

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

1111 Clairemont Mesa Blvd., Ste. B
San Diego, California 92124-1331
Telephone: (619) 265-5114

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

P 116 722 306

May 19, 1989

RECEIVED
MAY 23 1989
ENVIRONMENTAL V.H.S.

Mr. Vernon Sorgee, Director
Environmental Management
Greyhound Lines, Inc.
901 Main Street, Suite 2500
Dallas, Texas 75202

Dear Mr. Sorgee:

RE: CLEANUP AND ABATEMENT ORDER NO. 89-49

Enclosed is Cleanup and Abatement Order No. 89-49. This Cleanup and Abatement Order is being issued to Greyhound Lines, Inc. under the authority of California Water Code section 13304 in response to the presence of petroleum hydrocarbon contamination in the soil and ground water beneath the Greyhound Maintenance Center at 539 First Avenue, San Diego, California which is presently owned by Greyhound Lines, Inc.

Basically, the Cleanup and Abatement Order directs Greyhound Lines, Inc. to clean up the soil contamination, remove free product (if any), and clean up ground water to the satisfaction of the Regional Board Executive Officer.

The Order requires Greyhound Lines, Inc. to conduct a subsurface investigation to characterize the vertical and horizontal extent of contamination in the soil and ground water (both free product and dissolved). This report is due no later than August 31, 1989. The Order also requires Greyhound Lines, Inc. to submit quarterly monitoring/progress reports to this office until, in the opinion of the Executive Officer, the cleanup can be considered complete. The first quarterly progress report is due no later than September 30, 1989. A copy of these monitoring reports should also be sent to the Hazardous Materials Management Division of the County of San Diego Department of Health Services.

You are hereby notified that you have the right to a public hearing before the Regional Board concerning Cleanup and Abatement Order No. 89-49. If you desire to have a public hearing at the Regional Board's next meeting on July 10, 1989 meeting, you must notify this office of your request in writing by June 20, 1989. If no written request for a public hearing is received by June 20, 1989, then a public hearing will not be scheduled. The July 10, 1989 Regional Board meeting will begin at 9:00 a.m. in Room B109 of the State Office Building, 1350 Front Street, San Diego.

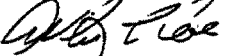
I strongly urge a prompt and complete response to each directive of Cleanup and Abatement Order No. 89-49. My staff will be happy to work with you toward achieving compliance with the Cleanup and Abatement Order.

Mr. Vernon Sorgee
May 19, 1989

-2-

If you have any questions, please contact Mr. John Anderson at (619) 265-5114.

Very truly yours,


LADIN H. DELANEY
Executive Officer

JPA

Enclosure

cc: Ms. Sheila Vassey, Office of Chief Counsel, State Water Resources Control Board,
Sacramento.

Mr. Kevin Heaton, Hazardous Materials Management Division, County of San Diego
Department of Health Services, San Diego.

Mr. John Clemons, White & Bright, 355 W. Grand Avenue, Ste. 2, Escondido, California
92025

Mr. Jeffrey R. Stoke, Lillick & McHose, 101 West Broadway, 18th floor, San Diego

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

CLEANUP AND ABATEMENT ORDER NO. 89-49

GREYHOUND LINES, INCORPORATED
GREYHOUND MAINTENANCE CENTER
539 FIRST AVENUE, SAN DIEGO
PARCEL NO. 535-072-03-00
BLOCK 92, LOTS C THRU J
SAN DIEGO COUNTY

California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds that:

1. Greyhound Lines, Inc. (hereinafter Greyhound) owns and operates a bus maintenance center at 539 First Avenue. The site is within the San Diego Mesa Hydrographic Subunit (8.2) of the Coronado Hydrographic Unit (8.0).
2. On September 9, 1987, the Regional Board sent a letter to Greyhound requesting information regarding past practices associated with the subject site.
3. By letter dated September 21, 1987, Greyhound informed the Regional Board that five tanks currently exist at the facility. They include:
 - One small, abandoned steel waste oil tank,
 - Two 10,000 gallon steel diesel tanks,
 - One 8,000 gallon steel motor oil tank, and
 - One 1,000 gallon steel waste oil tank.
4. The site is a part of the Marina Redevelopment Project in the center city area of the City of San Diego. The project is being administered by the Redevelopment Agency of the City of San Diego. The Centre City Development Corporation, Inc. (CCDC) is a nonprofit corporation established by the City of San Diego to administer downtown redevelopment projects, including the Marina Redevelopment Project.
5. In 1987, CCDC discovered a subsurface hydrocarbon plume near the intersection of Market Street and First Avenue. The subsurface plume is composed of petroleum hydrocarbon with a carbon chain which ranges from gasoline to diesel and appears to be an accumulation of several coalescing sources. A 3.0 foot thickness of petroleum hydrocarbon was measured in a ground-water monitoring well adjacent to the eastern boundary of the subject property. The subject site is on the southern margin of this hydrocarbon plume.
6. By letter dated November 12, 1987, Regional Board staff requested Greyhound to conduct a subsurface investigation to ascertain whether or not fuel has been discharged into the environment.
7. In response to our letter of November 12, 1987, Regional Board staff received, and subsequently approved, a workplan from Applied GeoSystems for Greyhound. According to the workplan, the small waste oil tank mentioned in Greyhound's September 21, 1987 letter, appears to be a 5,000 gallon tank, presumably constructed of steel.

8. Regional Board staff subsequently received a technical subsurface investigation report summary, dated February 12, 1988, and additional information submitted by letter, dated February 23, 1988, from Greyhound. This information was inadequate to determine whether the tank system had discharged fuel to the subsurface.
9. By letter dated April 1, 1988, Regional Board staff requested Greyhound to conduct a new subsurface investigation.
10. Greyhound submitted the requested technical report prepared by Kleinfelder, Inc. dated December 21, 1988. Regional Board staff requested additional information by letter dated March 24, 1989. Greyhound has submitted a portion of the requested information in a letter dated May 3, 1989.
11. The following pertinent information has been provided to date:
 - a. The two 10,000 steel fuel tanks and the 5,000 gallon waste oil tank (abandoned about 1975) were installed in 1953 and are now 36 years old. The tanks apparently do not have secondary containment nor are they equipped with cathodic protection.
 - b. From 1953 to 1967, the 10,000 gallon tanks held leaded gasoline. From 1967 to 1973, they held diesel No. 1-D. From 1974 to Present, they have held diesel No. 2-D.
 - c. The two 10,000 gallon steel tanks are believed to extend to a depth of 12 feet. To date, however, no soil samples, above the 15-foot horizon, have been analyzed for petroleum hydrocarbons.
 - d. The Kleinfelder report indicated that a maximum organic vapor meter reading of >1,000 occurred at the 10-foot sampling point, however no soil sample analysis was performed. It appears that there is soil contamination which occurs above the historic high ground-water level (16-18 feet below ground surface), and occurs within 10 feet of the 10,000 gallon tanks.
 - e. Monitoring wells drilled near the 10,000 gallon tanks detected 4 to 5 feet of floating hydrocarbon product. The floating product beneath the facility contains the same petroleum hydrocarbon constituents which have historically been stored on site in the 10,000 gallon tanks.
 - f. Results of precision tests conducted by Greyhound in 1987 and 1988 indicate that the 4 active tanks are leaking small amounts of product.
 - g. No information has been provided by Greyhound regarding whether the abandoned waste oil tank still contains waste oil.
 - h. No information has been provided regarding whether the product lines and associated piping have been precision tested.
 - i. Significant soil and ground-water contamination exists beneath the site at the 15 to 20 feet depth. Soil above the 15 foot level has not been adequately assessed.

12. From available data, it appears that a discharge of hydrocarbon fuel to the environment has occurred, and is still occurring, in the vicinity of the Greyhound maintenance center tanks and that the discharge has reached the historic water table.
13. The *Comprehensive Water Quality Control Plan Report, San Diego Basin (9)* (Basin Plan) was adopted by this Regional Board on March 17, 1975; approved by the State Water Resources Control Board on March 20, 1975; and updated by the Regional Board on February 27, 1978; March 23, 1981; January 24 and October 3, 1983; August 27, 1984; and December 16, 1985. The updates were subsequently approved by the State Board.
14. The Basin Plan established no beneficial uses for surface or ground waters in the San Diego Mesa Hydrographic Subunit.
15. The Basin Plan established the following beneficial uses for San Diego Bay:
 - a. Industrial Service Supply
 - b. Navigation
 - c. Water Contact Recreation
 - d. Non-Contact Water Recreation
 - e. Ocean Commercial And Sport Fishing
 - f. Saline Water Habitat
 - g. Preservation of Rare and Endangered Species
 - h. Marine Habitat
 - i. Fish Migration
 - j. Shellfish Harvesting
16. The quality of the ground water of the San Diego Mesa Hydrographic Subunit and of the San Diego Bay water is subject to the provisions of the State Water Resources Control Board's Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality Waters in California*. This policy is incorporated in the Basin Plan. Under the terms and conditions for Resolution No. 68-16, the existing (predischARGE) quality of ground water in the San Diego Mesa Hydrographic Subunit and the surface water of San Diego Bay must be maintained unless it is demonstrated that a decrease in water quality (1) will be consistent with maximum benefit to the people of the state, (2) will not unreasonably affect beneficial uses, and (3) will not result in water quality less than that prescribed in the Basin Plan or other adopted policies.
17. The Basin Plan contains the following prohibition:

"Dumping or deposition of oil, garbage, trash or other solid municipal, industrial or agricultural waste into natural or excavated sites below historic water levels or deposition of soluble industrial wastes at any site is prohibited, unless such site has been specifically approved by the Regional Board for that purpose."

The subject site has not been specifically approved by the Regional Board for the above purpose.

18. Section 13304(a) of the California Water Code states the following:

"Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, cause or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up such waste or abate the effects thereof or, in the case of threatened pollution or nuisance, take other necessary remedial action."

19. Greyhound has caused or permitted petroleum hydrocarbons to be discharged or deposited on the site where such wastes have been and probably will be discharged into the ground water. The on-going discharge of petroleum hydrocarbons to the ground water has resulted in pollution of the ground water and threatens to pollute waters of San Diego Bay for beneficial uses listed in Finding No. 15. Additionally, the on-going discharge violates Resolution 68-16 because the Regional Board finds that the decrease in ground-water quality is not consistent with the maximum benefit to the people of the state.
20. These discharges have polluted and threaten to further pollute ground water of the basin and threaten to pollute surface water of San Diego Bay.
21. Regional Board files indicate that the ground water has a total dissolved solids (TDS) concentration that ranges from 1,085 to 3,080 parts per million (ppm) and, under the federal definition, qualifies as a potential underground source of drinking water. The United States Environmental Protection Agency's (EPA) definition of an "underground source of drinking water" is found in Title 40, Code of Federal Regulations (40 CFR), Section 146.3, and states the following:

"Underground source of drinking water (USDW) means an aquifer or its portion:

- (1) (i) Which supplies any public water system; or
- (ii) Which contains a sufficient quantity of ground water to supply a public water system; and
 - (a) Currently supplies drinking water for human consumption; or
 - (b) Contains fewer than 10,000 mg/l total dissolved solids; and
- (2) Which is not an exempted aquifer."

As defined under 40 CFR Section 141.2(e) a "public water system" means:

- 1. "a system for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year."

Presently, the ground water is not being used as a drinking water source. However, some time in the future this water source may be utilized. The discharge of petroleum hydrocarbons degrades the existing water quality and renders it unusable for drinking water unless the ground water is treated.

22. The ground water beneath the site is in continuity with waters of the bay. The petroleum hydrocarbon concentrations are hazardous to marine life and may impact other beneficial uses of San Diego Bay, as described in Finding No. 15, if allowed to migrate to the bay.
23. Greyhound has demonstrated negligence in the discharge of petroleum hydrocarbons to the environment as follows:
 - a. Single-walled steel tank construction which is subject to corrosion,
 - b. No cathodic protective coating of the tanks,
 - c. No early warning site monitoring to detect any discharges,
 - d. No tank over-spill protection, and
 - e. The lack of thorough and adequate tank tests, given the age (36 years old) of the steel tanks.
24. Greyhound installed the underground fuel tanks at the site. The existence of soil and ground-water contamination at the site indicates that the tanks and/or associated piping has leaked. Petroleum hydrocarbon from the tanks has been and are being discharged to the ground water. These discharges constitute a continuing public nuisance in violation of Civil Code Section 3490. The discharges also violated Health and Safety Code Section 5411 and California Water Code Section 13304(a).
25. Civil Code Section 3490 prohibits the creation or continuation of a public nuisance. The courts have held that water pollution constitutes a public nuisance. In addition, Health and Safety Code Section 5411 prohibits the discharge of waste which will result in pollution, contamination, or nuisance. The past and on-going subsurface discharge of petroleum hydrocarbons has resulted in pollution and in threatened pollution.
26. For reasons explained above, the Regional Board finds that Greyhound has discharged and is discharging petroleum hydrocarbons at the site in violation of Section 13304(a) of the California Water Code.
27. Regional Board considers this property one of several properties which have contributed to the ground-water plume for which Cleanup and Abatement Orders will be issued to collectively mitigate the contamination.
28. This enforcement action is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED, that pursuant to Section 13304 of the California Water Code, Greyhound Lines, Inc. (hereinafter the discharger) shall comply with the following directives:

1. The discharger shall conduct a subsurface investigation and submit the results in a report to this office, no later than August 31, 1989, which characterizes the vertical and horizontal extent of petroleum hydrocarbon contamination in the soil and ground water (both free product and dissolved) resulting from the unauthorized release from the maintenance center at the subject site. The report shall contain the following information:

add
Site
Baseline

- a. A site map showing the location of all borings and monitoring wells.
- b. Provide a true and accurate map which depicts all past and present tank locations and all associated piping and any underground utilities that might act as conduits along which petroleum hydrocarbons could migrate.

N/A

- c. Answers to the following questions:

(1). Why was the 5,000 gallon waste oil tank abandoned? *N/A*
Has this tank ever been precision tested for tightness? Was the tank abandoned with waste oil still in the tank? Is there waste oil presently in the tank?

(2). Why did the 1976 plot plan state that the diesel fuel tanks will be abandoned? *N/A*

(3). Has the piping and associated product lines ever precision tested for tightness? Were product lines ever repaired or replaced? *N/A*

(4). How long does Greyhound retain repair and product inventory reconciliation records? *3 yrs*

N/A

- d. The water levels and fuel product thicknesses in all wells on or immediately adjacent to the property (to the nearest 0.01 foot). *N/A*

de

- e. A site map showing the contours and/or boundary of the soil contamination. *found under tanks or piping that is due to carbon spill from fill*
- f. A site map showing the hydrologic contours and the boundary of the free product plume and the dissolved product ground-water contamination.

include

- g. All soil samples should be analyzed for the following:

- (1). Benzene, Toluene, Ethylbenzene, and total Xylenes (using EPA method 8020),
- (2). Total Petroleum Hydrocarbons [using EPA method 418.1 and California Department of Health Services (CDOHS) method],
- (3). Organic Lead (using CDOHS method),
- (4). Polynuclear Aromatic Hydrocarbons (using EPA method 8100).

N/A

- h. All ground-water samples should be analyzed for the following:

- (1). Benzene, Toluene, Ethylbenzene, and total Xylenes (using EPA method 8020)
- (2). Total Petroleum Hydrocarbons (using CDOHS method)
- (3). Total Lead (using EPA method 7421)
- (4). Polynuclear Aromatic Hydrocarbons (using EPA method 8100).

2. The discharger shall submit a remedial action strategy proposal, no later than October 16, 1989, which addresses the removal and/or treatment of the soil contamination.

3. The discharger shall submit a remedial action strategy proposal, no later than November 30, 1989, which addresses the removal of any free product and the removal and/or treatment of the ground-water contamination.

4. The discharger shall take:

- a. Effective remedial action to immobilize and remove any free product plume.
- b. Effective remedial action to immobilize and clean up petroleum hydrocarbon dissolved in the ground water to the following levels:

water?

<u>Constituent</u>	<u>Cleanup Level</u>
Benzene	40 ppb
Toluene	5,000 ppb
Ethylbenzene	430 ppb
Total Xylenes	1,750 ppb

- c. Effective remedial action to remove and/or treat all soil contamination to a level which would prevent leaching of petroleum hydrocarbons to the ground water which would cause contamination in the ground water to exceed the cleanup levels stated in Directive 4(b) above.
5. The discharger shall submit monitoring reports to this office on a quarterly basis until, in the opinion of the Regional Board Executive Officer, the site has been cleaned up. The monitoring reports shall describe the progress made in the cleanup operations and shall demonstrate that the petroleum hydrocarbons discharged from the maintenance center has been and remains immobilized. The quarterly monitoring reports shall include, but not be limited to, the following information:
- a. A map of the site with hydrologic contours showing the ground-water flow pattern and the locations of all wells.
 - b. A map of the site showing the boundary of the free petroleum hydrocarbon product plume (if any).
 - c. The water levels and product thickness (if any) in all of the wells (to the nearest 0.01 foot).
 - d. A description of the remedial actions employed by the discharger.

The quarterly monitoring reports shall be submitted to this office in accordance with the following schedule:

<u>Reporting Period</u>	<u>Due Date</u>
June, July, August	<u>September 30</u>
September, October, November	<u>December 30</u>
December, January, February	<u>March 30</u>
March, April, May	<u>June 30</u>

6. The discharger shall dispose of all ground water and/or soil polluted with petroleum hydrocarbons in accordance with all applicable local, state, or federal laws and regulations.

7. After the discharger demonstrates to the Regional Board Executive Officer's satisfaction that the final cleanup levels have been achieved throughout the soil and ground-water contamination zones, the discharger shall continue to monitor the ground water and submit quarterly monitoring reports in accordance with Directive No. 5 of this Order for a period of one year. If at any time during this post-cleanup monitoring the data indicate that the final cleanup levels have not been maintained, the discharger shall immediately resume appropriate remedial cleanup actions. If the final cleanup levels have not been exceeded for the year of monitoring, then no further monitoring will be required.

Ordered by: _____

Ladin H. Delaney
Ladin H. Delaney
Executive Officer

Dated: May 19, 1989

JPA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

71 Clairemont Mesa Blvd., Ste. B
San Diego, California 92124-1331
Telephone: (619) 265-5114

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

P 954 098 860

October 27, 1989

Mr. Vernon Sorgee, Director
Environmental Management
Greyhound Lines, Inc.
901 Main Street, Suite 2500
Dallas, Texas 75202

Dear Mr. Sorgee:

RE: ISSUANCE OF ADDENDUM NO. 1 TO CLEANUP AND ABATEMENT ORDER
NOS. 89-48, 89-49, 89-50 (THIRD REVISION), AND 89-51.

Enclosed is a copy of Addendum No. 1 to Cleanup and Abatement Order Nos. 89-48, 89-49, 89-50 (Third Revision), and 89-51. This Addendum is being issued under the authority of Water Code Section 13304 to Greyhound Lines, Inc. in response to the presence of petroleum hydrocarbon contamination in the soil and ground water beneath 539 First Avenue in downtown San Diego.

Basically, Addendum No. 1 extends the submittal date for the ground-water remedial action strategy proposal from November 30, 1989 to February 16, 1990 to allow the responsible parties time to develop an effective remediation proposal.

You are hereby notified that you have the right to a public hearing before the Regional Board concerning Addendum No. 1 to Cleanup and Abatement Order Nos. 89-48, 89-49, 89-50 (Third Revision), and 89-51. If you desire to have a public hearing at the Regional Board's next meeting on December 18, 1989, you must notify this office of your request in writing by November 28, 1989. If no written request is received, then a public hearing will not be scheduled. The December 18, 1989 Regional Board meeting will begin at 9:00 a.m. at the Encinitas City Council Chamber, 535 Encinitas Boulevard, Suite 100, Encinitas, California.

I strongly urge a prompt and complete response to each directive of Cleanup and Abatement Order No. 89-49. My staff will be happy to work with you toward achieving compliance with the Cleanup and Abatement Order.

Mr. Sorgee
Addendum No. 1

-2-

October 27, 1989

If you have any questions, please contact Mr. John Anderson at the above number.

for Michael Molan
LADIN H. DELANEY
Executive Officer

JPA

Enclosures

cc: Ms. Sheila Vassey, Office of Chief Counsel, State Water Resources Control Board, Sacramento.

Mr. Kevin Heaton, Hazardous Materials Management Division, County of San Diego Department of Health Services, San Diego.

Mr. John Clemons, White & Bright, 355 W. Grand Avenue, Suite 2, Escondido, California 92025

Mr. Jeffrey R. Stoke, Lillick & McHose, 101 West Broadway, 18th floor, San Diego, California 92101

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 1
TO

CLEANUP AND ABATEMENT ORDER NOS. 89-48, 89-49, 89-50, AND 89-51
REGARDING
THE PETROLEUM HYDROCARBON CONTAMINATION OF GROUND WATER
IN THE DOWNTOWN SAN DIEGO AREA

California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds that:

1. On May 19, 1989, the Regional Board Executive Officer issued the following Cleanup and Abatement Orders:
 - a. No. 89-48 to G.T.F. Properties and Shell Oil Company;
 - b. No. 89-49 to Greyhound Lines Inc.;
 - c. No. 89-50 to the Redevelopment Agency for the City of San Diego;
 - d. No. 89-51 to Golden West Hotel and Unocal Corporation

These orders were issued for violation of Section 13304(a) of the California Water Code for discharges of petroleum hydrocarbon to the vadose zone and underlying ground water.

2. Based on technical reports submitted to date, the Regional Board considers the above named parties to have contributed to ground-water contamination.
3. The Cleanup and Abatement Orders referenced above established the following directives:
 - a. The discharger(s) shall conduct a subsurface investigation and submit the results in a report to this office, no later than August 31, 1989, which characterizes the vertical and horizontal extent of petroleum hydrocarbon contamination in the soil and ground water (both free product and dissolved) resulting from the unauthorized release from the subject site.
 - b. The discharger(s) shall submit a remedial action strategy proposal, no later than October 16, 1989, which addresses the removal and/or treatment of the soil contamination.
 - c. The discharger(s) shall submit a remedial action strategy proposal, no later than November 30, 1989, which addresses the removal of any free product and the removal and/or treatment of the ground-water contamination.

October 26, 1989

4. As a result of communication between Regional Board staff and the responsible parties, a new submittal date is necessary to allow the responsible parties time to develop an effective ground-water remediation proposal.
5. This enforcement action is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED, that Directive No. 3 of Cleanup and Abatement Order Nos. 89-48, 89-49, 89-50 (Third Revision), and 89-51 is revised as follows:

1. The discharger(s) shall submit a remedial action strategy proposal, no later than February 16, 1990, which addresses the removal of any free product and the removal and/or treatment of the ground-water contamination.

Ordered by:

Ladin H. Delaney
Ladin H. Delaney
Executive Officer

Dated: October 26, 1989

JPA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 2
TO

CLEANUP AND ABATEMENT ORDER NOS. 89-48, 89-49,
89-50 (THIRD REVISION), AND 89-51

REGARDING

THE PETROLEUM HYDROCARBON CONTAMINATION OF GROUND WATER
IN THE DOWNTOWN SAN DIEGO AREA

California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds that

1. On May 19, 1989, the Regional Board Executive Officer issued the following Cleanup and Abatement Orders:
 - a. No. 89-48 to G.T.F. Properties and Shell Oil Company;
 - b. No. 89-49 to Greyhound Lines Inc.;
 - c. No. 89-50 to the Redevelopment Agency for the City of San Diego;
 - d. No. 89-51 to Golden West Hotel and UNOCAL Corporation.

These orders were issued for violation of Section 13304(a) of the California Water Code for discharges of petroleum hydrocarbon to the vadose zone and underlying ground water.

2. Based on technical reports submitted to date, the Regional Board considers the above named parties to have contributed to ground-water contamination.
3. The Cleanup and Abatement Orders referenced above established the following directives:
 - a. The discharger(s) shall conduct a subsurface investigation and submit the results in a report to this office, no later than August 31, 1989, which characterizes the vertical and horizontal extent of petroleum hydrocarbon contamination in the soil and ground water (both free product and dissolved) resulting from the unauthorized release from the subject site.
 - b. The discharger(s) shall submit a remedial action strategy proposal, no later than October 16, 1989, which addresses the removal and/or treatment of the soil contamination.
 - c. The discharger(s) shall submit a remedial action strategy proposal, no later than November 30, 1989, which addresses the removal of any free product and the removal and/or treatment of the ground-water contamination.
4. As a result of communication between Regional Board staff and the responsible parties, a new submittal date is necessary to allow the responsible parties time to develop an effective ground-water remediation proposal.

February 15, 1990

5. This enforcement action is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED, that Directive No. 3 of Cleanup and Abatement Order Nos. 89-48, 89-49, 89-50 (Third Revision), and 89-51 is revised as follows:

1. The discharger(s) shall submit a remedial action strategy proposal, no later than April 16, 1990, which addresses the removal of any free product and the removal and/or treatment of the ground-water contamination.

Ordered by:

Ladin H. Delaney
Ladin H. Delaney
Executive Officer

Dated: February 15, 1990

JPA:amend_2.C&A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

9771 Clairemont Mesa Blvd., Ste. 8
San Diego, California 92124-1331
Telephone: (619) 285-5114

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 16, 1990

Mr. Embry Byrd, Director Environmental Management P 550 242 109
Greyhound Lines, Inc.
901 Main Street, Suite 2500
Dallas, Texas 75202

Mr. Kenneth M. Ries, Director P 550 242 110
Environment and Energy
The Greyhound Corporation
Greyhound Tower
111 West Clarendon
Phoenix, Arizona 85077

Dear Messrs. Byrd and Ries:

RE: ISSUANCE OF ADDENDUM NO. 3 TO CLEANUP AND ABATEMENT ORDER
NOS. 89-49.

Enclosed is a copy of Addendum No. 3 to Cleanup and Abatement (C&A) Order No. 89-49. This Addendum is being issued under the authority of Water Code Section 13304 to Greyhound Lines, Inc. and Transportation Leasing Company in response to the presence of petroleum hydrocarbon contamination in the soil and ground water beneath 539 First Avenue in downtown San Diego.

Addendum No. 3 adds the Transportation Leasing Company as a responsible party for the remediation of the Greyhound Maintenance Facility.

You are hereby notified that you have the right to a public hearing before the Regional Board concerning Addendum No. 3 to C&A Order No. 89-49. If you desire to have a public hearing at the Regional Board's next meeting on March 12, 1990, you must notify this office of your request in writing and submit any written testimony by March 2, 1990. If no written request is received, then a public hearing will not be scheduled. The March 12, 1990 Regional Board meeting will begin at 9:00 a.m. at the Encinitas City Council Chamber, 535 Encinitas Boulevard, Suite 100, Encinitas.

Messrs. Byrd and Ries
Addendum No. 2


-2-

February 16, 1990

I strongly urge a prompt and complete response to each directive of C&A Order No. 89-49. My staff will be happy to work with you toward achieving compliance with the Cleanup and Abatement Order.

If you have any questions, please contact Mr. John Anderson at (619) 265-5114.



 LADIN H. DELANEY
Executive Officer

JPA:adengry2.1tr

Enclosures

cc: Ms. Sheila Vassey, Senior Staff Counsel, Office of Chief Counsel, State Water Resources Control Board, Sacramento.

Mr. Kevin Heaton, Hazardous Materials Management Division, County of San Diego Department of Health Services, San Diego.

Mr. John Clemons, White & Bright, 355 W. Grand Avenue, Suite 2, Escondido, California 92025

Mr. Jeffrey R. Stoke, Lillick & McHose, 101 West Broadway, 18th floor, San Diego, California 92101

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 3
TO

CLEANUP AND ABATEMENT ORDER NO. 89-49

AN ADDENDUM ADDING TRANSPORTATION LEASING COMPANY
AS A RESPONSIBLE PARTY TO ORDER NO. 89-49
FOR CONTAMINATION PRESENT

AT
GREYHOUND MAINTENANCE CENTER
539 FIRST AVENUE, SAN DIEGO
SAN DIEGO COUNTY

California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds that

1. On May 19, 1989, the Regional Board Executive Officer issued Cleanup and Abatement Order No. 89-49 to Greyhound Lines, Inc. for violation of Section 13304(a) of the California Water Code for discharges of petroleum hydrocarbons to the vadose zone and underlying ground water.
2. By letter dated January 24, 1990, Kenneth M. Ries, Director, Environment and Energy for Transportation Leasing Company (TLC), A Greyhound Company notified the Regional Board that TLC was assuming the responsibility for all remediation of soils and ground water at the Greyhound Maintenance Center. TLC is the former site and business owner of the Greyhound Maintenance Center at 539 First Avenue in San Diego.
3. The Regional Board has notified all known interested parties of its intent to modify C&A Order No. 89-49 to reflect the addition TLC as a responsible party for complying with C&A Order No. 89-49.

IT IS HEREBY ORDERED, that Cleanup and Abatement (C&A) Order No. 89-49 is modified as follows:

1. C&A Order No. 89-49 shall henceforth be referred to as Cleanup and Abatement Order No. 89-49 for Greyhound Lines, Incorporated and Transportation Leasing Company, Greyhound Maintenance Center.
2. The Directives contained in C&A Order No. 89-49 shall be applicable to Greyhound Lines, Inc. and Transportation Leasing Company and shall remain in full force and effect.
3. The word Discharger as it appears in C&A Order No. 89-49 shall hereafter be construed to refer to Greyhound Lines, Inc. and Transportation Leasing Company.

Ordered by: Ladin H. Delaney
Ladin H. Delaney
Executive Officer

Dated: February 20, 1990
JPA:amend_3.GRY

ORIGINAL NO: MAY 13, 1991
ADDENDUM 1: JULY 26, 1991
②: May 5, 1993
③: June 14, 1994

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

CLEANUP AND ABATEMENT ORDER NO. 91-45 [via JRO]

REDEVELOPMENT AGENCY OF THE CITY OF SAN DIEGO
303 MARKET STREET

G.T.F. PROPERTIES
AND
SHELL OIL COMPANY - RALPH'S
148 MARKET STREET

GOLDEN WEST HOTEL
AND
UNOCAL CORPORATION
235 MARKET STREET

GREYHOUND LINES, INCORPORATED
AND
TRANSPORTATION LEASING COMPANY
GREYHOUND MAINTENANCE CENTER
539 FIRST AVENUE

FOR
PETROLEUM HYDROCARBON CONTAMINATION OF GROUND WATER
IN THE DOWNTOWN SAN DIEGO AREA
SAN DIEGO COUNTY

California Regional Water Quality Control Board, San Diego Region
(hereinafter Regional Board) finds that:

1. In 1987, during routine exploratory boring, a subsurface hydrocarbon plume was discovered near the intersection of Market Street and First Avenue in downtown San Diego. The subsurface plume is composed of petroleum hydrocarbon with a carbon chain which ranges from gasoline to diesel and appears to be an accumulation of several coalescing sources. The plume has an areal extent which covers all or portions of six city blocks.
2. On May 19, 1989, the Regional Board Executive Officer issued cleanup and abatement orders to the following responsible parties:
 - a. No. 89-48 to G.T.F. Properties and Shell Oil Company, 148 Market Street;
 - b. No. 89-49 to Greyhound Lines Inc., 539 First Avenue;

- c. No. 89-50 to the Redevelopment Agency for the City of San Diego, 303 Market Street;
- d. No. 89-51 to Golden West Hotel and UNOCAL Corporation, 235 Market Street.

These orders, which remain in effect, were issued pursuant to Section 13304(a) of the California Water Code for discharges of petroleum hydrocarbon to the vadose zone and underlying ground water.

These sites are within the San Diego Mesa Hydrographic Subunit (8.2) of the Coronado Hydrographic Unit (8.0).

- 3. The cleanup and abatement orders referenced above established the following directives:
 - a. The discharger(s) shall conduct a subsurface investigation and submit the results in a report to this office, no later than August 31, 1989, which characterizes the vertical and horizontal extent of petroleum hydrocarbon contamination in the soil and ground water (both free product and dissolved) resulting from the unauthorized release from the subject site.
 - b. The discharger(s) shall submit a remedial action strategy proposal, no later than October 16, 1989, which addresses the removal and/or treatment of the soil contamination.
 - c. The discharger(s) shall submit a remedial action strategy proposal, no later than November 30, 1989, which addresses the removal of any free product and the removal and/or treatment of the ground-water contamination.
- 4. These sites are within the Marina Redevelopment Project in the center city area of the City of San Diego. The project is being administered by the Redevelopment Agency of the City of San Diego. Centre City Development Corporation (CCDC) is a nonprofit corporation established by the City of San Diego to administer downtown redevelopment projects, including the Marina Redevelopment Project.
- 5. By letter dated August 20, 1990, CCDC on behalf of the named responsible parties, submitted a remedial action plan (RAP), prepared by their consultant Geomatrix Consultants, to address the floating (free phase) petroleum hydrocarbon and ground water in the Marina Redevelopment Project area. The RAP indicates the following:

- a. The free product is generally stable and does not appear to be significantly migrating. The dissolved phase plume also has not shown significant migration.
 - b. Based on field measurements and ground-water modelling, the free product and dissolved phase plumes do not presently pose a threat to San Diego Bay. Continued ground-water monitoring will help verify the stability of the plumes.
 - c. Geomatrix concludes that by reducing the total mass of hydrocarbons in the subsurface, the potential future migration of hydrocarbons will be greatly reduced.
 - d. The parties propose to institute a petroleum hydrocarbon (product)-only extraction system which consists of a fixed petroleum hydrocarbon extraction system and a manual, periodic well skimming program. The fixed extraction system will be installed in the wells which have the greatest measured thickness of free product and will continually and automatically extract free product. The periodic well skimming program will include periodic removal of free product in those wells with a free product thickness >0.5 inch. They also plan to conduct a ground-water monitoring program.
6. Prior to initiating petroleum hydrocarbon recovery, monitoring wells which exhibit >0.5 inch of free phase hydrocarbon will be manually skimmed. Product recovery data will be used to evaluate which wells are best suited for inclusion in the fixed hydrocarbon extraction system.
 7. This Order has been issued in response to State Board Order No. WQ 90-2, "IN THE MATTER OF THE PETITION OF UNION OIL COMPANY OF CALIFORNIA FOR REVIEW OF CLEANUP AND ABATEMENT ORDER NO. 89-51 OF THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN DIEGO REGION", which recommended issuance of a consolidated order. This Order only addresses ground-water contamination and cleanup. These responsible parties are responsible for remediation of soils on each individual site under Cleanup and Abatement Order Nos. 89-48, 89-49, 89-50, and 89-51 and addenda.
 8. The "Comprehensive Water Quality Control Plan Report, San Diego Basin (9)" (Basin Plan) was adopted by this Regional Board on March 17, 1975; approved by the State Water Resources Control Board on March 20, 1975; and updated by the Regional Board on February 27, 1978; March 23, 1981; January 24 and October 3, 1983; August 27, 1984; December 16, 1985; March 24,

1986; November 16 and December 21, 1987; April 25, 1988; April 10, 1989 and March 12, 1990. The updates were subsequently approved by the State Board.

9. The Basin Plan established no beneficial uses for surface or ground waters in the San Diego Mesa Hydrographic Subunit.
10. The quality of the ground water of the San Diego Mesa Hydrographic Subunit is subject to the provisions of the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California." This policy is incorporated in the Basin Plan. Under the terms and conditions for Resolution No. 68-16, the existing (predischARGE) quality of ground water in the San Diego Mesa Hydrographic Subunit must be maintained unless it is demonstrated that a decrease in water quality (1) will be consistent with maximum benefit to the people of the state, (2) will not unreasonably affect beneficial uses, and (3) will not result in water quality less than that prescribed in the Basin Plan or other adopted policies.

11. The Basin Plan contains the following prohibition:

"Dumping or deposition of oil, garbage, trash or other solid municipal, industrial or agricultural waste into natural or excavated sites below historic water levels or deposition of soluble industrial wastes at any site is prohibited, unless such site has been specifically approved by the Regional Board for that purpose."

The subject site has not been specifically approved by the Regional Board for the above purpose.

12. These discharges have polluted and threaten to further pollute ground water of the basin.
13. Regional Board files indicate that the ground water has a total dissolved solids (TDS) concentration that ranges from 1,085 to 3,080 parts per million (ppm) and, under the state definition, qualifies as a potential underground source of drinking water. Presently, the ground water is not being used as a drinking water source. However, some time in the future this water source may be utilized. The discharge of petroleum hydrocarbons degrades the existing water quality and renders it unusable for drinking water unless the ground water is treated.

14. The ground water beneath the area is in continuity with waters of the bay. However, ground-water monitoring data indicates that the free product and dissolved phase plumes have not migrated to the bay.
15. This enforcement action is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED, that pursuant to Section 13304 of the California Water Code, the Redevelopment Agency of the City of San Diego; G.T.F. Properties, Shell Oil Company; Golden West Hotel, Union Oil Company; Greyhound Lines, Inc., and Transportation Leasing Company (hereinafter the dischargers) shall comply with the following directives:

1. The dischargers shall implement the Remedial Action Plan, dated August 17, 1990, prepared by Geomatrix Consultants, and institute free product removal no later than July 1, 1991. The implementation of the RAP shall include the following:

- a. On a monthly basis, the dischargers shall measure the free product and water levels in all monitoring wells.
- b. On a ~~quarterly~~^{reduce?} basis, for the first year of implementation, the dischargers shall sample the following ground-water monitoring wells and analyze them using EPA Methods 8015 (modified for gasoline and diesel), 8020 (aromatic hydrocarbons), and 7040 (organic lead):

GE-2, GE-3, GH-7, CC-10, CC-18, CC-19, NESD-3, and any additional well(s) specifically approved by the Regional Board Executive Officer.

Following the first year, the above wells shall be sampled and analyzed semi-annually.

- c. On an ~~annual basis~~ following the first year, the dischargers shall sample all wells listed under Directive 1.b., above, and the following ground-water monitoring wells for the same constituents as listed under Directive 1.b.:

OMW-8, BW-13, CC-4, CC-15, CC-15, and any additional well(s) specifically approved by the Regional Board Executive Officer.

2. The dischargers shall continue free phase petroleum hydrocarbon removal until such time that they can demonstrate to the Regional Board Executive Officer's satisfaction that the technically recoverable free phase petroleum hydrocarbon on the ground water has been adequately removed in accordance with the directives of this cleanup and abatement order.
3. On those wells not included in the fixed extraction system that exhibit >0.5 inches of free hydrocarbon, the dischargers shall manually skim those wells on a monthly basis until January 1, 1992. At that time staff will reevaluate the efficiency of whole extraction system and determine if the monthly well skimming should continue.
4. The dischargers shall submit monitoring reports to this office, in accordance with the schedules in Directive No. 1 above, which describe the progress made in the cleanup of the free phase hydrocarbon and shall demonstrate that the dissolved petroleum hydrocarbons have not migrated and remain immobilized. The reports shall include, but not be limited to, the following information:
 - a. The amount of petroleum hydrocarbon recovered for the month, cumulative totals, and operational details pertinent to the extraction system.
 - b. Monthly water levels and product thickness in all wells (to the nearest 0.01 foot). These data shall be included in the quarterly, semi-annual, and annual reports.
 - c. A site map depicting hydrologic contours showing ground-water flow patterns.
 - d. A site map depicting the boundary of the free product and dissolved phase plumes.
 - e. Any and all additional monitoring data results not specifically directed by this Order.

Quarterly monitoring reports shall be submitted to this office in accordance with the following schedule:

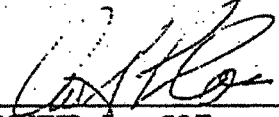
<u>Sampling Period</u>	<u>Report Due Date</u>
January - March	April 30
April - June	July 30
July - September	October 30
October - December	January 30

Semi-annual monitoring reports shall be submitted to this office in accordance with the following schedule:

<u>Sampling Period</u>	<u>Report Due Date</u>
January - June	July 30
July - December	January 30

Annual monitoring reports shall be submitted to this office by January 30 of each year.

5. If, through ground-water monitoring, the dissolved phase hydrocarbon is shown to be significantly migrating, then ground-water remediation may become necessary.
6. The dischargers shall dispose of all ground water polluted with petroleum hydrocarbons in accordance with all applicable local, state, or federal laws and regulations.
7. After the dischargers demonstrate to the Regional Board Executive Officer's satisfaction that the technically recoverable free product has been removed, the dischargers shall continue to monitor the ground water and submit ~~semi-annual~~ monitoring reports in accordance with Directive No. 2 of this Order for a period of five years. If at any time during this post-cleanup monitoring the data indicate that the free product has not been mitigated, the discharger shall immediately resume appropriate remedial cleanup actions.
8. Upon adoption of this order, the ground-water remediation directives herein shall supersede the ground-water directives in Cleanup and Abatement Order Nos. 89-48, 89-49, 89-50, and 89-51 and addenda. Other than the ground-water remediation directives, these previously issued orders remain in effect until rescinded by the Regional Board.
9. Any necessary soil remediation shall be in accordance with the directives in each responsible parties respective Cleanup and Abatement Order.

Ordered by: 

ARTHUR L. COE
Executive Officer

Date: MAY 13, 1991

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
DIEGO REGION

171 Clairmont Mesa Blvd., Ste. B
San Diego, California 92124-1331
Telephone (619) 265-5114

Copied Wilmoth
7-29-91
TLC-S.DIEGO
(Carry)



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

K.M. RIES

JUL 29 1991

July 26, 1991

To: DISTRIBUTION LIST (ATTACHED)

RE: ISSUANCE OF ADDENDUM NO. 1 TO CLEANUP AND ABATEMENT (C&A)
ORDER NO. 91-45 FOR THE MARINA REDEVELOPMENT PROJECT, SAN
DIEGO

Enclosed is a copy of Addendum No. 1 to C&A Order No. 91-45. This Addendum is being issued jointly to the Redevelopment Agency of the City of San Diego (RACSD); Shell Oil Company and G.T.F. Properties; UNOCAL Corporation and Golden West Hotel; Greyhound Lines, Inc. and Transportation Leasing Company under the authority of California Water Code section 13304 in response to the presence of petroleum hydrocarbon contamination in the soil and ground water beneath the Marina Redevelopment Project area, San Diego.

A meeting was held on June 13, 1991 at the Regional Board office with Messrs. David Allsbrook, Stephen Erb, Steve Landuyt, (representing the responsible parties) and Regional Board staff. As a result of that meeting, Regional Board staff and the responsible parties mutually agreed to certain changes in the designated wells to be monitored and the monitoring frequency. By letter dated June 25, 1991, CCDC requested some minor changes to the language of Finding Nos. 4 and 5 in order to clarify CCDC's position with respect to the responsible parties and the consultant retained by the responsible parties.

For easy review, the following changes have been incorporated into Addendum No. 1 (additions=bold and underlined; deletion=strikeout):

4. These sites are within the Marina Redevelopment Project area which is located in the center city area of the City of San Diego. ~~The project is being administered by the Redevelopment Agency of the City of San Diego.~~ Centre City Development Corporation (CCDC) is a nonprofit corporation established by the City of San Diego to administer the downtown redevelopment projects program, which includes the Marina Redevelopment Project. CCDC has been selected by the responsible parties to coordinate the cleanup efforts under this order between the responsible parties and the Regional Board.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

DISTRIBUTION LIST
FOR LETTER DATED JULY 26, 1991

RE: ISSUANCE OF ADDENDUM NO. 1 TO
CLEANUP AND ABATEMENT ORDER NO. 91-45 FOR
THE MARINA REDEVELOPMENT PROJECT

CENTRE CITY DEVELOPMENT CORPORATION PROPERTY (303 Market Street)
Parcel No. 535-C00-00-00; Block 94, Lots A & B

Mr. Jack McGrory, Executive Director
Redevelopment Agency of the City of San Diego
City Manager's Office P 669 828 971
202 "C" Street
San Diego, California 92101

FROST PROPERTY (148 Market Street)
Parcel No. 535-065-06-00; Block 91, Lots G & H

Mr. Gordon T. Frost, Jr.
G.T.F. Properties
P.O. Box 15 P 669 828 972
San Diego, California 92112-0015

Mr. Frank Fossati
Shell Oil Company P 669 828 973
P.O. Box 4848
Anaheim, California 92803

Mr. Stephen Landuyt (Attorney for Shell)
Harrigan, Ruff, Ryder & Sbardellati P 669 828 974
1855 First Avenue, Suite 200
San Diego, California 92101-2614

GOLDEN WEST HOTEL PROPERTY (235 Market Street)
Parcel No. 535-073-11-00; Block 93, Lots A, B, K, & L

Mr. Stephen T. Erb
Attorney at Law P 669 828 975
350 West B Street, Suite 230
San Diego, California 92101

Mr. John E. Trytek, Attorney
Unocal Refining & Marketing Division P 669 828 976
Unocal Corporation
P.O. Box 7600
Los Angeles, CA. 90051

July 26, 1991

- e- f. Any and all additional monitoring data results generated which are not specifically directed by this Order.

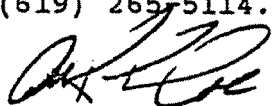
~~Quarterly monitoring reports shall be submitted to this office in accordance with the following schedule:~~

<u>Sampling Period</u>	<u>Report Due Date</u>
January—March	April 30
April—June	July 30
July—September	October 30
October—December	January 30

You are hereby notified that you have the right to a public hearing before the Regional Board concerning Addendum No. 1 to C&A Order No. 91-45. If you desire to have a public hearing at the Regional Board's next meeting on September 23, 1991, you must notify this office of your request in writing by August 26, 1991. If no written request is received, then a public hearing will not be scheduled. The meeting is scheduled for 9:00 a.m. at the Neighborhood Center, 200 East Main, El Cajon.

I strongly urge a prompt and complete response to each directive of Cleanup and Abatement Order No. 91-45 and Addendum No. 1. My staff will be happy to work with you toward achieving compliance with the Cleanup and Abatement Order.

If you have any questions, please contact Mr. John Anderson at (619) 265-5114.


ARTHUR L. COE
Executive Officer

JPA:c&atrans.ltr

Enclosure

cc: Ms. Sheila Vassey, Senior Staff Counsel, Office of Chief Counsel, State Water Resources Control Board, Sacramento.

Mr. Kevin Heaton, Hazardous Materials Management Division, County of San Diego Department of Health Services, San Diego.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 1
TO

CLEANUP AND ABATEMENT ORDER NO. 91-45

AN ADDENDUM MODIFYING GROUND-WATER MONITORING
REQUIREMENTS AND WELL DESIGNATION

FOR
PETROLEUM HYDROCARBON CONTAMINATION OF GROUND WATER
IN THE DOWNTOWN SAN DIEGO AREA
SAN DIEGO COUNTY

California Regional Water quality Control Board, San Diego Region
(hereinafter Regional Board) finds that:

1. On May 13, 1991, the Regional Board Executive Officer issued Cleanup and Abatement Order No. 91-45 to the Redevelopment Agency of the City of San Diego (RACSD); Shell Oil Company and G.T.F. Properties; UNOCAL Corporation and Golden West Hotel; Greyhound Lines, Inc. and Transportation Leasing Company for violation of Section 13304(a) of the California Water Code for discharges of petroleum hydrocarbons to the vadose zone and underlying ground water.
2. By letter dated June 17, 1991, Mr. Anthony D. Daus, Vice President of Geomatrix Consultants, Inc. (consultant for the responsible parties) submitted a request to modify the frequency of ground-water monitoring and to change the target wells to be sampled.
3. By letter dated June 25, CCDC submitted a request for a change in the language of Finding Nos. 4 and 5 to clarify CCDC's position with respect to the responsible parties and the consultant retained by the responsible parties.
4. By letter dated July 2, 1991, Mr. Anthony D. Daus, Vice President of Geomatrix Consultants, Inc. (consultant for the responsible parties) submitted a request to replace site maps depicting the boundary of the free product and dissolved fuel hydrocarbons with graphs depicting hydrocarbon thickness' versus time and dissolved product concentrations versus time (respectively) for selected monitoring wells.
5. After due consideration, Regional Board staff concurs with the proposed changes and modifications to Cleanup and Abatement Order No. 91-45.

July 26, 1991

They also plan to conduct a ground-water monitoring program."

2. Directives 1.b. and 1.c. shall read as follows:

"1.b. On a semi-annual basis, for the first year of implementation, the dischargers shall sample the following ground-water monitoring wells and analyze them using EPA Methods 8015 (modified for gasoline and diesel), and 8020 (aromatic hydrocarbons):

GE-2, GE-3, RMP-2, CC-9, CC-18, CC-19, and any additional well(s) specifically approved by the Regional Board Executive Officer. Total lead (EPA Method 7421) analyses shall only be conducted during the first round sampling event."

"1.c. On an annual basis, following the first year, the dischargers shall sample all wells listed under Directive 1.b., above, and the following ground-water monitoring wells and analyze the samples using EPA Methods 8015 (modified for gasoline and diesel), and 8020 (aromatic hydrocarbons):

BW-13, CC-4, OMW-4, and any additional well(s) specifically approved by the Regional Board Executive Officer."

3. Directive 4.d. shall read as follows:

"4.d. A graph depicting dissolved product concentrations versus time for each monitoring well listed in 1.b. and 1.c."

4. Directive No. 4.e. is added and reads as follows:

"4.e. A graph depicting hydrocarbon thickness versus time for monitoring wells: OMW-1, OMW-15, CC-17, IT-W, GH-7, and BW-19."

5. Directive 4.e. is replaced by 4.f. and reads as follows:

"4.f. Any and all additional monitoring data results generated which are not specifically directed by this Order."

Ordered by: 
ARTHUR L. COE
Executive Officer

Date: July 26, 1991

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Centre City
Development
Corporation

FAX 619/458-0943

DATE: AUGUST 28, 1995

TO: MARK SHERWIN - OGDEN ENVIRONMENTAL

FROM: DAVID ALLSBROOK

SUBJECT: REVISED CAO

NO. OF PAGES (INCLUDING COVER) 7

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Centre City
Development
Corporation

August 18, 1995

Stephen T. Erb, Esq.
501 West Broadway
Suite 1730
San Diego, CA 92101

SUBJECT: REVISED CAO

Dear Steve:

Enclosed is Draft Addendum No. 2 to CAO #91-45. Tony's cover letter to me explains the background and speaks for itself. Since this issue has dragged on so long, I would appreciate any comments you may have on this draft be communicated to Tony by Friday, September 1, 1995. By copy of this letter to Tony, I am instructing him to finalize and submit the Draft CAO if he has not received your comments. Of course, if there are any significant suggested changes, those changes will be shared with all parties before submission.

Sincerely,

David Allsbrook

DAVID ALLSBROOK
Manager, Contracting and Acquisitions

cc: Tony Daus

/mc

20201 S.W. Birch Street, Suite 150
Newport Beach, California 92660
(714) 474-8181 • FAX (714) 474-9084



August 15, 1995
S1710.04

Mr. David Allsbrook
Centre City Development Corporation
225 Broadway
Suite 1100
San Diego, CA 92101-5704

SUBJECT: REVISED CAO

Dear Dave:

Enclosed is the revised language for the CAO. The revisions are redlined for ease on review. Pursuant to your request, we called and discussed the revised language with John Odermatt at the California Regional Water Quality Control Board, San Diego Region (the Board). John had the following comments:

- He agreed with the reduced monitoring frequency.
- Monitoring of groundwater levels and product thickness should continue to be a joint effort and a single report should be submitted.
- Individual remedial actions can be implemented by PRPs and individual progress reports should be submitted to the Board.

John indicated that the dissolved phase groundwater contamination was still a group issue. He is concerned that dewatering at the convention center during its expansion will cause the dissolved phase to migrate. Therefore, he wants the group to continue monitoring groundwater.

We have modified the attached draft CAO to reflect our conversation with John. We recommend after review and approval by the PRP Group that the CAO be transmitted to John Odermatt. John indicated he would make the necessary arrangements to present the amendment to the Board. Please call me if you have any questions concerning the draft order.

Best regards,
GEOMATRIX CONSULTANTS, INC.

Anthony D. Daus
Anthony D. Daus
Vice President and
Principal Hydrogeologist

CENTRE CITY
DEVELOPMENT
CORPORATION

AUG 17 1995

Orig. To: *DAUS*
Copy To: _____

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Geomatrix Consultants, Inc.
Engineers, Geologists, and Environmental Scientists

DRAFT

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

**ADDENDUM NO. 2
TO
CLEANUP AND ABATEMENT ORDER NO. 91-45
FOR
PETROLEUM HYDROCARBON CONTAMINATION OF GROUND WATER
IN THE DOWNTOWN SAN DIEGO AREA
SAN DIEGO COUNTY**

The California Regional Water Quality Control Board, San Diego Region, (hereinafter Regional Board) finds that:

1. On May 13, 1991 the Regional Board Executive Officer issued Cleanup and Abatement Order No. 91-45 to the Redevelopment Agency of the City of San Diego (RACSD); Shell Oil Company and G.T.F. Properties; UNOCAL Corporation and Golden West Hotel; Greyhound Lines, Inc. and Transportation Leasing Company (hereinafter dischargers) for discharges of petroleum hydrocarbons to the vadose zone and underlying ground water.
2. On July 26, 1991 the Regional Board Executive Officer issued Addendum No. 1 to Cleanup and Abatement Order No. 91-45.
3. By letter dated August 20, 1990, a Remedial Action Plan (RAP) was submitted by the Centre City Redevelopment Corporation, on behalf of all the responsible parties named in the cleanup and abatement order to address the floating free product on the ground water in the Marina redevelopment area. The RAP proposed that product skimming be utilized to reduce the total mass of hydrocarbons in the subsurface. A reduction in the mass of hydrocarbons through skimming was thought to reduce the likelihood that the floating hydrocarbons would migrate.
4. The plan was implemented by the responsible parties pursuant to Directive 1 of Cleanup and Abatement Order 91-45 and Addendum No.1. Product extraction by manual skimming was initiated in June, 1991. A pilot fixed (automated) skimming program was also initiated at the end of September, 1991 at three locations. By letter dated May 26, 1992 the consultants for the dischargers, Geomatrix, reported that as of April 1992, only 365 gallons of free product had been removed from the ground water by skimming. This removal rate was considered too low for timely removal of hydrocarbons from the subsurface given the published estimates of hydrocarbons in the subsurface.
5. In early 1992 the dischargers elected to undertake a bioventing/soil vapor extraction pilot study to evaluate the efficacy of this technology for removing hydrocarbons in the

DRAFT



Addendum No. 2 to
Cleanup and Abatement
Order No. 91-45
Page 2

subsurface area. Geomatrix reports that the methodology tested involves removal of volatile fuel hydrocarbons by drawing hydrocarbon vapors from the subsurface and consuming them in an internal combustion engine, thermal oxidizer, and catalytic converter. The system tested consists of vapor extraction of the gasoline fraction and continued skimming of the diesel fraction. The system also enhances the ability of microorganisms to biodegrade gasoline and diesel fuel. Soil vapor extraction circulates air through the subsurface, replenishing the oxygen supply and sustaining the biodegradation rate. Reduction of the hydrocarbon mass by biodegradation will be greater in the soil zone than in the floating product zone because more surface area and oxygen are available to support biologic activity in the soil zone.

6. Two day vacuum extraction tests were conducted by Geomatrix at two locations; one where the product was primarily gasoline (the Shell site) and the other location where the product is primarily diesel fuel (the Greyhound site). The test results contained in a Geomatrix report dated June 5, 1992 demonstrated that bioventing/vacuum extraction would remove significantly more fuel hydrocarbons than could be accomplished through free product skimming. Approximately 135 to 145 equivalent gallons of fuel product were removed at the Shell site and approximately 65 to 75 equivalent gallons of fuel product were removed from the Greyhound site during the two day pilot study.
7. By letter to the Regional Board dated December 23, 1992 Anthony D. Daus, Vice President and Principal Hydrogeologist, Geomatrix Consultants, Inc., summarized the results of free product skimming, ground water monitoring and Dr. David Huntley's evaluation of the distribution and mobility of hydrocarbons in the subsurface at the Greyhound site. Most of the fuel hydrocarbons were found to be held in the soil column above the water table and are thus relatively immobile with respect to migration within the capillary fringe of the water table. Product skimming was found to not remove significant volumes of fuel hydrocarbons. Bioventing/vapor extraction was found to remove significantly more mass of fuel hydrocarbons through volatilization of a portion of the gasoline and bioremediation of the diesel and gasoline than product skimming.
8. The December 23, 1993 Geomatrix letter also requested that the Cleanup and Abatement Order be modified to:
 - a) not require continued skimming of the monitoring wells containing floating hydrocarbons;
 - b) change the Remedial Action Program from an area wide free product extraction program to a site specific cleanup objective and methodology; and

DRAFT



Addendum No. 2 to
Cleanup and Abatement
Order No. 91-45
Page 3

- c) modify the frequency of area wide ground water level and product thickness monitoring program measurements described in Directive 1.a from every month to every other month
9. Recent data presented by Geomatrix indicate that a quarterly groundwater and product thickness monitoring program is sufficient.
10. The Regional Board understands that the dischargers named in the cleanup and abatement order plan to implement individual remediation programs some of which may be similar to the bioventing/vapor extraction methodology described in Finding 5 of this Addendum.
11. This enforcement action is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED, that pursuant to Section 13304 of the California Water Code the dischargers shall comply with the following directive:

1. The dischargers shall submit Site Specific Remedial Action Plans ~~in 1995~~ describing the proposed actions for implementation of their respective remediation programs, and proposed schedules for their individual completions. The dischargers shall modify the Remedial Action Plans as directed by the Regional Board Executive Officer. In the interest of minimizing environmental contamination and promoting prompt cleanup, the dischargers may begin implementation of the actions proposed within the individual Remedial Action Plans after the Remedial Action Plans have been submitted and before they have received Regional Board Executive Officer concurrence. Implementation of the individual Remedial Action Plans shall begin after sixty (60) calendar days after written concurrence by the Regional Board Executive Officer, unless the dischargers are directed otherwise by the Regional Board Executive Officer. Before beginning the activities described in the Remedial Action Plans the Dischargers shall:
 - a) Notify the Regional Board Executive Officer in writing by registered mail of the intent to initiate the proposed actions included in the Remedial Action Plan submitted; and
 - b) Comply with any conditions set by the Regional Board Executive Officer including mitigation of adverse consequences from cleanup activities.

DRAFT



Addendum No. 2 to
Cleanup and Abatement
Order No. 91-45
Page 4

2. The dischargers shall, unless otherwise agreed upon by the Regional Board Staff:
 - a) On a quarterly basis measure the free product and water levels in all monitoring wells. ~~A single ground water monitoring report will be prepared and submitted to the Board semi-annually.~~
 - b) Continue the sampling required under Directives 1.b and 1.c of Cleanup and Abatement Order 91-45 as modified by Addendum No. 1.
 - c) Continue implementation of the remedial actions required in the August 20, 1990 Remedial Action Plan until the such time as the revised Remedial Action Plan described in Directive 1 of this Addendum is implemented.

PROVISIONS

1. Directive No. 1.a of Cleanup and Abatement Order 91-45 is rescinded.

Ordered by: _____

Arthur L. Coe
Executive Officer

Issuance Date:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

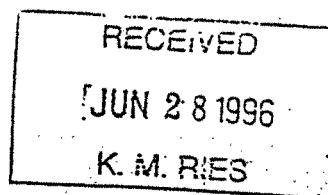
SAN DIEGO REGION

771 CLAIREMONT MESA BOULEVARD, SUITE A

SAN DIEGO, CA 92124-1331

TELEPHONE: (619) 467-2952

FAX: (619) 571-6972



June 25, 1996

To: Interested Parties (see Attached Mailing List)

RE: Addendum No. 3 to Cleanup and Abatement (C&A) Order No. 91-45.

Enclosed with this letter is Addendum No. 3 to Cleanup and Abatement Order No. 91-45. The C&A Order is issued under the authority of the California Water Code Section 13304 in response to the presence of petroleum hydrocarbon contamination in the ground water beneath the following sites:

1. 148 Market Street (G.T.F. Properties and Shell Oil Company),
2. 539 First Street, San Diego (Greyhound Lines Inc. and Transportation Leasing Company),
3. 303 Market Street, San Diego (Redevelopment Agency of the City of San Diego), and
4. 235 Market Street (Golden West Hotel and Unocal Corporation).

This addendum directs the following changes in the existing C&A Order:

1. Directs the dischargers to provide Corrective Action Plans (CAPs) as required by 23 CCR, Chapter 16, Article 11 for the sites listed above.
2. Modifies the frequency of manual recovery of free petroleum product from wells from a monthly to quarterly schedule.
3. Modifies the post-remedial monitoring period from 5 years to a monitoring frequency and duration approved by the Executive Officer.

This addendum was affirmed by the Regional Water Quality Control Board on June 13, 1996. The addendum is in effect as of June 14, 1996 and shall be enforced accordingly. If you have any questions or comments, please call John Odermatt of my staff at (619) 637-5595.

Sincerely,

JOHN P. ANDERSON, Senior Engineering Geologist
Site Mitigation and Cleanup Unit

Addendum No. 3, Cleanup and
Abatement Order No. 91-45

2

JPA:jro \blob\cao9145.let

Enclosures: "Addendum No. 3 to Cleanup and Abatement Order No. 91-45, An Addendum
Modifying Free Product Recovery and Post-Remediation Ground Water Monitoring
Requirements for Petroleum Hydrocarbon Contamination of Ground Water in the
Downtown San Diego Area, San Diego County"

cc: with Enclosures

Mailing List for Addendum No. 3: Cleanup and Abatement Order 91-45

1. Centre City Development Corporation, 225 Broadway, Suite 1100, San Diego,
CA 92101-5074
Attn: Mr. David Allsbrook (P-143-887-428)
2. Shell Oil Company, P.O. Box 4848, Anaheim, CA 90802
Attn: Mr. Frank Fossati (P-143-887-427)
Ms. Karen Haynes (P-143-887-425)
3. Unocal Corporation, P.O. Box 76, Brea, CA 92621
Attn: Mr. Richard Williams (P-143-887-426)
4. Transportation Leasing Company, 1850 North Central Avenue, Phoenix,
AZ 85077
Attn: Mr. Ken Ries (P-143-887-424)
5. Stephen Thomas Erb, A.P.C. (P-143-887-423)
11440 West Bernardo Court, Suite 204
San Diego, CA 92127-1643
6. Kent H. Foster, Esq. (P-143-887-422)
Glenn, Wright, Jacobs and Shell
101 West Broadway, Suite 1300
San Diego, CA 92101
7. John M. Sorich, Esq. (P-143-887-421)
Alavardo, Smith, Zamora & Wolff
4695 MacArthur Court, Suite 800
Newport Beach, CA 92660
8. Carl V. Down, Esq. (P-143-887-420)
Chevron USA Products Company
Law Department
6001 Bollinger Canyon Road
San Ramon, CA 94583-0944

CAO 91-45 Maling List (*continued*)

9. Stephen T. Landuyt, Esq. (*P-143-887-419*)
Harrigan, Ruff, et. al.
101 Broadway, Suite 1600
San Diego, CA 92101
10. Barak S. Platt, Esq. (*P-143-887-418*)
Skadden, Arps, Slate, Meagher and Flom
300 S. Grand Avenue
Los Angeles, CA 90071-3144
11. Robert Wilmoth, Esq. (Retired) (*P-143-887-417*)
Associate General Counsel
The Dial Corporation
1850 North Central Avenue, 22 Floor
Phoenix, AZ 85077
12. Linda Hoover, Esq. (*P-143-887-429*)
McKenna and Cuneo, L.L.P.
750 B Street, Suite 3200
San Diego, CA 92101

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 3 TO

CLEANUP AND ABATEMENT ORDER NO. 91-45

AN ADDENDUM MODIFYING THE FREE PRODUCT RECOVERY AND
POST-REMEDIATION GROUND WATER MONITORING REQUIREMENTS
FOR
PETROLEUM HYDROCARBON CONTAMINATION OF GROUND WATER
IN THE DOWNTOWN SAN DIEGO AREA
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter RWQCB) finds that:

1. On May 13, 1991 the RWQCB Executive Officer issued Cleanup and Abatement Order (CAO) No. 91-45 to the Redevelopment Agency of the City of San Diego (RACSD), Shell Oil Company and GTF Properties; Unocal Corporation and Golden West Hotel; Greyhound Lines, Inc. and Transportation Leasing Company (hereinafter the dischargers). CAO No. 91-45 consolidated some remedial activities and ground water monitoring previously required under CAOs 89-48 (*GTF Properties and Shell Oil Company*), 89-49 (*Greyhound Lines Inc.*); 89-50 (*Redevelopment Agency for the City of San Diego*), and 89-51 (*Golden West Hotel and Unocal Corporation*).
2. In a letter dated December 23, 1993, the consultant (Anthony D. Daus of Geomatrix Consultants, Inc.) summarized the results of free product skimming, ground water monitoring and Dr. David Huntley's evaluation of the distribution and mobility of hydrocarbons located beneath the Greyhound site. In the opinion of the consultant, most of the fuel hydrocarbons are immobilized in the soil column above the water table. The results of this evaluation formed the basis for their conclusion that product skimming does not remove significant volumes of fuel hydrocarbons. The consultant proposed that implementation of bioventing/soil vapor extraction would remove significantly more mass from the site than product skimming alone.
3. The December 23, 1993 letter from Geomatrix also requested that the Cleanup and Abatement Order be modified to:
 - a) not require continued skimming of the monitoring wells containing free petroleum product;

- b) change the Remedial Action Program from an area wide free product extraction program to a site specific cleanup objective and methodology; and
 - c) modify the frequency of area wide ground water level and product thickness monitoring program measurements described in Directive 1(a) from every month to every other month.
4. Under the requirements of the California Code of Regulations, Title 23, Chapter 16, Articles 5 (Section 2655) and 11 (Section 2722), free product removal is required as part of the corrective action process at leaking underground storage tank sites. Free product shall be removed in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate for the hydrogeological conditions at the site. Further, the removal of free product shall be to the maximum extent practicable as determined by the local agency (ARTICLE 11, Section 2655).
 5. The RWQCB understands that the dischargers wish to implement individual remediation programs at the four sites identified in CAO 91-45. This request is consistent with the corrective action requirements of 23 CCR, Article 11.
 6. The RWQCB has received and approved work plans for the implementation of remedial work at the Greyhound/Transportation Leasing Company site (at 539 First Street) and the GTF/Shell Site at (148 Market Street), the Golden West/Unocal site (235 Market Street), and the RACSD site (at 303 Market Street).
 7. The ground water monitoring data reported to the RWQCB Executive Officer from 1987 to 1995 indicate that free petroleum product continues to be present in a number of wells associated with the sites included in CAO 91-45. Historical ground water monitoring data indicate that the plume conditions identified in Findings 4 and 5 (as modified by Addendum No. 1 of CAO 91-45) are still true.
 8. The free product recovery data, for the time period June 1991 to December 1995, provided by the dischargers indicate that a total of 768.3 gallons of free petroleum product was recovered from ground water monitoring wells associated with these sites. Approximately 365 gallons of this total was collected using manual skimming techniques. This is an average recovery rate of approximately 8 gallons per month.

9. The *Water Quality Control Plan for the San Diego Region* (9) (Basin Plan) was adopted by the RWQCB on September 8, 1994; approved by the State Water Resources Control Board (SWRCB) on December 13, 1994, and approved by the Office of Administrative Law on April 26, 1995.
10. The RWQCB must include requirements of State Water Resources Control Board (SWRCB) Resolution Nos. 68-16 (*Statement with Respect to Maintaining High Quality Waters in California*) and 92-49 (*Policies and Procedures for Investigation and Cleanup and Abatement of Dischargers Under Water Code Section 13304*) in the enforcement of the California Water Code. Under these SWRCB requirements, the RWQCB is required to ensure that dischargers are required to clean up and abate the effects of discharges in a manner that promotes the attainment of background water quality, or the highest water quality which is reasonable if background levels can not be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible; any alternative levels less stringent than background shall:
 - a) be consistent with the maximum benefit to the people of the state;
 - b) not unreasonably affect the present and anticipated beneficial use of such water; and
 - c) not result in water quality less than that prescribed in the Water Quality Control Plans and Policies adopted by the State and Regional Water Boards.
11. State Water Resources Control Board (SWRCB) Resolution No. 92-49 (Section III(G)) requires the RWQCB to consider the conditions set forth in CHAPTER 15 (23 CCR, Division 3, CHAPTER 15, Article 5, Section 2550.4) in approving any alternative cleanup levels less stringent than background concentrations of contaminants.
12. SWRCB regulations governing the site investigation and corrective action at underground storage tank unauthorized release sites are contained in CCR, Title 23, Division 3, Chapter 16. In particular, ARTICLE 11, commencing with Section 2720 is applicable to this cleanup and abatement order.
13. This enforcement action is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED, that pursuant to Section 13304 of the California Water Code, the dischargers shall comply with the following Directives:

INTERIM REMEDIAL ACTION

1. The dischargers shall continue to implement interim remedial measures as necessary to:
 - a.) remove free petroleum product from the water table at each of their respective sites as required by the California Code of Regulations (CCR), Title 23, Division 3, Chapter 16, Article 5 (Section 2655) and Article 11 (Section 2722(b)); and
 - b.) abate or correct the actual or potential effects of the unauthorized release.

CORRECTIVE ACTION PLAN

2. Pursuant to the requirements of the CCR Title 23, Division 3, Chapter 16, Article 11 (ARTICLE 11); the dischargers shall each submit a Corrective Action Plan (CAP) for their respective sites identified in CAO 91-45. The CAPs must contain all the elements specified in Article 11 (Section 2725) including:
 - a.) an assessment of impacts in accordance with ARTICLE 11, Section 2725(e),
 - b.) a feasibility study to evaluate site remediation and mitigation alternatives in accordance with ARTICLE 11, Section 2725(f),
 - c.) cleanup levels in accordance with the requirements of ARTICLE 11, Section 2725(g) and which comply with the requirements listed in ARTICLE 11, Section 2721(b), SWRCB Resolution No. 92-49, and Directive No. 7 of this Order,
 - d.) proposed method(s) and schedule for monitoring and reporting the progress of remediation at their respective sites. These results should be used by the discharger to evaluate the effectiveness of the approved corrective action alternative implemented by the discharger to remediate the soil and ground water contamination from the unauthorized release at their respective sites. The results and the technical evaluation must be reported to the RWQCB Executive Officer for review and comment.

The CAP for each individual site included in CAO 91-45 must be submitted to the RWQCB Executive Officer on or before September 30, 1996.

3. The feasibility study described in Directive 2b of this order shall contain an evaluation of alternatives for cleanup of soil and ground water. The evaluation shall be consistent with the requirements of CCR Title 23, Division 3, Chapter 16, ARTICLE 11, Section 2725(f) and include the following elements:
 - a.) An evaluation of the effectiveness, feasibility and cost of at least one alternative to mitigate nuisance conditions and risk of fire or explosion.
 - b.) An evaluation of methods to control the spread of the dissolved contaminant plumes off the individual properties.
 - c.) A comprehensive description of the cleanup and abatement activities associated with each recommended alternative.
 - d.) A proposed time schedule, including interim milestone dates, for completion of each recommended alternative.
 - e.) The dischargers shall remove and/or treat all fuel contaminated soils to a level which will not cause the generation of free petroleum product on the ground water at their respective sites.
 - f.) The dischargers shall propose ground water cleanup levels for any residual dissolved fuel constituents from their respective sites. The proposed cleanup levels must be consistent with the requirements of the RWQCB Basin Plan (1994), ARTICLE 11 (Section 2725(g)(2)), and be protective of human health and the environment. The dischargers shall present sound technical rationale to support the proposed ground water cleanup levels in the CAP.
4. The dischargers shall modify their respective CAPs as directed by the RWQCB Executive Officer. Implementation of the CAP may begin within 60 calendar days after submittal, unless the dischargers are otherwise directed in writing by the RWQCB Executive Officer. Before implementing the proposed corrective action alternative, the dischargers shall:
 - a.) notify the RWQCB Executive Officer of their intention to begin cleanup;
and

- b.) comply with any conditions set by the RWQCB Executive Officer, including the mitigation of adverse consequences from cleanup activities.
- c.) The dischargers shall modify or suspend cleanup activities when directed to do so by the RWQCB Executive Officer.

VERIFICATION SAMPLING AND MONITORING

5. Upon completion of corrective action, the dischargers shall perform soil sampling and ground water monitoring which is necessary to verify: a) the effectiveness of the selected remedial alternative(s) identified in their respective Corrective Action Plans and/or b) other interim remedial action(s) implemented at their respective sites. The dischargers shall prepare a site-specific work plan for verification sampling and monitoring in compliance with Section 2727 of ARTICLE 11.

The work plan for verification sampling and monitoring of the completed corrective action plan (Directive Number 2) must be submitted to the RWQCB for review and approval within 60 days of full implementation of the CAP. The dischargers shall modify the proposed work plan as required by the RWQCB Executive Officer.

The results from the verification and monitoring work plan must be submitted to the RWQCB Executive Officer within 90 days of approval of the verification and monitoring work plan by the RWQCB. The dischargers may propose in writing an alternative deadline to the RWQCB Executive Officer for review and approval.

6. The dischargers shall manage all petroleum hydrocarbon contaminated ground water and/or soil, generated as a result of any corrective action work at their respective sites, in accordance with all applicable local, state and federal regulations and requirements.
7. Based upon review of each individual Corrective Action Plan (CAP), interim remedial action work plan and/or verification sampling and monitoring results, the RWQCB Executive Officer may amend this cleanup and abatement order to identify the target ground water and soil cleanup levels to be attained at the particular site or sites. If this Order is not amended by the RWQCB Executive Officer, then:
- a.) The mitigation of free petroleum product is the minimum water quality protection standard to be implemented for ground water at each site.

- b.) Residual fuel contaminant concentrations in soils at each site must be low enough so as not to yield free petroleum product to the ground water. The dischargers shall propose to the RWQCB Executive Officer a range of site-specific soil cleanup levels based upon a technical evaluation of residual saturation concentrations in fuel contaminated soils at each site. The proposed soil cleanup levels must also be protective of human health and the environment, and comply with the water quality protection requirements of CCR Title 23, Article 11; SWRCB Resolution No. 92-49; and the RWQCB Basin Plan (1994).

The dischargers shall implement their Corrective Action Plans in accordance with a time schedule proposed by the dischargers and approved by the RWQCB Executive Officer. The dischargers shall modify their proposed CAPs as required by the RWQCB Executive Officer.

GROUND WATER MONITORING

- 8. The dischargers shall continue to implement a coordinated ground water monitoring program for the Marina Sub Area of the Centre City Redevelopment Project. The dischargers shall, unless these requirements are modified by the RWQCB:
 - a.) Measure and remove free petroleum product from ground water monitoring wells on a quarterly schedule. This requirement modifies the previous schedule for free product removal and measurements of water levels required by Directive No. 1(a) in CAO No. 91-45 and Directive No. 2(a) of Addendum No. 2 of this Order.
 - b.) Continue monitoring and reporting of results from ground water wells as required by Directive Nos. 1(b) and 1(c) of CAO 91-45 as modified by Directives Nos. 2 through 5 of Addendum No. 1 to this Order.
 - c.) Continue implementation of the remedial actions required in the August 20, 1990 Remedial Action Plan until such time as Corrective Action Plans (CAP) are approved by the RWQCB Executive Officer as required in Directive 1 of this Addendum.
- 9. Directive No. 7 of Cleanup and Abatement Order No. 91-45 is amended to read: "After the dischargers demonstrate to the Regional Board Executive Officer's satisfaction that free product has been removed to the extent practicable, the dischargers shall continue to monitor the ground water and submit semi-annual ground water monitoring reports in accordance with the

requirements of Directives Nos. 1.b and 1.c of Cleanup and Abatement Order No. 91-45 as modified by Addendum No. 1. Modifications to the required ground water monitoring program may be proposed by the dischargers for review and approval by the RWQCB Executive Officer."

PROVISIONS

10. Directive No. 2(a) of Addendum No. 2 to Cleanup and Abatement Order No. 91-45 is hereby replaced by Directive No. 8(a) of this addendum.

Ordered by:



JOHN H. ROBERTUS
Executive Officer

Date: June 14, 1996

As Amended by Errata on June 13, 1996

ADDENDUM NO. 3 TO
CLEANUP AND ABATEMENT ORDER NO. 91-45
PETROLEUM HYDROCARBON CONTAMINATION OF GROUND WATER
IN THE DOWNTOWN SAN DIEGO AREA
SAN DIEGO COUNTY

**TABLE 1: SCHEDULE OF COMPLIANCE FOR DIRECTIVES IN
ADDENDUM NO. 3 TO RWQCB CLEANUP AND ABATEMENT ORDER No. 91-45**

C&A DIRECTIVE	SUBMITTAL	DUE DATE
2	Submit a Corrective Action Plan (CAP) to RWQCB.	September 30, 1996
5	Submit a work plan for verification sampling and monitoring to the RWQCB.	Within 60 days after full implementation of an approved CAP.
5	Submit the results from the verification and monitoring phase of corrective action.	Within 90 days after approval of a verification and monitoring sampling work plan.



California Regional Water Quality Control Board

San Diego Region



John H. Hickox
Secretary for
Environmental
Protection

Internet Address: <http://www.swrcb.ca.gov/rwqcb9/>
9771 Clairemont Mesa Boulevard, Suite A, San Diego, California 92124-1324
Phone (858) 467-2952 • FAX (858) 571-6972

Gray Davis
Governor

April 23, 2003

Mr. Ken Reis
Viad Corporation
1850 North Central Avenue
Phoenix, Arizona, 85077

In Reply Refer to:
UST:50-1561.05:sjp

Dear Mr. Reis:

RE: NO FURTHER ACTION
Greyhound Maintenance Garage, 539 First Avenue, San Diego, California

This letter confirms the completion of a site investigation and remedial action for the underground storage tank(s) formerly located at the above described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based on the information in the above referenced file and with the provisions that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in section 2721 (e) of Title 23 of the California Code of Regulations.

Please contact Ms. Sue Pease of my staff at 858-637-5596 if you have any questions regarding this matter.

Sincerely,

John H. Robertus
Executive Officer

JHR:jac:sjp
Attachment

C:\greyhound\closureltr.doc

cc(with attachment): Mr. Chuck Pryatel
AMEC Earth & Environmental, Inc.,
5510 Morehouse Drive
San Diego, CA 92121

California Environmental Protection Agency

Recycled Paper

Mr. Reis

- 2 -

April 23, 2003

Mr. Richard Oppen
Foley & Lardner
402 W. Broadway, 23rd Floor
San Diego, CA 92101-8105

California Environmental Protection Agency

Recycled Paper

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ORDER NO. R9-2003-0169

AN ORDER RESCINDING

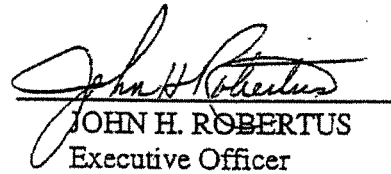
CLEANUP AND ABATEMENT ORDER NO. 89-49 ISSUED TO GREYHOUND
LINES, INCORPORATED, AND TRANSPORTATION LEASING COMPANY,
GREYHOUND MAINTENANCE CENTER 539 FIRST AVENUE,
SAN DIEGO, PARCEL NO. 535-072-03-00BLOCK 92,
LOTS C THRU J, SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego (hereinafter Regional Board) finds that:

1. The Regional Board issued Cleanup and Abatement Order (CAO) No. 89-49 to Greyhound Lines, Inc. and Transportation Leasing Company (hereinafter Discharger) for the site located at 539 First Avenue, San Diego.
2. CAO No. 89-49 established requirements for cleanup of pollution caused by gasoline, diesel, motor oil and waste oil.
3. The ground-water remediation directives of CAO No. 89-49, consisting of Directives 2 through 7, were superseded by the ground-water remediation directives of CAO No. 91-45 pursuant to Directive 8 of CAO No. 91-45.
4. The Discharger has complied with Directive 1 of CAO No. 89-49, the only directive not superseded by CAO No. 91-45.
5. The Discharger's compliance with the ground-water remediation directives in CAO No. 91-45 is documented in the staff report titled *Greyhound Lines, Incorporated, and Transportation Leasing Company Compliance with Interim Remedial Action, Corrective Action, and Verification Sampling and Monitoring Directives of Cleanup and Abatement Order No. 91-45*, dated April 23, 2003.
6. Greyhound has completed the corrective action required by CAO No. 91-45 for the property at 539 1st Ave. No further action is required at this time. However, CAO No. 91-45 will not be rescinded until the other Dischargers named in the Order complete corrective action at their respective properties.
7. This enforcement action is exempt from the provisions of the California Environmental Quality Act (Public Resource Code, section 21000 et seq.) in accordance with section 15321, Chapter 3, Title 14, California Code of Regulations.

8. A public notice of this rescission order will be printed in the Notifications section of the May 14, 2003 Regional Board meeting agenda to allow the public an opportunity to comment on this action.
9. The current property owner, Redevelopment Agency of the City of San Diego, has been notified of this action in accordance with section 25299.37.2 of the Health and Safety Code.

IT IS HEREBY ORDERED that Cleanup and Abatement Order No. 89-49, issued to Greyhound Lines, Inc. and Transportation Leasing Company, San Diego County, is hereby rescinded.


JOHN H. ROBERTUS
Executive Officer

Date: April 23, 2003

Case Closure Summary

UNDERGROUND STORAGE TANK (UST) PROGRAM

I. CASE INFORMATION

DATE: April 23, 2003

Site Name: Greyhound Lines, Inc. and Transportation Leasing Co. (Greyhound)		
Site Address: 539 1 st Ave., San Diego, CA		
Responsible Party Name: Viad Corporation		RP Phone Number: 602-207-5722
Responsible Party Address: 1850 North Central Ave., Phoenix, AZ 85077		
Current Land Use: condominium, shops, parking garage		
RWQCB File Number: 50-1561	Local Case Number:	RWQCB Staff: SJP
Basin Number: 8.20	Basin Uses: Ground water -- nonbeneficial Surface water -- IND, REC 1, REC 2, COMM, BIOL, WILD, RARE, MAR, MIGR, SHELL	

II. RELEASE AND SITE CHARACTERIZATION INFORMATION

Description of the unauthorized release (cause, release date, source[s]): An unauthorized release of diesel, gasoline, waste oil and lube oil was discovered when six UST's were removed in 1989. The unauthorized release was most likely from the UST's. It is unknown when the unauthorized release occurred. Free product, 3-4 feet thick initially, has been reduced to 1.24 feet, measured in November 1998.	
Contaminant[s] identified and amount leaked: Leaded and unleaded gasoline, diesel, waste oil, lube oil, heating oil; total amount estimated to range from 19,000 to 39,000 gallons, based on a 1992 study by Robert Hawk and David Huntley of San Diego State University.	
Description of the soil/geology: Subsurface soils are composed of alluvial and terrace deposits of Bay Point Formation, consisting mostly of fine to very fine sands, with intervals of medium sand.	
Is soil contamination completely delineated (to what levels)? Yes, to 27 feet below ground surface.	
Areal extent? Yes, across entire site.	
Vertical extent? Yes, to 27 feet below ground surface.	
Est. Volume of contaminated soil left on site and concentration: Approximately 15,500 cubic yards of TPH impacted soil is on site with a maximum concentration of 11,900 mg/kg TPH as diesel, and 6,900 TPH as gasoline.	
Is groundwater contamination completely delineated (to what levels)? The extent of the free product plume has been completely delineated. The extent of the dissolved plume has been completely delineated by non-detectable measurements (Oct. 1998) of TPH in two downgradient monitoring wells.	
Monitoring wells installed, properly permitted? Yes	Number of monitoring wells: 36
Depth to groundwater: 20 feet	Seasonal or tidal fluctuation: No
Groundwater flow direction: Southwest	Gradient: 0.01 feet/foot
Is groundwater or surface water impacted? Yes, groundwater.	
Is groundwater contamination contained on site? No. Downgradient ground water impacts have been documented in monitoring wells CC-9 and CC-10, located west of the site. However, recent analysis of CC-9 and CC-10 are non-detect for TPH.	

arest receptor (Inland Surface Water, Bay, Drinking Water Wells, etc.): San Diego Bay located approximately 1,200 feet west of the site.

III. MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATION

Contaminant	Soil (mg/kg) initial	Soil (mg/kg) current	Water (ug/l) initial	Water (ug/l) current
TRPH	35,000	< 35,000*	not analyzed	not analyze
TPH gasoline	44,000	6,900	400,000	99,200
TPH diesel	not analyzed	11,900	not analyzed	103,000
Benzene	12	<12*	15,000	11,700
Toluene	27	<27*	20,000	3,760
Ethylbenzene	15	<15*	2,800	1,840
Xylenes	71	<71*	18,000	10,500

* Remedial soil excavation was performed in the area corresponding to the initial soil concentration, however, verification soil sampling was not performed for these constituents.

IV. TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (include units)	Action (treatment or disposal)	Concentration	Date
Soil	1,260 yd ³	Disposed at Casmalia	TRPH = 66,000 mg/kg TPHd = 30,000 mg/kg	Oct. 1989
	7,200 yd ³	Onsite reuse	TPHd < 14,600 mg/kg TPHg < 7,500 mg/kg	Sept. – Nov. 2000
	11,960 yd ³	Treatment/recycling at Soil Wash	TPHd < 14,600 mg/kg TPHg < 7,500 mg/kg	Sept. – Nov. 2000
	4,285 yd ³	Disposed at Casmalia	TPH = 44,000	Sept. – Nov. 2000
Groundwater	825 gallons	Disposed at Demenno/Kerdoon	TPHd = 146,000 ug/L TPHg = 97,200 ug/L	July 1998
	1,700 gallons	Disposed at Crosby & Overton	contains free product	Sept.-Oct 1998
Free Product	148 gallons	Disposed at Demenno/Kerdoon and Crosby & Overton	free product	July 1998 October 1998

Tank(s)	2 x 10,000 gallon gasoline/diesel	Disposed at Pacific Steel	N/A	Sept. 198
	1 x 8,000 gallon lube oil	"		"
	2 x 550 gallon waste oil	"		"
	1 x 550 gallon heating oil	"		Oct. 1989
	1 x 12,000 gallon diesel	Disposed at All Ways Recycling		May 1999
	2 above ground tank (lube/waste oil)	"		"
Piping	Approximately 450 feet	Disposed at Pacific Steel		Sept. 198

V. CLOSURE

<i>Does completed corrective action protect beneficial uses per the RWQCB Basin Plan? Yes - See attached staff report.</i>		
<i>Should corrective action be reviewed if land use changes? Yes</i>		
<i>Monitoring wells decommissioned? Yes</i>	<i>Number decommissioned: 36</i>	<i>Number retained: 0</i>
<i>Enforcement actions taken: Cleanup and Abatement Orders No. 89-49, and 91-45*</i>		
<i>Enforcement actions rescinded: CAO 89-49 Rescinded by Order No. R9-2003-0169</i>		

*Greyhound has completed the corrective action required by CAO No. 91-45 for the property at 539 1st Ave. No further action is required at this time. However, CAO No. 91-45 will not be rescinded until the other Dischargers named in the Order complete corrective action at their respective properties.

VI. Signature of Reviewer

Susan P. [Signature] 4/23/03 Date
(Staff Name)

VII. Signature of Senior Staff

Julie Chen 4/23/03 Date
(Senior Staff Name)

STAFF REPORT

Greyhound Lines, Incorporated, and Transportation Leasing Company Compliance with Interim Remedial Action, Corrective Action, and Verification Sampling and Monitoring Directives of Cleanup and Abatement Order No. 91-45

April 23, 2003

Cleanup and Abatement Order No. 91-45 (Order) was issued to multiple dischargers for the cleanup of petroleum hydrocarbon contaminated soil and free phase petroleum hydrocarbon product (free product) on ground water at four separate properties in an area of San Diego known as the Marina Sub Area of the Centre City Redevelopment Project. The ground water remediation directives of the Order required Greyhound Lines, Incorporated, and Transportation Leasing Company (Greyhound) to take interim remedial action, corrective action and verification sampling and monitoring action to clean up its property located at 539 First Avenue. Similarly, the other dischargers were directed to take similar actions on their respective properties. The Order also required the dischargers as a group to implement a coordinated ground water monitoring program. This report discusses Greyhound's compliance with the ground water remediation directives of the Order.

1. The Order directed the Greyhound to:
 - a) Remove technically recoverable free product on the ground water (Directive 2), and similarly, remove free product from the water table at 539 First Avenue as required by the California Code of Regulations (CCR), Title 23, Chapter 16, section 2655 (Addendum No. 3, Directive 1.b).
 - b) Submit and implement a Corrective Action Plan pursuant to the requirements of CCR, Title 23, Chapter 16.
 - c) Perform soil sampling and ground-water monitoring necessary to verify the effectiveness of the remedial alternative and/or the interim remedial actions implemented
2. The ground water and soil cleanup levels for the site, specified in the Order, are as follows:
 - a) Mitigation of free petroleum product is the minimum water quality protection standard to be implemented for groundwater. According to CCR, Title 23, section 2655, free product is to be removed to the maximum extent practicable.
 - b) Residual fuel contaminant concentrations in soils at the site must be low enough so as not to yield free petroleum product to the ground water and be protective of human health and the environment.
3. The Dischargers removed free product as part of an area-wide removal for the downtown co-mingled hydrocarbon plume. As a result, measurable free product in

the Greyhound onsite monitoring wells decreased from an initial thickness of 3 to 4 feet in 1990 to 1.24 feet thick in November 1998. The November 1998 measurement of free product thickness occurred before source removal by excavation of contaminated soil. Measurements of free product thickness were not possible after excavation due to removal of all ground-water monitoring wells at the site. Thus, a verification monitoring workplan was never prepared, as required by Addendum No. 3, Directive 5, and verification monitoring of groundwater was not performed.

4. Because there was free product on the water table beneath the site during the last monitoring event, and because verification groundwater monitoring was never performed, the Regional Board cannot find that the Discharger mitigated the free petroleum product, or removed all of the contaminated soil capable of yielding free product to the ground water as required by the Order. However, if data show that the cleanup was successful in protecting the beneficial uses of waters threatened by the contamination, and if the residual free product in soil or on ground water at the site does not pose a human health risk or risk to the environment, there is no need for further corrective action.
5. The site is located in the Lower San Diego Mesa Hydrologic Sub-Area (HSA 8.20) which has beneficial uses for San Diego Bay, but no designated beneficial uses for ground water.
6. Beneficial uses of San Diego Bay are protected if the cleanup was successful in immobilizing the free phase and dissolved phase petroleum hydrocarbon plumes so that the plumes could not migrate to and pollute San Diego Bay.
7. Ground water monitoring from 1991 to 1998 of two offsite downgradient wells located between the site and San Diego Bay (CC-9 and CC-10) indicates that the free product plume is immobile. Free product has never been detected in these two offsite downgradient monitoring wells.
8. The Dischargers analyzed the ground water for four calendar quarters between September 1997 and October 1998 to demonstrate that offsite migration of dissolved petroleum hydrocarbons was not occurring and that the onsite dissolved petroleum plume was immobile. Three onsite monitoring wells (OMW-5, CC-8, and MW-12) and two offsite downgradient wells (CC-9 and CC-10) were monitored for dissolved petroleum constituents (benzene, toluene, ethylbenzene and xylenes, collectively designated as BTEX). The results demonstrated that the dissolved petroleum plume was stable and immobile before the removal of contaminated soil in 2000-2001.
9. Since removal of contaminated soil from the Greyhound site, dissolved BTEX levels in groundwater have been non-detectable in the two offsite downgradient monitoring wells located between the site and San Diego Bay. Therefore, the dissolved phase petroleum hydrocarbon plume in groundwater has been immobilized, and the level of free product cleanup achieved at the site has protected beneficial uses of San Diego Bay.

10. The Dischargers removed approximately 5,545 cubic yards (yd^3) of contaminated soil to Casmalia for disposal and 11,960 yd^3 to Soil Wash for treatment/recycling.
11. Soil cleanup levels were determined based on the amount of Total Petroleum Hydrocarbon (TPH) residual saturation concentration that would not yield free product to ground water. After removal of soil, verification soil samples from the bottom and sidewalls of the excavations were taken. The sampling results demonstrated that the maximum levels of TPH in soil remaining on the site (6,900 mg/kg TPH gas and 11,900 TPH diesel) were below site-specific cleanup levels (7,200 mg/kg TPH gas and 14,600 mg/kg TPH diesel). Thus, verification sampling demonstrated that the soil cleanup levels were achieved at the site.
12. Residual contamination in the soil left on site and free product that may be present on the ground water at the site is not a threat to human health based on a human health risk assessment performed by the Discharger (Ogden 2000). The risk assessment analyzed the risk to children in the parking garage, and a security guard working in the parking garage exposed to benzene volatilized from the free product and residual soil contamination. In all scenarios the excess human lifetime carcinogenic risk exposure from benzene is less than a regulatory threshold of 1×10^{-6} , and therefore is protective of human health. Other than water quality, the free product and soil contamination did not pose any risks to the environment.
13. The level of free product cleanup and soil cleanup achieved at the site are protective of beneficial uses in San Diego Bay, human health and the environment. Thus, no further action is required at the site.