

1 MATTHEW K. NARENSKY (Bar No. 215604)
2 WINSTON & STRAWN LLP
3 101 California Street
4 San Francisco, CA 94111-5850
5 Telephone: +1 (415) 591-6867
6 Facsimile: +1 (415) 591-1400

7 Attorneys for Petitioner
8 AMERICAN HONDA MOTOR CO., INC.

9 BEFORE THE CALIFORNIA
10 STATE WATER RESOURCES CONTROL BOARD

11 IN THE MATTER OF THE PETITION OF
12 AMERICAN HONDA MOTOR CO., INC.
13 California Regional Water Quality Control Board,
14 Los Angeles Region

No. _____

**PETITION FOR REVIEW AND
REQUEST FOR HEARING**

REQUEST FOR STAY

(Cal. Water Code § 13320; Cal. Code
Regs., tit. 23 §§ 2050 *et seq.*)

1 **IV. STATEMENT OF REASONS WHY THE REGIONAL BOARD’S ACTION WAS**
2 **INAPPROPRIATE OR IMPROPER**

3 The Regional Board’s Directive is inappropriate and improper because it does not satisfy
4 the requirements of California Water Code § 13267(b)(1), which provides: “The burden,
5 including costs, of these reports shall bear a reasonable relationship to the need for the report and
6 the benefits to be obtained from the reports.” As discussed in detail in Section VII below, the
7 Directive requires costly and time-consuming investigation and monitoring work that does not
8 bear a reasonable relationship to the need or benefit that could be obtained from such work. In
9 fact, the work required by the Directive is unnecessary in light of the significant data that has
10 been collected over the course of several decades and that already delineates the extent of
11 groundwater contamination that exists at the Honda Site, and shows the extent of releases from
12 the historical features on the Honda Site as well as releases from ExxonMobil Oil Corporation’s
13 (“ExxonMobil”) neighboring Torrance Refinery.¹

14 Indeed, since at least the 1980s and continuing to date, the Honda Site has been the
15 subject of detailed and comprehensive environmental investigation and groundwater monitoring,
16 including the installation of 28 groundwater monitoring wells on the Honda Site (many of which
17 have been installed at the locations of the historical features referenced in the Directive), along
18 with a significant network of additional groundwater monitoring wells located offsite and down-
19 gradient of the Honda Site, as depicted in **Exhibit 2**. The technical data collected from these
20 investigation and monitoring efforts demonstrate that a regional groundwater contamination
21 plume emanating from the ExxonMobil’s Torrance Refinery underlies the Honda Site, and shows
22 that the historical features from the Honda Site have had little (if any) additional impact to
23 ExxonMobil’s widespread and significant release of petroleum contaminants.

24 Accordingly, the Directive is unsupported by technical and scientific evidence because it
25 fails to take into account the considerable data and technical analysis that has already
26 characterized the groundwater conditions at the Honda Site and resolved the very questions raised

27 ¹ References in this Petition to “ExxonMobil” refers to both ExxonMobil Oil Corporation
28 and its predecessor, Mobil Oil Corporation.

1 in the Directive. The Regional Board’s assertion that it needs the information “in order to
2 determine if active groundwater remediation is needed” is not reasonable given that the Regional
3 Board has not required ExxonMobil to engage in any remediation despite the massive and
4 sustained releases of gasoline products from ExxonMobil’s Torrance Refinery that has
5 unquestionably and severely contaminated the groundwater underneath both the Torrance
6 Refinery and the Honda Site.

7 The Directive is also inconsistent with the State Board’s decisions, rules and policies.
8 Specifically, even assuming *arguendo* that some portion of the groundwater contamination
9 existing below the Honda Site is attributable to Petitioner or prior occupants of the Honda Site,
10 there would be no material change in the way this extensive plume needs to be managed,
11 evaluated, or remediated. *See, e.g., In re Chevron Products Co.*, 2004 WL 1378359 at *5 (Cal.
12 St. Wat. Res. Bd.) (May 20, 2004) (minor releases from an UST that “do not materially
13 contribute” to an existing plume underlying the site do “not warrant further investigation or
14 remediation”). Forcing Petitioner to expend resources installing additional groundwater
15 monitoring wells within the existing network of 28 onsite and many offsite groundwater
16 monitoring wells is not cost-effective, nor does it bear a reasonable relationship to the benefits, if
17 any, that could be derived from additional site investigation work at the well-defined Honda Site.

18 **V. MANNER IN WHICH PETITIONER IS AGGRIEVED**

19 Petitioner is an aggrieved person within the meaning of California Water Code § 13320
20 because the Regional Board’s Directive does not comply with the statutory requirements of
21 California Water Code § 13267. As discussed in detail in detail in Section VII below, the burdens
22 associated with the preparation of the required investigative work, CSM, and Technical Reports
23 significantly outweigh any conceivable benefits thereof in light of the long history of
24 investigation, remediation, and monitoring work that has been performed at the Honda Site, the
25 vast majority of which is ignored in the Regional Board’s Directive. Completion of the work
26 requested by the Regional Board would be time consuming, will cost hundreds of thousands of
27 dollars, and significantly disrupt business operations at Petitioner’s property.

1 **VI. SPECIFIC ACTION REQUESTED BY PETITIONER**

2 Petitioner respectfully requests that the State Board:

3 (a) Stay the effect of and rescind the Regional Board's Directive requiring that Petitioner
4 submit Technical Reports pursuant to California Water Code § 13267.

5 (b) Hold an evidentiary hearing on the Regional Board's challenged actions.

6 (c) Allow Petitioner to supplement the record with such additional evidence as is or may
7 become available. Petitioner will identify such additional evidence once the record is prepared.

8 (d) Petitioner reserves the right to further request any and all actions authorized in
9 California Water Code § 13320.

10 **VII. STATEMENT OF POINTS AND AUTHORITIES IN SUPPORT OF PETITION**

11 The Regional Board's findings upon which the Directive is based are flawed because the
12 Regional Board has failed to take into account the investigation and monitoring work that has
13 already been performed at the Honda Site over the past three decades. In light of the extensive
14 sampling data, site assessment, and other technical information previously submitted to the
15 Regional Board by Petitioner, ExxonMobil and others, the need for the Directive does not bear a
16 reasonable relationship to the benefits, if any, that could be derived therefrom. The Directive is
17 therefore not supported by the technical data already available in the Regional Board's own files.

18 **A. Summary of Investigation, Monitoring, and Remediation of the Honda Site**

19 The Honda Site has been the subject of investigation, monitoring, and remediation by
20 ExxonMobil and Petitioner since at least the 1980s. In particular, Petitioner's investigation and
21 remediation of the Honda Site dates back to at least January 1983, when Petitioner engaged in
22 various remediation activities in connection with the development of the property under the
23 oversight of the California Department of Health Services, Toxic Substance Division. Petitioner
24 has started the process of reviewing these historical records, and will supplement this Petition
25 with further information as to these early remedial activities as soon as practicable.

26 Investigation of the Honda Site also occurred in the late 1980s in connection with the
27 Regional Board's oversight over the extensive regional groundwater plume emanating from the
28 neighboring ExxonMobil Torrance Refinery. Specifically, in the late 1980s, groundwater

1 monitoring wells MW-1 through MW-6 were installed on the Honda Site by the Torrance
2 Redevelopment Agency (*See Exhibit 2*) for the purpose of delineating groundwater conditions
3 and evaluating the impacts to groundwater from former operations at the Honda Site as well as
4 from ExxonMobil's Torrance Refinery. Following the Regional Board's issuance of Cleanup &
5 Abatement Order ("CAO") 88-43 to ExxonMobil on March 28, 1988, ExxonMobil also began
6 investigating groundwater conditions at the Honda Site and providing monthly groundwater
7 monitoring reports to the Regional Board.

8 Petitioner's remediation work at the Honda Site continued in 1989 when two USTs were
9 discovered during site redevelopment work performed by the Petitioner. Specifically, a 5,000-
10 gallon gasoline UST was discovered and removed in April 1989, and a 1,000-gallon diesel/waste
11 oil UST was discovered and removed in July 1989. *See Exhibit 3* (Final Report Underground
12 Tank Closure by Removal, prepared by Environmental Solutions, Inc. dated May 1989) and
13 **Exhibit 4** (Final Report Underground Tank Closure by Removal (1,000 Gallon Tank), prepared
14 by Environmental Solutions, Inc. dated September 1989). Petitioner discovered impacted soils in
15 the tank graves, which were excavated until the concentrations of hydrocarbons remaining in soils
16 were below applicable standards, and the excavated areas were refilled with uncontaminated soil.
17 The Petitioner submitted applications for closure to the City of Torrance Fire Department, which
18 were subsequently approved. *See Exhibits 3 and 4.*

19 In the late 1980s and into the early 1990s, ExxonMobil raised the issue of Petitioner's
20 contribution to ExxonMobil's regional groundwater plume with the Regional Board.
21 ExxonMobil's consultant Harding Lawson Associates ("HLA") submitted two reports asserting
22 that former features on the Honda Site were potentially responsible for a portion of the regional
23 petroleum groundwater contamination. *See Exhibit 5* (HLA March 17, 1989 Report: Potential
24 Off-Site Contamination Source Identification); **Exhibit 6** (HLA January 31, 1991 Report: MW-
25 Series Well Installation, Data Summary and Discussion, Mobil Torrance Refinery). Petitioner's
26 consultant, SCS Engineers ("SCS") submitted a response to the HLA Reports, providing technical
27 reasons why HLA's claims were not supported by the data collected to date. *See Exhibit 7* (SCS
28 April 30, 1991 Report: Review and Comments on Mobil/HLA Report).

1 In addition to submitting these technical reports to the Regional Board, ExxonMobil,
2 Petitioner, the Torrance Redevelopment Agency and the Regional Board held an in-person
3 meeting in September of 1990 to discuss the technical work that would be required to identify any
4 contributing sources to the ExxonMobil plume. *See Exhibit 8* (Additional Ground Water
5 Investigation at Torrance/American Honda Site (File No. 86-10), prepared by the Regional Board,
6 dated September 13, 1990). As a result of this meeting, the Regional Board required that ten
7 additional groundwater monitoring wells be installed at the Honda Site “to complete the site
8 assessment.” *Id.* Five of the wells (MW-7 through MW-11) were installed by SCS, and five of
9 the wells (MW-12 through MW-16) were installed by HLA. The Regional Board “believe[d]
10 these joint [monitoring] activities [we]re essential in finalizing the assessment of this complex
11 condition of ground water contamination.” *Id.*

12 Based on its review of groundwater monitoring data collected pursuant to its September
13 1990 order, the Regional Board identified a single area of concern and issued another order to
14 Petitioner on March 20, 1992 requiring submittal of a workplan to further investigate the vertical
15 and lateral extent of petroleum hydrocarbons in soil near MW-8, which is located in the area of
16 U.S. Steel’s former above ground storage tanks (“ASTs”) at the Honda Site. *See Exhibit 9*
17 (Additional Site Assessment at American Honda Torrance Site (File No. 86-10), prepared by the
18 Regional Board, dated March 20, 1992). The Regional Board indicated that it “believe[d]
19 findings from this investigation will help in determining the allocation of ground water
20 remediation costs among all the involved parties,” suggesting that delineation was nearing
21 completion and that additional investigation was required for purposes of allocating liability. *Id.*
22 The Regional Board subsequently approved the workplan submitted by Petitioner’s consultant
23 Dames & Moore on January 15, 1993. Following completion of the investigation and monitoring
24 activities set forth in the workplan, the Regional Board did not require Petitioner to conduct any
25 additional studies or remediation of soil or groundwater.

26 Several years later, during the course of further development of the Honda Site, Petitioner
27 removed several USTs at various locations on the site. Specifically, in May 2005, the City of
28 Torrance Fire Department granted case closure for the removal of USTs formerly located near

1 Buildings 100, 300, 500, and 600 in December 2004. *See Exhibit 10* (Letters from City of
2 Torrance Fire Department). In addition to these UST sites that were closed by the Torrance Fire
3 Department, Petitioner also removed two USTs located near Building 320 (the “Building 320
4 UST Site”). On March 25, 2004 the City of Torrance Fire Department referred the Building 320
5 UST Site to the Regional Board for further investigation. After several years of site investigation
6 activities, on September 20, 2007 Petitioner filed a Petition for Site Closure for the Building 320
7 UST Site with the State Board. The State Board denied the petition on March 12, 2015.
8 Following this denial, the Regional Board issued a May 20, 2015 directive (May 2015 Directive”)
9 requiring Petitioner to take corrective action at the Building 320 UST Site. *See Exhibit 11*.
10 Petitioner is currently preparing a workplan in compliance with the Regional Board’s May 2015
11 Directive, and expects to submit this workplan on or before September 20, 2015.

12 The critical point for purposes of this Petition is that the precise issue the Regional Board
13 has raised in the Directive—the extent of contribution from historical features on the Honda Site
14 to the ExxonMobil plume—was squarely raised before the Regional Board 25 years ago, and
15 addressed to the satisfaction of the Regional Board through the installation of a network of
16 groundwater monitoring wells on the Honda Site. Monitoring of this network of groundwater
17 wells installed on the Honda Site, as well as a network of groundwater monitoring wells installed
18 offsite and down-gradient of the Honda Site, has taken place over the last three decades and is
19 still ongoing today. The data collected over the past three decades has defined the nature and
20 extent of groundwater conditions existing beneath the Honda Site, and shows that this
21 contamination is attributable to the regional plume emanating from ExxonMobil’s Torrance
22 Refinery.

23 **B. The Regional Board’s Factual Findings Do Not Support the Directive**

24 The Regional Board has made several substantive factual findings in support of its
25 Directive, set forth in Paragraph 1. The Regional Board’s factual findings are either erroneous,
26 unsupported by the record, or irrelevant to the actions that the Regional Board is requiring
27 Petitioner to take.
28

1 First, the Regional Board’s factual finding in Paragraph 1.1 merely recites a historical
2 timeline of activities at the Honda Site. Petitioner does not dispute the accuracy of the Regional
3 Board’s statements in Paragraph 1.1. However, the background facts set forth in this Paragraph
4 1.1 do not support the Regional Board’s Directive.

5 Second, the Regional Board refers in Paragraph 1.2 to certain data related to the Building
6 320 UST Site. The Regional Board’s reliance on this data is misplaced. Given that this data is
7 limited to the Building 320 UST site, it does not indicate anything about any other area of the
8 Honda Site. Therefore, this data does not constitute adequate “evidence that supports requiring
9 [Petitioner] to” perform the expansive site-wide work set forth in the Directive as required under
10 California Water Code § 13267(b)(1). In any event, Petitioner is already preparing the workplan
11 required under the May 2015 Directive for the purpose of further delineating the contamination at
12 the Building 320 UST Site.

13 Third, the Regional Board attempts to justify expanding the technical work beyond the
14 Building 320 UST Site by stating in Paragraph 1.3 of the Directive that “evidence found in the
15 Regional Board files” indicates that past activities at the Honda Site have resulted in
16 contamination. But this vague statement is insufficient as the Directive does not indicate what
17 evidence the Directive is referring to, nor explain in any fashion why the Regional Board believes
18 further Site characterization and remediation of such contamination is necessary in light of the
19 unspecified evidence.

20 Fourth, Paragraph 1.4 of the Directive references the HLA Reports discussed above
21 (**Exhibits 5 and 6**) and concludes that “records indicate that several petroleum USTs associated
22 with commercial and industrial businesses were also operated at multiple locations at the site.”
23 Of course, as discussed in detail above, the identification of these USTs and the assertion that
24 releases from them may have contributed to the ExxonMobil plume has already been directly
25 addressed by the Regional Board, and a network of groundwater monitoring wells has already
26 been installed precisely to delineate the potential contribution of such sources. The Regional
27 Board’s indication that these former USTs require further investigation is therefore not supported
28 by the record.

1 Fifth, the Directive finds in Paragraph 1.5 that “[t]he extent of groundwater contamination
2 resulting from releases at the [Honda] Site has not been defined either laterally or vertically.”
3 This statement is not supported by the record. The groundwater conditions at the Honda Site
4 have been well-delineated through the voluminous groundwater data gathered from the network
5 of 28 onsite monitoring wells, and many offsite monitoring wells, installed by Petitioner,
6 ExxonMobil and others over the past 25 years. Indeed, these groundwater monitoring wells were
7 installed at the locations of historical features on the Honda Site for the very purpose of
8 determining whether such features have contributed to the regional ExxonMobil plume.
9 Specifically, as shown in the figures prepared by Petitioner’s technical consultant, attached hereto
10 as **Exhibit 12**, the dissolved phase petroleum constituents (Benzene (Figure 1) and BTEX (Figure
11 2)) underlying the Honda Site are in a stable and well defined regional plume.² Moreover, this
12 data shows that the source of the plume is clearly the significant Free-Phase Hydrocarbon Product
13 (Figure 7) that has been released to the groundwater from the ExxonMobil Torrance Refinery.
14 Further, the data also shows that there are no issues related to MTBE (Figure 3) , PCE (Figure 4),
15 TCE (Figure 5) or 1,1,1-TCA (Figure 6).³

16 Finally, even assuming *arguendo* that some portion of the groundwater contamination
17 existing below the Honda Site is attributable to Petitioner or prior occupants of the Honda Site,
18 there would be no material change in the way this extensive plume needs to be managed,
19 evaluated and remediated. *See, e.g., In re Chevron Products Co.*, 2004 WL 1378359 at *5 (Cal.
20 St. Wat. Res. Bd.) (May 20, 2004) (minor releases from an UST that “do not materially
21 contribute” to an existing plume underlying the site do “not warrant further investigation or
22 remediation”). Forcing Petitioner to expend resources installing additional groundwater
23 monitoring wells within the existing network of 28 onsite groundwater monitoring wells is not
24

25 ² The figures in **Exhibit 12** are based upon data submitted to the Regional Board by
26 ExxonMobil.

27 ³ Petitioner notes that it does not and has never owned the former Solvent Coatings site,
28 which is surrounded by the Honda Site as shown on **Exhibit 2**.

1 cost-effective and does not bear a reasonable relationship to the benefits, if any, that could be
2 derived from additional site investigation work at the well-defined Honda Site.

3 For all of these reasons, the Directive does not satisfy the procedural or substantive
4 requirements of California Water Code § 13267(b)(1). The cost and other burdens associated
5 with the Regional Board's Directive do not bear a reasonable relationship to the benefits of
6 performing further site assessment work. The Regional Board's attempt to reopen the issue of
7 Petitioner's contribution to ExxonMobil's contamination plume without addressing its own
8 orders, or the decades of data collected on this issue, is misplaced and not supported by the
9 record. Accordingly, the Directive was improperly issued by the Regional Board.

10 Petitioner reserves its right to supplement this statement of points and authorities once the
11 record in this matter has been prepared.

12 **VIII. LIST OF INTERESTED PARTIES**

13 Petitioner has identified and has served this petition on the Regional Board and the
14 following additional interested parties the Regional Board copied on its Directive:

15 Kenneth Lew
16 City of Torrance Fire Department
17 Haz. Mat. Division
18 3031 Torrance Blvd.
19 Torrance, CA 90503

20 Kathy Jundt
21 State Water Resources Control Board, UST Cleanup Fund
22 1001 "I" Street
23 Sacramento, CA 95814

24 Phuong Ly
25 Water Replenishment District of Southern California
26 4040 Paramount Boulevard
27 Lakewood, CA, 90712

28 **IX. STATEMENT THAT COPIES OF PETITION HAVE BEEN SENT TO THE REGIONAL BOARD**

Copies of this Petition have been served on the Regional Board.

X. STATEMENT THAT ISSUES RAISED IN THE PETITION WERE PRESENTED TO THE REGIONAL BOARD

All substantive issues and objections raised in this Petition have been raised before the Regional Board, or Petitioner was not required to raise them, or was unable to raise them because

1 Petitioner was unaware of them and could not have reasonably been aware of them in time to
2 raise them before the Regional Board, or because the Regional Board unreasonably curtailed the
3 amount of time Petitioner was given to raise issues before the Regional Board.

4 **XI. REQUEST FOR PREPARATION OF THE ADMINISTRATIVE RECORD.**

5 By copy of this Petition to the Executive Officer of the Regional Board, Petitioner hereby
6 requests the preparation of the administrative record herein.

7 **XII. REQUEST FOR HEARING**

8 Petitioner requests that the State Board hold a hearing in this matter.

9 **XIII. STATEMENT OF ADDITIONAL EVIDENCE**

10 Petitioner requests that it be permitted to supplement the record before the State Board.
11 Petitioner will advise the State Board more specifically in this regard once the record has been
12 prepared by the Regional Board, and it knows what matters have not been included by the
13 Regional Board.

14 Respectfully Submitted,

15 Dated: August 26, 2015

WINSTON & STRAWN LLP

17 By: 

18 Matthew K. Narensky

19 Attorneys for Petitioner
20 AMERICAN HONDA MOTOR CO., INC.
21
22
23
24
25
26
27
28

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

REQUEST FOR IMMEDIATE STAY

Pursuant to California Water Code § 13321(a) and Title 23 of California Code of Regulations § 2053, Petitioner hereby requests an immediate stay of the Regional Board's Directive until such time as the subject matter of this Petition is resolved. Pursuant to Title 23 of California Code of Regulations § 2053(a), this request for a stay is supported by the Declaration of Carol Serlin ("Serlin Declaration"), Petitioner's environmental consultant, attached hereto.

I. FAILURE TO GRANT THE STAY WILL RESULT IN SUBSTANTIAL HARM TO PETITIONER

Petitioner will suffer substantial harm if a stay is not granted in this matter. The Directive sets an unreasonably short time frame in which to complete an SCM and perform the required site characterization work, and threatens to impose penalties of \$1,000 per day for each day each Technical Report is not received after the due dates set forth in the Directive.⁴ Thus, the Directive imposes an immediate requirement that Petitioner expend substantial resources engaging in the unnecessary additional site characterization required by the Regional Board, which will cost hundreds of thousands of dollars to complete. *See* Serlin Declaration at ¶ 3. Accordingly, failure to grant the stay will result in substantial financial hardship and harm to Petitioner.

II. INTERESTED PERSONS AND THE PUBLIC INTEREST WILL NOT BE SUBSTANTIALLY HARMED IF A STAY IS GRANTED

Interested persons and the public interest will not be harmed in any way if the stay is granted. The Honda Site is located within a well-documented mile-long groundwater contaminant plume emanating from ExxonMobil's Torrance Refinery containing high concentrations of gasoline products for which ExxonMobil has accepted responsibility. Given that the Regional Board has been aware of this regional groundwater contamination plume for over 30 years, there is no harm to the public interest or interested persons in staying the further

⁴ Petitioner notes that the Directive requires Petitioner to begin conducting semi-annual groundwater monitoring in January 2015, which had already passed at the time the Regional Board issued the Directive.

1 investigative work mandated under the Directive, because no matter what the results are, the work
2 will not abate or exacerbate the known plume of contaminated groundwater. *See* Serlin
3 Declaration at ¶ 4.

4 **III. SUBSTANTIAL QUESTIONS OF FACT AND LAW EXIST**

5 The central question to be decided in this Petition is whether the Regional Board may
6 ignore substantial technical evidence when issuing its orders and directives, and whether the
7 Regional Board can require private parties to expend significant resources performing site
8 characterization that is unnecessary. This issue presents substantial concerns of due process and
9 the proper exercise of administrative powers. A stay will permit the time needed to adequately
10 and fully address these questions and others regarding the underlying factual and legal bases for
11 the Regional Board's Directive.

12 Indeed, a stay of the Regional Board's Directive is particularly appropriate here because
13 the very subject matter of this Petition is the Regional Board's unreasonable demand that
14 Petitioner prepare an SCM by October 27, 2015. Meaningful review of the Regional Board's
15 Directive can only be achieved if the State Board resolves this Petition prior to Petitioner being
16 compelled (under threat of significant administrative penalties) to perform this unnecessary work.
17 Denial of a stay in this context would render the State Board's petition process ineffective to
18 address actions taken by the Regional Board.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

IV. CONCLUSION

For all the foregoing reasons, Petitioner respectfully requests that the State Board grant a stay of the effect of the Regional Board’s Directive. Petitioner requests that the stay remain in effect until at least ten days after formal resolution of this Petition.

Respectfully Submitted,

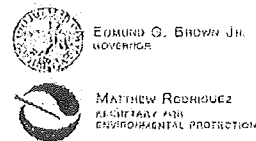
Dated: August 26, 2015

WINSTON & STRAWN LLP

By: 
Matthew K. Narensky

Attorneys for Petitioner
AMERICAN HONDA MOTOR CO., INC.

EXHIBIT 1



Los Angeles Regional Water Quality Control Board

July 27, 2015

Certified Mail # 7012 1640 0000 6294 6998
Return Receipt Requested

Mr. Tom Fromdahl
American Honda Motor Company, Inc.
1919 Torrance Blvd.
Torrance, CA 90501

**SUBJECT: REQUIREMENTS FOR SUBMITTAL OF TECHNICAL REPORTS
PURSUANT TO CALIFORNIA WATER CODE SECTION 13267 ORDER
NO. R4-2015-0114**

**CASE/SITE: AMERICAN HONDA MOTOR COMPANY, INC., 1919 TORRANCE
BOULEVARD, TORRANCE, CA 90501 (SITE ID NO. 905010198)**

Dear Mr. Fromdahl:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the State regulatory agency responsible for protecting surface and groundwater quality in Los Angeles and Ventura Counties. To accomplish this, the Regional Board oversees the investigation and cleanup of unregulated discharges adversely or potentially affecting the State's water, as authorized by the Porter-Cologne Water Quality Control Act (California Water Code [CWC], Division 7). The above-referenced site is situated within the jurisdiction of the Regional Board.

Based on the information provided to the Regional Board for the subject site (Site), the Regional Board has determined that past activities (unauthorized disposal and discharges of impacted waste) at the Site have resulted in contamination of the subsurface with petroleum hydrocarbons and potentially other compounds.

Enclosed is a CWC section 13267 Order (Order) requiring submittal of 1) a Site Conceptual Model, 2) an assessment report, and 3) submittal of semi-annual groundwater monitoring reports.

As indicated in the Order, you are required to submit/upload the required technical reports according to the schedule(s) specified in the Order. Your compliance with the Order is sincerely appreciated.

CHARLES STINGER, CHAIR | SAMUEL UNGER, EXECUTIVE OFFICER

320 West 4th St., Suite 200, Los Angeles, CA 90013 | www.waterboards.ca.gov/losangeles

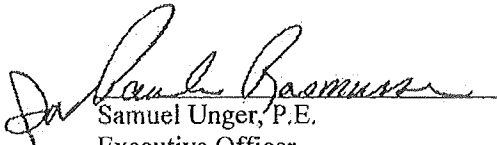
Mr. Tom Fromdahl

- 2 -

July 27, 2015

If you have any questions regarding this project please contact Ms. Maryam Taidy at (213) 576-6741 or maryam.taidy@waterboards.ca.gov, or Dr. Yi Lu at (213) 576-6695 or yi.lu@waterboards.ca.gov.

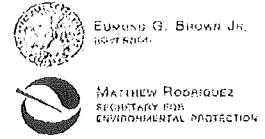
Sincerely,


Samuel Unger, P.E.
Executive Officer

Enclosure: California Water Code section 13267 Order dated July 27, 2015

cc:

Ken Lew, City of Torrance
Kathy Jundt, State Water Resources Control Board, UST Cleanup Fund
Phuong Ly, Water Replenishment District of Southern California



Los Angeles Regional Water Quality Control Board

INVESTIGATIVE ORDER NO. R4-2015-0114

ORDER TO PROVIDE TECHNICAL REPORTS

CALIFORNIA WATER CODE SECTION 13267 ORDER

**AMERICAN HONDA MOTOR COMPANY, INC.
1919 TORRANCE BOULEVARD, TORRANCE, CA 90501
(CASE ID # 905010198)**

The Regional Water Quality Control Board, Los Angeles Region (Regional Board) makes the following findings and issues this Order pursuant to California Water Code (CWC) section 13267:

1. The American Honda Motor Company, Inc. (Site) is located at 1919 Torrance Boulevard in Torrance, California. The Site is located in an industrialized part of Los Angeles County. The Site is a commercial property operating two underground storage tanks (USTs) and dispensers. There are several warehouses, manufacturing facilities, and oil refineries adjacent to the Site. Residential properties are located south and west of the Site.
 - 1.1. Steelmaking operations previously took place at the Site by Llewellyn Iron Works, Columbia Steel, and U.S. Steel from 1914 to 1980. The steel mill operations stopped when the property was sold to American Honda in 1979. The plant was demolished and replaced with new buildings in the early 1980s.
 - 1.2. American Honda Motor Company Inc. has conducted subsurface investigations and remediation on-Site, including excavation of about 50 cubic yards of petroleum impacted soil during the removal and replacement of one 5,000-gallon and one 10,000-gallon gasoline USTs in 2004. In November 2007, three soil borings were drilled and one of the borings was converted into groundwater monitoring well LFMW-1, which is located east of the former tank pit. Results of the soil samples collected and analyzed from the borings indicated maximum concentrations of 1.4 milligrams per kilograms (mg/kg) total petroleum hydrocarbon as gasoline (TPHg), 7.3 mg/kg methyl tert-butyl ether (MTBE), and 1.3 mg/kg tert-butyl alcohol (TBA) were detected in the samples. One groundwater sample was collected from the monitoring well LFMW-1 and concentrations of 86,000 micrograms per liter ($\mu\text{g/L}$) TPHg, 9,200 $\mu\text{g/L}$ total petroleum hydrocarbon as diesel (TPHd), 470 $\mu\text{g/L}$ MTBE, 66 $\mu\text{g/L}$ TBA, 21,500 $\mu\text{g/L}$ xylenes, 3,300 $\mu\text{g/L}$ ethylbenzene, 23,000 $\mu\text{g/L}$ toluene, 5,100 $\mu\text{g/L}$ benzene, and 250 $\mu\text{g/L}$ naphthalene were detected in the sample.
 - 1.3. The Regional Board has evidence found in the Regional Board files that past activities at the Site have resulted in contamination of the subsurface with petroleum contaminants and potentially other compounds.

CHARLES STRINGER, CHAIR | SAMUEL UNGER, EXECUTIVE OFFICER

320 West 4th St., Suite 200, Los Angeles, CA 90013 | www.waterboards.ca.gov/losangeles

- 1.4. Based on the historical and current groundwater investigation data, Site records indicate that several petroleum USTs associated with commercial and industrial businesses were also operated at multiple locations throughout the Site.¹
- 1.5. The extent of groundwater contamination resulting from releases at the Site has not been defined either laterally or vertically.
2. California Water Code section 13267(b)(1) states, in part: In conducting an investigation..., the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region . . . shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
3. This Order identifies American Honda Motor Company, Inc. as the party responsible for further investigation of the confirmed groundwater contamination based on its current ownership of the Site.
4. This Order requires the party named herein to prepare and submit technical reports related to additional subsurface investigations and future groundwater monitoring. The complete technical reports must be submitted as required by this Order. The Regional Board may reject the technical reports if not complete, or require revisions without issuing a new Order.
5. The Regional Board needs this information in order to determine if active groundwater remediation is needed for the protection of groundwater quality and/or human health, which may be impacted from contaminants in groundwater as a result of the use and unauthorized discharges of petroleum contaminants at the Site.
6. The burdens, including costs, of these reports bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The information is necessary to assure adequate investigation and cleanup of unauthorized discharges, which may pose significant threats to the environment and groundwater resources.
7. The issuance of this Order is an enforcement action by a regulatory agency and is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to section 15321(a)(2), Chapter 3, Title 14 of the California Code of Regulations. This Order requires submittal of technical and/or monitoring reports and work plans. The proposed activities under the work plans are not yet known. It is unlikely that implementation of the work plans associated with this Order could result in anything more than minor physical changes to the environment. If the implementation may result in significant impacts on the environment, the appropriate lead agency will address the CEQA requirements prior to approval of any work plan.

¹ Harding Lawson Associates, March 17, 1989. Potential Off-Site Contamination Source Identification.
Harding Lawson Associates, January 31, 1991. MW-Series Well Installation, Data Summary and Discussion, Mobil Torrance Refinery.

8. Any person aggrieved by this action of the Regional Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must *receive* the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

THEREFORE, IT IS HEREBY ORDERED that American Honda Motor Company, Inc., pursuant to section 13267(b) of the CWC, is required to perform additional investigations (see below) and submit the following technical report(s):

1. A Site Conceptual Model (SCM) to evaluate the fate and transport of contamination in the subsurface, distribution of contamination, exposure pathways, sensitive receptors and other relevant information by **October 27, 2015**.

The required SCM shall include:

- A. A brief summary of the Site history, previous and current investigation results, and current Site and operational status;
 - B. Location of historical, current, and proposed buildings and/or structures (if applicable); previous investigation, remediation, and/or field assessment locations, including borings, groundwater monitoring wells, excavations, soil sampling points, removal actions of construction/demolition debris, etc.; and, any potential historical source areas, including, but not limited to, clarifiers, sumps, chemical storage areas, aboveground or underground storage tanks, tanklines/treatment lines, and any waste treatment/discharge areas, etc. These locations and building(s) (or structures) must be presented on an accurately scaled Site map;
 - C. Tables including all historical analytical data from current and previous investigations of soil matrix and groundwater; and,
 - D. Scaled figures/maps showing plain and cross-section views of soil lithology and laboratory analytical results of soil, soil vapor, and groundwater sampling borings/points from the current and all previous site investigations.
2. Groundwater monitoring and reporting for existing and future groundwater wells shall be conducted in accordance with the following semi-annual schedule, starting January 2015:

<u>Monitoring Period</u>	<u>Report Due Date</u>
January – March	April 30 th
July – September	October 31 st

In addition to analysis of groundwater samples for volatile organic compounds (VOCs) by EPA method 8260B, all future groundwater sampling events shall include analysis for 1,4-dioxane (with a detection limit less than 1 µg/L), which has been historically used in industrial operations as a stabilizer for solvents, in particular 1,1,1-trichloroethane.

3. Additional site investigation(s) shall be conducted until the vertical and lateral extent of groundwater contamination originating from the Site is adequately defined and the potential of vapor intrusion to indoor air is fully evaluated. A report or reports documenting the results of the required investigations or work plans for further site investigation shall be submitted by the due date(s) specified in future amendments to this Order and in the work plan approval or report review comment letter(s) from the Regional Board.

The technical reports are required to be submitted under the Water Code section 13267 Order. Pursuant to Water Code section 13267(a), any person who fails to submit reports in accordance with the Order is guilty of a misdemeanor. Pursuant to Water Code section 13268(b)(1), failure to submit the required technical reports described above by the specified due date(s) may result in the imposition of administrative civil liability by the Regional Board in an amount up to one thousand dollars (\$1,000) per day for every day each technical report is not received after the above due date(s). These civil liabilities may be assessed by the Regional Board for failure to comply, beginning with the date that the violations first occurred, and without further warning.

The Regional Board, under the authority given by Water Code (CWC) section 13267(b)(1), requires you to include a perjury statement in all reports submitted under the 13267 Order. The perjury statement shall be signed by a senior authorized KS-611, LLC representative (not by a consultant). The perjury statement shall be in the following format:

"I, [NAME], certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The State Water Board adopted regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, California Code of Regulation) requiring the electronic submittal of information (ESI) for all site cleanup programs, starting January 1, 2005. Currently, all of the information on electronic submittals and GeoTracker contacts can be found at http://www.waterboards.ca.gov/ust/electronic_submittal.

To comply with the above referenced regulations, you are required to upload all technical reports, documents, sampling data, and well data to GeoTracker by the due dates specified in the Regional Board letters and orders issued to you or for the Site. However, we may request that you submit hard copies of selected documents and data to the Regional Board in addition to electronic submittal of information to GeoTracker.

For your convenience, the GeoTracker Global ID for this case is **T0603715594**.

SO ORDERED.

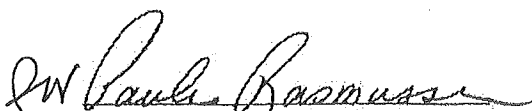
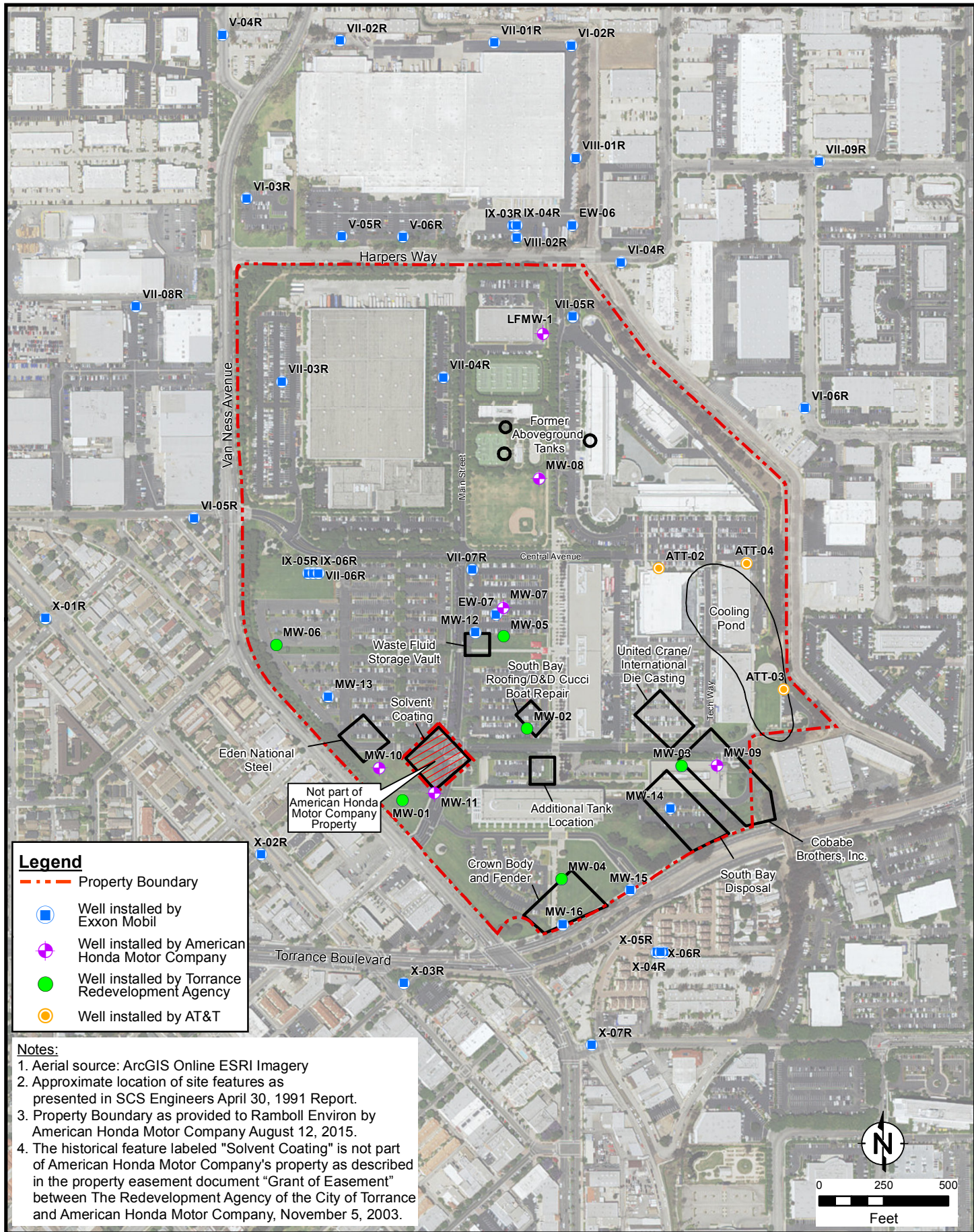

Samuel Unger, P.E.
Executive Officer

EXHIBIT 2



Path: Z:\01_Projects\American Honda\Figure - Historical Features and Monitoring Well Locations-FINAL - 2015-08-25.mxd

EXHIBIT 3

RECEIVED

MAY 24 1989

**FINAL REPORT
UNDERGROUND TANK CLOSURE
BY REMOVAL**

**AMERICAN HONDA MOTOR COMPANY
700 VAN NESS AVENUE
TORRANCE, CALIFORNIA**

Prepared For:

**CITY OF TORRANCE FIRE DEPARTMENT
FIRE PREVENTION DIVISION
3031 TORRANCE BOULEVARD
TORRANCE, CALIFORNIA**

May, 1989

APPROVED
TORRANCE FIRE DEPARTMENT
<u>5-19-89</u>
DATE
<i>N Douglas Bey (1111)</i>
FIRE PREVENTION DIVISION

TABLE OF CONTENTS

	<u>PAGE NO.</u>
LIST OF TABLES/FIGURES	ii
1.0 INTRODUCTION AND SUMMARY	1
2.0 TANK REMOVAL AND SOIL SAMPLING	1
3.0 SOIL ANALYSIS RESULTS	3
4.0 SITE CLOSURE AND SOIL DISPOSAL	4
APPENDIX A: CITY OF TORRANCE FIRE DEPARTMENT APPLICATION FOR CLOSURE	
APPENDIX B: LIQUID SAMPLE LABORATORY RESULTS	
APPENDIX C: CALIFORNIA UNIFORM HAZARDOUS WASTE MANIFESTS	
APPENDIX D: CERTIFICATE OF TANK DESTRUCTION	
APPENDIX E: EXPLOSIVE ATMOSPHERE TEST RESULTS PRIOR TO REMOVAL-EDWIN S. WYNKOOP AND ASSOCIATES	
APPENDIX F: FIELD (VOC) MONITORING DAILY LOG SHEETS	
APPENDIX G: CERTIFIED LABORATORY REPORTS AND CHAIN-OF-CUSTODIES	

LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
1	Summary - Laboratory Analysis Results	

LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>	<u>PAGE NO.</u>
1	Site Plan	
2	Location of Final Samples Collected on April 10, 1989	

1.0 INTRODUCTION AND SUMMARY

1. The closure of one 5,000-gallon underground gasoline tank has been completed at the American Honda Motor Company facility at 700 Van Ness Avenue, Torrance, California. The work is described in the City of Torrance Fire Department Application for Closure dated April 4, 1989. A copy of the application is included in Appendix A. The South Coast Air Quality District was notified as per District Rule 1166 requirements and a reference number for the site (Reference No. 89-1044) was issued on April 3, 1989.
2. The underground tank was encountered on a redevelopment site by a construction contractor for American Honda during grading work. The site had been purchased from the City of Torrance Redevelopment Agency in early 1986 and the tank's presence was not previously known or reported to American Honda. When struck by the soil excavation equipment, a hole was punctured in the tank. Observations into the tank indicated the presence of liquid and hydrocarbon odors.
3. American Honda had the liquid sampled and analyzed for fuel hydrocarbon characterization by the EPA-8015 Method. The analysis results characterized the liquid as gasoline. A copy of the certified laboratory report is included in Appendix B.
4. Field observations and analysis of soil samples collected from beneath the tank and from the cavity walls after removal indicated the presence of low levels of petroleum hydrocarbon contamination. Pursuant to the City of Torrance Fire Department request, the contaminated soil was excavated from the cavity. The soil was subsequently hauled offsite for disposal. Laboratory analysis results of the soil samples collected from the cavity following the removal of the contaminated soil indicated that the presence of contamination was below the limits of detection or at levels not considered significant under general regulatory guidelines. Final interpretation of these results rests with the City of Torrance Fire Department.

2.0 TANK REMOVAL AND SOIL SAMPLING

1. Environmental Solutions, Inc. removed one (1) 5,000-gallon underground tank on April 4, 1989. The former location of the tank is shown in Figure 1.
2. Further excavation to the top of the tank was performed first, followed by rinsing and extraction of residual contents and inerting with dry ice. The rinsate was transported under

California Uniform Hazardous Waste Manifest by United Pumping Services, Inc. (U.S. EPA I.D. No. CAD072953771) to a licensed TSD facility Demenno/Kerdoon (U.S. EPA I.D. No. CAT 080013352). A copy of the manifest is enclosed in Appendix C. The tank was removed, hauled away by truck, and subsequently destroyed. A copy of the certificate of tank destruction is enclosed in Appendix D.

3. Prior to removal, the tank was tested for an explosive atmosphere by an independent testing company, Edwin S. Wynkoop and Associates. A City of Torrance Fire Department inspector, Doug Bergen, was present during the explosive atmosphere testing. The tank was found not to contain an explosive atmosphere. A copy of the test result is enclosed in Appendix E.
4. Upon removal of the tank, the soil appeared to be contaminated based on discoloration and detection of hydrocarbon odors. As per South Coast Air Quality Management District Rule 1166 requirements, monitoring of volatile organic compounds (VOCs) was conducted during excavation and emissions of greater than 50 ppm were detected. The District was notified on April 5 of the detection of 50 ppm VOC-contaminated soil, within the District's required 24-hour time period. Excavation of the contaminated soil was performed under Environmental Solutions, Inc. Rule 1166 Excavation Permit, Application No. 181639. Excavation of contaminated soil occurred on two separate days (April 4 and April 10), and copies of the Field VOC Monitoring Daily Log Sheets are enclosed in Appendix F.
5. The tank was visually inspected after removal and found to be corroded along the bottom and tank ends. Evidence of holes that could lead to the potential presence of soil contamination was observed and supported by a stained surface in the vicinity of the holes along the tank bottom. The contamination did not appear widespread.
6. As per the City of Torrance Fire Department request, one soil sample was collected approximately two feet below the tank invert. After the excavation of the contaminated soil per the request of the Fire Department, two additional soil samples were collected from the cavity bottom and four soil samples were collected from the lower cavity walls. The samples were sent to a State-certified laboratory under Chain-of-Custody for analysis. Laboratory analysis results are presented in Section 3.0.

3.0 SOIL ANALYSIS RESULTS

1. One (1) soil sample was collected from two feet under the tank following removal. During excavation of the contaminated soil, five additional samples were collected. After removal of the contamination, two (2) soil samples were collected from the bottom of the tank cavity and four (4) soil samples were collected from the lower cavity walls. The samples were sealed, labeled, placed in an iced cooler, and shipped under Chain-of-Custody to a State-certified laboratory for analysis.
2. The samples were analyzed for fuel hydrocarbons including benzene, toluene, and total xylenes (BTX) by the EPA-8015 Modified Method for low level detection of gasoline and BTX. Copies of the laboratory reports and Chain-of-Custodies are enclosed in Appendix G.
3. The laboratory analysis result of the soil sample collected beneath the tank indicated the presence of contamination (73 ppm). However, at the time of removal, the contamination did not appear widespread based on visual observations.
4. With the approval of the City of Torrance Fire Department, direct excavation of contaminated soil was performed and more soil samples were collected. The results from samples collected following additional excavation indicated the presence of contamination in the cavity bottom (350 ppm) and the cavity walls (2,100 ppm). The laboratory analysis results are summarized in Table 1.
5. The South Coast Air Quality Management District was notified on April 10, prior to the continuation of contaminated soil excavation, and a new reference number for the site (Reference No. 89-1098) was issued. Excavation of contaminated soil was continued until field observations and OVA readings indicated the concentrations of hydrocarbons were below significant levels. Two soil samples were collected from the cavity bottom and four soil samples were collected from the lower cavity walls following the additional excavation activities. The locations of these final soil samples are shown in Figure 2. The samples were sealed, labeled, placed in an iced cooler, and shipped under Chain-of-Custody to a State-certified laboratory for analysis.

6. Laboratory analysis results of the soil samples collected following the removal of the contaminated soil did not indicate the presence of significant contamination. The laboratory analysis results are summarized in Table 1. Based on the soil analysis results, significant contamination was not indicated and the need for additional investigations and/or soil removal do not appear warranted.

4.0 SITE CLOSURE AND SOIL DISPOSAL

1. The cavity was backfilled five (5) feet with previously excavated uncontaminated soil. The site closure and compaction will be performed by American Honda Motor Company by its site construction contractor.
2. Approximately 147 tons (based on truck weight tickets) of contaminated soil excavated from the tank cavity were hauled offsite under California Uniform Hazardous Waste Manifest by United Pumping Services, Inc. (U.S. EPA I.D. No. CAD072953771) to a licensed Class I landfill, Casmalia Resources (U.S. EPA I.D. No. CAD020748125) in Casmalia, California. Copies of the manifests are enclosed in Appendix C.

TABLE 1

SUMMARY - LABORATORY ANALYSIS RESULTS

SOIL SAMPLE COLLECTION ACTIVITY AND DATE	SAMPLE I.D.	SAMPLE LOCATION	APPROXIMATE SAMPLE DEPTH (FEET)	FUEL HYDROCARBONS EPA-8015 MODIFIED METHOD ^(a)						FUEL CHARACTERIZATION
				FUEL HYDROCARBONS (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	TOTAL XYLENES (mg/kg)	CARBON RANGE	FUEL CHARACTERIZATION	
After Tank Removal April 4, 1989	SP-1	Cavity Bottom	13	73	1	3	5	C6-C14	UTD	
	SP-2	Cavity Bottom	18	350	<1	53	19	C6-C14	UTD	
	SP-3	N. Wall	13	<0.1	<0.005	0.013	<0.005	--	--	
	SP-4	E. Wall	13	0.26	0.005	0.011	0.006	C6-C12	--	
	SP-5	W. Wall	13	37	<1	2	2	C6-C14	UTD	
	SP-6	S. Wall	18	2,100	31	87	200	C6-C14	UTD	
After Final Excavation of Contaminated Soil April 10, 1989	SP-1	Cavity Bottom	27	<0.1	<0.005	<0.005	<0.005	--	--	
	SP-2	Cavity Bottom	27	0.22	0.040	0.013	0.007	C6-C12	Gasoline	
	SP-3	N. Wall	18	<0.1	<0.005	<0.005	<0.005	--	--	
	SP-4	E. Wall	18	<0.1	<0.005	<0.005	<0.005	--	--	
	SP-5	W. Wall	18	<0.1	<0.005	<0.005	<0.005	--	--	
	SP-6	S. Wall	18	<0.1	<0.005	<0.005	<0.005	--	--	

^(a)Detection limits vary; see laboratory reports in Appendix G for specific values.

UTD- Unable to Determine

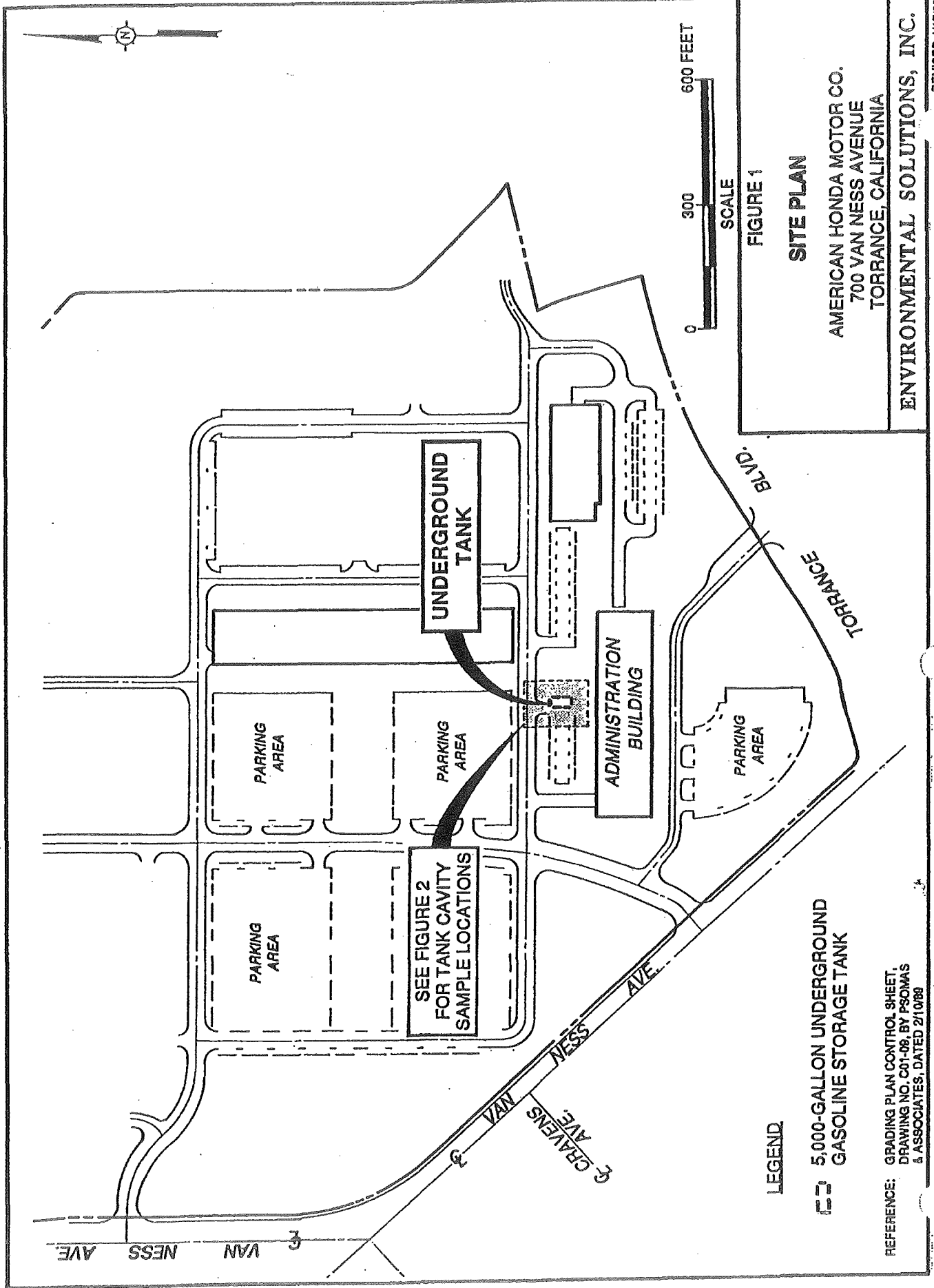
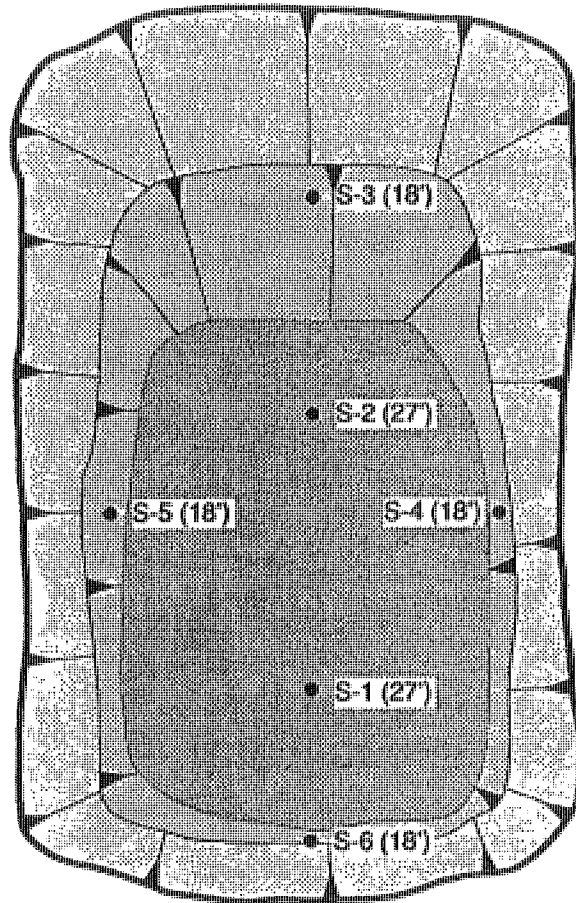


FIGURE 1
SITE PLAN
 AMERICAN HONDA MOTOR CO.
 700 VAN NESS AVENUE
 TORRANCE, CALIFORNIA
 ENVIRONMENTAL SOLUTIONS, INC.

REVISED 4/17/89



BOUNDARY OF CAVITY

LEGEND

— SURFACE BOUNDARY LIMIT OF EXCAVATION

▨ BOTTOM OF CAVITY AREA

● S-1 (18')

— DEPTH
— SAMPLE IDENTIFICATION
— SAMPLE LOCATION



SCALE (APPROXIMATE)

FIGURE 2
LOCATION OF FINAL SAMPLES
COLLECTED ON APRIL 10, 1989
AMERICAN HONDA MOTOR CO.
700 VAN NESS AVENUE
TORRANCE, CALIFORNIA

REFERENCE: SITE VISIT BY ENVIRONMENTAL SOLUTIONS, INC. PERSONNEL ON APRIL 4, 1989, AND APRIL 10, 1989

ENVIRONMENTAL SOLUTIONS, INC.

APPENDIX B
LIQUID SAMPLE LABORATORY RESULTS

MAY - 9

WCAS

**WEST COAST
ANALYTICAL
SERVICE, INC.**

ANALYTICAL CHEMISTRY

May 8, 1989

Ms. Lisa Chan
ENVIRONMENTAL SOLUTIONS
15520 Rockfield Blvd., Suite D
Irvine, CA 92718

Ref: WCAS Job No. 12293

Dear Ms. Chan:

Per request received from Jay White, Woodward-Clyde, we are sending the results for sample number B-1 on WCAS job no. 12293.

Thank you.

Sincerely,
WEST COAST ANALYTICAL SERVICE, INC.

Ramona Lee Northington

Ramona Lee Northington
Laboratory Manager

RLN/am

Enclosures

March 30, 1989

WOODWARD-CLYDE CONSULTANTS
203 N. Golden Circle Drive
Santa Ana, CA 92705

Attn: Jay White

JOB NO. 12293

WCAS

**WEST COAST
ANALYTICAL
SERVICE, INC.**

ANALYTICAL CHEMISTRY

A

LABORATORY REPORT

Samples Received: Two (2) liquids
Date Received: 3-28-89
Purchase Order No: Proj#: 8841953G/American Honda

The samples were analyzed as follows:

<u>Samples Analyzed</u>	<u>Analysis</u>	<u>Results</u>
One (1) liquid	Fuel Identification by modified EPA 8015 (LUFT Manual, May 1988)	Table I

TABLE I

Sample B-1 was determined to be gasoline.

cc: Environmental Solutions

Page 1 of 1

Shelley Rinker
Shelley Rinker
Senior Chemist

D. J. Northington
D. J. Northington, Ph.D.
Technical Director

APPENDIX A

CITY OF TORRANCE FIRE DEPARTMENT
APPLICATION FOR CLOSURE

APPLICATION FOR CLOSURE:
HAZARDOUS MATERIALS UNDERGROUND STORAGE

TORRANCE FIRE DEPARTMENT
CITY OF TORRANCE

TORRANCE FIRE PREVENTION: 3031 TORRANCE BOULEVARD, TORRANCE, CA 90503 (213) 618-6253

OWNER

Name: American Honda Motor Co., Inc.
Address: 100 West Alondra Blvd., Gardena State CA Zip 90248

FACILITY

Name: American Honda Motor Co., Inc.
Site Address: 700 Van Ness Avenue, Torrance, CA Zip 90509
Mailing Address: P.O. 2210, Torrance State CA Zip 90509-2210
Contact Person: Curt Cederquist Title Project Phone 781-4421

Closure Requested:

- _____ Temporary (Refer to conditions A and B on back of this form)
Effective Date of Closure _____
Date Operation will resume _____
- _____ Permanent, Tank(s) Removal Disposal Destination _____
Generator EPA# _____ Hauler EPA# _____
Manifest # _____ Refer to A & C on Back of Form
- _____ Permanent, Tank(s) in place.
(Refer to conditions A and D on back of this form)
- Permanent, Tank(s) "Certified" before removal from site.
Wash Waste, Generator EPA # CAC000162813 Manifest # 87004304
Hauler EPA# CAD072953771 Destination EPA# CAT080013352
Certified "Safe for Hot Work" by Edwin Wynkoop of Long Beach

TANK(S) DESCRIPTION (Attach additional list if necessary)

Tank No	Material	Age(Years)	Capacity(Gal)	Materials Stored
N/A	CARBON STEEL	Unknown	4,000 (approx.)	Gasoline

- Has any unauthorized discharge ever occurred at this site? _____ Yes No*
- Have structural repairs ever been made on these tanks? _____ Yes No*
- Will new underground tanks be installed following closure? _____ Yes No
- Will any wells, including monitoring wells, be abandoned? _____ Yes No

If the response to any of the above questions is yes, attach explanation.
*Unknown - Tank installed by previous property owner.

By signature below, the applicant certifies that he/she has read and understands the conditions on the reverse side of this form and that the statements and disclosures above are true and correct.

Applicant's Signature: Curt Cederquist Date 4-3-89
Owner _____ Operator _____ Contractor _____
State License No. _____

To be completed by the Fire Prevention Division

By Signature below, applicant is granted approval to proceed with the closure. FEE COLLECTED \$ WAIVED

N. Daniel Berg (1111) Date 4-4-89

TO ARRANGE FOR AN INSPECTION, TELEPHONE (213) 618-6253

COMPENSATION INSURANCE ON FILE
WITH BUILDING & SAFETY X /
YES NO

STATE COMPENSATION
INSURANCE COMPANY
POLICY # GROUP #46, UNIT #1784
EXPIRATION DATE JANUARY 1990

CITY OF TORRANCE

3031 TORRANCE BOULEVARD, TORRANCE, CALIFORNIA
TELEPHONE (213) 618-6253 90509-2970

APPLICATION FOR PERMIT

TO REMOVE/INSTALL TANKS

DATE April 3, 1989 PERMIT CODE # _____ PERMIT FEE _____

CONTRACTOR NAME G.T. Jones Construction & Maintenance Co., Inc.

CONTRACTOR ADDRESS 4708 Autry PHONE (213) 420-8217

Long Beach, CA 90808

APPLICANT OR DESIGNATED REPRESENTATIVE Russ Scanlon, Environmental Solutions, Inc.

PERMISSION IS REQUESTED TO: Remove one (1) underground gasoline tank, approximately 4,000 gallon in size.

DATE(S) Removal planned for Tuesday, April 4, 1989

AT 700 Van Ness Ave., Torrance Blvd., Torrance, CA 90509
(LOCATION/ADDRESS) OVER _____

Applicant hereby agrees that the above request, if granted, will be carried out in accordance with the Fire Prevention Code, City of Torrance (City Ordinance No. 3000) and any other City Ordinances applicable in addition to any SPECIAL CONDITIONS which may be DEEMED NECESSARY by the inspecting authority. Failure to do so may result in revocation of permit or legal action.


Signature of Applicant or Designated Representative

Date of Inspection _____

Inspected by _____

Approved _____

Rejected _____ Cause _____

CITY OF TORRANCE
Requirements for Contractors
Removal/Installation of Underground
Storage Tanks

The following is a list of the minimum requirements for contractors who intend to remove/install underground storage tanks in Torrance:

- YES
1. I have a class: "A", C-61/D-40, "B", C-36
State Contractors License (check appropriate).
License No. 508565

 2. I have a City of Torrance Business License.
License No. _____

 3. I have filed my State Comprehensive Insurance with the City of Torrance Building Department.
State Compensation
Insurance Company
Group #46, Unit #1784
Policy Number
January 1990
Expiration Date

 4. I have received the City of Torrance Underground Tank Removal and Installation Requirements. I understand them and agree to abide by them.

 5. I understand that appointments and inspections must be made 72 hours prior to the time requested.

Signed Marsha M. Jones Date 3-31-89

Marsha M. Jones
Name

G.T. Jones Construction & Maintenance Co., Inc.
Business Name

4708 Autry, Long Beach, CA 90808
Address

(213) 420-8217
Telephone Number

APPENDIX C

CALIFORNIA UNIFORM HAZARDOUS WASTE MANIFESTS

11857

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA161010116125113
 2. Manifest Document No. 0430
 3. Generator's Name and Mailing Address: AMERICAN HOME METAL CO INC, 700 VAN ALLEN AVE, TEBBING CA 90309
 4. Generator's Phone (213) 781-4421
 5. Manifest Number: 004
 6. Transporter 1 Company Name: UNITED PUMPING SERVICE INC, 17219 53 1/2 ST, 710
 7. Transporter 2 Company Name: [Blank]
 8. Designated Facility Name and Site Address: DEMENNO RERDON, 2000 N. ALAMOGA STREET, COMPTON CA 90222-2799
 9. US EPA ID Number: CA17101801011513161
 10. US EPA ID Number: [Blank]

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers		13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
	No.	Type			
a. FLAMMABLE WASTE LIQUID N.O.S. UN1993	1	DRUM	1	200 L	004
b.					
c.					
d.					

16. Additional Descriptions for Materials Listed Above: [Blank]
 16. Hazardous Waste Codes for Wastes Listed Above: [Blank]

15. Special Handling Instructions and Additional Information: USE GLOVES & GOGGLES.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
 If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: CARL CORRENT
 Signature: [Signature]
 Month Day Year: 01/10/89

17. Transporter 1 Acknowledgement of Receipt of Materials
 Printed/Typed Name: HECTOR SANTANA
 Signature: [Signature]
 Month Day Year: 01/10/89

18. Transporter 2 Acknowledgement of Receipt of Materials
 Printed/Typed Name: [Blank]
 Signature: [Blank]
 Month Day Year: [Blank]

19. Discrepancy Indication Space: [Blank]

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
 Printed/Typed Name: ARTURO P. PEREZ
 Signature: [Signature]
 Month Day Year: 01/10/89

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL CHEMICAL RECEIPT CENTER 1-800-424-8802. WITHIN CALIFORNIA, CALL 1-800-952-7550.

87006 74

870046
 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7650

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. CA1C1D101011612121131010101		Manifest Document No. 11111111111111111111111111111111		2. Page 1 of 1 Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address American Honda Motor Company 700 Van Ness Ave., Torrance, CA 90509				A. State Manifest Document Number 87004306		B. State Generator's ID H1A1H101316101219161714	
4. Generator's Phone (213) 781-4421				C. State Transporter's ID 016189		D. Transporter's Phone (818)961-3326	
5. Transporter 1 Company Name United Pumping Service, Inc.		6. US EPA ID Number 1C1A1D101712191513171711		E. State Transporter's ID		F. Transporter's Phone	
7. Transporter 2 Company Name		8. US EPA ID Number		G. State Facility's ID C1A1D10121017141811215		H. Facility's Phone (805) 937-8449	
9. Designated Facility Name and Site Address Casmalia Resources NTU Road Casmalia, CA 93429				10. US EPA ID Number			
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID-Number)				12. Containers		13. Total Quantity	
a. Hazardous Waste Solid, N.O.S., ORM-E, NA9189				No. Type		14. Unit Wt/Vol	
				0101 pl 01010120		Y	
b.						State 611 EPA/Other Non-RCRA State EPA/Other	
c.						State EPA/Other	
d.						State EPA/Other	
J. Additional Descriptions for Materials Listed Above Contaminated Soil with Less Than 1% Gasoline. Acceptance No. 10725806MS				K. Handling Codes for Wastes Listed Above a. 03		b. c. d.	
15. Special Handling Instructions and Additional Information Wear neoprene gloves; safety goggles.							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name Curt Cederquist				Signature <i>Curt Cederquist</i>		Month Day Year 11/21/89	
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name Mike Cervantes				Signature <i>Mike Cervantes</i>		Month Day Year 10/21/89	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature		Month Day Year	
19. Discrepancy Indication Space 14 y ³ not so manifested							
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. Printed/Typed Name Casmalia Resources							
Signature <i>Alvin L. ...</i>				Month Day Year 11/22/89			

GENERATOR

TRANSPORTER

FACILITY

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

870047 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-9802; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C1A1C1010101161218113101010101		Manifest Document No. 01010101	Page 1 of 2	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address American Honda Motor Company 700 Van Ness Ave., Torrance, CA 90509 4. Generator's Phone (213) 781-4421					A. State Manifest Document Number 87004307		
5. Transporter 1 Company Name United Pumping Service, Inc.					B. State Generator's ID HA1H013101219161714		
6. US EPA ID Number C1A1C10101712191513171711					C. State Transporter's ID 905121		
7. Transporter 2 Company Name					D. Transporter's Phone (818)961-0326		
8. US EPA ID Number					E. State Transporter's ID		
9. Designated Facility Name and Site Address Casmalia Resourcea BTU Road Casmalia, CA 93429					F. Transporter's Phone		
10. US EPA ID Number C1A1C10101210171418111215					G. State Facility's ID C1A1C1012071481125		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)					12. Containers	13. Total Quantity	14. Unit Wt/Vol
a. Hazardous Waste Solid, N.O.S., ORM-E, NA9189					No.	Type	I. Waste No.
							State 611
							EPA/Other Non-RCRA
							State
							EPA/Other
							State
							EPA/Other
J. Additional Descriptions for Materials Listed Above Contaminated Soil with Less Than 1% Gasoline. Acceptance No. 10725808MS					K. Handling Codes for Wastes Listed Above a. 03		
15. Special Handling Instructions and Additional Information Wear neoprene gloves; safety goggles.					b.		
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					c.		
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name: Curt Cederquist Signature: <i>Curt Cederquist</i> Month Day Year: 01/20/89					d.		
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name: <i>Sammy R. Curran</i> Signature: <i>Sammy R. Curran</i> Month Day Year: 10/20/89							
19. Discrepancy Indication Space 12-13							
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name: <i>Casmalia Resourcea</i> Signature: <i>Sammy R. Curran</i> Month Day Year: 11/19/89							

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

GENERATOR

TRANSPORTER

FACILITY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. CA1A10101011612181113	Manifest Document No. 010101013	2. Page 1 of 3	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address American Honda Motor Company 700 Van Ness Ave., Torrance, CA 90509				A. State Manifest Document Number 87004308		
4. Generator's Phone (213) 781-4421				B. State Generator's ID R1A1H101316101219161714		
5. Transporter 1 Company Name United Pumping Service, Inc.		6. US EPA ID Number CA1A10101011612181113		C. State Transporter's ID 9251222 010187		
7. Transporter 2 Company Name Return To Generator		8. US EPA ID Number		D. Transporter's Phone (819) 961-9326		
9. Designated Facility Name and Site Address Casmalia Resources NTU Road Casmalia, CA 93429				E. State Transporter's ID		
10. US EPA ID Number CA1A10101011612181113				F. Transporter's Phone		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) a. Hazardous Waste Solid, No O.S., ORM-E, NA9189				12. Containers No. Type 0 0 1 D T		13. Total Quantity 0 0 0 2 0 Y
						14. Unit Wt/Vol
						I. Waste No. State 611 EPA/Other Non-RCRA State EPA/Other
						State EPA/Other
						State EPA/Other
J. Additional Descriptions for Materials Listed Above Contaminated Soil with Less Than 1% Gasoline. Acceptance No. 10725808MS				K. Handling Codes for Wastes Listed Above a. 03 b. c. d.		
15. Special Handling Instructions and Additional Information Wear neoprene gloves; safety goggles.						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name Curt Cederquist		Signature <i>Curt Cederquist</i>		Month Day Year 11/12/89		
17. Transporter 1 Acknowledgement of Receipt of Materials						
Printed/Typed Name Mike Cederquist		Signature <i>Mike Cederquist</i>		Month Day Year 11/12/89		
18. Transporter 2 Acknowledgement of Receipt of Materials						
Printed/Typed Name		Signature		Month Day Year		
19. Discrepancy Indication Space 12x3						
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.						
Printed/Typed Name Casmalia Resources		Signature <i>[Signature]</i>		Month Day Year 11/12/89		

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

870049 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8602; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. CA1C10101011612811310101010		Manifest Document No. 6		2. Page 1 of 6		Information in the shaded areas is not required by Federal law.									
3. Generator's Name and Mailing Address American Honda Motor Company® 700 Van Ness Ave, Torrance, CA 90509						A. State Manifest Document Number 87004309											
4. Generator's Phone (213) 78184421						B. State Generator's ID H1A1H1Q13161012191517141											
5. Transporter 1 Company Name United Pumping Service, Inc.				6. US EPA ID Number 1C1A1D101712191513171711		C. State Transporter's ID 0101010		D. Transporter's Phone (818)961-9326									
7. Transporter 2 Company Name						8. US EPA ID Number		E. State Transporter's ID									
9. Designated Facility Name and Site Address Casmalia Resources NTU Road Casmalia, CA 93429						10. US EPA ID Number 1C1A1D10121017141811215		G. State Facility's ID CA1D10121017481125									
						H. Facility's Phone (805) 937-8449											
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit Wt/Vol		15. Waste No.					
a. Hazardous Waste Solid, N.O.S., ORM-E, KA9189						No. Type		Quantity		Unit Wt/Vol		State					
						01011 D IT		0101020 Y				611					
b.												EPA/Other Non-RCRA					
c.												State					
d.												EPA/Other					
J. Additional Descriptions for Materials Listed Above Contaminated Soil with Less Than 1% Gasoline Acceptance No. 10725808MS						K. Handling Codes for Wastes Listed Above a. 03 b. c. d.											
15. Special Handling Instructions and Additional Information Wear neoprene gloves; safety goggles.																	
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.																	
Printed/Typed Name Curt Cederquist						Signature <i>Curt Cederquist</i>				Month Day Year 11/12/89							
17. Transporter 1 Acknowledgement of Receipt of Materials						Printed/Typed Name Antonio Figueroa				Signature <i>Antonio Figueroa</i>				Month Day Year 10/12/89			
18. Transporter 2 Acknowledgement of Receipt of Materials						Printed/Typed Name				Signature				Month Day Year			
19. Discrepancy Indication Space																	
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.																	
Printed/Typed Name Casmalia Resources						Signature <i>Walter F. Lisen</i>				Month Day Year 11/12/89							

Please print or type. (Form designed for use on elite (12-pitch typewriter).

8/004:00 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-952-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. CIAIC101010111612R1113010004		Manifest Document No. 010004		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.			
3. Generator's Name and Mailing Address American Honda Motor Company 700 Van Ness Ave., Torrance, CA 90509 4. Generator's Phone (213)781-4421						A. State Manifest Document Number 87001310					
5. Transporter 1 Company Name United Pumping Service, Inc. 7. Transporter 2 Company Name (Stamp: CALIFORNIA)						6. US EPA ID Number CIAID101712101513171711 8. US EPA ID Number (Stamp: CALIFORNIA) 9. US EPA ID Number (Stamp: CALIFORNIA)					
9. Designated Facility Name and Site Address Casmalia Resources NTU Road Casmalia, CA 93429						10. US EPA ID Number Return to Generator (Stamp: CALIFORNIA) 11. US EPA ID Number (Stamp: CALIFORNIA)					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers No. Type		13. Total Quantity Unit Wt/Vol		14. Waste No.	
a. Hazardous Waste Solid, N.O.S., ORM-E, NA9189						0 0 1 1 D T 0 0 0 1 2 0		State 611		EPA/Other Non-RCRA	
b.								State EPA/Other		State EPA/Other	
c.								State EPA/Other		State EPA/Other	
d.								State EPA/Other		State EPA/Other	
J. Additional Descriptions for Materials Listed Above Contaminated Soil with Less Than 1% Gasoline. Acceptance No. 10725808MS						K. Handling Codes for Wastes Listed Above a. 03		b.		c.	
15. Special Handling Instructions and Additional Information Wear neoprene gloves; safety goggles.											
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.											
Printed/Typed Name Curt Cederquist				Signature (Signature)		Month Day Year 11/17/1989					
17. Transporter 1 Acknowledgement of Receipt of Materials						Printed/Typed Name Antonio Figueroa		Signature (Signature)		Month Day Year 10/4/2019	
18. Transporter 2 Acknowledgement of Receipt of Materials						Printed/Typed Name (Blank)		Signature (Blank)		Month Day Year 	
19. Discrepancy Indication Space (Blank)						(Blank)					
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.						Printed/Typed Name CASMALIA RESOURCES		Signature (Signature)		Month Day Year 11-13-1989	

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

8/00401
 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C I A C I 0 1 0 1 0 1 1 6 1 2 1 8 1 1 3		Manifest Document No. 0 1 0 1 0 1 0 1 5		2. Page 1 of 5		Information in the shaded areas is not required by Federal law.			
		3. Generator's Name and Mailing Address American Honda Motor Company 700 Van Ness Ave., Torrance, CA 90509 4. Generator's Phone (213) 781-4421						A. State Manifest Document Number 87004311		B. State Generator's ID HA 1H1031610219161214	
5. Transporter 1 Company Name United Pumping Service, Inc.						6. US EPA ID Number C I A D 1 0 1 7 1 2 1 9 1 5 1 3 1 7 1 1		C. State Transporter's ID 905137		D. Transporter's Phone (818) 961-9326	
7. Transporter 2 Company Name						8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone	
9. Designated Facility Name and Site Address Casmalia Resources NTU Road Casmalia, CA 93429						10. US EPA ID Number I C I A D 1 0 1 2 1 0 1 7 1 4 1 8 1 1 2 1 5		G. State Facility's ID C A I D 0 2 1 0 1 7 4 8 1 2 5		H. Facility's Phone (805) 937-8449	
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers		13. Total Quantity		14. Unit Wt/Vol		I. Waste No.	
				No.		Type					
a. Hazardous Waste Solid, N.O.S., ORM-E, NA9189				d d 1		p/r		0 1 0 1 0 1 2 1 0		y 611 Non-RCRA	
b.										State EPA/Other	
c.										State EPA/Other	
d.										State EPA/Other	
J. Additional Descriptions for Materials Listed Above Contaminated Soil with Less Than 1% Gasoline. Acceptance No. 10725808MS						K. Handling Codes for Wastes Listed Above		a. 03		b.	
15. Special Handling Instructions and Additional Information Wear neoprene gloves; safety goggles.											
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.											
Printed/Typed Name Curt Cederquist				Signature <i>Curt Cederquist</i>						Month Day Year 10/21/99	
17. Transporter 1 Acknowledgement of Receipt of Materials											
Printed/Typed Name Eddie Rivera				Signature <i>Eddie Rivera</i>						Month Day Year 10/4/99	
18. Transporter 2 Acknowledgement of Receipt of Materials											
Printed/Typed Name				Signature						Month Day Year	
19. Discrepancy Indication Space 154 ³											
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.											
Printed/Typed Name CASMALIA RESOURCES				Signature <i>Shirley M...</i>						Month Day Year 11/2/99	

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

88694136
 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-9602. WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C1A01072953771	Manifest Document No. K1111	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address Insect and Flea Control Company 710 Business Ave, Turlock, CA 95354				A. State Manifest Document Number 88694136	B. State Generator's ID 11111111111111111111
4. Generator's Phone (209) 721-4431		6. US EPA ID Number C1A01072953771		C. State Transporter's ID 063010191	D. Transporter's Phone (818) 961-9326
5. Transporter 1 Company Name UNITED PUMPING SERVICE, INC.		8. US EPA ID Number		E. State Transporter's ID	F. Transporter's Phone
7. Transporter 2 Company Name		10. US EPA ID Number		G. State Facility's ID C1A00101017112121	H. Facility's Phone (909) 437-9449
9. Designated Facility Name and Site Address C. S. MALINA RECYCLING 1170 ROAD COLUMBIA, SA 94424 K11111111111111111111					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers	13. Total Quantity	14. Unit Wt/Vol	1. Waste No.
a. HAZARDOUS WASTE SOLUTIONS CRM-E, NH 1159		No.	Type		State CA
b.					EPA/Other A-1-K-1111
c.					State
d.					EPA/Other
J. Additional Descriptions for Materials Listed Above CONTAMINATED SOIL WITH LESS THAN 1% GASOLINE ACCEPTANCE NO: 107255 FOR MS				K. Handling Codes for Wastes Listed Above a. 03	
15. Special Handling Instructions and Additional Information WEAR NEOPRENE GLOVES, SAFETY GOGGLES.					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name David Fiskie		Signature <i>David Fiskie</i>		Month Day Year 10/13/19	
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed/Typed Name Hector Ventura		Signature <i>Hector Ventura</i>	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed/Typed Name		Signature	
19. Discrepancy Indication Space					
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name Cecilia Rios		Signature <i>Cecilia Rios</i>		Month Day Year 10/13/19	

Do Not Write Below This Line

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

88694142
 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8602; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.					
3. Generator's Name and Mailing Address <i>WINDY HILL MANUFACTURING COMPANY 700 WINDY HILL ROAD SACRAMENTO, CA 95834</i>						A. State Manifest Document Number <i>88694142</i>							
4. Generator's Phone (209) 721-4421						B. State Generator's ID <i>11111111111111111111</i>							
6. Transporter 1 Company Name UNITED PUMPING SERVICE, INC.			6. US EPA ID Number <i>CAD072953772</i>			C. State Transporter's ID <i>063905121</i>		D. Transporter's Phone <i>(818) 961-9326</i>					
7. Transporter 2 Company Name			8. US EPA ID Number			E. State Transporter's ID		F. Transporter's Phone					
9. Designated Facility Name and Site Address <i>CASIMIRIA RESOURCES MTC ROAD CASIMIRIA, CA 92324</i>						10. US EPA ID Number		G. State Facility's ID <i>CA1D101210171811215</i>					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity					
a. <i>HAZARDOUS WASTE SOLID, AQUEOUS CONTAMINATED SOIL WITH LESS THAN 1% GASOLINE - ACCEPTANCE NO. 107256888</i>						No.		Type		14. Unit Wt/Vol		15. Waste No.	
												State <i>CA</i>	
												EPA/Other <i>11.1-11.2</i>	
												State	
												EPA/Other	
J. Additional Descriptions for Materials Listed Above <i>CONTAMINATED SOIL WITH LESS THAN 1% GASOLINE - ACCEPTANCE NO. 107256888</i>						K. Handling Codes for Wastes Listed Above							
						a. <i>03</i>		b.					
						c.		d.					
15. Special Handling Instructions and Additional Information <i>WEAR NEOPRENE GLOVES SAFETY GOGGLES</i>													
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.													
Printed/Typed Name <i>CERT. C. CEDERQUIST</i>				Signature <i>[Signature]</i>				Month Day Year <i>11/12/89</i>					
17. Transporter 1 Acknowledgement of Receipt of Materials				Printed/Typed Name <i>[Name]</i>				Signature <i>[Signature]</i>		Month Day Year <i>10/15/89</i>			
18. Transporter 2 Acknowledgement of Receipt of Materials				Printed/Typed Name				Signature		Month Day Year			
19. Discrepancy Indication Space													
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.													
Printed/Typed Name <i>Casimira Resources</i>				Signature <i>[Signature]</i>				Month Day Year <i>11/12/89</i>					

Do Not Write Below This Line

THIS FORM SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

APPENDIX D
CERTIFICATE OF TANK DESTRUCTION

JONES CONSTRUCTION & MAINTENANCE CO., INC.

OIL FIELD MAINTENANCE

4708 N. AUTRY AVENUE • LONG BEACH, CA 90808

PHONE (213) 420-8217

STATEMENT OF FACT

DATE APRIL 4, 19 89

COMPANY NAME: ENVIRONMENTAL SOLUTIONS, INC.

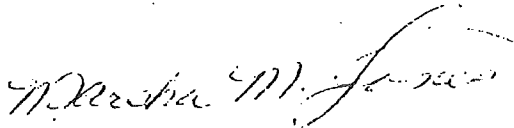
JOB LOCATION: AMERICAN HONDA - CITY OF TORRANCE

TANK DESCRIPTION: ONE (1) 5,000 GALLON STEEL TANK

THE TANK/TANKS DESCRIBED ABOVE WERE CUT UP AND PROPERLY DISPOSED OF FOR SALVAGE IN THE COUNTY OF LOS ANGELES BY JONES CONSTRUCTION & MAINTENANCE CO., INC.

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

EXECUTED ON 4-4, 19 89 AT LONG BEACH, , CA
Date City State


MARSHA M. JONES
VICE-PRESIDENT
LIC. NO. 508565-A

MMJ/sw
cc: File

certified p 113 687 539

MAY 3 -

BACKHOE

STINGER CRANE

DUMP TRUCK

GRADING

APPENDIX E

**EXPLOSIVE ATMOSPHERE TEST RESULTS PRIOR TO REMOVAL -
EDWIN S. WYNKOOP AND ASSOCIATES**

EDWIN S. WYNKOOP, P.E. and ASSOCIATES
 CERTIFIED SAFETY PROFESSIONAL
 LICENSE NO. 2960
 (818) 333-0873
 Contractor ESI

15241 Valdemar Dr.
 Hacienda Heights, CA 91745

CERTIFICATE SERIAL N^o 1131

Survey Requested by	American Honda	4-4-89
Vessel	Steel	700 Van Ness Torrance
Last Three (3) Cargoes	LEL = O ₂ - Visual	11:55
	Tests Performed	Time Survey Completed

This underground Tank identified with Red Paint - 1131

Tank Tested 0% LEL / 20.9% Oxygen

#1 Tank 4000 Gal. Cap. No UL Tag

Safe for hot work

Not Safe For Workers To Enter

Not Tested For Specific Toxics

This underground Tank has been washed "on site" and certified as clean and vapor free (zero percent of lower explosive limit) This cleaned tank is no longer a hazard waste and may be transported for either disposal, material recycling or salvage

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or if in any doubt, immediately stop all work and contact the undersigned.

QUALIFICATIONS: Transfer of ballast or manipulation of valves or closure equipment tending to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA 306 Subsections 1-8.1 through 1-8.4, and Subsection 5-3.2).
SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.
ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Certificate; and further, that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or, in the case of the fuel tanks or lube oil tanks, or engine room or fire room bilges, have been treated in accordance with the requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.
SAFE FOR REPAIR YARD ENTRY: Means that the compartments and spaces of the flammable cryogenic/liquid carrier so designated: (a) have been tested by sampling at remote sampling stations, and results indicate the atmosphere tested to be above 19.5 percent oxygen, and less than 10 percent of the lower flammable limit, or b) are inerted.

CERTIFIED SAFETY PROFESSIONAL'S ENDORSEMENT: This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards in tanks, etc., have been found the condition of each to be in accordance with the assigned designation.

The undersigned acknowledges receipt of this Certificate under Sec'n 2-3 of NFPA 306 and understands conditions and limitations under which it was issued.

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed [Signature] Date 4-4-89
 Company Jones Construction

Signed [Signature] For
 Edwin S. Wynkoop
 Certified Safety Professional License No. 2960

APPENDIX F
FIELD (VOC) MONITORING DAILY LOG SHEETS

**FIELD VOLATILE ORGANIC COMPOUND (VOC) MONITORING
DAILY LOG SHEET**

PROJECT SITE: American Honda DATE: 4/10/89
700 Van Ness PROJECT NO.: 89-180
Torrance, CA PERSON MONITORING: K. Hewlett
 SCAQMD REF. NO.: 89-1098
 AVG. WIND SPEED: 10 mph *Note: wind speed increased several mph after excavation was complete (NAT. WEATHER SERVICE (213) 554-1212)

TOTAL VOLUME OF SOIL EXCAVATED (EST.): 120 yds³ CONTAMINATED SOIL EXCAVATED (EST.): 80 yds³

CLEAN SOIL EXCAVATED (EST.): 40 yds³

TIME EXCAVATING STARTED: 7 am TIME EXCAVATING STOPPED: 1 pm

<u>TIME</u>	<u>VOC READING (INSTRUMENT TYPE = <u>HNU</u>)</u>	<u>SAMPLE/READING LOCATION</u>
<u>7:00</u>	<u>20 ppm</u>	<u>Top of north trench wall</u>
<u>7:15</u>	<u>20 ppm</u>	<u>" " " " "</u>
<u>7:30</u>	<u>150 ppm</u>	<u>Bottom trench</u>
<u>7:45</u>	<u>200</u>	<u>"</u>
<u>8:00</u>	<u>150</u>	<u>"</u>
<u>8:15</u>	<u>"</u>	<u>"</u>
<u>8:30</u>	<u>100</u>	<u>South wall</u>
<u>8:45</u>	<u>100</u>	<u>"</u>
<u>9:00</u>	<u>100</u>	<u>"</u>
<u>9:15</u>	<u>50</u>	<u>"</u>
<u>9:30</u>	<u>75</u>	<u>"</u>
<u>9:45</u>	<u>20</u>	<u>"</u>
<u>10:00</u>	<u>100</u>	<u>Bottom trench</u>
<u>10:15</u>	<u>120</u>	<u>"</u>

Over

4/10/89

10:30	50 ppm	Bottom East wall
10:45	70 ppm	"
11:00	30 ppm	"
11:15	100 ppm	Bottom trench
11:30	60 ppm	"
11:45	50 ppm	"
12:00	20 ppm	Bottom trench
12:15	{ No excavation from 12-12:15 }	
12:30	75 ppm	Bottom east wall
12:45	30 ppm	"
1:00	20 ppm	Bottom north wall

APPENDIX G
CERTIFIED LABORATORY REPORTS
AND
CHAIN-OF-CUSTODIES

AMENDED REPORT



BROWN AND CALDWELL LABORATORIES

5/10/89

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284

LOG NO: A89-04-006

Received: 04 APR 89

Reported: 05 APR 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-180

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED				
04-006-1	S-1 @ 13'	04 APR 89				
04-006-2	S-2 @ 18'	04 APR 89				
04-006-3	S-3 @ 13'	04 APR 89				
04-006-4	S-4 @ 13'	04 APR 89				
04-006-5	S-5 @ 13'	04 APR 89				
<hr/>						
PARAMETER	04-006-1	04-006-2	04-006-3	04-006-4	04-006-5	
<hr/>						
Fuel Hydrocarbons + BTX						
Date Analyzed	04/04/89	04/04/89	04/04/89	04/04/89	04/04/89	
Dilution Factor, Times 1	1	1	1	1	1	
Fuel Hydrocarbons, mg/kg	73	350	<0.1	0.26	37	
Benzene, mg/kg	1	<1	<0.005	0.005	<1	
Toluene, mg/kg	3	53	0.013	0.011	2	
Total Xylene Isomers, mg/kg	5	19	<0.005	0.006	2	
Carbon Range, .	C6 to C14	C6 to C14	---	C6 - C12	C6 to C14	
Fuel Characterization, .	UTD	UTD	---	---	UTD	



1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284

LOG NO: A89-04-006

Received: 04 APR 89

Reported: 05 APR 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-180

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
04-006-6	S-6 @ 18'	04 APR 89
PARAMETER		04-006-6
Fuel Hydrocarbons + BTX		
Date Analyzed		04/04/89
Dilution Factor, Times l		10
Fuel Hydrocarbons, mg/kg		2100
Benzene, mg/kg		31
Toluene, mg/kg		87
Total Xylene Isomers, mg/kg		200
Carbon Range, .		C6 to C14
Fuel Characterization, .		UTD

Values preceded by a "<" indicate detection limits for that parameter.
Verbal results reported to Ken Hewlett 04/05/89.

-- J. Jones

Report amended at client request 04/12/89 to
correct sample description. -- J. Jones

Report amended at client request 05/05/89 to add
Fuel Characterization and Carbon Range to the Fuel
Hydrocarbon report. --A. Morris-Seeley

UTD = Unable to determine. The fuel fingerprint
does not match any common type of fuel, although
it is similar to gasoline. T. X. Robinson

Judith A. Jones, Laboratory Manager



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284

LOG NO: A89-04-040

Received: 10 APR 89

Reported: 12 APR 89

APP 14

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-180

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
04-040-1	S-1 @ 27'	10 APR 89
04-040-2	S-2 @ 27'	10 APR 89
04-040-3	S-3 @ 18'	10 APR 89
04-040-4	S-4 @ 18'	10 APR 89
04-040-5	S-5 @ 18'	10 APR 89

PARAMETER	04-040-1	04-040-2	04-040-3	04-040-4	04-040-5
Fuel Hydrocarbons + BTX					
Date Analyzed	04/11/89	04/11/89	04/11/89	04/11/89	04/11/89
Dilution Factor, Times 1	1	1	1	1	1
Fuel Hydrocarbons, mg/kg	<0.1	0.22	<0.1	<0.1	<0.1
Benzene, mg/kg	<0.005	0.040	<0.005	<0.005	<0.005
Toluene, mg/kg	<0.005	0.013	<0.005	<0.005	<0.005
Total Xylene Isomers, mg/kg	<0.005	0.007	<0.005	<0.005	<0.005
Carbon Range, .	---	C6 - C12	---	---	---
Fuel Characterization, .	---	Gasoline	---	---	---



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284

LOG NO: AB9-04-040

Received: 10 APR 89
Reported: 12 APR 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

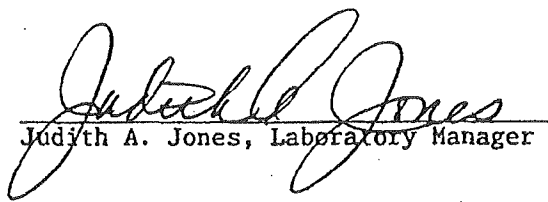
Project: 89-180

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
04-040-6	S-6 @ 18'	10 APR 89
PARAMETER	04-040-6	
Fuel Hydrocarbons + BTX		
Date Analyzed	04/11/89	
Dilution Factor, Times 1	1	
Fuel Hydrocarbons, mg/kg	<0.1	
Benzene, mg/kg	<0.005	
Toluene, mg/kg	<0.005	
Total Xylene Isomers, mg/kg	<0.005	
Other Fuel Hydrocarbons + BTX	---	

Values preceded by a "<" indicate detection limits for that parameter.


Judith A. Jones, Laboratory Manager

A89-CA-006

4-4-89
AMS

Ship To: <u>Brown and Caldwell</u>			Page <u>1</u> of <u>1</u>			CHAIN OF CUSTODY RECORD							
Attn: <u>Audrey</u>			Project Name: <u>Americas Honda</u>			Analysis							
			Project No.: <u>89-180</u>			Meth/8015/ETX							
			Site Location: <u>Torrance, CA</u>			Meth/8015/ETX							
			Date: <u>04/04/89</u>										
Boring/Well No.	Sample No.	Depth	Date	Time	Sample Type			Sample Containers			Remarks		
					Water	Solid	Other	Vol.	No.	Type		Pros	
	S-1	13'	4/4/89	2:00			SOIL			Jar		HOLD	
	S-2	18'		3:25								HOLD	
	S-3	18'										HOLD	
	S-4											HOLD	
	S-5											HOLD	
	S-6											taken off hold per Ken Hewlett	
Total Number of Samples Shipped: <u>6</u>			Shipper's Signature: <u>Ken B. Hewlett</u>										
Relinquished by: <u>Ken B. Hewlett</u>			Signature			Company			Date			Time	
Received by: <u>Richard Harris - Secretary</u>						<u>Environmental Solutions</u>			<u>4/4/89</u>			<u>5:15</u>	
Relinquished by:						<u>Brown and Caldwell</u>			<u>4/4/89</u>			<u>3:15pm</u>	
Received by:													
Relinquished by:													
Received by:													
Special Instructions / Shipment / Handling / Storage Requirements:						<input checked="" type="checkbox"/> ENVIRONMENTAL SOLUTIONS, INC. 15520 Rockfield Boulevard, Suite D Irvine, California 92718 <input type="checkbox"/> ENVIRONMENTAL SOLUTIONS, INC. 2820 Shadlands Drive, Suite 115 Walnut Creek, California 94598							
<p><u>RUSH</u></p> <p>The material(s) listed are received for analysis and/or treatability evaluation. At the conclusion of the test work, all remaining material(s) will be returned to the client for eventual disposal at a licensed facility.</p>													

A89-04-040

CHAIN OF CUSTODY RECORD

Ship To: Brown & Caldwell
 Attn: Judy
 Page 1 of 1
 Project Name: America Blade
 Project No.: 89 180
 Site Location: Torrance UT
 Date: 4 11 89

Boring/Well No.	Sample No.	Depth	Date	Time	Sample Type			Sample Containers		Remarks	
					Water	Solid	Other	Comp	g/g		Vol. No.
	5-1	27'	4/10/89	1:00pm		Soil					
	5-2	27'									
	5-3	18'									
	5-4	18'									
	5-5	18'									
	5-6	18'									

8015 BTX
 Analysis

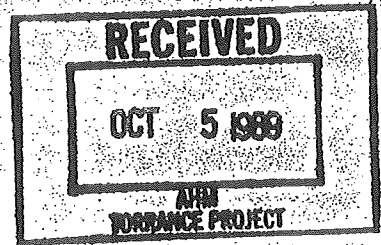
Total Number of Samples Shipped: _____ Shipper's Signature: [Signature] _____
 Signature: [Signature] _____ Company: Environmental Solutions, Inc. Date: 4/10/89 Time: 4:10pm

Relinquished by: [Signature]
 Received by: [Signature]
 Relinquished by: [Signature]
 Received by: _____
 Relinquished by: _____
 Received by: _____

Special Instructions / Shipment / Handling / Storage Requirements:
RUSH (24 hrs.)
 ENVIRONMENTAL SOLUTIONS, INC.
 15520 Rockfield Boulevard, Suite D
 Irvine, California 92718
 ENVIRONMENTAL SOLUTIONS, INC.
 2820 Shadelands Drive, Suite 115
 Walnut Creek, California 94598

The material(s) listed are received for analysis and/or treatability evaluation. At the conclusion of the test work, all remaining material(s) will be returned to the client for eventual disposal at a licensed facility.

EXHIBIT 4



**FINAL REPORT
UNDERGROUND TANK CLOSURE
BY REMOVAL
(1,000-GALLON TANK)**

**AMERICAN HONDA MOTOR COMPANY
700 VAN NESS AVENUE
TORRANCE, CALIFORNIA**

Prepared For:

**CITY OF TORRANCE FIRE DEPARTMENT
FIRE PREVENTION DIVISION
3031 TORRANCE BOULEVARD
TORRANCE, CALIFORNIA**

September, 1989

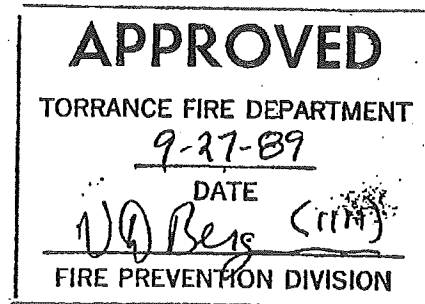


TABLE OF CONTENTS

	<u>PAGE NO.</u>
LIST OF TABLES/FIGURES	ii
1.0 INTRODUCTION AND SUMMARY	1
2.0 TANK REMOVAL AND SOIL SAMPLING	2
3.0 SOIL ANALYSIS RESULTS	3
4.0 SITE CLOSURE AND SOIL DISPOSAL	4
APPENDIX A: CITY OF TORRANCE FIRE DEPARTMENT APPLICATION FOR CLOSURE	
APPENDIX B: CALIFORNIA UNIFORM HAZARDOUS WASTE MANIFESTS	
APPENDIX C: CERTIFICATE OF TANK DESTRUCTION	
APPENDIX D: EXPLOSIVE ATMOSPHERE TEST RESULTS PRIOR TO REMOVAL - EDWIN S. WYNKOOP, P.E. AND ASSOCIATES	
APPENDIX E: CERTIFIED LABORATORY REPORTS AND CHAIN-OF-CUSTODIES	

LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>
1	Summary - Laboratory Analysis Results

LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>
1	Site Plan
2	Location of Final Samples Collected on July 26 and July 29, 1989

1.0 INTRODUCTION AND SUMMARY

1. The closure of one 1,000-gallon underground diesel/waste oil tank has been completed at the American Honda Motor Company facility at 700 Van Ness Avenue, Torrance, California. The work is described in the City of Torrance Fire Department Application for Closure dated July 24, 1989. A copy of the application is included in Appendix A. The South Coast Air Quality Management District (SCAQMD) was notified as per District Rule 1166 requirements and a reference number for the site (Reference No. 89-1980) was issued on July 25, 1989.
2. The underground tank was encountered on a redevelopment site during grading work by a construction contractor for American Honda. The site had been purchased from the City of Torrance Redevelopment Agency in early 1986 and the tank's presence was not previously known or reported to American Honda.
3. When struck by the soil excavation equipment, a hole was punctured in the top of the tank. Observations into the tank indicated the presence of liquid. Petroleum hydrocarbon odors were also detected. The liquid level indicated the tank was about one-half to three-quarters full. The liquid had the appearance of waste motor oil.
4. Due to seepage of liquid from around the lower portion of the tank as a result of disturbances caused by the grading and excavation activities, the liquid from within and surrounding the tank was immediately removed by vacuum truck and stored in a temporary portable tank. The liquid released from the tank appeared to be water from a lower aqueous phase in the tank. The City of Torrance Fire Department was notified and an application for closure permit was then obtained.
5. Field observations and analysis of soil samples collected from beneath the tank and from the cavity walls after removal indicated the presence of low levels of petroleum hydrocarbon contamination. At American Honda's request, additional soil was excavated from the walls and floor of the cavity. A larger contaminated area was encountered at the southwest end of the cavity and was subsequently excavated. Laboratory analysis results of the soil samples collected from the cavity following the removal of the contaminated soil indicate that the presence of contamination is below the limits of detection.

6. The excavated contaminated soil was transported under California Uniform Hazardous Waste Manifest to a licensed Class II landfill, Petroleum Waste, Inc.

2.0 TANK REMOVAL AND SOIL SAMPLING

1. On July 20, 1989, the tank contents were removed by a United Pumping Service vacuum truck and stored in a temporary portable tank. The water phase which had escaped from the tank into the cavity was also placed in the portable tank. At that time, a liquid sample was collected by United Pumping and submitted to DeMenno/Kerdoon, a recycle facility. Based on the results of testing performed by DeMenno/Kerdoon, the material was accepted for recycle.
2. Environmental Solutions, Inc. removed the 1,000-gallon underground tank on July 26, 1989. The former location of the tank is shown in Figure 1.
3. The tank was cleaned further by high pressure water rinsing. These activities were prolonged due to the discovery of a sludge at the bottom of the tank that necessitated additional rinsing. The rinsate was extracted and transported along with the tank contents stored in the portable tank under California Uniform Hazardous Waste Manifest by United Pumping Services, Inc. (U.S. EPA I.D. No. CAD072953771) to a licensed TSD facility DeMenno/Kerdoon (U.S. EPA I.D. No. CAT080013352). A copy of the manifest is enclosed in Appendix B. The tank was removed, hauled away by truck, and subsequently destroyed. A copy of the certificate of the tank destruction is enclosed in Appendix C.
4. After rinsing and inerting with dry ice, but prior to removal, the tank was tested for an explosive atmosphere by an independent testing company, Edwin S. Wynkoop and Associates. A City of Torrance Fire Department inspector, Doug Bergen was present during the explosive atmosphere testing. The tank was found not to contain an explosive atmosphere and Inspector Berger then allowed the removal to proceed. A copy of the test result is enclosed in Appendix D.

5. The tank was visually inspected after removal and a hole was found at the bottom of the tank where the fill pipe had punctured the tank. The puncture of the tank by the fill pipe was believed caused during grading when heavy equipment was driven over the top of the tank, resulting in partial collapse of the tank. The soil in the cavity appeared to be potentially contaminated based on detection of hydrocarbon odors and slight discoloration. Per the City of Torrance Fire Department request, one soil sample was collected approximately two feet below the tank invert in the center of the cavity.
6. Discolored/stained soil or soil exhibiting hydrocarbon odors was excavated from the sidewalls and bottom of the cavity, and seven additional samples were collected. The samples were sent to a State-certified laboratory under Chain-of-Custody for analysis. Analysis results indicated the presence of some remaining contamination and, therefore, additional soil excavation was performed. Final confirmation samples were then collected from the sidewalls and bottom of the cavity and analyzed. Laboratory analysis results are presented in Section 3.0.
7. Volatile organic compound (VOC) contaminated soil above SCAQMD Rule 1166 limits was not detected by Hvu instrument measurements performed during tank removal and soil excavation activities.

3.0 SOIL ANALYSIS RESULTS

1. One soil sample was collected from two feet below the tank invert in the center of the cavity following removal. After the initial removal of contaminated soil in the tank cavity, seven additional soil samples were collected; two samples were collected from the bottom of the tank cavity and four samples were collected from the cavity walls. The seventh sample was collected from the contaminated soil stockpile. The locations of the samples are shown in Figure 2. The samples were sealed, labeled, placed in an iced cooler, and shipped under Chain-of-Custody to a State-certified laboratory for analysis.
2. The samples were analyzed for total fuel hydrocarbons including benzene, toluene, total xylenes and ethyl benzene (BTXE) by the EPA-8015 Modified Method. In addition, two of the samples, the one from the below the tank invert and the one from the stockpile, were analyzed for total petroleum hydrocarbons by the EPA-418.1 Method. Copies of the laboratory reports and Chain-of-Custodies are enclosed in Appendix E.

3. The laboratory results are summarized in Table 1. The analysis results of the soil samples collected from the southwest and southeast walls of the tank cavity indicated the presence of some remaining contamination (2,000 and 580 ppm, respectively). However, at the time of removal, the contamination did not appear widespread based on visual observations. The contamination that was detected was characterized as diesel according to the laboratory results.
4. At the request of American Honda Motor Company, direct excavation of contaminated soil was performed and twelve additional soil samples were collected. The locations of these samples are also shown in Figure 2.
5. Eight of the samples were analyzed for total fuel hydrocarbons including BTXE by the EPA-8015 Modified Method to verify that the contaminated soil had been removed. In addition, the two samples from the cavity bottom were also analyzed for volatile aromatics by the EPA-8020 Method to verify that low levels of aromatics were not present. The sample from the contaminated soil stockpile was also analyzed for volatile priority pollutants by the EPA-8240 Method to verify that other volatile priority pollutants were not present in the contaminated soil. The samples were sealed, labeled, placed in an iced cooler, and shipped under Chain-of-Custody to a State-certified laboratory for analysis. Copies of the laboratory reports and Chain-of-Custodies are enclosed in Appendix E.
6. These laboratory analysis results are also summarized in Table 1. The analysis results indicate that the soil samples collected were below the limits of detection, with the exception of the result from the contaminated soil stockpile. Also, aromatic hydrocarbons were not detected in the samples from the cavity bottom and the presence of other volatile priority pollutants were not detected in the contaminated soil stockpile. The contaminated soil stockpile was, again, characterized as diesel. Based on these verification soil analysis results, remaining contamination above the limits of detection was not indicated and the need for additional investigations and/or soil removal do not appear warranted.

4.0 SITE CLOSURE AND SOIL DISPOSAL

1. The cavity closure and compaction will be performed by American Honda Motor Company by its site construction contractor.

2. Approximately 51 tons (based on truck weight tickets) of contaminated soil which had been excavated from the tank cavity were hauled offsite under California Uniform Hazardous Waste Manifest by United Pumping Services, Inc. (U.S. EPA I.D. No. CAD072953771) to a licensed Class II landfill, Petroleum Waste, Inc (U.S. EPA LD. No. CAD980675276) in Bakersfield, California. Copies of the manifests are enclosed in Appendix B.

TABLES

TABLE 1

SUMMARY - LABORATORY ANALYSIS RESULTS
 1,000-GALLON WASTE OIL TANK CAVITY
 AMERICAN HONDA MOTOR CO.
 TORRANCE, CALIFORNIA

SOIL SAMPLE COLLECTION ACTIVITY AND DATE	SAMPLE ID.	SAMPLE LOCATION	APPROXIMATE SAMPLE DEPTH (FEET)	TOTAL PETROLEUM HYDROCARBONS EPA-418.1 METHOD (mg/kg)	FUEL HYDROCARBONS EPA-8015 MODIFIED METHOD						VOLATILE AROMATICS EPA-820 METHOD	VOLATILE PRIORITY POLLUTANTS EPA-8240 METHOD	
					FUEL HYDROCARBONS (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	TOTAL XYLENES (mg/kg)	ETHYL-BENZENE (mg/kg)	CARBON RANGE			FUEL CHARACTERIZATION
Alter Tank Removal July 26, 1989	S-1	Cavity Bottom	5	<10	<5	<1	<1	<1	<1	<1			-
	S-2	Stockpile		6,400	1,200	<10	<10	19	<10	C7-C25	Diesel		-
	S-3	Cavity Bottom SW End	3	--	16	<1	<1	<1	<1	C8-C18	Diesel		-
	S-4	Cavity Bottom NE End	3	--	<5	<1	<1	<1	<1				-
	S-5	NE Wall	1.5	--	<5	<1	<1	<1	<1				-
	S-6	SE Wall	1.5	--	580	<1	<1	4	<1	C8-C24	Diesel		-
	S-7	SW Wall	1.5	--	2,000	<10	<10	<10	<10	C8-C25	Diesel		-
	S-8	NW Wall	1.5	--	<5	<1	<1	<1	<1				-
After Excavation of Contaminated Soil July 29, 1989	S-9	SE Wall	1.5	--	<5	<1	<1	<1	<1				-
	S-10	Cavity Bottom	12	--	<5	<1	<1	<1	<1			ND	-
	S-11	Cavity Bottom	12	--	<5	<1	<1	<1	<1			ND	-
	S-12	NE Wall	9	--	<5	<1	<1	<1	<1				-
	S-13	NE Wall	4	--	--	--	--	--	--				-
	S-14	SW Wall	9	--	<5	<1	<1	<1	<1				-
	S-15	SW Wall	3	--	--	--	--	--	--				-
	S-16	SE Wall	7	--	<5	<1	<1	<1	<1				-
	S-17	SE Wall	3	--	--	--	--	--	--				-
	S-18	NW Wall	9	--	<5	<1	<1	<1	<1				-
	S-19	NW Wall	4	--	--	--	--	--	--				-
	S-20	Stockpile		--	33	<1	<1	<1	<1	C8-C18	Diesel		ND ⁽¹⁾

-- = Not Analyzed

ND = Not Detected (detection limit <0.1 mg/kg)

(1) Three compounds which were not Volatile Primary Pollutants were detected, see report.

9/25/89

FIGURES

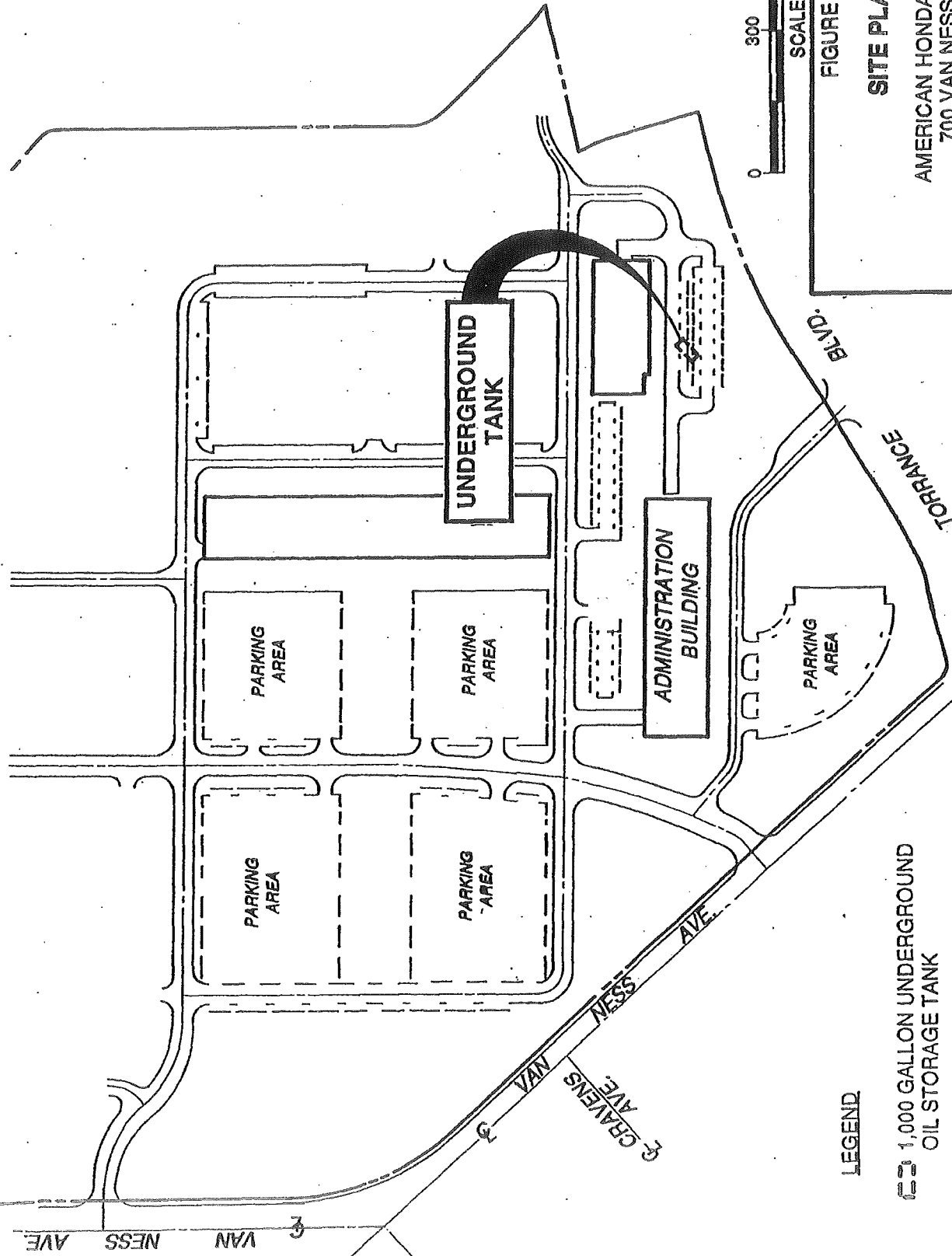
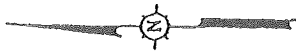


FIGURE 1

SITE PLAN

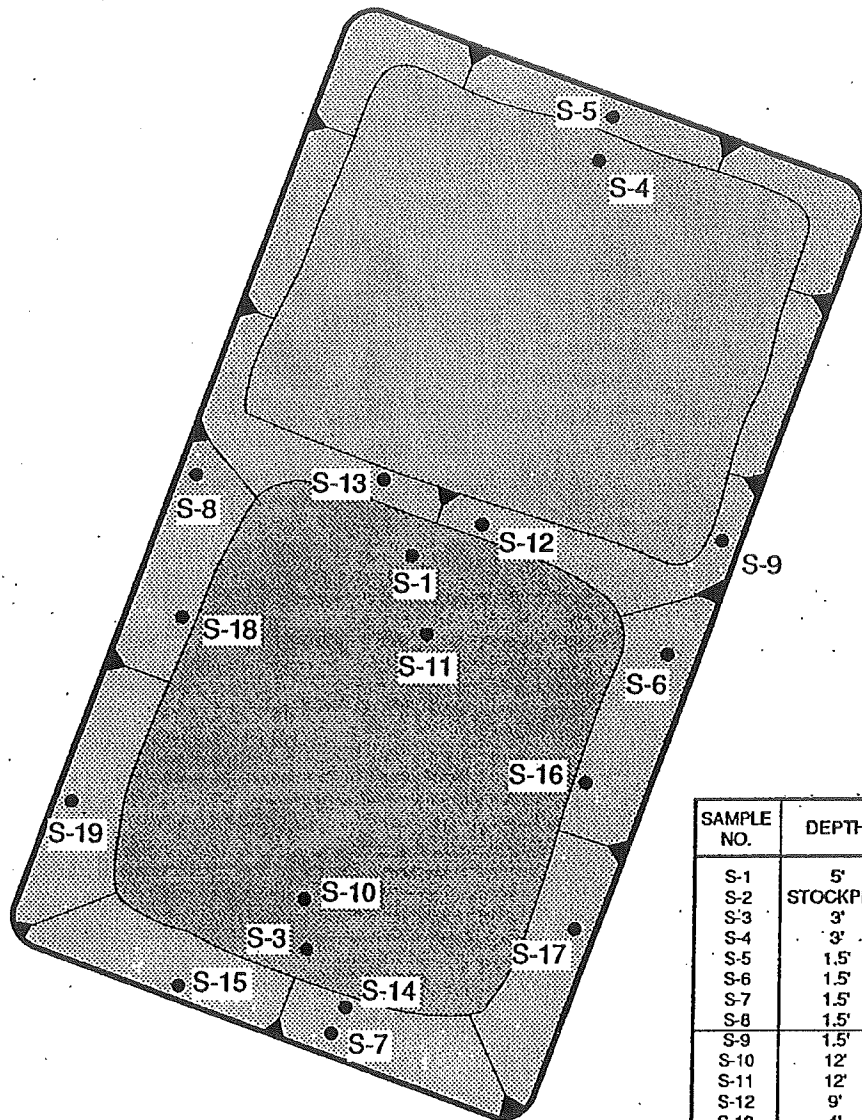
AMERICAN HONDA MOTOR CO.
700 VAN NESS AVENUE
TORRANCE, CALIFORNIA

ENVIRONMENTAL SOLUTIONS, INC.

LEGEND


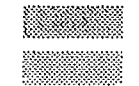
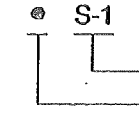
1,000 GALLON UNDERGROUND
OIL STORAGE TANK

REFERENCE: GRADING PLAN CONTROL SHEET
DRAWING NO. C01-09, BY PSOMAS
& ASSOCIATES, DATED 2/10/89



SAMPLE NO.	DEPTH	LOCATION	DATE COLLECTED
S-1	5'	BOTTOM, CENTER	7/26/89
S-2	STOCKPILE	(SOIL EXCAVATED 7/26/89)	7/26/89
S-3	3'	BOTTOM, SW END	7/26/89
S-4	3'	BOTTOM, NE END	7/26/89
S-5	1.5'	NE WALL	7/26/89
S-6	1.5'	SE WALL	7/26/89
S-7	1.5'	SW WALL	7/26/89
S-8	1.5'	NW WALL	7/26/89
S-9	1.5'	SE WALL	7/29/89
S-10	12'	BOTTOM	7/29/89
S-11	12'	BOTTOM	7/29/89
S-12	9'	NE WALL	7/29/89
S-13	4'	NE WALL	7/29/89
S-14	9'	SW WALL	7/29/89
S-15	3'	SW WALL	7/29/89
S-16	7'	SE WALL	7/29/89
S-17	3'	SE WALL	7/29/89
S-18	9'	NW WALL	7/29/89
S-19	4'	NW WALL	7/29/89
S-20	STOCKPILE	(SOIL EXCAVATED 7/29/89)	7/29/89

LEGEND

-  SURFACE BOUNDARY LIMIT OF EXCAVATION
-  BOTTOM OF CAVITY AREA
-  SAMPLE IDENTIFICATION
SAMPLE LOCATION

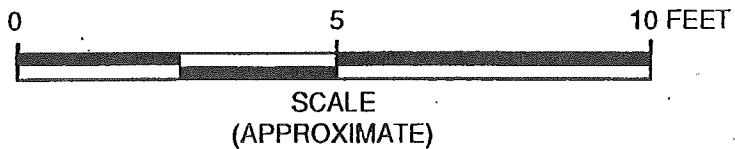


FIGURE 2
LOCATION OF SAMPLES
1000-GALLON WASTE OIL TANK CAVITY
AMERICAN HONDA MOTOR CO.
700 VAN NESS AVENUE
TORRANCE, CALIFORNIA
ENVIRONMENTAL SOLUTIONS, INC.

REFERENCE: SITE VISIT BY ENVIRONMENTAL SOLUTIONS, INC. PERSONNEL ON JULY 26, 1989, AND JULY 29, 1989

APPENDIX A
CITY OF TORRANCE FIRE DEPARTMENT
APPLICATIONS FOR CLOSURE

APPLICATION FOR CLOSURE:
HAZARDOUS MATERIALS UNDERGROUND STORAGE

TORRANCE FIRE DEPARTMENT
CITY OF TORRANCE

TORRANCE FIRE PREVENTION: 3031 TORRANCE BOULEVARD, TORRANCE, CA 90503 (213) 618-6253

OWNER

Name: American Honda Motor Co., Inc.
Address: 100 West Alondra Blvd., Gardena State CA Zip 90248

FACILITY

Name: American Honda Motor Co., Inc.
Site Address: 700 Van Ness Avenue, Torrance, CA Zip 90509
Mailing Address: P. O. Box 2210, Torrance State _____ Zip 90509-221
Contact Person: Curt Cederquist Title Project Phone 781-4421
Closure Requested: _____ Administrator

- Temporary (Refer to conditions A and B on back of this form)
Effective Date of Closure _____
Date Operation will resume _____
 - Permanent, Tank(s) Removal Disposal Destination _____
Generator EPA# _____ Hauler EPA# _____
Manifest# _____ (Refer to A and C on back of form)
 - Permanent, Tank(s) in place.
(Refer to conditions A and D on back of this form)
 - Permanent, Tank(s) "Certified" before removal from site.
Wash Waste, Generator EPA# CAC000162813 Manifest# _____
Hauler EPA# CAD072953771 Destination EPA# CAT080013352
- Certified "Safe for Hot Work" by Edwin Wynkoop of Long Beach

TANK(S) DESCRIPTION (Attach additional list if necessary)

Tank No	Material	Age(Years)	Capacity(Gal)	Materials Stored
N/A	Carbon Steel	Unknown	2,000 (Approx.)	Oil

- Has any unauthorized discharge ever occurred at this site? Yes No*
- Have structural repairs ever been made on these tanks? Yes No*
- Will new underground tanks be installed following closure? Yes No
- Will any wells, including monitoring wells, be abandoned? Yes No

If the response to any of the above questions is yes, attach explanation. *
*Unknown - Tank installed by previous property owner.

By signature below, the applicant certifies that he/she has read and understands the conditions on the reverse side of this form and that the statements and disclosures above are true and correct.

Applicant's Signature: Curt Cederquist Date 7-24-89
Owner _____ Operator _____ Contractor _____
State License No. _____

To be completed by the Fire Prevention Division

By Signature below, applicant is granted approval to proceed with the closure. FEE COLLECTED \$ Waived

Dave [Signature] (1111) Date 7-24-89
TO ARRANGE FOR AN INSPECTION, TELEPHONE (213) 618-6253

COMPENSATION INSURANCE ON FILE
WITH BUILDING & SAFETY X /
YES NO

State Compensation
INSURANCE COMPANY
POLICY # _____
EXPIRATION DATE _____

CITY OF TORRANCE
3031 TORRANCE BOULEVARD, TORRANCE, CALIFORNIA
TELEPHONE (213) 618-6253 90509-2970

APPLICATION FOR PERMIT

TO REMOVE/INSTALL TANKS

DATE July 24, 1989 PERMIT CODE # _____ PERMIT FEE _____

CONTRACTOR NAME G. T. Jones Construction & Maintenance Co., Inc.

CONTRACTOR ADDRESS 4708 Autry PHONE (213) 420-8217

Long Beach, CA 90808

APPLICANT OR DESIGNATED REPRESENTATIVE Russ Scanlon, Environmental Solutions, Inc

PERMISSION IS REQUESTED TO: Remove one (1) underground oil storage tank,
approximately 2,000 gallon volume.

DATE(S) _____

AT 700 Van Ness Avenue, Torrance, CA 90509
(LOCATION/ADDRESS) OVER _____

Applicant hereby agrees that the above request, if granted, will be carried out in accordance with the Fire Prevention Code, City of Torrance (City Ordinance No. 3000) and any other City Ordinances applicable in addition to any SPECIAL CONDITIONS which may be DEEMED NECESSARY by the inspecting authority. Failure to do so may result in revocation of permit or legal action.

Russ Scanlon
Signature of Applicant or Designated Representative

Date of Inspection _____

Inspected by _____

Approved _____

Rejected _____ Cause _____

CITY OF TORRANCE
Requirements for Contractors
Removal/Installation of Underground
Storage Tanks

The following is a list of the minimum requirements for contractors who intend to remove/install underground storage tanks in Torrance:

- YES
1. I have a class: "A", C-61/D-40, "B", C-36
State Contractors License (check appropriate).
License No. 508565
 2. I have a City of Torrance Business License.
License No. _____
 3. I have filed my State Comprehensive Insurance with the City of Torrance Building Department.

State Compensation
Insurance Company

Group #46, Unit 1784
Policy Number

January 1990
Expiration Date
 4. I have received the City of Torrance Underground Tank Removal and Installation Requirements. I understand them and agree to abide by them.
 5. I understand that appointments and inspections must be made 72 hours prior to the time requested.

Signed Marsha M. Jones Date 7/24/89

Marsha M. Jones
Name

G. T. Jones Construction and Maintenance Co., Inc.
Business Name

4708 Autry, Long Beach, CA 90808
Address

(213) 420-8217
Telephone Number

APPENDIX B

CALIFORNIA UNIFORM HAZARDOUS WASTES MANIFESTS

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-9002; WITHIN CALIFORNIA CALL 1-800-952-7350

UNIFORM HAZARDOUS WASTE MANIFEST

Generator's US EPA ID No. *161A1017191015191719* Manifest Document No. *87381689*

3. Generator's Name and Mailing Address
AMERICAN HONDA MOTOR CO. INC.
 200 VAN DYKE AVE. #310
 TORRANCE, CA 90509-8210

A. State (Generator's ID) *87381689*
 B. State (Generator's ID)

5. Transporter 1 Company Name
UNITED PUMPING SERVICE, INC.

C. State Transporter's ID *021080X*
 D. Transporter's Phone *(818) 881-833*

7. Transporter 2 Company Name

E. State Transporter's ID
 F. Transporter's Phone

9. Designated Facility Name and Site Address
DE WINDO REFINERY
 200 N. MARSH ST.
 COMPTON, CA 90222

G. State Facility's ID *CA01820180181521*
 H. Facility's Phone *913-537-7100*

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers No. Type
 13. Total Quantity
 14. Unit (Lb/Vol)
 15. Waste No.

HAZARDOUS WASTE LIQUID
ORM-E NA 7177

001100151016

b.
 c.
 d.

State *822*
 EPA/Other *EXCEPT*
 State
 EPA/Other
 State
 EPA/Other

J. Additional Descriptions for Materials Listed Above
OIL/WATER SEPARATION SLUDGE

K. Handling Codes for Wastes Listed Above
 a. *01*
 b.
 c.
 d.

16. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
 If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name *SAMUEL TIMELIS* Signature *[Signature]* Month Day Yr *11/24/87*

17. Transporter 1 Acknowledgement of Receipt of Materials
 Printed/Typed Name *AGUILO PINA* Signature *[Signature]* Month Day Yr *11/24/87*

18. Transporter 2 Acknowledgement of Receipt of Materials
 Printed/Typed Name Signature Month Day Yr

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
 Printed/Typed Name *ARTURO P. PEREZ* Signature *[Signature]* Month Day Yr *11/24/87*

11089 MW

Truck ①

88427247
 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER: 1-800-424-9802; WITHIN CALIFORNIA CALL 1-800-952-7650

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's-US EPA ID No. CA A C 10 10 11 6 2 8 1 3		Manifest Document No. 11111		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.					
3. Generator's Name and Mailing Address American Honda Motor Company 700 Van Ness Avenue Torrance, CA 90509 (213) 781-4421						A. State Manifest Document Number 88427247							
4. Generator's Phone (213) 781-4421						B. State Generator's ID H A H 0 3 6 0 2 9 6 7 4							
5. Transporter 1 Company Name United Pumping Service, Inc.				6. US EPA ID Number C A D 0 7 2 9 5 3 7 7 1		C. State Transporter's ID 010191		D. Transporter's Phone (818) 762-9326					
7. Transporter 2 Company Name						8. US EPA ID Number		E. State Transporter's ID					
9. Designated Facility Name and Site Address Petroleum Waste, Inc. P.O. Box 3366 Bakersfield, CA 93385						10. US EPA ID Number C A D 9 8 0 6 7 5 2 7 6		G. State Facility's ID					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit Wt/Vol		1. Waste No.	
a. California regulated waste only.						01011		2006210		Y		State 611 EPA/Other exempt	
b.												State EPA/Other	
c.												State EPA/Other	
d.												State EPA/Other	
J. Additional Descriptions for Materials Listed Above						K. Handling Codes for Wastes Listed Above							
Soil Contaminated with diesel fuel. Profile No. D-324						a.		b.		c.		d.	
15. Special Handling Instructions and Additional Information Avoid skin and eye contact													
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.													
Printed/Typed Name Curt Cederquist				Signature <i>Curt Cederquist</i>		Month Day Year 08 22 89							
17. Transporter 1 Acknowledgement of Receipt of Materials													
Printed/Typed Name FRANK COTTEZ				Signature <i>Frank Cottez</i>		Month Day Year 08 22 89							
18. Transporter 2 Acknowledgement of Receipt of Materials													
Printed/Typed Name				Signature		Month Day Year							
19. Discrepancy Indication Space													
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.													
Printed/Typed Name				Signature		Month Day Year							

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DA:
 To: P.O. Box 400, Sacramento, CA 95812-0400

Please print or type. (Form designed for use on elite (12-pitch typewriter).)

TRUCK 2

88427248

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8602; WITHIN CALIFORNIA CALL 1-800-852-7650

GENERATOR

TRANSPORTER

FACILITY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. CA1C1010101161218113		Manifest Document No.		2. Page 1 of		Information in the shaded areas is not required by Federal law.					
3. Generator's Name and Mailing Address American Honda Motor Company 700 Van Ness Avenue Torrance, CA 90509 (213) 781-4421						A. State Manifest Document Number 88427248							
4. Generator's Phone						B. State Generator's ID B1A1H01316101219161714							
5. Transporter 1 Company Name United Pumping Service, Inc.						C. State Transporter's ID 011745							
6. US EPA ID Number						D. Transporter's Phone (818) 961-9326							
7. Transporter 2 Company Name						E. State Transporter's ID							
8. US EPA ID Number						F. Transporter's Phone							
9. Designated Facility Name and Site Address Petroleum Waste, Inc. P.O. Box 3366 Bakersfield, CA 93385						G. State Facility's ID							
10. US EPA ID Number IC1A1D191810161715121716						H. Facility's Phone (805) 762-7341							
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol		1. Waste No.	
a. California regulated waste only.						01011 DIT		000120		Yy		State 611 EPA/Other exempt	
b.												State EPA/Other	
c.												State EPA/Other	
d.												State EPA/Other	
J. Additional Descriptions for Materials Listed Above Soil contaminated with diesel fuel Profile No. D-324						K. Handling Codes for Wastes Listed Above a. b. c. d.							
15. Special Handling Instructions and Additional Information Avoid skin and eye contact													
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.													
Printed/Typed Name Curt Cederquist				Signature <i>Curt Cederquist</i>				Month Day Year 10/22/89					
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name MIKE CERVANTES				Signature <i>Mike Cervantes</i>				Month Day Year 10/22/89					
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature				Month Day Year					
19. Discrepancy Indication Space													
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. Printed/Typed Name													
Signature				Month Day Year									

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAY
To: P.O. Box 400, Sacramento, CA 95812-0400

TRUCK
#3
Department of Health Services
Toxic Substances Control Division
Sacramento, California

88427249
 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550
 GENERATOR
 TRANSPORTER
 FACILITY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C A C 0 0 0 1 6 2 8 1 1 3		Manifest Document No.		2. Page 1 of		Information in the shaded areas is not required by Federal law.									
3. Generator's Name and Mailing Address American Honda Motor Company 700 Van Ness Avenue Sacramento, CA 90509 (213) 781-4421						A. State Manifest Document Number 88427249											
5. Transporter 1 Company Name United Pumping Service, Inc.						B. State Generator's ID H A H 0 3 6 0 2 9 6 7 4											
6. US EPA ID Number C A D 0 7 2 9 5 3 7 7 1						C. State Transporter's ID 010192											
7. Transporter 2 Company Name						D. Transporter's Phone (818) 961-9326											
8. US EPA ID Number						E. State Transporter's ID											
9. Designated Facility Name and Site Address Petroleum Waste, Inc. P.O. Box 3366 Bakersfield, CA 93385						F. Transporter's Phone											
10. US EPA ID Number I C A D 9 8 0 6 7 5 2 7 6						G. State Facility's ID											
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit Wt/Vol		I. Waste No.					
a. California regulated waste only.						0 0 1 D T				Y		State 611 EPA/Other exempt					
b.												State EPA/Other					
c.												State EPA/Other					
d.												State EPA/Other					
J. Additional Descriptions for Materials Listed Above Soil contaminated with diesel fuel Profile No. D-324						K. Handling Codes for Wastes Listed Above a. b. c. d.											
16. Special Handling Instructions and Additional Information Avoid skin and eye contact																	
18. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.																	
Printed/Typed Name Curt Cederquist						Signature <i>Curt Cederquist</i>				Month Day Year 082289							
17. Transporter 1 Acknowledgement of Receipt of Materials						Printed/Typed Name Jim Peppoy				Signature <i>Jim Peppoy</i>				Month Day Year 10122189			
18. Transporter 2 Acknowledgement of Receipt of Materials						Printed/Typed Name				Signature				Month Day Year			
19. Discrepancy Indication Space																	
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.																	
Printed/Typed Name						Signature				Month Day Year							

APPENDIX C
CERTIFICATE OF TANK DESTRUCTION

JONES CONSTRUCTION & MAINTENANCE CO., INC.
OIL FIELD MAINTENANCE
4708 N. AUTRY AVENUE • LONG BEACH, CA 90808
PHONE (213) 420-8217

STATEMENT OF FACT

DATE JULY 26, 19 89

COMPANY NAME: **ENVIRONMENTAL SOLUTIONS, INC.**

JOB LOCATION: **AMERICAN HONDA - 700 VAN NESS - CITY OF TORRANCE**

TANK DESCRIPTION: **ONE (1) 1,000 GALLON STEEL TANK.**

THE TANK/TANKS DESCRIBED ABOVE WERE CUT UP AND PROPERLY DISPOSED OF FOR SALVAGE IN THE COUNTY OF LOS ANGELES BY JONES CONSTRUCTION & MAINTENANCE CO., INC.

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

EXECUTED ON JULY 26, 19 89 AT TORRANCE , CA
Date City State

Marsha M. Jones

MARSHA M. JONES
VICE-PRESIDENT
LIC. NO. 508565-A

MMJ/sw
cc: File

BACKHOE

STINGER CRANE

DUMP TRUCK

GRADING

APPENDIX D

**EXPLOSIVE ATMOSPHERE TEST RESULTS
PRIOR TO REMOVAL -
EDWIN S. WYNKOOP, P.E. AND ASSOCIATES**

EDWIN S. WYNKOOP, P.E. and ASSOCIATES
 CERTIFIED SAFETY PROFESSIONAL
 LICENSE NO. 2960
 (818) 333-0873

15241 Valdemar Dr.
 Hacienda Heights, CA 91745

Environmental Solutions

CERTIFICATE SERIAL

1265

Environmental Solutions

Survey Requested by <u>TANK</u>	Vessel Owner or Agent <u>American Honda</u>	Date <u>7-26-89</u>
Vessel <u>OIL</u>	Type of Vessel <u>Steel</u>	Specific Location of Vessel <u>700 Van Ness Torrance</u>
Last Three (3) Cargoes <u>LEL - Oz - Visual</u>	Tests Performed <u>LEL - Oz - Visual</u>	Time Survey Completed <u>11:30</u>

This underground Tank is identified
 with Red Paint - 1268 -

Not Safe for
 Workers to Enter

Tank Tested 0% LEL / 20.9% Oxygen

#1 - Tank 1000 gal. Cap. UL A - 719017

Not Tested for
 Specific Toxics

This Tank has been washed "on-site" and Certified as Clean and
 Vapor Free (Zero Percent of the Lower Explosive Limit) This
 Cleaned Tank is No longer a hazard waste and may be
 transported for either: Disposal, Material recycling or Salvage.

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or if in any doubt, immediately stop all work and contact the undersigned.

QUALIFICATIONS: Transfer of ballast or manipulation of valves or closure equipment tending to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or release of Certificate for the spaces so affected. All lines, vents, heating coils, valves, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA 308 Subsections 1-6.1 through 1-6.4, and Subsection 5-3.2).

SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.

ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Certificate; and further, that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or, in the case of the fuel tanks or lube oil tanks, or engine room or fire room bilges, have been treated in accordance with the requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.

SAFE FOR REPAIR YARD ENTRY: Means that the compartments and spaces of the flammable cryogenic liquid carrier so designated: (a) have been tested by sampling at remote sampling stations, and results indicate the atmosphere tested to be above 19.5 percent oxygen, and less than 10 percent of the lower flammable limit, or b) are inerted.

CERTIFIED SAFETY PROFESSIONAL'S ENDORSEMENT: This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 308 Control of Gas Hazards in tanks, etc., have been found the condition of each to be in accordance with the assigned designation.

"The undersigned acknowledges receipt of this Certificate under Sec 2-3 of NFPA 306 and understands conditions and limitations under which it was issued."

Signed [Signature] 7/26/89 Date

Company

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed [Signature] Associate

Edwin S. Wynkoop JGC
 Certified Safety Professional Certificate No.

1988 Edition

APPENDIX E
CERTIFIED LABORATORY REPORTS AND
CHAIN-OF-CUSTODIES



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-090

Received: 26 JUL 89
Reported: 28 JUL 89

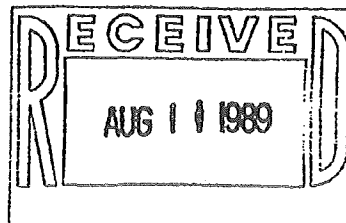
Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
07-090-1	S-1	26 JUL 89
PARAMETER	07-090-1	
Hydrocarbons by IR (EPA 418.1), mg/kg		<10
TPH and BTEX - Modified 8015		
Date Analyzed		07/27/89
Dilution Factor, Times 1		1
Benzene, mg/kg		<1
Ethylbenzene, mg/kg		<1
Toluene, mg/kg		<1
Total Xylene Isomers, mg/kg		<1
Total Fuel Hydrocarbons, mg/kg		<5
Other TPH and BTEX - Modified 8015		---





1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-090

Received: 26 JUL 89
Reported: 28 JUL 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED	
07-090-4	S-8 1.5'	26 JUL 89	
07-090-5	S-4 3'	26 JUL 89	
PARAMETER		07-090-4	07-090-5
TPH and BTEX - Modified 8015			
Date Analyzed		07/27/89	07/27/89
Dilution Factor, Times 1		1	1
Benzene, mg/kg		<1	<1
Ethylbenzene, mg/kg		<1	<1
Toluene, mg/kg		<1	<1
Total Xylene Isomers, mg/kg		<1	<1
Total Fuel Hydrocarbons, mg/kg		<5	<5
Other TPH and BTEX - Modified 8015		---	---



1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-090

Received: 26 JUL 89
Reported: 28 JUL 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

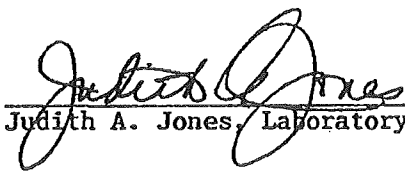
Page 3

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED	
07-090-2	S-3 3'	26 JUL 89	
07-090-3	S-6 1.5'	26 JUL 89	
PARAMETER		07-090-2	07-090-3
TPH and BTEX - Modified 8015			
Date Analyzed		07/27/89	07/27/89
Dilution Factor, Times 1		1	1
Benzene, mg/kg		<1	<1
Ethylbenzene, mg/kg		<1	<1
Toluene, mg/kg		<1	<1
Total Xylene Isomers, mg/kg		<1	4
Total Fuel Hydrocarbons, mg/kg		16	580
Fuel Characterization, .		Diesel	Diesel
Carbon Range, .		C8 to C18	C8 to C24

Values preceded by a "<" indicate detection limits for that parameter.

Amended report: added the carbon range of detected fuel hydrocarbons to the report at the client's request.

08-08-89 A. Morris-Seeley


Judith A. Jones, Laboratory Manager



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-095

Received: 26 JUL 89
Reported: 02 AUG 89

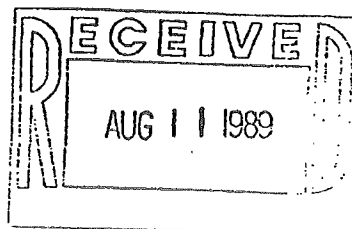
Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
07-095-1	S-2 Stockpile	26 JUL 89
PARAMETER	07-095-1	
Hydrocarbons by IR (EPA 418.1), mg/kg TPH and BTEX - Modified 8015	6400	
Date Analyzed	07/28/89	
Dilution Factor, Times 1	10	
Benzene, mg/kg	<10	
Carbon Range, .	C7 to C25	
Ethylbenzene, mg/kg	<10	
Toluene, mg/kg	<10	
Total Xylene Isomers, mg/kg	19	
Total Fuel Hydrocarbons, mg/kg	1200	
Fuel Characterization, .	Diesel	





1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: AB9-07-095

Received: 26 JUL 89
Reported: 02 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
07-095-2	S-5 1.5'	26 JUL 89
PARAMETER	07-095-2	
TPH and BTEX - Modified 8015		
Date Analyzed	07/28/89	
Dilution Factor, Times 1	1	
Benzene, mg/kg	<1	
Ethylbenzene, mg/kg	<1	
Toluene, mg/kg	<1	
Total Xylene Isomers, mg/kg	<1	
Total Fuel Hydrocarbons, mg/kg	<5	
Other TPH and BTEX - Modified 8015	---	



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-095

Received: 26 JUL 89
Reported: 02 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

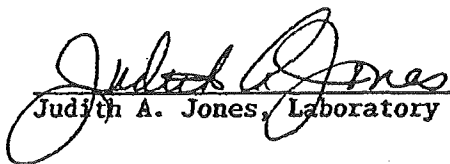
Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
07-095-3	S-7 1.5'	26 JUL 89
PARAMETER		07-095-3
TPH and BTEX - Modified 8015		
Date Analyzed		07/28/89
Dilution Factor, Times l		10
Benzene, mg/kg		<10
Ethylbenzene, mg/kg		<10
Toluene, mg/kg		<10
Total Xylene Isomers, mg/kg		<10
Total Fuel Hydrocarbons, mg/kg		2000
Fuel Characterization, .		Diesel
Carbon Range, .		C8 to C25

Values preceded by a "<" indicate detection limits for that parameter.
Amended report: added the carbon range of detected fuel hydrocarbons to the report at the client's request. -- 8/9/89 L.Sheer


Judith A. Jones, Laboratory Manager



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-108

Received: 31 JUL 89
Reported: 02 AUG 89

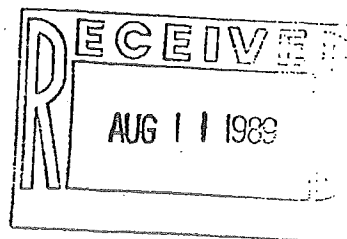
Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED				
07-108-1	S-10	29 JUL 89				
07-108-2	S-11	29 JUL 89				
07-108-3	S-12	29 JUL 89				
07-108-4	S-14	29 JUL 89				
07-108-5	S-16	29 JUL 89				
PARAMETER	07-108-1	07-108-2	07-108-3	07-108-4	07-108-5	
TPH and BTEX - Modified 8015						
Date Analyzed	07/31/89	07/31/89	07/31/89	07/31/89	07/31/89	
Dilution Factor, Times 1	1	1	1	1	1	
Benzene, mg/kg	<1	<1	<1	<1	<1	
Ethylbenzene, mg/kg	<1	<1	<1	<1	<1	
Toluene, mg/kg	<1	<1	<1	<1	<1	
Total Xylene Isomers, mg/kg	<1	<1	<1	<1	<1	
Total Fuel Hydrocarbons, mg/kg	<5	<5	<5	<5	<5	
Other TPH and BTEX - Modified 8015	---	---	---	---	---	





BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-108

Received: 31 JUL 89
Reported: 02 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES					DATE SAMPLED
07-108-1	S-10					29 JUL 89
07-108-2	S-11					29 JUL 89
07-108-3	S-12					29 JUL 89
07-108-4	S-14					29 JUL 89
07-108-5	S-16					29 JUL 89
PARAMETER	07-108-1	07-108-2	07-108-3	07-108-4	07-108-5	
Vol.Aromatics (EPA-8020)						
Dilution Factor, Times 1	1	1	---	---	---	
Chlorobenzene, mg/kg	<0.1	<0.1	---	---	---	
Total Xylene Isomers, mg/kg	<0.1	<0.1	---	---	---	
1,2-Dichlorobenzene, mg/kg	<0.1	<0.1	---	---	---	
1,3-Dichlorobenzene, mg/kg	<0.1	<0.1	---	---	---	
1,4-Dichlorobenzene, mg/kg	<0.1	<0.1	---	---	---	
Benzene, mg/kg	<0.1	<0.1	---	---	---	
Ethylbenzene, mg/kg	<0.1	<0.1	---	---	---	
Toluene, mg/kg	<0.1	<0.1	---	---	---	
Other Vol.Aromatics (EPA-8020)	---	---	---	---	---	



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-108

Received: 31 JUL 89
Reported: 02 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
07-108-6	S-18	29 JUL 89
PARAMETER		07-108-6
TPH and BTEX - Modified 8015		
Date Analyzed		07/31/89
Dilution Factor, Times 1		1
Benzene, mg/kg		<1
Ethylbenzene, mg/kg		<1
Toluene, mg/kg		<1
Total Xylene Isomers, mg/kg		<1
Total Fuel Hydrocarbons, mg/kg		<5
Other TPH and BTEX - Modified 8015		---



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-108

Received: 31 JUL 89
Reported: 02 AUG 89

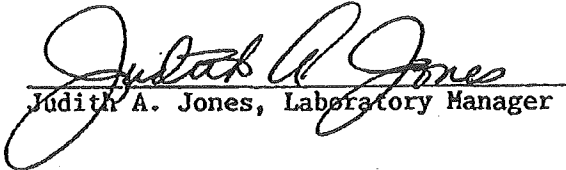
Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 4

Values preceded by a "<" indicate detection limits for that parameter.


Judith A. Jones, Laboratory Manager



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: AB9-07-109

Received: 31 JUL 89
Reported: 02 AUG 89

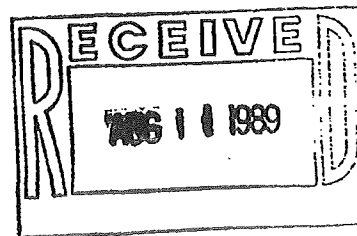
Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
07-109-1	S-9	29 JUL 89
PARAMETER		07-109-1
TPH and BTEX - Modified 8015		
Date Analyzed		07/31/89
Dilution Factor, Times 1		1
Benzene, mg/kg		<1
Ethylbenzene, mg/kg		<1
Toluene, mg/kg		<1
Total Xylene Isomers, mg/kg		<1
Total Fuel Hydrocarbons, mg/kg		<5
Other TPH and BTEX - Modified 8015		---





BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-109

Received: 31 JUL 89
Reported: 02 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED			
07-109-3	S-13	29 JUL 89			
07-109-4	S-15	29 JUL 89			
07-109-5	S-17	29 JUL 89			
07-109-6	S-19	29 JUL 89			
PARAMETER		07-109-3	07-109-4	07-109-5	07-109-6
Sample Held, Not Analyzed		08/01/89	08/01/89	08/01/89	08/01/89



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-07-109

Received: 31 JUL 89
Reported: 02 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

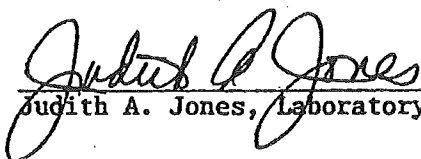
Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
07-109-2	S-20	29 JUL 89
PARAMETER		07-109-2
TPH and BTEX - Modified 8015		
Date Analyzed		07/31/89
Dilution Factor, Times 1		1
Benzene, mg/kg		<1
Ethylbenzene, mg/kg		<1
Toluene, mg/kg		<1
Total Xylene Isomers, mg/kg		<1
Total Fuel Hydrocarbons, mg/kg		33
Fuel Characterization, .		Diesel
Carbon Range, .		C8 to C18

Values preceded by a "<" indicate detection limits for that parameter.
Amended report: added the carbon range of detected fuel hydrocarbons to the report at client's request. -- 8/9/89 L.Sheer


Judith A. Jones, Laboratory Manager

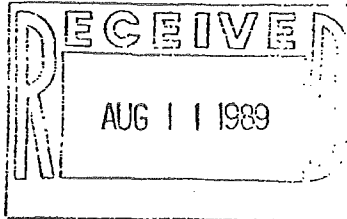


1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-08-005

Received: 01 AUG 89
Reported: 08 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718



Project: 89-288

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
08-005-1	S-20 (Stockpile)	29 JUL 89
PARAMETER		08-005-1
Vol. Pri. Poll. (EPA-8240)		
Date Analyzed		08/04/89
Dilution Factor, Times 1		1
1,1,1-Trichloroethane, mg/kg		<0.3
1,1,2,2-Tetrachloroethane, mg/kg		<0.3
1,1,2-Trichloroethane, mg/kg		<0.3
1,1-Dichloroethane, mg/kg		<0.3
1,1-Dichloroethylene, mg/kg		<0.3
1,2-Dichloroethane, mg/kg		<0.3
1,2-Dichlorobenzene, mg/kg		<0.3
1,2-Dichloropropane, mg/kg		<0.3
1,3-Dichlorobenzene, mg/kg		<0.3
cis-1,3-Dichloropropene, mg/kg		<0.3
1,4-Dichlorobenzene, mg/kg		<0.3
2-Chloroethylvinylether, mg/kg		<0.3
2-Hexanone, mg/kg		<3
Acetone, mg/kg		<3
Acrolein, mg/kg		<6
Acrylonitrile, mg/kg		<6
Bromodichloromethane, mg/kg		<0.3
Bromomethane, mg/kg		<0.3
Benzene, mg/kg		<0.3
Chlorobenzene, mg/kg		<0.3
Carbon Tetrachloride, mg/kg		<0.3
Chloroethane, mg/kg		<0.3
Bromoform, mg/kg		<0.3
Chloroform, mg/kg		<0.3



1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-08-005

Received: 01 AUG 89
Reported: 08 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
08-005-1	S-20 (Stockpile)	29 JUL 89
PARAMETER		08-005-1
Chloromethane, mg/kg		<0.6
Carbon Disulfide, mg/kg		<0.6
Dibromochloromethane, mg/kg		<0.3
Ethylbenzene, mg/kg		<0.3
Freon 113, mg/kg		<0.3
Methyl Isobutyl Ketone, mg/kg		<2
Methyl Ethyl Ketone, mg/kg		<3
Methylene Chloride, mg/kg		<0.3
Tetrachloroethylene, mg/kg		<0.3
Styrene, mg/kg		<0.3
Trichloroethylene, mg/kg		<0.3
Trichlorofluoromethane, mg/kg		<0.3
Toluene, mg/kg		<0.3
Vinyl Acetate, mg/kg		<2
Vinyl Chloride, mg/kg		<0.3
Total Xylene Isomers, mg/kg		<2
trans-1,2-Dichloroethene, mg/kg		<0.3
trans-1,3-Dichloropropene, mg/kg		<0.3
Semi-Quantified Results **		
A 2Nd Aromatic C9H12 Hydrocarbon, mg/kg		3
A C8 To C11 Hydrocarbon Matrix, mg/kg		40
An Aromatic C9H12 Hydrocarbon, mg/kg		2

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.



BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1200 EAST PACIFICO AVENUE, ANAHEIM, CA 92805
(714) 978-0113

FAX: (714) 978-9284
LOG NO: A89-08-005

Received: 01 AUG 89
Reported: 08 AUG 89

Mr. Ron Giraudi
Environmental Solutions, Inc.
15520 Rockfield Blvd., Suite D
Irvine, California 92718

Project: 89-288

REPORT OF ANALYTICAL RESULTS

Page 3

Values preceded by a "<" indicate detection limits for that parameter.


Judith A. Jones, Laboratory Manager

CHAIN OF CUSTODY RECORD

Page 1 of 1
 Project Name: AM. HONDA
 Project No.: 89-288
 Site Location: TORRANCE, CA
 Date: JULY 12, 1989

Ship To: BEC LAB.
 Attn: RECEIVING
1700 E. PACIFIC
ANAHEIM, CA

ADP-07-108
 order split by due date. See 89-07-108.
 ES 7/31

Boring/Well No.	Sample No.	Depth	Date	Time	Sample Type			Sample Containers			Remarks	
					Water	Solid	Other	Vol.	No.	Type		Pros
	5-9	1.5'	7/12/89		✓					2.0	1.0	Regular TAT
	5-10	12'			✓							Rush (24hr)
	5-11	12'			✓							Rush (24hr)
	5-12	9'			✓							Rush (24hr)
	5-13	9'			✓							Rush (24hr)
	5-14	9'			✓							Rush (24hr)
	5-15	3'			✓							Rush (24hr)
	5-16	7'			✓							Rush (24hr)
	5-17	3'			✓							Rush (24hr)
	5-18	9'			✓							Rush (24hr)
	5-19	9'			✓							Rush (24hr)
	5-20	STAKE			✓							R Regular TAT

Total Number of Samples Shipped: 12 Shipper's Signature: [Signature]

Signature _____ Date _____ Company _____ Time _____

Reinquinshed by: [Signature]

Received by: [Signature]

Reinquinshed by:

Received by:

Reinquinshed by:

Received by:

7-31-89 8:50 AM

B+C ANALYTICAL

Special Instructions / Shipment / Handling / Storage Requirements:

ENVIRONMENTAL SOLUTIONS, INC.
 15520 Rockfield Boulevard, Suite D
 Irvine, California 92718

ENVIRONMENTAL SOLUTIONS, INC.
 2820 Shadelands Drive, Suite 115
 Walnut Creek, California 94598

The material(s) listed are received for analysis and/or treatability evaluation. At the conclusion of the test work, all remaining material(s) will be returned to the client for eventual disposal at a licensed facility.

EXHIBIT 5

REMEDIATION 1010277000
1989

Harding Lawson Associates

A Report Prepared for

Mobil Oil Corporation
Torrance Refinery
3700 West 190th Street
Torrance, California 90509-2929

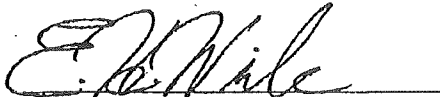
FILE COPY

File # 3340.89.2

POTENTIAL OFF-SITE CONTAMINATION
SOURCE IDENTIFICATION
AREA SOUTHEAST OF THE MOBIL TORRANCE
REFINERY
TORRANCE, CALIFORNIA
MARCH 17, 1989

HLA Job No. 6258,127.11

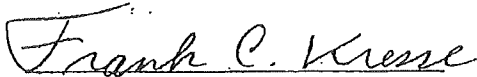
by



Eric H. Wiebe
Senior Hydrogeologist



Steven L. Shestak
Project Geologist



Frank C. Kresse
Certified Engineering Geologist - 406

Harding Lawson Associates
15621 Redhill Avenue, Suite 100
Tustin, California 92680
714/259-7992

1000-000220

TABLE OF CONTENTS

	EXECUTIVE SUMMARY	v
1.0	INTRODUCTION	1
2.0	BACKGROUND	2
3.0	SCOPE OF WORK	3
	3.1 Historical Aerial Photographs	3
	3.2 Pipeline Drawings	3
	3.3 Government Agency File Reviews and Other Contacts	4
4.0	POTENTIAL CONTAMINANT SOURCES	5
	4.1 Previous Investigations	5
	4.2 Former U.S. Steel Plant	8
	4.2.1 Main Plant Complex	9
	4.2.2 Storage and Loading Areas	12
	4.2.3 Cooling Pond	13
	4.2.4 Disposal Areas	16
	4.2.5 Product Lines and Storage Tanks	17
	4.2.6 Water Wells	19
	4.3 USS Plant Site Closure	20
	4.4 Southern 26-Acre Parcel	21
	4.4.1 Eden National Steel	21
	4.4.2 Solvent Coatings	22
	4.4.3 D and D Cucci Boat Repair and South Bay Roofing	24
	4.4.4 United Crane/International Die Casting	24
	4.4.5 Cobabe Bros., Inc.	24
	4.4.6 South Bay Disposal	25
	4.4.7 Crown Body and Fender	25
	4.4.8 Automotive Repair	25
	4.4.9 Other Properties	25
	4.4.10 Abandoned Casing	25
	4.5 Honda and Harpers Sites	26
	4.6 Petroleum and Other Product Pipelines	26
	4.7 Surrounding Industrial/Commercial Areas	27
5.0	SUMMARY	28

CONTENTS (continued)

TABLES

BIBLIOGRAPHY

TABLES

ILLUSTRATIONS

APPENDICES

- A Selected Analytical Data – SCS Engineers and Woodward–Clyde Consultants
- B Former U.S. Steel Water Well Information
- C Addendum Report – Report of Observations, Honda Site Tank Pull, Torrance, California

DISTRIBUTION

CONTENTS (continued)

TABLES

Table 1	List of Aerial Photographs Reviewed
Table 2	List of Pipeline Drawings Reviewed
Table 3	List of Agency and Other Contacts
Table 4	List of Pipelines in the Del Amo Boulevard 30-foot Right-of-Way
Table 5	Summary of Potential Contamination Sources

ILLUSTRATIONS

Plate 1	Potential Off-Site Contamination Sources
---------	--

EXECUTIVE SUMMARY

The following report summarizes Harding Lawson Associates' (HLA) investigation of potential off-site contaminant sources in the area southeast of the Mobil Torrance Refinery. This investigation is part of a study to characterize and delineate organic compounds in soils and ground water southeast of the Refinery. This area, which is roughly bounded on the west and east by Van Ness Avenue and the Torrance flood control lateral, respectively, and to the south by Torrance Boulevard (Plate 1), was previously the location of numerous industrial and commercial businesses which used, stored, or generated hazardous substances. A portion of this area has subsequently been redeveloped and presently consists of the Harpers Furniture Manufacturing (Harpers) plant and American Honda Motor Corporation (Honda) Headquarters. The 26-acre parcel south of the Honda site is currently undeveloped.

The results of research have indicated that numerous potential contamination sources currently or previously existed in this area. Soil and ground-water investigations performed by several consultants have documented contamination at the former U.S. Steel (USS) site and at the locations of several former businesses in the 26-acre parcel immediately south of the USS site (U.S. Steel is presently doing business as USX). Contaminants that have been detected during previous investigations include combustible vapors, heavy metals, and organic compounds. Based on available information, the following locations have been identified as sources of contamination:

- o The former Solvent Coatings site,
- o The former Eden National Steel site,
- o The pipelines that previously traversed the USS property,
- o The former aboveground storage tanks located along the M-47 pipeline,
- o The cooling pond and circulation channels located in the southeast portion of the former USS property,
- o The former South Bay Disposal site, and
- o The former D and D, Cucci Boat Repair and South Bay Roofing

Locations that have been identified as potential sources include:

- o The former USS plant including the acid discharge line, subsurface vault, and storage and disposal areas, and
- o The auto repair/towing and machining businesses located in the 26-acre parcel.

Ground-water quality analyses from wells installed by HLA and other consultants detected concentrations of dissolved benzene, toluene, xylene, and ethylbenzene (BTXE) and several types of solvents including hexane, perchloroethene (PCE), trichloroethane (TCA), trichloroethene (TCE) and 1,2-dichloroethane (DCA), in the ground water southeast of the Refinery. TCE and PCE concentrations detected by SCS Engineers in Wells MW-1 through MW-4 were above State Action Levels.

Preliminary information suggests that three organic contaminant plume centers may exist and that one or more organic contaminant sources potentially exist within the former USS site and the southern 26-acre parcel. The concentrations detected at MW-2, MW-5, and MW-6 could be derived from sources found in the southern 26-acre parcel including the former Eden National Steel, Solvent Coatings, D and D Cucci Boat Repair and South Bay Roofing, and South Bay Disposal locations. Additional exploration will be required to further evaluate the interrelationship of the plumes in these areas.

This investigation has also yielded information on the existence of five production water wells at the former USS property. Although the present ground-water flow direction is southeast, pumping that occurred from 1927 through 1979 from the known USS water production wells could have significantly modified the ground-water flow directions in the area of the southern 26-acre parcel. These wells were located in the southwest portion of the former USS property and were operated on a continuous basis, extracting between 600 and 1,200 acre-feet per year from the regional aquifers. Although no water level data exist to verify the effect of pumping at these wells, it can reasonably be assumed that the pumping created a radius of influence that caused a deviation to, and locally modified, present-day ground-water flow directions. Potentially contaminated ground water may have been drawn from the area of the southern 26-acre parcel toward the area now occupied by Honda and may have contributed to the current distribution of contaminants in the ground water of the area.

1.0 INTRODUCTION

This report presents the results of Harding Lawson Associates' (HLA) investigation for potential off-site contamination source identification for the Mobil Oil Corporation (Mobil) Refinery in Torrance, California. The purpose of this investigation was to identify previous land use in this area and to evaluate whether potential contaminant sources existed, which may have contributed to the observed degradation of ground-water quality in this area. Much of the discussion and conclusions herein is based on data from documents provided by Allied Signal Garrett AiResearch (Garrett AiResearch), California Department of Health Services (DHS), California Regional Water Quality Control Board - Los Angeles Region (RWQCB), Department of Water Resources (DWR), U.S. Environmental Protection Agency (USEPA), American Honda Motor Corporation (Honda), and the Torrance Redevelopment Agency. Other documentation may exist regarding the area of investigation although not available to HLA for this report. HLA makes no warranty, either expressed or implied, for the validity of data provided to HLA by the above-mentioned companies or agencies.

2.0 BACKGROUND

Currently, 35 Gardena aquifer monitoring wells exist between the southeastern Refinery boundary and the southern Honda property boundary (see Plate 1). These include Mobil Wells IV-1R through IV-3R, V-1R through V-8R, VI-1R through VI-6R, and VII-1R through VII-9R; and Honda site Wells MW-1 through MW-6, ATT-2, ATT-3, and ATT-4 (ATT-1 was recently abandoned for new structure construction). From these 35 wells (including ATT-1), data indicated the presence of contamination in 26 wells.

Based on Mobil's goal to further characterize and investigate the occurrence of contaminants detected in the Gardena aquifer, downgradient and southeast of the Refinery, HLA conducted a comprehensive review of historic data to locate potential contamination sources off site, southeast of the Refinery. The following report sections describe the activities performed to evaluate potential off-site contamination sources and the findings of this investigation.

3.0 SCOPE OF WORK

The activities performed by HLA to assess potential off-site hydrocarbon sources southeast of the Refinery included obtaining and reviewing aerial photographs, performing file and records searches at various public agencies, and reviewing environmental reports prepared by other consultants. These activities were focused on (1) identifying previous property owners, businesses, and land uses in the area now occupied by Harpers and Honda to evaluate whether potentially hazardous materials have been stored, used, or generated at these locations, and (2) reviewing available information to assess whether subsequent actions occurred to assess potential contamination and/or remove contaminated materials. The activities performed during this investigation are outlined below.

3.1 Historical Aerial Photographs

Black and white as well as color aerial photographs were obtained for review from the Fairchild Collection at Whittier College (Whittier, California) and from Continental Aerial Photo (Santa Ana, California). The photographs that were reviewed are listed in Table 1 and included stereographic pairs and individual photographs from 1927 through 1988. Photographs from various dates were enlarged to facilitate detailed review of structures in the photographs. Each photograph was examined to observe the history and development of the area being investigated and to locate storage tanks, pipelines, ponds, disposal areas, or other indications of the potential presence of hazardous material. The results were used to compile the location map presented in Plate 1 and are discussed in Section 4.0 of this report.

3.2 Pipeline Drawings

Pipeline plans obtained from Mobil West Coast Pipe Lines and the City of Torrance were reviewed to locate hydrocarbon product lines traversing the study location. Plate 1 shows the location of a 30-foot-wide right-of-way for pipelines, which has been established along the southern boundary of the Refinery. Also shown on Plate 1 are pipelines that outlet from the southeast part of the Tank Farm along Van Ness Avenue and others that led from the Refinery to the former U.S. Steel (USS) site. Table 2 lists the pipelines contained within the 30-foot (Del Amo) right-of-way.

3.3 Government Agency File Reviews and Other Contacts

A list of government agency and other contacts from which information was obtained regarding local businesses and industries is presented in Table 3. Personal interviews and file reviews were performed to acquire information on previous and/or ongoing environmental investigations at properties within the study area. Agencies that were contacted included:

- o DHS Toxic Substances Control Division,
- o RWQCB,
- o Los Angeles County Health Services Department – Hazardous Materials Department,
- o City of Torrance Redevelopment Agency, and
- o DWR – Water Master, West Coast Basin.

File reviews and discussions were directed at evaluating whether the properties adjacent to the Refinery were used for storage, production, or disposal of hazardous materials; whether reports of hazardous material spills were documented; whether soil or ground-water contamination investigations had been performed and the results of these studies; what ongoing investigations may be in progress; and whether sanctions or actions had been undertaken by the governmental agencies against properties in the study area.

Numerous reports by consultants to Honda and the Torrance Redevelopment Agency were acquired during this investigation. These reports concerned investigation and assessment of soil and ground-water contamination at the properties now owned by Honda and Harpers (Plate 1). Environmental Impact Reports (EIR) were prepared for several proposed projects in the study area including Garrett AiResearch, Honda development projects, and the former USS plant. Most of these EIR's did not include field investigations; information on site conditions were referenced to previous studies by Converse Consultants (Converse), SCS Engineers (SCS), and Hydro-Fluent. The only EIR with subsurface information was performed by LeRoy Crandall & Associates on the Garrett AiResearch property. A list of the reports that were reviewed to identify potential sources of contamination is provided in the Bibliography.

4.0 POTENTIAL CONTAMINANT SOURCES

Information acquired during this investigation has been compiled onto the location map presented on Plate 1 and is listed in Table 5. Plate 1 shows the locations of past and present businesses in the area southeast of the Refinery. It also shows the locations of oil and gasoline distribution pipelines, aboveground and underground storage tanks, slag disposal areas at the former USS site, and other features pertinent to evaluating potential off-site contamination sources. A summary of previous investigations performed in the area and a description of each of the potential sources that have been identified is presented in the following sections.

4.1 Previous Investigations

Numerous geotechnical and environmental assessment investigations have been performed since 1980 in the area of the former USS property and the adjacent 26-acre parcel. Converse and Woodward-Clyde Consultants (WCC) were contracted by Honda to perform geotechnical and environmental assessments of the USS property during demolition/renovation activities in the period 1980 to 1984. Subsequent investigations of ground-water quality and subsurface vapors were performed for Honda by Aqua Terra Technologies (ATT) and SCS in 1986 and 1987. HLA has been conducting an ongoing investigation of ground-water quality in the area since 1986 on behalf of Mobil Oil Corporation.

The investigations performed by Converse were primarily directed toward the geotechnical aspects of the demolition and renovation of the former USS property for construction of the Honda buildings. In addition to the geotechnical investigations, an industrial audit was performed by Converse (1982a) to evaluate whether hazardous wastes existed on the USS property. Their study identified numerous liquid and solid hazardous substances at the former USS site including polychlorinated biphenyl (PCB) oil, asbestos, radioactive sources, oily waste, solvents, and acid residues. These materials were reportedly removed from the site during the facility demolition and, subsequently, Converse stated that none of the identified hazardous wastes remained on site.

It should be noted that the audit did not refer to any chemical analyses of soils, ground water, or waste material to verify whether hazardous materials were present after the removal of the substances noted above. Some testing may have been performed during a previous study by Converse (Pond Lining Study, Torrance, California, November 30, 1981), but this report was not available for review. Reference to analyses of heavy metals and flammability of oily sludges for this 1981 report is made in a letter report by Converse to the Torrance Building and Safety Department (1982b). The information presented in the response letter is insufficient to assess the extent of testing.

WCC performed a two-part investigation for Honda beginning in 1983. Their initial investigation consisted of a review of environmental studies performed on the former USS property; however, this report was not available for review. The final Phase II report was obtained for review and consisted of a detailed investigation on the nature and extent of hazardous wastes at the property and an analysis of the potential environmental hazards from these wastes. A total of 119 soil and slag samples were collected from 58 borings and 4 surface locations. Samples were tested for PCB's, organic priority pollutants, oil and grease, selected heavy metals, asbestos, fluoride, and radioactive material. The results of their analyses have been included in Appendix A.

WCC concluded that the slag deposits on site could be considered hazardous waste because of heavy metals concentrations. No other compounds were encountered at concentrations that would classify the material as hazardous. Elevated levels of oil and grease were, however, detected in samples from 19 locations. Oil was not listed at this time (study performed prior to authorization of Subchapter 15) as a hazardous waste by the DHS. WCC, therefore, did not list the presence of oil as a hazardous waste at the site although they made recommendations for additional evaluation of oil at selected locations and cautioned against potential effects of associated vapors and engineering problems.

Ecology and Environment, Inc., performed a file review of the history of the USS site and subsequent demolition activities for the USEPA to determine if the previous investigations had been adequate to evaluate whether the soil and ground water

had been contaminated. The information reviewed by Ecology and Environment, Inc., included DHS, RWQCB and USEPA files. The EPA obtained information from Honda per a RCRA 3007/CERCLA 104 letter dated October 21, 1985. The information concerning the demolition and characterization of the USS site was primarily obtained from the Ecology and Environment, Inc., 1986 report. Their report contained analytical data retrieved from their file searches which included analysis of the effluent discharged to the cooling pond and samples from the cooling pond liner and acid waste discharge line. Ecology and Environment, Inc., noted the lack of information documenting the chemical characteristics of the site. They recommended that ground-water monitoring wells be installed in the area of the cooling pond to evaluate the ground-water conditions and to collect soil samples for chemical analysis during drilling. This was later performed by ATT.

SCS was contracted by the Torrance Redevelopment Agency to perform an investigation of soil and ground-water quality in the area now occupied by Honda. Studies performed by SCS within the past 2 years have focused on (1) identification and investigations of individual businesses that used hazardous materials in their operations or had underground storage tanks, and (2) investigation of the soil and ground-water quality at the Honda property.

SCS installed and sampled six ground-water monitoring wells with multiple-completion vapor probes at the locations shown on Plate 1. Eleven vapor monitoring probes were installed by SCS in the proposed footprint of the Honda buildings. They also drilled numerous soil borings and oversaw tank removals at several locations in the southern 26-acre parcel. Their investigations have encountered elevated levels of organic contaminants in the soil and ground water of the study area. Soil-gas samples indicated the presence of a complex mixture of gases including methane, ethane, propane, butane, pentane, hexane, isobutane, pentene, hexene, benzene, toluene, and xylene. Appendix A contains a summaries of SCS's analyses of soil and ground-water samples. The following sections contain information from the SCS investigations presented as it pertains to each of the facilities previously located in the area.

The information from each of these consulting reports, and information from the regulatory agencies, has been compiled into sections 4.2 through 4.10 to address potential contaminant sources at individual properties located throughout the study area. Included is a description of the potential sources identified, the extent of previous investigations that provide information on these sources, and the findings of investigations that may have been performed.

4.2 Former U.S. Steel Plant

The 175-acre former USS plant was located between Van Ness and Western Avenues, south of Del Amo Boulevard and north of Torrance Boulevard (Plate 1). Steel-making operations took place at this site between 1914 and 1980 under the names Llewellyn Iron Works, Columbia Steel, and U.S. Steel. The steel mill stopped operations in December 1979 when the property was sold to Honda. The plant was demolished in the early 1980's, and new buildings were erected at the site for Honda and Harpers.

Review of aerial photographs from 1928 through 1941 indicated that most of the property surrounding the Refinery and the former USS plant at that time was either undeveloped or agricultural land. The only other major structure in the area was the Pacific Electric (Redcar) Railyard, which was located west of USS and south of the Refinery. The Redcar site was not included as part of this investigation since it was located well west of the Refinery and is not upgradient of the off-site area under investigation. The areas adjacent to the Refinery began being developed for commercial uses in the late 1940's to early 1950's.

The primary features of the the USS plant are shown on Plate 1 and include:

- o The main plant complex,
- o Storage areas and loading docks located on the northwest and east sides of the main plant,
- o A 3- to 4-acre cooling pond with two adjacent circulation channels,
- o Areas of slag and trash disposal and an area possibly used for coke, slag, or coal storage,

- o Product lines,
- o Aboveground storage tanks (potentially used for fuel-oil storage), and
- o Four water wells used for industrial production at the site.

These features, with the exception of the production wells, comprise the primary potential sources of contamination to the underlying soil and ground water. They include both solid and liquid sources of potentially hazardous materials. The production wells are of concern because of their possible effect on ground-water flow directions in the immediate area. Information on these features has been obtained primarily through review of consulting reports by Converse (1981, 1982a, 1982b), Ecology and Environment, Inc. (1986), WCC (1984), and review of documents on file at the DHS. Each feature is discussed below.

4.2.1 Main Plant Complex - The main plant complex was the location of five open-hearth furnaces, one electric furnace, a foundry, and several mills, casters, and shear machines. Aerial photograph enlargements show adjacent buildings that appear to have been used for equipment storage and maintenance. The potential sources that have been identified and the extent of investigation and findings are described in the following sections.

4.2.1.1 Potential Sources - Although limited information is available concerning the actual operations of the plant and the types of potentially hazardous material used in their processes, the following potential sources have been identified based on assumed industrial practices and information from consulting reports:

- o Fuel oils and coke used to supply power and operate the furnaces,
- o Cuttings oils used for milling of materials,
- o Oils, solvents, acids, and other chemicals used for forging and press equipment and in the quenching process,
- o Fuels stored on site to operate transport vehicles and other gasoline- or diesel-powered equipment,
- o A deep vault apparently used for waste fluid storage,

- o Four electrical substations containing transformers and capacitors which contained PCB oil,
- o An acid storage area located near the plant boiler house and an acid discharge line along the southern property boundary, and
- o Waste fluids of unknown type reportedly removed periodically by Chancellor and Ogden (subcontracted waste haulers).

No information was available on the types and quantities of fuels, solvents, or other chemicals that may have been used for plant operations nor was detailed information acquired concerning the waste fluids that were periodically removed from the site. Although no records of underground storage tanks were located, DHS files (dated November 20, 1981) indicated that gasoline pumps were found on the USS property during a DHS site visit. A vault, measuring 24 by 40 feet wide, was located in the main plant complex and was apparently used for waste fluid storage. Twenty-five barrels of oily fluid was removed from the vault during demolition. No analysis of the fluid was found. The location of the vault is shown on Plate 1. Four electrical substations were located on the property as identified by WCC (Plate 1). These substations were equipped with numerous transformers and capacitors which contained PCB oil. Documents in the Converse report (1982b) reported the removal of 5,335 gallons of PCB and PCB-contaminated flushing solvents, 10 transformers (30,000 lbs), 118 capacitors (8,000 lbs), and nine 55-gallon drums (contents not reported) during demolition.

No specific information was available on the types of waste fluids that were removed periodically by Chancellor and Ogden.

4.2.1.2 Investigation

Nearly 30 borings were drilled in the vicinity of the main plant complex by WCC in 1983. Converse also drilled several borings and excavated trenches in this area prior to 1981 but, unlike WCC, their work apparently did not include chemical analyses of any samples. Two ground-water monitoring wells (MW-5 and MW-6) were installed by SCS in 1987 on the east and west sides of the former location of the main plant complex. Multiple-completion vapor probes were installed by SCS in conjunction with these wells. The vapor probes were completed to depths of 15, 50, and 75 feet.

WCC submitted selected soil samples (from depths of 9 to 75 feet) for analyses of asbestos, radionuclides, PCB, oil and grease, trace metals, and volatile and semivolatile priority pollutant organics. SCS submitted four soil samples from the two well borings for analysis of benzene, toluene, xylenes, and ethylbenzene (BTXE) and analyzed ground-water samples for volatile and semivolatile organics, DDT, and dissolved gases (methane, ethane, propane, butane, pentane, and hexane). The vapor probes were sampled for gases (methane, carbon dioxide, and nitrogen) and BTX.

4.2.1.3 Findings

WCC's investigation of the main plant complex was directed at evaluating the presence of radionuclides, asbestos, and PCB's. The analysis of selected soil samples did not detect the presence of asbestos or PCB's and radionuclides (gross alpha and beta) were not detected above background levels. A soil sample collected at a depth of 35.5 feet from a boring next to the subsurface vault had an oil and grease concentration of 12.7 milligrams per kilogram (mg/kg).

SCS analyzed four soil samples each from MW-5 and MW-6 at depths of 20 to 93 feet. Elevated levels of benzene (0.053 mg/kg) were detected at 20 feet and toluene (0.076 mg/kg) at 80 feet in MW-5. BTXE was also detected in samples from the top of the saturated zone (90 to 93 feet) in both MW-5 and MW-6. The results of the SCS analyses for BTXE compounds are included in Appendix A.

Ground-water samples were collected in April and May 1987. The dominant constituents detected in MW-5 and MW-6 during SCS's May 1987 sampling event were benzene (25 to 31 milligrams per liter [mg/l]) and toluene (49.8 to 49.9 mg/l). Low concentrations of butane (4.4 to 8.0 mg/l) were also detected but no solvents were detected. The results of SCS's 1987 analyses are contained in Appendix A-3.

SCS installed multiple-completion vapor monitoring probes at depths of 15, 50, and 75 feet in MW-5 and MW-6. SCS's analyses for the April 1987 sampling event detected benzene and toluene in the 75-foot probe of MW-5 (0.60 and 0.88 parts per million (ppm), respectively) and benzene (5.3 ppm) at 75 feet in MW-6. Methane was not detected in any of the probes.

4.2.2 Storage and Loading Areas – Two extensive storage and loading areas were located on the northwest and east sides of the main building complex. Rail spurs, loading docks, equipment and raw material storage areas, trucks, and a loading area were visible on the aerial photographs. The eastern location, which was serviced by several rail spurs, appears to have been used for storage of either processed slag, coal, or coke. Lengthy elongate piles of the material were stored adjacent to the rails. Waste materials (slag and trash) were deposited farther east of these storage areas in topographically low areas near the drainage course. WCC reported an aboveground acid storage area on the east side of the main plant complex (Plate 1). The potential sources identified, and the extent of previous investigations and their findings are outlined below:

4.2.2.1 Potential Sources

- o Miscellaneous liquid petroleum materials stored in these areas,
- o An aboveground acid storage area,
- o Fueling tanks which may have been located in the area,
- o Fuel spills from transportation activities in these areas. (Aerial photographs depict noticeable surface staining in these areas.), and
- o Slag, coke, coal, and trash.

4.2.2.2 Investigation – Previous investigations of the loading areas included borings and trenches by Converse, and several borings by WCC. A ground-water monitoring well installed by ATT (ATT-2) is located in the unloading area east of the main plant complex.

4.2.2.3 Findings – WCC reported that previous investigations (Converse, 1982a; James M. Montgomery, 1982) tested near-surface samples for pH and selected heavy metals. The total metals concentrations were below the Title 22 total threshold limit concentration (TTLC). WCC drilled two borings near the acid storage area and submitted samples from depths of 35 and 19.5 feet for analysis of pH. The pH values were 6.3 for the deep sample and 4.5 for the shallower sample. Analysis of four shallow surface samples collected by WCC in the unloading and storage areas

detected chromium, copper, and nickel at concentrations above the TTLC. Priority pollutants (EPA Method 8240/8270) were not detected in any of the samples tested. The sample tested by WCC from the area where the coal, slag, or coke was being stored had the highest metals concentrations. This sample of the fill material had total nickel concentrations which exceed the TTLC by 7 times. Soluble concentrations did not exceed the Title 22 soluble threshold limit concentration (STLC).

4.2.3 Cooling Pond - A cooling pond, approximately 3.5 acres in size, with two adjacent circulation channels, was located near the southeastern part of the property along the bank of the flood control channel (Plate 1). The pond was observed in the 1928 aerial photograph and was used until the plant's demolition in 1979. The cooling pond, and waste fluids contained within, appears to be a primary source of potential contamination.

4.2.3.1 Potential Sources - The fluids and sludges within the cooling pond and circulation channels represent potential contaminant sources. Contaminants of concern include metals, and organic contaminants.

Converse (1982a) reported oil on the surface of the pond and up to 4 feet of sludge on the bottom of the pond. The sludge was described as containing oil and tar residue. Aerial photographs taken during the active life of the pond show areas of sludge accumulation at the north and southwest portions of the pond. A second, smaller pond (less than 1 acre) was located at the south edge of the pond (Plate 1). Two smaller ponds located north of the plant and north of the cooling pond were observed on later photographs.

USS had a National Pollutant Discharge and Elimination System (NPDES) permit (No. CA000275) to discharge noncontact cooling waters, boiler blowdown, and rainfall surface runoff from the facility to the unlined natural watercourse along the east side of the property (now the Torrance flood control lateral). Analytical reports for May and October 1975 reported that the effluent from the pond contained low concentrations of metals (arsenic, chromium, copper, nickel, tin, and lead), a pH of 8.2 to 8.5, and oil and grease concentrations of 8.4 to 14.0 mg/l. A second set of

analytical data for the USS main outfall was available for January and June 1975. The test results showed similar metals concentrations, oil and grease at 2 to 9 mg/l, and total dissolved solids (TDS) concentrations of 602 to 640 mg/l. In 1955, the discharge was reported at 10, 810 cubic meters per day.

During demolition and renovation at the former USS property, Converse recommended that the pond sludge be removed. This recommendation was based on engineering judgment as the sludge apparently was not found to be hazardous when subject to "spectrographic analysis" by Converse (1982a). The pond "lining" was again tested in 1982 as reported in a July 15, 1982, memorandum from Converse to Honda. Test results of three samples of the pond lining showed that concentrations of copper, zinc, lead, nickel, and chromium were above State threshold limits. A letter in the DHS files dated August 5, 1982, from Miller Chambers (DHS) to Mike Shonsun (Honda) stated that "stockpiled bottom muck from the old wastewater pond disclosed hazardous concentrations of copper, lead, nickel, chromium, and zinc," and Honda was directed to dispose of the material at a Class I landfill. A total of 29,216 tons of soil was removed from the pond for disposal at BKK landfill in West Covina, California. The DHS certified that removal of the pond contents was adequate on January 24, 1983. In a DHS file letter dated March 20, 1984, from D. Oliva, the DHS stated "the soil layer contaminated with heavy metals (believed to be the former pond lining)" was removed and, subsequently, certification was given by the DHS to Honda (owners at the time of site renovations) that the hazardous contamination had been mitigated.

4.2.3.2 Investigation - WCC drilled four borings from 25 to 70 feet deep along the axis of the former pond. Two 26- to 30-foot-deep borings were also drilled along each of the two circulation channels. These borings were drilled in December 1983 after the removal of the pond sludge had been completed and the area had been built up to a grade level with the rest of the property. WCC's borings encountered fill depths of approximately 5 to 8 feet in the circulation channels and 15 to 36 feet in the area of the pond. The fill materials apparently included construction rubble (steel, brick, concrete, and debris) and slag. According to WCC's logs, strong hydrocarbon odors were noted in one of the borings at a depth of 5 feet and at

depths of 30 to 40 feet in another boring. The log from the latter boring, located near the center of the pond, also noted what was described as possibly being pond sediment (sludge) at a depth of 29 to 44 feet beneath the surface.

WCC submitted samples from each of the borings for analysis of selected heavy metals, fluoride, semivolatile organic priority pollutants, and oil and grease. The samples tested ranged in depth from 26 to 70 feet.

4.2.3.3 Findings -- Analysis of soil samples by WCC indicated that the material at depth did not contain total metals concentrations above the TTLC. One sample had a total copper concentration that exceeded the STLC. No analyses for soluble concentrations were performed. Organic priority pollutants were detected with the highest concentrations being 0.26 mg/kg to 0.40 mg/kg di-n-butyl phthalate and 0.25 mg/kg di-n-octyl phthalate. Oil and grease concentrations ranged from 5.0 to 89.8 mg/kg.

Analytical results for ground-water samples from the four wells (ATT-1 through ATT-4) installed in March 1987 by ATT were provided in the 1987 SCS report. Wells ATT-1 and ATT-3 were located on the east side of the pond and ATT-2 and ATT-4 were located approximately 200 feet northwest and northeast of the pond, respectively. Analyses for Subchapter 15, Title 22, list of 17 metals detected low levels of barium (0.03 to 0.07 mg/l) in the four wells; selenium at concentrations of 0.003 to 0.009 mg/l in Wells ATT-1, ATT-2, and ATT-4; and lead at concentrations of 0.007 to 0.020 in all wells but ATT-2.

Analyses of volatile organics in the ground-water samples detected BTXE, chloroform, acetone, and 1,2-dichloroethane (DCA) in ATT-2. Acetone and trace levels of DCE, TCE, and toluene were detected in ATT-1. No volatile organic compounds were detected in ATT-3. The solvent 1,2-DCA was detected in ATT-4. Analyses of semivolatile organics were also performed; however, these were compounds not detected.

4.2.4 Disposal Areas - Plate 1 shows the areal extent of disposal areas north and east of the main plant complex, which were used for slag and trash disposal. The outlined area represents the maximum extent of the disposal area; most of the disposal activity appears to have been located along the north and northeast portions of the property closest to the main plant. USS obtained a Class 3 permit for on-site disposal of plant-generated material in 1925. The plant's disposal practices impinged upon and altered the drainage course northeast of the plant as shown on Plate 1. The drainage course was again altered later to direct it away from the slag deposits.

Excavations and borings by Converse and WCC encountered wood, organics (refuse), and metal debris intermixed with slag. A map in the 1981 Converse report detailed the former USS property during demolition and identified three fill areas based on thickness and content. Plate 1 outlines the north and northeast portions of the site identified by Converse as containing fill thicknesses of 10 to 30 feet which contained mostly slag with minor trash and organic refuse. A strip of fill 10 to 30 feet thick containing primarily trash, organics, and unsuitable rubbish was delineated in the area on the east side of the property north of the pond. A third area, defined as a north-south trending strip between the main plant and the ponds, correlates to the loading area shown on Plate 1. Here the fill was less than 10 feet deep and contained slag, metal debris, rubble, and minor amounts of organics. WCC's work at the site in 1983/1984 showed 35 to 60 feet of fill underlying the entire site after demolition/renovation.

4.2.4.1 Potential Sources - Potential contaminant sources at the disposal areas include oils, fuels, and solvents that may have been included as trash or intermixed with the slag itself. The extent of such occurrences could be assessed only by reviewing Converse (1981) and WCC (1984) boring and trench logs. No documentation on the actual types and quantities of potentially hazardous wastes disposed of is available.

4.2.4.2 Investigation - Converse (1981) drilled numerous borings and trenched in the disposal areas to characterize the fill for geotechnical purposes. WCC (1984)

drilled 23 borings in the disposal areas and submitted soil samples for analysis of selected heavy metals, priority pollutant organics, and pH.

The presence of contaminant sources is noted in one boring and one trench. Boring B-10, located in the disposal area immediately east of the main plant and drilled by Converse (1981), encountered oil-stained fill. Trench T-15, located just south of Harpers Way and centered between the property lines, was also reported by Converse to have encountered free diesel oil at a depth of 6.5 feet. During demolition of the property, the slag was reportedly processed and removed for sale and the trash exported off site. Many of the WCC borings encountered trash, slag, and rubble after facility demolition, indicating that some fill containing slag remained on site.

4.2.4.3 Findings – Several of the surface samples of the slag fill contained total concentrations of chromium above or near the TTLC. No soluble concentrations exceed the STLC. Samples from depths of 22 to 73 feet from the borings were tested for organics, metals, and pH. Trace to low levels of organic priority pollutants (various phthalate compounds) were detected in nearly all samples. The highest value detected was 4.5 mg/kg bis-(2-ethylhexyl)phthalate. The pH values for samples tested ranged from 4.8 to 8.6 units with most below 6 units. All samples contained total metals concentration below both the TTLC and STLC with the exception of one sample. This sample had a total copper concentration a little over 2 times the STLC.

4.2.5 Product Lines and Storage Tanks – Review of pipeline drawings available from Mobil West Coast Pipe Lines and the City of Torrance, aerial photographs, and information from Converse and WCC revealed the location of several pipelines and aboveground storage tanks on the former USS property. Potential sources are identified in the following sections along with the extent of investigations performed in these areas and their results.

4.2.5.1 Potential Sources – Potential contaminant sources identified include:

- o Three Mobil pipelines (M-35, M-43, and M-47) that traversed the USS property north of the main plant (Plate I),

- o Three aboveground storage tanks located along the pipelines, and
- o An acid discharge line located along the southern property boundary (Plate I).

Pipeline plans supplied by Mobil and others reviewed at City of Torrance offices indicate that several pipelines traversed the former USS property en route to the Port of Los Angeles and/or other destinations, and that from one to three lines (M-35, M-43, and M-47) may have been direct supply lines to the plant itself. Three large aboveground storage tanks were also observed in aerial photographs. At least one tank appears to have been connected to the Mobil M-47 8-inch-diameter residium product line, based on the pipeline plans reviewed. The first aboveground tank was apparently brought into service about 1928 and a second tank in 1935, as evidenced by the photographs. The easternmost aboveground tank was observed in the 1979 photo, but it is not certain whether this tank was connected to a product line.

Leakage from these pipelines and/or storage tanks is a possible contaminant source, but documentation on tank integrity or known leakage is unavailable. At least one pipeline, M-35, was cut and abandoned in place in October 1979, along with the other line (M-47) that crossed the former USS property. A 10-inch-diameter main line that entered the property from Van Ness Avenue was abandoned in place in 1985.

Converse (1981) noted the occurrence of a vitreous clay pipeline paralleling the southerly property. This pipeline was reported to have carried acid residue from treatment operations to an off-site storage vault apparently located south of Santa Clara Avenue (Plate I). It is not known whether the pipeline carried other fluids or whether additional pipelines were located on site. The pipeline, which was in service from 1926 to 1954, was removed when this property was developed for commercial use.

4.2.5.2 Investigation - Borings drilled by WCC (1984) encountered petroliferous odors at a depth of 25 feet in Boring B3-2 located just east of the corner of Van Ness Avenue and Dominguez Street, which is near where the pipelines entered the former USS property.

WCC drilled a series of seven borings along the pipelines and seven borings along the acid discharge line. Samples from depths of 29 to 74 feet along the pipelines were submitted for analysis of oil and grease and PCB's. The samples along the acid discharge line were collected from depths of 12 to 62 feet and tested for pH only.

4.2.5.3 Findings – Converse did not submit samples from the boring along the pipeline near the west property line that encountered petroliferous odors for chemical analysis. Analytical results for WCC's drilling program detected oil and grease concentrations of 37 to 1410 mg/kg. Oil and grease were not detected in three of the seven samples from 20 and 40 feet deep. The highest concentration, 1,410 mg/kg, was detected at a depth of 57.5 feet in a boring near the two aboveground storage tanks. Strong odors were detected during drilling of this boring.

The samples from WCC's borings along the acid discharge line had pH values ranging from 4.6 to 8.3. Only two samples had values less than 5.4 pH units.

4.2.6 Water Wells – The USS plant had four or five production water wells on site which supplied water to the plant. The water wells were located on the western side of the property near the main building complex as shown on Plate I. These wells were used to supply water for steel-making operations. Records from DWR files were found for USS-1, USS-3, USS-4, and USS-5. No data was found for USS-2 (if it existed). Available well logs and water quality analyses are contained in Appendix B.

Well USS-1 was drilled in 1929. The other wells were drilled in the years 1935, 1938, and around 1970 as replacement wells to the older wells, which became decreasingly productive because of sanding problems. DWR records from 1960 through 1980 indicate that the wells extracted approximately 600 to 1,200 acre-feet per year. USS had a total adjudicated a right of 1,791 acre-feet per year. The wells were apparently screened in the general range of 150 to 500 feet in depth and thus extracted water from the Gardena and Lynwood/Silverado aquifers at approximate pumping rates of 500 to 600 gallons per minute (gpm). DWR files listed static water levels of approximately 97 feet below the surface (28 feet below Mean Sea Level [MSL]) and pumping levels between 150 and 223 feet below the surface (80 to 153 feet below MSL).

According to a site investigation report dated April 29, 1982, in the DHS files, Mr. Blake Dallin of The Austin Company reported that the wells had been properly capped and abandoned during demolition. Converse (1982) noted that the wells had reportedly been filled under permit and inspection by the Environmental Management Department of the State of California. A letter from USS stating that USS-3 had been abandoned was the only documentation found in the DWR files. No detailed information was available as to exactly how or when the wells were abandoned.

The former USS production wells are of concern for two reasons. First, the production rates of 500 to 600 gpm on a continuous basis could have affected ground-water flow directions and gradients in the area of the USS property and the 26-acre parcel to the south. The cone of depression created by the wells may have affected the path of contaminants in the ground water. Water-quality analysis data for USS-4 and USS-5 obtained from the DWR did not include analyses of priority pollutant metals or organics. TDS ranged from 284 to 572 ppm and pH values ranged from 7.9 to 8.4.

4.3 USS Plant Site Closure

The former USS property was listed by the USEPA as a hazardous waste site (CAD 008491748) in July 1981. The DHS was the lead agency in overseeing the demolition of the property. A DHS site visit on July 1, 1982, noted the presence of hazardous concentrations of chromium, copper, nickel, zinc, and lead in the lining of the cooling pond. These observations are documented in a July 15, 1982, memorandum from Converse to Honda transmitting chemical analytical data for three samples collected from the cooling pond lining and three samples from "near the acid waste line." The second set of samples may have been from the sump located at the outlet of the acid discharge line.

Only the samples from the pond lining exceeded State threshold limits. The DHS required that the contaminated material be removed from the pond bottom per a letter from Miller Chambers of the DHS to Honda dated August 5, 1982. The contaminated soil was removed and trucked to BKK Landfill by Aman Brothers, Inc.

The excavation was completed on January 24, 1983. Approximately 29,216 tons of soil was removed as estimated from waste manifests (letter from Heller, Eharman, White, McAuliffe, Attorneys to Mr. Jeff Rosenbloom, USEPA, November 21, 1985). The DHS certified that the removal of pond sludges was adequate on January 24, 1983.

Mr. Roy Thielking, DHS Toxics Substances Division, oversaw the demolition and soil removal at the site (Ecology and Environment, Inc., 1986). In a telephone interview with Ecology and Environment, Inc., on March 5, 1986, Mr. Thielking stated that the DHS did not document the depth and extent of removal, did not perform sampling to verify that the remaining material did not contain hazardous concentrations of metals or other contaminants, did not sample or remove material from the unlined circulation channel, and did not monitor ground water in this area to evaluate whether it had been contaminated by leakage from the pond (Ecology and Environment, Inc., 1986).

4.4 Southern 26-Acre Parcel

The southern 26-acre parcel is located south of Santa Clara Avenue, east of Van Ness Avenue, and north of Torrance Boulevard (Plate I). It is the location of the Torrance Industrial Redevelopment project and is presently owned by Honda. The property is presently undeveloped; however, it previously was a commercial and industrial business area. The previous businesses in this area that had, or are suspected of having, underground storage tanks are shown on Plate I. Only businesses suspected of potentially handling hazardous wastes are shown. A complete list of parcels and property owners can be referenced in Table I of the 1986 SCS report.

4.4.1 Eden National Steel - This small steel plant and trucking firm was constructed prior to 1928, the date of the earliest available aerial photograph. Information on this site is available from investigations performed by SCS (1987a). Potential contaminant sources include:

- o Two 10,000-gallon underground gasoline storage tanks,

- o Two possible cooling ponds observed on aerial photographs,
- o Slag or other material deposited along the northeast and southeast sides of the building prior to 1955, and
- o Materials, fuels, and solvents used in steel-making operations.

The two tanks were removed from the site in 1986 and the site demolished during the redevelopment project. SCS (1987a) reported 1,429 mg/kg total recoverable petroleum hydrocarbons (TRPH) detected in soil samples from beneath the tanks when the tanks were removed. Additional investigation at the site was recommended by SCS (1987a), but apparently not performed. No information was available concerning the removal of potentially hazardous wastes during facility demolition.

4.4.2 Solvent Coatings - The former Solvent Coatings facility was a paper coating service established in 1955 or 1956. It was located adjacent to Eden National Steel prior to being removed during the redevelopment project (Plate 1). Information on this site is available from a series of reports by SCS, who performed a two-part investigation at the facility in November 1987 and February 1988. Potential contaminant sources at this facility include:

- o Fifteen 1,000-gallon and four 8,000-gallon underground storage tanks containing industrial solvents including xylene, toluene, and methanol,
- o Drum storage of solvents prior to 1980 when the underground storage tanks were installed, and
- o The facility operations themselves.

The SCS investigation included drilling 14 borings, sampling beneath underground tanks, and collecting four surface samples from areas suspected to be contaminated by surface spills. Falcon Environmental Engineering and Construction performed tank integrity tests prior to tank removal in March 1987. A ground-water monitoring well (MW-1) with multiple completion vapor probes is located just southwest of the site. Selected analytical results are presented in Appendix A.

SCS reported the following results from their investigations. Tank integrity testing certified that all tanks had leak rates less than 0.05 gallon per hour. Soil samples from directly beneath each tank and from the soil excavated during tank removal had maximum concentrations of 50 ppm benzene, 1,424 ppm toluene, 271 ppm ethylbenzene, and 1,270 ppm xylenes.

Four samples were collected from areas beneath drains or concrete slabs in chemical storage areas and found to have maximum concentrations of 0.422 ppm benzene, 400 ppm toluene, 292 ppm total xylene, 48.4 ppm ethylbenzene, 310 parts per billion (ppb) (TCA), 106 ppb (PCE), and 30 ppb TCE.

Ninety-two samples collected from 14 borings around the tanks drilled to depths of 30 to 80 feet detected significant contamination. Ethylbenzene and xylenes were detected at the highest concentrations with lesser quantities of benzene and toluene. The highest level of contamination was characterized by ethylbenzene at concentrations up to 3,200 mg/kg and xylenes to 6,100 mg/kg. Solvents were also detected and dominated by TCA at 330 mg/kg. The subsurface soils were found to have highest levels of chlorinated and aromatic organic compounds between 30 and 50 feet below the surface and in borings beneath the footprint of the former Solvent Coatings building.

Results from Well MW-1, which was installed on the southwest side of this property, indicated elevated levels of organic contaminants in the ground water, and methane in the unsaturated zone. SCS's April 1987 sampling event detected toluene (10.2 mg/l), benzene (7.78 mg/l), and TCA (15.3 ug/l). PCE (3.84 ug/l) and TCE (3.0 ug/l) were also detected when sampled in March and May 1987.

SCS concluded that their results indicated the source of the contaminants to be the older aboveground operations and storage of solvents rather than the underground storage tanks. Some of the contaminated soils were removed from the site but the high concentrations of BTXE and solvents in deeper samples indicate that contaminants still remained in the soils. SCS estimated that approximately 5,000

cubic yards of soil were contaminated at concentrations that probably would require remediation. In their report dated March 1988, SCS did not recommend further exploration, but provided several remediation alternatives including:

- o Soil excavation and removal or on-site treatment,
- o Excavation and on-site aeration,
- o In-situ biodegradation, and
- o Soil-vapor extraction

No information was available concerning the remediation of the remaining contaminated soils.

4.4.3 D and D Cucci Boat Repair and South Bay Roofing (D and D) - SCS (1986) reported that permits on file with the Torrance Fire Department indicated that a 1,000-gallon underground gasoline storage tank and a 2,000-gallon underground storage tank of unknown contents were located at this site. The status of tanks, installed in 1959 and 1955, respectively, is unknown. SCS installed a monitoring well (MW-2) at this property and detected elevated contaminant concentrations. Of the BTXE compounds, toluene was detected at the highest concentration (44.1 ppm, April 1987). PCE (6.0 ppb) and TCE (3.0 ppb) were also detected. MW-2 was found to contain dissolved gases including hexane (286 ppm), pentane (1.25 ppm), butane (0.76 ppm), and ethane (0.175 ppm). Methane was not detected. Methane was detected at high concentrations in the associated vapor probes at Well MW-2 along with ethane, propane, butane, pentane, and hexane. No documentation of further investigation of the site was found.

4.4.4 United Crane/International Die Casting - SCS (1986) reported that this business had a permit for a 1,000-gallon underground gasoline storage tank on file with the Torrance Fire Department. A ground penetrating radar (GPR) survey performed by Spectrum Environmental Services in November 1986 found no evidence of underground tanks. SCS installed Monitoring Well MW-3 at this site and detected toluene (0.026 mg/l), TCE (7.4 to 24 ug/l), and PCE (31 to 188 ug/l). Methane was not detected in the vapor probes at this location. No documentation of further investigation at the site was found.

4.4.5 Cobabe Bros., Inc. - Cobabe Bros., Inc., was a plumbing business that had a 10,000-gallon underground gasoline storage tank on site (SCS, 1986). The tank was removed in March 1987 by Falcon Environmental Engineering and Construction. No contamination was detected in the excavation pit soils based on the analysis of one sample from beneath the tank (SCS, 1987a). No documentation of further investigation was found.

4.4.6 South Bay Disposal - An automobile restoration business was located on this property. A 10,000-gallon underground gasoline storage tank and a 1,000-gallon underground diesel storage tank were located at this site until removal by Falcon Environmental Engineering and Construction in March 1987. Three soil samples were collected from the excavation pit during tank removal. They contained TRPH levels as high as 14,300 mg/kg (sample from beneath the diesel tank). No analyses for BTXE were found in the literature reviewed. No documentation of further investigation was found.

4.4.7 Crown Body and Fender - SCS (1986) reported that a 1,000-gallon underground gasoline storage tank was removed from this site in April 1986. No documentation of investigation at the property was found. SCS Monitoring Well MW-4 is located slightly north of the site. Organic contaminants were detected in the ground water at this location, including BTXE, PCE (5 to 24 ppb), TCE (92 to 164 ppb), butane, hexane, and pentane. The 680-mg/l hexane concentration was the highest detected for the six wells tested. Low levels of methane were detected in the associated vapor probes.

4.4.8 Automotive Repair - Parcels 11-1 through 11-6 contained several automotive repair businesses. SCS observed remnants of gasoline pumps and dispenser islands at the site but GPR studies by Spectrum Environmental Services failed to detect underground storage tanks. No permits were reported on file with the Torrance Fire Department for the site. No record of subsurface investigation of potential contamination at this location was found.

4.4.9 Other Properties - Numerous other businesses in the southern 26-acre parcel may have been potential sources. Review of the property records compiled by SCS (1986) shows that at least two additional areas had numerous machine shops, and

another parcel had a large automobile repair/storage/towing business located there (Plate 1). These business may have had underground tanks for which no records were available. The machine shops also may have been sources of solvents.

4.4.10 Abandoned Casing – A steel casing was found by SCS during their investigation of the southern 26-acre parcel. The 24-inch-diameter, 30-foot-deep casing was thought to be a remnant of an abandoned test hole. The casing contained oily residue which was analyzed to be crude-oil product. The casing was drilled out and the hole backfilled with concrete. No records on an oil well were found for this location.

4.5 Honda and Harpers Sites

Plate 1 shows the locations of the various Honda and Harpers buildings as they presently exist. These buildings were constructed following the sale and demolition of the USS property. Harpers consists of a single, large building located north of Harpers Way and along the east side of Van Ness Avenue. The Honda site includes a main building along Van Ness Avenue and several smaller buildings just to the east. Parking areas and greenbelts are located adjacent to these buildings. The southern 26-acre parcel owned by Honda is presently undeveloped. The available files indicate that no reported hydrocarbon spills or leaks have occurred at the Honda or Harpers sites. It would therefore appear that potential contaminant sources in this area would be from previous operations.

4.6 Petroleum and Other Product Pipelines

Plate 1 shows the locations of several pipelines located in the area southeast of the Refinery. Table 2 presents a list of the pipeline plans that were reviewed for this investigation. As discussed in Section 4.1, three Mobil pipelines traversed the USS property but were eventually taken out of service. Currently, several active pipelines now run along the Del Amo Boulevard 30-foot right-of-way north of the Harpers site. A list of the pipelines contained within the Del Amo Boulevard right-of-way are presented in Table 4. No pipeline integrity testing records were reviewed for these pipelines.

4.7 Surrounding Industrial/Commercial Areas

Plate 1 shows the locations of several large industrial, commercial, or manufacturing complexes to the east and south of the Refinery. These include Garrett AiResearch and a former gas station, U.S. Gypsum, Reynolds Aluminum, and the former Redcar service yard. Five oil wells are also located in these areas (Plate 1).

Reports concerning the removal of tanks from the former gas station located at the corner of Western Avenue and Del Amo Boulevard show that the soils adjacent to and underlying the tanks were contaminated with up to 3,000 ppm of total petroleum hydrocarbons (Hydro-Fluent, 1986a). The present status of activities at this location is unknown.

Review of government agency files and interviews with representatives of the other above-listed properties did not reveal evidence that these locations had significant potential for affecting soils and ground water with contaminants. No reports of significant spills or leaks were found. Existing data for monitoring wells located west and north of the Honda property also support the conclusion that ground-water conditions in the area of the Honda site are most likely not being affected from areas to the west and north.

5.0 SUMMARY

The investigation of previous land use in the area southeast of the Mobil Torrance Refinery has identified several potential sources of contamination. Table 5 summarizes the properties that have been identified as being sources which potentially contributed contaminants to the soil and ground water in the area. The primary sources that have been identified are as follows:

- o Solvent Coatings,
- o Eden National Steel,
- o Pipelines and aboveground storage tanks previously located on the USS property,
- o USS plant including:
 - Cooling pond and circulation channels,
 - Storage and use of hazardous and nonhazardous materials (i.e., fuels, oils) on site,
 - Disposal areas,
- o D and D business property, and
- o South Bay Disposal.

Information from investigations by WCC on the former USS property and SCS on the various properties in the southern 26-acre parcel indicated that moderate to significant levels of contamination existed in the soils underlying these sites. Similar contaminants were also detected in ground-water monitoring wells. Although analytical information on the former USS property is limited, oil and grease concentrations ranging from 12 to 1,410 mg/kg were detected in the soils at depths of 20 to 75 feet beneath the surface along the pipelines, near the aboveground storage tanks, at a subsurface waste fluid vault in the main plant, and underlying the cooling pond and circulation channels. Insufficient information was available to assess whether acids, solvents, or other organic chemicals were present in the subsurface at these locations.

Investigations by SCS in the southern 26-acre parcel identified the properties occupied by former Eden National Steel, Solvent Coatings, D and D, and South Bay

Disposal as having organic contamination, including solvents, in the soil and ground water. These contaminants appear to have been derived from leakage of underground storage tanks and, in the case of Solvent Coatings, from surface spillage. Indications of impact of properties is evidenced by the presence of organic compounds in the soils at concentrations up to 6,100 mg/kg xylene and 94 mg/kg TCA, which were detected in samples from 30 feet below the surface at the Solvent Coatings site. High concentrations of solvents in the southernmost ground-water wells (up to 188 ppb TCE) have also been detected. These identified contaminant sources can be directly related to the ground-water degradation presently observed southeast of the Mobil Refinery.

BIBLIOGRAPHY

BCL Associates, Inc., 1986, Focused Investigation of the Carson Estates Company Property at 20225 South Western Avenue, Torrance, California

California Code of Regulations, Title 22, Division 4, Section 66699

Converse Consultants, 1981, Phase II Geotechnical Investigation, Proposed Plant Site, Van Ness Avenue at Harpers Way, Torrance, California

Converse Consultants, 1982a, Industrial Site Audit to Determine Presence of Hazardous Wastes, Former United States Steel Plant Site, Van Ness Avenue South of Harpers Way, Torrance, California

Converse Consultants, 1982b, Response to Mr. Ralph Grippo, Director of Building and Safety, City of Torrance, concerning Hazardous Waste Audit, American Honda Site

Ecology and Environment, Inc., 1986, RCRA 3007/CERCLA 104 Letter Review, American Honda Company, Inc., Torrance, California

Harding Lawson Associates, 1986, Subsurface Investigation and Site Assessment, Mobil Oil Corporation, Torrance, California, Volume I

Harding Lawson Associates, 1988, Refinery Subsurface Progress Report, Second Semester 1988, Mobil Torrance Refinery

Hydro-Fluent, Inc., 1986a, Ground-Water Monitoring, Carson Estates Company, 20225 South Western Avenue, Torrance, California

Hydro-Fluent, Inc., 1986b, Revised Work Plan for Ground-Water Monitoring, 20225 South Western Avenue, Torrance, California

James M. Montgomery Consulting Engineers, Inc., 1982, Letter report on the review and evaluation of hazardous waste problems at American Honda's Torrance site: unpublished report submitted to American Honda Motor Company, Inc.

LeRoy Crandall and Associates, 1977, Master Plan EA 76-73, Garrett AiResearch Property, Torrance, California

SCS Engineers, 1986, Preliminary Hydrogeological Investigation and Environmental Assessment of Torrance Industrial Redevelopment Project (Van Ness: Mullin Avenue Site)

SCS Engineers, 1987a, Addendum, Hydrogeological Investigation and Environmental Assessment of Torrance Industrial Redevelopment Project

SCS Engineers, 1987b, Draft Report, Preliminary Site Assessment, Former Solvent Coatings Site, Torrance, California

BIBLIOGRAPHY (continued)

SCS Engineers, 1988a, Draft Report, Preliminary Site Assessment, Former Solvent Coatings Site, Torrance, California

SCS Engineers, 1988b, Draft Report, Additional Site Assessment, Former Solvent Coatings Site, Torrance, California

Western Laboratories, 1984, Soils Investigation for Feasibility Study - Proposed Torrance Redevelopment "Triangle" - ±26 Acre Parcel - Located South of Santa Clara Avenue, Easterly of Van Ness Avenue, in the City of Torrance, California

Woodward-Clyde Consultants, 1984, Phase I Geotechnical Investigation, American Honda Motor Company Inc., Corporate Center, Torrance, California

Table 1. List of Aerial Photographs Reviewed

<u>Flight Number</u>	<u>Date Flown</u>	<u>Source</u>	<u>Frame Number</u>	<u>Scale</u>	<u>Enlargement Factor</u>
C-300	1928	Fairchild Collection	M:71	1"=375'	4x
C-7347	8/30/41	Fairchild Collection	42,43*	1"=333'	3x
C-7558	12/01/41	Fairchild Collection	3	1"=333'	3x
C-7558	12/01/41	Fairchild Collection	2,3*	1"=1,000'	—
C-11351	07/01/47	Fairchild Collection	12:9	1"=666'	3x
C-11703	08/22/47	Fairchild Collection	3:9	1"=1333'	3x
C-19375	07/15/53	Fairchild Collection	6:28	1"=400'	3x
C-21250	12/18/54	Fairchild Collection	20	1"=666'	3x
C-21250	12/18/54	Fairchild Collection	19,20*	1"=2000'	—
C-22478	04/05/56	Fairchild Collection	1:34	1"=833'	3x
61-7	01/31/70	Continental Aerial Photo	180,181*	1"=4000'	—
LA-CO	05/12/79	Continental Aerial Photo	68, 69*	1"=3000'	—
F-341-342	12/86	Continental Aerial Photo	341,342*	1"=3000'	—
City of Torrance	1988	Continental Aerial Photo	—	1"=400'	10x

*Stereographic pair

Table 2. List of Pipeline Drawings Reviewed

<u>Line Number</u>	<u>Drawing Numbers</u>	<u>Date Drawn</u>
M-47	4-A-425	May 31, 1929
	4-A-426	June 5, 1929
	4-A-425 (updated)	January 16, 1967
	4-A-425A	January 16, 1967
	4-A-426 (updated)	January 16, 1967
	4-A-425B	February 1985
	4-A-425C	February 1985
M-35	4-A-1919	September 18, 1967
	4-A-1920	September 18, 1967
	4-A-1921	September 18, 1967
	4-A-1922	September 18, 1967
	4-A-1923	September 18, 1967
	4-A-1924	September 18, 1967
M-119	4-A-1460	July 25, 1950
	4-A-1461	July 25, 1950
	4-A-1462	July 25, 1950
Del Amo Boulevard 30-foot Right-of-Way	4-A-1519	July 13, 1951
	4-A-1520	July 13, 1951
	4-A-1521	July 13, 1951
	4-A-1522	July 13, 1951
12-inch-diameter White Product Line	4-A-2053	October 31, 1973
	4-A-2054	October 31, 1973
Southern California Gas Company, Torrance	C-436W	—
	C-437-W	—

Table 3. List of Agency and Other Contacts

<u>Name</u>	<u>Government Agency/Business</u>	<u>Date</u>
Mike Bihn	Torrance Redevelopment Agency	12/87
Rick Cappelino	Cappelino Construction Company	12/87
Mr. Deltard	Reynolds Aluminum	12/87
Karl D. Fechner	Surf Management, Inc.	12/87
Dan Fescaz	LA County Health Department	9/88, 10/88
Hank Harper	Harpers Furniture	12/87
John Hinton	Department of Health Services	9/88
Steve Lavinger	Department of Health Services	9/88
Jane Lu	Department of Health Services	12/87
Dick Murtha	Garrett Corporation	12/87
Leonard C.L. Nagler	Department of Water Resources	9/88
Tom Schmidt	Reynolds Aluminum	12/87
Jim Smith	Department of Health Services	12/87
	Torrance Historical Society Museum	10/88

Table 4. List of Pipelines in the Del Amo Boulevard
30-foot Right-of-Way

<u>Diameter (inches)</u>	<u>Pipeline</u>
10	Mobil M-131 (oil)
6	Douglas Oil (former M-42)
8	Amine
8	Amine
10	Mobil M-119 (gasoline)
10	Mobil M-54 (gasoline)
2	G-95 (gasoline)
8	Shell
8	ARCO (former M-105)
8	Mobil M-44 (oil)
8	Mobil M-109 (oil)
12	Mobil M-145
24	Mobil M-146
4	Gas Dow Chemical (old M-136)
16	ARCO Crude Oil Line
20	Chevron Products Line

Table 5. Summary of Potential Contaminant Sources

Site	Type of Contamination	Extent of Previous Investigations	Investigator	Remedial Action
U.S. Steel				
Main plant	Oils, metals, PCB's, acids, asbestos	Numerous borings and 2 wells	SCS, WCC	Demolished
Storage areas	Oils, metals, acids	2 wells	SCS, WCC	Demolished
Cooling ponds	Metals, oils	4 wells, 5 borings	ATT, WCC	Removed sludge
Slag disposal	Metals	8 borings	WCC	Left on site
Product lines/ storage tanks	Oils, Fuels	9 borings	WCC	Removed
Acid discharge lines	Acids	7 borings	WCC	Removed
Electrical sub- stations (4 locations)	PCB oil	11 borings	WCC	Removed
Subsurface vault	PCB oil	1 boring	WCC	Removed
Eden National Steel	Oils, metal, PCB's acids, UST's (gasoline)	Surface samples	SCS	Tanks removed, site demolished

Notes:

PCB = polychlorinated biphenyls
 UST = underground storage tank
 SCS = SCS Engineers

WCC = Woodward-Clyde Consultants
 ATT = Aqua Terra Technologies

Table 5. Summary of Potential Contaminant Sources (continued)

<u>Site</u>	<u>Type of Contamination</u>	<u>Extent of previous Investigations</u>	<u>Investigator</u>	<u>Remedial Action</u>
Solvent Coatings	19 UST's (solvents, gasoline)	14 borings, 4 soil samples, MW-1	SCS	Tanks removed
D and D Cucci Boat Repair and South Bay Roofing	2 UST's (unknown contents)	MW-2	SCS	Tanks removed
South Bay Disposal	2 UST's (gasoline, diesel)	3 soil samples	SCS	Tanks removed
United Crane	1 UST (fuel)	MW-3	SCS	Tank removed
Cobabe Bros., Inc.	1 UST (fuel)		SCS	Tank removed
Crown Body and Fender	1 UST (fuel)	MW-4	SCS	Tank removed
Miscellaneous automotive repair shops (parcels 11-1 through 11-6)	Fuel, oil	GPR survey	SCS	No tanks found or removed
Abandoned casing	Oil	Sampled contents	SCS	Drilled out and plugged
Petroleum pipelines	Fuel, oil	Unknown	Unknown	Some remain, some abandoned

Notes:

PCB = polychlorinated biphenyls
 UST = underground storage tank
 SCS = SCS Engineers

WCC = Woodward-Clyde Consultants
 ATT = Aqua Terra Technologies

Harding Lawson Associates

APPENDIX A

SELECTED ANALYTICAL DATA -
SCS ENGINEERS AND
WOODWARD-CLYDE CONSULTANTS

1980-000229

SUMMARY OF EPA METHOD 8240 AND 8270 ANALYSIS
OF NINE TORRANCE SUBSURFACE SOIL SAMPLES

Monitoring Well (Sample Depth)	EPA Method 8240*	EPA Method 8270*
	----- (ug/kg) -----	
MW-1 (8 ft)	1,1,1-trichloroethane - 4 Methylene chloride - 30	ND‡
MW-1 (52.5 ft)	Methylene chloride - 815	ND
MW-1 (82.5 ft)	Benzene - 3 Toluene - 5 Methylene chloride - 833	ND
MW-2 (10 ft)	Chloroform - 3 Acetone - 24 Methylene chloride - 1,200	ND
MW-2 (85 ft)	Toluene - 2 Acetone - 5 Methylene chloride - 275	ND
MW-3 (8 ft)	Acetone - 12 Methylene chloride - 398	ND
MW-3 (82 ft)	Methylene chloride - 716	ND
MW-4 (10 ft)	Chloroform - 2 Toluene - 10 Methylene chloride - 232	ND
MW-4 (75 ft)	Toluene - 7 Methylene chloride - 1,500	ND

* Only positive results reported. All others were not detected

‡ ND = Not detected.

From: SCS Engineers, 1986

1999-000229



RESULTS OF SOIL ANALYSES

<u>Well No.</u>	<u>Depth (in feet)</u>	<u>Date sampled</u>	<u>EPA 8020 (mg/kg)</u>			
			<u>Benzene</u>	<u>Toluene</u>	<u>E. Benzene</u>	<u>Xylenes</u>
MW5	20	3/24/87	0.053	ND	ND	ND
MW5	50	3/24/87	ND	ND	ND	ND
MW5	80	3/24/87	ND	0.076	ND	ND
MW5	90	3/24/87	2.20	5.73	0.58	3.49
MW6	23	3/25/87	ND	ND	ND	ND
MW6	48	3/25/87	ND	ND	ND	ND
MW6	88.5	3/25/87	4.23	30.2	8.68	53.3
MW6	93	3/25/87	ND	ND	ND	ND

ND = Not Detected.

From: SCS Engineers, 1987a

1000-000229

RESULTS OF GROUND WATER ANALYSES

Well No.	Date Sampled	EPA 602 (mg/l = ppm)			EPA 601 (ug/l = ppb)	DDT (ug/l = ppb)	Butane (mg/l = ppm)*
		Benzene	Toluene	E. Benzene			
MW1	3/06/87	4.20	4.10	0.515	3.84 Tetrachloroethene 15.3 1,1,1-Trichloroethane ND	NA	NA
	4/10/87	7.78	10.5	NA	4.41	NA	NA
	5/01/87	3.15	1.12	0.106	1.36	ND	0.156
MW2	3/06/87	25.6	37.7	2.38	15.1	NA	NA
	4/10/87	40.7	44.1	NA	12.8	NA	NA
	5/01/87	28.5	43.6	2.91	18.7	ND	2.23
MW3	3/06/87	ND	0.026	ND	7.41 Trichloroethene 31.80 Tetrachloroethene 188.00 Tetrachloroethene 24.0 Trichloroethene 56.0 Tetrachloroethene	NA	NA
	4/10/87	ND	ND	NA	ND	NA	NA
	5/01/87	ND	ND	ND	ND	ND	0.374
MW4	3/06/87	14.7	14.1	2.12	7.46	NA	NA
	4/10/87	29.0	21.9	NA	8.1	NA	NA
	5/01/87	16.8	17.5	2.63	9.76	ND	5.35
MW5	4/10/87	47.0	50.0	NA	14.4	NA	NA
	5/01/87	30.6	49.8	3.34	19.4	ND	4.44
MW6	4/10/87	37.9	45.2	NA	13.1	NA	NA
	5/01/87	25.7	49.9	3.10	19.1	ND	8.02
Detection Limit (ug/l)	0.7	1.0	1.0	1.0	Tetrachloroethene 1.0 1,1,1-Trichloroethane 1.0 Trichloroethene 1.0 Chloroform 1.0	0.05	100
State Action Level (ug/l)	0.7	100.0	680.0	620.0	Tetrachloroethene 4.0 1,1,1-Trichloroethane 200.0 Trichloroethene 5.0 Chloroform 100.0	No State Action Levels	No State Action Levels

ND = Not Detected
NA = Not Analyzed

From: SCS Engineers, 1987e

HEAVY METAL ANALYSES - FILL (SLAG) - LAYER I

Location	SAMPLE		Coordinates		Depth (ft)	DATE		CONCENTRATION (mg/kg)						
	Number		North	East		Collected	Analyzed	Cd	Cr	Cu	Mn	Pb	Zn	
A. Total ¹														
2	1	6757	5888	6000	0	22 Dec 83	13 Jan 84	0.47	1566	367	52.9	3.8	24.6	
16	1	6076	6232	6000	0	22 Dec 83	5 Jan 84	0.21	2640	124	44.6	30.0	90.5	
43	1	5682	6456	6000	0	22 Dec 83	5 Jan 84	0.25	2470	170	48.7	34.6	235	
62	1	5714	6000	6000	0	23 Dec 83	13 Jan 84	2.83	622	1581	14960	503	211	
B. Total ¹														
2	1	6757	5888	6000	0	3 Feb 84	7 Feb 84	<0.05	63.2	587	43.4	16.3	38.6	
16	1	6076	6232	6000	0	3 Feb 84	7 Feb 84	0.67	548	455	48.8	275	3690	
43	1	5682	6456	6000	0	3 Feb 84	7 Feb 84	0.52	2700	156	26	416	416	
62	1	5714	6000	6000	0	3 Feb 84	7 Feb 84	0.76	3440	213	70.1	36.9	550	
TTLC ²														
								100	2500	2500	2000	1000	5000	
C. 48-hour Waste Extraction Test Pulverized to #40 Mesh ³														
2	1	6757	5888	6000	0	22 Dec 83	29 Dec 83	<0.1	467	<0.2	<0.2	<0.25	1.1	
16	1	6076	6232	6000	0	22 Dec 83	29 Dec 83	<0.1	17.0	<0.2	<0.2	<0.25	<0.1	
43	1	5682	6456	6000	0	22 Dec 83	29 Dec 83	<0.1	18.7	<0.2	<0.2	<0.25	<0.1	
62	1	5714	6000	6000	0	23 Dec 83	9 Jan 84	0.44	135	<0.2	47.9	505	520	
D. 48-hour Waste Extraction Test Pulverized to #10 Mesh ⁴														
2	1	6757	5888	6000	0	3 Feb 84	7 Feb 84	<0.05	0.8	0.4	0.9	<0.25	<0.1	
16	1	6076	6232	6000	0	3 Feb 84	7 Feb 84	<0.05	185	1.9	5.3	<0.25	8.6	
43	1	5682	6456	6000	0	3 Feb 84	7 Feb 84	<0.05	10.7	0.4	0.7	<0.25	0.5	
62	1	5714	6000	6000	0	3 Feb 84	7 Feb 84	<0.05	30.6	<0.2	1.3	<0.25	<0.1	
E. 48-hour Waste Extraction Test Non-Pulverized														
2	1	6757	5888	6000	0	6 Jan 84	13 Jan 84	0.34	239	<0.2	6.4	0.6	8.5	
16	1	6076	6232	6000	0	6 Jan 84	13 Jan 84	<0.1	163	<0.2	11.3	2.3	36.2	
43	1	5682	6456	6000	0	6 Jan 84	13 Jan 84	<0.1	274	1.2	10.1	2.3	100	
62	1	5714	6000	6000	0	23 Dec 83	9 Jan 84	<0.1	199	<0.2	5.8	<0.25	100	
STLC ⁵														
								1	560	25	20	5	250	

NOTES:

1. Two samples for total heavy metal analyses were collected from the same sample location on different dates.
2. Total Threshold Level Concentrations (TTLC) are from DMIS (1983).
3. WET test run according to DMIS (1981) crushing specifications.
4. WET test run according to DMIS (1983) crushing specifications.
5. Soluble Threshold Level Concentrations (STLC) are from DMIS (1983).

From: Woodward-Clyde Consultants, 1984

HEAVY METALS AND PH ANALYSES - PREVIOUS SLAG STOCKPILE AREA - SUBLAYER 2-1'

Location	Sample Number	Coordinates		Depth (ft)	DATE		CONCENTRATION (mg/kg)							pH
		North	East		Collected	Analyzed	Cd	Cr	Cu	Ni	Pb	Zn		
1	6	6680	5246	21.0	6 Dec 83	16 Dec 83	0.05	14.8	56.3	11.3	0.8	22.1	4.82	
2	11	6523	6177	51.5	4 Dec 83	16 Dec 83	0.05	18.7	8.63	13.4	1.55	21.5	4.92	
3	11	6311	5629	48.5	5 Dec 83	16 Dec 83	0.05	13.3	6.49	7.69	1.1	14.8	5.62	
12	6	6029	5855	22.5	7 Dec 83	16 Dec 83	<0.05	18.2	10.5	10.4	0.7	16.9	8.62	
17	1	6188	6397	55.5	21 Dec 83	13 Jan 84	0.3	18.5	8.1	13.4	<2.5	22.8	6.83	
25	9	5808	5226	36.0	6 Dec 83	16 Dec 83	<0.05	12.9	7.62	4.23	0.3	7.96	5.92	
45	1	5645	6731	47.5	15 Dec 83	28 Dec 83	0.13	24.6	19.1	16.5	4.7	41.2	6.63	

Notes:

1. pH in units
2. pH analysed on 15 Dec 83
3. pH analysed on 3 Jan 84

From: Woodward-Clyde Consultants, 1984

2000-000220

ORGANIC PRIORITY POLLUTANTS ANALYSES - ORIGINAL GROUND - LAYER 2

Location	S A M P L E		D A T E		C O N C E N T R A T I O N (mg/kg) 1,2							
	Number	Coordinates North East	Depth (ft)	Collected	Analyzed	Methylene Chloride	Bis (2-Ethylhexyl) Phthalate	Di-N-Butyl Phthalate	Butyl Benzyl Phthalate	Dibutyl Phthalate	Diethyl Phthalate	1,2-Dichloro- Benzene
5	6	6680 5246	22.0	6 Dec 83	13 Jan 84	ND ³	0.54	Trace	Trace	Trace	Trace	ND
14	10	6128 6078	43.5	8 Dec 83	2 Jan 84	ND ⁴	ND	ND	ND	ND	ND	ND
25	9	5808 5228	36.0	6 Dec 83	17 Jan 84	ND ³	Trace	0.29	ND	Trace	Trace	ND
34	16	5590 5685	72.5	13 Dec 83	17 Jan 84	ND ³	ND	Trace	ND	ND	Trace	Trace
45	3	5645 6731	47.5	15 Dec 83	17 Jan 84	ND ³	Trace	0.29	ND	ND	Trace	Trace
50	1	5420 6385	29.5	15 Dec 83	17 Jan 84	ND ³	ND	0.26	ND	Trace	Trace	ND
59	3	5130 6572	25.5	15 Dec 83	13 Jan 84	2.05	4.5	Trace	ND	ND	ND	ND

1999-000229

Notes:

1. Only detected organic priority pollutants are listed.
2. ND = none detected; trace indicates that an amount lower than the detection limit was encountered.
3. Volatile organics analyzed on 27 Dec 83.
4. Volatile organics analyzed on 20 Dec 83.
5. Volatile organics analyzed on 28 Dec 83.

From: Woodward-Clyde Consultants, 1984

HEAVY METALS AND FLUORIDE ANALYSES - POND/CANALS - SUBLAYER 2-2

Location	SAMPLE		Depth (ft)	DATE		CONCENTRATION (ug/kg)									
	Number	Coordinates North East		Collected	Analyzed	Cd	Cf	Cu	Hl	Pb	Zn	P ¹			
44	1	5560 6580	35.5	22 Dec 83	5 Jan 84	0.11	18.4	9.0	12.8	1.7	34.4	<0.2			
53 <i>canal</i>	6	5380 6320	26.5	12 Dec 83	16 Dec 83	<0.05	12.6	6.12	5.4	0.3	11.7	---			
54	1	5420 6385	29.5	15 Dec 83	28 Dec 83	<0.05	10.8	6.8	6.4	42.5	21.1	0.9			
56	1	5400 6690	43.5	22 Dec 83	5 Jan 84	0.09	19.9	25.4	17.2	3.0	51.0	---			
57	1	5310 6740	50.5	22 Dec 83	5 Jan 84	0.05	11.4	2.0	6.4	1.0	19.3	---			
58	2	5252 6760	61.5	18 Dec 83	28 Dec 83	<0.05	11.1	1.7	7.5	<2.5	11.4	---			
60	6	5140 6820	69.5	16 Dec 83	28 Dec 83	<0.05	12.7	5.7	6.5	<2.5	7.9	0.5			

Note:

1. Fluoride analyzed on 4 Jan 84.

From: Woodward-Clyde Consultants, 1984

SEMI-VOLATILE ORGANIC PRIORITY POLLUTANTS ANALYSES - POND/CANALS - SUBLAYER 2-2

Location	Number	S.A.M.P.L.E.		Depth (ft)	D.A.T.E.	C.O.N.C.E.N.T.R.A.T.I.O.N (mg/kg)l.2									
		Coordinates North	East			Diethyl Phthalate	Di-N-Butyl Phthalate	Phenol	Di-N-Octyl Phthalate	Bis (2-Ethyl- hexyl) Phthalate	ND	ND	ND		
54	1	5560	6580	35.5	22 Dec 83	28 Dec 83	Trace	Trace	Trace	ND	ND	ND	ND	ND	ND
53	6	5360	6320	26.5	12 Dec 83	20 Dec 83	ND	ND	ND	ND	ND	ND	ND	ND	ND
54	1	5420	6385	29.5	15 Dec 83	27 Dec 83	Trace	0.26	ND	ND	ND	ND	ND	ND	ND
56	1	5400	6690	43.5	22 Dec 83	28 Dec 83	Trace	ND	Trace	ND	ND	ND	ND	ND	ND
57	1	5310	6740	50.5	22 Dec 83	28 Dec 83	Trace	0.40	ND	ND	0.25	Trace	Trace	Trace	Trace
59	2	5252	6760	61.5	16 Dec 83	16 Jan 84	ND	ND	ND	ND	ND	ND	ND	ND	ND
60	8	5140	6820	69.5	16 Dec 83	16 Jan 84	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

1. ND = none detected; trace indicates that an amount lower than the detection limit was encountered.
2. Only detected semi-volatile organic priority pollutants are listed.

From: Woodward-Clyde Consultants, 1984

EXTRACTABLE HYDROCARBON (OIL) AND VOLATILE ORGANIC PRIORITY POLLUTANTS ANALYSES -
POND/CANALS - SUBLAYER 2-2

Location	SAMPLE		Depth (ft)	DATE		CONCENTRATION (mg/kg) ¹			
	Number	Coordinates North East		Collected	Analyzed	Product ³	Methylene Chloride	Chloroform	
44	1	5560	6580	35.5	22 Dec 83	18 Jan 84	8.7	ND	ND
53	6	5380	6120	26.5	12 Dec 83	16 Jan 84	5.0	ND	ND
54	1	5420	6385	29.5	15 Dec 83	17 Jan 84	33.6 ²	ND	ND
56	1	5400	6690	43.5	22 Dec 83	18 Jan 84	6.2	ND	ND
57	1	5310	6740	50.5	22 Dec 83	13 Jan 84	45.5	ND	ND
58	1	5270	6760	61.5	18 Dec 83	20 Jan 84	36.6 ²	0.2	0.1
59	1	5140	6820	59.5	16 Dec 83	20 Jan 84	89.8 ²	0.2	0.1

NOTES:

1. ND = none detected; trace indicates that an amount was observed lower than the detection limit. Only detected organic priority pollutants are listed.
2. Analyzed on 28 Dec 83.
3. Extractable hydrocarbon concentrations were reported in mg/kg. These concentrations are considered to be approximately equivalent to (petroleum) product concentrations.

From: Woodward-Clyde Consultants, 1984

PH ANALYSES - ACID LINE/STORAGE AREA - SUBLAYER 2-3

Location	S A M P L E		D A T E		U N I T
	Number	Coordinates North East	Depth (ft)	Collected Analyzed	
41	8	5700 6090	35.0	7 Dec 83 15 Dec 83	6.3
42	5	5655 6200	19.5	10 Dec 83 15 Dec 83	4.5
49	13	5236 5470	62.5	10 Dec 83 15 Dec 83	4.6
50	3	5231 5765	12.5	12 Dec 83 15 Dec 83	6.7
51	6	5238 5939	24.5	12 Dec 83 13 Dec 83	7.7
52	11	5248 6258	48.5	12 Dec 83 15 Dec 83	6.2
55	10	5215 6462	52.5	10 Dec 83 15 Dec 83	5.4
59	1	5130 6562	35.5	15 Dec 83 3 Jan 84	8.3
61	10	4850 6770	41.5	15 Dec 83 3 Jan 84	6.2

Note:

1. pH in units

From: Woodward-Clyde Consultants, 1984

1990-000220

ASBESTOS ANALYSES - SUBLAYER 2-4

Location	S A M P L E		Depth (ft)	DATE		CONCENTRATION, %	
	Number	Coordinates North. East		Collected	Analyzed	ASBESTOS	
14	6	6128 6078	25.0	8 Dec 83	9 Jan 84	0	0
23	3	5610 5132	10.5	2 Dec 83	9 Jan 84	0	0
27	1	5856 5480	9.5	20 Dec 83	9 Jan 84	0	0
31	4	5780 5550	13.5	3 Dec 83	9 Jan 84	0	0
33	4	5585 5662	17.5	5 Dec 83	9 Jan 84	0	0
39	5	5652 5763	19.5	3 Dec 83	9 Jan 84	0	0

NOTE:

1. Percent
2. Method identifies fibers with diameters greater than 1.0 μ m.

From: Woodward-Clyde Consultants, 1984.

RADIONUCLIDE ANALYSES -- SUBLAYER 2-5

S A M P L E				D A T E		R A D I O A C T I V I T Y		
Location	Number	Coordinates North East	Depth (ft)	Collected	Analyzed	Gross Alpha Count	Gross Beta Count	pCi/gl
22	9	5562 5055	39.5	2 Dec 83	12 Jan 84	0 ± 3	45 ± 7	
24	5	5643 5172	19.5	2 Dec 83	12 Jan 84	4 ± 2	33 ± 6	
26	12	5586 5338	47.5	2 Dec 83	12 Jan 84	3 ± 2	40 ± 5	
32	13	5572 5568	59.5	3 Dec 83	12 Jan 84	4 ± 3	37 ± 5	
34	16	5590 5685	72.5	13 Dec 83	12 Jan 84	0 ± 3	26 ± 8	
36	8	5762 5778	32.5	2 Dec 83	12 Jun 84	7 ± 3	39 ± 6	
40	15	5675 5810	64.6	3 Dec 83	12 Jan 84	0 ± 3	24 ± 7	

Note:

1. PicoCurie/gram dry weight ± 2σ. PicoCurie is a unit of radioactive disintegration equal to 3.70 x 10⁻¹² disintegrations per second.

From: Woodward-Clyde Consultants, 1984

POLYCHLORINATED BIPHENYL (PCB) ANALYSES - SUBLAYER 2-6

Location	SAMPLE			DATE		CONCENTRATION (mg/kg)
	Number	Coordinates North East	Depth (ft)	Collected	Analyzed	
19	3	5960 4740	9.5	8 Dec 83	16 Jan 84	<0.05
20	2	5922 4740	7.5	8 Dec 83	16 Jan 84	<0.05
21	2	5885 4740	7.5	8 Dec 83	16 Jan 84	<0.05
28	3	5654 5470	8.5	6 Dec 83	16 Jan 84	<0.05
29	4	5654 5518	13.5	5 Dec 83	5 Jan 84	<0.05
30	4	5654 5567	13.5	5 Dec 83	5 Jan 84	<0.05
37	5	5695 5720	18.5	9 Dec 83	5 Jan 84	<0.05
38	5	5695 5752	19.5	9 Dec 83	5 Jan 84	<0.05
46	3	5427 5498	11.0	6 Dec 83	16 Jan 84	<0.05
47	3	5360 5548	11.0	6 Dec 83	16 Jan 84	<0.05
48	4	5360 5592	12.5	6 Dec 83	16 Jan 84	<0.05

From: Woodward-Clyde Consultants, 1984

EXTRACTABLE HYDROCARBONS (OIL) AND PCB ANALYSES -
OIL PIPELINES AND VAULT - SUBLAYER 2-2
2-7 ?

SAMPLE			DATE		CONCENTRATION (mg/kg)		
Location	Number	Coordinates North East	Depth (ft.)	Collected	Analyzed	Product ¹	PCB ^{2,3}
4	7	6219 4793	29.5	15 Dec 83	28 Dec 83	41.4	<0.05
5	15	6220 5198	66.5	14 Dec 83	28 Dec 83	49.8	--
7	5	6190 5367	20.5	9 Dec 83	20 Dec 83	45.0	--
11	14	6190 5790	57.5	8 Dec 83	17 Jan 84	1410	--
13	7	6200 6050	48.5	10 Dec 83	20 Dec 83	45.0	40.05
15	4	6180 6208	29.5	20 Dec 83	29 Dec 83	37.1	--
18	15	6190 6542	74.5	9 Dec 83	20 Dec 83	45.0	<0.05
35	2	5755 5734	35.5	20 Dec 83	28 Dec 83	12.7	--

Notes:

1. Extractable hydrocarbon concentrations were reported in mg/kg. These concentrations are considered to be approximately equivalent to (petroleum) product concentrations.
2. Analyzed on 5 Jan 84.
3. PCB analyses were conducted on three samples; the symbol -- indicates no analysis was conducted for PCB's.

From: Woodward-Clyde Consultants, 1984

**HEAVY METALS AND ORGANIC PRIORITY POLLUTANTS ANALYSES
POND/CANALS STOCKPILE AREA - SUBLAYER 2-8**

Location	S.A.M.P.L.E		Depth (ft)	DATE		C O N C E N T R A T I O N S (mg/kg)						
	Number	Coordinates North East		Collected	Analyzed ¹	Cd	Cr	Cu	Ni	Pb	Zn	Priority 2 Pollutants ²
6	2	6115 5175	5.5	8 Dec 83	2 Jan 84 ³	0.20	44.6	55.9	35.9	4.4	101	ND
8	1	6050 5185	1.5	8 Dec 83	2 Jan 84 ³	0.10	83.6	16.3	12.6	2.9	40.6	ND
10	2	6082 5580	3.5	8 Dec 83	3 Jan 84 ³	0.05	27.8	14.4	10.3	2.2	38.6	ND

STC

Notes:

1. Heavy metal sample analyzed on 16 Dec. 83; date of analysis given is for priority pollutants.
2. ND = none detected.
3. Organic priority pollutants were analyzed on 20 December 1983.

From: Woodward-Clyde Consultants, 1984

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

WATER CONSERVATION DIVISION

WATER QUALITY WORK SHEET

38878

(11)

D 75 L.S. NO. D
 3 G LA 114

ANALYSIS

STATION NO. 04S14W11G04S YR. MO. DAY 75 05 12 TIME (PST) 1,120 CO 1,9 FIELD TEMP. U 75 F
 FIELD EC FIELD pH DO DISCHARGE (CFS) G.H. (FT) DEPTH (FT) SAMPLER 1,1,0,1 CARD CODE 1 A

AGENT	VOLUME OF DILUTION	ANALYTICAL DATA	FACTOR	ION (mg/l)	mg/l	mg/l
CHLORINE	150	10.09	9.80	19.7	0.01998	3.94
CALCIUM	10	11.91	3.85	47.0	0.04990	2.35
MAGNESIUM		8.08	2.295	19.4	0.08226	1.60
IRON		602 58.5	1	58.5	0.04350	2.54
ZINC		602 6.44	1	6.4	0.02557	0.16
COPPER		0-1		0	0.05544	0
TOTAL CATIONS					XXXX	6.65
FLUORIDE	150	13.10	20.10	26.3	0.05880	4.32
CHLORIDE				0, 8.1	0.01639	0
NITRATE		0.20	50.61	10.1	0.03333	0
NITRITE	150	3.91	21.88	84.8	0.02082	0.21
AMMONIUM		4 = 0.8 0-1 0.007	0.007	0.8	0.02821	2.39
PHOSPHATE					0.01613	0
SULFATE					0.03159	
CHLORIDE					0.05264	

ION TURBIDITY CODE R
 Candle = C
 Hatch = A
 Hellige = E

DIS. SOLIDS T
 150 ml 180°C = 8
 105°C = 5

TOTAL ANIONS XXXX 6.92
 BALANCE XXXX 5.27
 TOTAL IONS 48.9 mg/l

SPECIFIC CONDUCTANCE
 RT 25 T 25 F 0.99
 Cell K 2 - R25 755
 MICROMHOS/cm 6.62

SILICA

B mg/l TURB. CODE R
 1, 0, 1 3 A

I.D.S. (mg/l) T
 37.78

1998-000220

D T LAB NO.

36 LA 514

1 2 3 7 8 5 9

name _____ address _____

city _____ zip code _____ copy to owner

REF POINT _____ CL RESID. _____ COLOR NONE

DETAILED LOCATION 785 D DIST. TO H₂O _____ SECCHI _____ ODOUR NONE

PPG _____ WIND _____ FOAM _____

USE _____ % CLOUD COVER _____

PERF INTER _____ ALGAE _____ TURSIDIO NONE

REMARKS _____

SAMPLED BY MLS

MISCELLANEOUS

CL mg/l [5] [12] [13] [18] [17] CODE obs=A lab=L OAG mg/l [10] [20] CH mg/l [21] [23] PHENOL mg/l [26] [31] SET SOL ml/l [32] [34] [35] CODE field=F lab=L

SET SOL mg/l [38] [40] [41] [43] COD mg/l [45] [49] TANNIC ACID mg/l [50] [54] [55] BOD mg/l [58] [62] SUS SOL mg/l [63] CODE 130°C=8 105°C=5 VSS mg/l [64] [66]

PH [69] [71] [72] [74] COLOR UNITS [75] [78] LAB [1,10,1] [2,A] TOC mg/l [9] [12] [13] [16] DCC mg/l [17] [20] [21] [23] [27] [32] [33] [37] [38] [42] [43] [47] [72] [80]

I mg/l [17] [20] [21] [23] Br mg/l [27] [32] SO₃ mg/l [33] [37] SULFIDES TOT [38] [42] [43] [47] [72] [80] SULFIDES DIS [43] [47] [72] [80] ODOUR [72] [80]

NITRITE AS N mg/l [41] [47] x.3043= [49] [53] HITRATE AS N mg/l [49] [53] 0.0 x.7733= [55] [62] AMMONIA AS N mg/l [55] [62]

ORGANIC N mg/l [63] [69] LAB [2,A] [79] [80] ORTHO PO₄ DIS mg/l [79] [80] x.3261= [79] [80] ORTHO PO₄ TOTAL mg/l [79] [80] x.3261= [79] [80]

NUTRIENT

LAB [1,10,1] [3,A] [74] [77] [73] [30] [79] [80] [4] [79] [79] [80] FE mg/l [57] [63] [64] [79] 0.04 T [2]

MEI, 2

MN mg/l [5] [13] [15] 0.05 T [17] [23] [24] HG mg/l [49] [53] LAB OV [79] [79] [3] [79] [17] [23] [24] [79] Ni mg/l [17] [23] [24] [79] T [3]

BACTER

FECAL COLI /100ml [9] [13] [15] [22] [23] [29] [79] [5] TOTAL COLI /100ml [15] [22] [23] [29] [79] [5] FECAL STRSP /100ml [9] [13] [15] [22] [23] [29] [79] [5]

PARAM _____ PARAM _____ PARAM _____ PARAM _____ PARAM _____

1999-000229

DATE TO LAB MAY 1 1978 DATE STARTED MAY 1 1978 DATE COMPLETED JUN 13 1978

CHEMIST _____ CHECKED _____

Harding Lawson Associates

APPENDIX B
FORMER U.S. STEEL WATER WELL INFORMATION

1990-000229

DIVISION OF WATER RESOURCES

WELL LOG

Well No. _____

County _____

Location _____

State _____

Date _____

Driller _____

Well Depth _____

Company _____

Well No. _____

State _____

Date _____

Driller _____

Well Depth _____

Company _____

Well No. _____

State _____

Date _____

Driller _____

Well Depth _____

Company _____

Well No. _____

State _____

Date _____

Driller _____

Well Depth _____

Company _____

Well No. _____

State _____

Date _____

Driller _____

Well Depth _____

Company _____

WELL LOG

COUNTY: Washington COUNTY SECT: 10
 TOWNSHIP: 10N RANGE: 10E
 SECTION: 10
 DATE COMPLETED: 12/17/72
 COUNTY OF RECORDING: 10
 OPERATOR: B.B. Fish
 PURPOSE OF INFORMATION: See file no.
 TYPE OF WELL & DRILLING: See file no.
 WELL IDENTIFICATION: 64151

DEPTH (FEET)	ELEVATION OF SURFACE OF BOREHOLE	MATERIAL	PERMEABLE	WATER BEARING	WELL LOG
0-5		White sandstone			
5-10		Yellow clay sandstone			
10-15		White yellow sandstone			
15-20		White sandstone			
20-25		White sandstone			
25-30		White sandstone			
30-35		White sandstone			
35-40		White sandstone			
40-45		White sandstone			
45-50		White sandstone			
50-55		White sandstone			
55-60		White sandstone			
60-65		White sandstone			
65-70		White sandstone			
70-75		White sandstone			
75-80		White sandstone			
80-85		White sandstone			
85-90		White sandstone			
90-95		White sandstone			
95-100		White sandstone			
100-105		White sandstone			
105-110		White sandstone			
110-115		White sandstone			
115-120		White sandstone			
120-125		White sandstone			
125-130		White sandstone			
130-135		White sandstone			
135-140		White sandstone			
140-145		White sandstone			
145-150		White sandstone			
150-155		White sandstone			
155-160		White sandstone			
160-165		White sandstone			
165-170		White sandstone			
170-175		White sandstone			
175-180		White sandstone			
180-185		White sandstone			
185-190		White sandstone			
190-195		White sandstone			
195-200		White sandstone			
200-205		White sandstone			
205-210		White sandstone			
210-215		White sandstone			
215-220		White sandstone			
220-225		White sandstone			
225-230		White sandstone			
230-235		White sandstone			
235-240		White sandstone			
240-245		White sandstone			
245-250		White sandstone			
250-255		White sandstone			
255-260		White sandstone			
260-265		White sandstone			
265-270		White sandstone			
270-275		White sandstone			
275-280		White sandstone			
280-285		White sandstone			
285-290		White sandstone			
290-295		White sandstone			
295-300		White sandstone			
300-305		White sandstone			
305-310		White sandstone			
310-315		White sandstone			
315-320		White sandstone			
320-325		White sandstone			
325-330		White sandstone			
330-335		White sandstone			
335-340		White sandstone			
340-345		White sandstone			
345-350		White sandstone			
350-355		White sandstone			
355-360		White sandstone			
360-365		White sandstone			
365-370		White sandstone			
370-375		White sandstone			
375-380		White sandstone			
380-385		White sandstone			
385-390		White sandstone			
390-395		White sandstone			
395-400		White sandstone			
400-405		White sandstone			
405-410		White sandstone			
410-415		White sandstone			
415-420		White sandstone			
420-425		White sandstone			
425-430		White sandstone			
430-435		White sandstone			
435-440		White sandstone			
440-445		White sandstone			
445-450		White sandstone			
450-455		White sandstone			
455-460		White sandstone			
460-465		White sandstone			
465-470		White sandstone			
470-475		White sandstone			
475-480		White sandstone			
480-485		White sandstone			
485-490		White sandstone			
490-495		White sandstone			
495-500		White sandstone			
500-505		White sandstone			
505-510		White sandstone			
510-515		White sandstone			
515-520		White sandstone			
520-525		White sandstone			
525-530		White sandstone			
530-535		White sandstone			
535-540		White sandstone			
540-545		White sandstone			
545-550		White sandstone			
550-555		White sandstone			
555-560		White sandstone			
560-565		White sandstone			
565-570		White sandstone			
570-575		White sandstone			
575-580		White sandstone			
580-585		White sandstone			
585-590		White sandstone			
590-595		White sandstone			
595-600		White sandstone			
600-605		White sandstone			
605-610		White sandstone			
610-615		White sandstone			
615-620		White sandstone			
620-625		White sandstone			
625-630		White sandstone			
630-635		White sandstone			
635-640		White sandstone			
640-645		White sandstone			
645-650		White sandstone			
650-655		White sandstone			
655-660		White sandstone			
660-665		White sandstone			
665-670		White sandstone			
670-675		White sandstone			
675-680		White sandstone			
680-685		White sandstone			
685-690		White sandstone			
690-695		White sandstone			
695-700		White sandstone			
700-705		White sandstone			
705-710		White sandstone			
710-715		White sandstone			
715-720		White sandstone			
720-725		White sandstone			
725-730		White sandstone			
730-735		White sandstone			
735-740		White sandstone			
740-745		White sandstone			
745-750		White sandstone			
750-755		White sandstone			
755-760		White sandstone			
760-765		White sandstone			
765-770		White sandstone			
770-775		White sandstone			
775-780		White sandstone			
780-785		White sandstone			
785-790		White sandstone			
790-795		White sandstone			
795-800		White sandstone			
800-805		White sandstone			
805-810		White sandstone			
810-815		White sandstone			
815-820		White sandstone			
820-825		White sandstone			
825-830		White sandstone			
830-835		White sandstone			
835-840		White sandstone			
840-845		White sandstone			
845-850		White sandstone			
850-855		White sandstone			
855-860		White sandstone			
860-865		White sandstone			
865-870		White sandstone			
870-875		White sandstone			
875-880		White sandstone			
880-885		White sandstone			
885-890		White sandstone			
890-895		White sandstone			
895-900		White sandstone			
900-905		White sandstone			
905-910		White sandstone			
910-915		White sandstone			
915-920		White sandstone			
920-925		White sandstone			
925-930		White sandstone			
930-935		White sandstone			
935-940		White sandstone			
940-945		White sandstone			
945-950		White sandstone			
950-955		White sandstone			
955-960		White sandstone			
960-965		White sandstone			
965-970		White sandstone			
970-975		White sandstone			
975-980		White sandstone			
980-985		White sandstone			
985-990		White sandstone			
990-995		White sandstone			
995-1000		White sandstone			

1999-000229

DIVISION OF WATER RESOURCES
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

South Coastal Plain

NUMBER 31038

WELL LOG

LOCAL DESIGNATION

Owner #1

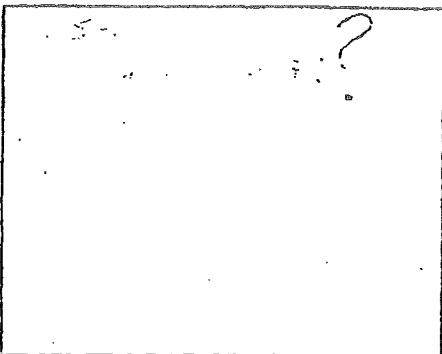
LOCATION 500' east of Arlington St., 600'
south of 28th St.

LOG AREA
USGS 74-11E2
LANDMAP S-D-13
HAYS#45

OWNER C. M. H. Reed Co.

SKETCH

DATE COMPLETED Jan 1937



DIAMETER OF CASING 14"

DRILLED BY E. B. Fisher

SOURCE OF INFORMATION L. O. P. C.

INSPECTED WHILE DRILLING SEE FILE NO.

SURFACE ELEVATION 67' ± S

FOR FIELD COPIES USE ALTERNATE LINES

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
0-6	61	2113				
76	51	Yellow clay, fine sand	CS			
68	41	Yellow yellow sand with clay	75			
69	4	Fine yellow sand	5			
90	2	Coarse yellow sand	5			
110	21	Coarse yellow sand, yellow	6			
150	21	Blue medium sand, yellow	6			
175	20	Blue coarse yellow sand	5			
210	19	Fine blue sand (partly)	75			
266	18	Blue clay	5			
293	18	Fine coarse sand	5			
304	21	Fine medium sand (partly)	19			
337	18	Fine blue sand (partly)	15			
350	17	Blue medium sand	6			
361	21	Blue coarse sand (partly)	10			
380	23	Blue medium sand	5			
382	21	Blue coarse sand (partly)	19			
408	18	Blue medium sand	4			
457	18	Blue medium sand, silty	7			
577	18	Blue clay	6			
598	18	Coarse sand and gravel (part)	10			
617	18	Medium sand and gravel (part)	7			
		12/2/38 Well found covered over with concrete to prevent access.				

LOG OBTAINED BY DATE

1936-000220

State of California
DEPARTMENT OF WATER RESOURCES

WATER ANALYSIS
Province _____

GROUND WATER SURFACE WATER _____
WASTE Domestic _____ Industrial _____

WASTE	Sample No.	189	GROUND WATER	State	4 ^N 14 ^E 11 ^E 1	S		
	Source	Lab. No. 44322		G.W. Basin	U. Coast		Wall No.	U-05-A2
	Treatment	Work Authority No. 1408-0014		Date drilled			Date	10-18-66
	Loc. of Disch.	Type of Analysis Std. Men.		Depth	Dia.		Analysis No.	Time 08.30
Disch. to		Log No.		County	LA-70	Temp. 72 ° F		
Gate Ht.	Disch. (of)	M.P.U.	Sampled Depth	Laboratory	5050	Surface Water No.		
General location		Use		Other Identification No.	#4 U.S. STEEL			
Detailed locations		Pumping	CON'T.	Field pH		D.O.		
		General location		Point of Collection	Tap on Disch.			
		Detailed locations			U.S. Steel #4			

OWNER: U.S. Steel Name Address Torrance City Zip Code Copy to owner

REMARKS: COLORLESS. ODORLESS.

Analyst's name: Graham Organization: So. Dist. DWR Agency Code No.: 5050

pH <u>8.4</u>	Cell Constant	ALKALINITY _____ ml _____	<u>0.1</u> ppm BORON	Additional Analysis
<u>977</u>	R _____ T _____			
EC x 10 ⁰	R _____ T _____			
<u>79</u> ppm CALCIUM	<u>3.94</u> ppm	<u>8</u> ppm CO ₃ <u>0.27</u> ppm		
		<u>240</u> ppm HCO ₃ <u>3.93</u> ppm		
		<u>48</u> ppm SULFATE	<u>1.00</u> ppm	
<u>22</u> ppm MAGNESIUM	<u>1.83</u> ppm			
<u>82</u> ppm SODIUM	<u>3.57</u> ppm	<u>145</u> ppm CHLORIDE	<u>4.09</u> ppm	
			<u>572</u> ppm TOTAL DISSOLVED SOLIDS	
<u>68</u> ppm POTASSIUM	<u>0.17</u> ppm	<u>3.0</u> ppm NITRATE	<u>0.05</u> ppm	
		Devarda's <input type="checkbox"/>		
			<u>289</u> ppm TOTAL HARDNESS	
			ppm Alkalinity	
			<u>79</u> ppm	
			TURBIDITY _____ J.C.U.	
			Date into Laboratory	
			Date Started	
			Date Completed	
			CHEMIST	

ANALYSIS OF WATER

DRAINAGE PROVINCE

GROUND ✓ SURFACE WASTE

Use: Dom. Ind. ✓ Irr. Other ✓

Sample Number 3205	Laboratory Number R 2611	Work Authority Number 1408-0722	State Well No. 4 S 14 W 11E1
Type of Analysis COMPLIANCE		Areal Code U.O.A.2	Date Sampled 9/2/69
G.W. Basin _____ Source _____		Analysis No. 1	Time 1:30 PST
Date drilled _____ Depth _____ Dia. _____ Treatment _____	Location of discharge _____	Country 70 ✓	Temp 77 °F
M.P.U. _____ Depth to water _____	Location of discharge _____	Laboratory Code No. 5050	Surface Water No. _____
Sampled depth _____ Ppg. _____ Discharge to _____	G.S. Elev. _____	Gage Ht. _____ Disch. _____ cfs	gpm _____
Perf. _____	G.S. Elev. _____	Field pH _____	D.O. _____
General location _____ miles _____ of _____		Other identification _____	
Detailed location _____		Point of collection Hydrant	
OWNER Name U.S. STONE	Address _____	City _____	Zip code 111 Color 111
REMARKS:		Send copy to owner <input checked="" type="checkbox"/>	Odor 110 Foam 110
		Cl. Resid. _____	Algae 110
Sampler Ed Brammer	of D.W.R.	Agency Code No. 1072	Turbid 110

pH 7.9	Cell Constant	ALKALINITY _____ ml _____		0.12 mg/l	Additional Analyses
956	R _____ T _____			BORON (B)	
SPECIFIC CONDUCT. micromhos/cm	R _____ T _____	0 mg/l CO ₃ 0 meq/l	0 mg/l	MBAS as ABS	
53 mg/l 2.64 meq/l	CALCIUM (Ca)	255 mg/l HCO ₃ 4.18 meq/l	45 mg/l 0.94 meq/l	SULFATE (SO ₄)	
37 mg/l 3.07 meq/l	MAGNESIUM (Mg)	134 mg/l 3.78 meq/l	4 mg/l 0.06 meq/l	NITRATE (NO ₃)	
72 mg/l 3.15 meq/l	SODIUM (Na)	4 mg/l 0.06 meq/l	285 mg/l	TOTAL HARDNESS (CaCO ₃)	
10 mg/l 0.25 meq/l	POTASSIUM (K)	Devarda's <input type="checkbox"/>	209 mg/l	TOTAL ALKALINITY as CaCO ₃	
_____ mg/l _____ meq/l	AMMONIUM (NH ₄)	0.28 mg/l 0.01 meq/l	COLIFORM: MPN/100ml	TURBIDITY _____ units	
		Distilled <input type="checkbox"/>	B.O.D. (5 day) _____ mg/l	Date Into Laboratory	
TOTAL CATIONS 9.11 meq/l	TOTAL ANIONS 8.97 meq/l		SET S. _____ ml/l/hr	Date Started	
			SUS. S. _____ mg/l	Date Completed 4-23-69	
				CHEMIST 7	

1999-00229

State of California
DEPARTMENT OF WATER RESOURCES

WATER ANALYSIS

GROUND WATER X SURFACE WATER _____
WASTE _____ Domestic _____ Industrial _____

WASTE	Sample No. 0990	GROUND WATER	State Well No. A #14 W 11F1
Source	Lab. No. 20761	G.W. Basin W. COAST	Area Code U-05.A2 Date 3/28/67
Treatment	Work Authority No. 1408-1400	Date drilled _____	Analysis No. 1 Time 1145 PST
Loc. of Disch.	Type of Analysis Comp.	Depth _____ Dia. _____	County L.A. 70 Temp. 72
Disch. to		Log No. _____	Laboratory Code No. 5050 Surface Water No. _____
Age Ht. _____	Disch. (afa) _____	M.P.U. _____ Sampled Depth _____	Use INDUST. Other Identification No. Dumeva #4
General location _____ miles _____ of _____		Pumping CONT SLY Field pH _____	B.O. _____
Detailed location U.S. STEEL WELL #4		Point of Collection 840 BLOOR AV., TORRANCE	

OWNER: **U.S. STEEL**
Name _____ Address _____ City _____ Zip Code _____ Copy to owner X
REMARKS: **COLLECT, H₂S ODR.**

Sample's name **M. Quin** Organizations **DWR** Agency Code No. **5050**

PH 8.2	Cell Constant	ALKALINITY _____ ml _____	0.15 ppm BORON	Additional Analysis
922	R _____ T _____			
SC x 10 ⁰	R _____ T _____			
75 ppm	3.74 ppm	0 ppm CO ₂ 0 ppm		
CALCIUM		242 ppm HCO ₃ 3.76 ppm		
		41 ppm 0.86 ppm	HBAS as ABS	
23 ppm	1.89 ppm	SULFATE		
MAGNESIUM			PHOSPHATE ppm	
80 ppm	3.48 ppm	151 ppm 4.26 ppm	594 ppm TOTAL DISSOLVED SOLIDS	
SODIUM		CHLORIDE		
7 ppm	0.18 ppm	1.0 ppm 0.02 ppm		
POTASSIUM		NITRATE		
		Dovarda's <input type="checkbox"/>	37 % % SODIUM	TURBIDITY _____ J.C.U.
		0.3 ppm 0.02 ppm	282 ppm TOTAL HARDNESS	Date into Laboratory
AMONIUM		FLUORIDE	198 ppm Alkalinity	Date Starts APR 26 1967
		Dialing <input type="checkbox"/>	84	Date Completed APR 20 1967
				REMARKS

1999-000229

ANALYSIS OF WATER

GROUND X SURFACE _____ WASTE _____
User Dom. _____ Ind. _____ Irr. _____ Other _____

Sample Number 1338	Laboratory Number R-2217	Work Authority Number 1400-0749	State Well No. 4 ^M _S 19 ^E _W 11E1
Type of Analysis GROUND	completo		Areal Code U-TS-A2
G.W. Basin	Source	Analysis No.	Time 1200 PST
Date drilled	Depth	Dia	Treatment
M.P.U.	Depth to water	Location of discharge	County 70
Sampled depth	Ppg.	Discharge to	Temp 72 °F
Perf.	G.S. Elev.	Field pH	Laboratory Code No. 5050
General location	miles of	Other Identification	Surface Water No.
Detailed location	Point of collection		Gage Ht.
			Disch. _____ cfs
			gpm

OWNER Name _____ Address _____ City _____ Zip code _____

REMARKS: _____ Send copy to owner

Sampler **D. Sant...** of **DWR**

Color _____ Odor _____
Foam _____ Algae _____
Turbid _____

pH 8.0	Cell Constant	ALKALINITY _____ ml _____	0.20 mg/l	Additional Analytes
92.1	R _____ T _____		BORON (B)	
SPECIFIC CONDUCT. _____ micromhos/cm	R _____ T _____			
71 mg/l	3.54 meq/l	_____ mg/l CO ₃ _____ meq/l	_____ mg/l	
CALCIUM (Ca)		256 mg/l HCO ₃ 4.19 meq/l	MBAS as ABS	
		44 mg/l 0.91 meq/l	_____ mg/l	
		SULFATE (SO ₄)	ORTHOPHOSPHATE (PO ₄)	
26 mg/l	2.14 meq/l		513 mg/l	TOTAL DISSOLVED SOLIDS (at 180° C)
MAGNESIUM (Mg)				
83 mg/l	3.60 meq/l	145 mg/l 4.10 meq/l		
SODIUM (Na)		CHLORIDE (Cl)		1999-000229
6 mg/l	0.15 meq/l	1.5 mg/l 0.02 meq/l	284 mg/l	TOTAL HARDNESS (CaCO ₃)
POTASSIUM (K)		NITRATE (NO ₃)	210 mg/l	TOTAL ALKALINITY as CaCO ₃
		Devarda's <input type="checkbox"/>		TURBIDITY _____ units
		0.1 mg/l .00 meq/l	COLIFORM: MPN/100ml	Date into Laboratory
AMMONIUM (NH ₄)		FLUORIDE (F)		Date Started 4-17-68
		Distilled <input type="checkbox"/>	B.O.D. (5 day) _____ mg/l	Date Completed 4-22-68
TOTAL CATIONS 9.41 meq/l	TOTAL ANIONS 9.22 meq/l		SUS. S. _____	CHEMIST T...

Harding Lawson Associates

APPENDIX C

ADDENDUM REPORT – REPORT OF OBSERVATIONS
HONDA SITE TANK PULL
TORRANCE, CALIFORNIA

1000-000220

April 18, 1989
6258,127.11
Mr. G.M. Sparks
Mobil Oil Corporation
Page 2

Discussions with representatives from ESI and WCC indicated that the UST had been purged of an unknown volume of a liquid (believed to be gasoline) using a vacuum truck. The UST had been flushed with water, which also was removed with the vacuum truck. Dry ice had been placed inside the UST to purge any explosive vapors from the interior prior to pulling the UST from the excavation. As UST excavation continued, a moderate hydrocarbon (HC) odor was detected in the ambient air. A soil sample (HTP-1) was collected at this time. Sample HTP-1 registered a reading of 165 on a calibrated photoionization detector (PID). Soil sample information, including sample location and PID reading, is presented in Table 1.

At approximately 1:30 p.m., a City of Torrance (City) inspector arrived at the site, and the UST was pulled from the excavation. The UST was approximately 15 feet in length and 5.5 to 6 feet in diameter.

Upon inspection of the UST bottom, approximately eight holes were observed on what had been the northwest end. The largest of these holes was approximately 4 inches in diameter. One hole was observed near the mid-section of the UST and was filled with dry ice. The City inspector indicated that the City had record of a UST that had been installed at an unknown location in 1951, removed, tested, and reinstalled at a second location; however, the tank was never found.

Observation of the excavation after UST removal indicated that the bottom was saturated with what appeared to be wastewater from flushing the UST. A soil sample (HTP-2) was collected that had a strong HC odor and registered a PID reading of 210 (Table 1). Excavation was continued below the depth of the UST bottom. Additional samples were collected at approximately 13 and 16 feet below grade. These samples, designated HTP-3 and HTP-4, indicated strong HC odors and PID readings of 200 and 175, respectively. HLA monitored soil as it was removed from the excavation. In general, PID readings were higher from the southeastern portion of the excavation than those from the northwestern portion. At approximately 18 feet below ground surface (approximately 10 feet from the UST bottom depth), excavation was discontinued. Samples HTP-5 and HTP-6 were collected from the south and north walls, respectively. Sample HTP-5 registered a PID reading of 175 and a strong HC odor; Sample HTP-6 registered a PID reading of 100 and a moderate HC odor.

ADDITIONAL SITE OBSERVATIONS

A severely damaged second tank was observed approximately 25 feet west of the UST excavation (see Plate 1). Vapors within the damaged tank registered a PID reading of 100 and a moderate odor of paint/solvent. According to the WCC

April 18, 1989
6258,127.11
Mr. G.M. Sparks
Mobil Oil Corporation
Page 3

representative at the site, the damaged tank was uncovered at a location south of the UST excavation and moved to the new location; the soil around the original damaged tank position did not appear to be contaminated, although a small amount of liquid leaked from the tank during removal. The Underwriters Laboratory tag number on the tank was C-576017. A soil sample was collected from inside the tank (HTP-9). In addition, what appeared to be the remains of a crushed drum were lying next to the damaged tank. An oily substance was observed on the soil adjacent to the drum. A soil sample (HTP-7) was collected by HLA.

HLA also observed dark, discolored soil approximately 80 feet west/southwest of the UST excavation in the side cut of a ramp excavated southward toward the southern building excavation (see Plate 1, Ramp 1). Soil staining was observed on both sides of Ramp 1 from approximately 2 feet below grade to the floor of the ramp, approximately 10 feet below grade. A soil sample (HTP-8) was collected from the stained side wall and from the ramp floor (HTP-12). Additional soil staining was observed on the building excavation side wall looking north across the excavation. On April 5, 1989, an HLA representative observed excavation of a second ramp (Ramp 2, Plate 1) located along the north edge of the building excavation. As Ramp 2 was continued downward, another area of soil contamination was discovered. A soil sample was collected at this location (HTP-10). In further discussions with WCC personnel, it was learned that what appeared to be an electric furnace had been dug up in the area of Ramp 1. Pieces of what appeared to be slag were uncovered as the excavation continued. Ramp 2 was lowered to an approximate final depth of 6 feet below grade, and work was halted when two cylindrical pieces of metal approximately 3 feet in length were uncovered. One of the metal pieces appeared to be a hydraulic lift and was leaking an oily liquid. The other piece appeared to be part of an oil drain. A sample of soil surrounding the metal pieces was collected (HTP-11).

HLA conducted additional site observations on April 6 and 7, 1989; no additional work completed on the UST or either ramp excavation was observed. On April 11, 1989, further observation indicated that the UST excavation had been enlarged, loose material covered the excavation floor, and contaminated soil from Ramp 2 had been laterally spread northwest of the UST excavation.

CLOSURE

HLA has "Polaroid" photographs of the site and observations described above, which are available upon request. The soil samples collected during observation were

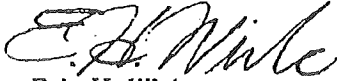
April 18, 1989
6258,127.11
Mr. G.M. Sparks
Mobil Oil Corporation
Page 4

submitted to Analytical Technologies Incorporated (ATI) in San Diego, California, for analyses. ATI was instructed to split the samples and send the sample splits to Mobil's Technical Services Laboratory (TSL), attention Mr. R. Beyer.

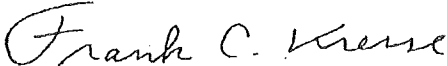
If you have any questions regarding this information, please contact Brad Eismen or either of the undersigned.

Very truly yours,

HARDING LAWSON ASSOCIATES



Eric H. Wiebe
Senior Hydrogeologist



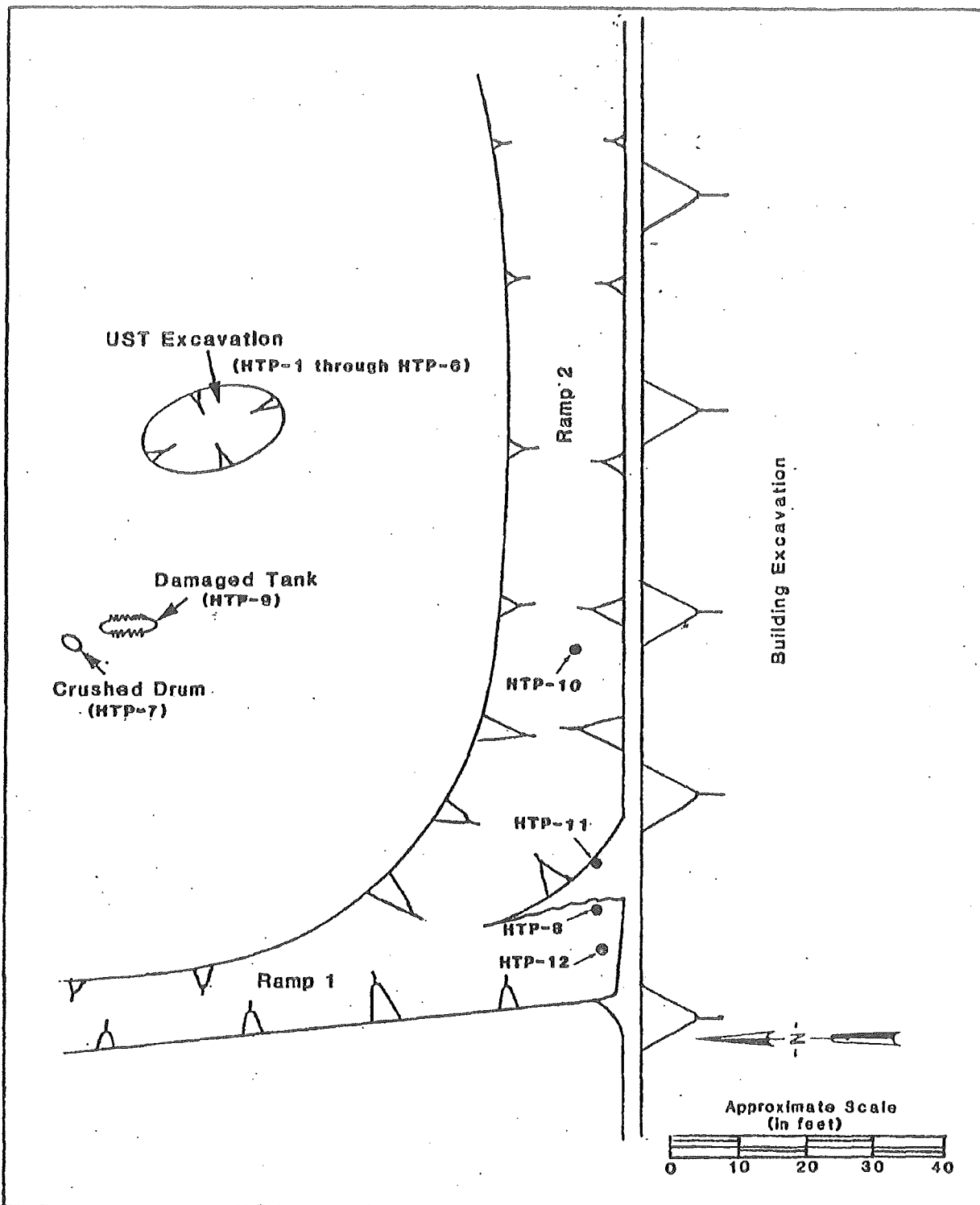
Frank C. Kresse, CEG - 406
Principal Geologist

EHW/FCK/ws
5551B

Attachments: Table 1
Plate 1

TABLE 1
SOIL SAMPLE INFORMATION

<u>SAMPLE NUMBER</u>	<u>PID READING</u>	<u>SAMPLE LOCATION SHOWING APPROXIMATE DEPTH BELOW GRADE (in feet)</u>
HTP-1	165	Northwest UST excavation; @ 7'
HTP-2	210	Bottom of UST excavation; @ 10'
HTP-3	200	Southeast UST excavation; @ 13'
HTP-4	175	Southeast UST excavation; @ 16'
HTP-5	175	Southeast UST excavation; @ 17'
HTP-6	100	Northwest UST excavation; @ 17'
HTP-7	0	Oily liquid from crushed drum
HTP-8	0	East wall Ramp 1; @ 7'
HTP-9	100	Soil adjacent to damaged tank
HTP-10	0	Center of Ramp 2; @ 2'
HTP-11	not measured	West end of Ramp 2; @ 2'
HTP-12	not measured	South end of Ramp 1; @ 11'



Harding Lawson Associates
Engineers, Geologists
& Geophysicists

1999-000229

PLATE

1

DRAWN

JOB NUMBER
8258, 127.11

APPROVED

DATE
4-18-88

REVISED

DATE

EXHIBIT 6

3340.91.3

Harding Lawson Associates


A Report Prepared for


Mobil Oil Corporation
Torrance Refinery
3700 West 190th Street
Torrance, California 90509-2929


**MW-SERIES WELL INSTALLATION
DATA SUMMARY AND DISCUSSION
MOBIL TORRANCE REFINERY
January 31, 1991**

HLA Job No. 6258,233:11

by


Bradford C.D. Eismen
Project Geologist


Eric H. Wiebe
Associate Hydrogeologist


Frank C. Kresse
Certified Engineering Geologist - 406

Harding Lawson Associates
15621 Redhill Avenue, Suite 100
Tustin, California 92680
714/259-7992

EXECUTIVE SUMMARY

Following the discovery of free hydrocarbon product (FHP) in Well EW-7 during third quarter (August 1990) monitoring activities, the Los Angeles Regional Water Quality Control Board (Board) requested additional ground-water investigation workplans from both Mobil Oil Corporation (Mobil) and American Honda Motor Company, Inc. (Honda), for the Honda site in Torrance, California.

As a result of a meeting attended by the Board, Mobil, Harding Lawson Associates (HLA), Honda, Redevelopment Agency - City of Torrance (RACT), and SCS Engineers (SCS), it was understood that during this phase of the investigation Mobil's contractor (HLA) would install five additional Honda site observation wells (designated MW-12 through MW-16) and Honda's contractor (SCS) would install five additional Honda site observation wells (designated MW-7 through MW-11).

The MW-Series wells installed by HLA and SCS during this investigation were located based on existing hydrogeochemical and soils data from the Honda site, information presented in HLA's report entitled "Potential Off-Site Contamination Source Identification, Area Southeast of the Mobil Torrance Refinery, Torrance, California," dated March 17, 1989, comments by the Board, and well-site access conditions.

All of the new MW-Series wells indicate organic compounds in Gardena aquifer ground water as summarized below.

- 1,2-dichloroethane (1,2-DCA) was detected in all the wells at concentrations ranging from 3 parts per billion (ppb) in Well MW-10 to 1,100 ppb in Well MW-8,
- Trichloroethene (TCE) was detected in four of the wells at concentrations ranging from 1 ppb in Well MW-9 to 98 ppb in Well MW-16,
- Tetrachloroethene (PCE) was detected in five of the wells at concentrations ranging from 7.3 ppb in Well MW-13 to 58 ppb in Well MW-12,
- 1,1-dichloroethene (1,1-DCE) was detected in three of the wells at concentrations ranging from 3 ppb in Well MW-10 to 17 ppb in Well MW-11,
- 1,1,1-trichloroethane (1,1,1-TCA) was detected in Well MW-11 at 21 ppb, and
- One or more of the EPA Method 8020 (benzene, toluene, xylenes, and ethylbenzene) compounds were detected in nine of the new MW-Series wells.

Based on review of previous data and historic aerial photographs, the detection of chlorinated and aromatic organic compounds in soil and ground water during this investigation, and the orientation and geometry of Gardena aquifer chemical concentration contours, we conclude that sources of ground-water contamination exist at the following former sites on the Honda property:

- The former U.S. Steel site near two former aboveground storage tanks, in an area of steel-waste dumping and/or processing, is a significant source of aromatic and chlorinated organic and diesel-range compounds,
- The former U.S. Steel site at or near Well EW-7 and the former waste-fluid vault is a significant source of FHP and aromatic and chlorinated organic compounds,
- The former commercial and industrial sites located in the southern 26-acre parcel of the Honda site is a significant source of chlorinated organic compounds, and
- The former Solvent Coatings site is a significant source of aromatic and chlorinated organic compounds.

INTRODUCTION

Harding Lawson Associates (HLA) is pleased to present this report to Mobil Oil Corporation (Mobil) summarizing the data collected during observation well installation and ground-water sampling activities at the American Honda Motor Company, Inc. (Honda), facility at 700 Van Ness Avenue in Torrance, California. Authorization to proceed with these activities was received from Mobil on September 24, 1990.

BACKGROUND

In April 1989, Mobil submitted an HLA report to the Los Angeles Regional Water Quality Control Board (Board) entitled "Potential Off-Site Contamination Source Identification, Area Southeast of the Mobil Torrance Refinery, Torrance, California," dated March 17, 1989. The report presented a summary of the investigation of potential off-site contamination sources in the area southeast of the Mobil Torrance Refinery and was part of the study to characterize and delineate organic compounds in soil and ground water in the area roughly bounded on the west and east by Van Ness Avenue and the Torrance flood control lateral, respectively, and to the south by Torrance Boulevard. This study area was the previous location of numerous industrial and commercial businesses that stored, handled, or generated hazardous substances. The northern portion of the area has been redeveloped and is presently the site of Harpers Furniture Manufacturing. The southern portion of the area has been redeveloped and is presently the site of American Honda Headquarters.

As previously reported, the results of the research indicated that numerous potential contamination sources previously existed throughout this area. Soil and ground-water investigations performed by several consultants working for Honda and/or the Redevelopment Agency - City of Torrance (RACT), including Converse Consultants, SCS Engineers (SCS), and Woodward-Clyde Consultants, have documented contamination within the study area, including the U.S. Steel site formerly located in the northern and central portions, and other industrial and commercial businesses previously located in the southern portion of the area. Contaminants that have been detected during previous investigations in this area include

organic compounds, heavy metals, and combustible vapors. As a result of previous studies, the following locations were identified as confirmed sources of contamination:

- The former Solvent Coatings site where fifteen 1,000-gallon and four 8,000-gallon underground storage tanks (USTs) used to store industrial solvents including toluene and xylene were reported as removed. Significant concentrations of aromatic organic compounds (up to 8,500,000 parts per billion [ppb] total benzene, toluene, xylenes, and ethylbenzene [BTXE]) along with several chlorinated solvents were detected in soil beneath the site, and aromatic and/or chlorinated solvents were detected in soil samples collected at the bottom of five of the seven boreholes previously drilled at the site. A remediation facility has been installed at this site; however, its operational status is not known by HLA.
- The former U.S. Steel site and waste disposal areas where soil and slag fill sample analyses indicated the presence of organic priority pollutants (various phthalate compounds) and priority pollutant metals (chromium and copper). In addition, a previous consultant reported that petroleum products were encountered during soil sampling and trenching at 19 locations across the former U.S. Steel site at depths near the surface to 70 feet below ground surface (bgs). Because of currently existing Honda structures, few wells have been installed in the former U.S. Steel waste disposal area near the former U.S. Steel plant. However, Well VII-4R is located in the former southwestern waste disposal area and indicates elevated concentrations of chlorinated and aromatic hydrocarbons in the Gardena aquifer.
- The former Eden National Steel site where two 10,000-gallon USTs used to store gasoline were reported as removed. Concentrations as high as 1,429 parts per million (ppm) of total recoverable petroleum hydrocarbons (TRPH) were detected in soil beneath the USTs during removal.
- The former South Bay Disposal site where one 10,000-gallon and one 1,000-gallon UST were reported as removed. TRPH concentrations as high as 14,300 ppm were detected in the soil beneath the 1,000-gallon UST during removal.
- The former International Die Casting site (former Parcel 14-2) where an unmapped 5,000-gallon leaking UST was discovered in April 1989 during site renovation activities. Analysis of soil samples collected during removal of the UST indicated fuel hydrocarbon concentrations as high as 2,100 ppm at a final excavation depth of 18 feet bgs. Hydrocarbon-stained soil (unrelated to the leaking UST) was discovered just south of the UST during related excavation.
- The former cooling pond, approximately 3.5 acres in size, that handled wastewater from the former steel mill. A California Department of Health Services letter to Honda stated that "... stockpiled bottom muck from the old wastewater pond disclosed hazardous concentrations of copper, lead, nickel,

chromium, and zinc." Drilling and soil sampling activities at the former wastewater pond location indicated strong hydrocarbon odors, phthalate compound concentrations as high as 400 ppb, and oil and grease concentrations as high as 89.9 ppm.

In addition, based on historic aerial photographs and literature review, the off-site source study identified numerous other locations as potential sources of contamination, including:

- The three aboveground storage tanks previously located in the east-central area of the U.S. Steel site, and piping connected to and/or running nearby these tanks.
- The former U.S. Steel plant and surrounding storage, railcar, and equipment operation areas.
- The former U.S. Steel subsurface waste-fluid storage vault located south-southwest of Aquifer Test Well EW-7 within the main area of the U.S. Steel plant. Approximately 1,200 gallons of waste fluid were removed from the vault during facility demolition, and free hydrocarbon product (FHP) was discovered in Well EW-7 shortly after installation and testing of the well.
- The 1,000- and 2,000-gallon USTs reported at the former D and D Cucci Boat Repair and South Bay Roofing site. Chlorinated organics were previously detected in an observation well located at this site.
- The 1,000-gallon UST reported at the former United Crane site. Aromatic and chlorinated organics were previously detected in an observation well at this site.
- The 10,000-gallon UST and the 1,000-gallon UST reported as removed at the former Cobabe Bros., Inc., site and Crown Body and Fender site, respectively.
- Several machine shops and automotive repair shops formerly located at the site.

Based on the length of time this property was used for intensive industrial activities, and on the history of common industrial practices over the past six decades, it is very likely that other sources of contamination exist at this site but have not been discovered and/or are not documented.

Following the discovery of FHP in Well EW-7 during third quarter (August 1990) monitoring activities, the Board requested additional ground-water investigation workplans from both Mobil and Honda for the Honda site. HLA's initial workplan to the Board recommended the

installation of 21 additional soil borings/observation wells to further characterize the known and/or suspected sources of contamination detailed in HLA's source identification report. However, as a result of a meeting attended by the Board, Mobil, HLA, Honda, RACT, and SCS, it was understood that during this phase of the investigation Mobil's consultant (HLA) would install five additional Honda site observation wells (designated MW-12 through MW-16) and Honda's consultant (SCS) would install five additional Honda site observation wells (designated MW-7 through MW-11). Proposed details of the two conjunctive investigations were presented to the Board in HLA's workplan dated September 21, 1990, and SCS's workplan dated September 24, 1990. Approval to proceed with the work as detailed in HLA's workplan was received by Mobil from the Board on October 18, 1990.

WELL LOCATIONS

The MW-Series wells installed by HLA and SCS during this investigation were located based on existing hydrogeochemical and soils data from the Honda site, information presented in HLA's source identification report, comments by the Board, and well-site access conditions. The final location of each new MW-Series well is shown Plate 1 (general well location map) and on Plate 2 (source identification map). The rationale for each well location is discussed below.

- Well MW-7 is located approximately 50 feet northeast of previously installed Well EW-7 where FHP was recently discovered on the Gardena aquifer beneath the former U.S. Steel plant. Well MW-7 is intended to further assess the extent, nature, and concentration of organic contaminants beneath the eastern area of former U.S. Steel plant operations, and delineate the extent of FHP detected in Well EW-7.
- Well MW-8 is located approximately midway between previously installed Wells VII-4R and ATT-2. This location was identified during review of historic aerial photographs as an area where steel-mill waste processing and equipment operation (potentially railcar) occurred, near the former location of two of the three aboveground storage tanks, and in the center of the area where elevated concentrations of 1,2-dichloroethane (1,2-DCA) have been detected in the Gardena aquifer. Well MW-8 is intended to further assess the extent and nature of organic contaminants in this previously industrialized area, and in particular, to further define the 1,2-DCA plume.

- Well MW-9 is located approximately 150 feet east-southeast of the location of abandoned Well MW-3. Well MW-9 is located downgradient of the former United Crane site where chlorinated organics were detected in the Gardena aquifer. Prior to abandonment, Well MW-3 indicated concentrations of trichloroethene (TCE) and tetrachloroethene (PCE) as high as 24 and 188 ppb, respectively. Well MW-9 is intended as a replacement well for Well MW-3.
- Well MW-10 is located approximately 200 feet northwest of previously installed Well MW-1 and southeast of the former Eden National Steel 10,000-gallon USTs. At least one of these USTs is a known source of petroleum hydrocarbon contamination. Well MW-10 is intended to further assess the extent, nature, and concentration of organic contaminants south of the former Eden National Steel USTs.
- Well MW-11 is located at the former Solvent Coatings site, which is a known source of chlorinated and aromatic hydrocarbon contamination. Significant concentrations of aromatic and chlorinated hydrocarbons have been detected in the soil beneath the site. Well MW-11 is intended to assess the presence, extent, nature, and concentration of organic contaminants in the Gardena aquifer at this site.
- Well MW-12 is located approximately 150 feet southwest of previously installed Well EW-7 where FHP was recently discovered on the Gardena aquifer beneath the approximate site of the former U.S. Steel waste-fluid subsurface storage vault from which 1,200 gallons of waste fluid were removed during facility demolition. Well MW-12 is intended to further assess the extent, nature, and concentration of organic contaminants beneath the eastern area of U.S. Steel plant operations including the waste-fluid vault, and delineate the extent of FHP detected in Well EW-7.
- Well MW-13 is located approximately 300 feet southeast of previously installed Well MW-6 in the southwestern area of the former U.S. Steel plant. Based on historic aerial photograph review, this area was characterized by heavy industrial use at the former U.S. Steel site. Well MW-13 is intended to assess the presence, extent, nature, and concentration of organic contaminants beneath the western area of U.S. Steel plant operations, and further define the extent of chlorinated and aromatic organic compounds detected in upgradient Well MW-6.
- Well MW-14 is located approximately 500 feet northeast of previously installed Well MW-4 at the former South Bay Disposal site. Petroleum hydrocarbon concentrations as high as 14,300 ppm were detected in soil beneath one of the two USTs at this site. Well MW-14 is intended to assess the presence, extent, nature, and concentration of organic contaminants beneath the former South Bay Disposal site.
- Wells MW-15 and MW-16 are located along the southern boundary of the Honda site along Torrance Boulevard, at the former Crown Body and Fender site, and reported machine shops, respectively. Wells MW-15 and 16 are intended to assess

the presence, extent, nature, and concentration of organic contaminants beneath these two former commercial sites, and along the Honda site fence line in the area between previously installed Well MW-4 and Wells X-4R, X-5R, and X-7R.

WELL INSTALLATION

SCS began this phase of the Honda-site ground-water investigation program by installing Wells MW-7 through MW-11. An HLA geologist was present during the installation of the SCS wells to observe drilling, soil sampling, and well construction activities. Following installation and development, ground-water samples were collected from these wells. After sampling Wells MW-7 through MW-11, HLA installed, developed, and sampled Wells MW-12 through MW-16. An SCS observer was present during the installation of Wells MW-12 through MW-16. Soil and ground-water samples were transported to a State-certified laboratory, Enseco-CRL, following chain-of-custody protocol.

Boring logs and well construction diagrams, prepared by HLA, of the newly installed MW-Series wells are provided in Appendix A. All borings were drilled with a hollow-stem auger (HSA) drill rig owned and operated by H-F Drilling, Inc., of Fullerton, California. Soil samples were collected every 5 feet in the vadose zone and approximately every 10 feet in the saturated zone. Samples were screened with a calibrated photoionization detector (PID). Selected samples were analyzed for EPA Method 8010, 8020, and/or modified 8015 compounds. An analytical data summary is provided in Table 1. Laboratory data sheets are provided in Appendix B. All wells were completed with polyvinyl chloride (PVC) casing and screen except Well MW-7, which was completed by SCS with stainless-steel wire-wrap screen and PVC blank casing. Wells were completed with a total of 30 feet of screen, which included approximately 20 feet of screen below and 10 feet of screen above the potentiometric surface. A well-screen slot-size of 0.020 inch and No. 3 Monterey sand were used in all wells.

GROUND-WATER SAMPLING

Following installation and development, all wells were sampled and analyzed for EPA Method 8010 and 8020 compounds. An analytical data summary is provided in Table 2. Laboratory data sheets are provided in Appendix B.

Sampling procedures were conducted in accordance with accepted U.S. Environmental Protection Agency Technical Enforcement Guidance Document procedures. A clean stainless-steel bailer was used to collect the ground-water samples. An equipment blank was collected from the bailer before sampling. To minimize volatilization, a Teflon stopcock was used to decant the samples into clean sample containers. Split samples were collected by HLA from the wells installed by SCS, and collected by SCS from the wells installed by HLA. SCS resampled Wells MW-7 through MW-11 on November 20 and 21, 1990, and HLA collected a second split from Well MW-8 at this time.

ANALYTICAL RESULTS

SOIL

An analytical data summary for soil samples collected and submitted for testing by HLA during the MW-Series investigation is provided in Table 1. Because SCS was responsible for the installation of Wells MW-7 through MW-11, additional soil sample data may be available from SCS for these wells. Soil sample PID readings are shown on the boring logs in Appendix A. The field and laboratory analytical soil data for the new MW-Series wells developed by HLA are summarized below.

Boring MW-7 (installed by SCS)

Soil samples collected during the drilling and installation of Well MW-7, located approximately 50 feet northeast of Well EW-7 where FHP was discovered beneath the former U.S. Steel plant, indicated a PID reading of 40 units at 30 feet bgs and a maximum reading of 200 units from the 50- and 60-foot samples. Because only a limited amount of undisturbed

soil was collected during the sampling activities at Well MW-7, no soil samples were submitted by HLA for laboratory analyses.

Boring MW-8 (installed by SCS)

Contaminated soil was encountered during drilling activities at Well MW-8, located approximately 60 feet west of two former U.S. Steel aboveground storage tanks and in an area of waste processing. Disturbed soil (possible fill) was encountered from the surface to a depth of approximately 55 feet bgs. Visible FHP staining was encountered on samples collected from 10 feet bgs down to the top of the Gardena aquifer (approximately 80 feet bgs). Analytical results for soil samples collected at 15, 35, and 70 feet bgs indicated total petroleum hydrocarbon (TPH) extractable (characterized as diesel) concentrations of 1,100, 6,400, and 4,800 ppm, respectively, and TPH volatile (characterized as gasoline) concentrations of 48, 100, and 1,100 ppm, respectively. The samples from 35 and 70 feet bgs also indicated total BTXE concentrations of 940 and 44,700 ppb, respectively. Detectable concentrations of PCE were indicated in the samples collected at 35 and 70 feet bgs (25 and 69 ppb). Detectable concentrations of 1,2-DCA were indicated in the soil sample collected at 70 feet bgs (107 ppb).

During a previous investigation at the Honda facility (VII-Series well installation program), a soil boring (SB-4) was drilled approximately 125 feet northeast of the present location of Well MW-8. Analytical results (EPA Method 418.1) for the sample collected at 10 feet bgs from Boring SB-4 indicated a TPH concentration of 2,020 ppm. Similar to the soil conditions logged at Well MW-8, the SB-4 boring log also indicated fill; however, only to a depth of approximately 18 feet bgs. The contamination detected in Boring SB-4 occurred in the former area of U.S. Steel waste disposal.

Boring MW-9 (installed by SCS)

Soil samples collected during drilling activities at Well MW-9, located at the former Cobabe Bros. site and intended as a replacement for abandoned Well MW-3, indicated no PID readings.

Boring MW-10 (installed by SCS)

Soil samples collected at Well MW-10, located southeast of the former 10,000-gallon USTs at the Eden National Steel site where high concentrations of TRPH were reported, indicated a PID reading of 20 units at 20 feet bgs and a maximum reading of 1,200 units from the sample collected at 40 feet bgs. A moderate to strong hydrocarbon odor was noted from the 40-foot sample during PID screening and logging by the HLA field geologist. No soil samples collected from Well MW-10 were submitted for laboratory analyses by HLA.

Boring MW-11 (installed by SCS)

Soil samples collected from Well MW-11, located at the former Solvent Coatings site where significant concentrations of aromatic organic compounds along with several chlorinated solvents were previously detected in soils, indicated a PID reading of 18 units at 25 feet bgs and a maximum reading of 1,500 units from the sample collected at 40 feet bgs. A moderate solvent odor was noted from the 40-foot bgs sample during PID screening and logging by the HLA field geologist. No soil samples collected from Well MW-11 were submitted for laboratory analyses by HLA.

Boring MW-12 (installed by HLA)

Soil samples collected from Well MW-12, located southwest of previously installed Well EW-7 where FHP was recently discovered and at the approximate site of the former U.S. Steel waste-fluid subsurface storage vault, indicated PID readings of 5 units at 60 feet bgs, 11 units at 80 feet bgs, and 65 units at 100 feet bgs. Analytical results from soil samples collected within the Gardena aquifer (in the saturated zone) at 90 and 100 feet bgs indicated total BTXE concentrations of 329 and 15,190 ppb, respectively.

Boring MW-13 (installed by HLA)

Soil samples collected from Well MW-13, located in an area characterized by heavy industrial use, indicated a PID reading of 210 units at 80 feet bgs and a maximum reading of 750 units

at 90 feet bgs. Analytical results from the soil sample collected in the Gardena aquifer (saturated zone) at 105 feet bgs indicated a total BTXE concentration of 35.2 ppb.

Boring MW-14 (installed by HLA)

Soil samples collected at Well MW-14, located at the former South Bay Disposal site where TRPH concentrations as high as 14,300 ppm were detected beneath one of the two USTs at the site, indicated a maximum PID reading of 4 units at 70 feet bgs. BTXE or chlorinated solvents were not detected above the reporting limit for this soil sample.

Boring MW-15 (installed by HLA)

Soil samples collected from Well MW-15, located at the southwestern fenceline of former machine shops and at the southern fenceline of the Honda site, indicated maximum PID readings of 3 units throughout a zone beginning at 45 feet bgs and ending at 70 feet bgs. Analytical results for the soil sample collected at 75 feet bgs indicated 14 ppb of toluene, and the sample collected in the Gardena aquifer at 90 feet indicated 5 ppb of xylenes. Benzene was not detected in either soil sample.

Boring MW-16 (installed by HLA)

Soil samples collected from Well MW-16, located at the former Crown Body and Fender site and along the southern fenceline of the Honda site, indicated a PID reading of 64 units at 60 feet bgs. A maximum PID reading of 140 units was detected from the sample collected in the Gardena aquifer at 90 feet bgs. Analytical results for the soil sample collected at 90 feet indicated 5.3 ppb of xylenes. Benzene or toluene were not detected in the sample.

GROUND WATER

An analytical data summary of ground-water samples collected during this MW-Series well installation program are provided in Table 2, and the results are discussed below. Laboratory data sheets are provided in Appendix B.

Well MW-7

Analytical results for the ground-water samples collected at Well MW-7 (50 feet northeast of the FHP discovered in Well EW-7) indicate a 1,2-DCA concentration of 335 ppb and a total BTXE concentration of 96,730 ppb. The calculated toluene to benzene and xylenes to benzene ratios for these data are 3.76 and 1.73, respectively. Toluene to benzene and xylenes to benzene ratios were calculated for contouring purposes.

Well MW-8

Ground-water analytical results for Well MW-8 (60 feet west of two former U.S. Steel aboveground tanks) indicate a 1,2-DCA concentration of 1,100 ppb and a total BTXE concentration of 24,580 ppb. No other chlorinated solvents were detected in Well MW-8 using EPA Method 8010. However, because of the elevated concentration of 1,2-DCA detected in Well MW-8, the detection limit for the Method 8010 compounds was 250 ppb. The calculated toluene to benzene ratio for the MW-8 data is 1.61, and the xylenes to benzene ratio is less than 1.

Well MW-9

Analytical results from ground-water sampling at Well MW-9 (downgradient of abandoned well MW-3) indicate a PCE concentration of 12 ppb, a 1,2-DCA concentration of 12 ppb, and a total BTXE concentration of 165 ppb. The calculated toluene to benzene and xylenes to benzene ratios are 2.93 and 1.76, respectively.

Well MW-10

Analytical results for ground-water samples from Well MW-10 (southeast of the former Eden National Steel USTs) indicate a 1,1-dichloroethene (1,1-DCE) concentration of 3 ppb, a 1,2-DCA concentration of 3 ppb, and a total BTXE concentration of 14,490 ppb. Of the total BTXE detected in Well MW-10, 81 percent of the concentration was toluene and xylenes.

The calculated toluene to benzene and xylenes to benzene ratios are 2.99 and 4.07, respectively.

Well MW-11

Analytical results for ground-water samples from Well MW-11 (former Solvent Coatings site) indicate a 1,1-DCE concentration of 17 ppb, a 1,2-DCA concentration of 11 ppb, a 1,1,1-trichloroethane (1,1,1-TCA) concentration of 21 ppb, and a total BTXE concentration of 54,030 ppb. Of the total BTXE detected in Well MW-11, 90 percent of the concentration was toluene and xylenes. The calculated toluene to benzene and xylenes to benzene ratios are 11.54 and 6.70, respectively.

Well MW-12

Analytical results for ground-water samples from Well MW-12 (southwest of FHP detected in Well EW-7 and at the former U.S. Steel waste-fluid vault) indicate a 1,2-DCA concentration of 430 ppb, a PCE concentration of 58 ppb, and a total BTXE concentration of 48,200 ppb. The calculated toluene to benzene ratio is 1.60, and the xylenes to benzene ratio is less than 1.

Well MW-13

Analytical results for ground-water samples from Well MW-13 (southwestern area of the former U.S. Steel plant) indicate a 1,2-DCA concentration of 16 ppb, a PCE concentration of 7.3 ppb, and a total BTXE concentration of 16,900 ppb. Of the total BTXE detected in Well MW-13, 81 percent of the concentration was toluene and xylenes. The calculated toluene to benzene and xylenes to benzene ratios are 2.14 and 2.75, respectively.

Well MW-14

Analytical results for ground-water samples from Well MW-14 (former South Bay Disposal site) indicate a 1,2-DCA concentration of 36 ppb, a TCE concentration of 4 ppb, a PCE concentration of 28 ppb, and no detectable concentrations of BTXE.

Well MW-15

Analytical results for ground-water samples from Well MW-15 (former machine shops and along the Honda site southern fenceline) indicate a 1,2-DCA concentration of 100 ppb, a 1,1-DCE concentration of 14 ppb, a TCE concentration of 47 ppb, a PCE concentration of 13 ppb, and a benzene concentration of 84 ppb.

Well MW-16

Analytical results for ground-water samples from Well MW-16 (former Crown Body and Fender site and along the Honda site southern fenceline) indicate a 1,2-DCA concentration of 18 ppb, a TCE concentration of 98 ppb, and a total BTXE concentration of 7,700 ppb. The calculated toluene to benzene ratio is less than 1, and the xylenes to benzene ratio is 1.13.

GROUND-WATER DATA SUMMARY

A total of 10 new Gardena aquifer observation wells were installed at the Honda site; five of the new wells were installed by SCS and five were installed by HLA. These new wells, labeled MW-7 through MW-16, were installed in several of the areas of known or suspected sources of contamination based on previous investigations and research. All of the new MW-Series wells indicate organic compounds in the Gardena aquifer as summarized below.

- 1,2-DCA was detected in all the wells at concentrations ranging from 3 ppb in Well MW-10 to 1,100 ppb in Well MW-8.

- TCE was detected in four of the wells at concentrations ranging from 1 ppb in Well MW-9 to 98 ppb in Well MW-16.
- PCE was detected in five of the wells at concentrations ranging from 7.3 ppb in Well MW-13 to 58 ppb in Well MW-12.
- 1,1-DCE was detected in three of the wells at concentrations ranging from 3 ppb in Well MW-10 to 17 ppb in Well MW-11.
- 1,1,1-TCA was detected in Well MW-11 at 21 ppb.
- One or more of the EPA Method 8020 (BTXE) compounds were detected in nine of the new MW-Series wells. Total BTXE concentrations ranged from 84 ppb in Well MW-15 to 96,730 ppb in Well MW-7. The sample from Well MW-14 indicated no detectable concentrations of BTXE. Well MW-15 indicated benzene only, with no toluene, xylenes, or ethylbenzene, and Well MW-9 indicated benzene, toluene, and xylenes, with no ethylbenzene.
- Elevated toluene to benzene (T to B) and xylenes to benzene (X to B) ratios were indicated in the southwestern area of the Honda site at Wells MW-10, MW-11, and MW-13. Well MW-10 indicated a T to B and X to B ratio of 2.99 and 4.07, respectively; Well MW-11 indicated a T to B and X to B ratio of 11.54 and 6.70, respectively; Well MW-13 indicated a T to B and X to B ratio of 2.14 and 2.75, respectively.

DISCUSSION

Several chemical concentration contour maps were prepared using the ground-water data developed during the second semester 1990 sampling events, including routine semestrial data and new MW-Series data. Plates 3, 4, 5, and 6 present isoconcentration contour maps for 1,2-DCA, PCE, total BTXE, and TCE, respectively. Plates 7 and 8 present toluene to benzene ratio contours and xylene to benzene ratio contours, respectively. All second semester analytical data used for contouring was presented in HLA's report entitled "Refinery Subsurface Cleanup Progress Report, Second Semester 1990, Mobil Torrance Refinery," dated January 15, 1991.

Based on the organic geochemical data collected during the second semester 1990 sampling events, Well MW-8 indicates the highest 1,2-DCA concentration (Plate 3). As Plate 3 indicates, the location of this elevated 1,2-DCA concentration is consistent with current and

previous semestrial (1,2-DCA) isoconcentration contour data, and is centered (as indicated on historic aerial photographs) approximately 60 feet west of two former U.S. Steel aboveground storage tanks, and in an area formerly used by U.S. Steel for waste processing.

Well MW-12, located approximately 150 feet southwest of Well EW-7 where FHP was recently discovered on the Gardena aquifer, and at the approximate location of a former U.S. Steel waste-storage subsurface vault, indicates the highest PCE concentration of all wells sampled during the second semester 1990 (Plate 4). Well MW-7, located approximately 50 feet northeast of Well EW-7, indicates the highest total BTXE concentration of all wells sampled during the second semester 1990 (Plate 5).

Well MW-14, located at the former South Bay Disposal site, indicates the second highest concentration of PCE during the second semester 1990 (Plate 4). Although PCE was detected upgradient from Well MW-14 in Well MW-12 (as discussed above), based on the contoured data, a second source of PCE appears to exist in the southeastern portion of the site. No data are available as to the vertical extent of PCE in either area (free-phase PCE is denser than water).

Well MW-16, located at the former Crown Body and Fender site along the southern edge of the Honda property, indicates the highest TCE concentration of all wells sampled during the second semester 1990 (Plate 6). Isoconcentration contours developed from the second semester TCE data indicate a plume of TCE located below the southern area of the Honda site and extending off site to at least 213th Street at Well X-7R. Based on previous data from the Torrance Center II site, this plume may extend further south past 213th Street. No data are available as to the vertical extent of TCE below the southern area of the Honda site (free-phase TCE is denser than water).

Separate concentration ratio contour maps for toluene to benzene and xylene to benzene data were prepared (Plates 7 and 8, respectively). Well MW-11, located at the former Solvent Coatings site, indicates a total BTXE concentration of 54,030 ppb. Of the total BTXE detected in Well MW-11, 90 percent of the concentration was a result of toluene and xylenes. As a result, Well MW-11 indicates anomalously high toluene to benzene (11.5) and xylene

to benzene (6.7) ratios in comparison to all wells sampled during the second semester 1990. These ratio data are consistent with previous SCS analytical data for the former Solvent Coatings site that indicated concentrations as high as 6,100 ppm of xylenes (approximately 0.6 percent) and 1,424 ppm of toluene (approximately 0.1 percent) in soil beneath the site.

CONCLUSIONS

Based on the elevated concentrations of 1,2-DCA and total BTXE at Well MW-8, the orientation and geometry of the contoured 1,2-DCA plume, the detection of gasoline, diesel-range and aromatic compounds, and 1,2-DCA and PCE in soil samples collected above the Gardena aquifer at Well MW-8, and the discovery of FHP staining from 10 feet bgs to the top of the Gardena aquifer, we conclude that one or more significant sources (including gasoline, diesel-range and aromatic compounds, and 1,2-DCA and PCE) of Gardena aquifer ground-water contamination has been identified at the former U.S. Steel site approximately 60 feet west of two former aboveground storage tanks in an area used for steel-waste disposal and/or processing.

Based on the discovery of FHP in Well EW-7, the high concentration of total BTXE in Wells MW-7 and MW-12 and previously installed Wells MW-5 and VII-7R, and the detection of PCE in Well MW-12, we conclude that a significant source (or sources) of Gardena aquifer ground-water contamination (including gasoline, aromatic, and chlorinated compounds) exists in the former U.S. Steel plant area surrounding Well EW-7.

Because of the nondetection of PCE in numerous wells upgradient of the Honda site and the detection of PCE in several wells on the Honda site, we conclude that one or more sources of this chlorinated compound from former commercial and industrial sites on the Honda property have significantly contaminated the Gardena aquifer.

Because of the nondetection of TCE in numerous wells upgradient of the Honda site and the detection of TCE in several wells on and directly downgradient of the Honda site, we conclude that one or more sources of this chlorinated compound from former commercial and industrial sites on the Honda property have significantly contaminated the Gardena aquifer.

Based on the concentration of total BTXE in Well MW-11, the calculated toluene to benzene and xylenes to benzene ratio data for the study area and particularly in the southwestern area (Wells MW-10, MW-11, and MW-13), the detection of 1,1-DCE and 1,1,1-TCA in Well MW-11, and the high concentrations of contaminants in the soil, we conclude that a significant source of Gardena aquifer ground-water contamination (including aromatic and chlorinated compounds) exists at the former Solvent Coatings site.

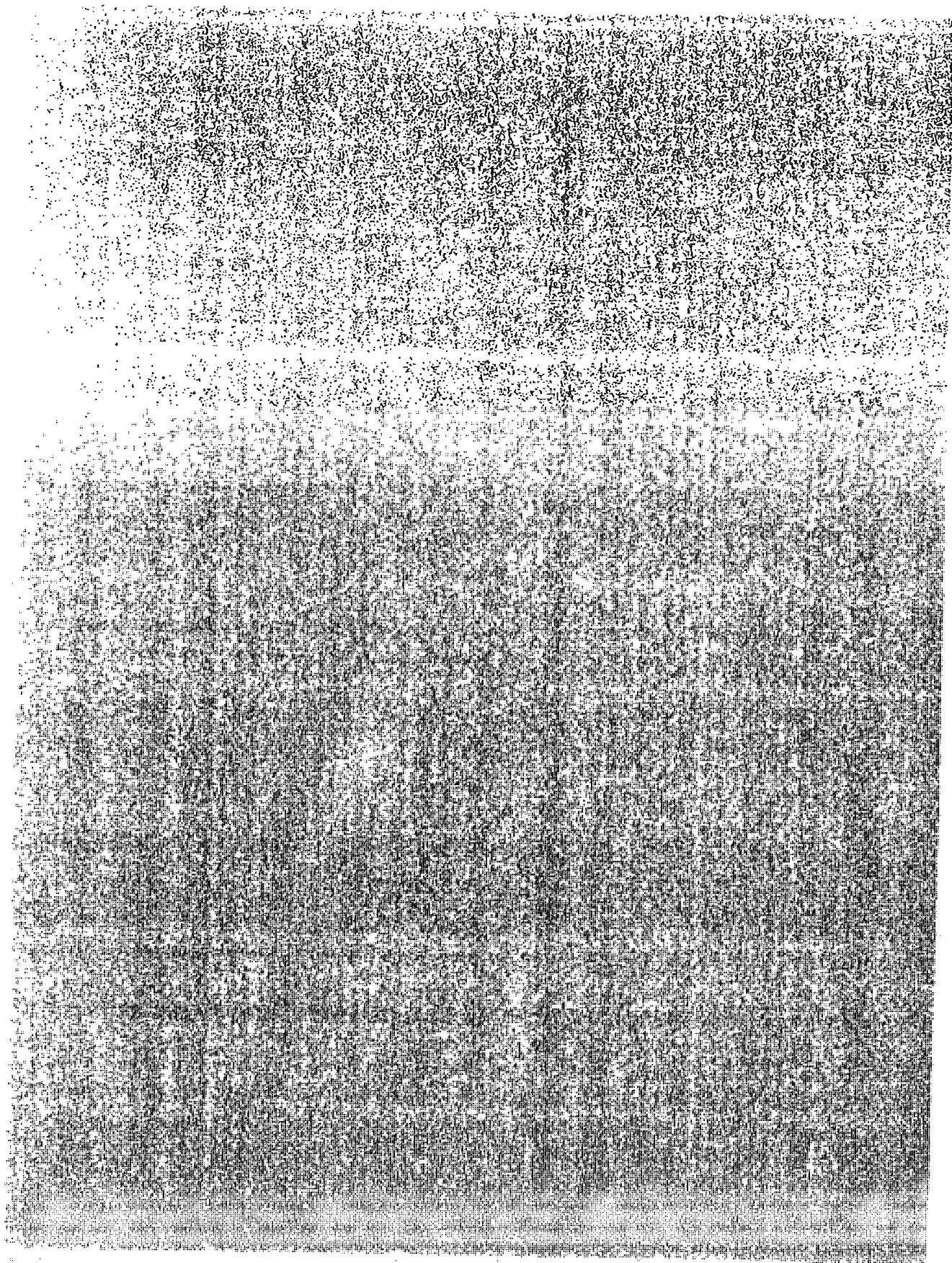


Table 1. MW-Series Analytical Data Summary
Soil Organic Compounds

Boring No.	Sample Depth	Date	TPH Volatile (mg/kg)	TPH Extractible (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Xylene (ug/kg)	Ethylbenzene (ug/kg)	1,2-DCA (ug/kg)	PCE (ug/kg)	Methylene Chloride (ug/kg)
MW-08	15	10/15/98	4.8	1100	ND(5)	ND(5)	ND(5)	ND(5)	ND(25)	ND(25)	ND(5)
MW-08	35	10/15/90	100	6400	360	ND(250)	320	260	ND(25)	25	ND(25)
MW-08	70	10/15/90	1100	4800	4700	29000	ND(2500)	11000	107	69	ND(25)
MW-12	90	11/02/90	NA	NA	29	120	180	ND(50)	ND(50)	ND(50)	50
MW-12	100	11/02/90	NA	NA	3000	7100	6300	790	ND(5)	ND(5)	ND(5)
MW-13	95	10/29/90	NA	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
MW-13	105	10/29/90	NA	NA	ND(5)	6.2	29	ND(5)	ND(5)	ND(5)	ND(5)
MW-14	70	10/30/90	NA	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
MW-15	75	10/31/90	NA	NA	ND(5)	14	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
MW-15	90	10/31/90	NA	NA	ND(5)	ND(5)	5.0	ND(5)	ND(5)	ND(5)	ND(5)
MW-16	90	11/01/90	NA	NA	ND(5)	ND(5)	5.3	ND(5)	ND(5)	ND(5)	ND(5)
MW-16	100	11/01/90	NA	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)

Notes: 1. Compounds shown are those detected in one or more borings (see Appendix B for Laboratory data sheets).
 2. ug/kg = micrograms per kilogram (ppb).
 3. mg/kg = milligrams per kilogram (ppm).
 4. ND(5) indicates compound not detected at or above detection limit.
 5. NA indicates not analyzed.
 6. Tetrachloroethene (PCE) and 1,1,2,2-tetrachloroethane co-elute. Quantitation based on average response of the two compounds and reported as PCE.

Table 2. MW-Series Analytical Data Summary
Ground-water Organic Compounds

Well No.	Date	Benzene (ug/l)	Toluene (ug/l)	Xylene (ug/l)	Ethylbenzene (ug/l)	BTXE (ug/l)	Total Toluene to Benzene	Xylene to Benzene	1,2-DCA (ug/l)	1,1-DCE (ug/l)	TCE (ug/l)	PCE (ug/l)	1,1,1-TCA (ug/l)
MW-07	10/24/90	14200	53430	24830	4270	96730	3.76	1.75	335	ND(25)	ND(25)	ND(25)	ND(25)
MW-08	10/23/90	6930	11150	5500	1000	24580	1.61	0.79	1100	ND(250)	ND(250)	ND(250)	ND(250)
MW-09	10/24/90	29	85	51	ND(10)	165	2.93	1.76	12	ND(1)	1	12	ND(1)
MW-10	10/23/90	1670	5000	6800	1020	14490	2.99	4.07	3	ND(1)	ND(1)	ND(1)	ND(1)
MW-11	10/23/90	2670	30800	17880	2680	54030	11.54	6.70	11	17	ND(10)	ND(10)	21
MW-12	11/08/90	15000	24000	7700	1500	48200	1.60	0.51	430	ND(50)	ND(50)	58	ND(50)
MW-13	11/08/90	2800	6000	7700	400	16900	2.14	2.75	16	ND(1)	ND(1)	7.3	ND(1)
MW-14	11/07/90	ND(0.5)	ND(1)	ND(1)	ND(1)	ND	ERROR	ERROR	36	ND(2.5)	4	26	ND(2.5)
MW-15	11/08/90	84	ND(10)	ND(10)	ND(10)	84	0.00	0.00	100	14	47	13	ND(10)
MW-16	11/08/90	2300	1100	2600	1700	7700	0.48	1.13	18	ND(10)	98	ND(10)	ND(10)

Notes: 1. Compounds shown are those detected in one or more wells (see Appendix B for laboratory data sheets).

2. ug/l = micrograms per liter (-ppb).

3. ND(1) indicates compound not detected at or above indicated detection limit.

4. NA indicates not applicable.

5. Tetrachloroethene (PCE) and 1,1,2,2-tetrachloroethane co-elute. Quantitation based on average response of the two compounds and reported as PCE.

Table 1. MW-Series Analytical Data Summary
Soil Organic Compounds

Boring No.	Sample Depth	Date	TPH Volatile (mg/kg)	TPH Extractible (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Xylene (ug/kg)	Ethylbenzene (ug/kg)	1,2-DCA (ug/kg)	PCE (ug/kg)	Methylene Chloride (ug/kg)
MW-08	15	10/15/90	48	1100	ND(5)	ND(5)	ND(5)	ND(5)	ND(25)	ND(25)	ND(5)
MW-08	35	10/15/90	100	6400	360	ND(250)	320	260	ND(25)	25	ND(25)
MW-08	70	10/15/90	1100	4800	4700	29000	ND(2500)	11000	107	69	ND(25)
MW-12	90	11/02/90	NA	NA	29	120	180	ND(50)	ND(50)	ND(50)	50
MW-12	100	11/02/90	NA	NA	3000	7100	4300	790	ND(5)	ND(5)	ND(5)
MW-13	95	10/29/90	NA	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
MW-13	105	10/29/90	NA	NA	ND(5)	6.2	29	ND(5)	ND(5)	ND(5)	ND(5)
MW-14	70	10/30/90	NA	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
MW-15	75	10/31/90	NA	NA	ND(5)	14	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
MW-15	90	10/31/90	NA	NA	ND(5)	ND(5)	5.0	ND(5)	ND(5)	ND(5)	ND(5)
MW-16	90	11/01/90	NA	NA	ND(5)	ND(5)	5.3	ND(5)	ND(5)	ND(5)	ND(5)
MW-16	100	11/01/90	NA	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)

Notes: 1. Compounds shown are those detected in one or more borings (see Appendix B for laboratory data sheets).

2. ug/kg = micrograms per kilogram (ppb).

3. mg/kg = milligrams per kilogram (ppm).

4. ND(5) indicates compound not detected at or above detection limit.

5. NA indicates not analyzed.

6. Tetrachloroethene (PCE) and 1,1,2,2-tetrachloroethane co-elute. Quantitation based on average response of the two compounds and reported as PCE.

Table 2. MW-Series Analytical Data Summary
Ground-water Organic Compounds

Well No.	Date	Benzene (ug/l)	Toluene (ug/l)	Xylene (ug/l)	Ethylbenzene (ug/l)	Total BTME (ug/l)	Toluene to Benzene	Xylene to Benzene	1,2-DCA (ug/l)	1,1-DCE (ug/l)	TCE (ug/l)	PCE (ug/l)	1,1,1-TCA (ug/l)
MW-07	10/24/90	14200	53430	24830	4270	96730	3.76	1.75	335	ND(25)	ND(25)	ND(25)	ND(25)
MW-08	10/23/90	6930	11150	5500	1000	24580	1.61	0.79	1100	ND(250)	ND(250)	ND(250)	ND(250)
MW-09	10/24/90	29	85	51	ND(10)	165	2.93	1.76	12	ND(1)	1	12	ND(1)
MW-10	10/23/90	1670	5000	6800	1020	14490	2.99	4.07	3	3	ND(1)	ND(1)	ND(1)
MW-11	10/23/90	2670	30800	17880	2680	54030	11.54	6.70	11	17	ND(10)	ND(10)	21
MW-12	11/08/90	15000	24000	7700	1500	48200	1.60	0.51	430	ND(50)	ND(50)	58	ND(50)
MW-13	11/08/90	2600	6000	7700	400	16900	2.14	2.75	16	ND(1)	ND(1)	7.3	ND(1)
MW-14	11/07/90	ND(0.5)	ND(1)	ND(1)	ND(1)	ND	ERROR	ERROR	56	ND(2.5)	4	28	ND(2.5)
MW-15	11/08/90	84	ND(10)	ND(10)	ND(10)	84	0.00	0.00	100	14	47	13	ND(10)
MW-16	11/08/90	2300	1100	2600	1700	7700	0.48	1.13	18	ND(10)	98	ND(10)	ND(10)

- Notes: 1. Compounds shown are those detected in one or more wells (see Appendix B for laboratory data sheets).
 2. ug/l = micrograms per liter (ppb).
 3. ND(1) indicates compound not detected at or above indicated detection limit.
 4. NA indicates not applicable.
 5. Tetrachloroethene (PCE) and 1,1,2,2-tetrachloroethane co-elute. Quantification based on average response of the two compounds and reported as PCE.

EXHIBIT 7

Messrs. Ross and Liu
April 30, 1991
Page Two

Contour maps prepared by Mobil/HLA during this sampling round (Fall 1990) for BTXE and 1,2 dichloroethane (1,2 DCA) were constructed utilizing data from two sampling rounds up to 3 months apart (semestrial sampling data and MW-Series sampling data). Since ground water quality measurements are largely time dependent, these two sets of data should not be utilized on the same map. Contour maps prepared by SCS, utilizing data collected contemporaneously, for these compounds indicate a source north and upgradient of the former U.S. Steel and 26 acre sites (see Figures 2 through 5). A number of facts argue against the scenario set forth by Mobil/HLA.

Individual gasoline components (BTXE) have differing properties and undergo a variety of physical and chemical processes in the subsurface. Reactions such as volatilization, adsorption, and biodegradation occur and tend to affect migration of these contaminants and their eventual migration into the ground water. Reactions continue to occur while these individual compounds are transported through the aquifer system. Therefore, benzene to toluene ratios in ground water are not expected to correspond with these ratios in product sources, contrary to Mobil/HLA assertions.

Not only do the physical and chemical processes in the subsurface effect the migration of gasoline and its components, but several additional factors are also recognized as having sizable impact on the offsite migration of gasoline from the Mobil property. Among these other factors are: a) the presence of paleochannel sedimentary features in the subsurface, b) the history and nature of the product losses at Mobil since 1927 (i.e., they have likely been of various sizes; they have probably occurred over a very long period of time; they have resulted from a variety of point sources at Mobil and not one single source), c) the long-term hydrology in the area which has created seasonal and annual variations in ground water recharge and runoff has also varied in the creek channel which exists in the area, d) there have been changes in ground water flow velocities and flow directions since 1927, e) the monitoring wells in the area reflect conditions in somewhat different portions of the Gardena Aquifer, and f) there are undoubtedly some differences in sampling and analytical techniques. As a result of these factors, one would expect slugs of contaminants rather than one continuous source. Therefore, one would expect to see some localized high data values; however, overall, contaminant contour maps should reflect a more or less continuous contaminant path rather than a series of closed contours surrounding individual high data points.

Motor fuel antiknock compound (also known as tetraethyl lead) which has been utilized by the major refineries for decades,

Messrs. Ross and Liu
April 30, 1991
Page Three

contains 1,2 DCA, which acts as a lead scavenger. Ethyl Corporation and Dupont indicate that their motor fuel antiknock compound package contains an average of 5 to 19 percent and 19 percent 1,2 DCA, respectively. Although we do not have direct physical information on the storage and handling of this compound at the Mobil Torrance Refinery, it is our opinion that the source of 1,2 DCA in this area is the Mobil Torrance Refinery. Our rationale includes the historical presence of this compound in ground water underlying and downgradient of the refinery, and the fact that Mobil has produced leaded gasoline for decades. Furthermore, with the exception of one soil sample analyzed by Mobil/HLA after the proper sample holding time, 1,2 DCA has never been detected in soil samples collected from the unsaturated zone of the former U.S. Steel and 26 acre sites. A definitive soil and ground water sampling program at the refinery based on the historical locations of use and storage of 1,2 DCA should be required to determine the exact location or locations of the 1,2 DCA contamination sources at the refinery.

Based on the continued presence of free product in wells on the west side of the Mobil Torrance Refinery, further work is necessary in this area. To the best of our knowledge, additional work has not been undertaken by Mobil/HLA to define and characterize the areal extent of petroleum hydrocarbons in this area. In addition, ground water samples should also be collected from more than the few selected on-site Mobil Torrance Refinery wells, as data from these additional wells are important for BTXE as well as 1,2 DCA migration studies.

The following sections provide our more detailed comments on the subject Mobil/HLA reports.

COMMENTS REGARDING MW-SERIES REPORT

BACKGROUND-MOBIL TORRANCE REFINERY SITE

The following facts pertain to the Mobil Torrance Refinery which indicate that the hydrocarbon leakage in the area downgradient of the refinery is largely due to the Mobil Torrance Refinery site.

- Mobil has conducted refinery operations at the Torrance site since 1927. Mobil has manufactured and stored large volumes of hydrocarbons on its property in many large volume tanks and in the many miles of pipelines on this facility.

- There have been a number of documented incidents of significant releases of chemicals, including fuel products, at the refinery. Table 1 presents a chronology of selected significant emergency events (fires, explosions, product losses, safety hazards) occurring at the Mobil Torrance Refinery since 1979. There is no reason to believe that the record for previous years is substantially different.
- A large hydrocarbon pumping facility, which included piping, fittings, connections and pumps existed for many years at the southeastern corner of the Mobil facility (intersection of Del Amo Boulevard and Van Ness Avenue), upgradient of the former U.S. Steel and 26 acre sites.
- Until rerouted and/or lined with concrete, a creek crossed the Mobil property flowing in a southeasterly direction to the intersection of Western Avenue and the Southern Pacific railway line. Historic surface spills and tank and pipeline leaks, coupled with overland flow during rainfall and drainage, would have resulted in the direct flow of contaminants from the refinery into the creek channel.
- Gasoline and its principal components (BTXE and in the case of leaded gasoline, 1,2 dichloroethane) are found in the soils and/or ground water beneath the Mobil property.
- Free product gasoline is found on the water table beneath much of the Mobil property. In some places, reported free product thickness has been as great as 30 to 50 feet.
- No other sizable industrial and/or commercial facility capable of long-term or high volume gasoline usage currently exists or ever existed upgradient from or at the former U.S. Steel and 26 acre sites.
- Ground water elevation data for various time periods consistently show a flow direction from the northwest to the southeast. The Mobil Torrance Refinery lies immediately upgradient from the former U.S. Steel and 26 acre sites. There is an unbroken continuum of exceptionally high concentrations of BTXE in the ground water underlying the refinery and extending to and beyond the former U.S. Steel and 26 acre sites.

Messrs. Ross and Liu
April 30, 1991
Page Five

- Geologically, the types of sediments underlying the Mobil facility are essentially the same as those encountered beneath properties southeast and downgradient of the refinery.
- There are no faults or other ground water barriers to preclude hydraulic continuity between the Mobil Torrance Refinery and the former U.S. Steel and 26 acre sites.
- Concentrations of BTXE are found in the ground water under the former U.S. Steel and 26 acre sites in sizable concentrations. Concentrations of BTXE generally increase in an upgradient direction towards the Mobil facility.
- Although some relatively small underground gasoline tanks formerly existed on the former U.S. Steel and 26 acre sites, none of these could have leaked such significant volumes of gasoline that would account for the extraordinarily high concentrations and sizable areal extent of hydrocarbon contamination detected in ground water underlying this property.

BACKGROUND-FORMER U.S. STEEL AND 26 ACRE SITES

Mobil/HLA have repeatedly suggested, and more recently asserted, that the small number of 1,000- to 10,000-gallon gasoline tanks on the 26 acre site is responsible for the substantial BTXE plume underlying the former U.S. Steel and 26 acre sites and that Mobil's responsibility for ground water contamination ends at the Harpers Furniture/former U.S. Steel site boundary. There is no basis in either fact or theory for such assertions.

Soil samples collected underneath tanks on the former U.S. Steel and 26 acre sites, observations by site personnel and City of Torrance Fire Department personnel during tank removals, and the results of ground water monitoring point to an offsite, upgradient source for the substantial BTXE plume. In fact, ground water samples collected in wells downgradient from the underground storage tanks do not indicate increased concentrations in a downgradient direction but rather they show increased concentrations in an upgradient direction toward the Mobil Refinery. Based on the geologic boring logs for the site, information available in the literature, and geologic cross-sections prepared for the area, there are no geologic discontinuities in the subsurface which could terminate the continuous southeasterly flow of the Mobil hydrocarbon plume at the Harper's Furniture site. Figure 2 illustrates the relationship between the former underground tank

Messrs: Ross and Liu
April 30, 1991
Page Six

locations and the BTXE contours for the site. With the exception of the area of MW11 which appears to contain elevated levels of toluene and xylenes, there do not appear to be increased concentrations of BTXE which could indicate sources of BTXE on the former U.S. Steel and 26 acre sites. These contour maps also show the areal extent of the BTXE and 1,2 DCA contaminant plume and point to a source upgradient of the former U.S. Steel and 26 acre sites.

The following narrative outlines the investigations and findings at each of these former underground tank sites and the U.S. Steel site downgradient of the Mobil Refinery. Additional information is contained in the City of Torrance Fire Department files. Of the 29 underground tanks discussed in the following section, only 6 of these reportedly contained gasoline. The remainder of these tanks contained diesel, waste oils, various industrial solvents (Solvent Coatings tanks), and two had unknown contents.

To the best of our knowledge, no investigation has been conducted on the Mobil Torrance Refinery of equal thoroughness, in spite of the large number of aboveground tanks on the Mobil site. Furthermore, to the best of our knowledge, no comprehensive investigation of 1,2 DCA has been undertaken at the Mobil Torrance Refinery. In fact, Mobil has yet to provide information about its use or storage of 1,2 DCA at the refinery.

Eden National Steel

Two 10,000-gallon gasoline tanks were located on the subject property. These tanks were removed in March 1987 by Falcon Environmental in the presence of the Torrance Fire Department. Fire Department personnel did not indicate that further work and/or remediation was required in this area. However, SCS Engineers investigated the site in January 1990 by drilling two borings and collecting soil samples in the area of these former tanks.

Analytical results of soil samples collected by SCS indicated the localized presence of total petroleum hydrocarbons (up to 1,740 mg/kg at 31 feet) and low levels of BTXE. With the exception of the 31 foot sample collected from BH2, total soil concentrations of BTXE detected were less than 0.4 mg/kg. Volatile aromatic compounds detected in BH2 at 31 feet were 13.1 mg/kg benzene, 119 mg/kg ethylbenzene, 2,540 mg/kg toluene, and 616 mg/kg xylenes. Samples collected at 41 feet in this boring show trace levels of these compounds (less than 0.2 mg/kg) and the 51 foot sample from BH2 did not

Messrs. Ross and Liu
April 30, 1991
Page Seven

show detectable BTXE. Ground water beneath the tanks is not encountered until a depth of 80 to 85 feet below ground surface.

The analytical data indicate that hydrocarbons did not migrate to ground water from these tanks. Depth to ground water in MW10 was measured at 83.75 feet below ground surface in November 1990 and the underlying soils appear to have effectively attenuated the downward migration of petroleum hydrocarbons at this location. These facts are consistent with expectations in a situation involving small volume leakage and 70 to 80 foot soil cover above the ground water table. Information regarding this investigation is contained in the SCS report entitled "Summary Report for Additional Investigation Completed at the American Honda Site, Torrance, California", dated September 1990.

South Bay Disposal

This site contained two underground tanks, one 10,000-gallon gasoline and one 1,000-gallon diesel tank. These tanks were removed and investigated by Falcon Environmental in March 1987. SCS Engineers also collected soil samples in the area underlying the tanks. No odors were indicated in the soil samples collected by SCS and analytical results indicate total petroleum hydrocarbons (TPH) at low levels underneath the 10,000-gallon tank (5.7 mg/kg TPH and 392 mg/kg TPH which were identified by the laboratory as diesel); no BTX was detected underneath this tank. The other tank (1,000-gallon diesel tank) indicated elevated levels of total petroleum hydrocarbons (14,300 mg/kg which was identified by the laboratory as diesel) and thus not a viable source of appreciable BTXE to ground water.

MW14 which was drilled in 1990 on the South Bay Disposal site, did not indicate detectable concentrations of BTXE in ground water samples collected, indicating that these tanks did not impact ground water. Furthermore, observations by site personnel during the drilling of this well did not indicate the presence of contaminated soils.

United Crane/International Die Casting

Torrance Fire Department records indicate that a 1,000-gallon diesel/waste oil underground tank existed at this site which was removed by Environmental Solutions. Although, these records do not indicate when the tank was removed, site reconnaissance and grading activities in this area have not yielded any evidence of contaminated soils on this parcel.

Messrs. Ross and Liu
April 30, 1991
Page Eight

South Bay Roofing/D&D Cucci Boat Repair

According to City of Torrance Fire Department records, one 1,000-gallon gasoline tank and a 2,000-gallon tank of unknown contents existed on the subject site. Tank removal records were not available at the Fire Department; however, it is believed that the tanks have been removed. Grading and construction activities have not yielded evidence of an underground tank or contaminated soils in this area.

Cobabe Brothers, Inc.

The Cobabe Brothers site formerly contained one 10,000-gallon gasoline tank. This tank was removed and investigated by Falcon Environmental in March 1987. No odors were noted from soil samples collected by SCS Engineers in the area underlying the tank and analytical results indicate there were no detectable TPH or BTXE compounds in soils underlying the tank.

Crown Body and Fender

A 1,000-gallon gasoline tank was removed from this site on April 17, 1986. Grading and construction activities have not indicated any contaminated soils in this area.

In addition, there was no evidence of soil contamination during the drilling and installation of MW-16 which is located on the subject parcel.

Solvent Coatings

The Solvent Coatings site contained fifteen 1,000-gallon and four 8,000-gallon underground tanks which were used to store various industrial solvents (including xylene and toluene) which were utilized for paper coating. These tanks were removed and investigated in March 1987 by Falcon Environmental.

Additional investigation of the former Solvent Coating site by SCS indicated elevated concentrations of volatile organic compounds in soils underlying the subject site. The primary compounds detected in these soils were toluene and xylenes. Elevated concentrations of these compounds were found at depths of 30 to 60 feet below ground surface. A vapor extraction system has been installed at the site and is currently operating to remediate the affected soils.

Based on the soil investigations at this site by SCS and ground water sampling in the vicinity of the former Solvent Coatings site, it appears that elevated levels of toluene and

Messrs. Ross and Liu
April 30, 1991
Page Nine

xylenes are present in ground water directly underlying the subject site. However, the extent of elevated toluene and xylenes in ground water appears to be "localized" and not apparent further downgradient.

Additional Underground Tank Discovered on 26 Acre Site

One additional underground tank was detected on the former 26 acre site during grading activities. This tank is identified by Mobil/HLA as being located on the International Die Casting site.

This 5,000-gallon tank was removed and investigated by Environmental Solutions, Inc. in April 1989. Petroleum hydrocarbons were detected in soil samples underneath the tank (2,100 mg/kg TPH at 18 feet below ground surface). These soils were excavated and removed from the site; and soil samples collected after excavation indicated trace levels of volatile aromatic compounds at 27 feet below ground surface (specifically, 0.040 mg/kg benzene, 0.013 mg/kg toluene, and 0.007 mg/kg xylenes).

For reasons previously stated, specifically the relatively small volumes of fuel released, trace concentrations of petroleum hydrocarbons at shallow depths, and the depth to ground water in this area (approximately 80 to 85 feet below ground surface), there is no reason to believe that this former underground tank has affected the underlying ground water.

U.S. Steel Site

Cooling Pond--

The cooling pond area has been thoroughly investigated at the subject site by Converse Consultants and Aqua Terra Technologies Inc., as documented in previous reports and correspondence by these consultants. Soil containing elevated concentrations of metals was removed from the area. There is no indication that the activities at the former cooling pond have impacted ground water underlying the site.

Aboveground Storage Tanks--

As stated in previous submittals by SCS Engineers, the aboveground storage tanks on the former U.S. Steel site were most likely used to store fuel oils or lubricating oils for processes at U.S. Steel and not lighter gasoline-type hydrocarbons or solvents. Although analytical results of soil samples recently collected and analyzed from MW8 (drilled in the general vicinity of these former tanks) indicate elevated

Messrs. Ross and Liu
April 30, 1991
Page Ten

concentrations of TPH (ranging from 2,030 mg/kg to 67,500 mg/kg) and low levels of BTXE (ranging from 0.01 mg/kg to 22 mg/kg), there is no indication that these soils were affected from a gasoline source.

A close examination of the individual chromatograms of soil samples from MW8 shows that contaminants detected through the soil profile closely resemble a diesel-like substance and heavier hydrocarbons. As the sampled soils approach the ground water table, there is evidence of the presence of some gasoline-type, lighter, more volatile constituents intermixed with the more predominant diesel peaks. These more volatile constituents do not match a gasoline standard, rather they are only the very light, highly mobile and diffuse species.

The source of these BTXE compounds is thought to be due to the absorption by the heavy hydrocarbon contaminated soil of the upward migrating BTXE vapors from the existing dissolved gasoline ground water plume. These aromatic compounds are continually volatilizing and migrating upward through soil interstices toward the ground surface. As a result, BTXE can typically be detected in soil vapors at sites such as this without necessarily being detectable in site soils. While there may be some limited low-level adsorption in the soil, significant soil levels would not be expected unless vapor concentrations reached levels where condensation would be likely.

However, the heavier aliphatic hydrocarbon material in the pore spaces of these soils appear to have acted as a solvent or absorbing medium for these upward migrating vapors. This is supported by analytical data which show a trend of high BTXE concentrations near the ground water table and decreasing concentrations with increasing distance upward and away from the known gasoline-saturated sediments.

In addition, if the area surrounding MW8 was a source of gasoline and/or diesel contributing to ground water contamination, higher values of BTXE (hundreds or thousands of mg/kg) would be expected in the soils indicating near saturation levels. Furthermore, the relative amounts of these compounds are not consistent with a typical diesel fuel since such a diesel spill would contain neither benzene nor 1,2 DCA.

Storage, Railcar, and Equipment Areas--

The majority of compounds utilized, stored, processed, and shipped from the U.S. Steel site were heavy oils (fuel oil and lubrication oil), acids, and cooling waters and not

Messrs. Ross and Liu
April 30, 1991
Page Eleven

substances which contained volatile aromatic hydrocarbons. Samples collected from downgradient monitoring wells do not indicate that ground water has been affected from activities in these areas.

Waste-Fluid Storage Vault--

The subsurface waste-fluid vault was located in the area of MW12 and MW5. Soil samples analyzed and logs of these wells indicate that no contaminated soil was encountered in this area. Furthermore, BTXE concentrations in ground water samples collected from these wells fit the overall pattern of contaminant migration from the Mobil facility to the former U.S. Steel and 26 acre sites via subsurface migration and paleochannels.

ANALYTICAL RESULTS

Soil

Selected soil samples were analyzed by Mobil/HLA in monitoring wells MW12 through MW16 which are located on the former U.S. Steel and 26 acre sites. With the exception of samples collected in the saturated zone, Mobil/HLA analyses of soil samples collected in these borings did not indicate the presence of BTXE compounds. The presence of BTXE in the saturated zone soils is expected due to the dissolved gasoline ground water plume in the area.

In addition, soil samples were also collected from MW8 by Mobil/HLA as well as SCS Engineers. While Mobil/HLA analysis of MW8 indicated the presence of tetrachloroethene (25 ug/kg at 35 feet and 69 ug/kg at 70 feet), samples collected and analyzed by SCS Laboratory did not detect this compound. The samples taken by Mobil/HLA were analyzed after the appropriate maximum holding time had been exceeded and therefore are suspect. BTXE and 1,2 DCA detected in the 70 foot sample (just above the saturated zone) sample are not unexpected due to the dissolved gasoline ground water contamination in this area. Furthermore, no other chlorinated compounds were found in ground water at MW8 (SCS detection level for TCE and PCE was 1 ug/L).

Hnu readings were also reported in the Mobil/HLA report. While Hnu readings may provide relative indications of contamination in the soil profile, BTXE vapors resulting from the underlying ground water contamination are known to migrate through soils in this area. The source of VOCs giving the Hnu readings reported by Mobil/HLA is likely the dissolved gasoline plume in the ground water and not the soil itself.

Messrs. Ross and Liu
April 30, 1991
Page Twelve

Ground Water

SCS and Mobil/HLA both collected samples from the ten additional ground water monitoring wells (results presented in Table 2). Ground water analytical results reported by Mobil/HLA differ from data reported by SCS Engineers. The greatest variation appeared to be in samples collected from MW7, MW8, and MW12. Specifically in MW7, SCS reported 21,000 ug/L benzene, 29,000 ug/L toluene, 20,000 ug/L xylenes, 2,800 ug/L ethylbenzene, and 35 ug/L 1,2 DCA. Mobil/HLA reported 14,200 ug/L benzene, 52,430 ug/L toluene, 24,830 ug/L xylenes, 4,270 ug/L ethylbenzene, and 335 ug/L 1,2 DCA in the same well.

Similar variations were detected in MW8 and MW12. The greatest variations in analytical data were reported for 1,2 DCA. Specifically, 1,2 DCA was reported for MW8 as 135 ug/L by SCS and 1,100 ug/L by Mobil/HLA. In MW12, 1,2 DCA was reported as not detected by SCS and 430 ug/L by Mobil/HLA.

Some of this variation can be explained due to the resampling of MW7 and MW8 by SCS approximately 3 weeks after samples were collected and analyzed by Mobil/HLA. Other possible sources of variation include differences in sampling methods, sample holding times, variation in dilution factors between laboratories, etc. Review of these latest groundwater results suggest that one additional sampling round may help resolve variations between sampling and analytical techniques.

1,2 DCA

Industrial sources indicate that motor fuel antiknock compound (also known as tetraethyl lead), in which 1,2 DCA acts as a lead scavenger, is utilized by the major refineries in their gasoline products as an antiknock agent. Two distributors of this additive (Ethyl Corporation and Dupont) dominate sales to the petroleum market. As indicated in the Ethyl Corporation and Dupont MSDSs, these companies' packages average 5 to 19% and 19% 1,2 DCA content, respectively.

At this time, we do not have information on the quantities, storage, processing, or handling of this compound on the Mobil Torrance Refinery. However, due to the historical presence of this compound in ground water underlying the refinery and downgradient of the refinery (see attached maps), the paleochannel features which control contaminant migration in this area, and because Mobil has been manufacturing gasoline for decades at their Torrance facility, the source of 1,2 DCA in this area is most likely the Mobil Torrance Refinery. Moreover, it is possible to detect increased

Messrs. Ross and Liu
April 30, 1991
Page Thirteen

concentrations of 1,2 DCA downgradient of the refinery since the use of 1,2 DCA has been decreased over the last 10 years and the plume has migrated off-site from its original point source.

Based on information available from steel manufacturing industries, it does not appear that 1,2 DCA is commonly used in large quantities during steel making operations as a degreaser.

CONTOUR MAPS

Contaminant contour maps prepared by Mobil/HLA were constructed by combining data taken from two sampling rounds which occurred up to three months apart (semestrial sampling data and MW-Series sampling data): We do not believe it is valid to use data derived from sampling at different times to prepare single contour maps because of the great variation seen in concentrations of dissolved organics with time. In addition, only selected refinery and immediate off-site wells appear to have been sampled and analyzed during this latest sampling round. Large areas exist on the refinery for which no data were recorded during this period. Data from all wells at the refinery and on the former U.S. Steel and 26 acre sites, collected in a single sampling round, are needed for a complete picture.

Total BTXE

Contour maps prepared by Mobil/HLA utilized data from samples collected up to three months apart (semestrial sampling round and MW-Series sampling round). Since ground water quality data is time dependent, these two sets of data should not be utilized on the same map. Figures 6 through 11 show fluctuations of benzene for selected wells illustrating the time dependency of ground water sampling data.

The geology and hydrogeology of the Gardena Aquifer system are interpreted to include paleochannel features based on field work at the site and information in the literature (Department of Water Resources, Bulletin 104 and U.S.G.S. Professional Paper No. 1461). A similar situation exists at the Shell Refinery in Carson, California where migration of contaminants from this refinery appears to be controlled by similar types of mechanisms. It is also likely that there is no single continuous point source on the Mobil Torrance Refinery responsible for BTXE contamination, and due to historical fluctuations of ground water gradient, velocities, and recharge rates, and variations in sampling and analytical techniques, one would expect slugs of contaminants rather than one continuous source. It is also recognized that

Messrs. Ross and Liu
April 30, 1991
Page Fourteen

ground water barriers do not exist between the Mobil and former U.S. Steel and 26 acre sites, as indicated by field work and literature sources. Therefore, contour maps of BTXE should reflect a more or less continuous high level contaminant path rather than a series of closed contours surrounding individual high data points that might otherwise occur if the region had had a large number of point source gasoline leaks.

Total BTXE contour maps prepared by SCS for the intermediate Gardena Aquifer zone for the area of the Mobil facility as well as the shallow zone suggest a source of BTXE on the Mobil Torrance Refinery (see Figures 2 and 3). Additional sampling points should be collected on the refinery to help resolve the difference between SCS's and Mobil two interpretations and to complete the overall regional picture for the BTXE contaminant plume.

1,2 DCA

The same arguments expressed above (lack of ground water barriers, the presence of paleochannels) are also true for the 1,2 DCA contour map presented by Mobil/HLA (HLA Plate 3, January 31, 1991 report). Most important of these arguments is the use of data from differing sampling rounds. Data from MW8 through MW16 should not be contoured on this map. Deleting this data and utilizing data only from the semestrial sampling round suggests a source of 1,2 DCA north of the former U.S. Steel and 26 acre sites. Figures 4 and 5 present 1,2 DCA contour maps prepared by SCS for the subject site utilizing only semestrial sampling round data. These maps also indicate the off-site migration of 1,2 DCA from the Mobil Torrance Refinery into downgradient properties. Figures 12 and 13 show historical contour maps for 1,2 DCA in ground water underlying the subject site. As repeatedly emphasized, a comprehensive investigation of the 1,2 DCA contamination on and beneath the refinery is required to complete the contouring exercise.

TCE/PCE

As previously stated, data from separate sampling events should not be contoured together. However, ground water samples collected by both SCS and Mobil/HLA indicate the presence of concentrations of TCE in MW15 and MW16 (ranging from 47 and 98 ppb). Concentrations of PCE (ranging from 13 to 34 ppb) were also detected in MW14 and MW15 by both SCS and Mobil/HLA. Elevated PCE was also reported for MW12 (58 ppb) by Mobil/HLA; however SCS analytical data did not indicate this. The data for PCE and TCE should be evaluated with data from surrounding wells in the next Mobil/HLA semestrial sampling round (scheduled for March 1991).

Messrs. Ross and Liu
April 30, 1991
Page Fifteen

Ratio Maps

Determining contaminant migration through soils into underlying aquifer systems requires an understanding of the fate and transport of these chemicals. Gasoline constituents such as BTXE each have differing physical and chemical properties and undergo a variety of processes in the subsurface such as hydrolysis, oxidation, reduction, volatilization, adsorption, and biodegradation, which affect their introduction into the underlying ground water and migration within the aquifer system. This migration is also complicated by site conditions such as soil type and moisture content.

Transport in ground water is also affected by factors such as differing water solubilities, molecular structure, adsorption, and biodegradation. Interpretation of this data and, therefore, identification of source areas requires more than plotting benzene to toluene ratios or xylene to toluene ratios. To rely on such ratios is an over-simplification and may be potentially misleading.

As with previous data interpretation in Mobil/HLA reports, only selected wells on the Mobil Torrance Refinery were used for this analysis and this may present a skewed interpretation. Furthermore, data from the later sampling of MW8 through MW16 is mixed on these maps with prior semestrial sampling data for other wells.

Isoconcentration 3-D Maps

Isoconcentration 3-D maps present a three dimensional picture of constituents in ground water by plotting data on a grid coordinate system.

These maps do not present an accurate picture of the ground water contamination underlying the former U.S. Steel and 26 acre sites. This representation is biased due to the omission of on-site refinery wells and the use of only certain selected wells on the former U.S. Steel and 26 acre sites. Furthermore, data used in the isoconcentration 3-D maps is from sampling rounds up to 3 months apart and since ground water monitoring data is largely time dependent, data from disparate sampling dates should not be contoured together.

In addition, although software packages may be helpful in analyzing ground water monitoring data, available geological and hydrogeological information should be utilized as a control factor for a true interpretation of ground water data at the site. The geology and hydrogeology of the Gardena Aquifer system is interpreted to consist of paleochannel features which are likely to allow much more rapid migration

Messrs. Ross and Liu
April 30, 1991
Page Sixteen

along the axis of the features as evidenced by field work at the site and information in the literature (Department of Water Resources, Bulletin 104 and U.S.G.S. Professional Paper No. 1461). Based on the bulk of the data gathered to date, the isoconcentration maps should reflect a more or less continuous system rather than "hills and valleys" of individual high value and low value BTXE data points. Such use of isolated high value data point contouring reflects an arbitrary effort to identify ground water barriers or several separate point sources.

COMMENTS REGARDING SECOND SEMESTER 1990 REPORT

OFF-SITE MIGRATION (WEST SIDE OF REFINERY)

It appears that no ground water monitoring wells are planned at this time to further delineate the hydrocarbon plume that exists on the west side of the Mobil Torrance Refinery (southwest of Railroad Avenue). Further work is recommended in this area since many residential areas exist nearby.

Based on November 1990 data, an apparent increase in free product thickness was detected in numerous perched zone wells southwest and offsite of the Mobil Torrance Refinery. Specifically, 6.97 feet in C-28 which indicates a significant increase from the previous measurement of 2.77 feet in April 1990. Free product was also detected for this time period in C-21 at 6.34 feet and in C-1 at a thickness of 5.08 feet. In addition, wells C-10, C-10a, C-19, C-35 had measurable thicknesses of free product over 3 feet. This information indicates the need for further investigation in this area to characterize the areal extent of free product as well as dissolved petroleum hydrocarbons in this area.

ADDITIONAL INFORMATION

Additional information is needed to complete the picture of ground water contamination in this area including the sampling of all refinery wells as well as the collection and interpretation of contemporaneous data. It is recommended that more ground water samples should be collected from the on-site Mobil Torrance Refinery wells. These wells should prove to be important sources of information for BTXE as well as 1,2 DCA source identification. Furthermore, ground water data collected should be analyzed in the context of data collected during the same sampling round.

Messrs. Ross and Liu
April 30, 1991
Page Seventeen

If you have any questions on this submittal, please contact the undersigned. Please note that corrected SCS cross-sections (Figures 4 and 5), from our latest report dated January 1991, will be submitted to your office shortly.

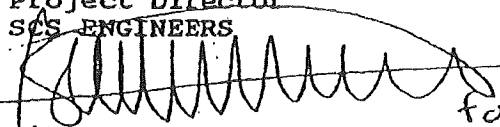
Sincerely,



Anne S. Childress, R.G.
Senior Project Geologist



Kenneth V. LaConde
Project Director
SCS ENGINEERS


for:
Richard C. Slade, R.G.
Consulting Ground Water Geologist

enclosures

cc: Mike Bihn, TRA
Mike Lappen, TRA
Ken Nelson, Agency Counsel, City of Torrance
Curt Cederquist, American Honda
Colin Lennard, Morrison & Foerster
Joe Armao, Heller, Ehrman, White & McAuliffe
Steve Onstott, Burke, Williams, & Sorensen
Lynn Lachenmeyer, Mobil

Table 1. Significant Fire/Explosion Incidents at
Mobil Torrance Refinery Since 1979

October 1979	- Fire in gas processing tower.
December 1979	- Vapors drift from refinery onto Van Ness Avenue, ignite car and nearby storage tank.
1980	- Minor explosion due to pump failure.
1984	- Oil unit caught fire, layers of thick soot released on surrounding streets and houses.
February 1984	- Refinery fire due to ruptured chemical line.
May 1984	- A ruptured pipe sent superheated oil shooting into the air and onto nearby residences.
January 1985	- Tanker car leaked flammable liquified butane gas creating a vapor cloud, closing Prairie Avenue.
November 1987	- Explosion, one major and one small fire.
March 1988	- Propane and butane gas leak from the top of a tanker being loaded at refinery.
May 1988	- Mobil cited by AQMD for excessive smoke.
July 1988	- Two separate explosions and fires, thousands of gallons of chemicals (including hydrogen peroxide, bromine and arsenic) were spilled at waste water treatment and storage tank.
August 1988	- Fire at crude oil processing unit.
January 1989	- Small fire.
February 1989	- Small explosion.
March 1989	- Hydrogen sulfide gases emanate through local neighborhood and nearby school.
March 1989	- Workers burned from blast of pressurized oil and steam from a processing unit.

Table 1. Continued

March 1990	- An explosion occurred while waste water was being cleaned from a tank.
September 1990-	Accidental surge of gases causes flame and smoke to be emitted from smokestacks.
November 1990	- Fire in oil storage tank at Mobil's main tank farm.

TABLE 2. ANALYTICAL RESULTS OF GROUND WATER SAMPLES COLLECTED FROM AMERICAN HONDA SITE (OCTOBER/NOVEMBER 1990)

Well No.	EPA 601 (ug/L)				EPA 602 (ug/L)			
	1,2 DCA	TCE	PCE	Other	B	T	EB	X
RW7-SCS	35	ND	ND	ND	21000	29000	2800	20000
RW7-RLA	335	ND	ND	ND	14200	53430	4270	24830
RW8-SCS	135	ND	ND	ND	16000	18000	1250	9000
RW8-RLA	1100	ND	ND	ND	6930	11150	1000	5500
RW9-SCS	4	ND	ND	ND	4	5	ND	4
RW9-RLA	12	1	12	ND	29	85	ND	51
RW10-SCS	ND	ND	ND	ND	1000	6300	2600	19000
RW10-RLA	3	ND	ND	3 1,1 DCE	1670	5000	1020	6800
RW11-SCS	4	1	5	16 1,1,1 TCA	2100	16000	2000	14600
RW11-RLA	11	ND	ND	21 1,1,1 TCA 17 1,1 DCE	2670	30800	2680	17880
RW12-SCS	ND	ND	4	ND	20250	30000	2800	19100
RW12-RLA	430	ND	58	ND	15000	24000	1500	7700
RW13-SCS	5	ND	5	ND	3250	6050	1540	9250
RW13-RLA	16	ND	7.3	ND	2800	6000	400	7700
RW14-SCS	23	10	34	ND	2	2	1	7
RW14-RLA	36	4	28	ND	ND	ND	ND	ND
RW15-SCS	71	62	17	14 1,1 DCE	56	ND	ND	1
RW15-RLA	100	47	13	ND	84	ND	ND	ND
RW16-SCS	ND	82	ND	ND	4350	2180	1550	7500
RW16-RLA	10	98	ND	ND	2300	1100	1700	2400

1,2 DCA = 1,2 Dichloroethane
 1,1 DCE = 1,1 Dichloroethene
 TCE = Trichloroethene
 PCE = Tetrachloroethene
 TCA = Trichloroethane

B = Benzene
 T = Toluene
 EB = Ethylbenzene
 X = Xylenes

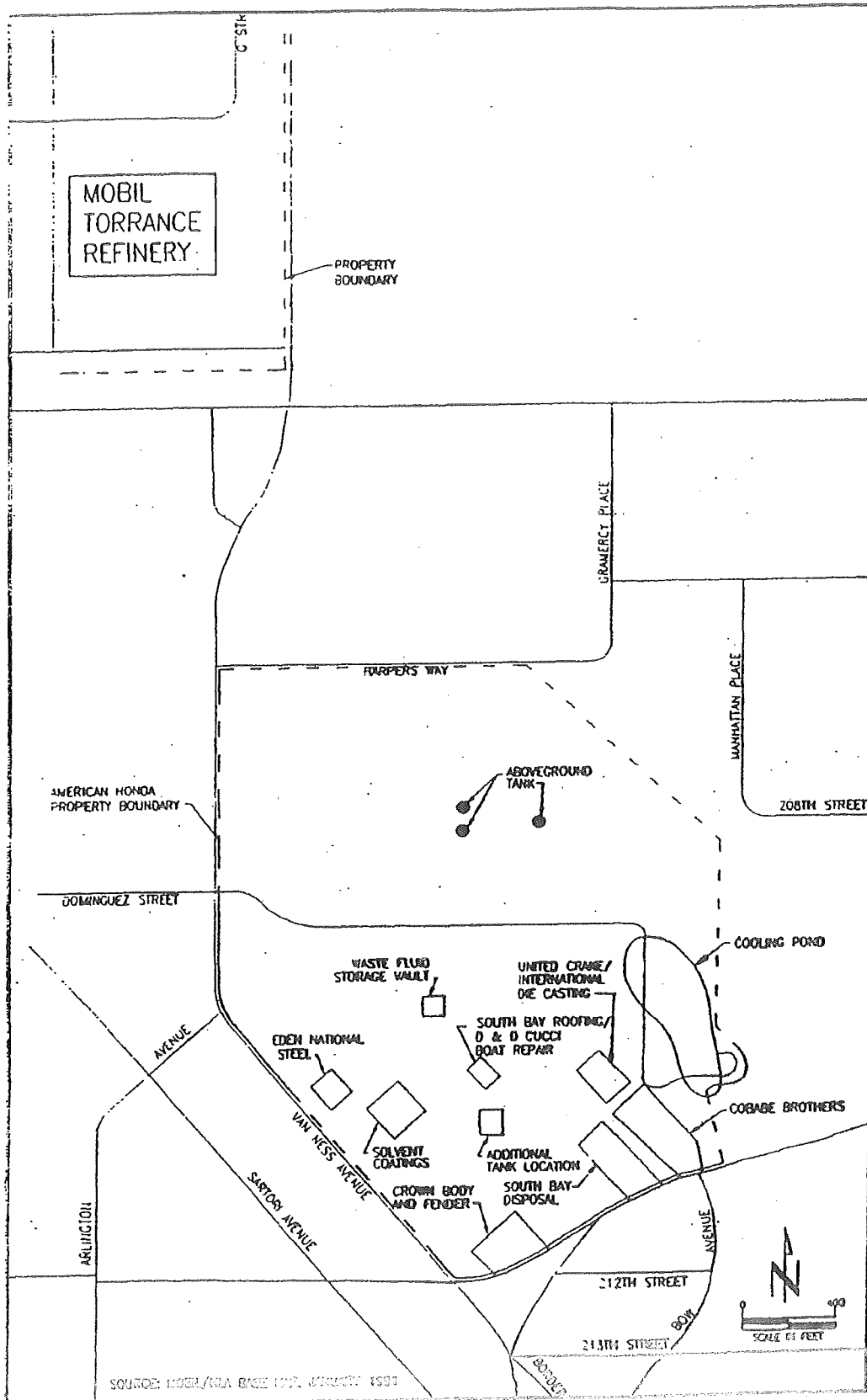


FIGURE 1. MAP SHOWING APPROXIMATE LOCATION OF HISTORICAL FEATURES AT THE AMERICAN HONDA SITE

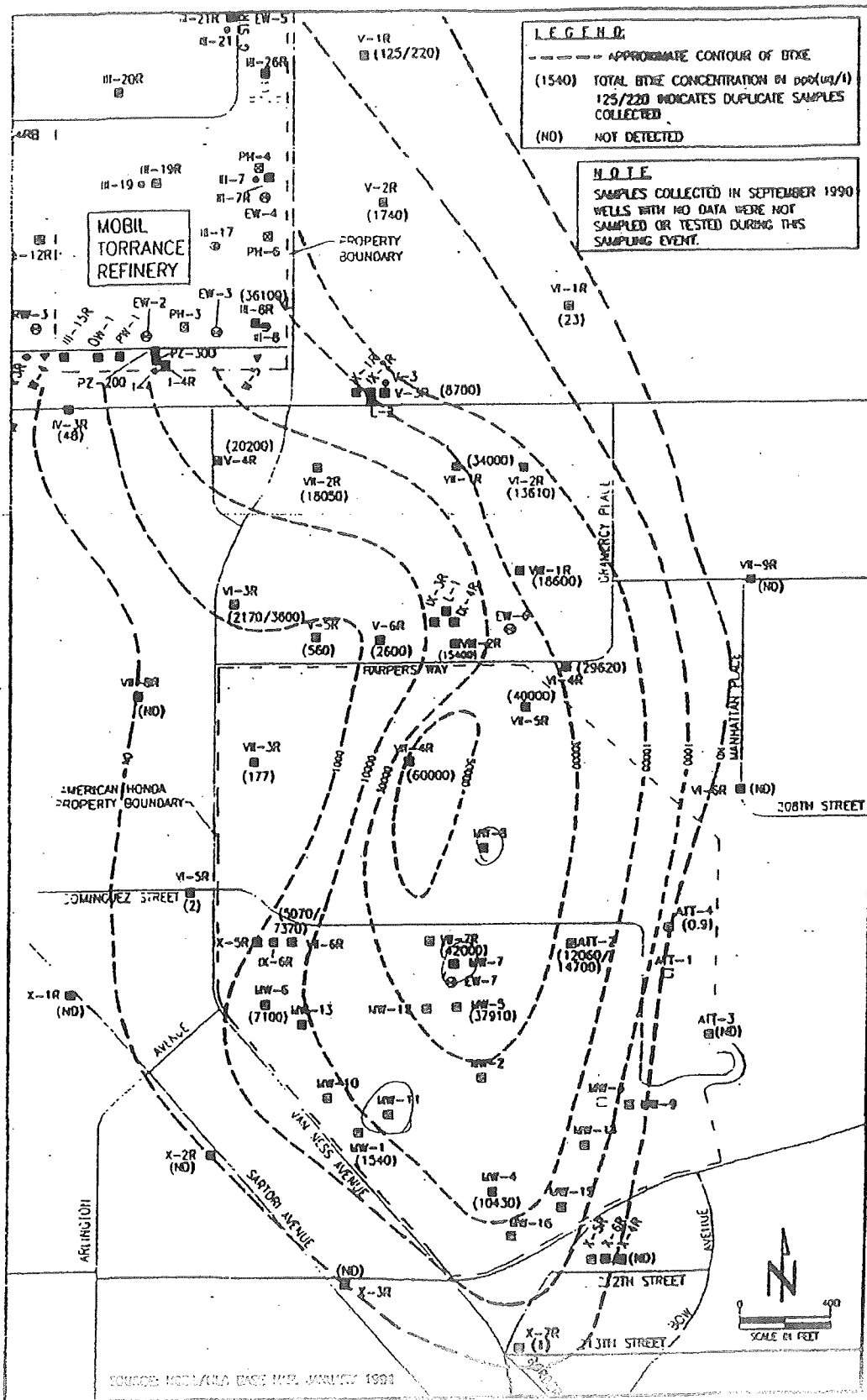


FIGURE 2. Contour Map of Total BTEX (Benzene, Toluene, Ethylbenzene, Xylenes) Shafter Gardens Aquifer Zone, Torrance, California

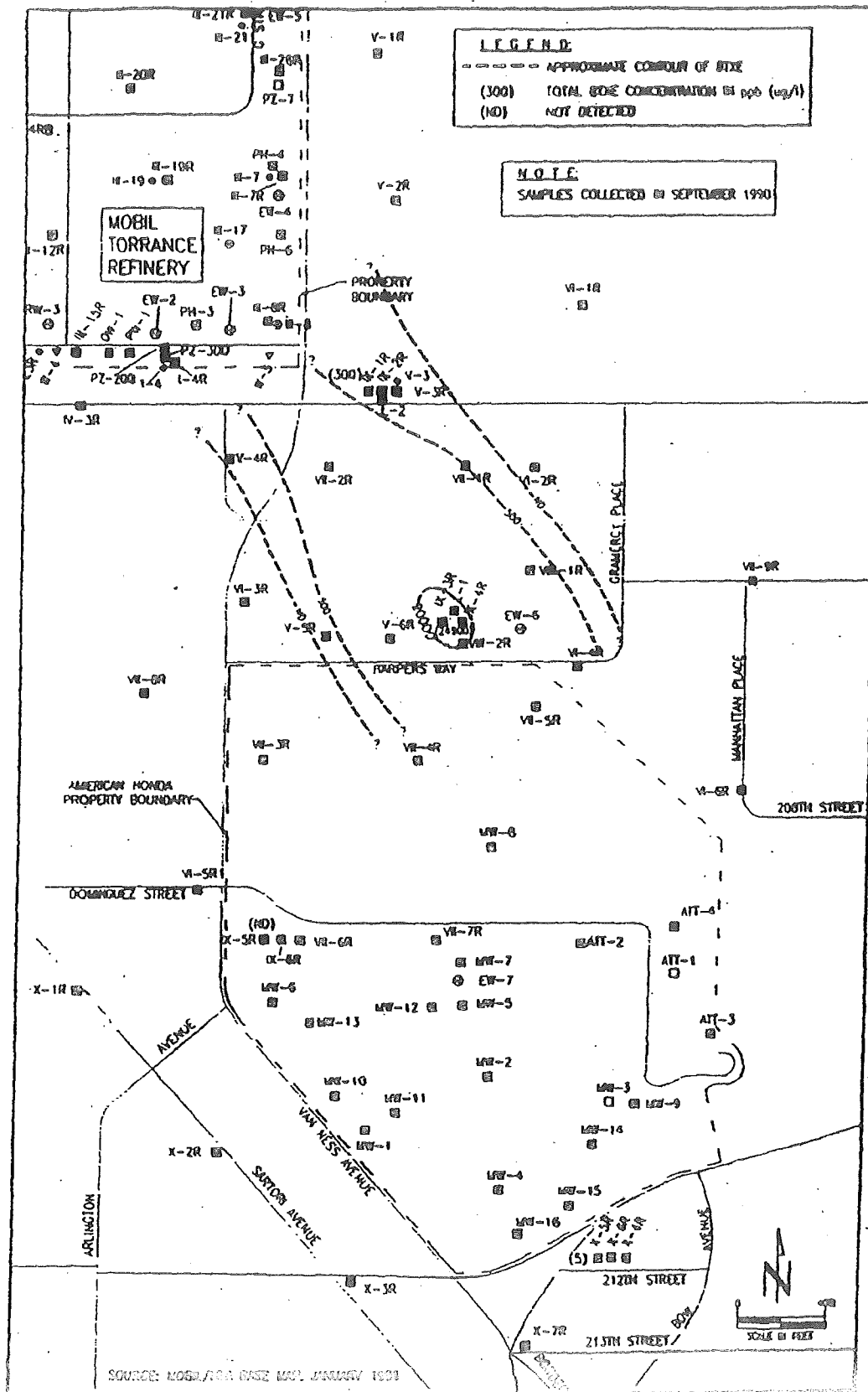


FIGURE 3. Contour map of total BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes) in the Redondo Beach Golf Course Aquifer Zone, Torrance, California.

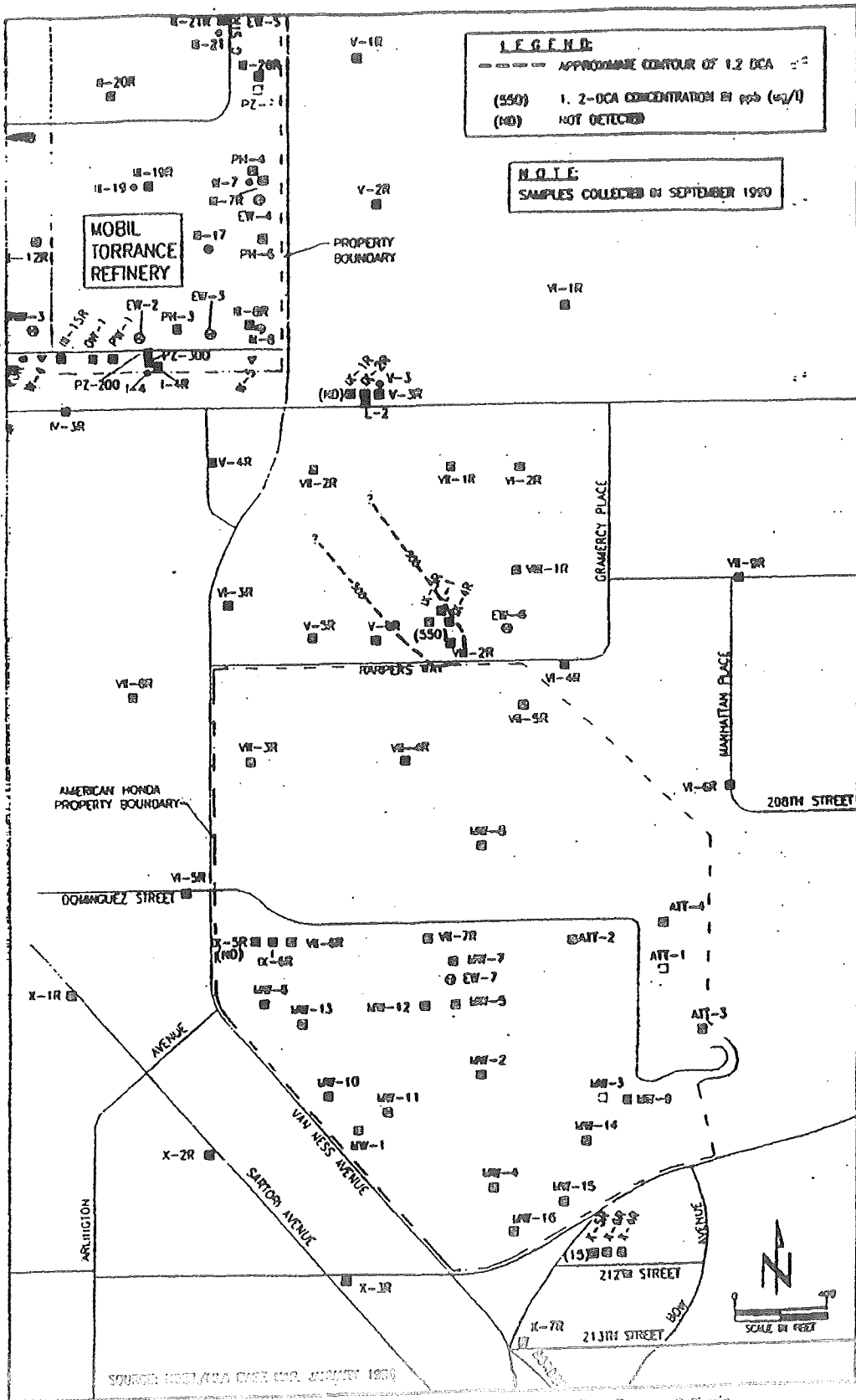


FIGURE 15 Contour Map of 1,2-DCA, Intermediate Oxidation Product Zone, Torrance, California

Fluctuation of Benzene in III-8R (Mobil Refinery)

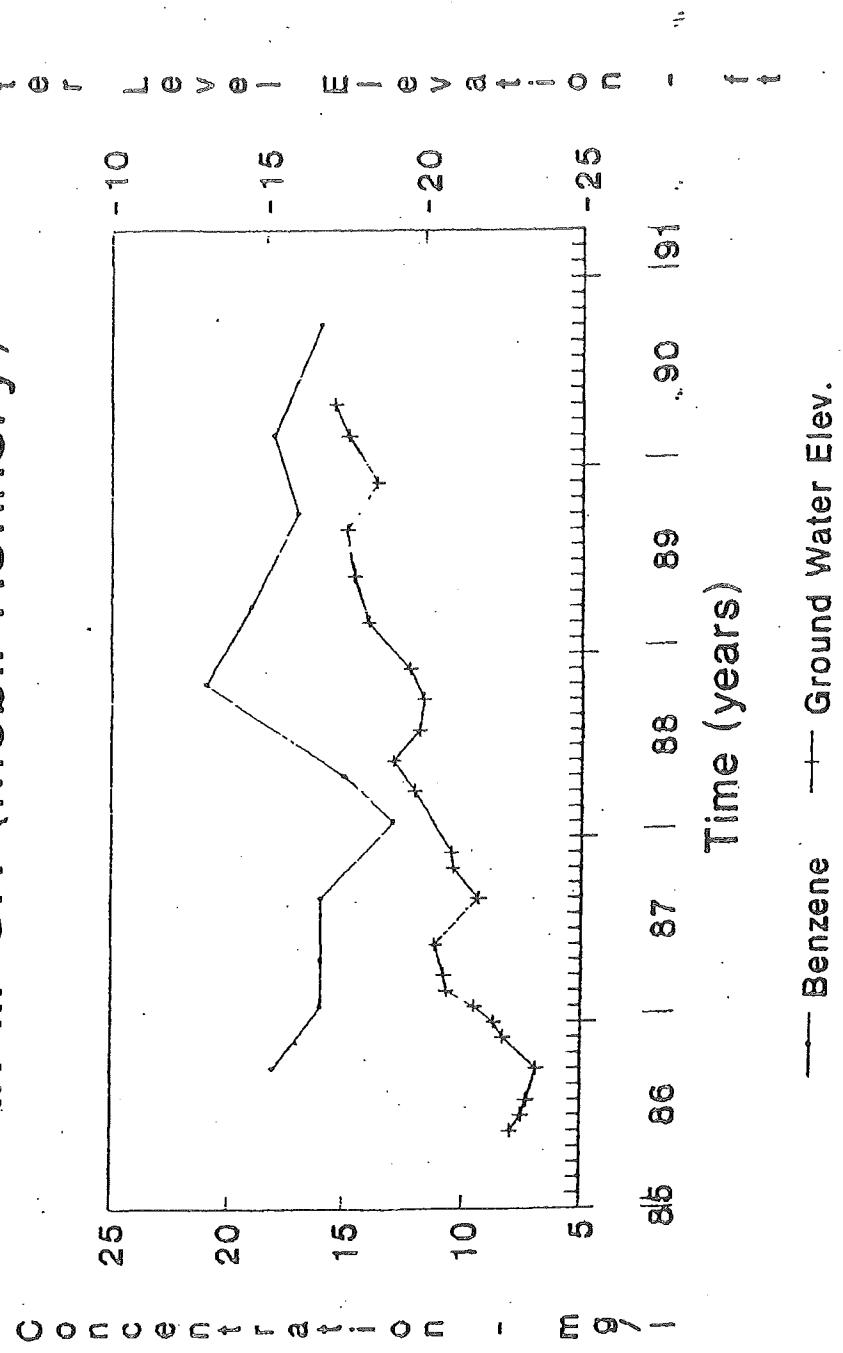


Figure 6.

Fluctuation of Benzene in I-4R (Mobil Refinery)

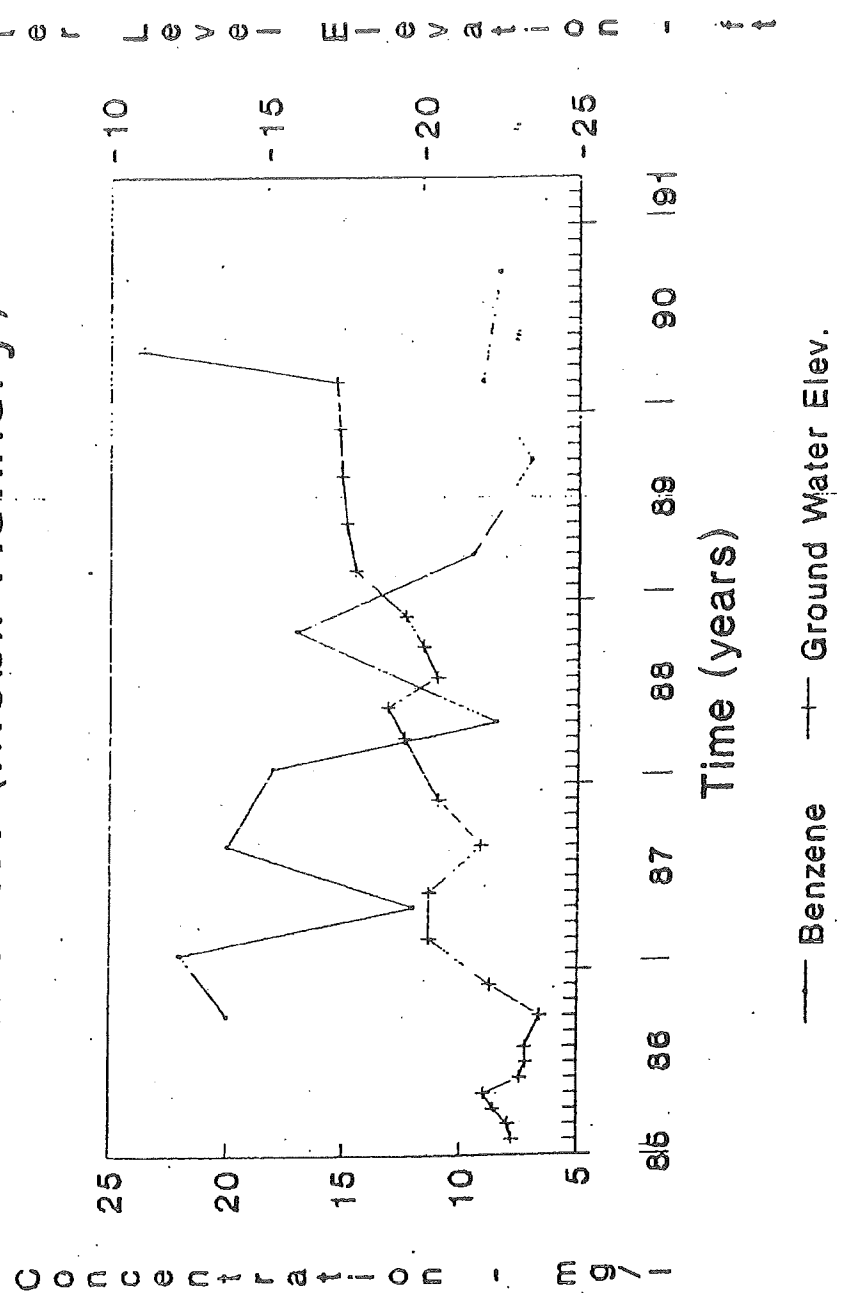


Figure 7.

Fluctuation of Benzene in V-3R (Del Amo Blvd)

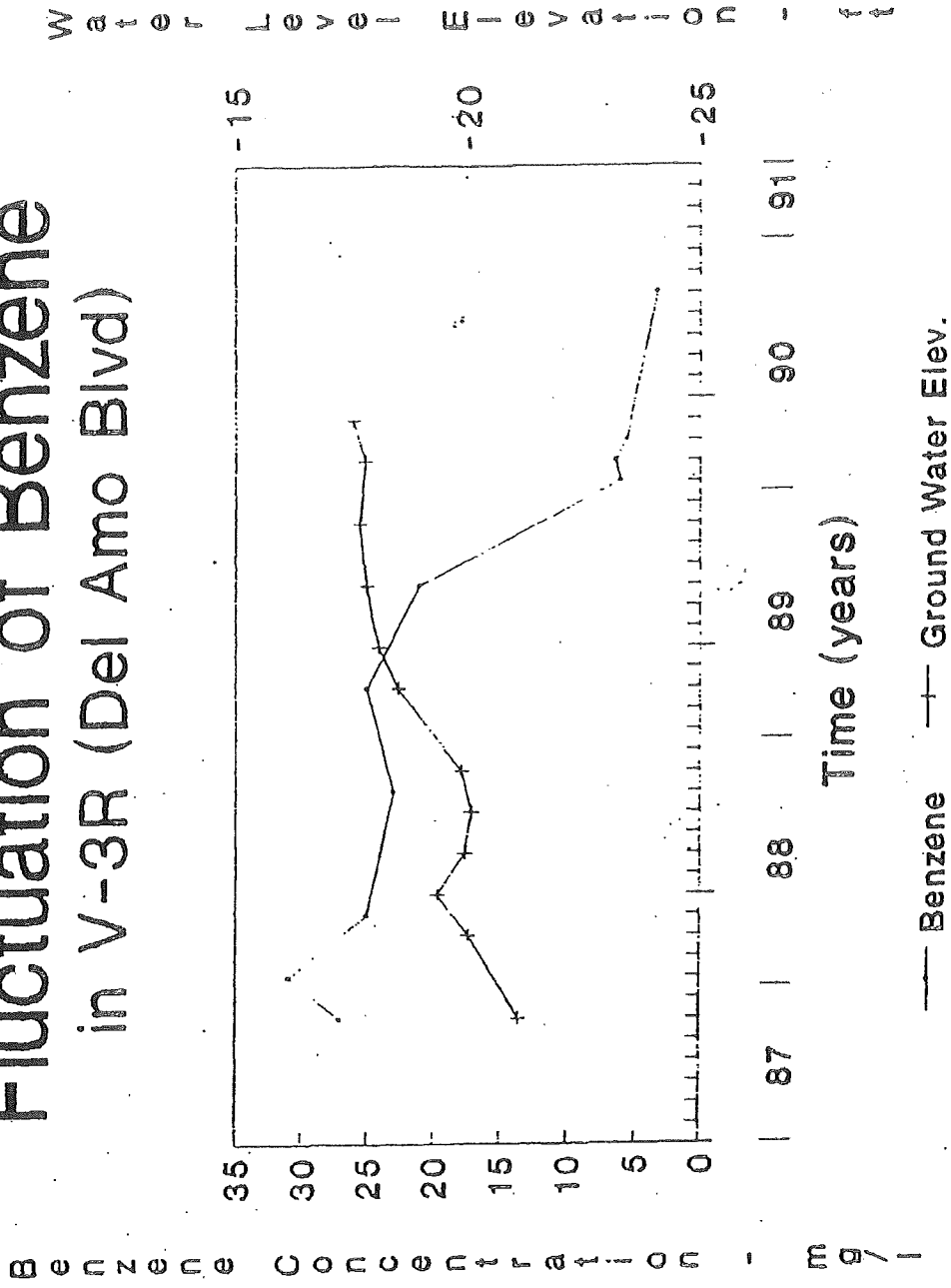


Figure 8.

Fluctuation of Benzene in V-6R (Harpers Furniture)

Benzene Concentration - mg/l

Water Level Elevation - ft

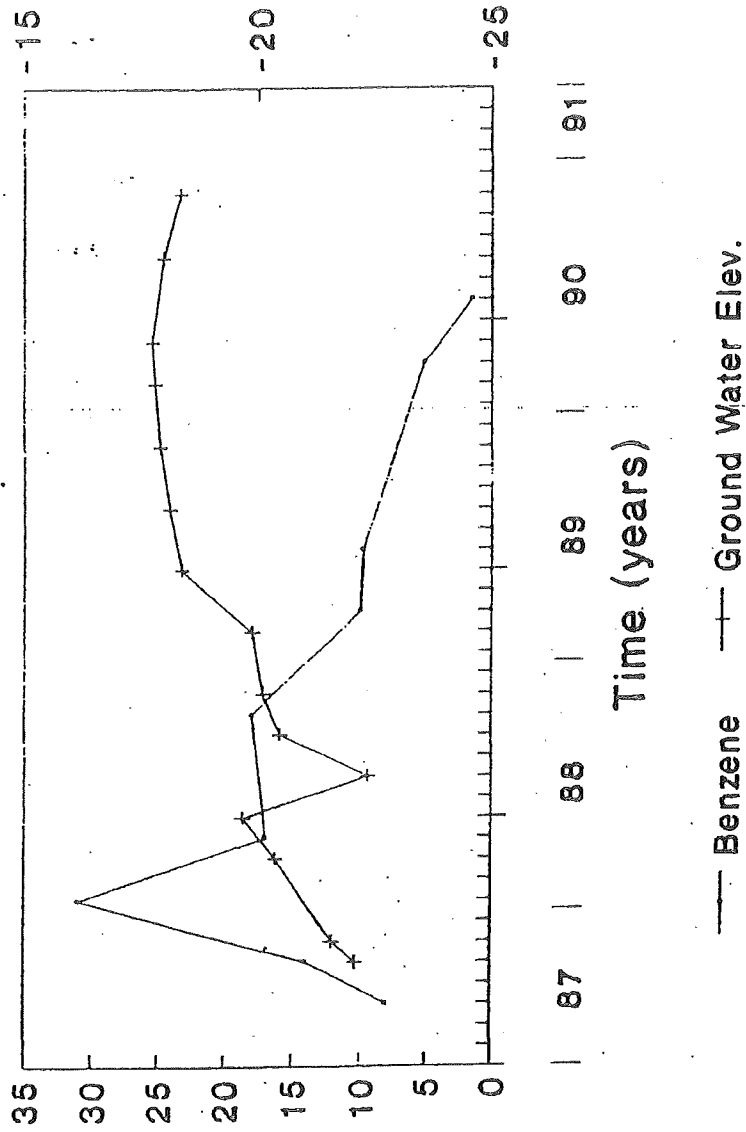


Figure 9.

Fluctuation of Benzene in VII-4R (U S Steel).

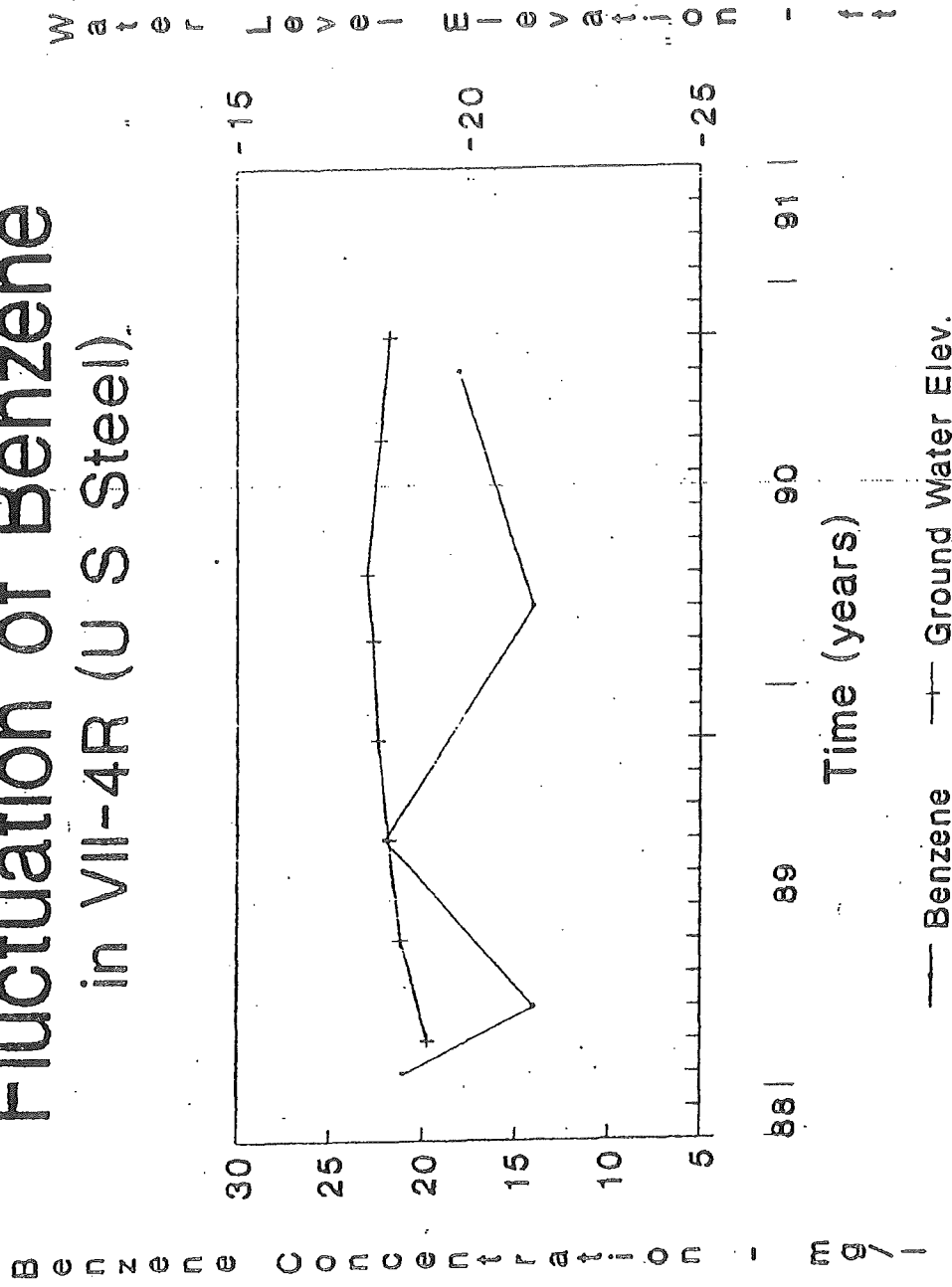


Figure 10.

Fluctuation of Benzene in MW-4 (26 Acre)

BENZENE CONCENTRATION - mg/l

Water Level Elevation - ft

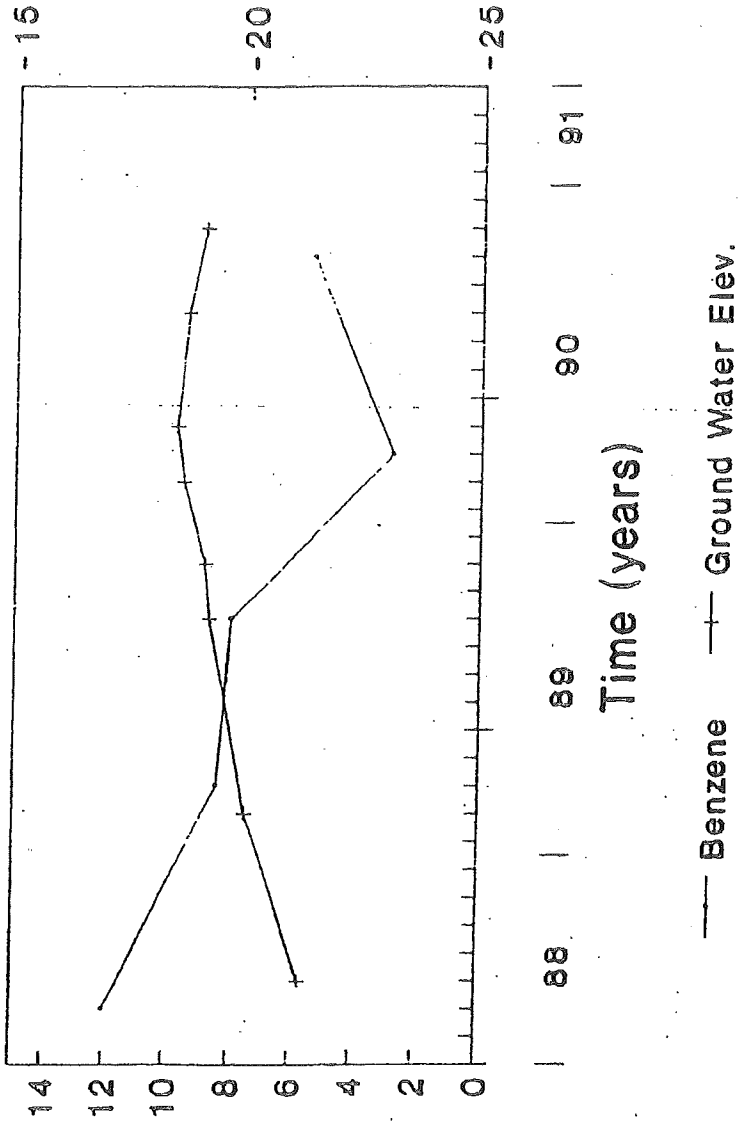


Figure 11.

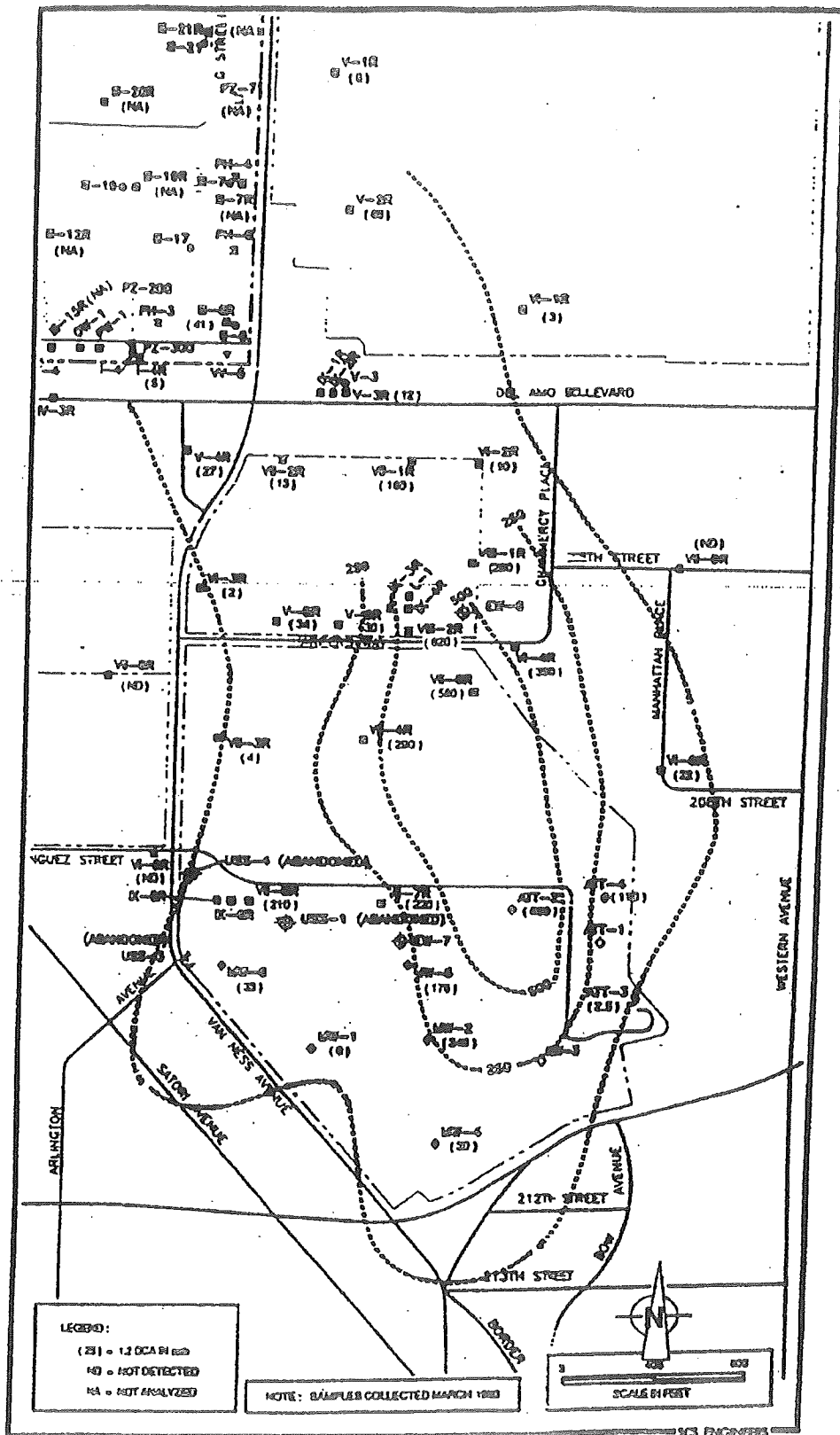


Figure 12. Contour Map of 1,2 DCA (March 1990) Shallow Gardena Aquifer Zone, Torrance, California

Fluctuation of Benzene in III-8R (Mobil Refinery)

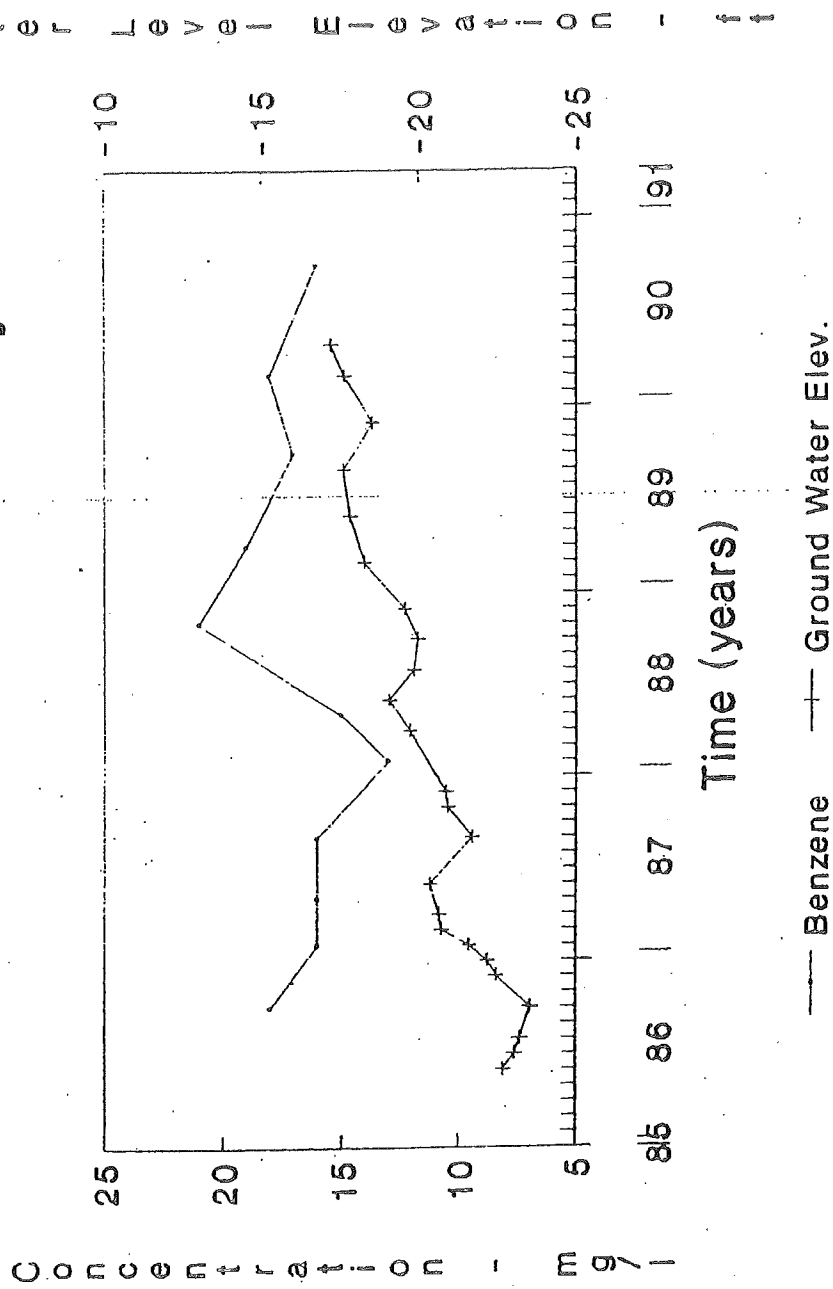


Figure 6.

Fluctuation of Benzene in I-4R (Mobil Refinery)

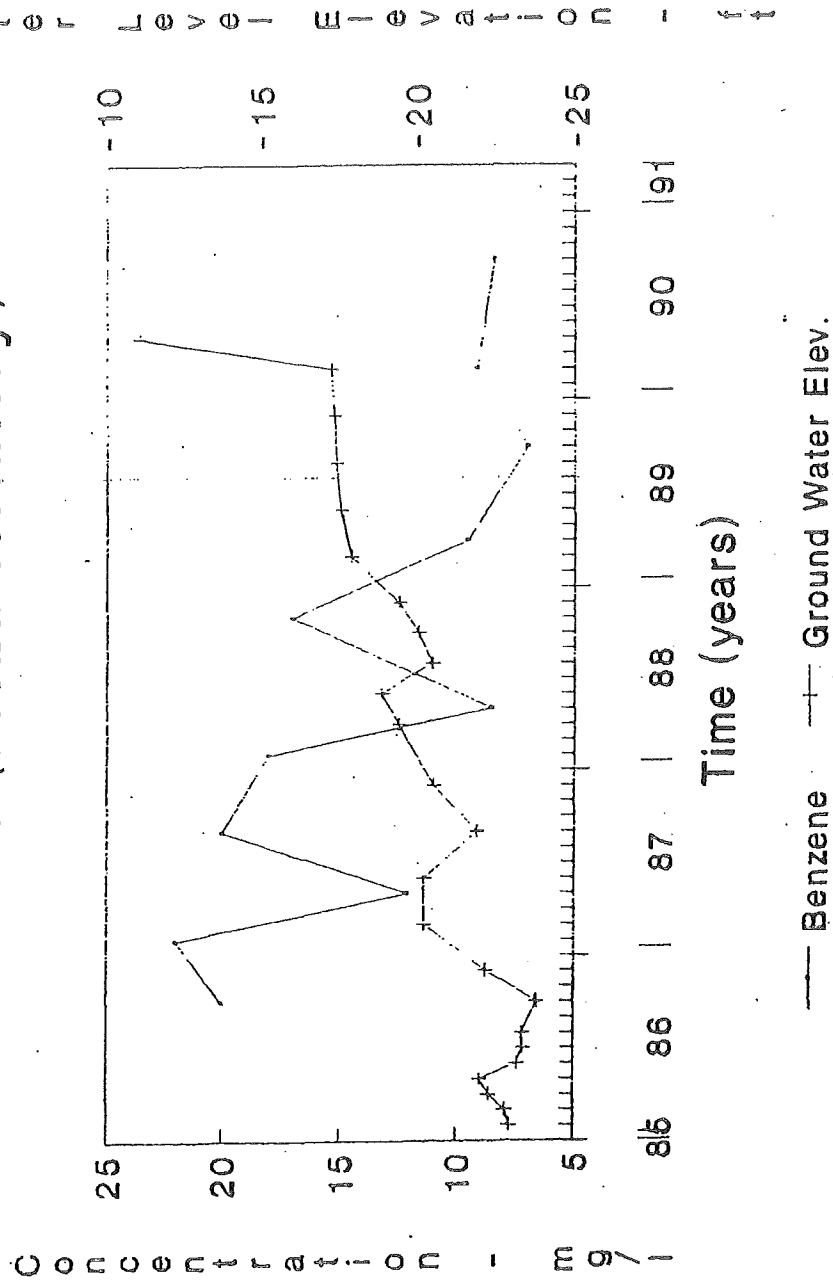


Figure 7.

Fluctuation of Benzene in V-3R (Del Amo Blvd)

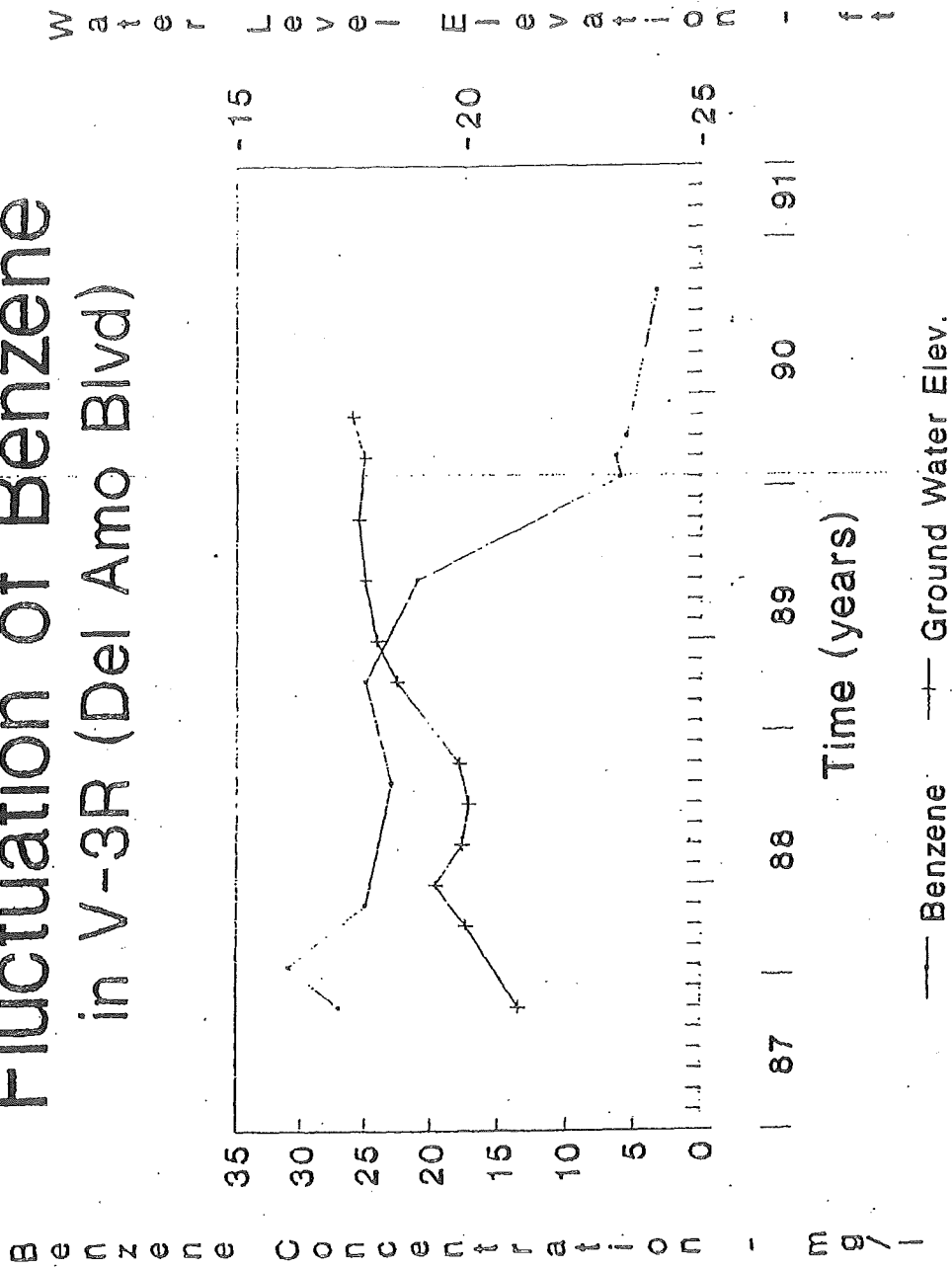


Figure 8.

Fluctuation of Benzene in V-6R (Harpers Furniture)

Benzene Concentration - mg/l

Water Level Elevation - ft

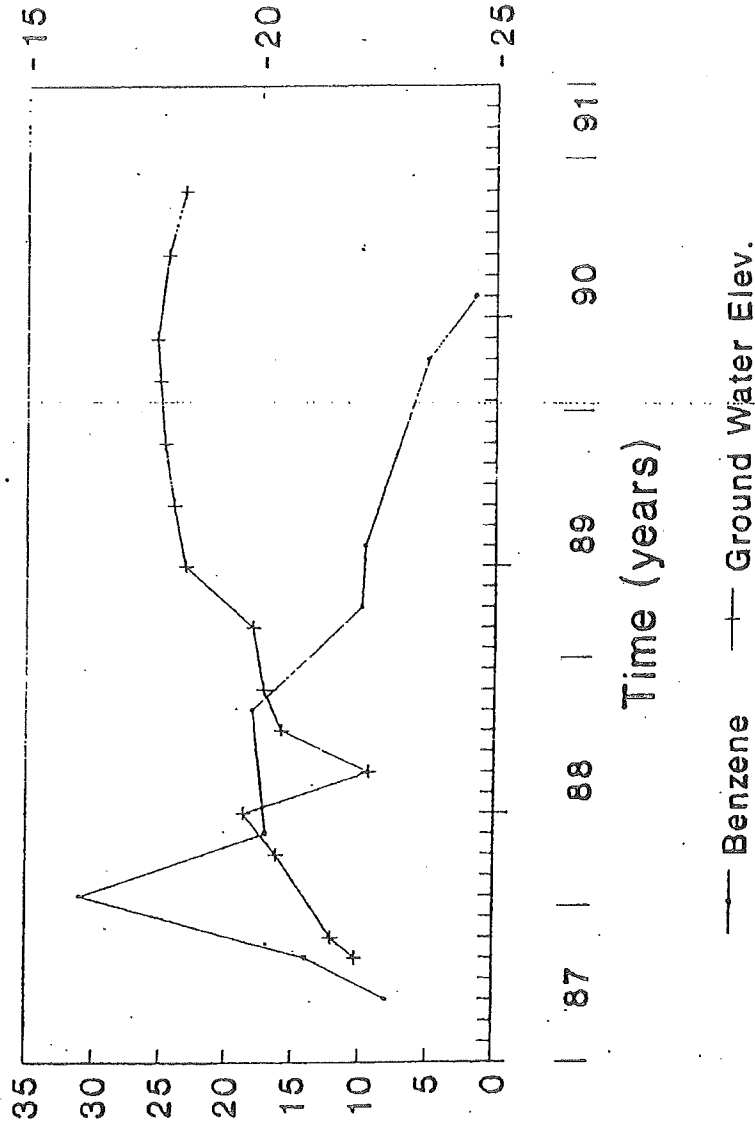


Figure 9.

Fluctuation of Benzene in VII-4R (U S Steel)

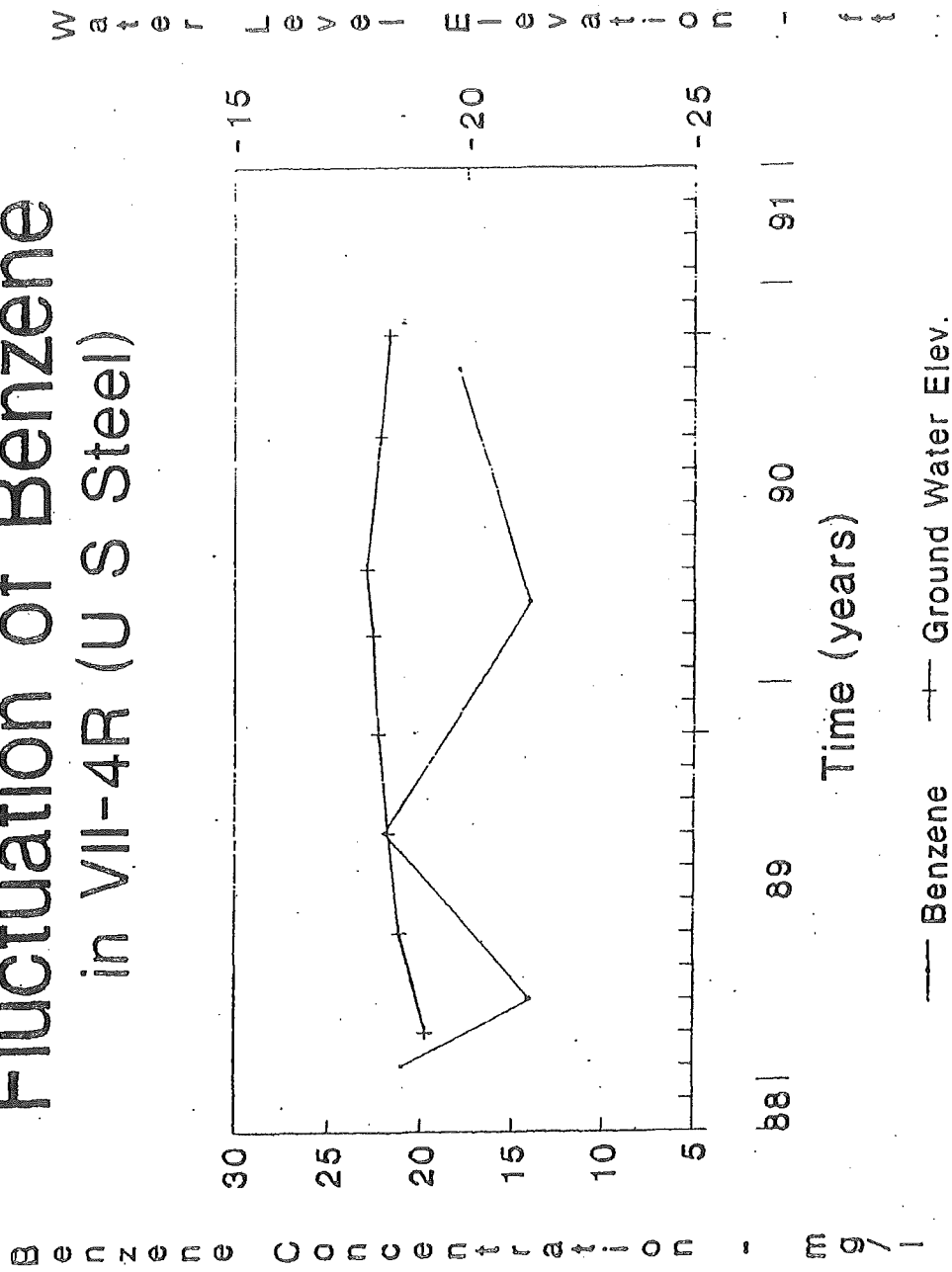


Figure 10.

Fluctuation of Benzene in MW-4 (26 Acre)

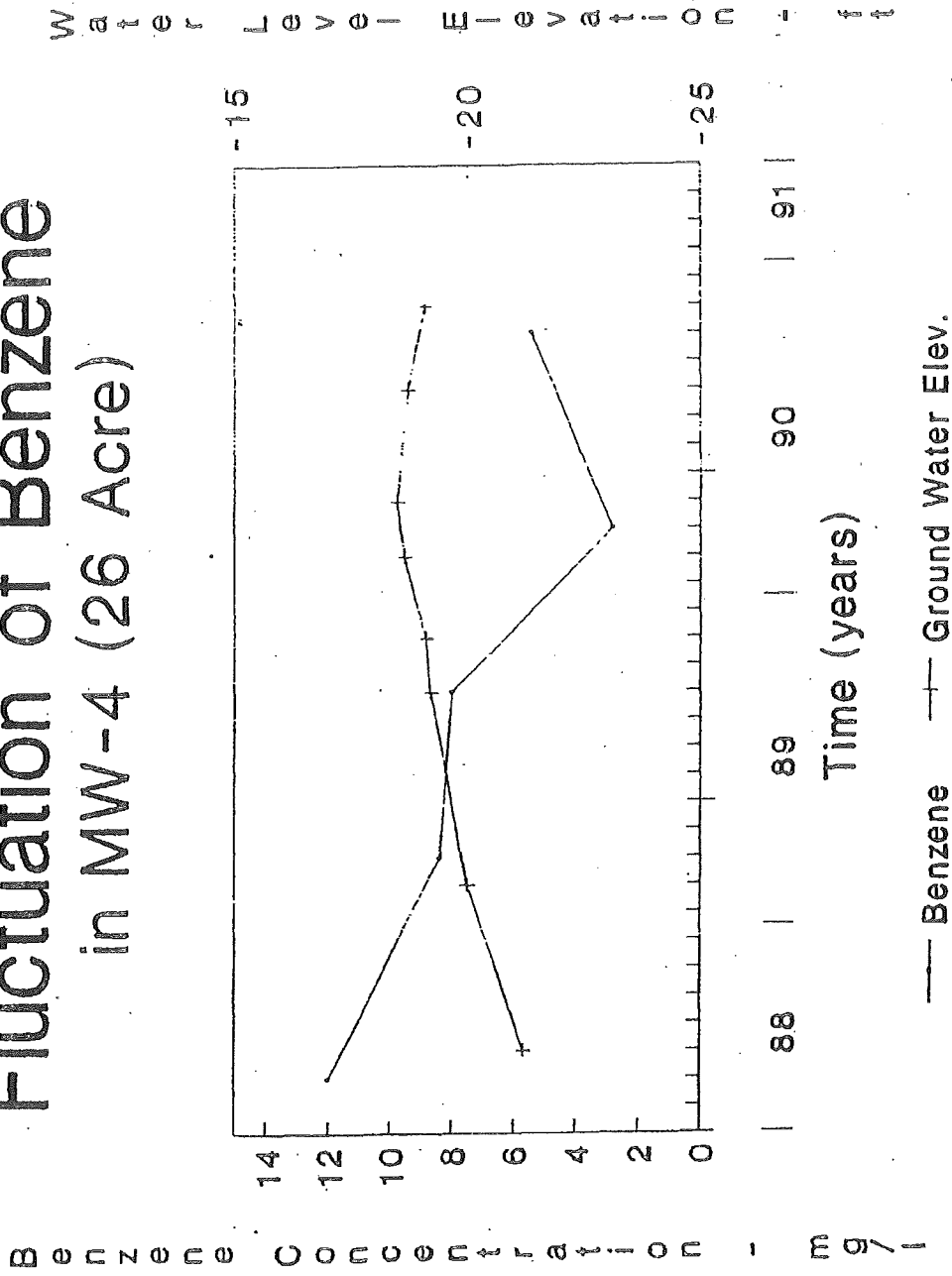


Figure 11.

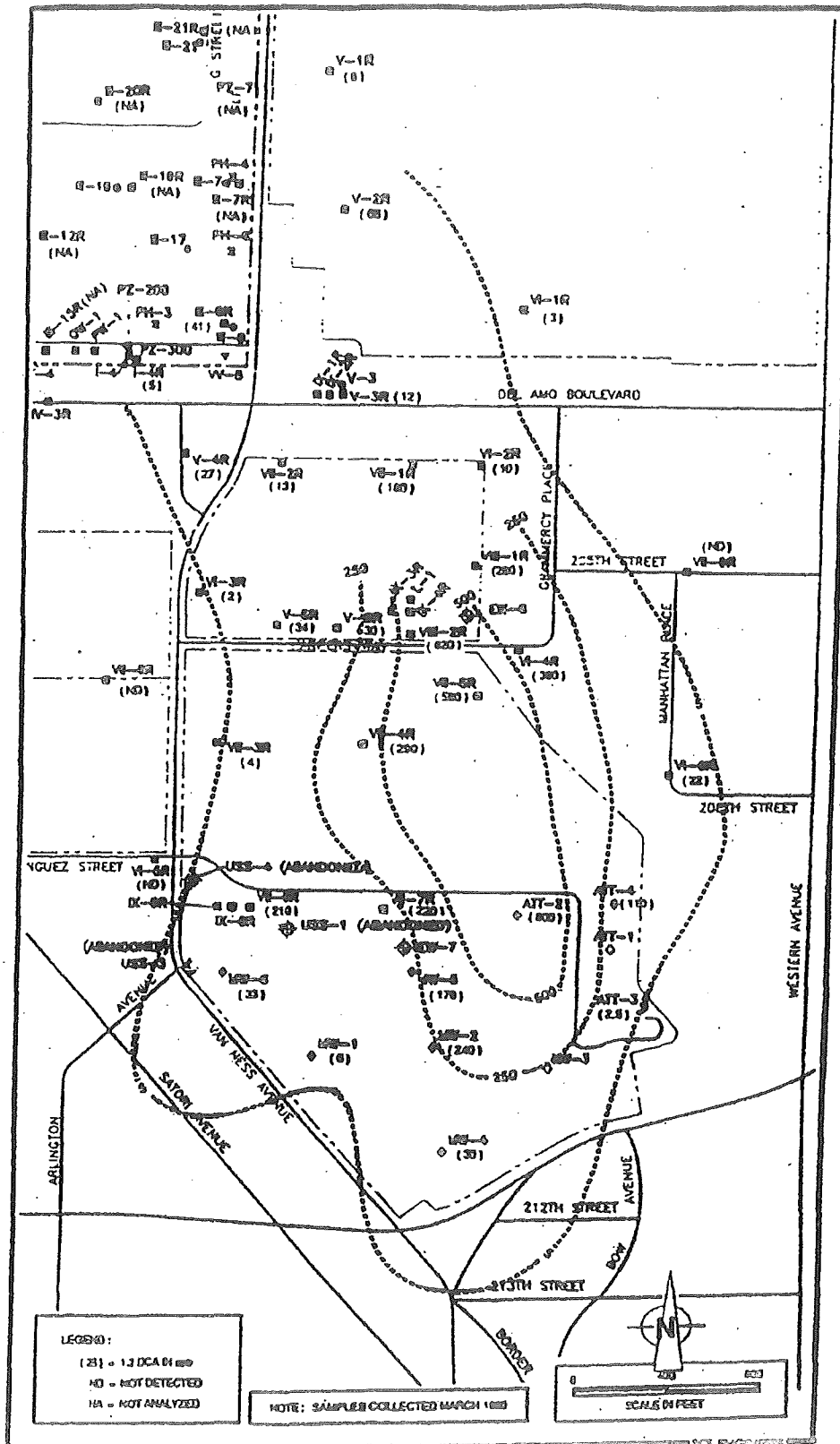


Figure 12. Contour Map of 1,2 DCA (March 1988) Shell's Gardens Aquifer Zone, Torrance, California

EXHIBIT 8

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CALIFORNIA 91754-2156
(213) 266-7500



September 13, 1990

Mr. J. H. Maness, Manager
Mobil Oil Corporation
3700 West 190th St.
Torrance, CA 90509-2929

**ADDITIONAL GROUND WATER INVESTIGATION AT TORRANCE/AMERICAN HONDA
SITE (FILE NO. 85-7)**

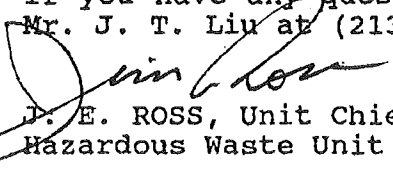
This letter is to summarize the outcome of the joint meeting between representatives from this Regional Board, Mobil, American Honda, and Torrance Redevelopment Agency (TRA) held in our office on September 12, 1990. The purpose of this meeting was to review individual workplans submitted by Harding Lawson Associates and SCS Engineers and develop a single workplan which will finalize the necessary additional assessment activities at the American Honda site.

In summary, a total of ten additional monitoring wells shall be installed at the American Honda site to furnish the data needed to complete the site assessment. Also, it was understood, subject to approval by the respective management, that the work will be accomplished jointly by American Honda/TRA and Mobil with individual reports submitted by each party.

We believe these joint activities are essential in finalizing the assessment of this complex condition of ground water contamination and will be a benefit in identifying all contributions to this condition.

You are directed to coordinate with American Honda/TRA and submit to this Board, a finalized workplan indicating the wells to be installed by each party along with a time schedule for these activities by September 24, 1990.

If you have any questions concerning this matter, please contact Mr. J. T. Liu at (213) 266-7615.


J. E. ROSS, Unit Chief
Hazardous Waste Unit

JTL/

cc: see the attached mailing list

Mr. J. H. Maness

Page 2

Mailing List

Michael Bihn, Redevelopment Agency of the City of Torrance

Ken Nelson, Agency Counsel, City of Torrance

Anne Childress, SCS Engineers

Frank Kresse, Harding Lawson Associates

Curt Cedarquist, American Honda Motor Co, Inc.

Lynn Lachenmeyer, Mobil Oil Corporation

Colin Leonard, Law Office of Burke, Williams & Sorensen

Joseph J. Armao, Luce, Forward, Hamilton & Scripps

State Department of Health Services, Toxic Substances Control
Program, Region 4

EXHIBIT 9

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500



March 20, 1992

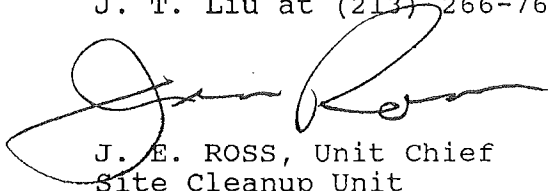
Mr. Curt Cederquist
American Honda Motor Co., Inc.
1919 Torrance Blvd.
Torrance, CA 90501-2746

ADDITIONAL SITE ASSESSMENT AT AMERICAN HONDA TORRANCE SITE
(FILE NO. 86-10)

Reference is made to your recent conversations with Board staff regarding the additional subsurface investigation which you will propose in the area adjacent to Monitoring Well MW-8.

The purposes of this investigation are to identify source(s) of contamination detected during drilling of well MW-8 and to fully delineate the extent of contamination. We believe findings from this investigation will help in determining the allocation of ground water remediation costs among all the involved parties. It is also our intent to arrange a joint meeting with all the involved parties when this additional investigation is completed. In order to resolve the issue of cost allocation in a timely manner, we will request that a workplan for this additional investigation be submitted to this Regional Board for our review no later than May 1, 1992.

If you have any questions concerning our request, please call Mr. J. T. Liu at (213) 266-7615.



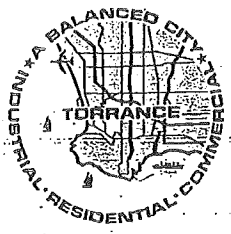
J. E. ROSS, Unit Chief
Site Cleanup Unit

JTL/

cc: State Department of Toxic Substances Control, Region 4
Mobil Oil Corporation, Torrance Refinery Attn: J. R. Britt
City of Torrance Redevelopment Agency Attn: Michael Bihn

EXHIBIT 10

5-5-05
Bldg 100



CITY OF
TORRANCE

FIRE DEPARTMENT
FIRE PREVENTION DIVISION
HAZARDOUS MATERIALS DIVISION

May 5, 2005

Mr. Anthony Piazza
American Honda Motor Company, Inc.
1919 Torrance Boulevard M/S 100-1W-4D
Torrance, CA 90501

SUBJECT: Request for Underground Storage Tank Case Closure at American Honda Motor Company, Inc., Building 100, 1919 Torrance Blvd., Torrance, CA 90503 (LFR Report No. 002-07746-00)

Dear Mr. Piazza:

This letter confirms the completion of a site investigation and corrective 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 tank(s) are greatly appreciated.

Based on information in the above referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tanks(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.30 of the Health and Safety Code and that no further action related to the petroleum release(s) is required.

This notice is issued pursuant to subdivision (h) of Section 25296.10 of the Health and Safety Code.

Mr. Piazza
May 5, 2005
Page Two

If you have groundwater monitoring wells and/or vapor extraction wells that are remaining on site and are not active and are not intended for any future use at the subject property, you must comply with the following:

1. All wells must be located and properly abandoned in accordance with the procedures per Part III, "Destruction of Monitoring Wells," **California Well Standards**, 1991 (Bulletin 74-90).
2. Well abandonment permits must be obtained from the Los Angeles County Department of Health Services, (213) 881-4147, and all other necessary permits must be obtained from the appropriate agencies prior to the start of work.
3. You must submit a report on the abandonment of the wells to this department by N/A. This report must include, at a minimum, a site map, a description of the well abandonment process, and copies of all signed permits.

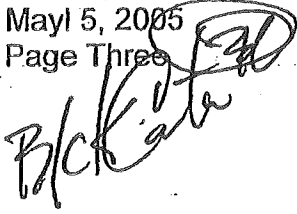
Finally, to cover the costs of remedial oversight of petroleum contaminated sites, all such sites will be billed at a rate of \$87.00/hour per Fee Resolution 98-136.

Please contact our office if you have any questions regarding this matter.

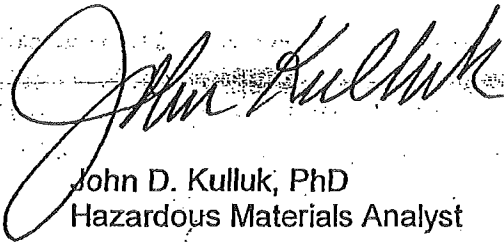
Sincerely,

TORRANCE FIRE DEPARTMENT
Richard V. Bongard, Fire Chief

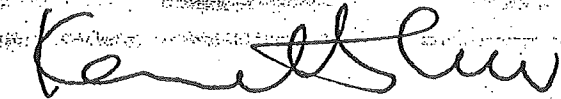
Mr. Piazza
May 5, 2005
Page Three



Ken C. Carter, Battalion Chief
Fire Marshal



John D. Kulluk, PhD
Hazardous Materials Analyst



Kenneth Lew
Hazardous Materials Specialist

enclosures: 1. billing
2. case closure summary form.

cc: Mr. Martin Hamann, LFR Levine-Fricke, 3150 Bristol Street, Suite 250
Costa Mesa, CA 92626

s:data/ustsite/closure/1919 Torrance Blvd Bldg 100.doc

TORRANCE FIRE DEPARTMENT

HAZARDOUS MATERIALS DIVISION

3031 Torrance Boulevard

Torrance, California 90503

Telephone 310/618-2973 • Fax 310/781-7506

Case Closure Summary Form

Date:		Case Reviewer: Ken Lew
Site Name/Address: Building 100 American Honda Motor Co., Inc. 1919 Torrance Blvd Torrance, CA 90501	Responsible Parties: American Honda Motor Co., Inc. Mr. Anthony Piazza	Address/Phone: American Honda Motor Co., Inc. 1919 Torrance Blvd Torrance, CA 90501 Mail Stop 100-1W-4D (310) 783-2056

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS

Contaminant	Soil		Analytical Method	Comments
	Initial (Year)	Latest (Year)		
TPH			8015M	N/A
BTEX	2004		8260B	B: ND; E: 2.3 ug/kg; T: 2.1 ug/kg; X: 14.9 ug/kg
MTBE	2004		8260B	Non-detect
METALS			6020 (ICPMS)	N/A
TRPH	2004		418.1	34 mg/kg

SITE CHARACTERIZATION INFORMATION

GW basin: Los Angeles		Uses:	Depth to Usable Aquifer:	
Distance to nearest supply well:			Distance between known shallow GW impact and usable aquifer:	
GW shallowest depth: Approx. 70 ft.	GW deepest depth:		Well screen:	Flow Direction:
Soil types: silts/sands/clays			Max soil depth sampled: 9.5 feet	

SOIL REMEDIATION

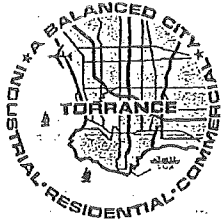
Method:	Duration:
Not Applicable	Not Applicable

RECOMMENDED ACTION

Case Closure Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Solvent Case Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Additional Action Required: None.	

COMMENTS AND JUSTIFICATION FOR RECOMMENDED ACTION

Based on the soil sample analytical results, the depth to groundwater underlying the site, and other investigative information presented in the Request for Closure dated December 3, 2004, no additional investigative activities appear to be warranted at this time.



FIRE DEPARTMENT
FIRE PREVENTION DIVISION
HAZARDOUS MATERIALS DIVISION

CITY OF
TORRANCE

002-07746-00

5-5-05

Bldg 300

May 5, 2005

Mr. Anthony Piazza
American Honda Motor Company, Inc.
1919 Torrance Boulevard M/S 100-1W-4D
Torrance, CA 90501

SUBJECT: Request for Underground Storage Tank Case Closure at American Honda Motor Company, Inc., Building 300, 1919 Torrance Blvd., Torrance, CA 90503 (Ref: LFR Report No. 002-07746-00)

Dear Mr. Piazza:

This letter confirms the completion of a site investigation and corrective 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 tank(s) are greatly appreciated.

Based on information in the above referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tanks(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.30 of the Health and Safety Code and that no further action related to the petroleum release(s) is required.

This notice is issued pursuant to subdivision (h) of Section 25296.10 of the Health and Safety Code.

Mr. Piazza
May 5, 2005
Page Two

If you have groundwater monitoring wells and/or vapor extraction wells that are remaining on site and are not active and are not intended for any future use at the subject property, you must comply with the following:

1. All wells must be located and properly abandoned in accordance with the procedures per Part III, "Destruction of Monitoring Wells," California Well Standards, 1991 (Bulletin 74-90).
2. Well abandonment permits must be obtained from the Los Angeles County Department of Health Services, (213) 881-4147, and all other necessary permits must be obtained from the appropriate agencies prior to the start of work.
3. You must submit a report on the abandonment of the wells to this department by N/A. This report must include, at a minimum, a site map, a description of the well abandonment process, and copies of all signed permits.

Finally, to cover the costs of remedial oversight of petroleum contaminated sites, all such sites will be billed at a rate of \$87.00/hour per Fee Resolution 98-136.

Please contact our office if you have any questions regarding this matter.

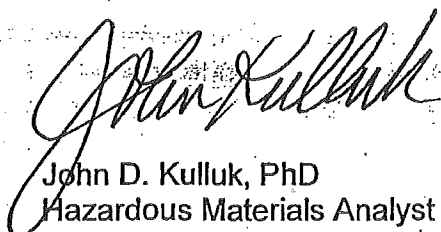
Sincerely,

TORRANCE FIRE DEPARTMENT
Richard V. Bongard, Fire Chief

Mr. Piazza
May 5, 2005
Page Three



Ken C. Carter, Battalion Chief
Fire Marshal



John D. Kulluk, PhD
Hazardous Materials Analyst



Kenneth Lew
Hazardous Materials Specialist

enclosures: 1. billing
2. case closure summary form

cc: Mr. Martin Hamann, LFR Levine-Fricke, 3150 Bristol Street, Suite 250
Costa Mesa, CA 92626

s:data/ustsite/closure/1919 Torrance Blvd Bldg 300.doc

TORRANCE FIRE DEPARTMENT

HAZARDOUS MATERIALS DIVISION

3031 Torrance Boulevard

Torrance, California 90503

Telephone 310/618-2973 • Fax 310/781-7506

Case Closure Summary Form

Date:		Case Reviewer: Ken Lew
Site Name/Address: Building 300 American Honda Motor Co., Inc. 1919 Torrance Blvd Torrance, CA 90501	Responsible Parties: American Honda Motor Co., Inc. Mr. Anthony Piazza	Address/Phone: American Honda Motor Co., Inc. 1919 Torrance Blvd Torrance, CA 90501 Mail Stop 100-1W-4D (310) 783-2056

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS

Contaminant	Soil		Analytical Method	Comments
	Initial (Year)	Latest (Year)		
TPH	2004		8015M	TPHg: <5mg/kg; TPHd: <10mg/kg; TPHo: <50mg/kg
BTEX	2004		8260B	All non-detect
MTBE	2004		8260B	<10 mg/kg
METALS	2004		6020 (ICPMS)	Arsenic: 8.6 mg/kg
Full 8260B list	2004		8260B	All non-detect

SITE CHARACTERIZATION INFORMATION

GW basin: Los Angeles		Uses:	Depth to Usable Aquifer:	
Distance to nearest supply well:			Distance between known shallow GW impact and usable aquifer:	
GW shallowest depth: Approx. 70 ft.	GW deepest depth:	Well screen:	Flow Direction:	
Soil types: silts/sands/clays			Max soil depth sampled: 12 feet	

SOIL REMEDIATION

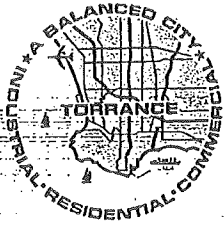
Method: Not Applicable	Duration: Not Applicable
---------------------------	-----------------------------

RECOMMENDED ACTION

Case Closure Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Solvent Case Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Additional Action Required: None.	

COMMENTS AND JUSTIFICATION FOR RECOMMENDED ACTION

Based on the soil sample analytical results, the depth to groundwater underlying the site, and other investigative information presented in the Request for Closure dated December 3, 2004, no additional investigative activities appear to be warranted at this time.



CITY OF TORRANCE

FIRE DEPARTMENT
FIRE PREVENTION DIVISION
HAZARDOUS MATERIALS DIVISION

002-07746-00
5-9-05
Bldg 600

May 9, 2005

Mr. Anthony Piazza
American Honda Motor Company, Inc.
1919 Torrance Boulevard M/S 100-1W-4D
Torrance, CA 90501

**SUBJECT: Request for Underground Storage Tank Case Closure at
American Honda Motor Company, Inc., Building 600,
1919 Torrance Blvd., Torrance, CA 90503
(Ref: LFR Report No. 002-07746-00)**

Dear Mr. Piazza:

This letter confirms the completion of a site investigation and corrective action for the underground storage tank(s) 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 tank(s) are greatly appreciated.

Based on information in the above referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tanks(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.30 of the Health and Safety Code and that no further action related to the petroleum release(s) is required.

This notice is issued pursuant to subdivision (h) of Section 25296.10 of the Health and Safety Code.

Mr. Piazza
May 9, 2005
Page Two

If you have groundwater monitoring wells and/or vapor extraction wells that are remaining on site and are not active and are not intended for any future use at the subject property, you must comply with the following:

1. All wells must be located and properly abandoned in accordance with the procedures per Part III, "Destruction of Monitoring Wells," California Well Standards, 1991 (Bulletin 74-90).
2. Well abandonment permits must be obtained from the Los Angeles County Department of Health Services, (213) 881-4147, and all other necessary permits must be obtained from the appropriate agencies prior to the start of work.
3. You must submit a report on the abandonment of the wells to this department by N/A. This report must include, at a minimum, a site map, a description of the well abandonment process, and copies of all signed permits.

Finally, to cover the costs of remedial oversight of petroleum contaminated sites, all such sites will be billed at a rate of \$87.00/hour per Fee Resolution 98-136.

Please contact our office if you have any questions regarding this matter.

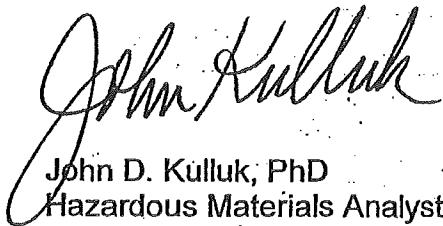
Sincerely,

TORRANCE FIRE DEPARTMENT
Richard V. Bongard, Fire Chief

Mr. Piazza
May 9, 2005
Page Three



Ken C. Carter, Battalion Chief
Fire Marshal



John D. Kulluk, PhD
Hazardous Materials Analyst



Kenneth Lew
Hazardous Materials Specialist

enclosures: 1. billing
2. case closure summary form

cc: Mr. Martin Hamann, LFR Levine-Fricke, 3150 Bristol Street, Suite 250
Costa Mesa, CA 92626

s:data\ustsite\closure\1919 Torrance Blvd Bldg 600.doc

TORRANCE FIRE DEPARTMENT
HAZARDOUS MATERIALS DIVISION
 3031 Torrance Boulevard
 Torrance, California 90503
 Telephone 310/618-2973 • Fax 310/781-7506

Case Closure Summary Form

Date:		Case Reviewer: Ken Lew
Site Name/Address: Building 600 American Honda Motor Co., Inc. 1919 Torrance Blvd Torrance, CA 90501	Responsible Parties: American Honda Motor Co., Inc. Mr. Anthony Piazza	Address/Phone: American Honda Motor Co., Inc. 1919 Torrance Blvd Torrance, CA 90501 Mail Stop 100-1W-4D (310) 783-2056

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS

Contaminant	Soil		Analytical Method	Comments
	Initial (Year)	Latest (Year)		
TPH	2004		8015M	All non-detect
BTEX	2004		8260B	All non-detect
MTBE	2004		8260B	Non-detect
METALS			6020 (ICPMS)	N/A

SITE CHARACTERIZATION INFORMATION

GW basin: Los Angeles	Uses:	Depth to Usable Aquifer:	
Distance to nearest supply well:		Distance between known shallow GW impact and usable aquifer:	
GW shallowest depth: Approx. 70 ft.	GW deepest depth:	Well screen:	Flow Direction:
Soil types: silts/sands/clays		Max soil depth sampled: 4.5	

SOIL REMEDIATION

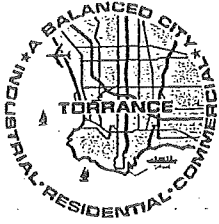
Method: Not Applicable	Duration: Not Applicable
-------------------------------	---------------------------------

RECOMMENDED ACTION

Case Closure Yes <input checked="" type="checkbox"/> No	Solvent Case Yes No <input checked="" type="checkbox"/>
Additional Action Required: None.	

COMMENTS AND JUSTIFICATION FOR RECOMMENDED ACTION

Based on the soil sample analytical results, the depth to groundwater underlying the site, and other investigative information presented in the Report on Modifications to 10,000-Gal Diesel-UST dated February 2, 2005, no additional investigative activities appear to be warranted at this time.



CITY OF TORRANCE

FIRE DEPARTMENT
FIRE PREVENTION DIVISION
HAZARDOUS MATERIALS DIVISION

May 5, 2005

Mr. Anthony Piazza
American Honda Motor Company, Inc.
1919 Torrance Boulevard M/S 100-1W-4D
Torrance, CA 90501

**SUBJECT: Request for Underground Storage Tank Case Closure at
American Honda Motor Company, Inc., Building 500,
1919 Torrance Blvd., Torrance, CA 90503
(Ref: LFR Report No. 002-07746-00)**

Dear Mr. Piazza:

This letter confirms the completion of a site investigation and corrective 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 tank(s) are greatly appreciated.

Based on information in the above referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tanks(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.30 of the Health and Safety Code and that no further action related to the petroleum release(s) is required.

This notice is issued pursuant to subdivision (h) of Section 25296.10 of the Health and Safety Code.

Mr. Piazza
May 5, 2005
Page Two

If you have groundwater monitoring wells and/or vapor extraction wells that are remaining on site and are not active and are not intended for any future use at the subject property, you must comply with the following:

1. All wells must be located and properly abandoned in accordance with the procedures per Part III, "Destruction of Monitoring Wells," California Well Standards, 1991 (Bulletin 74-90).
2. Well abandonment permits must be obtained from the Los Angeles County Department of Health Services, (213) 881-4147, and all other necessary permits must be obtained from the appropriate agencies prior to the start of work.
3. You must submit a report on the abandonment of the wells to this department by N/A. This report must include, at a minimum, a site map, a description of the well abandonment process, and copies of all signed permits.

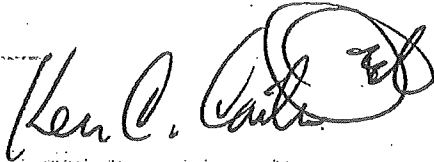
Finally, to cover the costs of remedial oversight of petroleum contaminated sites, all such sites will be billed at a rate of \$87.00/hour per Fee Resolution 98-136.

Please contact our office if you have any questions regarding this matter.

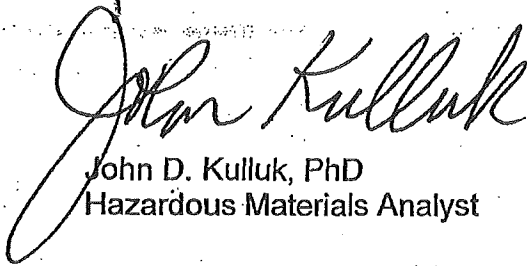
Sincerely,

TORRANCE FIRE DEPARTMENT
Richard V. Bongard, Fire Chief

Mr. Piazza
May 5, 2005
Page Three



Ken C. Carter, Battalion Chief
Fire Marshal



John D. Kulluk, PhD
Hazardous Materials Analyst



Kenneth Lew
Hazardous Materials Specialist

enclosures: 1. billing
2. case closure summary form

cc: Mr. Martin Hamann, LFR Levine-Fricke, 3150 Bristol Street, Suite 250
Costa Mesa, CA 92626

s:data/ustsite/closure/1919 Torrance Blvd Bldg 500.doc

TORRANCE FIRE DEPARTMENT

HAZARDOUS MATERIALS DIVISION

3031 Torrance Boulevard

Torrance, California 90503

Telephone 310/618-2973 • Fax 310/781-7506

Case Closure Summary Form

Date:		Case Reviewer: Ken Lew
Site Name/Address: Building 500 American Honda Motor Co., Inc. 1919 Torrance Blvd Torrance, CA 90501	Responsible Parties: American Honda Motor Co., Inc. Mr. Anthony Piazza	Address/Phone: American Honda Motor Co., Inc. 1919 Torrance Blvd Torrance, CA 90501 Mail Stop 100-1W-4D (310) 783-2056

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS

Contaminant	Soil		Analytical Method	Comments
	Initial (Year)	Latest (Year)		
TPH	2004		8015M	All non-detect
BTEX	2004		8260B	All non-detect
MTBE	2004		8260B	All non-detect
METALS	2004		6020 (ICPMS)	Barium: 110 mg/kg; Chromium: 24 mg/kg; Cobalt: 15 mg/kg; copper: 34 mg/kg; lead: 6.9 mg/kg; Molybdenum: 1.7 mg/kg; Nickel: 20 mg/kg; Vanadium: 46 mg/kg; Zinc: 76 mg/kg
Full 8260B List	2004		8260B	All non-detect

SITE CHARACTERIZATION INFORMATION

GW basin: Los Angeles		Uses:	Depth to Usable Aquifer:	
Distance to nearest supply well:			Distance between known shallow GW impact and usable aquifer:	
GW shallowest depth: Approx. 70 ft.	GW deepest depth:		Well screen:	Flow Direction:
Soil types: silts/sands/clays			Max soil depth sampled: 13 feet	

SOIL REMEDIATION

Method: Not Applicable	Duration: Not Applicable
-------------------------------	---------------------------------

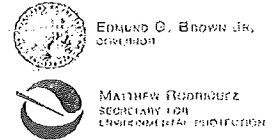
RECOMMENDED ACTION

Case Closure Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Solvent Case Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Additional Action Required: None.	

COMMENTS AND JUSTIFICATION FOR RECOMMENDED ACTION

Based on the soil sample analytical results, the depth to groundwater underlying the site, and other investigative information presented in the Request for Closure dated December 16, 2004, no additional investigative activities appear to be warranted at this time.

EXHIBIT 11



Los Angeles Regional Water Quality Control Board

May 20, 2015

Mr. Tom Fromdahl
American Honda Motor Company, Inc.
1919 Torrance Blvd.
Torrance, CA 90501

Certified Mail # 7014 2870 0001 4537 7736
Return Receipt Requested

UNDERGROUND STORAGE TANK PROGRAM -- DIRECTIVE TO TAKE CORRECTIVE ACTION IN RESPONSE TO UNAUTHORIZED UNDERGROUND STORAGE TANK RELEASE – HEALTH AND SAFETY CODE SECTION 25296.10 AND TITLE 23, CHAPTER 16, CALIFORNIA CODE OF REGULATIONS, SECTIONS 2720-2727. AMERICAN HONDA MOTOR CO., INC. (PRIORITY C-1 SITE) 1919 TORRANCE BLVD., TORRANCE, LOS ANGELES COUNTY (CASE ID # 905010198)

Dear Mr. Fromdahl:

Background

In 2004, American Honda Motor Company Inc. conducted subsurface investigations and remediation, including excavation of about 50 cubic yards of petroleum impacted soil during the removal and replacement of one 5,000-gallon and one 10,000-gallon gasoline underground storage tanks (USTs) located west of Building 320, north of the subject facility (the Site). In November 2007, three soil borings were drilled and one of the borings was converted into groundwater monitoring well LFMW-1, which is located east of the former tank pit. Results of the soil samples collected and analyzed from the borings indicated maximum concentrations of 1.4 milligrams per kilograms (mg/kg) total petroleum hydrocarbon gasoline (TPHg), 7.3 mg/kg methyl tert-butyl ether (MTBE), and 1.3 mg/kg tert-butyl alcohol (TBA) were detected in the samples. A groundwater sample was collected from monitoring well LFMW-1 and maximum concentrations of 86,000 micrograms per liter (µg/L) TPHg, 9,200 µg/L total petroleum hydrocarbon diesel (TPHd), 470 µg/L MTBE, 66 µg/L TBA, 21,500 µg/L xylenes, 3,300 µg/L ethylbenzene, 23,000 µg/L toluene, 5,100 µg/L benzene, and 250 µg/L naphthalene were detected in the samples.

On September 20, 2007, American Honda Motor Company, Inc. (Petitioner) petitioned the State Water Board for site closure. The State Water Resources Control Board (State Board) issued a decision (copy attached) dated March 12, 2015, to dismiss your petition for UST case closure of the Site. The State Board denied the closure for the Site and stated (on Page 4): "After consideration of the comments provided during the 60-day comment period, I agree with the Los Angeles Water Board staff determination that all of the General and Media-Specific Criteria in the Policy have not been met. The Petitioner has not adequately characterized petroleum contamination in soil and groundwater beneath the Site. In addition to the petroleum USTs that

were replaced during 2004, additional information has been added to the Site record which indicates that several petroleum USTs associated with commercial and industrial businesses were also operated at multiple locations throughout the Site. There is insufficient soil and groundwater data to characterize potential residual petroleum constituents in soil and groundwater related to the previous commercial and industrial businesses that operated at the Site."

Based on data provided to the State Water Board we believe that there may be locations at the Site associated with previous operations that were not investigated. Therefore, additional information may be required to determine the extent of groundwater contamination resulting from known and potential releases at the Site and the entire American Honda property.

Requirement for a Workplan (Per CCR title 23, §2725)

Pursuant to Health and Safety Code Section 25296.10, you are required to take corrective action in the UST area (i.e., Preliminary Site Assessment, Soil and Water Investigation, Corrective Action Plan Implementation, and Verification Monitoring) to ensure protection of human health, safety and the environment. Corrective action requirements are set forth in California Code of Regulations (CCR), Title 23, Sections 2720 through 2727.

Based on the above information, you are required to submit a workplan to install a sufficient number of soil borings and/or groundwater monitoring wells to fully delineate the lateral and vertical extent of the soil and/or groundwater contamination for the USTs leak west of Building 320. The workplan including a site map depicting the proposed soil and/or monitoring well locations, and a Health and Safety Plan is due to this Regional Board by **July 20, 2015**.

Groundwater Monitoring Requirements (Per CCR title 23, §2724 and §2727)

There have been no groundwater monitoring activities since 2007 at the Site. To monitor groundwater conditions beneath the site, a groundwater monitoring program must be implemented and must comply with the following requirements:

1. All existing and new groundwater monitoring wells related to the site must be sampled and monitoring reports must be submitted according to the following schedule, with the next report due by **January 15, 2016**.

<u>Reporting Period</u>	<u>Sampling Period</u>	<u>Report Due Date</u>
January – June	April - June	July 15th
July – December	October - December	January 15th

2. Groundwater samples must be analyzed by Cal-LUFT GC/FID or Cal-LUFT GC/MS Method for total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd) when diesel is identified at the site; and by EPA Method 8260B for benzene, toluene, ethylbenzene and xylenes (BTEX), naphthalene, and fuel oxygenate compounds including methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), and tertiary butyl alcohol (TBA). Ethanol is also required and shall be analyzed by either method above. The analytical detection limits must conform to the Regional Board General Laboratory Testing Requirements (9/06)
http://www.waterboards.ca.gov/losangeles/publications_forms/forms/ust/lab_forms/labre

[g9-06.pdf](#)). All respective analytical methods must be certified by the California Environmental Laboratory Accreditation Program (ELAP). All analytical data must be reported by a California-certified laboratory.

3. Prior to collecting groundwater samples, free product thickness (if present) must be determined and the depth to water must be measured in all wells to be sampled. Then the wells are to be properly purged until the temperature, conductivity, and pH stabilize, and the water is free of suspended and settleable matter, before samples are collected for analysis.
4. Prior to consideration of case closure, you must analyze at least one round of groundwater samples, including all common aromatic and chlorinated volatile organic compounds, per EPA Method 8260B. If the site has a waste oil tank, the full suite of aromatic and chlorinated analytes must be tested and reported per EPA Method 8260B.
5. Each groundwater monitoring report must include the following:
 - A separate summary table containing current concentrations.
 - A summary table containing all historical data per each well with groundwater depth (or elevation) and well screen intervals.
 - A regional map depicting site vicinity business and street, etc.
 - A site plot plan depicting site location, tank and associated system locations.
 - A site map depicting all well locations and groundwater elevations (contour) with flow gradient and direction.
 - An isoconcentration map for TPHg, benzene, MTBE, and TBA, respectively.
 - A hydrograph superimposing on concentration over time at the most impacted well for TPHg, benzene, MTBE, and TBA (or at any other wells as warranted).

Regulatory Requirement for Electronic Submission of Laboratory Data to the Geotracker Database

Chapter 30, Division 3 of Title 23 of California Code of Regulations (CCR), requires persons to ensure electronic submission of laboratory analytical data (i.e., soil or water chemical analysis) and locational data (i.e., location and elevation of groundwater monitoring wells), to the SWRCB's GeoTracker database. The regulations and other background information are available at <http://geotracker.waterboards.ca.gov>.

In accordance with the above regulations, you are required to submit all laboratory data in the Electronic Deliverable Format to the SWRCB's GeoTracker database for any soil and/or groundwater samples obtained after September 1, 2001. This would include any sampling completed for underground storage tank system removal, site assessment activities, periodic groundwater monitoring, and post cleanup verification sampling. Per the same regulations, you are also required to submit locational data for all groundwater monitoring wells (i.e., latitude, longitude, and elevation survey data) together with groundwater information (i.e., elevation, depth to free product, monitoring well status, etc.) and a site map commencing January 1, 2002. Hard copy paper reports, which must also be electronically uploaded onto GeoTracker, are no longer required to be submitted to the Regional Board.

General Requirements


1. The contractor who conducts the environmental work as required in this order shall, at all times, comply with all applicable State laws, rules, regulations, and local ordinances specifically, including but not limited to, environmental, procurement and safety laws, rules, regulations, and ordinances. The contractor shall obtain the services of a Professional Geologist or Engineer, Civil (PG/PE-Civil) to comply with the applicable requirements of the Business and Professions Code, sections 7800 et seq. implementing regulations for geological or engineering analysis and interpretation for this case. All documents prepared for others by the contractor that reflect or rely upon geological or engineering interpretations by the contractor shall be signed or stamped by the PG/PE-Civil indicating her/his responsibility for them as required by the Business and Professions Code.
2. All necessary permits must be obtained from the appropriate agencies, prior to the start of work.
3. Prior to commencing any fieldwork, Regional Board staff must be given a minimum of 15 days advance notice in writing, so that one of our staff may be present.

Enforcement

Failure to comply with the **July 20, 2015**, due date may result in an enforcement action by this Regional Board. Pursuant to section 25299(d) of the Health and Safety Code , any person who violates any corrective action requirement established by, or issued pursuant to, section 25296.10 is liable for a civil penalty of not more than ten thousand dollars (\$10,000) for each underground storage tank for each day of violation. A civil penalty may be imposed by civil action pursuant to section 25299(d)(2) or imposed administratively by the Regional Board pursuant to Water Code sections 13323 through 13328. The Regional Board reserves its rights to take any further enforcement action authorized by law.

If you have any questions on this matter, please contact Ms. Maryam Taidy at (213) 576-6741 or mtaidy@waterboards.ca.gov.

Sincerely,


Samuel Unger, P.E.
Executive Officer

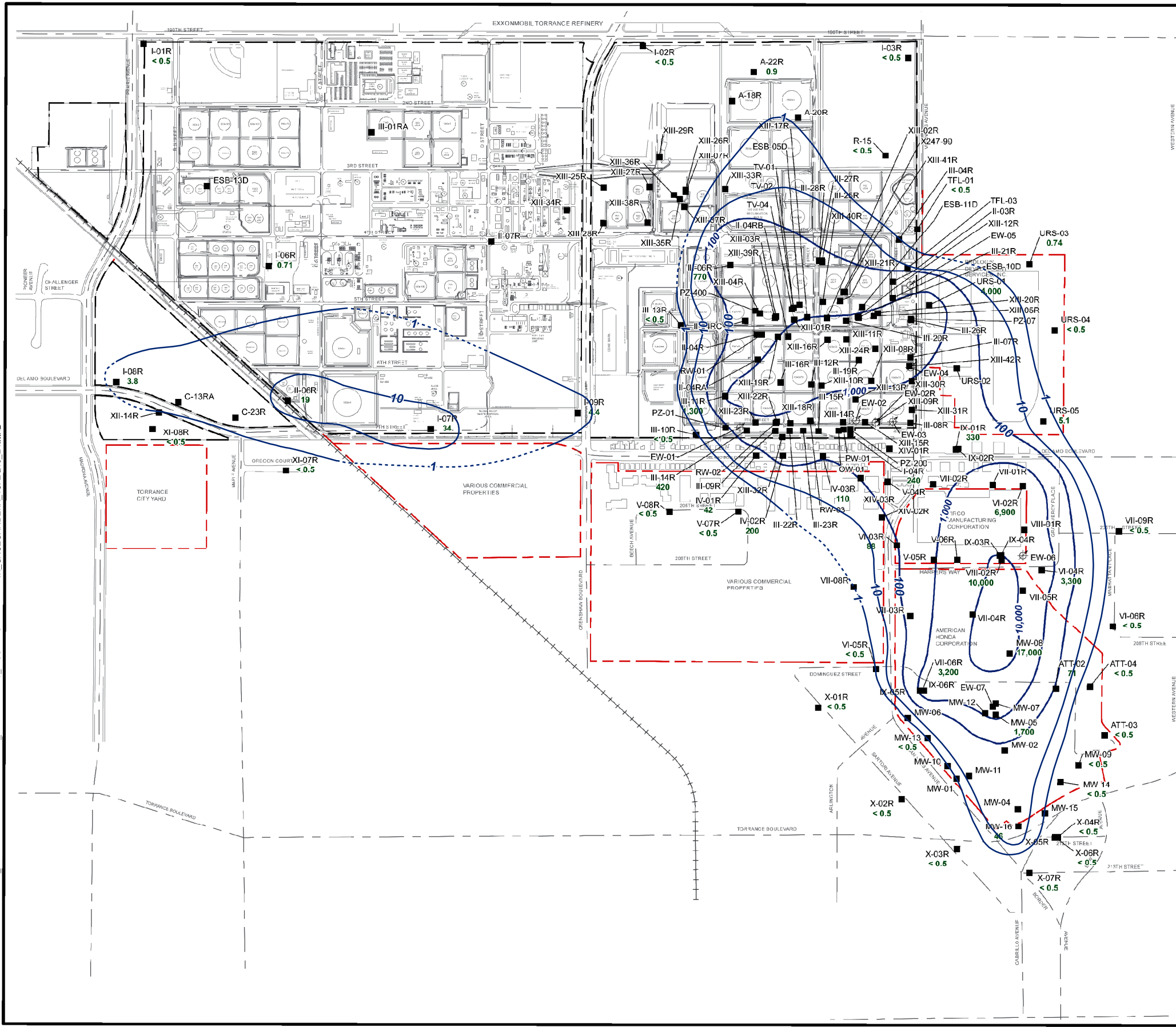
Enclosure: State Board directive dated March 12, 2015

cc:

Kathy Jundt, State Water Resources Control Board, UST Cleanup Fund
Phuong Ly, Water Replenishment District of Southern California
Dok Choe, ExxonMobil

EXHIBIT 12

ANSI B 11" x 17" Approved: MH Designer: SM Checked: JP Project Management: Initials: B1.MXD



LEGEND

- GAGE-GARDENA AQUIFER MONITORING WELL SHOWING DISSOLVED-PHASE BENZENE CONCENTRATION (µg/L)
- ⊗ GAGE-GARDENA AQUIFER EXTRACTION WELL
- 100 — BENZENE CONCENTRATION CONTOUR (µg/L) FOR GAGE-GARDENA AQUIFER; DASHED WHERE INFERRED
- - - EXXONMOBIL REFINERY PROPERTY BOUNDARY
- - - OTHER PROPERTY BOUNDARY
- ++++ RAILROAD TRACK
- - - STREETS

- Notes:
1. Information Shown Based on ExxonMobil Drawing 0A0094E.
 2. All concentrations reported in micrograms per liter (µg/L).
 3. Contours drawn by AECOM include the 10,000 µg/L, 1,000 µg/L, and 100 µg/L contours.
 4. Ramboll Environ added the 10 µg/L and 1 µg/L contours.
 5. The 1 µg/L contour is based on California's Maximum Contaminant Level (MCL) for Benzene.
 6. Source: "Refinery Subsurface Cleanup Progress Report - First Semester 2015, ExxonMobil Oil Corporation, Torrance Refinery, Torrance, CA by AECOM, July 15, 2015.

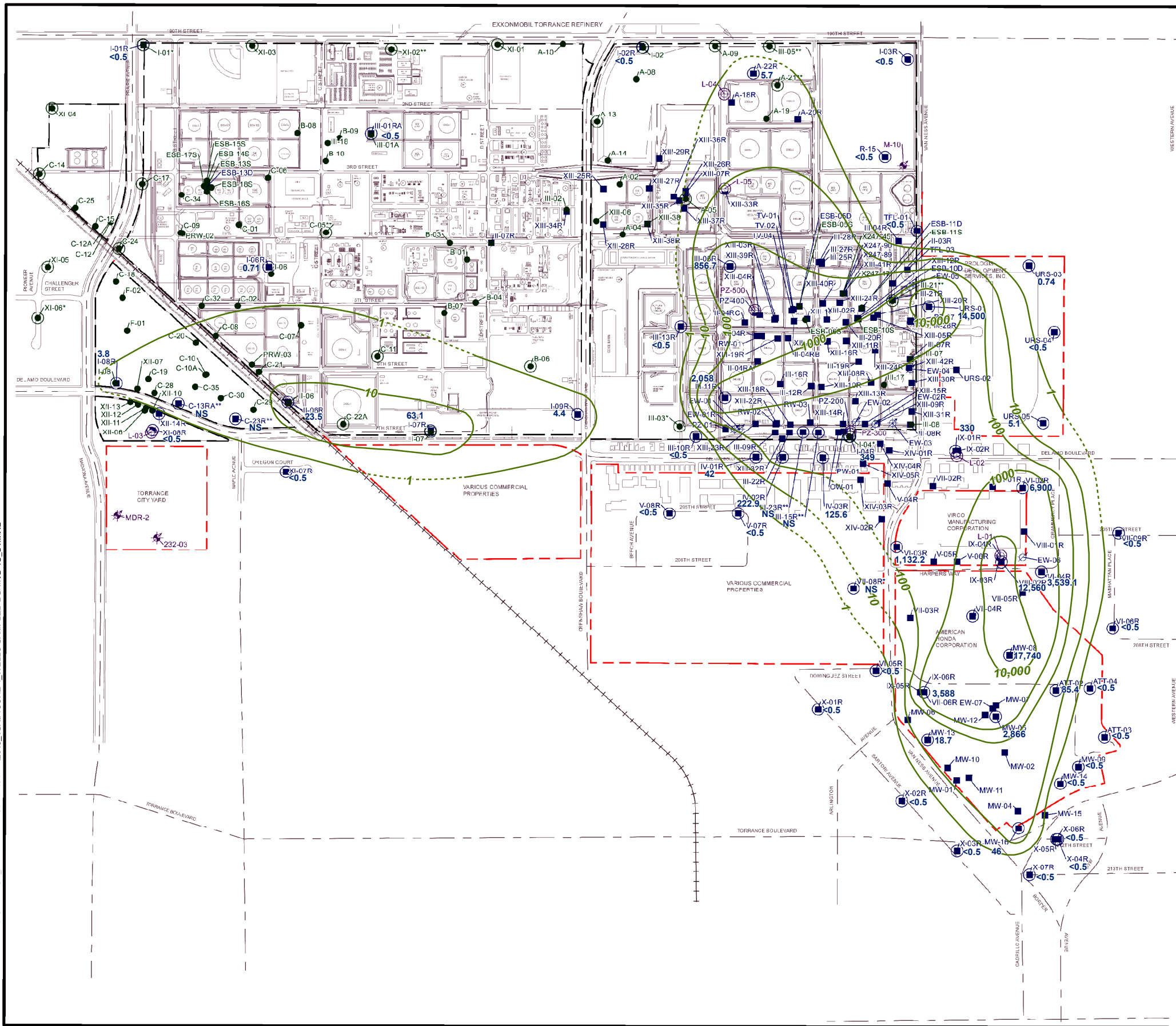
DISSOLVED-PHASE BENZENE IN THE GAGE-GARDENA AQUIFER FIRST SEMESTER 2015

Refinery Subsurface Cleanup Progress Report
ExxonMobil Oil Corporation
Torrance Refinery - Torrance, California
Project No.: 60337359 Date: 2015-07-10

AECOM #76
Figure: 13

Path: Z:\01_Projects\American Honda\0438540A_Figure 1 - Dissolved-Phase Benzene - 2015-08-25.mxd

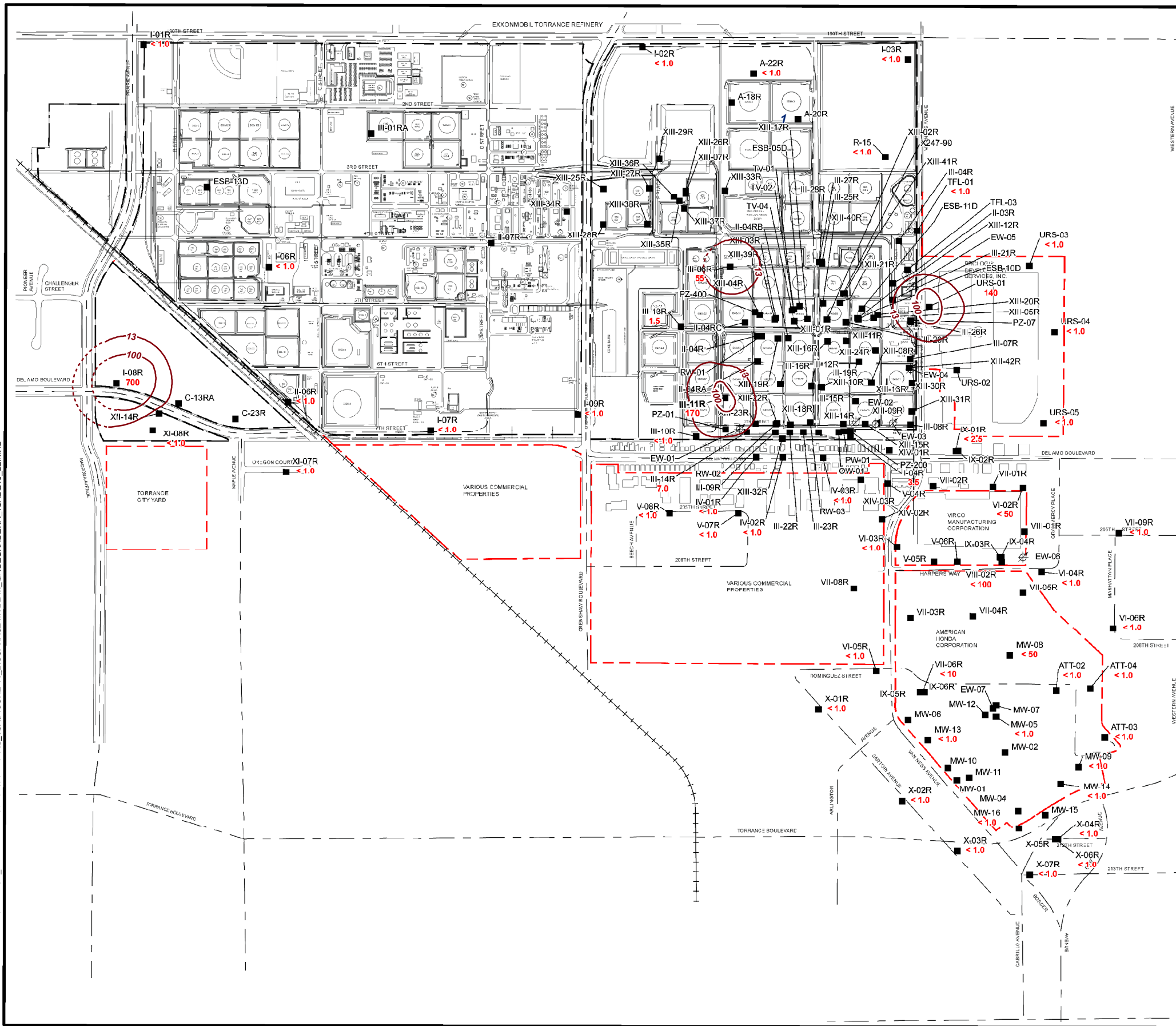
Last saved by: MEX/AS (2015-07-13) Last Picked: 2015-06-14
 Filename: I:\EXXONMOBIL\TORRANCE REFINERY\PROJECT\SCPR\2015_1\SA\Figure 4_Wells Sampled During 1S_B1.MXD
 Project Management Initials: Designer: SM Checked: JF Approved: MH ANSIB 11" x 17"



- LEGEND**
- PERCHED ZONE MONITORING WELL
 - GAGE-GARDENA AQUIFER MONITORING WELL
 - ⊕ GAGE-GARDENA AQUIFER EXTRACTION WELL
 - ⊕ LYNWOOD AQUIFER MONITORING WELL
 - ⊕ LYNWOOD-SILVERADO PRODUCTION WELL
 - ⊕ WELL SAMPLED DURING SECOND SEMESTER 2014
 - EXXONMOBIL REFINERY PROPERTY BOUNDARY
 - OTHER PROPERTY BOUNDARY
 - ⊕ RAILROAD TRACK
 - STREETS
- Notes:**
1. Information shown based on ExxonMobil drawing 0A0094E.
 2. Total BTEX = the sum of the concentrations of Benzene, Toluene, Ethylbenzene, and Xylenes.
 3. All concentrations reported in micrograms per liter (µg/L).
 4. NS = Not Sampled
 5. Contours by Ramboll Environ using groundwater sample analytical results reported by AECOM for the First Semester 2015.
 6. The 1 µg/L contour is based on California's Maximum Contaminant Level (MCL) for Benzene, which is the lowest individual MCL of the BTEX constituents.
 7. Well 111-14R not displayed on map. Total BTEX (502.6 µg/L).
 8. Source: "Refinery Subsurface Cleanup Progress Report - First Semester 2015, ExxonMobil Oil Corporation, Torrance Refinery, Torrance, CA by AECOM, July 15, 2015.

AECOM #74
Figure: 4
WELLS SAMPLED DURING FIRST SEMESTER 2015
Refinery Subsurface Cleanup Progress Report
ExxonMobil Oil Corporation
 Torrance Refinery - Torrance, California
 Project No.: 60337359 Date: 2015-06-30
 Path: Z:\01_Projects\American Honda\0438540A_Figure 2 - Dissolved-Phase Total BTEX - 2015-08-25.mxd

Last saved by: MEXIAS (2015.07.13) Last Picked: 2014.12.10
 Filename: I:\EXXONMOBIL\TORRANCE_REFINERY\PROJECT\SCPR\2015_1\SA\Figure 14_DISSPHASE MTBE IN GAGEGARDENA_ISA\Figure 14_DISSPHASE MTBE IN GAGEGARDENA_ISA2015_B2.VXD
 Project Management Initials: Designer: SM Checked: JF Approved: MH ANSI B 11" x 17"

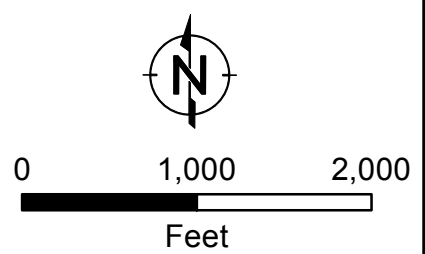


LEGEND

- GAGE-GARDENA AQUIFER MONITORING WELL SHOWING DISSOLVED-PHASE BENZENE CONCENTRATION (µg/L)
- ⊕ GAGE-GARDENA AQUIFER EXTRACTION WELL
- 100 — MTBE CONCENTRATION CONTOUR (µg/L) FOR GAGE-GARDENA AQUIFER; DASHED WHERE INFERRED
- - - EXXONMOBIL REFINERY PROPERTY BOUNDARY
- - - OTHER PROPERTY BOUNDARY
- ++++ RAILROAD TRACK
- - - STREETS

Notes:

1. Information Shown Based on ExxonMobil Drawing 0A0094E.
2. MTBE = Methyl Tert-Butyl Ether
3. All concentrations reported in micrograms per liter (µg/L).
4. NS = Not Sampled
5. Contours drawn by AECOM include the 100 µg/L contours.
6. Ramboll Environ added the 13 µg/L contour.
7. The 13 µg/L contour is based on California's Maximum Contaminant Level (MCL) for MTBE.
8. Source: "Refinery Subsurface Cleanup Progress Report - First Semester 2015, ExxonMobil Oil Corporation, Torrance Refinery, Torrance, CA by AECOM, July 15, 2015.



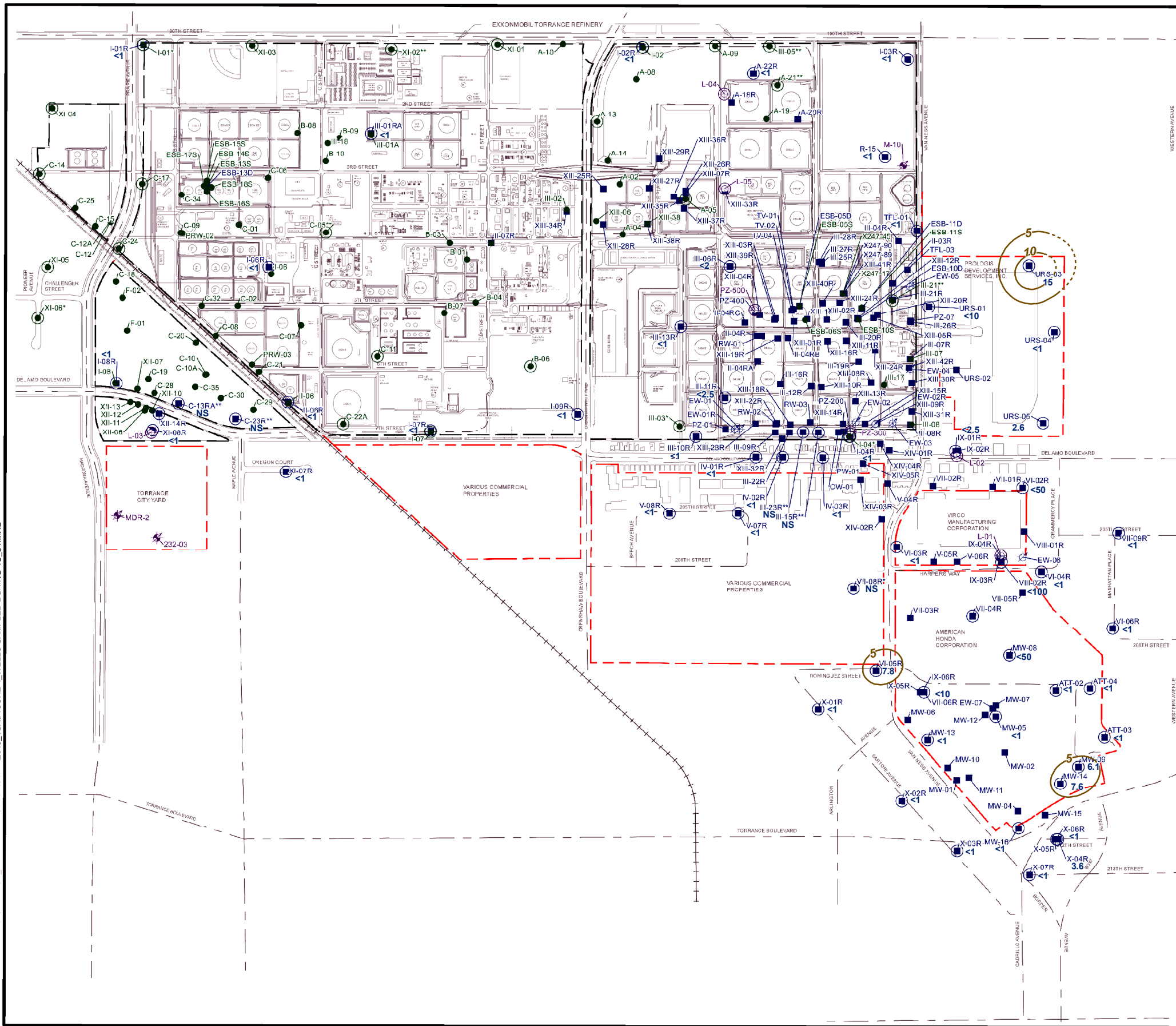
AECOM #74
Figure: 14

DISSOLVED-PHASE MTBE IN THE GAGE-GARDENA AQUIFER FIRST SEMESTER 2015

Refinery Subsurface Cleanup Progress Report
ExxonMobil Oil Corporation
 Torrance Refinery - Torrance, California
 Project No.: 60337359 Date: 2015-07-10

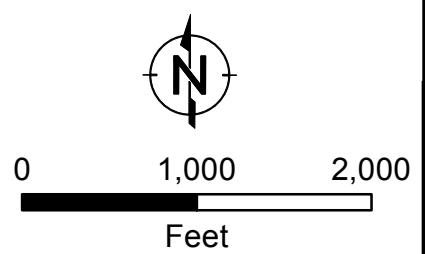
Path: Z:\01_Projects\American Honda\0438540A_Figure 3 - Dissolved-Phase MTBE - 2015-08-25.mxd

ANSI B 11" x 17" Approved: MH Checked: JF Designer: SM Project Management Initials: B1.MXD
 Last saved by: MEX/AS (2015-07-13) Last Picked: 2015-06-14
 Filename: I:\EXXONMOBIL\TORRANCE REFINERY\PROJECT\SCPR\2015_1\SA\Figure 4 - Wells Sampled During 1S_B1.MXD



- LEGEND**
- PERCHED ZONE MONITORING WELL
 - GAGE-GARDENA AQUIFER MONITORING WELL
 - ⊕ GAGE-GARDENA AQUIFER EXTRACTION WELL
 - ⊕ LYNWOOD AQUIFER MONITORING WELL
 - ⊕ LYNWOOD-SILVERADO PRODUCTION WELL
 - ⊕ WELL SAMPLED DURING SECOND SEMESTER 2014
 - - - EXXONMOBIL REFINERY PROPERTY BOUNDARY
 - - - OTHER PROPERTY BOUNDARY
 - ⊕ RAILROAD TRACK
 - - - STREETS

- Notes:**
1. Information shown based on ExxonMobil drawing 0A0094E.
 2. PCE = Tetrachloroethene
 3. All concentrations reported in micrograms per liter (µg/L).
 4. NS = Not Sampled
 5. Contours by Ramboll Environ using groundwater sample analytical results reported by AECOM for the First Semester 2015.
 6. The 5 µg/L contour is based on California's Maximum Contaminant Level (MCL) for PCE.
 7. Well III-14R not displayed on map. PCE (< 2 µg/L).
 8. Source: "Refinery Subsurface Cleanup Progress Report - First Semester 2015, ExxonMobil Oil Corporation, Torrance Refinery, Torrance, CA by AECOM, July 15, 2015.



AECOM #76
Figure: 4

WELLS SAMPLED DURING FIRST SEMESTER 2015

Refinery Subsurface Cleanup Progress Report
ExxonMobil Oil Corporation
 Torrance Refinery - Torrance, California
 Project No.: 60337359 Date: 2015-06-30

Dissolved-Phase PCE in the Gage-Gardena Aquifer
First Semester 2015

Torrance Refinery
 Torrance, California

Figure
4

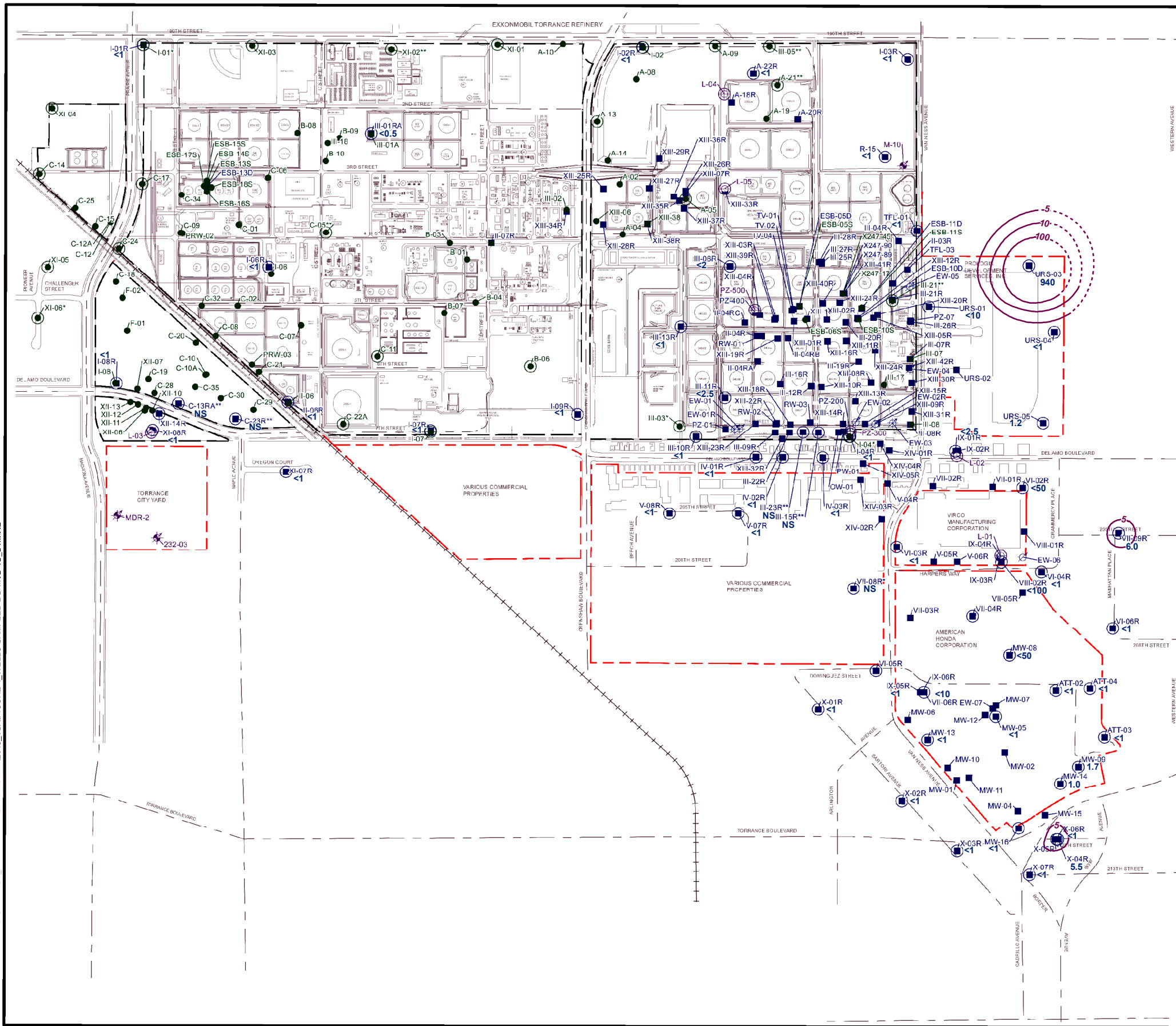


DRAFTED BY: KMYoung Date: 8/25/2015

PROJECT: 04-38540A

Path: Z:\01_Projects\American Honda\0438540A_Figure 4 - Dissolved-Phase PCE - 2015-08-25.mxd

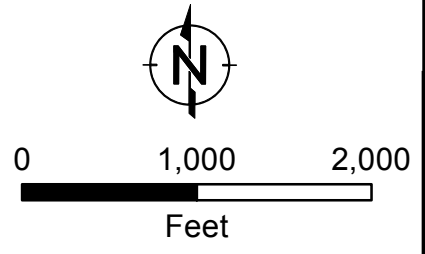
ANSI B 11" x 17" Approved: MH Checked: JF Designer: SM Project Management Initials: Last saved by: MEX/AS (2015-07-13) Last Picked: 2015-06-14
 File name: I:\EXXONMOBIL\TORRANCE REFINERY\PROJECT\SCPR\2015_1\SA\Figure 4_Wells Sampled During 1S_B1.MXD



LEGEND

- PERCHED ZONE MONITORING WELL
- GAGE-GARDENA AQUIFER MONITORING WELL
- ⊕ GAGE-GARDENA AQUIFER EXTRACTION WELL
- ⊕ LYNWOOD AQUIFER MONITORING WELL
- ⊕ LYNWOOD SILVERADO PRODUCTION WELL
- ⊕ WELL SAMPLED DURING FIRST SEMESTER 2015
- - - EXXONMOBIL REFINERY PROPERTY BOUNDARY
- - - OTHER PROPERTY BOUNDARY
- ⊕ RAILROAD TRACK
- - - STREETS

- Notes:**
1. Information Shown Based on ExxonMobil Drawing 0A0094E.
 2. TCE = Trichloroethene
 3. All concentrations reported in micrograms per liter (µg/L).
 4. NS = Not Sampled
 5. Contours by Ramboll Environ using groundwater sample analytical results reported by AECOM for the First Semester 2015.
 6. The 5 µg/L contour is based on California's Maximum Contaminant Level (MCL) for TCE.
 7. Well III-14R not displayed on map. TCE (< 2 µg/L).
 8. Source: "Refinery Subsurface Cleanup Progress Report - First Semester 2015, ExxonMobil Oil Corporation, Torrance Refinery, Torrance, CA by AECOM, July 15, 2015.



AECOM #74
Figure: 4

WELLS SAMPLED DURING FIRST SEMESTER 2015

Refinery Subsurface Cleanup Progress Report
ExxonMobil Oil Corporation
 Torrance Refinery - Torrance, California
 Project No.: 60337359 Date: 2015-06-30

Dissolved-Phase TCE in the Gage-Gardena Aquifer
First Semester 2015

Torrance Refinery
 Torrance, California

Figure 5

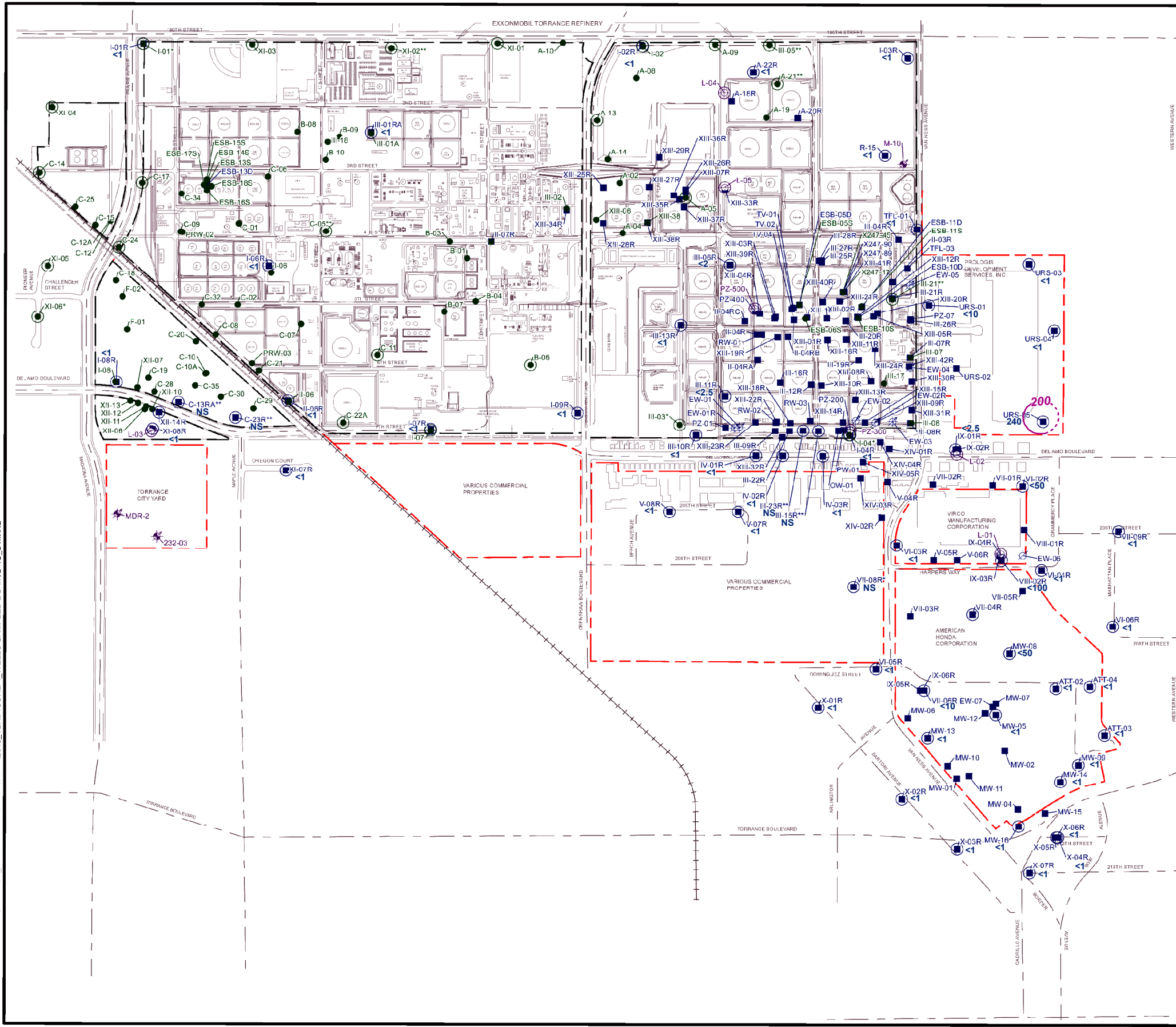


DRAFTED BY: KMYoung Date: 8/25/2015

PROJECT: 04-38540A

Path: Z:\01_Projects\American Honda\0438540A_Figure 5 - Dissolved-Phase TCE - 2015-08-25.mxd

ANSI B 11" x 17"
 Approved: MH
 Checked: JF
 Designer: SM
 Project Management Initials:
 Last saved by: MEX/AS (2015-07-13) Last Picked: 2015-06-14
 Filename: I:\EXXONMOBIL\TORRANCE REFINERY\PROJECT\SCPR\2015_1\SA\Figure 4_Wells Sampled During 1S_B1.MXD



LEGEND

- PERCHED ZONE MONITORING WELL
- GAGE-GARDENA AQUIFER MONITORING WELL
- ⊕ GAGE-GARDENA AQUIFER EXTRACTION WELL
- ⊕ LYNWOOD AQUIFER MONITORING WELL
- ⊕ LYNWOOD-SILVERADO PRODUCTION WELL
- ⊕ WELL SAMPLED DURING FIRST SEMESTER 2015
- - - EXXONMOBIL REFINERY PROPERTY BOUNDARY
- - - OTHER PROPERTY BOUNDARY
- ▬ RAILROAD TRACK
- - - STREETS

- Notes:
1. Information shown based on ExxonMobil drawing 0A0094E.
 2. 1,1,1-TCA = 1,1,1- Trichloroethane
 3. All concentrations reported in micrograms per liter (µg/L).
 4. NS = Not Sampled
 5. Contours by Ramboll Environ using groundwater sample analytical results reported by AECOM for the First Semester 2015.
 6. The 200 µg/L contour is based on California's Maximum Contaminant Level (MCL) for 1,1,1-TCA.
 7. Well III-14R not displayed on map. 1,1,1-TCA (< 2 µg/L).
 8. Source: "Refinery Subsurface Cleanup Progress Report - First Semester 2015, ExxonMobil Oil Corporation, Torrance Refinery, Torrance, CA by AECOM, July 15, 2015.

AECOM #76
Figure: 4

WELLS SAMPLED DURING FIRST SEMESTER 2015

Refinery Subsurface Cleanup Progress Report
ExxonMobil Oil Corporation
 Torrance Refinery - Torrance, California
 Project No.: 60337359 Date: 2015-06-30

Path: Z:\01_Projects\American Honda\0438540A_Figure 6 - Dissolved-Phase 1,1,1-TCA - 2015-08-25.mxd



Dissolved-Phase 1,1,1-TCA in the Gage-Gardena Aquifer
First Semester 2015

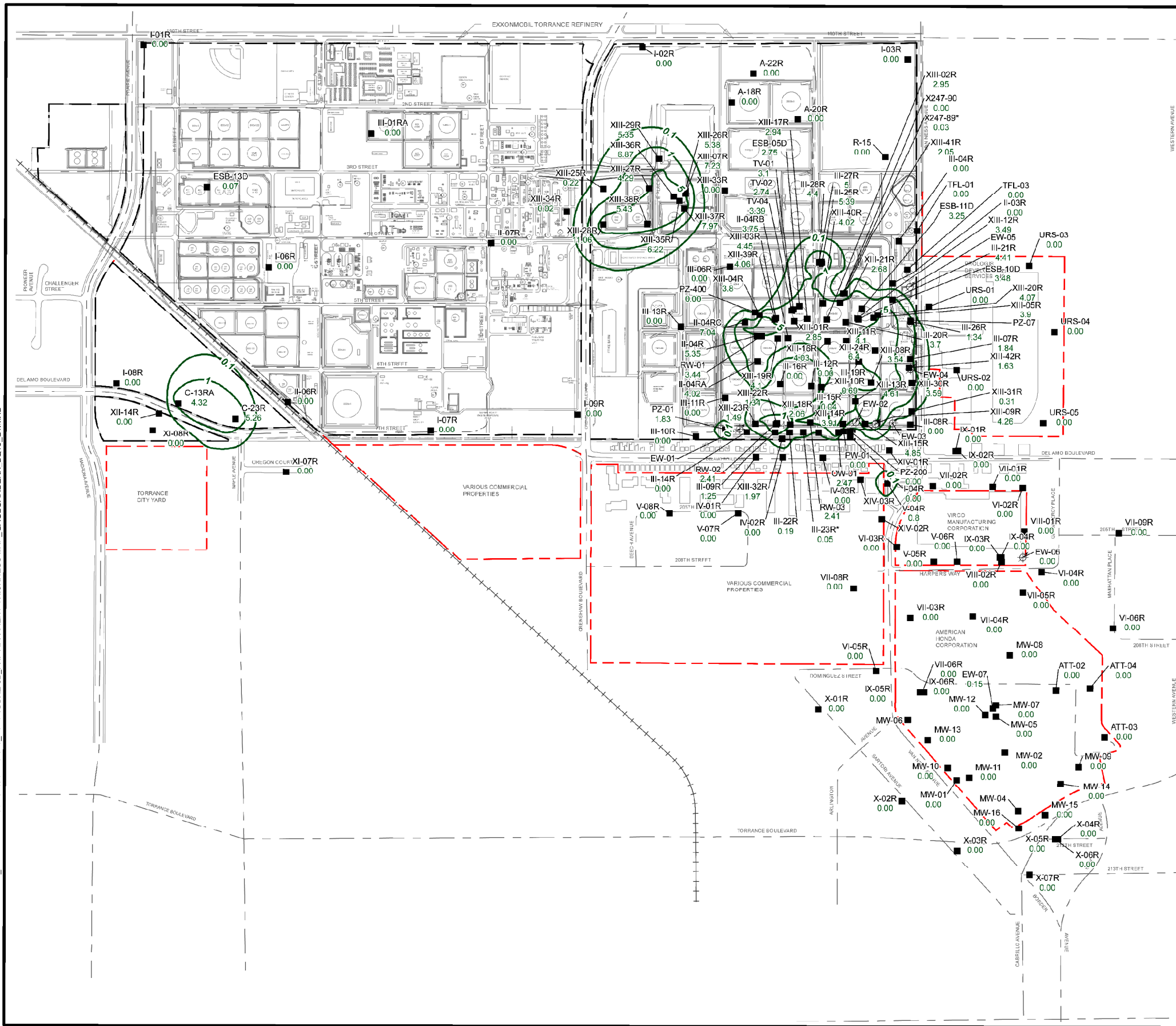
Torrance Refinery
 Torrance, California

Figure 6

DRAFTED BY: KMYoung Date: 8/25/2015

PROJECT: 04-38540A

Last saved by: MEXIAS (2015-07-13) Last Plotted: 2014-12-11
 File name: I:\EXXONMOBIL\TORRANCE_REFINERY\PROJECT\SCPR\2015_1\SAIFigure 8B_FHP APPARENT THICKNESS MAP_GAGEGARDENA_2015_BI.MXD
 Project Management Initials: Designer: SM Checked: JF Approved: MH ANSI B 11" x 17"



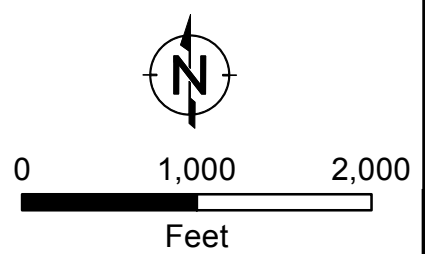
LEGEND

- GAGE-GARDENA AQUIFER MONITORING WELL SHOWING APPARENT THICKNESS OF FHP (IF ANY) IN FEET
- ⊗ GAGE-GARDENA AQUIFER EXTRACTION WELL
- FREE-PHASE HYDROCARBON PRODUCT (FHP) ISOPACH CONTOUR: BASED ON APPARENT WELL SAMPLED DURING FIRST SEMESTER 2015 INFERRED
- - - EXXONMOBIL REFINERY PROPERTY BOUNDARY
- - - OTHER PROPERTY BOUNDARY
- ⊕ RAILROAD TRACK
- - - STREETS

ABBREVIATIONS

- * ANOMALOUS DATA NOT USED IN CONTOURING

- Notes:
1. Information shown based on ExxonMobil drawing 0A0094E.
 2. FHP = Free-Phase Hydrocarbon Product
 3. Well III-14R not displayed on map. FHP (0.00)
 4. Source: "Refinery Subsurface Cleanup Progress Report - First Semester 2015, ExxonMobil Oil Corporation, Torrance Refinery, Torrance, CA by AECOM, July 15, 2015.



AECOM #70
Figure: 8B
FHP APPARENT THICKNESS MAP FOR GAGE-GARDENA AQUIFER SECOND QUARTER 2015
 Refinery Subsurface Cleanup Progress Report
 ExxonMobil Oil Corporation
 Torrance Refinery - Torrance, California
 Project No.: 60337359 Date: 2015-07-10
 Path: Z:\01_Projects\American Honda\0438540A_Figure 7 - FHP - 2015-08-25.mxd