PUERTO RICO WATER RESOURCES AND ENVIRONMENTAL RESEARCH INSTITUTE

104B SECTION RESEARCH PROGRAM

3rd Quarterly Progress Report

Date of the report: December 1st, 2004 **For Quarter Ending:** December 30th, 2004

Project Tittle: 'Investigation of Sorbing Behavior of Crumb Rubber to Remove Inorganic and Organic Contaminants from Aqueous Solutions'

Name of Contact (PI): Oscar Perales-Perez

Telephone: 1-787-8324040 (3087) **Fax:** 1-787-265-3816

E-mail: oscar@ge.uprm.edu

Names of Co-PI's: Felix Roman, Marco A. Arocha

Percentage of work completed in this period (%): 20%

Accumulative Percentage of work completed (%): 60%

Completion Date: February 28th, 2005

Project status: Schedule ___ Suspended _X__ Delayed ___ Cancelled ___ Completed
Activities progress: (according to work schedule submitted with application)

Task #	Major Activity	Date started	% Completed	Estimated date of completion	Date Completed	Dependant on task(s)
01	ICP calibration for cadmium and lead	September 1st, 2004	100	September 20th, 2004	September 20th, 2004	
02	Sorption tests: cadmium	September 21st, 2004	100	October20th, 2004	October 30th, 2004	
03	Sorption tests: lead	October 15th, 2004	100	November 20th, 2004	November 30th, 2004	
04	ICP calibration and chromium(III) sorption tests	October 30th, 2004	25	November 30th, 2004		

Summary of Progress on Project this Quarter: The progress can be summarized as follows

- ICP calibration for inorganic quantitative analyses: cadmium, lead and chromium.
- Experimental work on sorption of cadmium ions.
- Experimental work on sorption of lead ions.
- Beginning of experimental work on sorption of chromium (III) ions.
- According to Dr. Guillermo Riera's suggestion (Director of ADS), a proposal requesting funds for acquisition of instrumental equipment for precise quantitative determination of Hg and As species, was prepared and submitted on November 2004.
- Vials for organic sorption tests arrived.
- A GC-MS system is being calibrated. It will be used for quantitative analyses on sorption of organic species.

Problems encountered and/or assistance need:
The ICP system exhibited certain instability during measurements of dissolved Cr species in obtained water samples. A poor reproducibility was observed in the determination of total chromium concentration in water samples. This problem has delayed our working schedule. Sorption tests for Cr(III) will be retaken only after the instability problem be solved. We are working on it.

Note.- Sorption tests for Cr(III) and Cr(VI), as well as As(III, V) are scheduled for this coming quarter. We expect to start with preliminary sorption tests for organic compounds right after calibrating the GC-MS unit in Dr Roman's laboratory.

Certifications:
As the Principal Investigator, I certify that the information contained within this quarterly report accurately reflects the status of this project.

Dr Oscar Perales-Perez, PI December 1st, 2004
Assistant Professor