



# Chemical Safety and Hazard Investigation Board

## Office of General Counsel

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### Memorandum

To: Board Members  
From: Christopher Warner *Chris Warner*  
Cc: Leadership Team; Jeffrey Wanko  
Subject: Board Action Report – Notation Item 795  
Date: October 22, 2010

On September 5, 2010, the Board approved Notation Item 795, thereby approving the award and execution of a \$60,000 contract for a topographical survey in support of the Caribbean Petroleum investigation. The Board further approved the allocation of \$60,000 to that contract from the Other Services category within the Investigations budgetary unit's Fiscal Year 2010 operating budget.

### Voting Summary – Notation Item 795

**Disposition: APPROVED**

**Disposition date: September 5, 2010**

|                       | Approve | Disapprove | Calendar | Not Participating | Date     |
|-----------------------|---------|------------|----------|-------------------|----------|
| <b>R. Moure-Eraso</b> | X       |            |          |                   | 9/3/2010 |
| <b>J. Bresland</b>    | X       |            |          |                   | 9/5/2010 |
| <b>M. Griffon</b>     |         |            |          | X                 |          |
| <b>W. Wark</b>        | X       |            |          |                   | 9/8/2010 |
| <b>W. Wright</b>      | X       |            |          |                   | 9/3/2010 |



## Chemical Safety and Hazard Investigation Board

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### Memorandum

To: Board Members  
From: Rafael Moure-Eraso *Rafael Moure-Eraso*  
Cc: Leadership Team; Jeffrey Wanko  
Subject: Notation Item 795  
Date: September 3, 2010

Attached for your review and vote is Notation Item 795. This item provides for approval of the award of, and allocation of funds for, a contract in support of the Caribbean Petroleum investigation. Board approval is required because the price of the contract exceeds \$50,000.

To assist you in understanding the need for this contract, the investigation team has provided the following background information:

The Caribbean Petroleum incident occurred when 120,000 to 200,000 gallons of gasoline poured from the top overflow ports on a 5-million gallon storage tank. The overflowing gasoline cascaded down the side of the tank striking two 8-inch stiffening bands. Striking the stiffeners caused the gasoline to spray and atomize thus facilitating vaporization.

A large vapor cloud formed during the 30-minute overfill period. The vapor cloud overtopped the tank containment berms and flowed throughout the facility. Winds were calm on the night of the incident and the property is slightly sloped. Therefore, the flow of the vapor cloud was defined by the slope of the property and the concentration gradient, not by wind or other meteorological conditions.

The investigation team must fully understand the topography at the site in order to describe how the vapor cloud moved through the facility on the night of the incident. The outcome of the topographical survey will likely be included as an appendix in the interim report.

According to the investigation team, the information gathered from the topographical study should also assist modeling conducted in the analysis phase of this incident. The CSB is working on a separate procurement for blast and fire behavior modeling and analysis, with an estimated value of \$150,000. The Board will consider that procurement as a separate notation item in the next fiscal year. The investigation team anticipates that a blast or vapor dispersion model will use the results of the topographical study to determine the size and flow of the vapor cloud and concentration gradients across the property. The team also expects that the topographical survey, along with further vapor cloud dispersion analysis will help inform design and operation considerations for all terminal operators across the United States.

You may direct any questions about this item to Jeffrey Wanko, Investigator-in-Charge. Please return completed vote sheets to Chris Kirkpatrick as soon as possible, but no later than the close of business on Monday, September 13, 2010. Thank you for your attention to this item.



## Chemical Safety and Hazard Investigation Board

**Rafael Moure-Eraso, Ph.D., CIH**  
Chairperson and CEO

**John S. Bresland**  
Board Member

**Mark Griffon**  
Board Member

**William B. Wark**  
Board Member

**William E. Wright**  
Board Member

### CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD MEMBER VOTING RECORD

**Notation No.:** 795

**Voting Period:** Urgent Notation Item, September 3 – September 13, 2010, but votes are requested as soon as possible.

**Subject:** Approval of Support Contract for Caribbean Petroleum Investigation

Whereas,

1. On October 23, 2009, the CSB, pursuant to its authority under 42 U.S.C. § 7412(r)(6)(C)(i), initiated an investigation of an explosion at the Caribbean Petroleum Corporation tank farm in Bayamón, Puerto Rico;
2. CSB investigative staff determined that they require the support of a contractor to perform a topographical survey of the tank farm, as described in the Attachment to this item;
3. Following a competitive procurement process, a vendor has been tentatively selected for award of the topographical survey contract, with a contract price of \$60,000;
4. Funding for this contract is available in the Other Services category within the Investigations budgetary unit's Fiscal Year 2010 operating budget;
5. Board Order 027 requires that the Board approve the allocation of funds for contracts exceeding \$50,000; and
6. Board Order 028 requires that the Board approve contracts exceeding \$50,000.

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**Notation No.:** 795  
**Subject:** Approval of Support Contract for Caribbean Petroleum Investigation

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Therefore, the Board hereby votes (1) to approve the award and execution of a \$60,000 contract for a topographical survey in support of the Caribbean Petroleum investigation; and (2) to approve the allocation to that contract of \$60,000 from the Other Services category within the Investigations budgetary unit's Fiscal Year 2010 operating budget.

\_\_\_\_\_ I **APPROVE** this notation item **AS PRESENTED**.

\_\_\_\_\_ I **CALENDAR** this notation item for discussion at a Board meeting.

\_\_\_\_\_ *Some of my concerns are discussed below or on the attached memorandum.*

\_\_\_\_\_ I **DISAPPROVE** this notation item.

\_\_\_\_\_ *A dissent is attached.*

\_\_\_\_\_ *I will not file a dissent.*

\_\_\_\_\_ I am **NOT PARTICIPATING**.

Note: An urgent notation item is either adopted or disapproved when the affirmative or negative votes of a majority of the participating members are received by the Office of General Counsel.

Date: \_\_\_\_\_

Member: \_\_\_\_\_

**CARIBBEAN PETROLEUM INVESTIGATION  
SITE TOPOGRAPHICAL SURVEY  
OBJECTIVE AND SCOPE OF WORK**

**OBJECTIVE:**

The objective of this solicitation is to obtain the services of a contractor to perform a topographical survey of the tank farm, including facility roads, berms, wastewater treatment plant, stormwater drainage ditches, and portions of the neighboring properties to the east and north.

**SCOPE:**

Work will be performed at and around the accident location in Bayamon, Puerto Rico, and at the contractor's facility. The contractor will perform the tasks set forth below. The topographical survey and mapping should be consistent with ASTM E860-97, "Standard Practices for Examining and Testing Items That Are or May Become Involved in Litigation." All tasks conducted at the Bayamon, Puerto Rico facility will be coordinated with the CSB Investigator-in-Charge.

**Task 1:**

This is a required task that will be conducted at the incident site in Bayamon, Puerto Rico. Contractor will perform a topographical survey of the Caribbean Petroleum site including tank farm roads, tank farm berms, wastewater treatment plant, stormwater drainage ditches, and portions of neighboring properties to the north and east (see Figure 1 for area to be surveyed).

Contractor will provide a spreadsheet to the CSB with longitude, latitude, and elevation at distance intervals not to exceed 50 feet.

**Task 2:**

This is a required task to be performed by the contractor at their facility. Contractor will develop an electronic topographical map for the area surveyed with elevation contours at 1 foot intervals.

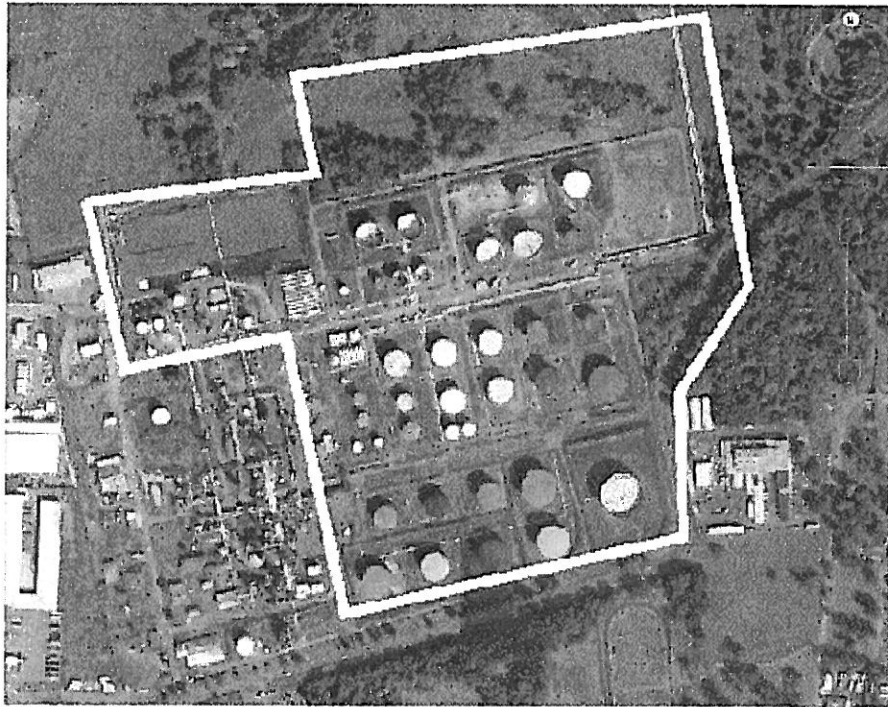


Figure 1 - Area to be Surveyed.