitors will be finalized by 21 Nov. In addition, ERT will assist in determining environmental impact from the Sufuric Acid released. Tentatively, ERT will be on the ground Wednesday through Friday of next week 28 - 30 Nov. EPA is keeping a presence on the ground (at least one RST member) to monitor PRP efforts. EPA has also obtained a single point source monitor (SPM) for sulfuric acid and SO2 that we will make available to the facility if needed, EPA personnel will hand carry this equipment on 21 Nov. EPA is instructing the PRP that at least 3 SPMs would be necessary to monitor any future neutralization attempts (neutralization is a last resort). EPA would also conduct mathematical dispersion modeling to look at worst case scenarios for an acid plume.

Preliminary calculations show that approximately 27,700 gal of Sulfuric acid are currently unaccounted for, and could have been released. This number will be adjusted as the contents of the secondary containment are collected and quantified. The two pathways of the release were: 1. discharge directly into the ocean and 2. Seepage through the secondary containment liner. ERT is less concerned with the discharge into the ocean. Since sulfuric acid is totally miscible with water, and the flow was relatively low, they predict the sulfuric acid dissolved instantaneously when it hit the water (disolution reaction) in addition to reacting with the carbonates etc. (alkalinity of ocean water) so that even with the low mixing forces in the

instances of 4-5 fish killed and localized bleaching. DPNR was in the process of obtaining pH readings from the surrounding water column, the result of this sampling is unknown at this time. The possible seepage through the liner is of greater concern. The air pockets that formed in the liner may have been formed either through reaction with the caliche base (CaCO3) indicating a possible breach of the liner, or through the heat of dissolution when it contacted the remaining rain water. The PRP was tasked to provide a workplan to both DPNR and EPA as to how they were going to measure the impact on ground water and mitigation actions if necessary. The PRP has 4 technical experts due on the island on Monday 26 Nov. They will meet with the ERT person that arrives on Wed 28 Nov.

C. Key Issues to Address

PRP, EPA and DPNR should conduct a Chemical Safety Audit of this closed facility to determine the safety of approximately 8 million gal of caustic remaining in the facility. Although they have programmed for tanker ships to remove this product(two separate ships, first one arriving in November) we would be well served to verify that the integrity of the current storage is adequate, that the facility has a fully developed and implementable contingency plans, and that the upcoming transfer operation is consistent with standard practices.

EPA and DPNR need to coordinate possible enforcement actions stemming from this release, and establish jurisdiction for these actions.

EPA must work with DPNR and HOVENSA to coordinate the transfer of the remaining sulfuric acid from St. Croix Alumina to HOVENSA. HOVENSA wants certification from both EPA and DPNR that it is acceptable for them to receive this shipment. HOVENSA is waiting for lab results on the sulfuric acid to determine how to handle the shipment.

The LEPC should analyze the actions during this release and develop "lessons learned", further, they should correct problem areas such as contracting issues.

Polrep: ___1_____ Further Polreps forthcoming: ____yes____

Technical Note
Evaluation of Environmental Impacts Associated with the Sulfuric Acid Spill at the St Croix Alumina Plant St Croix U.S. Virgin Islands

December 13, 2001

Prepared by

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U.S. Environmental Protection Agency
Environmental Response Team

The purposes of this technical note is to document the observations of the field reconnaissance and associated recommendations related to ecological/environmental impacts stemming from the sulfuric acid spill at the St Croix Alumina plant in St Croix, U.S.V.I..

On November 28, 2001, a reconnaissance was conducted of the area around the storage tank where the spill occurred and the surrounding area with the U.S. EPA OSC, Geoffrey Garrison and representatives of the Department of Planning and Natural Resources (DPNR). Observations were made in several specific areas: observations in and around the acid storage tank and secondary containment area; the surface area immediately surrounding the acid tank and containment area; surface drainage pathways leading to the release of materials to the surface water system; three distinct release points of surface drainage to the surface water; and along easily accessible areas of the shore for subsurface water discharge locations.

Overview

On November 15, 2001, a leak from the intake line to a sulfuric acid storage tank, which contained approximately 97,000 gallons of 98% sulfuric acid, was discovered at the St Croix Alumina plant in St Croix U.S.V.I.. The storage tank is located on top of a steep slope immediately above the access road to the facility shipping dock. The distance between the acid storage tank and the surface water is approximately 20 meters, although the surface release pathway to the surface water is substantially farther.

The precise volume of acid which was released is uncertain, the uncertainty arises because of multiple release points around the storage tank and secondary containment area and that recovered acid had mixed with water increasing the volume, making calculations of the amount of original acid actually lost to the environment imprecise. The initial release was estimated to be 900 gallons with a total release of between 20,000 to 30,000 gallons; however, the best estimate of lost sulfuric acid is between 9,000 and 12,000 gallons total volume of original concentration. However, a substantial amount of this "lost acid" was recovered and neutralized. Recovered sulfuric acid from the secondary containment lagoon was as low as 84% after dilution/mixing with rainwater. More complete and accurate accounting of the volumes of lost, recovered and treated acid are anticipated to be available as the spill response is brought to completion.

Three specific potential release points to the surrounding area (non-contained release) were identified. An unknown volume of sulfuric acid was released to the ground surface, from the initial release (the time from the start of the leak until a temporary "sleeve" was placed around the leaking line (see pictures 1); an unknown volume of acid was inadvertently released from the secondary containment area (see pictures 2 through 4) through the drain line; and there is the potential for subsurface release of acid which may have entered the soil, by circumventing the containment liner and through infiltration through cracks in the concrete around the storage tank.

Once released into the environment (un-contained), the released acid followed one of four

cm) layer of concrete (see picture 5). The concrete is believe to be intended to be there for erosion control, however there are numerous cracks within the surface. The release then flowed along a concrete stormwater pathway to a grated stormwater sewer line (see picture 6 and 7). The stormwater line ran under the roadway and down a second steep embankment to the shoreline, with the outfall being above the water line (see picture 8).

A second surface release of acid occurred when a drain line from the secondary containment area released an unknown volume of acid to the concrete roadway near the acid transfer pad, adjacent to the storage tank area (see picture 9). The acid was washed (with fresh water during the first day and a half and seawater used during days 2 and 3 of the spill response) down the roadway to the stormwater drain described above; however the additional flow added two additional release points to the surface water, a second stormwater drain (see picture 10) and some water continued to flow on the roadway along the entire length of the shipping dock ultimately reaching the surface water via a runoff point into the turning basin, which is the third release point (see picture 11).

The fourth pathway of potential release to the environment was unconfirmed at the time of this memo. The pathway would involve the release of acid from the secondary containment area to the soil; as well as any infiltration of acid through cracks in the concreted bluff area. There is the unconfirmed potential of subsurface migration of acid to the surface water. However, the caliche/soil which underlies the secondary containment area, and presumably the concreted bluff, is a carbonate based material with a high buffering capacity, which may have neutralized the released acid. This process did occur as evidenced by the formation of bubbles in the secondary containment lagoon and the "bubbling-up"of the containment liner (see picture 2) In addition it is believed that the caliche/soil under the secondary containment liner should have a permeability similar to clay thereby limiting any migration to the subsurface soils to which it could potentially migrate. The potential for subsurface contamination resulting from the release from the secondary containment area should be apparent, in the soil beneath the liner, during the planned removal of the liner. It is anticipated that only a relatively small amount of acid could have entered the soils through the cracks in the concreted bluff.

As stated the volume and actual acid concentration at the point of release to the surface water is not known. Released acid reacted with the concrete, was diluted with water and was buffered to an unknown extent through the use of sea water, as a flushing material, as noted previously, the acid recovered from the secondary containment lagoon was as low as 84%. However, given the extent of terrestrial plant damage (see pictures 8 and 10), it is clear that the acid entering the surface water at the two stormwater drains was still highly corrosive and reacting with the water as well as the soil and other components of the terrestrial area.

At the third release point to the surface water there is little evidence that the material released was "highly" corrosive (see picture 11).

Environmental Setting

The soils within the area of the acid storage tank are the carbonate based caliche soil. There has been significant alteration of the surface topography from the original elevations. This appears to be a function of the construction of the "pad" area for the acid storage tank and the secondary containment area. And the construction of the roadway to the shipping dock. In addition, the "cutting"of the shipping channel has altered the topography immediately adjacent to the surface water. The banks leading to the channel are very steep at and around the shipping dock (see picture 8); however at the end of the facility there is a much reduced elevation difference from the facility to the water body (see picture 11).

Terrestrial Ecological Setting

There is currently little terrestrial area for ecological resources. The area surrounding the acid storage tank and secondary containment area is industrial with a small sloped grass area adjacent to one side, this area has historically been maintained and was again mowed during the spill response. There is a limited terrestrial area on the steep slopes leading down to the surface water from the shipping dock access road. The area is vegetated with a variety of small woody species, some grasses and herbaceous plants (see picture 8). While collections and taxonomic identifications were not made, the plant community appears to be a mix of invasive species.

Surface Water

The surface water which received the released acid is a shipping channel which was cut into the existing waterway. The slope of the channel is very steep, with a depth of approximately 10 meters within 5 to 10 meters of the shore (see picture 12). The channel is a maintained and active, with depth believed to be uniform. At the facility the shipping channel ends just beyond the end of the shipping dock (see picture 13). At the southern end of the facility the channel opens into a turning basin and the shipping channel extends out into the Caribbean (see picture 14).

Light penetration measurements were not made, however, the water clarity was notably less than the open Caribbean waters. Visibility was believed to be approximately 3 meters.

Semiaquatic and aquatic and ecological setting

Semiaquatic

It should be noted that the area of St. Croix Alumina is located in a highly industrialize area. At one point this industrial area (Krause Lagoon) was a large mangrove swamp; however, today the mangrove swamp has been highly disrupted.

The littoral zone around the shipping channel is very limited, due to the nature of the cutting of the channel through the carbonate based bed formation (see picture 12). However, native species are re-colonizing the area, notably red mangrove, Rhizophora mangle , (see picture15 and 16), which was seen in clumps of various sizes along the shoreline. These mangroves appear to be

marine life including fish cover and breeding habitat. Breeding habitat is inferred by the observation of schools of fish fry along the shoreline during the site reconnaissance, the fry were believed to be a few days past a swim-up stage.

It should be anticipated that as the mangrove root system expands to the extent possible, being limited by the steep slope of the channel, this mangrove root habitat will be a functional system. There will be limitations on the extent of the functioning of the system (because of the limited size and potentially water quality issues) but the observations made suggest that it will be an area of significant ecological use.

Aquatic

As noted above, the rapid increase in depth, along the shoreline, limits the location specific evaluation of aquatic resources at the facility. However, the following observations were made: A calcareous shelf appears to be forming, extending into the channel from the shore at a depth of less than 0.5 meters (see pictures 17). The shelf may be forming from the growth of calcium carbonate depositing algae. The existence of the shelf limited observations of organisms as it blocks much of the view of the shoreline slope. This shelf area with intermixed red mangrove prop roots provides much of the ecological resources in the area of the shipping channel.

Collection and identification of finfish was not done, however, observations and personal communications regarding fish found dead after the acid spill, suggest that a substantial number of fish species utilize the area. During the limited observations along the shoreline (less than one hour of observation and only limited shoreline area) approximately 6 species of finfish were seen. These include several schools of fry, and what was believed to be sergeant majors, and a species of trunkfish; fish found dead after the spill were said to include anglefish.

At the end of the facility, where the third surface water release point is located, there is a turning basin (see picture 14). The shoreline distant from the facility and heading out the shipping channel appears to be fringed with red mangrove, which is consistent with the observations made along the shipping channel near the loading dock. At the outfall a slightly larger littoral zone exists which contains some macrophytes (see picture 18) it is believed that these macrophytes are in fact "rooted algae" (possibly of the genus Caulerpa) rather than one of the species of marine grasses which exist around St. Croix. Since specimens were not collected, the identification can not be conclusive and is based on the high water quality requirements and high water circulation requirement of the marine grasses, which does not appear to exist adjacent to the facility and it is therefore not likely that they would grow in this location. However, the macroalgae does still provide habitat for other species.

The channel bottom was not sampled and could not be observed due to limited water clarity, the channel is an active and maintained shipping channel and it is anticipated that the substrate has limited ecological value and utilization.

While the St. Croix Alumina facility is located within the Krause Lagoon (an historically large

Observed impacts

Terrestrially, sulfuric acid is anticipated to impact the environment primarily as a corrosive causing chemical burns. Chemical burns would be anticipated from direct contact with the acid including acidic fumes formed due to chemical reactions with the acid and heat generated from the dissolution of the acid in water. While the potential for dissolution of metals, such as lead or cadmium, with a subsequent exposure of these contaminants to ecological receptors exists, the limited duration of the acid release event, the relatively small volume of acid released, and the high buffering capacity of the local soil and sea water; make this environmental impact scenario unlikely.

Aquatically, sulfuric acid is again anticipated to act primarily as a corrosive. In addition the strong acid dissolving in the water generates large amounts of heat. The heat generation could also create localized area of low dissolved oxygen, as the solubility of oxygen in water decreases with increase temperature. For fish and other aquatic organisms it would be anticipated that the respiratory system would be the primary site of action of the acid, as gills and gill tissue are sensitive injury. Aquatic organisms unable to escape from the heat and/or direct contact with the acid spill would be expected to die quickly. While some injured fish could initially survive, their long term viability could be significantly reduced.

Overall, ecological impacts from the acid spill are anticipated to be severe (lethal) but to be limited in time to the acid release period, and limited in area (due to neutralization and dilution of the acid).

Observed terrestrial impacts

Vegetation in the immediate area of the release at the tank and the spill release pathway was killed, as evidenced by the brown (chemically burned) vegetation around these areas (see pictures 19, 8 and10). However, as can be seen in pictures 19, 8 and 10, the impact to the plants is limited in area and appears to be mainly effecting invasive species. As can be seen in the photographs, the extent of damage is largest at the first stormwater outfall and substantially less at the second. There were no observations of dead or stressed vegetation at the third surface water release point at the end of the facility (see pictures 11 and 14). No observations or reports of injured or dead fauna were found.

Aquatic Impacts

The acid release points (outfalls) to the surface water are not co-located with the red mangrove clumps.

Personal communications with the OSC suggest that while there was an initial fish kill, the number of fish which died was small, with the DPNR F&W reporting finding 4 to 5 fish dead in localized areas. Additional fish and other marine life likely died as individuals which would

No dead or injured organisms were seen.

Representative of the DPNR took pH measurements in the near bottom waters across the shipping channel several days prior to this reconnaissance and prior to any ship activity in the channel. They reported no abnormal pH readings.

During the Nov. 28 reconnaissance it was observed that a "sluffing" of a tan/white material was occurring from the shelf (see picture 20). It was difficult to tell the origin of this material, however, upon a review of the photographs taken (see pictures21 and 22), there does appear to be a "bleached" area within the vicinity of the first stormwater outfall, along the shoreline. The sluffing material may be the dead algal colony which formed the shelf. The "bleached" area may represent the extent of acid concentrations in the surface water sufficient to kill the algae and other organisms, thereby leaving the substrate "clean".

Due to the presence of the loading dock, observations of impacts at the second stormwater outfall were limited, with no discernable impact seen at the time of the reconnaissance.

At the third surface water release point there was also limited evidence of impacts, other than those which would be associated with a stormwater release point (e.g. those effects caused by high water velocities and pulses of freshwater (see picture 11).

Summary

Sulfuric acid of unknown quantity and concentration was released via three known surface water release points. Limited terrestrial impacts were observed, being confined to a small area with low ecological value. The acid was released to the adjacent shipping channel, the known area of impact is limited in size and is primarily within approximately 10 meters on either side of the first stromwater drain outlet. Impacts include a limited fish kill, and apparent loss of a shelf forming algal community. Given the type and area of the impacts it is anticipated that a recovery of the area will occur naturally within a reasonable time frame.

No conclusions could be reached regarding subsurface releases of acid as this information was not available at the time of this report.

Recommendations

An evaluation of the potential for surface groundwater release points to the shipping channel should be made. Several points of subsurface water release were made, which appeared to be related to rainfall events. Observations and measurements of near surface waters for pH, temperature, salinity, conductivity, turbidity and redox potential, could identify surface groundwater release pathways. If any subsurface contamination occurred these release points could be monitored for the release of contamination into the surface water. These evaluations should involve simple observations and data generation with handheld instruments.

A more detailed observation of the channel wall and shelf in the vicinity of the first stormwater

benthic/attached marine community. This would be accomplished best by underwater observations and photography.

If additional underwater observations are made, a survey of the fish species and other marine organism within the shipping channel would assist in confirming that the species of fish found dead do live within the channel. It would also assist in the evaluation of the ecological functioning of the channel as it now exists. This information could be of great value currently, as well as in the future, as it will provide a baseline of resources for use in the management of the shipping channel.

Appendix K

Previous Alumina Production

Vialco

Plant Process Operation

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Date: *March, 1995*

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INTRODUCTION

The purpose of this publication is to familiarize a "green" employee with the refining process used at Viatco.

It is important to know the terms used in operations to converse intelligently about the process. It is also necessary to have an appreciation of the flow of the process to make good decisions. Typical chemical reactions are included for those wishing to probe deeper into the process.

The final sections addresses the individual departmental operations and their purposes. It is necessary to know the purposes of the departments because achievement of each purpose adds up to the composite success of the plant.

On the other hand, the non-achievement of just one purpose constitutes a bottleneck and may have ill effects on the production and quality.

Although this publication is of a technical nature, it must be recognized that the safety of our personnel and equipment is of paramount importance. In every step of operation, employees must be guided by a "Safety First" attitude.

U.J. Shim You
March, 1995

JSY:vm

GLOSSARY

A

Acid	-	A sharp biting corrosive type material, usually a liquid.
Air Lift	-	A device for elevating solids or liquids by air flow.
Air Slide	-	A conveying device which uses air to fluidize material for free flow by gravity.
Alumina (Al_2O_3)	-	Alumina Oxide - the finished product of Calcination. Sometimes referred to as corundum.
Alumina Trihydrate ($Al_2O_3 \cdot 3H_2O$) T.H.A.	-	This material commonly called hydrate, is the product from the precipitation process. It is the same as the major constituent found in bauxite and is the same composition as scale deposited in some pipe lines and on tank walls of precipitator tanks . Soluble in caustic, also known as beta trihydrate, Bayerite, Gibbsite, Hydrargillite or Nordstrandite.
Alumina Monohydrate ($Al_2O_3 \cdot H_2O$) M.H.A.	-	A minor constituent of bauxite. Soluble in strong caustic or at higher temperatures. Also known as Boehmite or diaspore.
Angle of Repose	-	Angle between base and sloping side of a pile formed when material is dropped at a center point to form a pile. Information used for bin design and flow characteristics.
Available Alumina	-	Useful alumina extractable from the bauxite.
Attrition	-	The size reduction of particle by the grinding action by one upon another.
Auto Precipitation	-	The precipitation of alumina trihydrate crystals without external seeding.
Adsorption	-	A liquid or a gas being held on the surface of a solid.
Absorption	-	Similar to adsorption but the material is held within the material.

B

Bauxite	-	The name of an earth material which has enough alumina hydrates in it to be suitable for the extraction of alumina on a commercial basis.
Bleeding	-	The removal of a small amount of gas or liquid from a system.
Blending	-	The mixing of two or more materials to a homogenous composition.
Blow-off System	-	A step wise reduction of solution or slurry pressure by flashing off vapor.
Barometric Leg	-	A pipe which permits water to exit from a vacuum system into a seal pot.
Booster Pump	-	An additional pump in series used to increase (boost) the pressure.
Bomb Digest	-	A laboratory test used to determine the percent available alumina and reactive silica of bauxite.
Ball Mill	-	A rotating drum containing a specific charge of various balls which are used for grinding bauxite slurries.

C

Calcination	-	The process of decomposing a material by action of a direct heat. Alumina 1000°C = 1832°F. Chemically combined water is driven from alumina.
Caustic or liquid Caustic Soda	-	Sodium hydroxide (NaOH) is a viscous liquid which is used to dissolve aluminum hydrate from the bauxite. Laboratory reports this as T.C.
Causticization	-	Regeneration of caustic performed by reacting lime with sodium carbonate.
Continuous Precipitation	-	Precipitation using uninterrupted solution and seed flows.
Circulate	-	The pumping around and around of a solution or slurry.

Classifier	-	Equipment which separated particles according to size or specific gravity.
Condensate	-	Water obtained from cooling steam to liquid.
Concentration	-	The strength of a constituent of a solution usually expressed in grams per liter, e.g. 50 g/l alumina.
Combined Water	-	Water which is chemically bonded inside a compound.
Compound	-	An orderly and specific combination of elements.
Conductivity Cell	-	An electrical device which indicates the presence of caustic or acid in condensate, or the alumina to caustic ratio in a liquor for digester blow off ratio control.
Conveyor	-	An endless belt used to transport a material from one location to another.
CCD System	-	Counter Current Decantation System used to wash Red Mud by mixing wash water and mud slurry using counter current flows.
CRD System	-	Continuous Regenerative Digestion System - the system used in a Bayer Plant for heat exchange in the digestion operations.
Crystallization	-	The process of precipitating the dissolved compound from a liquor.
Curing	-	Treatment of a furnace lining material to give it strength.
Cyclone	-	A cone shaped vessel in which a solid/liquid or a solid/gas separation is made.

D

Densitometer	-	Instrument to measure density of materials (slurries).
Density	-	The weight of a specified volume of material - e.g. $\frac{\text{Pound}}{\text{Cu.Ft.}}$
Dp Cell	-	An instrument to measure differential pressure.

Desilication Product (DSP)	-	A hard scale formed in pipes and tanks by the reaction of a soluble silica in the liquor with caustic and alumina. ($3Na_2O \cdot 3Al_2O_3 \cdot 6SiO_2 \cdot 2Na_2CO_3$).
Digestion	-	The dissolution of a material in a solution, e.g. the dissolution of alumina hydrate from bauxite in the digestion operation.
Dilution	-	Any water added to the liquor stream thereby diluting the stream.

E

Evaporation	-	The removal of water by vaporization to concentrate a solution.
Extraction	-	A process of separating a compound from the raw material by selective dissolution.

F

Filters	-	Equipment used to separate a solid from a liquid.
Filtrate	-	The product clear liquor from the filters.
Flashing	-	The vaporization of water caused by reduction in pressure.
Flocculant	-	Synthetic organic compounds composed of long chain molecules (polymers) used to agglomerate mud to achieve good settling and clarity in settlers and washers.
Free Water	-	Water in a material which is not chemically combined.
Fluidize	-	The mixing of a gas and solid so the mixture acts like a fluid.

G

Grizzly	-	An iron grating to separate large boulders prior to crushing operations.
Gross Dilution	-	Total first washer overflow to the blowdown tank.

H

Hammermill	-	A mill which crushes material by the use of swinging hammers.
Heat Exchanger	-	A device for continuous exchange of heat between mediums.
Hydrate	-	See Alumina Trihydrate.
Hydrometer	-	An instrument used for determining the specific gravity of liquids.

I

Indicator	-	The portion of an instrument indicating the quantity or value of a process variable.
Insoluble	-	Materials which are not dissolved in a solution, are said to be insoluble.
Injection	-	The addition of liquid to a slurry.

K

Kiln	-	A furnace for drying or burning of a material using direct firing.

L

Launder	-	A trough used to transport liquids or slurries.
Lime (CaO)	-	The product of calcined limestone.
Limestone	-	The mineral Calcium Carbonate.
Liquor	-	A term loosely applied to process liquid at any stage in the process.
Loss on Ignition	-	The loss in weight of a material after heating for a specified length of time at a specified temperature (300° - 1200°C).
Loose Bulk Density (LBD)	-	The density of a material as measured when a known volume is filled with free flow with no compaction.
LTP	-	Liquor to precipitation.

M

Mesh - The number of openings per square inch of screens used to measure particle sizes. The particle size is generally expressed in reference to that number.

Micron - A unit measure of length of small particles. 1 micron = 1/1,000,000 of a meter.

Microtrac - Instrument used to quickly measure particle size distribution, reporting percentages at different micron sizes. (325 mesh - 44 microns)

Moisture - The free water content of any solid.

Mud Lake - The impounding area for mud disposal.

N

Net Dilution - Total first washer overflow to the blowdown tanks minus total mud settler under flow.

O

Orifice - A plate with a hole drilled in it which is inserted in a pipe line for flow measurement or a flow restriction.

Overflow - Solution overflowing a vessel or tank, e.g. settler overflow.

P

Pan Feeder - A solids feeding device which employs a series of interlocked pans which discharge material from the bottom of storage bin or hopper.

Percent Solids - The weight of solids in a slurry compared to a total weight of solids and liquids expressed as percentage.

pH - The symbol followed by a number indicates the quantity of alkalinity or acidity of a solution. pH-7 indicates a neutral solution while numbers above 7 indicate a base and numbers below seven indicate acidity.

Precipitation - See Crystallization.

Purge	-	The cleansing of equipment or systems using gases or liquids to prevent liquor or solids from entering gauges, also to purge a vessel of unwanted gases before entering.
Pregnant Liquor	-	Bayer process liquor which is saturated with dissolved alumina.

R

Ratio	-	The fraction by which the concentration of a component is related to another component, e.g. concentration of alumina as related to the total caustic concentration.
Red Mud	-	The residue material from bauxite after digestion.
Refractory	-	Heat resistant lining of vessels and ducts: 1. Castable - is a molded refractory. 2. Plastic - a special type of refractory, pliable before curing. 3. Bricks - pre-formed shapes.

S

Saturation	-	A condition wherein a liquor contains the maximum concentration of a compound at given conditions of pressure and temperature.
Scale	-	An undesirable deposit formed on surfaces of tanks and pipelines.
Scale Basket	-	A device for removing scale and trash from the liquor stream.
Seed	-	The alumina trihydrate particles added to liquor to initiate crystallization, such as primary (coarse material) secondary (intermediate) and tray seed (fine material).
Settling	-	Gravity separation of solids from a slurry.
Slaked Lime	-	Lime which had been reacted with water.
Slurry	-	Mixture of solution and solids.
Smelter	-	A plant in the aluminum industry which processes aluminum oxide to aluminum metal.

Sodium Carbonate	-	A compound formed when carbon dioxide reacts with caustic.
Sodium Hydroxide	-	See Caustic.
Solubility	-	The capability of a compound to dissolve in a liquid.
Specific Gravity	-	The index figure comparing the weight of a volume of a material to the weight of the same volume of water.
Spent Liquor	-	Bayer process liquor from the precipitation operation.
Steam Ejector	-	A device used to produce vacuum by expansion of steam.
Stuffing Box	-	The assembly containing packing to prevent leakage around a rotating shaft of pumps etc.
Sump Pit	-	The low spot of a drainage system for collection of solutions and slurries.
Supersaturation	-	The condition wherein the concentration of a compound in a liquid is higher than the normal saturation value.

T

Test Tanks	-	Surge tanks where spent liquor is accumulated for pumping to digestion. Originally liquor in these tanks was tested for composition before charging to digesters.
Thermocouple	-	An electrically operated temperature sensing device.
Total Soda	-	Abbreviated T.S. is a measure in grams per liter the sodium carbonate content of a liquor. This value includes the total caustic content. Also known as total alkali. **Note:** Test tank liquor 75.5 g/l Al_2O_3 183.8 g/l T.C., 251.1 g/l T.A. A/C = 0.411 Ratio = 75.5/183.8, free sodium carbonate = 251.1 - 183.8 = 67.3 g/l C/A = .732 ratio = = 183.8/251/1
Total Caustic	-	Abbreviated T.C. is a measure in grams per liter the caustic content of a liquor reported as equivalent sodium carbonate content.

Tubular Heater	-	A vessel in which liquid is heated by passing it through tubes surrounded by steam.
Tray Seed (Fine Seed)	-	Alumina hydrate particles, from the tray thickeners, which are charged to the precipitation process.

U

Underflow	-	The thickened slurry flow from the bottom of mud settlers, tray settler, or cyclone.

V

Viscosity	-	Property of a fluid which causes it to resist flow e.g. molasses is a viscous liquid.

W

Water Sorption	-	Water (free and combined) which is held by alumina at specified conditions.

X

X-Ray Analyzer	-	An electronic laboratory instrument used to determine the chemical composition of various materials.

BAYER PROCESS

The Bayer process essentially involves dissolving alumina from its most common ore bauxite, by heating with a given quantity of caustic solution, physically separating the residual mud and precipitating alumina hydrate from the pregnant liquor. This process was named after Karl Joseph Bayer who patented the process in 1888.

RAW MATERIALS

Bauxite was first discovered in 1821 by P. Berthier near the French town of Les Baux. Bauxite has the following typical chemical analysis:

50%	Alumina Trihydrate
3%	Alumina Monohydrate
8-12%	Iron Oxide
4%	Silica
7-10%	Moisture
20-28%	Organics; volatiles; other minerals

Fuel Oil is of the #6 variety and commonly referred to as "Bunker C". This is imported and utilized mainly in the kiln operation.

Liquid Caustic is another imported commodity and is the agent used to dissolve alumina from bauxite. This commodity is lost due to:

(a) settling with mud at the lakes
(b) chemical reaction with silica
(c) lost with product as impurity

A typical loss is about .08 ton per ton of alumina produced.

Synthetic Flocculant are imported and used to accelerate the separation of mud residue for the pregnant liquor.

Coal typically comes from Venezuela or Columbia in a moist granular state and used exclusively in the coal boiler. Its use is more economical than fuel oil in the Power House.

Lime is imported from Puerto Rico and used primarily as filter aid. It is also used to scavenge many impurities found in the Bayer process.

Bauxite is imported from Trombetas, Brazil and at Vialco bauxite is mixed with spent liquor in a fixed ratio to form bauxite slurry. The solid fraction of this slurry is then ground to fine particles. This resulting fine slurry is then heated and stored in large insulated holding tanks to deactivate the reactive silica.

A fixed ratio of spent liquor and bauxite slurry is combined and heated to the digestion temperature to allow the trihydrate in the bauxite to dissolve in the spent liquor. This composite mud slurry is then cooled by flashing so that the liquor will not boil at atmospheric pressure. The liquid fraction is now called pregnant liquor and the solid fraction called mud.

The mud slurry is then desanded (here sand is not the sand used for concrete work but rather refers to solid particles of a certain grain size). The recovered sand is washed with water and the sand is transferred to the sand holding pond and eventually to the mud lake.

The fine mud slurry is then treated with specific doses of synthetic flocculant and the resultant allowed to settle in settlers. The solids concentrate into a thick mud slurry which underflows to the mud washing system. The supernatant liquor is expected to be clarified and sent to the Filters for further clarification.

The thickened underflow is washed with water by a counter current decantation process. The overflow from the first washers is sent to the blowdown tank. The underflow from the last washers is sent to the mud filters; the filtrate is returned to the process while the mud cake is repulped and sent to the mud lake.

The overflows from the settlers are filtered to remove the last traces of solid particles of mud.

The filtrate is still hot, near boiling, and is cooled by flashing under vacuum. This flashed steam is used to heat the spent liquor enroute to the test tanks.

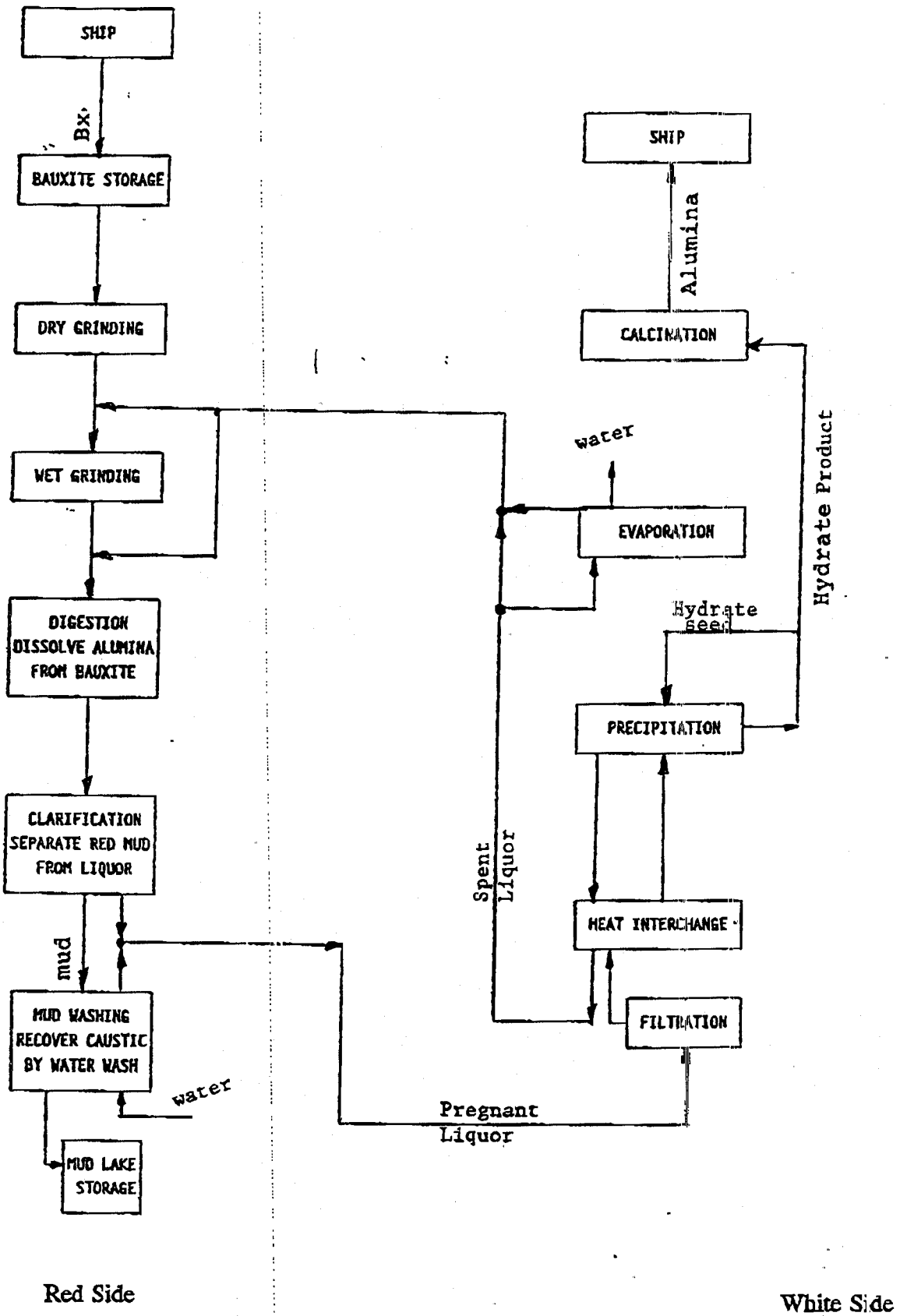
This cooled pregnant liquor is further cooled to a prescribed temperature and sent to the precipitators at regulated flow rates. Hydrate seed are added to the cooled pregnant liquor to activate the precipitation of alumina hydrate from the liquor. At the end of the precipitation process, a mixture of various size seeds are produced and require classification for further use. The coarsest seeds are cycloned into Primary tanks and represent seeds to be calcined. Intermediate size seeds are caught at the Secondaries and the fine seeds are caught at the Trays. The intermediate and fine seeds are used to seed the incoming cooled pregnant liquor.

Primary seeds are transported to the Kilns as seed slurry which is filtered and washed with condensate. The washed seeds are then calcined and cooled to form alumina. The calcined alumina is then stored in silos before shipment.

After alumina hydrate is precipitated from the pregnant liquor, the resulting liquor is called spent liquor. This spent liquor is very dilute and must be concentrated

before recycling to the Digesting process. So a portion of this spent liquor is sent to the evaporators for concentrating, preheated with the flash steam from the filtrate and then reused to dissolve alumina hydrate from bauxite.

BAYER PROCESS AT VIALCO



Red Side

White Side

CHEMICAL REACTIONS IN THE BAYER PROCESS

Digestion

1. $Al_2O_3 \cdot 3H_2O + NaOH \xrightarrow[(143^\circ C)]{(290^\circ F)} 2NaAlO_2 + 4H_2O$

   Alumina trihydrate-gibbsite

2. $Al_2O_3 \cdot H_2O + 2NaOH \xrightarrow[(235^\circ C)]{(455^\circ F)} 2NaAlO_2 + 2H_2O$

   Alumina monohydrate-boehmite

3. $CaO + H_2O \longrightarrow Ca(OH)_2$

   quicklime → hydrated lime

4. $Na_2CO_3 + Ca(OH)_2 \longrightarrow 2NaOH + CaCO_3$

5. $3Ca(OH)_2 + 2NaAlO_2 + 4H_2O \longrightarrow 3CaO \cdot Al_2O_3 \cdot 6H_2O + 2NaOH$

6. $Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O + 6NaOH \longrightarrow 2NaAlO_2 + 2Na_2SiO_3 + 5H_2O$

   Kaolinite

7. $2(Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O) + 2NaAlO_2 + 2Na_2SiO_3 + 2Na_2CO_3 \longrightarrow 3Na_2O \cdot 3Al_2O_3 \cdot 6SiO_2 \cdot 2Na_2CO_3 +$

   Kaolinite → D.S.P. (desilication product)

8. $ALPO_4 + 4NaOH \longrightarrow Na_3PO_4 + NaAlO_2 + 2H_2O$

9. $3Ca(OH)_2 + 2Na_3PO_4 \longrightarrow Ca_3(PO_4)_2 + 6NaOH$

10. $ZnCO_3 + 4NaOH \longrightarrow Na_2ZnO_2 + Na_2CO_3 + 2H_2O$

11. $3Na_2ZnO_2 + 2Na_3PO_4 + 6H_2O \longrightarrow + Zn_3(PO_4)_2 + 12NaOH$

12. Organic carbon compounds + NaOH ⟶ Organic carbon sodium salt

13. Organic carbon sodium salt + O_2 ⟶ $Na_2C_2O_4 + Na_2CO_3$

14. Organic carbon sodium salt + $2O_2$ ⟶ Na_2CO_3

15. $2Na_2C_2O_4 + 4NaOH + O_2 \longrightarrow 4Na_2CO_3 + 2H_2O$

CLARIFICATION

1. $3CaO \bullet Al_2O_3 \bullet 6H_2O + 3Na_2CO_3 + 2H_2O \longrightarrow 2NaAlO_2 + 3CaCO_3 + 4NaOH + 6H_2O$

2. $3CaCO_3 + 2Na_3PO_4 \longrightarrow Ca_3(PO_4)_2 + 3Na_2CO_3$

PRECIPITATION

1. $2NaAlO_2 + 4H_2O \xrightarrow[(60^\circ - 71^\circ C)]{(140^\circ - 160^\circ F)} Al_2O_3 \bullet 3H_2O + 2NaOH$

CALCINATION

1. $Al_2O_3 \bullet 3H_2O \xrightarrow[(1010^\circ C)]{(1850^\circ F)} \underset{SGA}{Al_2O_3} + 3H_2O$

2. $Al_2O_3 \bullet 3H_2O \xrightarrow[(357^\circ C)]{(675^\circ F} \underset{FAH}{Al_2O_3 \bullet 0.5H_2O} + 2.5H_2O$

3. $CaCO_3 \xrightarrow[(1200^\circ C)]{(2192^\circ F)} CaO + CO_2$

UNIT I

PURPOSE:

1. Stores bauxite in a manner that blending of various types can be facilitated on reclamation.
2. Storage and reclamation program must ensure that there is no accumulation of coarse bauxite.
3. Transfer reclaimed bauxite to crushers then ball mills.

OPERATIONS:

1. Store bauxite preferentially under building in designated groups.
2. Reclaim bauxite to satisfy required blend.
3. Crush "dry bauxite"
4. Transfer to ball mill hoppers.

SLURRY MAKE-UP - UNIT 2

Purpose: Bauxite is mixed with Spent Liquor in a given ratio in ball mills and the resulting slurry scalped of small rocks/objects greater than 1/2 inch diameter. The screened slurry is then passed over D.S.M. screens where the coarse fraction is directed to ball mills for further grinding. Heat is added to the slurry in the Sumitomo heaters such that desilication is optimized.

Operations:

1. Mix bauxite and Spent Liquor in fixed proportion in ball mills to obtain bauxite slurry; screen slurry.
2. Use DSM screens to screen this slurry. Send the coarse fraction to the ball mill. It is important to grind the coarse material to less than 100 mesh to allow easy dissolution of alumina from bauxite and prevent blockages in the tanks, T-heaters, sand traps, washers and pumps.
3. Pump slurry to Unit 3.

SLURRY STORAGE - UNIT 3

Purpose: Bauxite slurry is stored at a given temperature to facilitate desilication and phosphorous removal while providing surge capacity.

Operations:

1. Store bauxite slurry in holding tanks.
2. Recirculate slurry from tank to tank as directed while rakes are turning to keep solids uniformly suspended.
3. Heat slurry to target temperature.
4. Clean screen boxes at set intervals to rid the system of coarse materials.

TEST TANKS - UNIT 14

Purpose: To store concentrated Spent Liquor and provide surge for the digestion unit.

Operations:

1. Receives heated Evaporator discharge liquor and maintains 80 - 90% level.
2. Pumps this liquor to the Digesters and the Ball Mills.

DIGESTION - UNIT 4

Purpose:

Dissolve alumina trihydrate from bauxite by heating a fixed amount of bauxite slurry and spent liquor to a given temperature under pressure then cooling the resultant pregnant liquor to a temperature just below its boiling point at atmospheric pressure. This cooling step is important to prevent boiling in the mud settlers and hence settling problems. The live steam condensate produced is the main source of boiler feed water. The flash steam condensate supplies T10-1 demands.

Operations:

1. Spent liquor from the test tanks and bauxite slurry from Unit 3 are heated in digesters in a fixed ratio. The required digest temperature is trimmed in the digesters.

2. The digesters are vented to prevent non-condensable gases from interfering with the heating process and the retention of slurry in the digesters.

3. The dissolution of alumina trihydrate should be complete in the digesters as well as the desilication process.

4. On leaving the last digester, the slurry passes through Flash tanks where the pressure is gradually released to atmospheric pressure and consequently the temperature is decreased below its boiling point.

5. The Flash steam from the Flash tanks is used to preheat the spent liquor in the tubular heaters. Live steam is used to heat the slurry in the digesters. Dirty heaters causes poor heat transfer and low energy efficiency.

6. Live steam condensate is routed directly to the power house and the B.M.U. must be run at a minimum; currently over 50% B.M.U. means that condensate problem is threatening.

7. Flash steam is the main supply to T10-1. If potable water is required as make-up, then condensate problem is threatening.

HEAT INTERCHANGE - UNIT 13

Purpose: To cool filtered pregnant liquor from Unit 5 and heat spent liquor by counter current regenerative flash cooling. The condensate produced is primary source of wash water.

Operations:

1. Pregnant Liquor is cooled by flashing under vacuum in flash tanks.

2. Spent liquor is heated, by the flash steam generated, in tubular heaters.

3. The condensate produced is pumped to T10-1 or T6-9.

4. Good operations is dependent on:

   (a) a leak-free system

   (b) clean heaters

   (c) no water-logging of the heaters.

5. Good heat transfer is essential as this system is an integral part of the plant's evaporation capacity.

EVAPORATION - UNIT 28

Purpose:

Excess water added to the plant system which would cause the plant volume to grown above target must be removed by evaporation. Evaporation is done by heating Spent Liquor from the Precipitation department and allowing it to flash cool under vacuum by stages. The condensate produced is a large source of the gland water supply. Live steam condensate is returned to the Power House.

Operations:

1. Spent Liquor is heated to about 250°F in Tubular heaters then allowed to flash under vacuum in Flash tanks.

2. The temperature differential of each tubular heater must be monitored carefully as lowering of these differential could be caused by:

   (a) leaks in the vacuum system

   (b) insufficient vacuum produced

   (c) water logging of the tubular heaters

   (d) scaling of the tubular heaters

3. The evaporator adds significantly to the cost of energy. Hence, all efforts should be made to minimize extraneous dilution to the process.

SAND SEPARATION - UNIT 4

Purpose:

This area comprises the sand cyclones and sand classifiers.

The sand cyclones are giant cyclones which separate grits and sandy material from the blow-down slurry.

The sand classifiers are to deliquor the grit/sand slurry and wash out the caustic/alumina solution which is recycled to the blow-down tanks.

Operations:

1. Blow down liquor is cycloned, the fine mud slurry is sent to the mud settlers while the sand slurry is sent to the sand classifiers. Poor ball mill efficiency or defective DSM screens will overload the sand separation system and cause blockages.

2. The sand slurry is de-liquored and the sand washed with water; this is done in a counter current mode. Too much washing dilutes the liquor stream and too little washing as well as inefficient de-liquoring causes caustic losses and environmental problems.

3. The washed sand is slurried with sea water and sent to the sand pond.

MUD SETTLERS - UNIT 6D

Purpose: Fine mud slurry is separated into thickened mud slurry and clarified pregnant liquor by accelerated sedimentation. The clarity of the pregnant liquor is very crucial to the efficiency of the filters and the clarity must be carefully protected by the use of synthetic flocculant as well as the control of liquor viscosity and the Phosphorous and Geothite levels in the bauxite.

Operations:

1. Carefully metered synthetic flocculant is added to the fine mud slurry and the solids allowed to settle to a thickened mud slurry which is underflowed. The overflow is clear pregnant liquor.

2. Restricted underflows will cause a build up of mud in the settlers and manifest itself in high torque and high mud level and ultimately mud in the overflow. If the underflow is too much, this usually tends to cause internal disturbance in the settler and increases the mud particles in the overflow.

3. The proper settling rate and timely removal of the thickened mud is key to preventing auto-precipitation.

4. The clarified settler overflow goes to the filters. The thickened mud slurry is pumped to the mud washers (Unit 6).

5. The thickener underflow should be operated in its thickest possible state as this saves on caustic and alumina losses.

MUD WASHERS - UNIT 6

Purpose:

Caustic and alumina in solution is recovered from the settler underflow by stagewise counter current washing with water from T6-9.

Operations:

1. Net dilution (water in excess of that required to balance the last washer underflow) is necessary to help settle the mud slurry in the washers - hence the plant volume must be carefully controlled to assure net dilution.

2. There are normally five stages of wash. The slurry feed of each stage comprise the thickened mud slurry from the previous stage and the clarified overflow from the following stage. At equilibrium, these two flows should be such that the solids content of the combined streams should be less than 65-70 g/l solids. Over this value, settling of the mud will be hindered.

3. It is therefore necessary to have consistent and similar underflow and overflow at each stage. Apart from saving on caustic/alumina losses, item 1 helps to prevent obtaining 60-70 g/l solids in the washer feed.

4. Each stage underflow should be as thick as is practical to save on caustic/alumina losses.

5. Flocculant added to the washer feed must be carefully controlled to obtain the thickest yet flowable underflow.

6. The last washer underflow goes to the Unit 18 drum filters.

MUD DISPOSAL - UNIT 18

Purpose: Last washer underflow is deliquored in preparation for a dry stacking type of mud disposal. Excessive cake moisture will result in a long drying time for the mud and if this condition is protracted, mud lake space will be threatened.

Operation:

1. Filter last washer underflow to produce 40% moisture cake.
2. Sluice this with fly ash slurry and reconstitute as a slurry to get 45% moisture.
3. Pump to mud lake (discharge pressures in excess of 400 psi tend to indicate line blockages).

FLOCCULANT MAKE-UP - UNIT 16

Purpose:

Synthetic Flocculant is the main agent for settling mud slurry to the settlers and washers.

The addition of this solution must be done with precision. A small excess, this agent will cause fast settling of the mud which results in very viscous underflow mud (causing high torques on the rakes) and poor overflow clarities. A small decrease in the flocculant added to the mud slurry will cause slow settling which results in poor overflow clarities and low density underflow muds.

Mistakes on this system are very unforgiving.

Operations:

1. Raw synthetic flocculant must be agitated at given intervals to keep this emulsion uniformly suspended. Non-uniformity of the raw flocculant results in poor quality made-up flocculant solution to the process.

2. Raw flocculant is mixed thoroughly with water in a fixed proportion to obtain a .8% uniform solution.

3. Malfunction of the mixing process may cause "fish eyes" or "lumps" in the finished solution which leads to blockages; another effect is off-specification solution. Remember, flocculant operation is very unforgiving.

4. This .8% solution is fed to the feed wells of the settlers and washers.

MUD LAKES

Purpose: The mud lake receives mud slurry from Unit 18. It is a reservoir for the mud solids. The mud from the slurry settles by sedimentation and the supernatant liquid (called Lake Water) is allowed to evaporate.

Operation: The mud slurry from Unit 18 must be deposited in alternating cells to facilitate the drying cycle.

FILTRATION - UNIT 5

Purpose:

The purpose of these filters is to remove solid particles (mud) such that the filtrate comes out below 10 mg/l solids.

This is one of the most vulnerable areas of the plant and requires timely caustic cleaning, and overhauls to keep them in a state of readiness. Experience shows that filtration decrease as the solids content of the pregnant liquor increases; typically good quality liquor contains about 75 mg/l solids, over 100 mg/l solids leads to guide blockages. The filtrate normally comes out below 10 mg/l solids; over this target adversely impacts the impurities in alumina. Autoprecipitation of the pregnant liquor causes hardening of the filter cloth and must be avoided by not allowing the temperature to fall below 210°F or have the A/C ratio above the given target. Operating instructions must be adhered to.

Operations:

1. Filter through the press filters to obtain about 800 gpm feed.
2. Check filtrate to assure good quality.
3. Caustic clean and do turn around maintenance as prescribed.
4. After about 8 hours the filtration rate will typically fall from about 800 gpm to about 300 gpm. This filter should then be taken off line and washed.
5. Addition of TCA must be precise to assure the goodness of the filtrate. Therefore lime slurry must be properly made to assure good TCA slurry.
6. Lime slurry is also added to the blowdown tank to control phosphorous and enhance the cleansing of the liquor stream. The chemistry of lime is very complex and not fully understood; as a result, lime addition is still an art.

PRECIPITATORS - UNIT 7

Purpose:

The Precipitators are the containers that allow the pregnant liquor to be in intimate contact with hydrate seeds to effect maximum recovery of alumina hydrate from the pregnant liquor. Too much solids in the Precipitators will cause settling out and hence mechanical failure. Too little solids will cause reduced recovery of alumina hydrate.

Operations:

1. A metered quantity of pregnant liquor is introduced in the first precipitator of each row along with a metered quantity of tray seeds to achieve a desired "specific Precipitation Rate" (SPR).

2. The second precipitator in series is fed with a metered quantity of secondary seeds to optimize liquor yield and hydrate seed size control.

3. Some tanks, especially the first six are mechanically stirred. All others are air agitated. Precipitators are reputed to consume about 80% of the plant air supply - every effort should be made to minimize air usage.

PRIMARIES - UNIT 7

Purpose: These tanks are basically seed classifiers, they trap the coarsest hydrate seed and allow the finer seeds to go on to the secondaries.

Operations:

*1. Hydrate seed slurry from the last precipitator enters the Feed Well of the Primary before descending into the tank.

3. The coarsest seeds fall to the bottom and is underflowed to be calcined.

3 The finer seeds stay in suspension and is overflowed to the Secondaries.

4. Thickened secondary underflow is used as coarse seed, while the overflow reports to the trays.

* 1. Currently, last precipitator hydrate slurry is pumped to two batteries of cyclones. The cyclones' underflow goes to the product Primary, while the overflow reports to the fine tray seed stream.

SECONDARIES - UNIT 7

Purpose: These tanks are also seed classifiers and trap intermediate sized seeds. The finest seeds are overflowed to the trays.

Operations:

1. Seed slurry overflowing the Primaries is introduced in a feedwell before descending into the tank.

2. Coarser seeds from the slurry settle to the bottom and are underflowed back to the second precipitator.

3. The finest seeds are overflowed to the trays.

TRAYS - UNIT 8

Purpose: Very fine hydrate seeds are separated from Spent Liquor by a process of sedimentation.

Operations:

1. Fine seed slurry overflowing the Secondaries and equally fed to trays and allowed to sediment.

2. If the tray rakes must be raised because of tray loading, they should be lowered as soon as possible.

3. The seeds caught at the trays are underflowed to the 7C disc filters. Filter cake is dumped to the 7C pugging tank where pregnant liquor is mixed in at a specific ratio. The expected clean spent liquor overflowing the tray goes to the spent liquor tanks.

SPENT LIQUOR STORAGE - UNIT 8

Purpose: These tanks provide surge storage for spent liquor. Disbursement of this liquor to the evaporators is also done.

Operation:

1. Clarified spent liquor overflowing the trays feed these tanks.

2. The bulk of this spent liquor is pumped to the evaporators heat interchange units.

3. A minor portion of this spent liquor is used internally as injection liquor for seed slurry that is too thick to flow.

DISC FILTERS - UNITS 7C & 7D

Purpose:

In general, these filters deliquor the hydrate seed slurry. "Dry" hydrate cake and good clarity filtrate are very desired products.

7C filters deliquors spent liquor from fine seed slurry so that the fine seed may be reslurried with pregnant liquor to charge the precipitators and assure good agglomeration and yield.

7D filters deliquors dilute spent liquor from kiln feed hydrate slurry so that the coarse seed may be slurried with weak filtrate to form a stage of wash before the final wash stage on the pan filters.

Tears in the filter cloth causes passage of solids to the filtrate which is really amounting to seed recycling.

Operation:

1. Ensure highest practical density of seed slurry to the filter to reduce the load on the filter.
2. Filters must be shielded from sunlight to prevent UV attack on the filter cloth when not in use.
3. Caustic cleaning must be scheduled so that the cloth is kept rejuvenated.

PAN FILTERS - UNIT 9

Purpose: These are horizontal filters which deliquors kiln feed hydrate slurry and washes out the traces of caustic. This is an important function as "caustic soda" content of the final alumina is an important customer requirement. It is also important to obtain the driest filter cake possible to economize on energy.

Operation:

1. Feed filter with dense slurry.
2. Assure a good caustic cleaning schedule and no tears in the cloth.
3. Wash bars must spray the minimum hot wash water to achieve the dryest and purest hydrate cake. Dewatering aid is normally added to the last wash bar to accelerate the drying process.

KILNS - UNIT 10

Purpose: This operation serves to drive off water (both free moisture and chemically combined) from the kiln feed hydrate to produce product alumina.

Operation:

1. Final product must have a specified L.O.I. (which is dictated by the customer) and the furnace temperature must be carefully controlled to achieve this.

2. If the alumina is over-burned, the L.O.I. will be low, causing difficulty in dissolving in the smelter's bath. If the alumina is under-burned, the L.O.I. will be low and causes dusting problems in the smelter's pots.

3. Fuel to air ratio must also be controlled to prevent non combustibles and unburned fuel from escaping through the stacks.

E. S. P.
ELECTROSTATIC PRECIPITATORS

Purpose: Invariably, fine alumina particles become airborne in the kiln and must be recaptured before the combustion product is discharged into the atmosphere. The job of the E.S.P. is to capture these airborne particles such that the exit gases meet the E.P.A. standards.

Operation:

1. Operating voltage and current must be at the required standard.
2. Cyclones and attending dust transport system must be operating perfectly well.
3. Precipitation hydrate seeds must be of sufficient toughness to prevent excessive breakages (thermal shock) in the kilns.

VIALCO

MONTHLY/WEEKLY PLANT EFFICIENCY CALCULATIONS

*

Month: nov-1-7-93

	Plant Feed Bauxite	Flash Tank Effluent (DBO) A-Train	B-Train	Mud Settlers Underflow	Last Washer Underflow
Analyses					
L.O.I.	28.5	9.8	10.6	10.7	11.9
Fe2O3	9.2	36.7	37.4	35.6	37.3
SiO2	5.4	17.4	17.6	17.5	16.5
TiO2	2.2	7.2	7.4	7.6	7.4
(T.A.) Al2O3	54.7	20.8	17.9	18.1	16.9
Na2O	-	8.1	9.1	8.8	7.3
CaO	-	-	-	1.7	2.7
TAA	51.1	9.3	9.6	9.1	10.1
THA	50.0	7.0	7.4	6.8	8.5
MHA	1.1	2.3	2.2	2.3	1.6
Theor. MHA		4.2	4.3	4.2	4.3
Corrected THA		5.1	5.3	4.9	5.8
% React. SiO2	4.6 *				
Calculations					
Mud Factor		0.2605	0.2553	0.2648	0.2559
T.Al2O3 extr.		49.2	50.1	49.9	50.3
TAA Al2O3 extr.		48.7	48.6	48.7	48.5
UnCorr. THA Al2O3 extr.		48.2	48.1	48.2	47.8
Corr. THA Al2O3 extr.		48.7	48.6	48.7	48.5
Ext. Efficiencies					
(i) Based on Bx TAA & T.A. Al2O3					
(ii) On T.A.					
(iii) On TAA		95.3	95.2	95.3	94.9
(iv) On UnCorrected THA		96.4	96.2	96.4	95.6

Tons Bauxite per Ton Al2O3 TAA 2.0612
UnCorr. THA 2.0910 *

% Bauxite Used

60 % Trombetas
40 % Guyana (inc

VIALCO

8

MONTHLY/WEEKLY PLANT EFFICIENCY CALCULATIONS

*

Month: nov-8-15-93

Analyses	Plant Feed Bauxite	Flash Tank Effluent (DBO) A-Train	Flash Tank Effluent (DBO) B-Train	Mud Settlers Underflow	Last Washer Underflow
L.O.I.	28.4	10.7	11.2	11.7	11.6
Fe2O3	9.2	35.6	36.2	33.6	33.3
SiO2	5.0	17.4	17.3	17.4	17.3
TiO2	1.8	7.5	7.4	7.5	7.6
(T.A.) Al2O3	55.6	20.6	19.5	19.9	19.4
Na2O	-	8.2	8.4	7.9	8.2
CaO	-	-	-	2.0	2.6
TAA	52.5	11.0	11.3	11.7	11.1
THA	50.8	8.6	9.1	9.4	9.2
MHA	1.7	2.4	2.2	2.3	1.9
Theor. MHA		6.7	6.7	6.4	6.3
Corrected THA		4.3	4.6	5.3	4.8
% React. SiO2	4.6 *				
Calculations					
Mud Factor		0.2552	0.2523	0.2676	0.2689
T.Al2O3 extr.		50.3	50.7	50.3	50.4
TAA Al2O3 extr.		49.7	49.6	49.4	49.5
UnCorr. THA Al2O3 extr.		48.6	48.5	48.3	48.3
Corr. THA Al2O3 extr.		49.7	49.6	49.4	49.5
Ext. Efficiencies					
(i) Based on Bx TAA & T.A. Al2O3					
(ii) On T.A.					
(iii) On TAA					
(iv) On UnCorrected THA		94.7	94.6	94.0	94.3
		95.7	95.5	95.0	95.1

Tons Bauxite per Ton Al2O3 TAA 2.0196
UnCorr. THA 2.0693 *

% Bauxite Used

60 % Trombetas
40 % Guyana

VIALCO

MONTHLY/WEEKLY PLANT EFFICIENCY CALCULATIONS

Month: nov-16-23-93

Analyses	Plant Feed Bauxite	Flash Tank Effluent (DEO) A-Train	Flash Tank Effluent (DEO) B-Train	Mud Settlers Underflow	Last Washer Underflow
L.O.I.	28.6	11.2	11.4	11.3	11.8
Fe2O3	8.0	30.4	32.2	30.1	32.4
SiO2	4.9	18.4	18.4	19.4	18.7
TiO2	2.1	8.3	7.7	8.3	7.9
(T.A.) Al2O3	56.4	22.7	22.0	19.7	17.9
Na2O	-	9.0	8.3	9.2	8.6
CaO	-	-	-	2.0	2.7
TAA	54.2	12.5	12.5	11.0	12.3
THA	51.8	8.9	9.7	8.6	9.6
MHA	2.4	3.6	2.8	2.4	2.7
Theor. MHA		9.2	9.5	9.1	9.6
Corrected THA		3.3	3.0	1.9	2.7
% React. SiO2	4.6 *				
Calculations					
Mud Factor		0.2610	0.2531	0.2630	0.2506
T.Al2O3 extr.		50.5	50.8	51.2	51.9
TAA Al2O3 extr.		50.9	51.0	51.3	51.1
UnCorr. THA AL2O3 extr.		49.5	49.3	49.5	49.4
Corr. THA Al2O3 extr.		50.9	51.0	51.3	51.1
Ext. Efficiencies					
(i) Based on Bx TAA & T.A. Al2O3					
(ii) On T.A.					
(iii) On TAA					
(iv) On UnCorrected THA		94.0	94.2	94.7	94.3
		95.5	95.3	95.6	95.4

Tons Bauxite per Ton Al2O3 TAA 1.9563
UnCorr. THA 2.0245 *

% Bauxite Used

60 % Trombetas
40 % Guyana (ABC)

VIALCO

MONTHLY/WEEKLY PLANT EFFICIENCY CALCULATIONS

*

Month: nov-24-30-93

	Plant Feed Bauxite	Flash Tank Effluent (DBO) A-Train	B-Train	Mud Settlers Underflow	Last Washer Underflow
Analyses					
L.O.I.	29.1	10.6	10.6	10.7	11.3
Fe2O3	7.0	34.9	34.8	33.6	31.8
SiO2	4.8	19.8	19.6	19.9	21.3
TiO2	2.4	8.8	8.4	8.7	8.8
(T.A.) Al2O3	56.7	18.4	18.6	16.6	16.9
Na2O	-	7.5	8.0	8.7	7.3
CaO	-	-	-	1.8	2.6
TAA	53.1	10.5	11.1	10.3	11.6
THA	51.8	8.0	8.5	8.1	9.1
MHA	1.3	2.5	2.6	2.2	2.5
Theor. MHA		6.0	6.0	5.8	5.6
Corrected THA		4.5	5.1	4.5	6.0
% React. SiO2	4.6 *				
Calculations					
Mud Factor		0.2151	0.2176	0.2222	0.2315
T.Al2O3 extr.		52.7	52.7	53.0	52.8
TAA Al2O3 extr.		50.8	50.7	50.8	50.4
UnCorr. THA AL2O3 extr.		50.1	50.0	50.0	49.7
Corr. THA Al2O3 extr.		50.8	50.7	50.8	50.4
Ext. Efficiencies					
(i) Based on Bx TAA & T.A. Al2O3					
(ii) On T.A.					
(iii) On TAA		95.7	95.5	95.7	94.9
(iv) On UnCorrected THA		96.7	96.4	96.5	95.9

Tons Bauxite per Ton Al2O3 TAA 1.9836
UnCorr. THA 2.0124 *

% Bauxite Used 60 % Trombetas
40 % Guyana (ABC)

MONTHLY/WEEKLY PLANT EFFICIENCY CALCULATIONS

* Month: DEC-14-21-94

	Plant Feed Bauxite	Flash Tank Effluent (DBO) A-Train	B-Train	Mud Settlers Underflow	Last Washer Underflow
Analyses					
L.O.I.	29.7	11.0	10.8	11.6	11.3
Fe2O3	5.5	26.4	26.7	25.2	25.9
SiO2	4.9	22.1	22.1	21.6	21.2
TiO2	2.4	11.1	11.1	11.0	10.5
(T.A.) Al2O3	57.5	24.2	24.5	22.1	22.5
Na2O	-	5.2	4.8	4.7	4.2
CaO	-	-	-	3.8	4.4
TAA	54.2	11.6	10.5	11.2	11.9
THA	52.8	7.9	7.0	7.1	8.2
MHA	1.4	3.7	3.5	4.1	3.7
Theor. MHA		6.6	6.7	6.4	6.5
Corrected THA		5.0	3.8	4.8	5.4
% React. SiO2	4.23 *				
Calculations					
Mud Factor		0.2107	0.2090	0.2182	0.2170
T.Al2O3 extr.		52.4	52.4	52.7	52.6
TAA Al2O3 extr.		51.8	52.0	51.8	51.6
UnCorr. THA AL2O3 extr.		51.1	51.3	51.3	51.0
Corr. THA Al2O3 extr.		51.8	52.0	51.8	51.6
Ext. Efficiencies					
(i) Based on Bx TAA & T.A. Al2O3					
(ii) On T.A.					
(iii) On TAA		95.5	96.0	95.5	95.2
(iv) On UnCorrected THA		96.8	97.2	97.1	96.6

Tons Bauxite per Ton Al2O3 TAA 1.9373
UnCorr. THA 1.9600 *

Bauxite Used 60 % Trombetas
40 % Guyana (ABC)

Bauxite and Red Mud Analysis, St. Croix

SAMPLE	NA2O %	AL2O3 %	SIO2 %	P2O5 %	SO3 %	CAO %	H2O %	TIO2 %	V2O5 %	CR2O3 %	MNO %	FE2O3 %	ZRO2 %	MGO %	H2O DIFF
P/BX/1WOCT94		52.829	5.016	0.118	0.146		0.021	1.413	0.045	0.024		8.702	0.112		31.575
P/BX/2WOCT94		52.243	4.945	0.065	0.112		0.026	1.457	0.033	0.024		9.487	0.134		31.472
P/BX/3WOCT94		51.089	5.270	0.067	0.137		0.014	1.399	0.043	0.025		10.563	0.134		31.258
P/BX/4WOCT94		49.627	4.772	0.054	0.147		0.021	1.484	0.040	0.024		9.245	0.105		34.482
P/BX/1WNOV94		51.008	4.793	0.091	0.138		0.021	1.252	0.026	0.023		10.323	0.111		32.215
P/BX/2WNOV94		52.478	5.288	0.156	0.130	0.013	0.021	1.419	0.036	0.018		8.740	0.126		31.574
P/BX/3WNOV94		51.255	3.960	0.047	0.100		0.022	1.081	0.024	0.016		10.195	0.111		33.189
P/BX/4WNOV94		48.916	4.479	0.055	0.116		0.020	0.958	0.032	0.023		10.370	0.086		34.944
P/BX/1WDEC94		50.780	4.202	0.071	0.115		0.025	1.146	0.036	0.014		10.278	0.100		33.231
P/BX/2WDEC94		53.007	4.661	0.164	0.095	0.163	0.020	2.000	0.054	0.039	0.001	6.633	0.149		33.011
P/BX/3WDEC94		53.331	4.855	0.167	0.120	0.212	0.030	2.389	0.060	0.034	0.001	5.479	0.183		33.136
P/BX/4WDEC94		51.930	4.132	0.106	0.100	1.098	0.028	1.791	0.039	0.028	0.002	6.629	0.149		33.966
T/6/7/1WOCT94	3.628	24.180	19.027	1.681	2.257	1.669	0.010	6.039	0.003	0.066		29.617	0.373		11.209
T/6/7/2WOCT94	3.708	25.824	19.708	2.217	2.437	2.504	0.003	7.216	0.021	0.081	0.013	35.814	0.455		0.000
T/6/7/3WOCT94	3.990	25.911	19.325	1.006	2.166	2.462	0.005	6.253	0.003	0.060		34.000	0.376		4.420
T/6/7/4WOCT94	3.195	24.435	16.786	2.402	2.165	3.272	0.018	6.781	0.014	0.065		38.473	0.385		0.000
T/6/7/1WNOV94	3.650	24.771	18.257	1.017	2.345	3.624		7.066	0.019	0.093		38.696	0.464		0.000
T/6/7/2WNOV94	3.443	24.796	18.416	0.949	2.415	2.660		5.478	0.016	0.061		39.636	0.363		1.565
T/6/7/3WNOV94	3.555	24.686	18.229	1.150	2.241	3.263		6.734	0.005	0.069		36.425	0.386		4.258
T/6/7/4WNOV94	3.099	25.017	19.133	1.810	1.976	2.937	0.004	4.881	0.018	0.041		37.756	0.341		3.687
T/6/7/1WDEC94	2.956	27.346	16.926	0.952	2.358	3.577	0.003	4.752	0.025	0.052		40.719	0.333		0.000
T/6/7/2WDEC94	3.475	27.115	18.252	1.757	3.971	3.373	0.020	6.211	0.021	0.072		35.315	0.419		0.000
T/6/7/3WDEC94	4.145	28.179	21.161	2.171	2.605	4.396	0.010	10.479		0.142	0.017	25.870	0.625		0.000
T/6/7/4WDEC94	4.273	27.100	20.129	2.537	2.746	5.876		9.908		0.139	0.020	26.610	0.602		0.000

Bauxite

Red Mud

Appendix L

Desalinization Documentation

ST. CROIX RENAISSANCE

August 21, 2006

Dean C. Plaskett, Esq.
Commissioner
Virgin Islands Department of Planning
and Natural Resources
#45 Estate Mars Hill
Frederiksted, VI 00840

RE: St. Croix Renaissance Group, LLLP
Major CZM Permit No. CZX 25-94L

Dear Commissioner Plaskett:

In response to Item 3 of your request made on August 7, 2006, pertaining to desalinization plant documentation of activity that has occurred from June 14, 2002 to the present at St. Croix Renaissance Park, attached herewith is a transmittal of our records to satisfy your inquiry.

I remain available to answer any further questions you may have concerning SCRG's desalinization operations.

Sincerely,

Myron A. Allick
Vice President of Operations

Encl.

ST. CROIX RENAISSANCE GROUP, LLLP
1 Estate Anguilla • P.O. Box 1525 • Kingshill • St. Croix • US Virgin Islands 00851 - 1525
Phone (340) 778-2323 • Fax: (340) 778-1400 / (340) 778-8742

ST. CROIX RENAISSANCE GROUP WATER SALES

June 2002 to August 2006

YEAR	SOLD TO HOVENSA	SOLD TO WATER TRUCKS	ESTIMATE FOR IN HOUSE USE[1]	TOTAL WATER PRODUCED	ESTIMATED BRINE PRODUCED[2]
2002	6,856,165		550,000	7,406,165	10,580,000
2003		1,185,820	1,100,000	2,285,820	3,266,000
2004	6,000,000	625,000	1,100,000	7,725,000	11,036,000
2005	6,640,000	223,785	1,100,000	7,963,785	11,377,000
2006	10,675,000	1,170,159	650,000	12,495,159	17,850,000
TOTALS	**30,171,165**	**3,204,764**	**4,500,000**	**37,875,929**	**54,109,000[3]**

[1] In-house estimate is based on 3,000 gallons per day consumption.
[2] Brine production estimate is based on a concentration ratio of 1.7:1
[3] All brine is contained in the on-site cooling ponds where it evaporates.

NOTE: Water sales statistics reported in gallons.

ST. CROIX RENAISSANCE GROUP WATER SALES

June 2002 to August 2006

YEAR	SOLD TO HOVENSA	SOLD TO WATER TRUCKS	ESTIMATE FOR IN HOUSE USE[1]	TOTAL WATER PRODUCED	ESTIMATED BRINE PRODUCED[3]
2002	6,856,165		550,000	7,406,165	10,580,000
2003		1,185,820	1,100,000	2,285,820	3,266,000
2004	6,000,000	625,000	1,100,000	7,725,000	11,036,000
2005	6,640,000	223,785	1,100,000	7,963,785	11,377,000
2006	10,675,000	1,170,159	650,000	12,495,159	17,850,000
TOTALS	**30,171,165**	**3,204,764**	**4,500,000**	**37,875,929**	**54,109,000[3]**

[1] In-house estimate is based on 3,000 gallons per day consumption.
[2] Brine production estimate is based on a concentration ratio of 1.7:1
[3] All brine is contained in the on-site cooling ponds where it evaporates.

Tank T-30-1 Release Information

ST. CROIX RENAISSANCE

July 14, 2006

Clanicia Pelle, PhD
Environmental Program Manager
Division of Environmental Protection
Department of Planning and Natural Resources
45 Mars Hill
Frederiksted, VI 00840

Dear Dr. Pelle:

Following discovery of oil beneath St. Croix Renaissance Group (SCRG) Tank T-30-1, Dr. Ken Haines, Environmental Consultant, reviewed the site, and recommended the following approach to remediating the problem.

Cleanup Of Heavy Oil Beneath The Crushed Stone In Tank T-30-1

Background
When the existing steel plate floor was removed from Tank T-30-1 in July, 2006, it was discovered that there was some residual heavy oil (#6 oil) below the crushed stone ballast and on top of the caliche soil that was used to fill inside the ring foundation wall supporting the tank wall. The oil puddle is believed to vary between three inches deep and a thin film over three quarters of the tank bottom area. There are weep holes (short two-inch steel pipes through the foundation wall) that allow any fluids beneath the floor of the tank to drain to the exterior of the foundation. Some of the oil has passed through the gravel, flowing over the caliche base, and reached the weep holes on the west side of the tank. This oil is being cleaned up from where it has accumulated next to the tank wall, outside of the foundation. The weep holes will be plugged to prevent the escape of additional oil until standing oil can be removed from inside the tank, as discussed below.

Plan for handling the remainder of the oil under the ballast
Potable water with an added surfactant will be introduced onto the ballast at the edge of the limit of the oil puddle under the ballast. The surfactant will facilitate removal of the oil from the surface of the stones in the ballast and from the surface of the caliche soil substrate below the ballast. At the same time that the water is sprayed on the ballast, the resulting oil/water mixture

will be pumped out from a trench in the gravel on the west side of the tank. The oil and water will separate in the tank truck, so that oil can be pumped to storage and the water can be pumped into an onsite oil/water separator before discharge into the onsite wastewater system. This work will be done by General Engineering Corporation (GEC). GEC has used this method successfully for similar oil spills in other tanks at other locations.

When the oil/water removal from inside the tank is complete, the weeps on the west side of the tank will be reopened, and spouts will be welded to them so that receptacles, such as half-drums, can be placed under them to collect any residual oil that may migrate there at a later time. The receptacles will be monitored daily for accumulations of oil and will be emptied on an as-needed basis.

The above-described process of removing the oil will allow the oil to be extracted, without having to remove the ballast covering an area of approximately 13,000 square feet in a layer 12 to 14 inches thick, and then having to dispose of the contaminated stone. Any residual oil will be present as a film only and will not be a risk to ground water. Percolation tests to determine the permeability of compacted caliche to #6 oil were performed by VIALCO in 1994 and caliche was found to be highly impermeable to penetration by the oil. The tests demonstrated that #6 oil penetrated compacted caliche soil 1/8" in 5 days and 3/16" in 15 days from a bottomless oil drum that was approximately half full with #6 oil.

•

Though there is no apparent threat of contamination, SCRG is moving expeditiously to address all potential concerns. Should you need to further discuss the process for clean up cited above, I may be contacted at 340-778-2323 x672.

Thank you for your usual prompt attention to this matter.

Sincerely,

Myron A. Allick
Vice President of Operations

xc: Jim C. Casey
Virgin Islands Coordinator
EPA - Caribbean Environmental Protection Division
1336 Beltjen Rd, 1st Floor
Charlotte Amalie, VI 00802

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES

DEPARTMENT OF PLANNING AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
[illegible]
[illegible]
[illegible]

August 8, 2006

Mr. Myron Allick
Vice President of Operations
St. Croix Renaissance Group, LLLP
1 Estate Anguilla
P.O. Box 1525, Kingshill
St. Croix, VI 00851-1525

Subject: **Approval of work plan for the removal of oil beneath Tank T-30-1**

Dear Mr. Allick:

The Department of Planning and Natural Resources – Division of Environmental Protection has reviewed your proposal dated July 14, 2006 regarding the above referenced matter. The following supplemental information was also reviewed in support of the proposal.

1. Tank T-30-1 construction specifications, dated December 24, 1963 – Harvey Aluminum.
2. Percolation test rates and porosity of the caliche compacted base for tank T-30-1 – dated March 18, 1994 and January 20, 1995 - VIALCO.
3. API 653 certification and engineering evaluation for tank T-30-1 dated April 6, 2006 – St. Croix Renaissance.

Based on the review, and subsequent site inspection conducted on August 7, 2006, the work plan is CONDITIONALLY APPROVED as follows:

- All rinse water, containing oil/water mixture must be containerized, and shall NOT be discharged into the onsite oil/water separator and/or onsite wastewater system without the appropriate TPDES permit.
- The amount of product recovered will be recorded and the final disposition of the oil/water mixture (including waste manifests, if any) will be discussed in the complete report, which must be submitted to the Department within 30 days of completion of remedial activities.

If you need additional information, please contact Syed Syedali, Environmental Program Manager at 773-1082 extension 2276. Thank you.

Sincerely,

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CARIBBEAN ENVIRONMENTAL PROTECTION DIVISION
THE TUNICK BUILDING
1336 BELTJEN ROAD - 1ST FLOOR
ST. THOMAS, USVI 00802

Acknowledgment of Receipt of Documents from the U.S. Environmental Protection Agency

Your signature below confirms that you have received the documents described from EPA's Virgin Island Office.

Document Title: ***November 02, 2006 Correspondence*** from EPA addressed to Aaron Hutchins, Director of Division of Environmental Protection, VIDPNR

Date Received: November 03, 2006

Recipient's Signature: [signature]

In addition, review of data generated from routine surveys at a groundwater monitoring well (VW-1) immediately in the vicinity of Tank T-30-1, revealed zero measurement of free petroleum product. Further, chemical analysis for hazardous constituents associated with petroleum product and wastes at another groundwater monitoring well (VW-16) situated about 750 feet west/southwest of Tank T-30-1 resulted as non-detected (Referenced in HOVIC's July 30, 2006 Semiannual PSH Report, St. Croix Alumina Site Administrative Order Docket No. RCRA-0202001-7301). Such data suggest that there ***may not*** be an existing release of petroleum residual from the base of Tank T-30-1 into the groundwater table, or that existing release of product has not migrated beyond the area immediately beneath the base of the tank. However, in the event that future sample analyses reveal the presence of petroleum product and associated hazardous constituents in the groundwater table beneath SCRG's property, EPA is prepared to take appropriate corrective actions, within the scope of the agency's existing enforcement action (St. Croix Alumina Site Administrative Order Docket No. RCRA-0202001-7301).

September 25 - 29, 2006 SPCC Inspections

During the above period, EPA personnel, accompanied by DEP staff performed SPCC inspections at identified facilities in the Virgin Islands, including SCRG's facility in St. Croix, on September 28, 2006. As a result of the focal inspection at SCRG, EPA determined that Tank T-30-1 (which is currently being refurbished by SCRG, with intention to use the vessel to store ethanol) is not violating provisions of federal SPCC regulations; because the tank is currently not in use, and does not contain petroleum related product. Further, when the tank is refurbished, and used for storage of ethanol in the future, the operation will not be subject to federal SPCC regulations, because ethanol is not classified as a petroleum related product.

In summary, findings derived as result of the recent environmental media inspections performed at SCRG's facility by EPA have not revealed any 'major regulatory' violations with the exception of issues of concern outlined in EPA's Notice of Violation, pursuant to Section 3007 of RCRA, in the agency's September 29, 2006 correspondence (See a copy attached for your agency's information).

Should you have any questions concerning these matters, please contact Mr. Jim C. Casey at (340) 714-2333.

Sincerely,

Carl-Axel Soderberg, Director
Caribbean Environmental Protection Division, EPA-Reg 2

Attachment: EPA's September 29, 2006 correspondence to SCRG

cc: Myron Allick, Vice President of Operations, St. Croix Renaissance Group
Jim C. Casey, V.I. Coordinator, EPA-CEPD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CARIBBEAN ENVIRONMENTAL PROTECTION DIVISION
CENTRO EUROPA BUILDING, SUITE 417
1492 PONCE DE LEON AVENUE, STOP 22
SAN JUAN, PR 00907-4127

November 02, 2006

Mr. Aaron Hutchins, Director
Division of Environmental Protection
V.I. Department of Planning and Natural Resources
45 Mars Hill, Frederiksted
St. Croix, V.I. 00845

RECEIVED 11/3/06

Dear Mr. Hutchins:

This is a follow-up to an October 18, 2006 telephone conference discussion with the Division of Environmental Protection (DEP), during which we shared with you and your staff the results of recent inspections that the U.S. Environmental Protection Agency (EPA) performed at the facility of St. Croix Renaissance Group (SCRG) in St. Croix, Virgin Islands. A summary of our discussion is presented below:

July 29, 2006 RCRA Inspection
EPA personnel, accompanied by DEP staff, performed a RCRA Inspection at the above referenced facility. The findings of this inspection are summarized in a correspondence addressed to SCRG by EPA, dated September 29, 2006, on which your agency was copied. In the September 29, 2006 correspondence, EPA has requested that SCRG submit additional information related to management of petroleum product wastes removed from Tank T-30-1. EPA will assess all additional information submitted by SCRG to determine the facility's compliance with applicable RCRA requirements. Especially, regulating management of hazardous wastes. EPA will inform DEP whether the agency plans additional follow-up enforcement actions against SCRG as a result of further findings of violation.

September14, 2006 Reconnaissance Inspection at SCRG
EPA's personnel performed a Reconnaissance Inspection at SCRG (related to Tank T-30-1), following implementation of the company's remedial plan (July 14, 2006 plan submitted by SCRG for remediation of petroleum contaminated gravel in the base of Tank T-30-1; and subsequently approved by DEP). Inspection of the existing tank facility revealed that there were no visible discharge of pollutants coming from the containment structure at the base of Tank T-30-1, nor any visible signs of potential structural integrity problems;(such as, crakes, fissures, and wet areas immediately outside of the tank) in the concrete base of the tank. It is EPA's assessment that no violations of the federal Oil Pollution Act were evident at the time ; and that, the potential for such occurrences are minimal, seeing that receiving waters of the United States that can be adversely impacted are not in the immediate vicinity of Tank T-30-1.

F-6

Page of

PORT / TERMINAL: [illegible]	SGS	OFFICE: St Croix	TEL: 340 778 5171
VESSEL: VOY # :		INSPECTOR(S): [illegible]	SGS FILE: 830066
DATE : 6/26/2006 COMMODITY: Fuel Oil		CLIENT: St Croix Renaissance	REF:

☐ **SAMPLING REPORT** ☐ **SAMPLE RECEIPT ***
Oil Gas & Chemicals Services Division.

☐ AS SAMPLING ALONE ☐ WITH CUSTODY TRANSFER ☐ AS PRESAMPLIN
☐ NON STANDARD RETAIN _____ DAYS ☐ INDEFINITE

THE BILL OF LADING ON REVERSE OF F-6C MUST BE COMPLETED IF SAMPLES ARE TRANSPORTED BY ROAD

SAMPLE ORIGIN	TYPE / SIZE	DATE / TIME	SEAL #	☐ NON STANDARD RETAIN** ☐ ALL ☐ INDIVIDUAL DAYS ☐ INDEFINITE	SAMPLE ORIGIN	TYPE / SIZE	DATE / TIME	SEAL #	☐ NON STANDARD RETAIN** ☐ ALL ☐ INDIVIDUAL DAYS ☐ INDEFINITE
T 30-1	Crude	6/26/03 1480	1/2	____ DAYS ☐ INDEFINITE					____ DAYS ☐ INDEFINITE
				____ DAYS ☐ INDEFINITE					____ DAYS ☐ INDEFINITE
				____ DAYS ☐ INDEFINITE					____ DAYS ☐ INDEFINITE
				____ DAYS ☐ INDEFINITE					____ DAYS ☐ INDEFINITE
				____ DAYS ☐ INDEFINITE					____ DAYS ☐ INDEFINITE
				____ DAYS ☐ INDEFINITE					____ DAYS ☐ INDEFINITE

**REQUESTED BY: _____
DATE: _____
INDEFINITE IS = _____ MONTHS _____ YEARS

REMARKS:

STORAGE MARKINGS:

* SAMPLES RECEIVED BY :

MASTER / CH OFFICER

TERMINAL/LAB REP

OTHER, SPECIFY

INSPECTOR

SAMPLES DRAWN BY : SAMPLING WITNESSED BY :

SAMPLES TO SGS SAMPLE RECEIPT AREA

DEPOSITED BY : [illegible] DATE : 6/26/06 TIME : 1645
RECEIVED BY : J. Wade DATE : 6/26/06 TIME : 1645
DISPOSAL DATE IF NON STANDARD RETAIN: DATE :

* The samples represented by this receipt are left in your custody according to the instructions from our customers and/or your request.

We draw your attention to the fact that you must ensure that these samples are transported, stored and disposed of in a safe and legal manner. SGS cannot be held responsible. Please refer to the respective MSDS (Material Safety Data Sheets) which the producer or owner of the product must make available to you and any other appropriate safety, transportation, storage, disposal, composition, and labeling information. You may elect to return the above samples to us for disposal or packing and freighting for your account upon receipt of your order to the appropriate SGS office.

Your signature above indicates that you have read and understood this notice. If you have any questions, please call the SGS office indicated above.

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Services rendered according to published General Terms and Conditions

SGS

INVOICE

Invoice Number : 10701121
Date : 05-JUL-06
Page : 1 /1

Customer Number 122045
Currency USD
Payment Term Net due upon receipt

SGS Order No. 656486

ST CROIX RENAISSANCE GROUP LLLP
#1 ANGUILLA MELVIN H EVANS HWY
POB 1525
KINGSHILL VI 00851
United States

Attention : JOSE FIGUEROA

Unit Type Shoretank
Primary Unit Tank No T30-1
Product Description Fuel Oil
Reference Order OGC850066

Item	Description	Quantity	UoM	Unit Price	Net Amount	Amount
32652	Sampling (shoretank) 630.00 USD Discount: 20% External Execution Location Renaissance, Krausse Lagoon Actual Execution Date(Start-End) June 27, 2006	1	TNK		504.00	504.00
33700	Analysis 1257.00 USD Discount: 20%	1	Ea	1,005.60	1,005.60	1,005.60

No Sales Tax 0.00

Net Amount USD 1,509.60
Sum of Tax USD 0.00

Total Amount USD 1,509.60

Contact Name:	CAMPANILE, BRANDI
Direct line:	(281) 478-8232
E-mail:	brandi.campanile@sgs.com

Please Remit To:
FOR WIRE TRANSFER PAYMENTS:
CITIBANK - NEW CASTLE, DELAWARE

ACCOUNT #3880-5189
ABA #031100209
SWIFT CODE: CITIUS33

PLEASE INCLUDE INVOICE NUMBER WITH PAYMENT DETAIL

FOR CHECK PAYMENTS:
PO BOX 2502
CAROL STREAM IL 60132-2502
United States

ORIGINAL

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SGS

COPY

P.O. BOX 1528 Kingshill
St. Croix U.S.V.I.
Tel: (340) 778-5471
Fax: (340) 778-5589

File # : 830066
Client : RENAISSANCE
Tank T30-1
Date : June 27, 2006
Product : FUEL OIL

CERTIFICATE OF ANALYSIS

Based upon samples drawn by SGS inspector and analysis performed by the SGS Laboratory.

METHOD	TEST	TANK RESULTS
D 287	API Gravity	15.5
D 93	Flash Point F Pensky-Marten, F	200
D 95	Water by Distillation, vol %	1.0
D 445	Viscosity cSt @ 122 F	1517.34
D 473	Sediment By Extraction, vol%	0.31
D 2622	Total Sulfur, wt%	0.47

SGS OIL, GAS AND CHEMICAL SERVICES

LIMITATIONS OF LIABILITY

IMPORTANT: No person should accept, use or rely upon SGS-OGC documents or the information contained in them without understanding all of the details of the engagements under which they were issued. SGS-OGC conducts inspection, testing, and quality control services pursuant to agreements with and instructions from its clients ("Services"). In the course of performing such services, SGS-OGC develops information ("Information") and generates documents such as reports and certificates ("Documents"). By accepting, using or relying upon Information or Documents, the clients for whom the Services are performed, and any person who relies upon the information or the Documents, agree to the following terms and conditions.

1. Any use of/or reliance upon the Information or the Documents by the clients is conditioned upon the timely payment of fees. Client agrees to pay late charges of 1.5% per month on all invoices not paid within 30 days, plus collection costs including attorneys' fees.

2. SGS-OGC does not, by performing Services or by issuing Documents, assume, abridge, abrogate, or undertake to discharge any duty or responsibility of the client to any person or entity.

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4. SGS-OGC warrants that it will perform only the Services agreed upon with its client in a workmanlike manner. SGS-OGC makes no further warranty of any kind, expressed or implied.

5. Any person accepting, using or relying upon Information or Documents agrees in consideration for SGS-OGC performing the service at the fee charged that the professional liability of SGS-OGC is limited to ten times the amount of fee paid for the service, or $25,000, whichever is less.

6. SGS-OGC expressly disclaims liability as an insurer or guarantor. Any client or other person seeking greater protection from loss or damage than is provided for herein should obtain appropriate insurance.

7. Acceptance, use or reliance upon Information or Documents from SGS-OGC shall be governed by the laws of the State where the Services were performed.

8. No person is authorized to waive or modify any of the foregoing terms and conditions orally. Any written waiver or modification must be signed by a senior officer of SGS-OGC Houston, TX.

9. SGS-OGC hereby objects to any conflicting terms contained in any acceptance submitted by client.

10. All costs associated with compliance with any subpoena(s) for documents, testimony in a court of law, or for any other purpose relating to work performed for that Client, shall be paid by Client. Client shall also pay SGS-OGC then existing standard fees for consulting, deposition and trial testimony and all expenses related there to.

Precision parameters apply in the determination of the above test results. Also refer to ASTM D 3244-77/83, IP 367 and appendix E of IP standard methods for analysis and testing for the utilization of the test data to determine conformance with specifications.

VIRGIN ISLANDS REGULATED WASTE MANAGEMENT, INC.
Post Office Box 222994. Christiansted, St. Croix
U.S. Virgin Islands 00822
Tel: 340-773-9121 • Fax: 340-778-0855

August 21, 2006

c/o Harry Finley for
GeoNet Ethanol
One Estate Anguilla
P.O. Box 2090
Kingshill, St. Croix USVI 00851

Report: Oil Recovery Tank #1

Dear Mr. Finley:

The following is the scope of work and report summary regarding the above stated project. Please contact me at 340-773-9121 with any questions or concerns.

SCOPE OF WORK

Final Timeline 2 days

1. Recover heavy #6 oil from trench using a vacuum tank truck.
2. Apply surfactant/degreaser to impacted gravel.
3. Pressure wash stone/gravel to flush out excess oil towards trench.
4. Collect and recover Heavy #6 oil, surfactant/degreaser and water solution trapped by trench.
5. Remove and transport oily waste to designated storage tank.

REPORT SUMMARY

The following is a summary of the Scope of Work performed by Virgin Islands Regulated Waste Management (VIRWM) in association with the oil recovery in Tank # 1. The project consisted of the recovery of heavy #6 oil from the stone/gravel layer in the bottom containment of the tank. The oil apparently had leaked through the tank floor and impacted approximately 5000 sq. feet of a stone/gravel. Prior to VIRWM beginning the project, a trench had been excavated along the downward sloping western edge of the impacted area. The trench contained approximately 4 inches of oil.

On 8/14/06, VIRWM personnel utilized a vacuum tank truck to recover the oil from the trench. Upon completion of the recovery operations a surfactant/degreaser was applied to the impacted area to break down the oil. This solution was applied with a mechanical pump at low pressure rate of 6 ounces per sq. foot. This solution was allowed to penetrate into the

stones for approximately 2 hours. VIRWM then used clean water applied at a high pressure rate to wash and flush the impacted area. During the washing procedure, the vacuum truck was also being used to recover the oily product and solution at the trench. The washing of the stone/gravel was accomplished after 8 hours on 8/14/06 and the workload was suspended until the following morning. On 8/15/06 the recovery operations continued until the trench went dry numerous times and did not yield any oil or oily solution to be recovered. A total volume of 1987 gallons was recovered from the trench. After subtracting the water and surfactant solution, the recovery operations yielded approximately 687 gallons of recovered oily product. At the completion of VIRWM activities there was still some staining of the rocks due to the oil impregnating the surface. However, there was no evidence of any free-flowing recoverable oil in the impacted area. VIRWM feels they have successfully accomplished the directed task of oil recovery and that no further action is required in the impacted area. The oily waste was transferred to a designated tank at the site.

Report Completed By:
Name: Marcia Richards-O'Neale

Date: 8/21/06

Title: General Manger
V.I. Regulated Waste Management, Inc.