

April 11, 1991

Attn: Mr. Gil Wistar
ACHCSA
80 Swan Way, Room 200
Oakland, CA 94621

91 APR 12 AM 10:06

Subject: Report transmittal, American City Truck Stop, 6310 Houston Court, Dublin, CA

Dear Mr. Wistar:

Transmitted herewith is one copy of the report titled "Well Installation Report and Results of Quarterly Monitoring, American City Truck Stop, 6310 Houston Court, Dublin, CA," dated April 9, 1991, prepared by EIRRA Consultants. The supplemental investigation has included 1) summation of all previous analytical and groundwater elevation data, 2) installation of additional monitoring wells, 3) sampling and analysis of the four existing wells and 4) hydrogeologic and analytical data interpretation and evaluation.

Two additional monitoring wells have been installed for evaluation of groundwater. MW-5 has been located downgradient of the former waste oil source. Well MW-6 was located approximately 150 feet downgradient of the former diesel USTs, within the projected centerline of the plume, as defined by my previous consultant (NSI). Well MW-5, which EIRRA Consultants has indicated is not yet fully developed, contains detectable but limited levels of diesel and oil. Well MW-6, installed for lateral downgradient definition of hydrocarbons in groundwater, contains no detectable concentrations of hydrocarbon constituents. Results of the most recent quarterly monitoring for the four existing wells confirm that hydrocarbon concentrations in groundwater continue their gradual decline. The discussion and conclusions provided by EIRRA indicate that the hydrogeologic setting and contaminant transport behavior have generally caused attenuation of hydrocarbon concentrations in the immediate area of the source.

It is my consultant's opinion that the generally low levels of hydrocarbon constituents in groundwater do not warrant remediation, given the absence of potable groundwater in the shallow groundwater bearing zone and the technical constraints associated with remediation of a clay water bearing zone. I have been advised, however, that subsequent site activities should include 1) quarterly monitoring of existing site wells, 2) evaluation of the presence or absence of beneficial uses of shallow groundwater, 3) identification of all groundwater wells within a 0.5 mile radius of the site and 4) performance of a risk assessment for evaluation of the impact to human health and the environment. We plan to initiate these activities in the near future in order to facilitate pending plans for property development. Should you have any questions, please call.

Very truly yours,



Fred Houston

cc: Mr. Lester Feldman, Regional Water Quality Control Board

VEIRRA CONSULTANTS

Environmental Investigation,
Remediation and Risk Assessment
11828 Dublin Blvd., Ste. C
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Bus: (415) 833-8464
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April 9, 1991

Mr. Fred L. Houston
Winning Action Investments, Inc.
7080 Donlon Way, Ste. 208
Dublin, CA 94568

Subject: Well Installation Report and Results of Quarterly Monitoring, American City Truck Stop, 6310 Houston Court, Dublin, CA

Dear Mr. Houston:

This report presents the results of quarterly monitoring and additional well installation performed for the above referenced site in Dublin, California. The primary purpose of the scope of work has been to provide for 1) confirmation of previous groundwater analytical results and 2) evaluation of the lateral extent of groundwater contamination, as requested in the letter dated 22 October 1991, prepared by Mr. Gil Wistar of the Alameda County Health Care Services Agency (ACHCSA). The scope of work, originally proposed in a work plan prepared by Environmental Experts, Inc. dated 29 November 1990, included installation and sampling of additional exploratory borings, located both on and off the site, and conversion of the borings to groundwater monitoring wells. Representative soil and groundwater samples have been submitted to Chromalab, Inc., a Department of Health Services certified analytical laboratory, for analysis of petroleum hydrocarbons. This report presents 1) a description of the site setting, 2) results of the current and previous soil and groundwater investigation and 3) recommendations for further site work. Figures which provide an illustration of the site setting and location of the former underground storage tank are presented in Attachment A. Attachment B contains a tabulation of soil and groundwater analytical results and quarterly monitoring data. The lithologic logs and well construction diagrams for the monitoring wells are provided in Attachment C. Certified analytical reports and chain of custody documentation are provided in Attachment D.

EXECUTIVE SUMMARY

A 500 gallon waste oil tank and two 12,000 gallon diesel tanks were removed from the property in 1989. Four monitoring wells were previously installed at the property for evaluation of shallow groundwater conditions. Monitoring results, presented in Table 1 of Attachment B, have indicated a gradual and consistent decline in groundwater hydrocarbon concentrations over time. This supplemental investigation has been initiated to confirm the trend and to provide for lateral definition of the groundwater plume.

and a 8,000 g. diesel

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The subject property is located in an area zoned for light industrial use. As a result of past land use practices, several known sources of groundwater contamination have come to be located in the shallow water bearing zone in the area of the site. The shallow water bearing zone is generally comprised of clay with a low hydraulic conductivity and high retardation coefficient. Given the low hydraulic conductivity, low gradient and high retardation coefficient of the shallow water bearing zone, the potential for transport of hydrocarbon constituents in groundwater is very limited. Review of regional groundwater conditions for the Dublin Subbasin indicates that shallow unconfined groundwater is generally of poor quality. Deeper groundwater is of good quality. Because the groundwater potential of the two zones is essentially equal, little vertical exchange between the two zones is anticipated. The local groundwater gradient in both the shallow and the deep aquifer is essentially flat. It is likely that both shallow and deep groundwater move very slowly beneath the site.

Two additional monitoring wells have been installed for evaluation of groundwater. MW-5 has been located downgradient of the former waste oil source, which has previously been overexcavated and removed from the site. Well MW-6 was located approximately 150 feet downgradient of the diesel excavation in the centerline of the plume, as defined by a previous consultant. Well MW-5, which has not yet been fully developed, contains detectable levels of diesel and oil, albeit in only moderate concentrations. Well MW-6, installed for downgradient definition of hydrocarbons in groundwater, contains no detectable concentrations of hydrocarbon constituents.

Existing groundwater wells were also sampled during the investigation. Sampling was performed by an employee of GeoLine Engineering, located in San Jose, California. Results of the most recent quarterly monitoring generally confirm the declining nature of hydrocarbon concentrations in groundwater.

Evaluation of groundwater flow direction and gradient reveals the influence of hydrogeologic inhomogeneities and the possible influence of stormwater recharge to the shallow groundwater bearing zone. Refraction of the groundwater equipotential lines, shown in Plate 5, is most probably due to the influence of extensive clay deposits in the area. Utilizing published estimates for hydraulic transmissivity, effective porosity and the calculated gradient, it is estimated that groundwater flow beneath the site has an approximate velocity of between ten and 100 feet per year, which is very low.

The discussion and conclusions provided herein indicate that the hydrogeologic setting and contaminant transport behavior have generally caused attenuation of hydrocarbon concentrations in the immediate area of the source. The generally low levels of

hydrocarbon constituents in groundwater do not warrant remediation, given the absence of potable groundwater in the shallow groundwater bearing zone and the technical constraints associated with remediation of a clay water bearing zone. It is recommended that subsequent activities include 1) quarterly monitoring of existing site wells, 2) evaluation of the presence or absence of beneficial uses of shallow groundwater, 3) identification of all groundwater wells within a 0.5 mile radius of the site and 4) performance of a risk assessment for evaluation of the impact to human health and the environment.

BACKGROUND

Previous work has been described in Kleinfelder (1989), Safety Specialists (1989 a and b, 1990) and NSI Technology Services Corporation (1990). The site is located in Dublin, California, as shown in Plate 1, Attachment A. The former locations of one 500 gallon waste oil tank and three diesel tanks (two 12,000 gallon and one 8,000 gallon), removed from the site on 31 March, 1989, are shown in Plate 2. One 12,000 gallon diesel tank remains in place for continued use. Based upon a summary prepared by Kleinfelder, Inc. (June 7, 1989), also illustrated in Plate 2, results of soil analytical data derived from closure activities indicate concentrations of Total Petroleum Hydrocarbons as Diesel (TPHD) ranged from non detectable (<3) to 190 milligrams per kilogram (mg/Kg), or parts per million (ppm). It is further reported that Total Oil and Grease (TOG) concentrations in soil ranged from less than detectable (<10 ppm) to 240 ppm. The waste oil excavation contained nondetectable concentrations of both TPHD and TOG, although a small quantity of surface spillage around the waste oil tank may have contained TOG in excess of 1,000 ppm (based upon the results of stockpile sampling reported in Safety Specialists, 1989a), which was subsequently removed and disposed of in accordance with applicable regulations. Groundwater "grab" samples collected from the main excavation contained TPHD concentrations ranging from 8.5 to 380 ppm. A groundwater grab sample collected from the waste oil excavation contained 9.7 ppm TPHD.

Four monitoring wells have been previously installed at the property, as shown in Plate 3. Analytical results of previous groundwater monitoring events are presented in Table 1, Attachment B. The table includes the results of the latest round of monitoring, performed on 1 March, 1991, by an independent technical consultant (GeoLine Engineering, San Jose, CA). The table indicates a generally declining trend in contaminant concentrations through time for each of the monitoring wells.

Soil removed from both the waste oil and the diesel fuel excavations was transported off

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site and disposed in accordance with applicable land disposal regulations. Documentation of disposal has been submitted to the ACHCSA previously.

SITE SETTING

The subject property lies in an area of light industrial use in Dublin, California. Several additional cases of groundwater contamination, derived from leaking underground storage tanks, are located upgradient and downgradient of the facility, based upon a reconnaissance driveby of nearby sites.

The site is located at an approximate elevation of 332 feet above mean sea level. The topographic gradient is directed to the southeast. Site surface water drainage is controlled by the grading of the site and by the storm water system.

The hydrogeologic setting has been described in detail in an earlier report (NSI Technology Services Corporation, 1990). In summary, the site is located in the Dublin Subbasin of the Livermore Valley Basin (Plate 4). Quaternary (<10,000 years old) sediments range in composition from coarse grained sand and gravel, deposited in an alluvial fan setting to fine grained clay, silt and fine sand, deposited in the central portion of the alluvial basin. Sediments underlying the upper twenty feet of the subject property, which is located in the latter hydrogeologic setting (basin depositional environment), are composed primarily of clay. Minor lenses of fine grained sand have been encountered.

Groundwater is reported to occur under unconfined and confined conditions. Unconfined groundwater is generally found in the near surface zones. Deeper groundwater may flow under confined conditions. Deeper groundwater is of good to excellent quality, while the shallow groundwater is of poor quality. Based upon the groundwater elevation data evaluated in "Fall 1990 Groundwater Level Report" (Alameda County Flood Control and Water Conservation District - Zone 7 [ACFCWCD], 1991), there is little discernable difference between shallow and deep groundwater elevations in the area of the site. The groundwater potential between the two zones being equal, there is little inclination for groundwater flow to occur between the two units. Evaluation of the Zone 7 data indicates that the regional groundwater flow in the vicinity of the site is directed to the south to southeast under an approximate regional gradient of 0.002 feet per foot. The local gradient has been previously calculated to be approximately .004 feet per foot. Both gradients are representative of essentially low flow groundwater conditions.

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FIELD INVESTIGATION METHODS AND PROCEDURES

All field work proceeded under the direct supervision of a California Registered Geologist. The locations of the two newly installed borings, MW-5 (located on site) and MW-6 (located off site), are shown in Plate 5. The borings have been drilled to a depth of 18 feet. Soil samples were collected from five foot intervals in each boring, commencing at a depth of eight feet, the approximate location of the capillary fringe of groundwater. The borings were converted to groundwater monitoring wells. The wells were developed greater than 72 hours following construction, and subsequently sampled. Protocol for drilling, soil sampling, well installation and groundwater sampling are summarized below. A complete description of field protocol has been provided in Attachments B and C of the work plan dated 29 November, 1990.

Drilling and Sampling Protocol

All drilling and sampling equipment was steam cleaned prior to initiation of field activities. The soil borings have been advanced using the hollow stem auger drilling method. Sampling of soil, using a California modified drive sampler equipped with brass sampling tubes, has been performed for purposes of lithologic classification and screening of hydrocarbon content. Soil samples have been classified according to the Unified Soil Classification System (USCS) method.

The Registered Geologist ensured that no headspace was present in the soil samples retained for analysis. The samples have been with teflon sheeting or aluminum foil, capped with plastic, and preserved on ice for transport to the analytical laboratory under appropriate chain of custody protocol.

Well Installation Protocol

Well completion details are presented in Attachment C. The Registered Geologist supervised all phases of well construction. The wells have been constructed of two inch diameter, schedule 40 PVC casing. Slotted casing (0.02") extends from a depth of approximately six to eighteen feet. A one foot thick seal of bentonite pellets is present above the sand pack of the screened interval, which consists of Lonestar #3 sand. A five foot thick seal of neat cement is present above the bentonite seal. The wells are completed within a traffic enclosure set flush with grade. The traffic enclosure and the well cap are fitted with rubber seals to inhibit surface water infiltration.

Groundwater Sample Collection Protocol

Groundwater samples have been collected in accordance with protocol presented in Attachments B and C of the work plan dated 29 November, 1990. Initially, the wells were developed by bailing. The wells were then purged at least 72 hours following development. A teflon bailer fitted with a teflon bottom emptying device was used for collection of groundwater samples, eliminating the risk of volatilization of hydrocarbon constituents. During purging and sampling, well discharge was monitored for temperature, pH and conductivity until these indicator parameters had stabilized completely. Once the indicator parameters had stabilized, water samples were collected directly from the discharge of the chemically inert sample tubing by inserting the tubing into the glass vial equipped with teflon septa, and filling the vial from the bottom up. Samples were preserved and delivered to the certified analytical laboratory under appropriate chain of custody protocol.

RESULTS OF INVESTIGATION

Geologic Characterization

The geologic logs of the borings are presented in Attachment C. In general, subsurface materials are characterized by silty clay. A thin lens of fine, well sorted sand was encountered at a depth of 14 feet in Well MW-6. Qualitative field indications of soil contamination were encountered below the water table in Well MW-5. Groundwater was encountered at approximately nine feet in both borings. Groundwater stabilized at approximately 8.5 feet in both borings following development.

Soil and Groundwater Analytical Results

A total of three soil samples and six groundwater samples have been submitted for analysis of total petroleum hydrocarbons as diesel (TPHD) and Total Oil and Grease (TOG). In addition, newly installed monitoring well MW-5 was analyzed for benzene, toluene, ethylbenzene and xylene (BTEX) by EPA Method 602. Groundwater and soil analytical results are summarized in Tables 1 and 2, respectively, of Attachment B. Certified analytical reports and chain of custody documentation are presented in Attachment D.

The summary of analytical results confirm the results of earlier monitoring. The petroleum hydrocarbon concentrations present in preexisting wells have been slowly declining towards nondetectable concentrations, although some data spikes do

occasionally occur, particularly in Well MW-1. With reference to the newly installed wells, review of Tables 1 and 2 indicates that Well MW-5, located downgradient of the former waste oil tank, contains detectable concentrations of petroleum hydrocarbons in both soil and groundwater. Monitoring Well MW-6, located downgradient of the sources as evaluated by NSI (1990) (see Plate 3), contains nondetectable concentrations of all constituents analyzed.

Groundwater Elevation Data

The two newly installed wells have been surveyed by Kier & Wright, Inc., who performed the survey for the other site wells (NSI, 1990). The position of all wells relative to the two site sources is shown in Plates 3 and 5. Groundwater elevation data for site wells is presented in Table 3. Groundwater potentiometric surface maps are provided in Plate 3 (NSI, 1990 for June 1990 data) and Plate 5 (April, 1991 data). Data for Well MW-4 is not shown in the latter diagram due to uncertainties regarding the well head elevation survey data.

The data presented in Plate 3 is based upon groundwater levels measured in the fourth year of drought. The data of Plate 5 is derived from data collected after several recent periods of precipitation and recharge to the shallow aquifer. Comparison of the two diagrams illustrates a slight change in on site groundwater flow directions. Evaluation of Plate 5 further indicates that the on site water level contour interval is compressed in comparison to the off site contour interval, and that the groundwater flow direction undergoes a slight change in direction between Wells MW-3 and MW-6. The observations are interpreted to reflect the influence of aquifer inhomogeneities and the temporary effect of stormwater recharge to the shallow groundwater table.

The compressed nature of the on site contours is due to the wide spread presence of clay in the subsurface. The clay inhibits groundwater flow and causes a steepening of the gradient across the site. The refraction of the contours observed in Plate 5 is most probably due to the presence of a sand deposit in the area of MW-6, and/or the presence of a substantial clay deposit in the eastern portion of the study area. Due to the essentially flat gradient within the area of the site, even localized hydrogeologic inhomogeneities or a localized source of storm-water recharge to the shallow aquifer may cause periodic variations in groundwater flow. These conditions are fairly typical of groundwater behavior in a fine grained hydrogeologic setting, are neither unusual nor unique to this particular site and will be better defined following a year of quarterly monitoring.

Estimate of Groundwater Flow Velocity

The groundwater potentiometric surface maps may be used to evaluate groundwater flow direction, gradient and velocity. Groundwater beneath the site flows to the south - southeast under an approximate gradient ($\delta h/\delta l$) of 0.001 (April, 1991) to 0.004 (NSI, June 1990) feet per foot. Assuming a hydraulic conductivity value (k) for very fine to fine sand of 5 to 15 feet per day (Lohman, U.S.G.S., 1979) and an effective porosity (η_e) of 20 % (Bouwer, 1978), application of the Darcy flow equation

$$q = k \cdot (\delta h/\delta l) / \eta_e \dots\dots\dots (1)$$

indicates that groundwater beneath the site is likely to flow at a rate of between 0.03 (conditions of minimum gradient and minimum transmissivity) and 0.3 feet per day (conditions of maximum gradient and maximum transmissivity), or approximately nine to 110 feet per year beneath the site.

SUMMARY AND EVALUATION

The detailed discussion and data provided herein allows the following qualified conclusions regarding the subject site:

- o Evaluation of ACFCWCD Zone 7 information, provided in NSI (1990), indicates that a shallow and a deep groundwater zone exist in the area of the Dublin Subbasin. The shallow groundwater zone flows under unconfined conditions and is of poor quality. The deep groundwater zone may flow under confined conditions and is of good quality. Because there is little difference between the groundwater potential between the two zones, there is little likelihood for any vertical exchange of groundwater.
- o Geologic conditions beneath the site are characterized by primarily fine grained soils (silty clay). Thin lenses of fine grained sand are occasionally present. The hydrogeologic conditions are conducive to limited advective transport and high retardation of petroleum hydrocarbons. Consequently, residual concentrations of petroleum hydrocarbons present in site soil and groundwater are unlikely to substantially impact potential off site receptors.
- o Groundwater flows to the south to south-southeast beneath the site under an approximate gradient of 0.001 to 0.004 feet per foot. The flow velocity is estimated to be less than approximately 100 feet per year.

- o Groundwater monitoring of existing wells, performed by an independent contractor, has provided further confirmation of the general declining trend of contaminant concentrations through time.
- o The downgradient extent of groundwater contaminant migration is estimated to be less than 200 feet, based upon installation and sampling of the off site, downgradient Well MW-6. Based upon evaluation of the gradient presented in NSI (1990), the absence of contamination in Well MW-6 appears to confirm that the combined effect of flat gradient, low transmissivity and adsorptive clayey matrix have acted to inhibit contaminant transport to the immediate vicinity of the subject property.
- o Residual contamination associated with the former waste oil tank has apparently impacted soil and groundwater in the vicinity of Well MW-5. It is our understanding that a significant quantity of soil was excavated from this source. The residual level of contaminant concentrations is not likely to pose a substantial threat to groundwater, for reasons enumerated above.

Evaluation

Decision criteria for assessing the need for additional work may be predicated upon an understanding of the hydrogeologic setting, the beneficial uses of water, contaminant transport behavior and fate, an assessment of risk to human health and the environment, and remedial measures taken to date.

The discussion and conclusions provided above indicate that the geologic setting and contaminant transport behavior have generally acted to attenuate hydrocarbon constituents in the immediate area of the source. Given the generally poor quality of shallow groundwater in the area and the anticipated limited impairment to beneficial use thereof, it is not anticipated that the generally low level of hydrocarbon constituents in groundwater will warrant a substantial additional effort.

Recommended Action

Based upon our professional opinion, there is little benefit, if any, to be derived from installation of a groundwater remediation system at this site. The decline in contaminant concentration levels observed over time (Table 1) and the present low levels of groundwater contamination simply do not warrant the cost of remediation, nor is installation of such a system feasible for technical reasons. The sediments beneath the site are extremely fine grained. Residual petroleum hydrocarbons dissolved in the pore

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water of the clay are not likely to drain from the pore space due to the high capillary potential of the matrix, nor are the sediments likely to provide for the continuous yield of groundwater necessary to cause plume capture. Furthermore, given the inferred limited potential for transport and the high degree of retardation of petroleum hydrocarbons, it is not likely that the existing low quantities of petroleum hydrocarbons will be subject to significant off site transport. Installation of a pump and treat system will only serve to extend the vertical spread of petroleum hydrocarbons into deeper levels of the saturated horizon due to drawdown and spreading of the pumping cone of depression.

Based upon our knowledge of the site setting and conditions, the following scope of work is recommended:

- 1) Well MW-5 should be further developed and resampled. It is our opinion that previous development has been inadequate.
- 2) All groundwater monitoring wells should be sampled on a quarterly basis for one year to further verify the declining trend in groundwater concentrations.
- 3) A well survey should be performed for all wells located within an 0.5 mile radius of the site for determination of the potential off site impacts of the plume. A data compilation of nearby contaminant sites, review of beneficial uses of groundwater in the site vicinity and a risk assessment should be performed to assess the need and/or feasibility for additional work.

REPORTING

Copies of this report should be submitted to:

Attn: Mr. Gil Wistar
ACHCSA
80 Swan Way, Room 200
Oakland, CA 94621

Attn: Mr. Lester Feldman
Regional Water Quality Control Board
2101 Webster Street, Ste. 500
Oakland, CA 94612

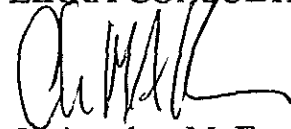
Mr. Fred Houston
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Additional copies of this report have been enclosed for the purpose of regulatory submittal.

Should you have any questions or require further assistance, please call.

Very truly yours,

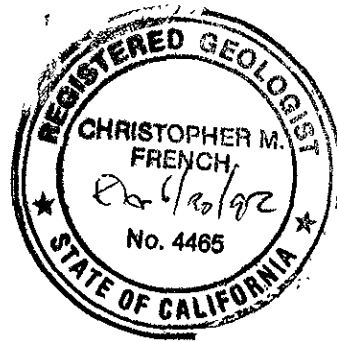
EIRRA CONSULTANTS



Christopher M. French, R.G., R.E.A.
Registered Geologist No. 4465 (Exp. 6/30/92)

CMF/lp

Attachments (4)



Mr. Fred Houston
Winning Action Investment
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REFERENCES AND BIBLIOGRAPHY

Alameda County Flood Control and Water Conservation District - Zone 7. 1991. Fall 1990 Groundwater Level Report. Memorandum dated January 16, 1991.

Bouwer, Herman. 1978. Groundwater Hydrology. McGraw-Hill Series in Water Resources and Environmental Engineering. McGraw-Hill Book Company. New York. 480 pp.

Kleinfelder, Inc. 1989. Proposal for Initial Subsurface Investigation, American City Truck Stop, Dublin, CA. Proposal dated 7 June, 1989.

Lohman, S.W. 1979. Ground-Water Hydraulics. U.S. Geological Survey Professional Paper 708.

NSI Technology Services Corporation. 1990. Environmental Assessment Report. American City Truck Stop. NSI Project CQ-90-027. Letter Report to Mr. Fred Houston dated 18 July, 1990.

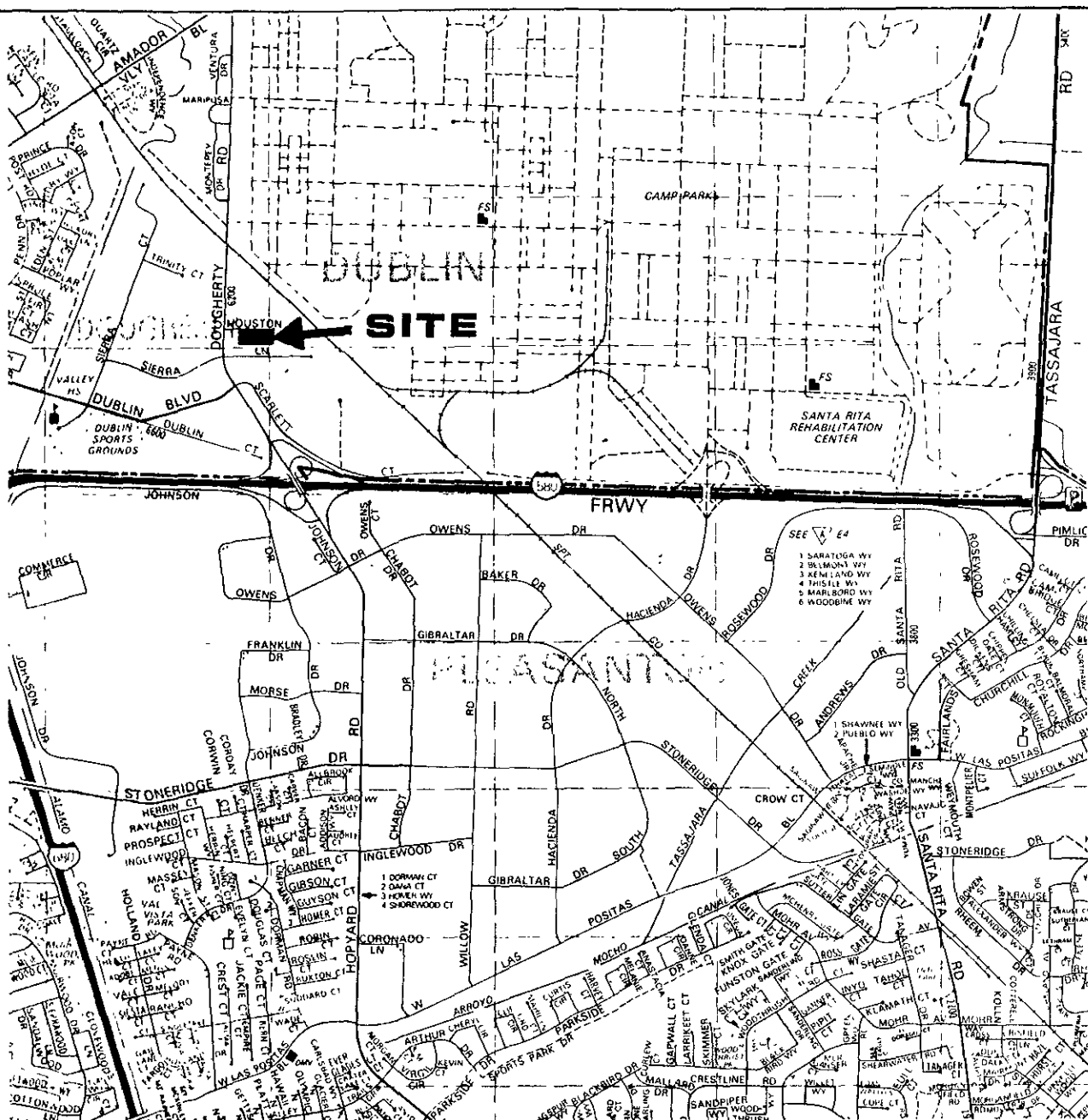
Safety Specialists, Inc. 1989a. SSI Project 530110. Letter Report to Mr. Fred Houston dated 29 August, 1989.

Safety Specialists, Inc. 1989b. SSI Project 530138. Letter Report to Mr. Fred Houston dated 26 December, 1989.

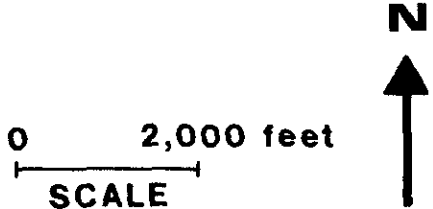
Safety Specialists, Inc. 1990. SSI Project 530138. Letter Report to Mr. Fred Houston dated 17 January, 1990.

ATTACHMENT A

Plates



Source: Thomas Bros. Maps, Alameda County, 1989



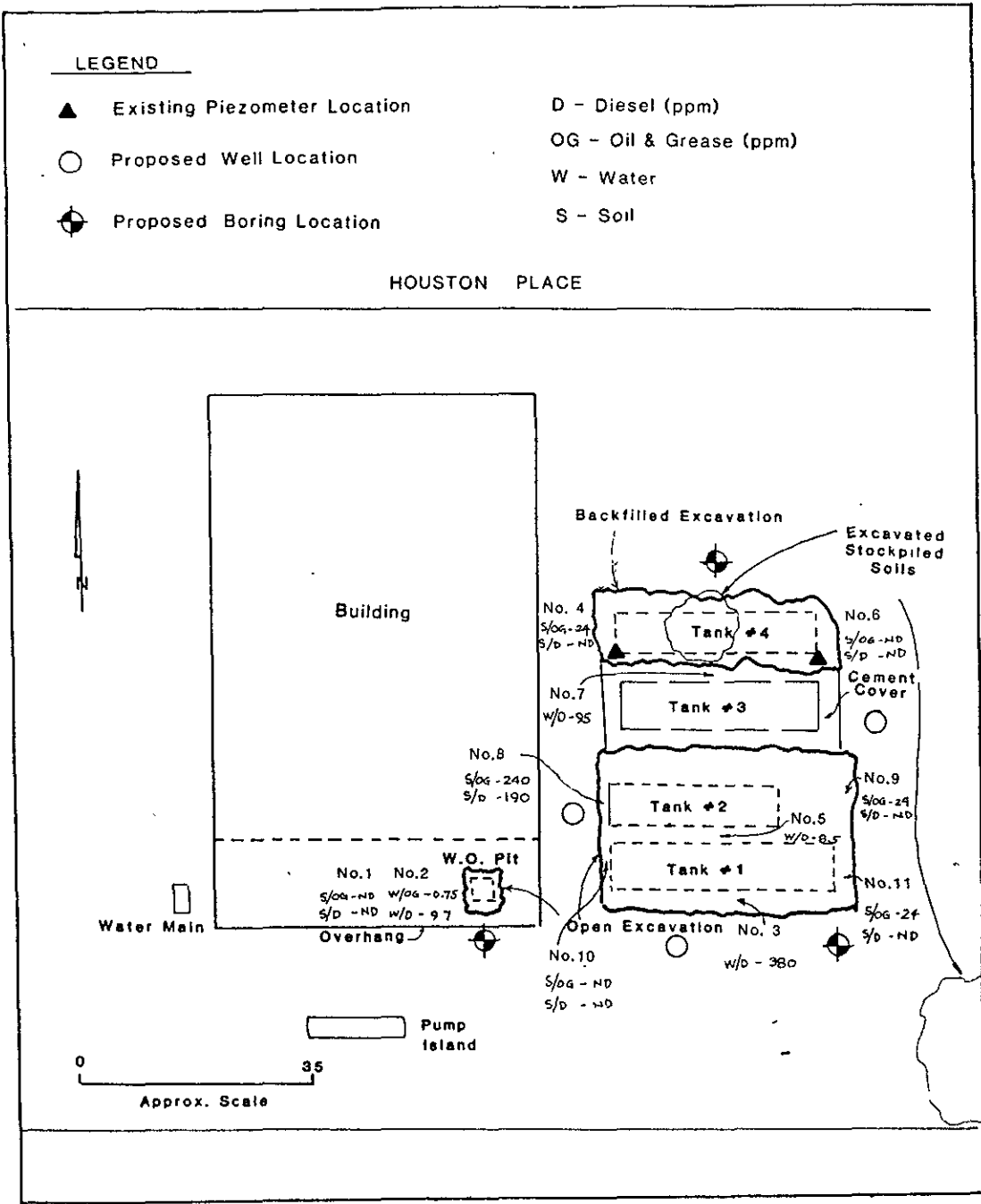
SITE LOCATION

WINNING ACTION INVESTMENTS

EIRRA CONSULTANTS

ENVIRONMENTAL INVESTIGATION, REMEDIATION, AND RISK ASSESSMENT

| Job Number | Date | Plate |
|------------|------|-------|
| 910301LU | 4/91 | 1 |



Source: Kleinfelder, 1989.
 Proposal for Initial Subsurface
 Investigation. Plate 3.

Note: Tank 3 remained in place.
 Waste oil pit subsequently
 overexcavated.

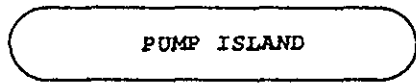
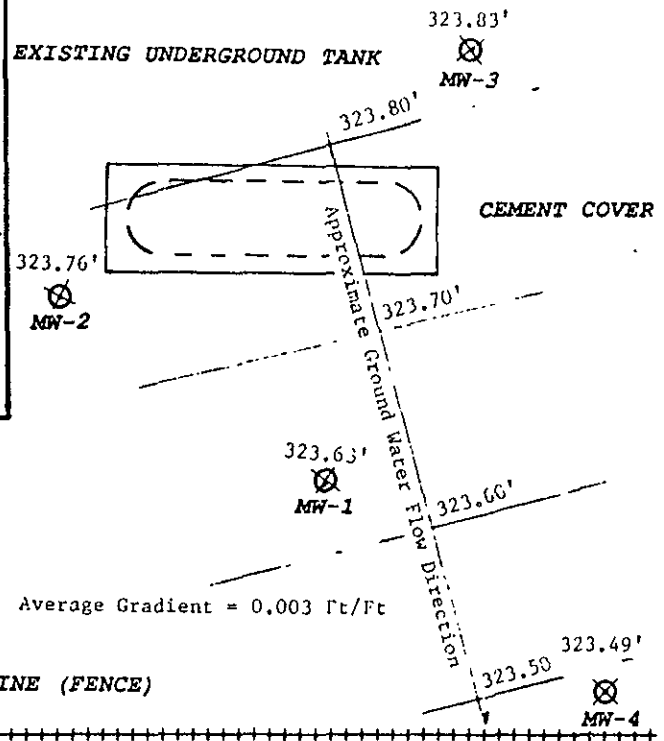
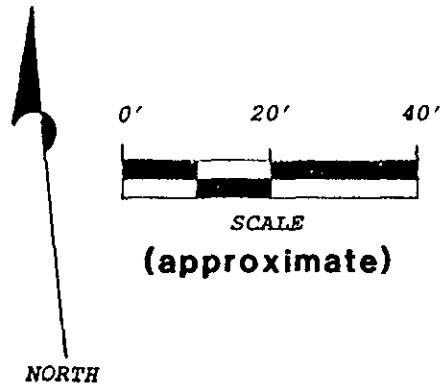
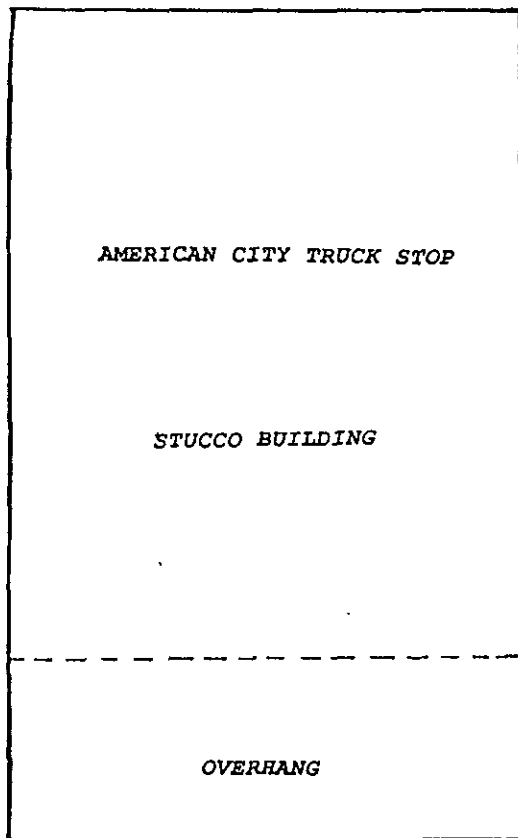
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WINNING ACTION INVESTMENTS

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ENVIRONMENTAL INVESTIGATION, REMEDIATION, AND RISK ASSESSMENT



BOUNDARY LINE (FENCE)

Source: NSI Technology Services Corporation, 1990. Environmental Assessment Report. Plate 4.

EXPLANATION

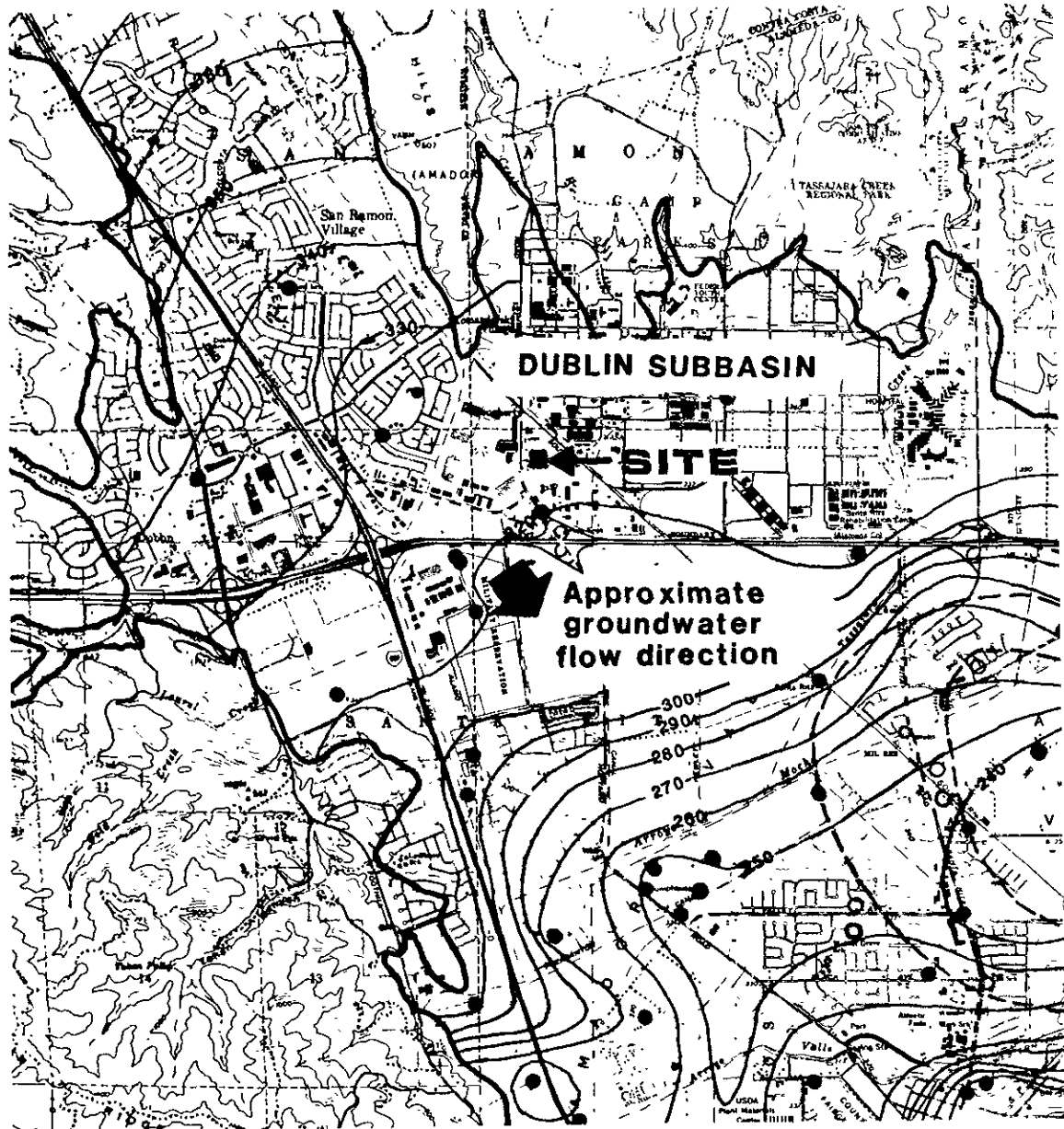
- ⊗ Monitoring well
- 323 - Water level of shallow water bearing zone (feet above mean sea level)

MONITORING WELL LOCATION MAP (ON SITE)

WINNING ACTION INVESTMENTS

EIRRA CONSULTANTS
ENVIRONMENTAL INVESTIGATION, REMEDIATION, AND RISK ASSESSMENT

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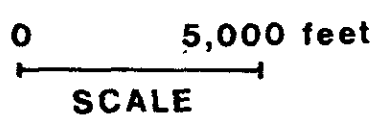


Source: ACFCWCD ZONE 7, Water Resources Engineering, Fall 1990 Groundwater Level Countours. Plate 4.



EXPLANATION

- Well
- 310 - Water level of aquifer (feet above mean sea level)



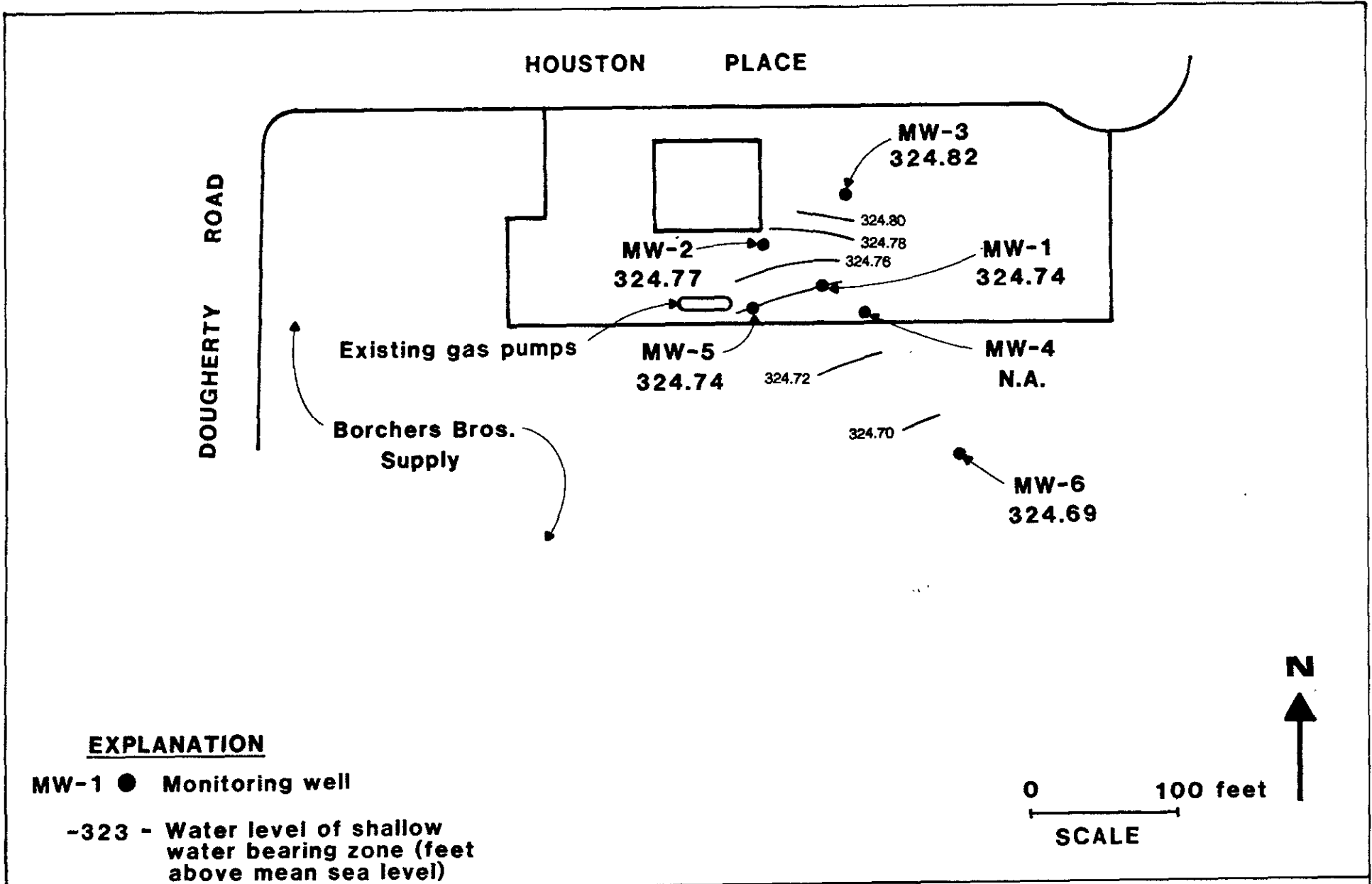
HYDROGEOLOGIC SETTING

WINNING ACTION INVESTMENTS

EIRRA CONSULTANTS

ENVIRONMENTAL INVESTIGATION, REMEDIATION, AND RISK ASSESSMENT

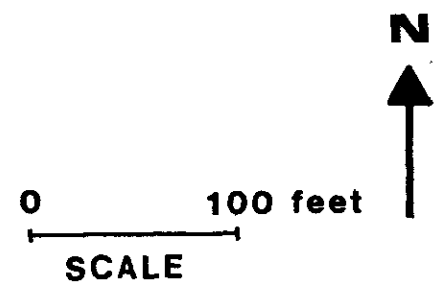
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| Job Number | Date | Plate |
| 910301LU | 4/91 | 4 |



EXPLANATION

MW-1 ● Monitoring well

-323 - Water level of shallow water bearing zone (feet above mean sea level)



| | | | | |
|--|--|--|------------------------------------|----------------------------------|
| EIRRA CONSULTANTS <small>ENVIRONMENTAL INVESTIGATION, REMEDIATION, AND RISK ASSESSMENT</small> | GROUNDWATER LEVEL CONTOUR MAP | WINNING ACTION INVESTMENTS | | |
| | | <small>Job Number</small> 910301LU | <small>Date</small> 4/91 | <small>Plate</small> 5 |

ATTACHMENT B

Tables

Table 1. Summary of historical groundwater monitoring results for American City Truck Stop, Winning Action Investment, Dublin, CA

MONITORING WELL MW-1

| <u>DATE</u> | <u>TPHD</u> | <u>TOG</u> | <u>B</u> | <u>T</u> | <u>E</u> | <u>X</u> |
|-------------|-------------|------------|----------|----------|----------|----------|
| 8/15/89 | 10.6 | N/A | 0.016 | ND | 0.0024 | 0.0031 |
| 12/13/89 | 60.0 | N/A | ND | ND | ND | ND |
| 6/20/90 | 4.3 | 7.2 | ND | ND | ND | ND |
| 8/30/90 | 15.0 | 20.0 | ND | ND | ND | ND |
| 3/01/91 | <0.05 | <0.5 | N/A | N/A | N/A | N/A |

MONITORING WELL MW-2

| <u>DATE</u> | <u>TPHD</u> | <u>TOG</u> | <u>B</u> | <u>T</u> | <u>E</u> | <u>X</u> |
|-------------|-------------|------------|----------|----------|----------|----------|
| 8/15/89 | 47.0 | 50.0 | ND | ND | ND | ND |
| 12/13/89 | 34.0 | 95.0 | ND | ND | ND | ND |
| 6/20/90 | 1.2 | ND | ND | ND | ND | ND |
| 8/30/90 | 1.8 | 2.5 | ND | ND | ND | ND |
| 3/01/91 | <0.05 | 1.9 | N/A | N/A | N/A | N/A |

MONITORING WELL MW-3

| <u>DATE</u> | <u>TPHD</u> | <u>TOG</u> | <u>B</u> | <u>T</u> | <u>E</u> | <u>X</u> |
|-------------|-------------|------------|----------|----------|----------|----------|
| 8/15/89 | 2.0 | N/A | ND | ND | ND | ND |
| 12/13/89 | 1.7 | N/A | ND | ND | ND | ND |
| 6/20/90 | ND | ND | ND | ND | ND | ND |
| 3/01/91 | 0.45 | 0.6 | N/A | N/A | N/A | N/A |

MONITORING WELL MW-4

| <u>DATE</u> | <u>TPHD</u> | <u>TOG</u> | <u>B</u> | <u>T</u> | <u>E</u> | <u>X</u> |
|-------------|-------------|------------|----------|----------|----------|----------|
| 6/20/90 | 22.0 | 8.6 | ND | ND | ND | ND |
| 8/30/90 | 0.560 | 2.4 | ND | ND | ND | ND |
| 3/01/91 | 0.73 | 1.4 | N/A | N/A | N/A | N/A |

MONITORING WELL MW-5

| <u>DATE</u> | <u>TPHD</u> | <u>TOG</u> | <u>B</u> | <u>T</u> | <u>E</u> | <u>X</u> |
|-------------|-------------|------------|----------|----------|----------|----------|
| 3/07/91 | 74 | 160 | <0.0005 | 0.0012 | 0.001 | 0.0022 |

MONITORING WELL MW-6

| <u>DATE</u> | <u>TPHD</u> | <u>TOG</u> | <u>B</u> | <u>T</u> | <u>E</u> | <u>X</u> |
|-------------|-------------|------------|----------|----------|----------|----------|
| 3/07/91 | <0.05 | <0.5 | N/A | N/A | N/A | N/A |

Note: 1989 and 1990 results reported in Winters Petroleum (1989), Safety Specialists (1989) and NSI (1990).

Groundwater concentrations expressed in milligrams per liter (mg/L), or ppm.

Abbreviations

TPHD - total petroleum hydrocarbons as diesel
 B - benzene
 T - toluene
 X - xylene
 E - ethylbenzene
 TOG - total oil and grease
 ND - not detected
 N/A - not analyzed

Table 2. Summary of soil and groundwater analytical results for supplemental investigation of American City Truck Stop, Winning Action Investment, Dublin, CA

SOIL ANALYTICAL RESULTS

| <u>Sample</u> | <u>Depth</u> | <u>TPHD</u> | <u>B</u> | <u>T</u> | <u>E</u> | <u>X</u> | <u>TOG</u> |
|---------------|--------------|-------------|----------|----------|----------|----------|------------|
| MW5-2 | 14.5 | 13 | <0.005 | <0.005 | <0.005 | <0.005 | 110 |
| MW5-3 | 17.5 | 49 | <0.005 | <0.005 | <0.005 | <0.005 | <10 |
| MW6-2 | 14.5 | <1.0 | <0.005 | <0.005 | <0.005 | <0.005 | <10 |

GROUNDWATER ANALYTICAL RESULTS

| <u>WELL</u> | <u>TPHD</u> | <u>TOG</u> | <u>B</u> | <u>T</u> | <u>E</u> | <u>X</u> |
|-------------|-------------|------------|----------|----------|----------|----------|
| MW-1 | <0.05 | <0.5 | N/A | N/A | N/A | N/A |
| MW-2 | <0.05 | 1.9 | N/A | N/A | N/A | N/A |
| MW-3 | 0.45 | 0.6 | N/A | N/A | N/A | N/A |
| MW-4 | 0.73 | 1.4 | N/A | N/A | N/A | N/A |
| MW-5 | 74 | 160 | <0.0005 | 0.0012 | 0.001 | 0.0022 |
| MW-6 | <0.05 | <0.5 | N/A | N/A | N/A | N/A |
| DHS/DWS | -- | -- | 0.001 | --- | 0.680 | 1.750 |

Note: Soil concentrations expressed in milligrams per kilogram (mg/Kg), or parts per million (ppm).

Groundwater concentrations expressed in milligrams per liter (mg/L), or ppm.

Depth expressed in feet below grade.

Abbreviations

TPHD - total petroleum hydrocarbons as diesel

B - benzene

T - toluene

X - xylene

E - ethylbenzene

DHS/DWS - California Department of Health Services Drinking Water Standards (CCR Title 22)

Table 3. Summary of groundwater elevation data for American City Truck Stop, Winning Action Investment, Dublin, CA

MONITORING WELL MW-1

| <u>DATE</u> | <u>WHE</u> | <u>DTW</u> | <u>GWE</u> |
|-------------|------------|------------|------------|
| 8/15/89 | 332.47 | NR | 323.13 |
| 12/13/89 | | 9.34 | 323.13 |
| 6/20/90 | | 8.84 | 323.63 |
| 8/30/90 | | 8.83 | 323.64 |
| 4/08/91 | | 7.73 | 324.74 |

MONITORING WELL MW-2

| <u>DATE</u> | <u>WHE</u> | <u>DTW</u> | <u>GWE</u> |
|-------------|------------|------------|------------|
| 8/15/89 | 332.58 | NR | 323.27 |
| 12/13/89 | | 9.21 | 323.37 |
| 6/20/90 | | 8.82 | 323.76 |
| 8/30/90 | | 8.82 | 323.76 |
| 4/08/91 | | 7.81 | 324.77 |

MONITORING WELL MW-3

| <u>DATE</u> | <u>WHE</u> | <u>DTW</u> | <u>GWE</u> |
|-------------|------------|------------|------------|
| 8/15/89 | 332.40 | NR | 323.33 |
| 12/13/89 | | 9.10 | 323.30 |
| 6/20/90 | | 8.57 | 323.83 |
| 8/30/90 | | 8.58 | 323.82 |
| 4/08/91 | | 7.58 | 324.82 |

MONITORING WELL MW-4

| <u>DATE</u> | <u>WHE</u> | <u>DTW</u> | <u>GWE</u> |
|-------------|---------------------|------------|------------|
| 6/20/90 | 331.55 ^a | 8.06 | 323.49 |
| 8/30/90 | | 8.07 | 323.48 |
| 4/08/91 | | 7.70 | 323.85 |

MONITORING WELL MW-5

| <u>DATE</u> | <u>WHE</u> | <u>DTW</u> | <u>GWE</u> |
|-------------|------------|------------|------------|
| 4/08/91 | 332.49 | 7.75 | 324.74 |

MONITORING WELL MW-6

| <u>DATE</u> | <u>WHE</u> | <u>DTW</u> | <u>GWE</u> |
|-------------|------------|------------|------------|
| 4/08/91 | 332.64 | 7.95 | 324.69 |

Note: Elevation data expressed in feet above mean sea level, City of Dublin datum. Elevation data from 1989 and 1990 reported in Safety Specialists (1989) and NSI (1990), respectively.

a Uncertain data.

Abbreviations

WHE - well-head elevation
 DTW - depth to water
 GWE - groundwater elevation

ATTACHMENT C

Drilling Log and Well Completion Details

LOCATION OF BORING:

PROJECT:

BORING NOMW-5

Winnipeg Action Trust

TOTAL DEPTH 18

JOB NO: 91030120

LOGGED BY: CMF

PROJ. MGR.

EDITED BY: CMF

DRILLING CONTRACTOR: Exploratory Geoservices

DRILL RIG TYPE: Mobile B-51

DRILLERS NAME: Frank

SAMPLING METHODS: Split Spoon

HAMMER WT.: 140

DROP: 30

STARTED, TIME: 13:35

DATE: 3-1-91

COMPLETED, TIME: 15:40

DATE: 3-1-91

BORING DEPTH (ft.)

18

CASING DEPTH (ft.)

18

WATER DEPTH (ft.)

8.48

7.75

-

TIME:

15:15

13:00

-

DATE:

3/7/91

4/8/91

-

BACKFILLED, TIME:

DATE:

BY:

SURFACE ELEV.:

DATUM:

CONDITIONS:

see PLATE 5

| SAMPLE DEPTH | SAMPLER TYPE | BLOWS / 6-IN. | INCHES DRIVEN | INCHES RECOVERED | SAMPLE CONDITION | DRILLING RATE (min/ft) | DEPTH IN FEET | GRAPHIC LOG |
|--------------|--------------|----------------|---------------|------------------|------------------|------------------------|---------------|---|
| | | | | | | | 0 | TI ASPHALT CAP AND BASE ROCK FILL |
| | | | | | | | 2 | CL SILTY CLAY; brown; very stiff; trace sand; low dilatancy; medium tough; damp |
| | | | | | | | 4 | |
| | | | | | | | 6 | |
| 8 | SP | 7 9 15 | 18 | 18 | GD | | 8 | e 9': wet |
| | | | | | | | 10 | |
| | | | | | | | 12 | |
| 13 | SP | 10 12 13 | 18 | 18 | GD | | 13 | e 13': brown to gray; petroleum like odor. |
| | | | | | | | 14 | |
| | | | | | | | 16 | |
| 16.5 | SP | 8 13 25 | 18 | 18 | GD | | 18 | e 18': slight odor, decreasing. Total depth = 18 feet. |
| | | | | | | | | |

LOCATION OF BORING

see Plate 5

| | | |
|--|-----------------------|------------------------|
| PROJECT: <i>WINNING ACTION INVEST</i> | | BORING NO. <i>MW-6</i> |
| JOB NO: <i>910301LV</i> | | TOTAL DEPTH: <i>18</i> |
| PROJ. MGR: | LOGGED BY: <i>CMF</i> | |
| DRILLING CONTRACTOR: <i>Exploration Co. services</i> | | EDITED BY: <i>cmf</i> |
| DRILL RIG TYPE: <i>Mobile 6-51</i> | | |
| DRILLERS NAME: <i>FRANK</i> | | |
| SAMPLING METHODS: <i>SP, SPAN</i> | | |
| HAMMER WT.: <i>140</i> | DROP: <i>30</i> | |
| STARTED, TIME: <i>10:10</i> | DATE: <i>3-1-91</i> | |
| COMPLETED, TIME: <i>13:15</i> | DATE: <i>3-1-91</i> | |
| BORING DEPTH (ft.) | <i>18</i> | |
| CASING DEPTH (ft.) | <i>18</i> | |
| WATER DEPTH (ft.) | <i>8.54</i> | <i>7.95</i> |
| TIME: | <i>12:00</i> | <i>13:13</i> |
| DATE: | <i>3-7-91</i> | <i>4-8-91</i> |
| BACKFILLED, TIME: | DATE: | BY: |
| SURFACE ELEV.: | DATUM: | |
| CONDITIONS: | | |

| SAMPLE DEPTH | SAMPLER TYPE | BLOWS/6-IN. | INCHES DRIVEN | INCHES RECOVERED | SAMPLE CONDITION | DRILLING RATE (min/ft) | DEPTH IN FEET |
|--------------|--------------|-------------------------|---------------|------------------|------------------|------------------------|---------------|
| | | | | | | | 2 |
| | | | | | | | 4 |
| | | | | | | | 6 |
| <i>8</i> | <i>SP</i> | <i>6 9 14</i> | <i>18</i> | <i>18</i> | <i>GD</i> | | <i>8</i> |
| | | | | | | | <i>10</i> |
| <i>13</i> | <i>SP</i> | <i>6 10</i> | <i>18</i> | <i>18</i> | <i>GD</i> | | <i>12</i> |
| | | | | | | | <i>14</i> |
| <i>16.5</i> | <i>SP</i> | <i>16 13 18</i> | <i>18</i> | <i>18</i> | <i>GD</i> | | <i>16</i> |
| | | | | | | | <i>18</i> |

| DEPTH IN FEET | GRAPHIC LOG |
|---------------|--|
| | <i>F</i> CEMENT AND BASE ROCK |
| <i>2</i> | <i>CL</i> SILTY CLAY, Black; trace sand; very fine; stiff; damp |
| <i>8</i> | <i>e 8'</i> : very stiff; red let casts; non dilatant; very tough; moist to wet. |
| <i>12</i> | <i>e 12'</i> : wet |
| <i>14</i> | CLAY AND SAND, INTERBEDDED. CLAY: as above. |
| <i>16</i> | SAND: grayish brown; very fine to fine; very well sorted; medium dense; wet. |
| <i>18</i> | CLAY; grayish brown; very stiff; non dilatant; tough; moist. TD = 18 feet. |

FIELD WELL COMPLETION FORM

JOB NAME: Winning Action Investments
 JOB NUMBER: 91030120 PROJECT MANAGER: CMF
 LOGGED BY: _____ EDITED BY: CMF
 WELL NAME: MW-5 DATE: 3-1-91
 DRILLING COMPANY: EXPLORATION GEOSCIENCES
 EQUIPMENT: 8 INCH HOLLOW STEM AUGER DRILLER: PAUL
 INCH ROTARY WASH HOURS DRILLED: 2

GALLONS OF WATER USED DURING DRILLING: 0 GALLONS
 METHOD OF DECONTAMINATION PRIOR TO DRILLING: STEAM

DEVELOPMENT
 METHOD OF DEVELOPMENT: BAILING
 DEVELOPMENT BEGAN DATE: 3-7-91 TIME: 15:15

| YIELD: | GPM | TIME: FROM | TO | DATE: |
|--------|-----|------------|----|-------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

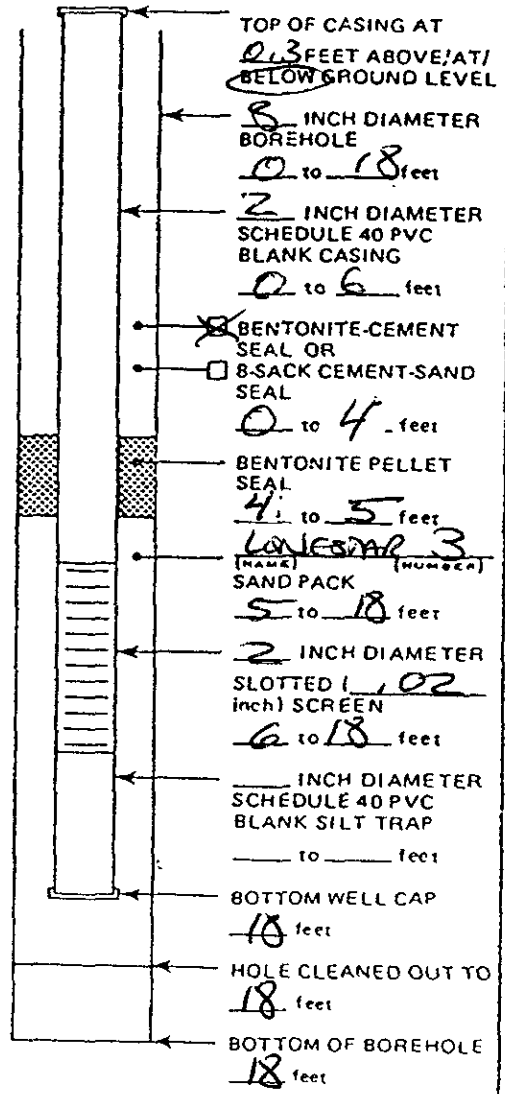
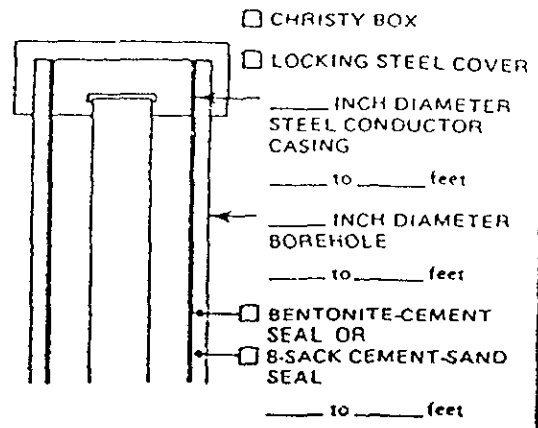
TOTAL WATER REMOVED DURING DEVELOPMENT: 12 GALLONS
 DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: CLEAR SLIGHTLY CLOUDY
 MOD. TURBID VERY MUDDY

ODOR OF WATER: Petroleum
 WATER DISCHARGED TO: GROUND SURFACE TANK TRUCK
 STORM SEWERS STORAGE TANK
 DRUMS OTHER _____

DEPTH TO WATER AFTER DEVELOPMENT: _____ FEET

MATERIALS USED
4.5 SACKS OF Longsight #3 SAND
3+ SACKS OF Portland CEMENT
 _____ GALLONS OF GROUT USED
 _____ SACKS OF POWDERED BENTONITE
 _____ POUNDS OF BENTONITE PELLETS
6 FEET OF 2 INCH PVC BLANK CASING
12 FEET OF 2 INCH PVC SLOTTED SCREEN
 _____ FEET OF _____ INCH STEEL CONDUCTOR CASING
 _____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED
 _____ YARD³ CEMENT-SAND (REDI-MIX) USED

CONCRETE PUMPER USED? NO YES
 NAME MW-5
 WELL COVER USED: LOCKING STEEL COVER
 CHRISTY BOX
 OTHER _____
 SILT TRAP USED? NO YES



NOT TO SCALE
 ADDITIONAL INFORMATION
Groundwater equilibrium
T = 62°F
pH = 7.07
EC = 10,400 µmhos/cm³

FIELD WELL COMPLETION FORM

JOB NAME: Winning Action Investments
 JOB NUMBER: 910301LV PROJECT MANAGER: CMT
 LOGGED BY: _____ EDITED BY: CMT
 WELL NAME: MW-6 DATE: 3-1-91
 DRILLING COMPANY: EXPLORATION SERVICES
 EQUIPMENT: 8 INCH HOLLOW STEM AUGER DRILLER: _____
 _____ INCH ROTARY WASH HOURS DRILLED: _____

GALLONS OF WATER USED DURING DRILLING: 0 GALLONS

METHOD OF DECONTAMINATION PRIOR TO DRILLING: STEAM

DEVELOPMENT

METHOD OF DEVELOPMENT: Bailing

DEVELOPMENT BEGAN DATE: 3/7/91 TIME: 12:00

| YIELD: | GPM | TIME: FROM | TO | DATE: |
|--------|-----|------------|----|-------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

TOTAL WATER REMOVED DURING DEVELOPMENT: 35 GALLONS

DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: CLEAR SLIGHTLY CLOUDY
 MOD. TURBID VERY MUDDY

ODOR OF WATER: NONE

WATER DISCHARGED TO: GROUND SURFACE TANK TRUCK
 STORM SEWERS STORAGE TANK
 DRUMS OTHER: SANIT SENSOR

DEPTH TO WATER AFTER DEVELOPMENT: 12.6 FEET

MATERIALS USED

5 SACKS OF Lonestar #3 SAND
3+ SACKS OF Portland CEMENT
 _____ GALLONS OF GROUT USED
 _____ SACKS OF POWDERED BENTONITE
 _____ POUNDS OF BENTONITE PELLETS
6 FEET OF 2 INCH PVC BLANK CASING
12 FEET OF 2 INCH PVC SLOTTED SCREEN
 _____ FEET OF _____ INCH STEEL CONDUCTOR CASING
 _____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED
 _____ YARD³ CEMENT-SAND (REDI-MIX) USED

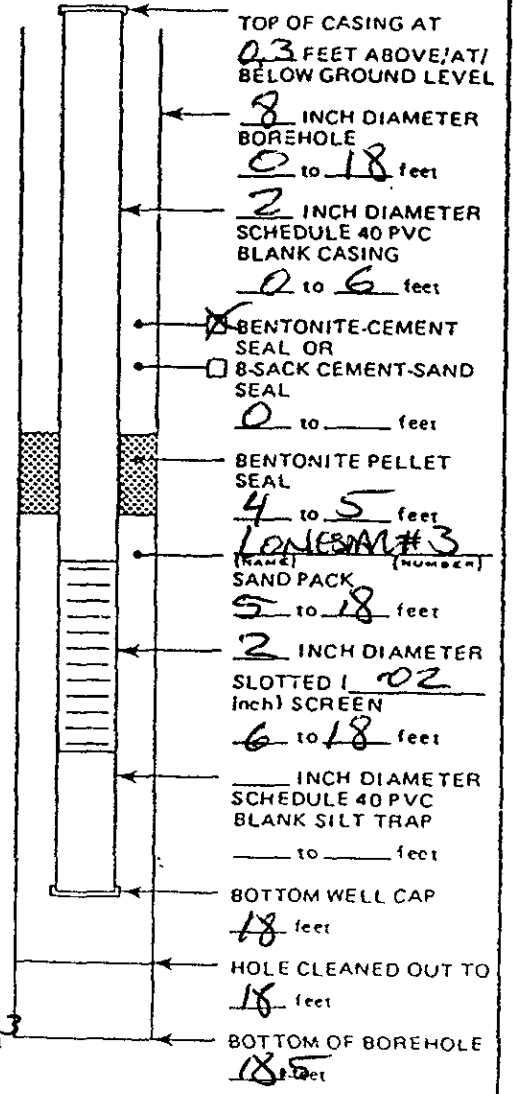
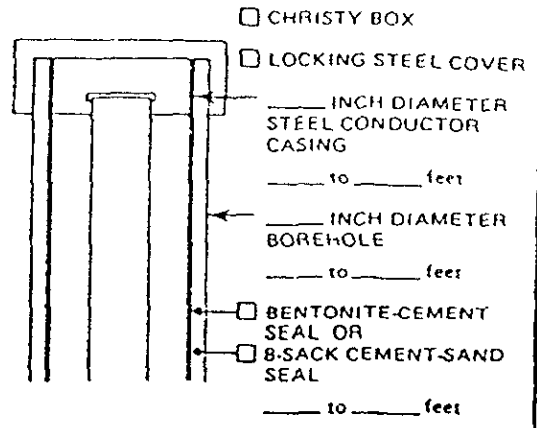
CONCRETE PUMPER USED? NO YES

NAME: MW-6

WELL COVER USED LOCKING STEEL COVER
 CHRISTY BOX
 OTHER _____

SILT TRAP USED? NO YES

GROUNDWATER AT Equilibrium
 T = 64.6 °F
 PH = 8.02
 EC = 3,420 $\mu\text{mhos/cm}^3$



NOT TO SCALE
 ADDITIONAL INFORMATION LOST
SANDING WEIGHT IN BOREHOLE
@ 18.5 feet; contained tape with
glue; drilled out to 18.5 feet
and set bentonite seal from
18.0 - 18.5 feet.

ATTACHMENT D

**Certified Analytical Reports and
Chain of Custody Documentation**

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

March 11, 1991

ChromaLab File No.: 0391009

CHRISTOPHER M. FRENCH

Attn: Christopher M. French, EIRRA Corporation

RE: Three soil samples for BTEX, Diesel and Oil & Grease analyses

Project Name: ALL AMERICAN TRUCK STOP

Date Sampled: March 1, 1991

Date Submitted: March 4, 1991

Date Extracted: March 6-8, 1991

Date Analyzed: March 6-8, 1991

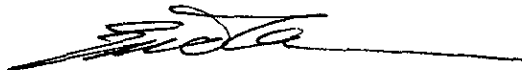
RESULTS:

| Sample No. | Diesel (mg/Kg) | Benzene (µg/Kg) | Toluene (µg/Kg) | Ethyl Benzene (µg/Kg) | Total Xylenes (µg/Kg) | Oil & Grease (mg/Kg) |
|--------------------|----------------|-----------------|-----------------|-----------------------|-----------------------|----------------------|
| MW5-2 | 13 | N.D. | N.D. | N.D. | N.D. | 110 |
| MW5-3 | 49 | N.D. | N.D. | N.D. | N.D. | N.D. |
| MW6-2 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| BLANK | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| SPIKE RECOVERY | 89.8% | 88.8% | 84.2% | 83.9% | 80.9% | ---- |
| DUP SPIKE RECOVERY | 102.6% | 95.6% | 95.2% | 94.9% | 80.7% | ---- |
| DETECTION LIMIT | 1.0 | 5.0 | 5.0 | 5.0 | 5.0 | 10 |
| METHOF OF ANALYSIS | 5030/ 8015 | 8020 | 8020 | 8020 | 8020 | 5520 E&F |

ChromaLab, Inc.



David Duong
Chief Chemist



Eric Tam
Laboratory Director

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

March 11, 1991

ChromaLab File No.: 0391008

CHRISTOPHER M. FRENCH

Attn: Christopher M. French, EIRRA Corporation

RE: Four water samples for Diesel and Oil & Grease analyses

Date Sampled: March 1, 1991

Date Submitted: March 4, 1991

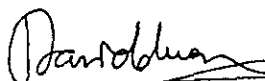
Date Extracted: March 6-8, 1991

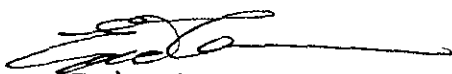
Date Analyzed: March 6-8, 1991

RESULTS:

| <u>Sample No.</u> | <u>Diesel ($\mu\text{g/L}$)</u> | <u>Oil & Grease (mg/L)</u> |
|----------------------|--|--------------------------------|
| MW-1 | N.D. | 6.7 |
| MW-2 | N.D. | 1.9 |
| MW-3 | 450 | 0.6 |
| MW-4 | 73 | 1.4 |
| BLANK | N.D. | N.D. |
| SPIKED RECOVERY | 89.8% | ---- |
| DUP. SPIKED RECOVERY | 102.6% | ---- |
| DETECTION LIMIT | 50 | 0.5 |
| METHOD OF ANALYSIS | 3510/8015 | 5520 B&F |

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director

CHROMALAB, INC.

Analytical Laboratory
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

March 25, 1991

ChromaLab File No.: 0391045

EIRRA CORPORATION

Attn: Christopher French

RE: Two water samples for BTEX, Diesel, and Oil & Grease analyses

Project Name: WINNING ACTION

Project Number: 910301W

Date Sampled: March 7, 1991

Date Submitted: March 11, 1991

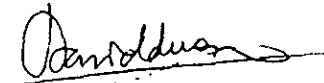
Date Extracted: March 18-19, 1991

Date Analyzed: March 18-19, 1991

RESULTS:

| Sample No. | Diesel ($\mu\text{g/L}$) | Benzene ($\mu\text{g/L}$) | Toluene ($\mu\text{g/L}$) | Ethyl Benzene ($\mu\text{g/L}$) | Total Xylenes ($\mu\text{g/L}$) | Oil & Grease (mg/L) |
|------------|----------------------------|-----------------------------|-----------------------------|-----------------------------------|-----------------------------------|---------------------|
| MW-5 | 74000 | N.D. | 1.2 | 1.0 | 2.2 | 160 |
| MW-6 | N.D. | ---- | ---- | ---- | ---- | N.D. |
| BLANK | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| SPIKED | | | | | | |
| RECOVERY | 94.2% | 90.3% | 104.1% | 98.7% | 94.8% | ---- |
| DETECTION | | | | | | |
| LIMIT | 50 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| METHOD OF | 3510/ | | | | | 5520 |
| ANALYSIS | 8015 | 602 | 602 | 602 | 602 | B&F |

ChromaLab, Inc.


David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director