

August 13, 1993

**TELEFAX AND
FED EXPRESS**

Ms. Caroline Kwan
Project Manager
USEPA - Region II
26 Federal Plaza, Room 737
New York, New York 10278

**RE: COMMENTS ON TECHNICAL MEMORANDUM II AND RI, TUTU SITE,
U.S. VIRGIN ISLANDS**

Dear Ms. Kwan:

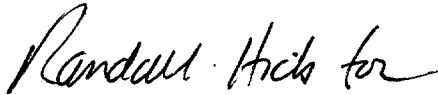
The group (Technical Group) comprised of the technical representatives of the PRPs listed below is pleased to submit our comments on Technical Memorandum II prepared by Geraghty and Miller and our further recommendations on how we can promptly proceed to completion of an appropriate RI/FS and ROD. All were afforded an opportunity to participate on the Technical Group including the Government of the Virgin Islands, the Virgin Island Housing Authority, and Mr. and Mrs. Torinus. Those not joining in this document indicated that they had not yet obtained technical representatives and therefore could not participate in the drafting of these comments. It is the unanimous opinion of the technical group that the Technical Memorandum II and the additional recommended work will not comprise a complete RI for the Tutu site. Therefore, we believe that it is necessary to supplement the existing and proposed site database to facilitate a timely, technically feasible and cost-effective solution for the remediation of the Tutu problem. Prior to executing additional investigations, the development and implementation of a supplemental work plan that incorporates appropriate data quality objectives and recognizes the importance of significant additional work performed outside the TEIC committee is critical. A supplemental work plan should be developed with the cooperation of the Technical Group to ensure participation of all interested parties.

The purpose of the Technical Group is cooperation toward implementing an effective remedy for the observed soil and groundwater impacts at the site. By pooling our collective knowledge about the site and by scheduling any required field work at each site, we believe that we can deliver a superior remedial strategy at a reasonable cost. Towards this end, you will note that we have spent considerable time and energy to develop specific comments on additional work required to reach a defensible ROD.

Ms. Caroline Kwan
Page 2
August 13, 1993

As we explained to you in our teleconference of 8/10/93, the group is just beginning to work together and a formal agreement has not been completed; however, we have provided specific and useful comments directed towards the completion of an RI/FS and ROD on the timetable presented to us by you. We believe the formation of this Technical Group is a very positive step toward a cost-effective remedy for the site. We look forward to working with USEPA in resolving this matter.

Sincerely,



Alberto A. Gutierrez, CPG
Coordinator, Technical Group

AAG/54153/KWAN001/LTR

Enclosures

THE TECHNICAL GROUP CONSISTS OF:

John T. Burkart, R.G., REA - Cooper Environmental, Ramsay Motors, Inc.
Ivan A. Cooper, P.E. - Cooper Environmental, Ramsay Motors, Inc.
Stephen Dubyk - H⁺GCL, Inc., Texaco Caribbean, Inc.
Donald P. Galya, P.E. - ENSR Consulting and Engineering, Western Auto, Inc.
Bruce K. Green - Caribbean Hydro-Tech, Inc., Four Winds Plaza Partnership
Randall T. Hicks - H⁺GCL, Inc., Texaco Caribbean Inc.
David E. Langseth - Arthur D. Little, Inc., Andreas Gal & Paul Lazare
Kenneth L. Loy - International Technology Corporation, L'Henri, Inc.
Thomas F. Maquire, CPG - Blasland & Bouck Engineers, P.C., Esso, S.A.
Belinda K. Price, MS, RPG - International Technology Corporation, L'Henri, Inc.

**TECHNICAL GROUP COMMENTS ON
TECHNICAL MEMORANDUM II AND
RECOMMENDATIONS FOR REMEDIAL INVESTIGATION**

The following are a series of comments that are intended to provide the USEPA Region II with recommendations to supplement Technical Memorandum II, thereby establishing a comprehensive Remedial Investigation (RI). The comments were developed by the Technical Group. Our comments relating to Technical Memorandum II are presented in Section A. Section B consists of our recommended objectives for a RI. Work elements which should be completed prior to implementation of Remedial Investigation field work are discussed in Section C. Section D presents a list of work elements and justification which, based on our present knowledge of the site, are required to meet the stated objectives of the RI. Implementation of Section C (below) may show that additional field programs are required.

A. General Comment by PRP Group Concerning Geraghty and Miller Technical Memorandum II

1. Tech Memo II made some conclusions that are not supported by information presented in this report. The data presented in the report includes only that from the TEIC wells; and the analyses and conclusions of the report focus on the TEIC well data. It is recommended that the conclusions of the report should be disregarded, except to the extent that conclusions support specific recommendations regarding future field work. The Memorandum should base recommendations upon data included in the document or data which are clearly referenced in other available documents. The data provided in Technical Memorandum II and data collected by the recommended work will not be sufficient for a complete RI.

B. Provide a list of objectives which should be addressed by a Remedial Investigation for the site

The selection of an appropriate set of objectives to assure that a RI/FS achieves the desired goal of supporting a ROD is critical in this effort. Since significant additional work has been completed at this site beyond that considered in Tech Memo II and outside the TEIC group, it is necessary to incorporate these data to the extent that they are helpful in developing a RI/FS that can be supported by all PRPs. Based upon our evaluation of the site conditions and the data available to the PRPs, the following remedial responses are possible at the site:

- i. Source control/remediation, point of use treatment, no active aquifer restoration program
- ii. Point of use treatment only
- iii. An integrated source/aquifer remediation program
- iv. No action

Following from the remedial responses presented above, the following objectives for the RI are appropriate:

- 1. Provide sufficient data to determine the radius of influence of each production and large-diameter monitor wells in or near the contaminant groundwater plume to permit design of point of use treatment.
 - 2. Provide sufficient data to predict contaminant concentrations in production wells within the Tutu aquifer to permit design of point of use treatment.
 - 3. Examine existing data to determine concentrations of major ions in groundwater to permit prediction of operation and maintenance costs of point of use treatment systems.
 - 4. Provide sufficient data to determine aquifer characteristics, contaminant distribution, exposure pathways, and receptors to permit the development of a defensible risk assessment and an evaluation of remedial alternatives for the site.
 - 5. Provide sufficient data to determine the magnitude and extent of unsaturated zone contamination at each potential source in sufficient detail to design/implement appropriate source control/remediation.
 - 6. Provide sufficient data to determine soil and aquifer characteristics to permit the selection of interim remedial actions, short-term measures or remedial designs for source control/remediation at each potential source.
 - 7. Provide sufficient data to determine contributions from surface runoff, sanitary and storm sewer line leakage.
- C. Suggested work elements which need to be conducted prior to any additional field work towards a Remedial Investigation**
- 1. Compile and provide to PRPs a complete bibliography of site information. All published reports, public documents (e.g. submitted to EPA), non-privileged documents (e.g. reports the PRPs are willing to release), depositions, correspondence, and historic aerial photographs, should be included in this bibliography.

2. Compile and synthesize chemical data into a computerized database for the purposes of statistical analyses and map generation. Chemical data reported in dissimilar units (such as ppmv versus $\mu\text{g/L}$ in the soil vapor surveys) must be converted and standardized to the same unit of measurement. Data from all PRPs should be included in this database. Geraghty and Miller may already have developed a database which may be expanded to meet the needs of future field work.
 3. Develop a computerized base map for the entire area, including all impacted water supply wells.
 4. Update the existing well inventory compiled by Geraghty and Miller and also identify locations of all soil borings, soil vapor points, surface soil sampling locations, sump and tank pit sampling locations, monitor wells, production wells and rock outcrops on the base map (item 3, above). This will allow data gaps to be identified. Many sample and soil boring locations, and monitor wells installed by the PRPs are not presented in Technical Memorandum II.
 5. Prepare a summary of all lithologic logs and well completion diagrams for wells/borings on site. Hydrogeologic cross sections should be included in this summary.
 6. Review and analyze all applicable data and analyses based upon a specific set of Data Quality Objectives.
 7. Evaluate existing aquifer test data to determine adequacy of tests. Tests conducted by Caribbean Hydro-Tech may be sufficient to characterize certain portions of the site. Aquifer test data presented in Technical Memorandum II are of limited application toward a RI due to the documented logistical problems associated with the tests.
- D. Work elements required as part of a Remedial Investigation to be incorporated into imminent field work currently scheduled to be performed in 1993**
1. Survey all wells to a common datum within the investigation area; establish a site coordinate system. This will permit creation of complete and accurate potentiometric surface maps.
 2. Those monitor wells where analytical results were compromised due to elevated detection limits, or where other problems have affected analyte identification should be re-sampled. Detection limits must equal or surpass drinking water standards for the analytes of concern.
 3. A single-event water quality analysis program should be performed on all wells in the area. Field analysis of dissolved oxygen and dissolved carbon dioxide should be included in this program. Samples for analysis of known or suspected contaminants should be collected and these data used to determine protocol for future regular sampling as needed.

4. Additional shallow and deep wells are necessary to fully define the pattern of groundwater contamination. However, we strongly urge that the items listed in Section C must be completed before any additional field work is done. Notwithstanding our unanimous opinion that the items in Section C must be completed before specific well locations can be evaluated or recommended in a technically-defensible manner, we offer the following comments on Geraghty & Miller's recommendations for additional wells as shown on Figure 7-1 of Tech Memo II.
- MW-15: The proposed location for this well should be moved approximately 50 feet west-northwest to ensure that the well does not lie close to locations of documented releases. The new location should be hydraulically equivalent to the original MW-15 location.
 - MW-16: Provided site conditions are appropriately dealt with such that the underground storage tank at this location can be removed without jeopardizing the integrity of the well.

Examples of additional wells that were discussed by the Technical Group and may be useful in the delineation of groundwater contamination are as follows:

- An additional shallow well should be located equidistant between MW-9 and proposed MW-18 to further define the down-gradient extent of organic contamination.
- A monitoring well should be installed up-gradient of the O'Henry laundry. This should be located 100 feet north-northeast of existing well MW-2 on the O'Henry property.
- Monitoring wells should be installed 300 feet due east of existing well MW-7 and 200 feet due east of MW-10 and -10D, adjacent to Highway 382.
- Several wells should be installed down-gradient of the Harvey well.
- A monitoring well should be installed at the fence line between Ramsay Motors and Antilles Motors directly south of the original proposed location of MW-15.

Justifications for these additional wells will be provided in subsequent communications upon EPAs request.

5. With respect to recommendations for additional soil borings, the PRP Group has examined the proposed recommendations from Geraghty & Miller. Although those recommended locations may indeed provide useful additional information, the group feels that without the systematic completion of the items included in Section C it is not prepared to individually comment on the soil boring locations suggested by Geraghty & Miller.

6. An evaluation of contaminant migration pathways arising from sanitary and storm sewers is necessary. The potential for these features to act as sources has not been investigated; therefore, appropriate measures should be taken to examine the potential for these sources.

The process by which any additional field investigations should take place is described below:

- Complete items included in Section C
- Evaluate need for additional field work, recommend and design additional field work
- Implement additional field work
- Complete data evaluation
- Complete RI/FS

The PRP Group feels that it is important, in order to arrive at a defensible RI for the site, that the data included as part of Section C activities be thoroughly considered in the development of the final RI/FS.

E. Preliminary recommendations for additional work required for a complete Remedial Investigation

1. Complete additional soil vapor surveys and obtain additional soil samples as necessary to define extent and magnitude of unsaturated zone contamination at each potential source area.
2. Agree to a single sampling and analysis protocol (including Data Quality Objectives) for the RI and any sampling conducted for subsequent interim remedial actions, tank removals, etc. Soil samples at all sites should be evaluated for solvents and other organic contaminants using standardized sampling and analytical techniques which will optimize the recovery and analysis of representative samples. Air permeability, bulk density, soil moisture, soil clay and organic content, and grain-size distribution measurements at specific locations may be appropriate if soil venting techniques are to be considered for contaminant control and source remediation at each potential source area. The method for determining the depth to bedrock in borings and wells must be standardized.
3. Obtain quarterly water level measurements on all wells identified in the area.

4. Develop adequate conceptual models of the hydrogeologic system, contaminant distribution, contaminant transport pathways and controlling fate mechanisms.

This memorandum was developed by the following Technical Group:

John T. Burkart, R.G., REA - Cooper Environmental, Ramsay Motors, Inc.
Ivan A. Cooper, P.E. - Cooper Environmental, Ramsay Motors, Inc.
Stephen Dubyk - H⁺GCL, Inc., Texaco Caribbean, Inc.
Donald P. Galya, P.E. - ENSR Consulting and Engineering, Western Auto, Inc.
Bruce K. Green - Caribbean Hydro-Tech, Inc., Four Winds Plaza Partnership
Randall T. Hicks - H⁺GCL, Inc., Texaco Caribbean Inc.
David E. Langseth - Arthur D. Little, Inc., Andreas Gal & Paul Lazare
Kenneth L. Loy - International Technology Corporation, L'Henri, Inc.
Thomas F. Maquire, CPG - Blasland & Bouck Engineers, P.C., Esso, S.A.
Belinda K. Price, MS, RPG - International Technology Corporation, L'Henri, Inc.

54153/RESPONS4.LTR