

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
Region 2

U.S. Environmental  
Protection Agency-Reg 2  
2014 MAY 13 PM 2:03  
REGIONAL HEARING  
CLERK

IN THE MATTER OF:

**Landfill Technologies of Fajardo, Corp.**  
(Fajardo Municipal Landfill)

and

**Consolidated Waste Services, Corp.**  
(Yabucoa Municipal Landfill)

**RESPONDENTS**

Proceeding for the assessment of a civil  
penalty pursuant to Section 309(g)(2)(B) of  
the Clean Water Act, 33 U.S.C. § 1319(g)

**CONSENT AGREEMENT  
AND FINAL ORDER**

**DOCKET NUMBERS:**

**CWA-02-2013-3454**

**CWA-02-2013-3455**

**CONSENT AGREEMENT AND FINAL ORDER**

Complainant, the United States Environmental Protection Agency ("EPA"), having issued Complaints herein on September 30, 2013, against Landfill Technologies of Fajardo, Corp. ("Landfill Technologies"), Docket Number CWA-02-2013-3454, and Consolidated Waste Services, Corp. ("ConWaste"), Docket Number CWA-02-2013-3455 (together Landfill Technologies and ConWaste hereinafter referred as "Respondents"), and

Complainant and Respondents having agreed that settlement of these matters are in the public interest, and that entry of this Consent Agreement and Final Order ("CA/FO") without further litigation is the most appropriate means of resolving these matters;

NOW, THEREFORE, before the taking of any testimony, upon the pleadings, without adjudication of any issue of fact or law, and upon consent and agreement of the Parties, it is hereby agreed, and ordered as follows:

In the Matter of:  
Landfill Technologies of Fajardo, Corp., Docket No. CWA-02-20133454  
Consolidated Waste Services, Corp., Docket No. CWA-02-2013-3455

Page 1 of 20

## I. PRELIMINARY STATEMENT

1. EPA initiated these proceedings for the assessment of a civil penalties, pursuant to Section 309 of the Clean Water Act ("CWA" or the "Act"), 33 U.S.C. § 1319.
2. The Complaint against Respondent Landfill Technologies alleges violations of Sections 301 and 402 of the Act, 33 U.S.C. §§ 1311 and 1342, for its failure to update the Storm Water Pollution Prevention Plan, to implement adequate erosion control measures, to conduct quarterly visual and benchmark monitoring, and to conduct and document the comprehensive site evaluations at the Fajardo Municipal Landfill as required by the 2008 National Pollutant Discharge Elimination System ("NPDES") Multi-Sector General Permit for Storm water Discharges Associated with Industrial Activity ("2008 NPDES MSGP").
3. The Complaint against Respondent ConWaste alleges violations of Sections 301 and 402 of the Act, 33 U.S.C. §§ 1311 and 1342, for its failure to apply and obtain permit coverage at the Yabucoa Municipal Landfill under the 2008 NPDES MSGP.
4. EPA notified the Commonwealth of Puerto Rico regarding the actions taken against Respondents and offered an opportunity for the Commonwealth of Puerto Rico to confer with EPA on the proposed penalty assessment, pursuant to 40 C.F.R. Part 22.
5. This action was public noticed. No public comment was received.
6. On October 31, 2013, Respondents filed answers to the Complaints, denying certain facts, admitting others, raising affirmative defenses and requesting a hearing in this matter.
7. This CA/FO shall apply to and be binding upon Respondents, their officers, directors, employees, successors and assigns, including, but not limited to, subsequent purchasers.
8. Respondents stipulate that EPA has jurisdiction over the subject matter alleged in the Complaints and that the Complaints state claims upon which relief can be granted against Respondents. Respondents waive any defenses they might have as to jurisdiction and venue, and, without admitting or denying the factual or legal allegations contained in the Complaint, consent to the terms of this CA/FO.
9. Respondents hereby waive their right to a judicial or administrative hearing or appeal on any issue of law or fact set forth in the Complaint.

## II. TERMS OF SETTLEMENT

10. Pursuant to Section 309(g) of the Act, 33 U.S.C. § 1319(g), the nature, circumstances, extent and gravity of the violations, Respondents agreement to perform a Supplemental Environmental Project ("SEP") with a total expenditure of not less than ONE HUNDRED EIGHT THOUSAND (\$108,000.00) DOLLARS, and other relevant factors, EPA has determined that an appropriate civil penalty to settle these actions is in the amount of **FORTY THOUSAND (\$40,000.00) DOLLARS**. Respondents shall pay this civil penalty in accordance with paragraph 13 of this Consent Agreement.
11. For purposes of settlement, Respondents consent to the issuance of this Consent Agreement, consent to the payment of the civil penalty and to the performance of the SEP in the amounts cited in paragraph 10.

### II.A. Penalty

12. No later than thirty (30) days after the Effective Date of this Order, as defined in the Final Order (at the end of this document), Respondents shall pay the amount of **FORTY THOUSAND (\$40,000.00) DOLLARS**.
13. Respondents shall pay the penalty of **FORTY THOUSAND (\$40,000.00) DOLLARS** by check, payable to the "Treasurer of the United States of America", electronically (i.e. wire or automated clearinghouse) or on line payment.
14. Respondents shall clearly identify, regardless of the form of payment, the names and docket number of the cases, set forth in the caption on the first page of this document. Payment methods are described below:
  - a. If Respondents choose to pay by cashiers' or certified check, the check shall be mailed mail to:

#### **BY U.S. POSTAL SERVICE**

US Environmental Protection Agency  
Fines and Penalties  
Cincinnati Finance Center  
PO Box 979077  
St. Louis, MO 63197-9000

#### **BY OVERNIGHT MAIL**

U.S. Bank  
1005 Convention Plaza  
Mail Station SL-MO-C2GL  
ATTN Box 979077  
St. Louis, MO 63101  
Contact: Natalie Pearson  
314-418-4087

- b. If Respondents choose to pay electronically, the transfer shall be made to:

**BY WIRE TRANSFER**  
Federal Reserve Bank of New York  
ABA = 021030004  
Account = 68010727  
SWIFT address = FRNYUS33  
33 Liberty Street  
New York, NY 10045.

Field Tag 4200 of the Fedwire message should read "D 68010727  
Environmental Protection Agency."

**BY AUTOMATED CLEARINGHOUSE (ACH) (also known as REX or remittance  
express)**

ACH for receiving US currency  
PNC Bank  
808 17<sup>th</sup> Street, NW  
Washington, DC 20074  
ABA = 051036706  
Transaction Code 22 - checking  
Environmental Protection Agency  
Account 310006—CTX Format  
Contact: Jesse White 301-887-6548.

- c. On Line Payment Option is available through the Department of Treasury. This payment option can be accessed through WWW.PAY.GOV. Enter sfo 1.1 in the search field. Open form and complete required fields.

Respondents shall send prove of payment as specified in paragraph 13 above to each of the following:

Jaime López  
Environmental Scientist  
Multimedia, Permits and Compliance Branch  
Caribbean Environmental Protection Agency  
U.S. Environmental Protection Agency Region 2  
City View Plaza II, Suite 7000  
#48 RD. 165 km 1.2  
Guaynabo, PR 00968-8069  
Fax number: (787) 289-7104;

Evelyn Rivera-Ocasio, Esq.  
Assistant Regional Counsel  
Office of Regional Counsel, Caribbean Team  
US Environmental Protection Agency, Region 2  
City View Plaza II, Suite 7000  
#48 RD. 165 km 1.2  
Guaynabo, PR 00968-8069  
Fax number: (787) 289-7104;

and

Karen Maples  
Regional Hearing Clerk  
U.S. Environmental Protection Agency  
Office of the Regional Counsel  
290 Broadway, 16<sup>th</sup> Floor  
New York, NY 10007  
Fax number: (212) 637-3115.

15. Failure to pay the penalty in full according to the above provisions will result in a referral of this matter to the United States Department of Justice or the United States Department of the Treasury for collection.
16. Further, if the payment is not received on or before the due date, interest will be assessed at the annual rate established by the Secretary of Treasury pursuant to the Debt Collection Act, 31 U.S.C. § 3717, on the overdue amount from the due date through the date of payment. In addition, a late payment handling charge of \$15.00 will be assessed for each 30 day period (or any portion thereof) following the due date in which the balance remains unpaid. A 6% per annum penalty also will be applied on any principal amount not paid within 90 days of the due date.
17. In addition, pursuant to Section 309(g)(9) of the Clean Water Act, 33 U.S.C. § 1319(g)(9), if payment is not received by the due date, a quarterly nonpayment penalty will be imposed for each calendar quarter during which such nonpayment persists. The quarterly nonpayment penalty is 20% of the aggregate amount of penalties and quarterly nonpayment penalties which are unpaid as of the beginning of such quarter.
18. Respondents also may be required to pay attorneys fees and costs for collection proceedings in connection with nonpayment.
19. The penalty to be paid is a civil penalty assessed by the EPA and shall not be deductible from the Respondents' federal or Commonwealth of Puerto Rico taxes.

## II.B. Supplemental Environmental Project

20. Respondents shall complete the following SEP, which the Parties agree is intended to secure significant environmental and public health protection and improvement:

- a. The project consists of planting vetiver grass (*Vetiveria zizanioides*) to stimulate evapotranspiration of leachate liquors generated during the decomposition process that occurs in the closed cells of the Fajardo Municipal Landfill ("FML"). Vetiver grass will be planted in a 4-acre parcel and will be irrigated with leachate to be applied by an irrigation system and serve as supply of nutrients and water for plants.

The goal of the project is to demonstrate the effectiveness of vetiver grass to decrease the amount of leachate liquors generated in the FML, as an erosion control and slope stabilization tool, and to generate guidelines for designing and building similar systems in other landfills in Puerto Rico and elsewhere in tropical and subtropical settings. The data collected as part of this project could result in the usage of the vetiver grass as part of the mitigation tools to reduce the impact of discharges of pollutants (stormwater and leachate from municipal landfills) into waters of the United States. Furthermore, after the study is completed, Respondents shall share the results of the study with Federal and Commonwealth of Puerto Rico regulatory agencies and with the regulated community through a seminar to the regulated community and a presentation to the regulatory agencies after the completion date of the project no later than August 31, 2015. (See more details in the *SEP Proposal* attached hereto as *Exhibit A* and incorporated herein by reference).

This project is mainly a pollution reduction project to test methods for obtaining phytoremediation of leachate pollutants and in demonstrating effectiveness of innovative technology.

- b. **Within thirty (30) days from the effective date of this CA/FO,** Respondents shall execute the contract with the Agricultural and Biosystem Engineering School of the University of Puerto Rico, Mayaguez Campus, to perform the activities leading to the implementation of the SEP described in Paragraph 21.a. above. (See the full details in the "*Phytoremediation of leachate, erosion control and slope stabilization with Vetiver*" Proposal attached hereto as *Exhibit B* and incorporated herein by reference)

c. **Within forty five (45) days from the effective date of this CA/FO,** Respondents shall submit an updated Work Plan to accomplish the SEP described in Paragraph 20.a. above, to include, at a minimum:

- i. a detailed schedule for all activities required to fulfill the Work Plan such that all activities are completed, including submission dates of Quarterly Progress Reports until the completion of the SEP, by no later than May 31, 2015.
- ii. the proposed dates of the seminar to the regulated community and the presentation to the regulatory agencies.

Respondents may consult with EPA while developing the Work Plan, to ensure timely submission of an approvable Work Plan, including submittal of drafts of the Work Plan to EPA for EPA's review and comments. EPA shall cooperate with Respondents in this consultation process providing input and recommendations to assist Respondents in achieving a Work Plan that is reasonably acceptable to EPA.

- d. If EPA approves the Work Plan required by Paragraph 20.c. above, EPA shall provide written notice of the Work Plan approval.
- e. If EPA approves the Work Plan required by Paragraph 20.c. above, the EPA approved Work Plan shall be incorporated by this reference into this Compliance Agreement and Final Order and shall be binding and enforceable.
- f. In the event that EPA disapproves the Work Plan, in whole or in part, within twenty (20) calendar days of receipt of EPA's disapproval, Respondents shall revise and re-submit such work plan for EPA review and approval.
- g. Upon re-submission of the Work Plan, EPA will review it and will inform Respondents, in writing, of EPA's approval, modification and approval, or disapproval of the re-submitted Work Plan, in whole or in part, and the specific grounds for any disapproval.
- h. If EPA elects to request modifications of the resubmitted Work Plan, EPA will permit Respondents the opportunity to object in writing to the notification of deficiency given pursuant to this paragraph within twenty (20) calendar days of receipt of such notification. EPA and Respondents shall have an additional twenty (20) calendar days from the receipt by EPA of the notification of objection to reach agreement on changes necessary to the

Work Plan. If agreement cannot be reached on any such issue within this twenty (20) calendar day period, EPA shall provide a written statement of its decision on the adequacy of the Work Plan, which decision shall be final and binding upon Respondents.

- i. Stipulated penalties shall be payable to the United States in the amount of two hundred (\$200.00) dollars per day for failure to submit an adequate Work Plan as stated in paragraph 20.h. above, beginning on the date that Respondents receive EPA's disapproval, in writing, of the resubmitted Work Plan.
  - j. Respondents shall begin implementation of the Work Plan within ten (10) calendar days of receipt of EPA's approval of the Work Plan.
  - k. The SEP as described in Paragraph 20.a. above shall be achieved in accordance with this CA/FO and the final EPA approved Work Plan.
  - l. The SEP shall be completed no later than May 31, 2015.
21. In the event that either of the parties proposes a change to the SEP and/or final EPA approved Work Plan, Respondents shall submit for EPA approval, modification and approval, or disapproval, a modified Work Plan incorporating such proposed changes following the procedures in paragraphs 20. c-h above.
22. **Federal Tax:** For Federal Income Tax purposes Respondents agree that they will neither capitalize into inventory or basis nor deduct any costs or expenditures incurred in performing the SEP.
23. **SEP Cost:** The total expenditure for the SEP, at cost to the Respondents, shall be not less than ONE HUNDRED EIGHT THOUSAND (\$108,000.00) DOLLARS. Respondents shall include documentation of the expenditures made in connection with the SEP as part of the SEP Completion Report.
24. **Certification:** Respondents hereby certify that, as of the date of this CA/FO, Respondents are not required to perform or develop the SEP by any federal, state or local law or regulation; nor Respondents or Third Party (if applicable) are required to perform or develop the SEP by any other agreement, grant or as injunctive relief in this or any other case. Respondents or a Third Party (if applicable) also certify that are not receiving any federal funds to perform any activity related to the SEP. Respondents further certify that it has not received, and is not presently negotiating to receive, credit in any other enforcement action for the SEP.



25. **SEP Completion Report:** Respondents shall submit a SEP Completion Report to EPA within sixty (60) calendar days after the completion of all activities that are part of the Work Plan. The SEP Completion Report shall contain the following information:
- a. a detailed description of the SEP as implemented;
  - b. a map of the SEP as implemented;
  - c. a description of any operating problems encountered and the solutions thereto;
  - d. itemized costs:
    - i. In itemizing its costs in the SEP Completion Report, Respondents shall clearly identify and provide acceptable documentation for all eligible SEP costs. Where the SEP Completion Report includes costs not eligible for SEP credit, those costs must be clearly identified as such. For purposes of this paragraph, "acceptable documentation" includes invoices, purchase orders, or other documentation that specifically identifies and itemizes the individual costs of the goods and/or services for which payment is being made. Canceled drafts do not constitute acceptable documentation unless such drafts specifically identify and itemize the individual costs of the goods and/or services for which payment is being made;
  - e. the SEP shall be completed no later than May 31, 2015;
  - f. certification that the SEP has been fully implemented pursuant to the provisions of this CA/FO and Work Plan; and
  - g. description of the environmental, ecological and public health benefits resulting from implementation of the SEP (with a quantification of the benefits and pollutant reductions, if feasible).
26. In all documents or reports, including, without limitation, any SEP reports, submitted to EPA pursuant to this Consent Agreement, Respondents shall, by its officers, sign and certify under penalty of law that the information contained in such document or report is true, accurate, and complete by signing the following statement:

"I hereby certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe

that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.”

27. Respondents agree that failure to submit the SEP Completion Report or any Periodic Report required shall be deemed a violation of this CA/FO and Respondents shall become liable for stipulated penalties pursuant to paragraph 32 below.
28. **Periodic Reports/Submissions:** Respondents shall submit any additional reports or information required by the Work Plan to EPA in accordance with the schedule and requirements recited therein.
29. Respondents shall maintain legible copies of documentation of the underlying research and data for any and all documents or reports submitted to EPA pursuant to this Consent Agreement for a term of five (5) years after the implementation of the SEP and shall provide the documentation of any such underlying research and data to EPA not more than ten (10) working days after a request for such information.
30. **Public Statements:** Any public statement, oral or written, in print, film, or other media, made by Respondents making reference to the SEP, as specified in the SEP Proposal documents attached hereto as Exhibits A and B, shall include the following language: "This project was undertaken in connection with the settlement of an enforcement action taken by the U.S. Environmental Protection Agency for violations of the Clean Water Act." "Este proyecto fue realizado como parte de un acuerdo legal con relación a una acción de cumplimiento por violaciones a la Ley Federal de Agua Limpia presentada por la Agencia Federal de Protección Ambiental de los Estados Unidos."
31. **EPA's Acceptance of SEP Completion Report:**
  - a. After receipt of the SEP Completion Report described in Paragraph 25 above, EPA will notify Respondents, in writing, regarding: (i) any deficiencies in the SEP Completion Report itself along with a grant of an additional thirty (30) days for Respondents to correct any deficiencies; or, (ii) indicate that EPA concludes that the project has been completed satisfactorily; or, (iii) determine that the project has not been completed satisfactorily and seek stipulated penalties in accordance with Paragraph 32 below.
  - b. If EPA elects to exercise option (i) above, i.e., if the SEP Completion Report is determined to be deficient but EPA has not yet made a final determination about the adequacy of SEP completion itself, EPA shall permit Respondents the opportunity to object in writing to the notification of

deficiency given pursuant to this Paragraph within twenty (20) days of receipt of such notification. EPA and Respondents shall have an additional thirty (30) days from the receipt by EPA of the notification of objection to reach agreement on changes necessary to the SEP Completion Report. If agreement cannot be reached on any such issue within this thirty (30) day period, EPA shall provide a written statement of its decision on adequacy of the completion of the SEP to Respondents, which decision shall be reasonable and final and binding upon Respondents. Respondents agree to comply with any requirements imposed by EPA as a result of any failure to comply with the terms of this CA/FO. In the event the SEP is not completed as contemplated herein, as determined by EPA, stipulated penalties shall be due and payable by Respondent to EPA in accordance with Paragraph 32 below.

32. **Stipulated Penalties:**

- a. In the event that Respondents fail to comply with any of the terms or provisions of this Agreement relating to the performance of the SEP described in Paragraph 20.a. above and/or to the extent that the actual expenditures for the SEP do not equal or exceed the cost of the SEP described in Paragraph 23 above, Respondents shall be liable for stipulated penalties according to the provisions set forth below:
  - i. if Respondents timely submit a Work Plan but the Work Plan fails to satisfy EPA requirements as detailed in Paragraph 20.c, f, g. and h above, EPA shall provide written final notice of the disapproval and the SEP shall not be performed and Respondents shall pay a stipulated penalty in the amount of \$108,000.00;
  - ii. for failure to submit an EPA-approvable Work Plan by its due date in accordance with Paragraph 20.c above, Respondents shall pay a stipulated penalty in the amount of \$200 for each day after the Work Plan was due until it is submitted;
  - iii. if the SEP is satisfactorily completed in accordance with Paragraph 20 above, but Respondents expend less than the agreed \$108,000.00 for the SEP project, Respondents shall pay a stipulated penalty equal to the difference between the amount of eligible SEP costs incurred by the Respondents and \$108,000.00;
  - iv. if the SEP is not completed in accordance with Paragraph 20 but: (a) Respondents certify, with supporting documentation, the amount of eligible costs expended on the SEP, and (b) EPA determines that the Respondents made good faith and timely efforts to complete the

project, then, Respondents shall pay a stipulated penalty that is the difference between the eligible SEP costs incurred by Respondents and \$108,000.00. If Respondents document that they, together with the third party (if applicable), did all that they could to ensure timely completion of the SEP but the SEP is not timely completed because of action, or inaction, on the part of the state government or a court, then it shall be deemed that the Respondents made good faith and timely efforts to complete the SEP project;

- v. if Respondents halt or abandon work on the SEP as described in Paragraph 20.a. above, and after the Work Plan has been approved by EPA, prior to its completion, Respondents shall pay a stipulated penalty of \$300 and shall also pay the difference of eligible costs incurred and \$108,000.00;
  - vi. for failure to submit the SEP Completion Report required by Paragraph 25 above, Respondents shall pay a stipulated penalty in the amount of \$200 for each day after the report was due until the report is submitted; and
  - vii. for failure to submit any report required by Paragraph 28 above, Respondents shall pay a stipulated penalty in the amount of \$200 for each day after the report was originally due until the report is submitted.
- b. The determinations of whether the SEP has been satisfactorily completed and whether the Respondents have made a good faith, timely effort to implement the SEP shall be in the sole discretion of EPA.
  - c. Respondents shall pay stipulated penalties within thirty (30) days after receipt of written demand by EPA for such penalties. Payment of stipulated penalties shall be made payable to the "Treasurer of the United States of America." Such check shall be mailed to:

U.S. Environmental Protection Agency  
Fines and Penalties  
Cincinnati Finance Center  
PO Box 979077  
St. Louis, MO 63197-9000.

The checks shall be identified with a notation of the name and docket number of this case, set forth in the caption on the first page of this document.

A copy of any penalty check and any transmittal letter shall be sent to each of the following:

Jaime López, Environmental Scientist  
Multimedia, Permits and Compliance Branch  
Caribbean Environmental Protection Agency  
U.S. Environmental Protection Agency Region 2  
City View Plaza II, Suite 7000  
#48 RD. 165 km 1.2  
Guaynabo, PR 00968-8069  
Fax number: (787) 289-7104;

Evelyn Rivera-Ocasio, Esq.  
Assistant Regional Counsel  
Office of Regional Counsel, Caribbean Team  
US Environmental Protection Agency, Region 2  
City View Plaza II, Suite 7000  
#48 RD. 165 km 1.2  
Guaynabo, PR 00968-8069  
Fax number: (787) 289-7104;

and

Karen Maples, Regional Hearing Clerk  
U.S. Environmental Protection Agency  
Office of the Regional Counsel  
290 Broadway, 16<sup>th</sup> Floor  
New York, NY 10007  
Fax number: (212) 637-3115.

Interest and late charges on stipulated penalties shall be paid as stated in Paragraph 16 above.

### **II. C. General Provisions**

33. The Respondents waive any right it may have pursuant to 40 C.F.R. § 22.8 to be present during discussions with or to be served with and to reply to any memorandum or communication addressed to the Director or the Regional Administrator where the purpose of such discussion, memorandum, or communication is to discuss a proposed settlement of this matter or to recommend that such official accept this Consent Agreement and issue the accompanying Final Order.

34. Nothing in this agreement shall be construed as prohibiting, altering or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondents' violation of this agreement or of the statutes and regulations upon which this agreement is based, or for Respondents' violation of any applicable provision of law.
35. This CA/FO shall not relieve Respondents of their obligation to comply with all applicable provisions of federal, state or local law, nor shall it be construed to be a ruling on, or determination of, any issue related to any federal, state or local permit, nor shall it be construed to constitute EPA approval of the equipment or technology installed by Respondents, if any, in connection with the SEP undertaken pursuant to this Agreement.
36. **Force Majeure:**
- a. If any event occurs which causes or may cause delays in the completion of the SEP as required under this Agreement, Respondents shall notify Complainant in writing not more than 10 days after the delay or Respondents' knowledge of the anticipated delay, whichever is earlier. The notice shall describe in detail the anticipated length of the delay, the precise cause or causes of the delay, the measures taken and to be taken by Respondents to prevent or minimize the delay, and the timetable by which those measures will be implemented. The Respondents shall adopt all reasonable measures to avoid or minimize any such delay. Failure by Respondents to comply with the notice requirements of this paragraph shall render this paragraph void and of no effect as to the particular incident involved and constitute a waiver of the Respondents' right to request an extension of its obligation under this Agreement based on such incident.
  - b. If the parties agree that the delay or anticipated delay in compliance with this Agreement has been or will be caused by circumstances entirely beyond the control of Respondents, the time for performance hereunder may be extended for a period no longer than the delay resulting from such circumstances. In such event, the parties shall stipulate to such extension of time.
  - c. In the event that the EPA does not agree that a delay in achieving compliance with the requirements of this CA/FO has been or will be caused by circumstances beyond the control of the Respondents, EPA will notify Respondents in writing of its decision and any delays in the completion of the SEP shall not be excused and stipulated penalties, if applicable, will be imposed.

- d. The burden of proving that any delay is caused by circumstances entirely beyond the control of the Respondents shall rest with the Respondents. Increased costs or expenses associated with the implementation of actions called for by this Agreement shall not, in any event, be a basis for changes in this Agreement or extensions of time under section (b) of this paragraph. Delay in achievement of one interim step shall not necessarily justify or excuse delay in achievement of subsequent steps.
37. This CA/FO constitutes a settlement by EPA of all claims for civil penalties pursuant to the Clean Water Act for the violations alleged in the Complaint. Nothing in this CA/FO is intended to nor shall be construed to operate in any way to resolve any criminal liability of the Respondents. Compliance with this CA/FO shall not be a defense to any actions subsequently commenced pursuant to Federal laws and regulations administered by EPA, and it is the responsibility of Respondents to comply with such laws and regulations.
  38. Each undersigned representative of the parties to this Consent Agreement certifies that he or she is fully authorized by the party represented to enter into the terms and conditions of this Consent Agreement and to execute and legally bind that party to it.
  39. Each party shall bear its own costs and attorney fees in connection with the action resolved by this CA/FO.

**RESPONDENT LANDFILL TECHNOLOGIES OF FAJARDO, CORP.:**

BY:   
\_\_\_\_\_  
CARLOS CONTRERAS, PRESIDENT

DATE: April 11, 2014



**RESPONDENT CONSOLIDATED WASTE SERVICES, CORP.:**

BY:   
\_\_\_\_\_  
CARLOS CONTRERAS, PRESIDENT

DATE: April 11, 2014

**COMPLAINANT:**

BY:  \_\_\_\_\_

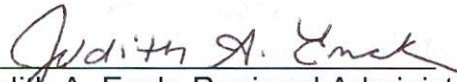
DATE: 5-5-14

José C. Font, Director  
Caribbean Environmental Protection Division  
U.S. Environmental Protection Agency - Region 2  
City View Plaza II, Suite 7000  
#48 RD. 165 km 1.2  
Guaynabo, PR 00968-8069

### III. FINAL ORDER

The Regional Administrator of the U.S. Environmental Protection Agency Region 2, ratifies the foregoing Consent Agreement. The Agreement entered into by the Parties is hereby approved, incorporated herein, and issued as an Order. The Effective Date of this Order shall be the date of filing with the Regional Hearing Clerk, U.S. EPA Region 2, New York, NY.

5/9/14  
Date

  
\_\_\_\_\_  
Judith A. Enck, Regional Administrator  
United States Environmental Protection  
Agency  
Region 2  
290 Broadway  
New York, NY 10007-1866

**EXHIBIT A**

## Phytoremediation of leachate, erosion control and slope stabilization with Vetiver

### A. Introduction

This Supplemental Environmental Project (SEP) proposal was developed jointly by Landfill Technologies of Fajardo, Corp., (LTF) and Consolidated Waste Services, Corp., (CWS) as an alternative to offset assessed penalties in the Administrative Complaint, Findings of Violation, Notice of Proposed Assessment of a Civil Penalty, and Notice of Opportunity to Request a Hearing issued by the U. S. Environmental Protection Agency, Region II ("EPA") (Docket Number CWA-02-2013-3454 and Docket Number CWA-02-2013-3455) related to storm water discharges emanating from the Fajardo and Yabucoa Municipal Landfills in Puerto Rico.

During settlement negotiations in the above captioned matters, EPA has provided LTF and CWS with an alternative to offset a significant percentage of the assessed penalty by performing SEPs valued at or more than \$108,000.00. Various SEP alternatives were discussed with EPA officials and considering the nexus requirements established by the applicable SEP guidelines, LTF and CWS opted to propose the performance of a SEP consisting of developing a system of zero discharge of leachate in the Municipal Landfill of Fajardo. The project will document by means of empirical experimentation the effectiveness of vetiver grass (*Vetiveria zizanioides*, L. Nash) to decrease the amount of liquids generated in the Fajardo Municipal landfill, and as an erosion control and slope stabilization tool, and to generate guidelines for designing and building similar systems in other landfills in Puerto Rico and elsewhere in tropical and subtropical settings. This SEP will implement the recommendations set forth in the "Phytoremediation of leachate, erosion control and slope stabilization with Vetiver" project developed by Dr. Luis Perez-Alegria of the Agricultural and Biosystem Engineering School of the University of Puerto Rico, Mayaguez Campus, in Puerto Rico. (referred to as the Vetiver Study from here on), copy of which is attached as Appendix A.

This proposed SEP satisfies several of the SEP categories listed by EPA guidelines that include:

- 1) Pollution Prevention: Through the use of guidelines established in the Vetiver Study, there will be reduction of pollutants from the Fajardo Municipal Landfill, as well as in other municipal landfills that implement similar measures.
- 2) Pollution Reduction: Through the efforts of installing Vetiver green infrastructure as a best management practices in Municipal landfills in Puerto Rico and elsewhere, a reduction in pollutant loadings into the Fajardo River and other surface bodies of water is expected.
- 3) Environmental Restoration and Protection: By installing selected Vetiver green infrastructure/infiltration practices, a reduction in volume of runoff are expected. This would have a positive implication on the Fajardo River banks and aquatic habitat.
- 4) Environmental Compliance Promotion: This SEP will be used to showcase green infrastructure application in retrofitting highly impacted municipal solid waste disposal facility. This will be realized

through utilizing the improved site storm water controls practices that will be developed as part of the Vetiver Study.

The guidelines that will ensue from this SEP will initiate a model of retrofitting slopes of the Fajardo Municipal landfill closed cell using innovative green infrastructure practices that will be developed as a result of the Vetiver Study and will simultaneously address multiple issues: improve water quality within a watershed, improve erosion control practices and improve slope stabilization measures. Through a series of seminars and presentations, the Vetiver Study guidelines would be shared with regulatory agencies and with the regulated community in order that the control measures could then be replicated across Puerto Rico as a model for leachate and erosion and storm water management in municipal solid waste landfills.

The SEP would cover three major tasks:

- Documentation by empirical experimentation of the effectiveness of Vetiver to decrease the amount of liquids generated in the municipal landfill;
- Development of guidelines for designing and building similar systems in other landfills in Puerto Rico and elsewhere; and
- Education and Public Outreach Activities to share the project's results with the regulatory agencies and regulated community I Puerto Rico.

#### B. Goals

The SEP goals include:

- To retrofit slopes of a closed landfill cell by the implementation of sustainable green infrastructure practices that will reduce the amount of pollutants and quantity of water from storm events into the Fajardo River from the Fajardo Municipal Landfill.
- Provide stormwater quality and quantity treatment.
- To implement a model project that can be duplicated at various locations in Puerto Rico and elsewhere.
- To educate stakeholders concerning the environmental aspects of the project.
- To reduce water quality impacts in the watershed.
- To use vegetation that slows down, filter and infiltrate stormwater runoff.
- To encourage the implementation of green infrastructure techniques as a means to reduce leachate impacts in Municipal Landfills.

#### C. Benefits

The SEP will be executed to mitigate the stormwater and leachate impacts of in Municipal Landfills. Stormwater will be addressed at the source by implementing infiltration practices that reduce leachate and pollutant discharges to improve water quality and aquatic habitat. An increase in the infiltration mechanisms by incorporating natural green systems together with the already installed traditional control systems that consists of piping and detention facilities will result in an improved water quality and improved aquatic habitat .

#### D. SEP Tasks

- 1) Empirical experimentation of effectiveness of the Vetiver grass to decrease amount of liquids generated at the Fajardo landfill, as per described in the Vetiver Study.
- 2) Develop guidelines for designing and building similar systems in other landfills in Puerto Rico and elsewhere.
- 3) Outreach and Education plan to share project results and developed guidelines with regulatory agencies (EPA, Puerto Rico Environmental Quality Board and Solid Waste Management Authority), the regulated community, its service providers and stakeholders. Two technical workshops will be offered after the completion date of the project but no later than August 31, 2015, as follows:

-A technical workshop will be conducted to train local engineers, architects and landscape architects on the Vetiver Study and resulting guidelines green infrastructures site design. Continuing education credits will be offered.

-Another education workshop will be held to educate the public officials ( EPA, Environmental Quality Board and Solid Waste Management Authority) on the process and lessons learned in developing and implementing the project.

#### E. Project Costs

The anticipated project costs are segregated to encompass:

1. the purchase, planting and harvest of the Vetiver plants ( Associated costs are detailed in Table A in the estimated amount of \$106,360.00) , and
2. the implementations of the “Phytoremediation of leachate, erosion control and slope stabilization with Vetiver” project developed by Dr. Luis Perez-Alegria of the Agricultural and Biosystem Engineering School of the University of Puerto Rico, Mayaguez Campus, in Puerto Rico ( See attached Vetiver Study, which describes the costs associated with the empirical/research/ investigation work by Dr. Perez-Alegria, estimated in \$47,800.14) .

As part of the SEP reporting requirements, LTF and CWS intend to jointly report to EPA on a quarterly basis the costs and expense disbursements associated with this project.

**Project: Phytoremediation of Landfill Leachate using Vetiver in Puerto Rico**

**Owner: Landfill Technologies Corp.**

**Landfill: Fajardo Municipal Solid Waste Landfill**

**Itemized Preliminary Cost Breakdown**

Description	Qty	Units	Unit cost	Sub Total
<b>University of Puerto Rico Cooperation Agreement</b>				
Project Setup and sowing asistance	2	LS	\$ 3,250	\$ 6,500
Meteorological Station Installation	1	LS	\$ 7,500	\$ 7,500
Sediment Collectors	1	LS	\$ 3,000	\$ 3,000
Monotoring and data gathering	12	months	\$ 2,150	\$ 25,800
Final Report	1	LS	\$ 5,000	\$ 5,000
			<b>Sub Total</b>	<b>\$ 47,800</b>
<b>Irrigation System</b>				
Pipe System	1	LS	\$ 5,000	\$ 5,000
Leachate Sprayers	1	LS	\$ 2,000	\$ 2,000
			<b>Sub Total</b>	<b>\$ 7,000</b>
<b>Vetiver</b>				
Develop Seedlings	4	months	\$ 6,875	\$ 27,500
Sow Vetiver seedling	4	months	\$ 6,425	\$ 25,700
			<b>Sub Total</b>	<b>\$ 53,200</b>
<b>Total</b>				<b>\$ 108,000</b>



**EXHIBIT B**

UNIVERSITY OF PUERTO RICO  
MAYAGUEZ CAMPUS

Phytoremediation of leachate, erosion control and slope stabilization with vetiver  
(*Vetiveria zizaniodes*) at the Fajardo Sanitary Landfill, Puerto Rico

February 25, 2014

Prepared by:

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*Phytoremediation of Leachate*

Phytoremediation of leachates, erosion control and slope stabilization with  
vetiver (*Vetiveria zizaniodes*) at the Fajardo Sanitary Landfill, Fajardo, Puerto Rico

Luis R. Pérez-Alegría, Ph.D., P.E.

February 25, 2014

Table of Contents

Introduction.....	3
Previous studies.....	3
Treatment of sanitary landfill leachate.....	4
TECHNICAL PROPOSAL.....	6
METHODOLOGY.....	6
WORK SCHEDULE.....	9
BUDGET.....	9
References.....	12

**Phytoremediation of Leachate**

3

**Introduction**

Landfill Technologies Corporation (LTC) has proposed the use of vetiver grass (*Vetiveria zizanioides*, L. Nash) to create a system of zero discharge of leachate in the landfill operated by LTC in Fajardo, Puerto Rico. This initiative is part of an arrangement between the federal Environmental Protection Agency (USEPA) and LTC in Fajardo as a result of leakage of leachate generated in the landfill's closed cells. The decision to LTC to use a system of vetiver plants is supported by the success reported by Allied Waste Services with a similar system in Ponce and Salinas in the south of Puerto Rico and other work reported in the literature (Cheng and Chu, 2011; Danh et al. , 2009 and Percy and Truong, undated) . The purpose of this project is documenting by means of empirical experimentation the effectiveness of the vetiver – leachate system to decrease the amount of liquids generated in the SRS and generate guidelines for designing and building similar systems in other landfills in Puerto Rico and elsewhere.

**Prior Studies**

*Vetiver Grass.* Vetiver (*Vetiveria zizanioides*) is a perennial grass of tropical and subtropical areas whose reproduction is difficult and is considered infertile. It is mainly spread by rooted radicular divisions. The plant grows forming clusters from a rooted seedling. At maturity the plant grows up to 2 meters high. Although the natural habitat of vetiver is wetlands, the plant is able to withstand extreme droughts as well as floods of up to 45 days. It adapts well to soils with a wide range of pH of soil solution and variable fertility. The species *V. zizanioides* does not produce seeds that germinate in normal soil conditions (World Bank, 1990), making it ideal for use on agricultural land and construction projects without presenting a risk of uncontrolled spread.

*Erosion control and slope stabilization.* There is extensive experience in the use of vetiver in erosion control and slope stabilization in Puerto Rico both for agricultural production as for civil works. The Natural Resources Conservation Service (NRCS) recommends it to stabilize slopes as well as to remove sediment from runoff flows in Puerto Rico farms (NRCS, 2005). The World Bank in collaboration with non-governmental organizations of global coverage (e.g. The Vetiver

**Phytoremediation of Leachate**

4

Network; <http://www.vetiver.com>) has promoted its use throughout the tropical and subtropical region of the globe through its publication widely disseminated as *Vetiver: The Barrier against Erosion* (1990).

*Heavy metals.* Several studies have demonstrated the ability of vetiver to remove heavy metals from contaminated soils and liquids leaching from landfills (Roonganakiat et al, 2003; Danh et al, 2009 ;). Roonganakiat et al. watered vetiver plants with leachate with a high content of heavy metals (lead, zinc, copper, nickel and chromium) and organic pollutants (COD = 13,160 mg/L BOD = 6,607 mg/L) and also planted vetiver in soil contaminated with the same heavy metals. At the end of the study it was observed that the vetiver plant could remove heavy metals from the soil and absorb and translocate heavy metals in its roots and aerial parts of the plant. The study documented that vetiver removed 53.84 and 347 mg/kg of Zn and Ni, respectively, when it was watered with pure leachate from a landfill. The toxicity limits of these metals for vetiver are 800 and 347 mg/kg for Zn and Ni, respectively (Truong, 1999). The same study found that vetiver removed 68.9 mg/kg of copper and 20.14 mg/kg of chromium, well above toxic levels for these metals in vetiver plants (13-15 mg/kg for copper and 5-18 mg/kg for chromium). Another finding of significance in this study is that the vetiver plant increases the amount of metals in its tissue as their concentration increases in the leachate liquor.

**Treatment of Landfill Leachates**

The use of vetiver in the treatment of landfill leachate in the U.S., Puerto Rico and Mexico has been relatively recent (Truong and Granley, undated; Allied Waste of Ponce, PR). Each of these projects has used the vetiver plant alone or in combination with trees and biological filters (e.g. artificial wetlands, RBC) to remove contaminants in liquid leachates generated in the landfill.

The population density of vetiver determines the amount of leaching that can be evaporated from the tissue of the plant and the soil. This process, known as crop evapotranspiration, is a function of the atmospheric conditions, soil, topography and crop. Plants use water to transport

***Phytoremediation of Leachate*****5**

nutrients and meet their physiological needs and to regulate the temperature of the foliage. The soil also serves as structural support, to store water, gases and nutrients that the plant needs. The deeper the soil profile, the more water can be stored in the porous phase. The soil is also affected by its management. A soil such as the one deposited in the final cover of the landfill has been compacted by heavy machinery to reduce its porosity and increase its bulk density or arrangement of the soil particles. This reduces soil porosity limiting its capacity to store water and creating a surface hard to penetrate by the crop roots.

The specifications of the soil cover in the landfill creates a conflict between the mechanical functions of the layer (e.g . prevent the entry and exit of fluids) and its agricultural functions to provide water storage and allow penetration of the roots of the vegetative barriers of vetiver. Unquestionably this conflict exists in all landfills that receive this treatment of vegetative cover, however there is not much literature on how it has been resolved and rather is left to the trial and error mechanism and adopting what works in the specific place or in many cases, we arrive at the landfill with a finished cover and the best measures are adopted to establish the vegetative cover (Percy and Truong , undated) .

*Potential leachate evaporation.* Typically crops in Puerto Rico can evapotranspire 5 mm/day of water from the soil. This value is a combination of crop transpiration and evaporation from the soil surface. Therefore, the higher the plant density, the higher the probability that all the surface being considered is evaporating soil moisture. The maximum amount of water to be applied depends on the weather conditions in Fajardo and soil leachate storage capacity. The more water is stored in the soil, the higher the possibility of evaporating more leachate. However, this factor could reduce the mechanical strength of the soil and cause slippage. It is important to adjust the rate of soil application with the maximum evapotranspiration of the plant. It is very likely that the rate of leachate application could vary during the year according to changes in weather conditions in Fajardo.

**TECHNICAL PROPOSAL**

**Phytoremediation of Leachate**

6

LTC proposes planting vetiver to stimulate evapotranspiration of leachate liquors generated during the decomposition process that occurs in the closed cells of the SRS. Vegetative barriers will be established at vertical intervals of 1 m which is equivalent to 2.23 m above the ground. Plants will be irrigated with leachate to be applied by an irrigation system and serve as supply of nutrients and water for plants. To encourage rapid rooting of vetiver, seedlings will be irrigated with good quality water and fertilized with an inorganic nitrogen source applied through the irrigation system. Once its rooting is documented the gradual conversion to leachate as the only source of irrigation and nutrients will commence.

The main objective of this proposal is to develop an experimental design for field data collection to validate the effectiveness of the measures taken by LTC in an initial 4-acre parcel that will be treated with vetiver and leachate from the Fajardo landfill. The specific objectives of this component developed by the University are:

1. Conducting a mass balance of liquids (rain, leachate liquors, percolation and groundwater recharge at the Fajardo landfill arriving and leaving the slope treated with vetiver-leachate.
2. Develop a plan for sampling of the soil and surface runoff on the slope treated with vetiver-leachate to quantify sediment movement and surface runoff.
3. Evaluating the effectiveness of the management of the vetiver plant and its effect on the water balance of the slope.

**METHODOLOGY**

1. *Diverting water from stormwater runoff which may be reaching the landfill or its closed cells.*

LFT in Fajardo is already performing this work in its routine operation of the landfill. Notwithstanding to quantify the effectiveness of the other proposed activities, the rainfall catchment area will be checked upstream of the exposed slopes to be treated by planting the vetiver vegetative cover. This is necessary to isolate any additional

***Phytoremediation of Leachate*****7**

factors that may affect the assessment of the techniques that will be implemented in this project.

If there is no channel to divert the stormwaters that intercepts and tracks those waters outside the study area, one will be designed and it shall be established following the LFT existing internal procedures and best management practices for stormwater runoff. LFT will be in charge of this activity.

2. *Develop a sampling of surface runoff on the slope with vetiver - treated leachate to quantify soil erosion and surface runoff.*

LFC will establish vetiver grass coverage on the exposed slope above the landfill in an initial area of 4 acres and 20,578 feet of longitude facing south (LTC drawing supplied). Vetiver coverage shall be established as contour planted barriers. The NRCS recommends that plant spacing be kept between 4-6 inches. The works of Percy and Truong in Australia report that vegetative barriers are planted at 4 in (10 cm) between plants. The World Bank (1990) recommends 4-6 in (10-15 cm).

The main purpose of this study is to evaluate the effectiveness of vetiver to reduce the volume of leachate generated by the Fajardo landfill by its use without prejudice to the physiological functions of the plant. Because of this a high population density is desired to increase the leaf area of the crop for greater use of the leachate. An increase in planting density increases the cost of establishing the cover. For this reason we will evaluate two distances between plants, 4 in and 6 in.

Moreover, the World Bank recommends a vertical distance of 1 m between contours. Thus for a slope of 2:1 (H:V) , a vertical interval of 1 m produces a distance between barriers along the ground than 2.2 m . This distance is recommended for vegetative barriers for erosion control and could initially be adopted to evaluate its effectiveness in use of leachate.



**Phytoremediation of Leachate**

Table 1. Crop density for various distances between plants and vertical intervals in the slope

Distance between Plants in the Contour (in)	Distance between contours (m)	Number of plants per acre (pts/Cda)
4	2.2	19,340
6	2.2	12,893
4	4.4	9,670
6	4.4	6,447

The University of Puerto Rico has the ability to produce the amount of vetiver seedlings needed in the project at its Gurabo Experimental Station. There are other local suppliers which have also indicated their ability to produce these seedlings for the project at a reasonable cost. It is estimated that the project will require a maximum of 77,360 vetiver seedlings in the first four acres of the project. Some of the suppliers are available to start producing this amount of seed and have indicated that they may have this amount in 45 days. As indicated by LTC, the seed will be procured by LTC with local suppliers.

To document the effectiveness of vetiver in using leachate liquors from the municipal landfill in Fajardo a completely randomized experiment will be designed using factors such as the amount, frequency of application of leachate and the established population density and in accordance with Table 1.

Traps will be installed to measure the amount of sediment and surface runoff exported by the slope treated with vetiver-leachate. Sediment and surface runoff traps will be installed all along the slope and in the lower part of each treatment. Water samples will be collected in bottles previously washed with acid and identified. The soil sample will be collected from the trap in identified plastic bags. Both soil and water samples will be sent to the laboratory selected by LTC for chemical characterization.

*3. Evaluate the effectiveness of the vetiver plant management and its effect on the water balance of the slope*

In this task the potential evapotranspiration ( $ET_p$ ) of the vetiver-soil system will be determined and leachate irrigation will be adjusted from 0.75 to 1.5 times the potential

**Phytoremediation of Leachate**

evapotranspiration in different areas of the cover. On the other hand the maximum water storage capacity of the soil will be determined. The leachate application rate will be set according to the values obtained in  $ET_p$  and water storage capacity (AWC) in the existing soil. To determine soil AWC, soil samples will be taken once the slope is completed. From these samples the bulk density, the density of the soil particles, the moisture content at field capacity and wilting point as a function of depth, will be determined.

**WORK SCHEDULE**

The tentative commencement date of the project will be determined once a contract between Landfill Technologies Corporation (LTC) and UPRM is signed. It is expected that the project will commence on April 1, 2014 or earlier. Once the project is signed the trips from the UPRM group to Fajardo would begin to coordinate the field work with LTC personnel and the vetiver seed producers. It is expected that by April 15, 2014 the initial 4-cuerdas slope planting will commence which will take a week until April 22, 2014 or less. In this period the system for irrigation with nitrogenous fertilizer will be established. This same system will be used to apply the leachate once the plant has developed roots in the ground.

The proposed work schedule is as follows:

Activity	2014												2015			
	1-Apr-14	15-Apr-14	22-Apr-14	31-Apr-14	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Execution of UPRM-LTC agreement																
Coordination of field work, ordering of equipment and materials																
Establishment of Vetiver-Leachate system																
Construct-Install sediment and runoff traps																
Monitoring and sampling																
Interpretation of results, prepare progress and final reports																

**BUDGET**

The total budget for the project is \$47,800.14 and is distributed as follows:

**Phytoremediation of Leachate****10**

Personnel		
Salaries, stipends and fringe benefits	Time of the project director, graduate student and part-time laboratory technician	\$30,233.73
Materials and field supplies	Sediment and runoff traps over the slope treated with vetiver	2,500.00
Equipment	Meteorological station to measure precipitation, solar radiation and wind speed. ET107 Evapotranspiration monitoring station by Campbell Scientific.	6,475.87
Trips	One weekly trip (three persons) is proposed for the first four weeks of the project, afterwards one monthly trip. In total no less than 15 trips a year are planned.	2,539.50
Total Direct Costs		41,749.10
Indirect Costs	UPRM carries 26% de direct costs for the administration of projects outside the Campus.	6,051.04
Total Costs		\$47,800.14

Personnel. The project will be led by Dr. Luis R. Pérez- Alegría, Professor of Agricultural and Biosystems Engineering , University of Puerto Rico in Mayaguez and who will devote his academic credit load to the project during the regular academic year and for one month during the summer period. Dr. Pérez-Alegría will be responsible for preparing periodic reports to LTC and the process certifications.

A lab technician will support the project in its construction and installation of field sediment traps phase. The field technician will devote 30% (1.5 days per week) of his time to the project. The budget is based on a salary of \$ 18000/year .

A graduate student will be hired for the daily management of the project including sampling and coordination of laboratory analyses with LTC and the selected laboratory, the preparation of interpretation and analysis of results. The graduate student will receive a compensation of \$1,000 per month for a period of 12 months.

Materials and Supplies. Materials and supplies are estimated at \$2,500 for the construction of sediment traps and sampling of surface runoff in the different vetiver-leachate treatments.

Equipment. The purchase of a weather station is proposed in order to perform the water balance in the area of application of vetiver-leachate. With this equipment the potential evapotranspiration of the vetiver in Fajardo will be calculated and the leachate application will be adjusted based on soil and climatic conditions for maximum application amount. This equipment will allow us to adjust the application of leachate depending on weather conditions.

***Phytoremediation of Leachate***

**11**

Trips. We propose a weekly trip to Fajardo of the UPRM group during the first four weeks into the project, then a monthly trip will be made for project monitoring, sampling and coordination with LTC. The estimated total travel expenses are \$2539.50.

**Phytoremediation of Leachate**

12

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## *Education and Experience:*

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Dr. David Sotomayor (UPRM)

Dr. Cinthya Rosenzweig (NASA-GISS-GSFC)  
Dr. Gustavo Martínez (UPRM)  
Dr. Rafael Dávila (UPRM)

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NASA-ASEE. Summer Faculty Fellow. Goddard Institute for Space Studies-GSFC. Climate Impacts group. Study impacts of possible climate change in US agriculture. New York City, NY. Summer 1999.

### **Consulting Services**

Since 1992 has provided engineering consulting services in the area of hydrologic analysis, wetland hydrology, hydric soils, wetland mitigation design and watershed management to engineering and environmental consulting companies including CSA-Architects and Engineers, PBS&J, Morris & Associates, Casiano-Ancalle and Associates, and government agencies including the PR-DNRE, PR-Land Authority, PR-Water Quality Board, US-EPA Region 2.

### **PROFESSIONAL ASSOCIATIONS**

Colegio de Ingenieros y Agrimensores de Puerto Rico. Registered Professional Engineer, License #: 13458. American Association for the Advancement of Science, AAAS.  
American Society of Agricultural & Biological Engineers. ASABE.  
Inter American Association of Sanitary and Environmental Engineers - AIDIS.  
Puerto Rico Water Resources Association, PRWRA.



## Terms and Conditions of this Document

1. This document is an unofficial, nonbinding document for the purposes of communicating approximate pricing and product options.
2. Prices shown are based on equipment being installed in the following country: **United States Territories.**
3. Prices do not reflect sales taxes, shipping costs, insurance, discounts or any other applicable pricing modifications that may be applied at time of order.
4. Prices are subject to change at any time without notice.
5. Prices below are per unit, regardless of quantities specified in your request. Should your request develop into a formal quote, we'll provide quantity pricing at that point.
6. Campbell Scientific will not be held responsible for typographical errors, omissions, or server errors in prices.
7. Campbell Scientific will not be held responsible for incorrect system configurations. Most products have limits on their compatibility with other products; please note that we have a 15% restocking fee and that some specialized products cannot be restocked at all. We recommend that you consult one of our application engineers prior to purchase to determine product compatibilities and the suitability of products to your applications. There is typically no charge for this service.



ET107	Evapotranspiration Monitoring Station .....	\$ 40.00 0.00
Charging Sources		\$77.00
-NC	-NC No Charging Source .....	
-AC	-AC .. AOC .. Power Kit .....	\$0.00 \$654.50
-SP	-SP .. 10.W. Solar .. Panel .....	\$506.00 \$869.00
Communications		\$1,353.00
-NM	-NM No Modem .....	\$0.00
-SH	-SH Short Haul .. Modem .. Kit .....	\$484.00 \$0.00
-PH	-PH Phone Modem .. Kit .....	\$214.50
Wind Sensor Options:		\$412.50
-MW	-MW Met One 034B-ETM Wind .....	\$322.00
-GW	-GW Gill WindSonic1-ETM .....	
Mounting Pole Option		
-NP	-NP No Pole .....	
-3M	-3M 3m Aluminum Pole .....	
Shipping Kit Option		
-NS	-NS No Ship Kit .....	
-SS	-SS Standard .. Shipping .. Kit .....	
Common Accessories		
VISUALWEATHER	Weather Station Software .....	
VISUALWEATHER/A	Additional Copies of VisualWeather on Same Order .....	



<b>ET107</b>	<b>Evapotranspiration Monitoring Station</b> .....	<b>\$4,070.00</b>
	Charging Sources	
-NC	-NC No Charging Source .....	\$0.00
-AC	-AC AC Power Kit .....	\$77.00
-SP	-SP 10W Solar Panel .....	\$308.00
	Communications	
-NM	-NM No Modem .....	\$0.00
-SH	-SH Short Haul Modem Kit .....	\$654.50
-PH	-PH Phone Modem Kit .....	\$506.00
	Wind Sensor Options	
-MW	-MW Met One 034B-ETM Wind .....	\$869.00
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-NS	-NS No Ship Kit .....	\$0.00
-SS	-SS Standard Shipping Kit .....	\$214.50
	<i>Common Accessories</i>	
	VISUALWEATHER Weather Station Software .....	\$412.50
	VISUALWEATHER/A Additional Copies of VisualWeather on Same Order .....	\$322.00

U.S. Environmental  
Protection Agency-Reg 2  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION II

2014 MAY 13 PM 2:02

IN THE MATTER OF:

Landfill Technologies of Fajardo, Corp.  
(Fajardo Municipal Landfill)

and

Consolidated Waste Services, Corp.  
(Yabucoa Municipal Landfill)

**RESPONDENTS**

CONSENT AGREEMENT  
AND FINAL ORDER  
REGIONAL HEARING  
CLERK

DOCKET NUMBERS:

CWA-02-2013-3454

CWA-02-2013-3455

CERTIFICATE OF SERVICE

I certify that I have this day caused to be sent the foregoing **Consent Agreement and Final Order**, dated May 13, 2014, and bearing the above-referenced docket number, in the following manner to the respective addressees below:

**ORIGINAL AND COPY HAND DELIVERED TO:**

**Karen Maples**, Regional Hearing Clerk  
Region 2  
U.S. Environmental Protection Agency  
290 Broadway, 16th Floor  
New York, NY 10007-1866  
maples.karen@epa.gov

**COPY BY ELECTRONIC MAIL TO:**

**Honorable Christine D. Coughlin**  
Administrative Law Judge  
Office of Administrative Law Judges  
U.S. Environmental Protection Agency  
1099 14<sup>th</sup> Street, N.W., Suite 350  
Washington, D.C. 20005  
OALJfiling@epa.gov

**COPY BY ELECTRONIC MAIL TO:**

Attorney for Respondents  
**Francis Torres, Esq.**  
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May 13, 2014  
Date

Lynn Khoury  
Name