# AMERADA HESS CORPORATION

732-750-6000
732-750-6105 (FAX)

1 HESS PLAZA
WOODBRIDGE, NJ 07095-0961

December 28, 2005



Ms. Sarah Andersen
Environmental Engineer
Petroleum Remediation Unit
Environmental Remediation Division
NYSDEC Region 2
47-40 21st Street
Long Island City, NY 11101-5407

Via: **CERTIFIED MAIL #7002 2410 0003 9874 1244**
**RETURN RECEIPT REQUESTED**

Re: Remedial Action Plan
Hess Station 32522 – Metropolitan
810 Metropolitan Avenue
Brooklyn, New York
NYSDEC Spill # 95-02757

Dear Ms. Andersen:

Pursuant to a letter from the New York State Department of Environmental Conservation (NYSDEC) dated December 6, 2005, Amerada Hess Corporation (Hess) has prepared the following Remedial Action Plan (RAP) for the above-referenced site. The RAP includes the use of extended-period air sparge (AS)/soil vapor extraction (SVE) events in the vicinity of monitoring well MW-4 and the installation of oxygen releasing material (ORM) socks in monitoring wells MW-2 and MW-4 for remediation of soil and groundwater.

## TECHNOLOGY OVERVIEW

### Air Sparge/Soil Vapor Extraction

AS technology involves the injection of air under pressure below the water table. The injected air displaces water and creates air-filled porosity in the saturated soils. The injected air contacts and removes dissolved and adsorbed (i.e. smear zone) phase volatile organic compounds (VOCs). These compounds volatilize into the air stream that migrates up into the overlying unsaturated soils above the water table where they are captured and removed via SVE technology.

### Oxygen Releasing Material

ORM, when mixed with water, slowly releases oxygen that can be used by microorganisms to biodegrade petroleum in groundwater and soil. In the presence of this oxygen source aerobic microbes flourish, accelerating natural attenuation of gasoline and fuel additives [i.e. benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary-butyl ether (MTBE)].

## SCOPE OF WORK

### Well Installation

As depicted in the enclosed Figure 1, two (2) AS wells and one (1) SVE well will be installed in the vicinity of monitoring well MW-4 to be utilized during the AS/SVE events. The AS wells will be constructed of 2-inch

diameter PVC with a screen zone extending from approximately 34 to 36 feet below grade (ft. bg.). A bentonite seal will be placed above the AS well screen zone during construction to prevent injected air from escaping upward through the annulus and maximize lateral movement of air into the formation. The SVE well will be constructed of 4-inch diameter PVC with a screen zone extending from approximately 15 to 30 ft. bg. All new wells will be developed following installation.

**AS/SVE Events & ORM Application**

Following well installation, extended-period AS/SVE events will be performed weekly for three (3) consecutive weeks. The events will be performed on the newly-installed remediation wells in the vicinity of monitoring well MW-4 using portable SVE/AS equipment. ORM socks will be installed in monitoring wells MW-2 and MW-4. The socks will be installed immediately below the water table in the monitoring wells.

**Operation, Maintenance and Monitoring Plan (OMMP)**

Prior to the AS/SVE events and ORM application, the existing network of monitoring wells (MW-1 through MW-5) will be gauged for depth to water, dissolved oxygen and temperature. During each of the three (3) weekly AS/SVE events, SVE effluent air samples will be collected for analysis of VOCs using a photo-ionization detector (PID). Monitoring well MW-4 will be gauged for depth to water, dissolved oxygen and temperature prior to and following each of the weekly AS/SVE events. Monitoring well MW-2 will also be gauged for the above-mentioned parameters during each of the weekly site visits.

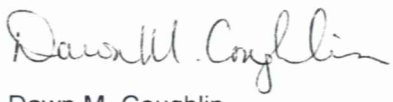
On a tri-annual basis, monitoring wells MW-1 through MW-5 will be gauged for depth to water, dissolved oxygen and temperature. Groundwater samples will be collected from monitoring wells MW-2, MW-3 and MW-4 and analyzed for BTEX and MTBE using EPA Method 602. The data gathered from the well gauging and groundwater sampling will be used to evaluate the effectiveness of the AS/SVE events and ORM application and will be the basis for the request for spill closure.

**Reporting**

The data obtained from the AS/SVE events, well gauging and groundwater sampling will be summarized in tri-annual update reports.

If you have any questions or comments, please do not hesitate to contact Gail Russo of Quantum Management Group, Inc. at (732) 750-6863 or the undersigned at (732) 750-7068.

Sincerely,



Dawn M. Coughlin
Manager, Marketing and Refining Remediation

Enclosure

cc: Edward E. Russo – EnviroTrac (w/o Enc.)
Gail Russo – Quantum (w/o Enc.)

MOTORCYCLE SAFETY SCHOOL

RESIDENTIAL

METROPOLITAN AVENUE

AMOCO SERVICE STATION

BUSHWICK AVENUE

KIOSK

DIESEL

DIESEL

AUTO YARD

RESIDENTIAL

UST VENTS

STORAGE BUILDING

GASOLINE

DIESEL

VAPOR RECOVERY

APPROXIMATE AREA OF REMOTE FILLS

RESIDENTIAL

LEGEND:

= MONITORING WELL

= PROPOSED SOIL VAPOR EXTRACTION WELL

= PROPOSED AIR SPARGE WELL

= EXISTING UST

= FORMER UST

= GASOLINE DISPENSER

NOTE: DATA TAKEN FROM ENVIRONMENTAL ALLIANCE, INC. MAP DATED 12/10/97

EnviroTrac
80 B AIR PARK DRIVE
RONKONKOMA, NEW YORK 11779
PHONE: (631)471-1500 FAX: (631)471-6363

0 FT 25

| REVISION DATE: | SCALE: | REVISED BY: |
|---|---|---|
| DECEMBER 22, 2005 | 1" = 25' | TB |

HESS STATION #32522 – METROPOLITAN
810 METROPOLITAN AVENUE
BROOKLYN, NEW YORK

PROPOSED WELL LOCATIONS

FIGURE # 1