Touchstone Developments
Environmental Management

WORK PLAN & HEALTH AND SAFETY PLAN FOR INITIAL SUBSURFACE INVESTIGATION

WASTE OIL UST SITE
3430 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

Touchstone Developments
Project No: 94-14

Prepared for:

The Goodyear Tire & Rubber Company
7301 Ambassador Row
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Prepared by:

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August 15, 1994

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I. INTRODUCTION

Touchstone Developments (TD) has prepared this Work Plan & Health and Safety Plan in response to your request for an initial evaluation of potential impacts to groundwater at the site of a former waste oil underground storage tank (UST) at 3430 Castro Valley Boulevard, Castro Valley, California. The request for this work was initiated by the Alameda Health Care Services Agency, Department of Environmental Health, letter dated May 19, 1994, in which they requested that an initial investigation in the specific form of a Preliminary Site Assessment (PSA) be conducted at the site to determine the extent of environmental impact resulting from the release or potential release, and whether further assessment or clean-up efforts are necessary. As requested by the Department of Environmental Health the PSA will be conducted in accordance with Regional Water Quality Control Board's staff recommendations for the initial evaluation and investigation for underground tanks. The local regulatory agency for this project is the Alameda County Department of Environmental Health. The first step in conducting a PSA is to prepare a Work Plan documenting the proposed work. The balance of this document is the proposed work and background information presented in accordance with the regulatory requirements.

Statement of Scope of Work

The scope of work for this initial assessment will be to drill three soils borings on the site and convert those soil borings into monitoring wells. After the installation of the monitoring wells groundwater samples will be collected and analyzed for suspect contaminants. In addition, the elevations of the well heads will be surveyed relative to mean sea level and groundwater elevations in the three wells will be measured to determine the local groundwater gradient. Information collected from this work, in addition to site history information, will be compiled into a report presenting our findings and recommendations for additional work, if needed.

Site Location

The site is located in the central part of Castro Valley, California, at 3430 Castro Valley Boulevard, on the north side of Castro Valley Boulevard and west of Redwood Road (Figure 1).

Background

The subject property is a commercial site, formerly leased by Goodyear. It is presently owned by the Aimee L. West trust and was previously leased to Merritt Tire & Brake, which was owned by Richard A. Gorkosky, Ben Tsurumoto, and Yoko Tsurumoto. The commercial site was used for a tire and auto repair business and included an underground storage tank for the containment of waste oil. In January of 1990, Goodyear issued a form letter to all their lessors who, according

to their records, had underground storage tanks (USTs) on their leased facilities. The form letter was to obtain general information for permission to remove those USTs if that became necessary and if Goodyear chose to remove those tanks in case of an emergency. A review of records indicated the tank was removed, but there was no indication Goodyear Tire & Rubber Company contracted for the removal of those tanks. Goodyear states that they did not remove the tank, nor were they in any way involved with its removal. Although the record is unclear, it appears that the tenant Merritt Tire and Brake had the tanks removed. However, review of Alameda County files does not indicate that this removal was done under permit. Therefore, the time and date of removal is not recorded, nor is the disposition of the UST.

On September 22, 1993 SEMCO was retained by Goodyear to conduct an initial sampling of the excavation. According to the chain-of-custody records, a soil sample from the south wall of the excavation at the 8-feet depth was collected as was an 8-foot deep sample from the north end of the tank excavation. The samples were apparently collected with a hand auger. The soils were analyzed at Superior Analytical Laboratory in Martinez, California for the following compounds: TPH-Oil & Grease; BTXE; and metals (cadmium, chromium, lead, nickel, and zinc). The results of those analyses were reported by Superior in their report dated September 29, 1993. The report indicates the following concentrations from those samples:

TABLE I

RESULTS OF ANALYSES
SUPERIOR ANALYTICAL REPORT, SEPTEMBER 29, 1993

Laboratory No.	No. 1 - South	No. 2 - North
Gasoline	230	22
Benzene	0.88	0.099
Toluene	7.6	0.88
Ethylbenzene	3.6	0.34
Total Xylenes	24	2.4
Diesel Range	2,400	388
Oil & Grease	6,100	1,600

Note: All concentrations are in mg/Kg (or ppm)

Based on this initial sampling and the indication of contamination, the Department of Environmental Health had requested that a preliminary investigation to determine the extent of contamination be conducted. Since the time of the SEMCO report and the present, there have been efforts between Goodyear Tire & Rubber and the Department of Environmental Health to determine the responsible party or parties (We understand the Goodyear, and possibly the Aimee L. West Trust et. al, are considered responsible parties by the Department of Environmental Health). Although resolution of this matter is not complete, Goodyear Tire & Rubber is proceeding with the investigation in accordance with the Department of Environmental Health's letter dated July 7, 1994.

Site History

Not much direct information is know about the site history and operations since the operators of Merritt Tire & Brake have not been available for an interview, and records regarding their operation are not available to us at this time. However, based on the type of business it could be inferred that general automotive repair was conducted at the site. The presence of the waste oil tank would indicate that oil changing and related automotive work was done. The types of materials that typically are discharged to waste oil tanks in an automotive operation would include such things as waste oil as well as various types of solvents and other liquid wastes resulting from automotive repair and servicing operations.

Since the tank was not registered and there is no record of its removal or disposition, the capacity of the tank is not known. However, available information indicates that only one tank was present at the site and it was used as a waste oil tank. For the same reasons (i.e. lack of historical records) we do not have information available at this time regarding manifests or disposal of the tank, the filling status, copies of unauthorized release forms (if they exist), previous tank testing results (if conducted), or an estimate of total quantity of product lost.

With the exception of the apparent unauthorized discharge from the above referenced tank, we have no information relating to other removed tanks or other accidental discharges at the site.

Previous subsurface work consisted of removal and disposal of the tank by unknown persons on an unknown date. Subsequently as reported, SEMCO was retained to collect hand auger soil samples from the waste tank area. Two samples were taken at an 8-foot depth, one from the north and one from the south end of the excavation. The results of the analyses of those samples are summarized in the previous section.

II. SITE DESCRIPTION

The site is a commercial property located near the center of Castro Valley on a nearly flat to gently south-sloping parcel. It fronts on Castro Valley Boulevard and is slightly to the west of Redwood Boulevard. The site is underlain by alluvial fan deposits derived predominantly of materials from the hills to the north. These materials as identified in soil borings on the adjacent property to the west consist of clayey silts, silty clays, clayey sand, and sand. In those borings, groundwater was determined to be at depths of 10.5 feet below the ground surface. The nearest surface water sources are San Leandro Creek, which lies approximately 6,000 feet to the south. In addition, the U.S.G.S. topographic quadrangle (Hayward Quadrangle, scale 1" = 2,000') indicates there is a small drainage approximately 1,000 feet to the east that is a tributary to San Leandro Creek. There is also shown an intermittent tributary drainage approximately 3,000 feet to the west. The attached Site Location Map, Plate 1, shows the locations of these drainages as well as surface water bodies such as ponds and reservoirs in the general area. Plate 2 presents a Site Map showing the location of the buildings and the former tank location, as well as an underground storage tank location on the adjacent property to the west. That property is referred to as 20630 Redwood Road and is owned by the R.T. Nahas Company.

The tank on the R.T. Nahas property is a 4,000-gallon, fiberglass tank that was installed in 1975 and permitted by Alameda County in 1992. Precision tests in 1989 and 1992 indicated a failure near the top portion of the tank. No repair was performed and during this period it was reported the tank was not filled. The tank was emptied of remaining gasoline in 1993 after the failed tests and has not been used since that time. BSK Associates performed an investigation and reported their results in a report dated May 26, 1994. Their investigation consisted of drilling two soil borings in the vicinity of the UST. Samples were collected from depth of 12 and 10 feet, and they were analyzed for TPH-gasoline, TPH-diesel, oil and grease, and BTXE, as well as total lead. In addition, a water sample was collected from each of the two borings. The analytical results of the water samples indicated no detection for any of the contaminants. However, the soil sample collected from the presumed down-gradient boring (SP-2 at 10 feet) indicated the presence of oil and grease at 22 ppm and possible TPH-diesel contamination at the concentration of 1.6 ppm. However, the laboratory indicated that the chromatograph for the TPH-diesel report was not consistent with the diesel standard. Our experience suggests that this is probably related to motor oil, some other heavier petroleum hydrocarbon, or possibly biogenic hydrocarbon not related to petroleum hydrocarbon.

On the subject site the report by SEMCO dated September 29, 1993 indicates there is petroleum hydrocarbon contamination in the soil at the 8-foot depth at the site of the previous waste oil UST. The results of that report are summarized in a previous section of this Work Plan.

The depth to groundwater based on the borings on the adjacent property (R.T. Nahas) is likely to be in the range of 10 to 12 feet. The soil types are likewise expected to be similar to those reported by BSK on the R.T. Nahas property, namely a sequence of silty clays, clayey silts, silty sands, and sands.

The analytical results from the previous soil sampling by SEMCO is presented in a previous section. The location of SEMCO's sampling points are shown on Plate 2, the Site Plan. A copy of the SEMCO report is attached to this Work Plan for your reference.

At this time we have no information indicating there are underground utilities in the area where we propose to drill borings and install monitoring wells. However, prior to field activity we will mark proposed boring locations and contact Underground Service Alert (USA) to obtain clearance in those areas. Also, we will take standard precautions to look for visual indications of underground utilities in the general area.

Since we have no information on the removal of the tank, we cannot provide at this time information on any problems or unusual conditions that may have occurred at the time of that tank removal.

III. PLAN FOR DETERMINING EXTENT OF SOIL CONTAMINATION ON-SITE

The proposed scope of work is intended to provide a preliminary determination of the potential for groundwater contamination and consists of installing three monitoring wells; one within approximately 10 feet down-gradient of the former tank location, one well up-gradient, and the third well cross-gradient, so as to form a triangle of sufficient size to determine groundwater gradient. At this time, we are not planning to conduct a soil gas survey or to drill exploratory borings (except for the monitoring wells). Therefore, this phase of investigation will provide limited information, only regarding the vertical and lateral extent of contamination in soil.

With regard to the three soil borings that will be drilled for conversion to monitoring wells, the proposed location is shown on the attached Site Plan (Plate 2). We anticipate the depth of the borings will extend to approximately 10 to 15 feet below first encountered groundwater. Based on information from the Robert T. Nahas property to the west of the subject site, we anticipate depth to groundwater will be approximately 10 feet below the ground surface. Therefore, we anticipate the total depth of our borings (and monitoring wells) will be 20 to 25 feet.

A properly licensed and experienced drilling contractor will be selected for drilling these borings and installing the proposed monitoring wells. The wells will be logged by a California Registered Geologist, using the Uniform Soil Classification System to describe the soils encountered. Pre-

cleaned, hollow stem augers will be used to drill the borings and soils samples will be collected by using a modified California drive sampler. For the boring within approximately 10 feet down-gradient of the former tank location, we will sample on an almost continual basis to determine in as much detail as possible the soil stratigraphy closest to the source of potential contamination. For the other two borings we will sample at least every five feet, at changes in lithology, and at locations where we suspect contamination might exist.

The augers will be decontaminated on-site by steam cleaning and rinsing between each boring. The drive sampler will be decontaminated by steam cleaning, washing in an Alxonox solution and triple rinsing, between each drive sample, as well as between each boring. Pre-cleaned, stainless or brass tubes will be inserted into the sampler for the collection of soil samples. Soil samples retained for laboratory analysis will be sealed with teflon tape or aluminum foil, capped with plastic caps, labeled, logged onto a chain-of-custody form and placed in an ice chest with frozen blue ice for transport to a state certified analytical laboratory. During the course of drilling, petroleum hydrocarbon contamination will be screened by visual observations, odors, as well as through the use of a Hanby field test kit or a PID. Field screening samples will selected in the field and the number of samples will be as determined by the site geologist.

Soil cuttings will be placed in DOT steel drums, which will be labeled and sealed. The drums will be placed on-site at a location either specified by the owner or his representative. Likewise rinseate from decontamination procedures as well as monitoring well development and purge water will be placed in labeled steel DOT drums.

IV. PLAN FOR DETERMINING GROUNDWATER CONTAMINATION

As noted in the preceding section, three groundwater monitoring wells will be installed on-site at the locations shown on the attached Plate 2. The methods for drilling the borings in which the monitoring wells are to be placed is described in the preceding section. These methods are in accordance with "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" (dated August 1990).

The rational for placement of the borings for the monitoring wells is discussed in the preceding section. Site constraints such as property lines, building locations, and underground utilities will determine the final locations of the proposed monitoring wells. The locations shown on the Site Plan are the proposed locations and there may be some variance based on site conditions.

The drilling methods for the monitoring wells is described in the preceding section. We expect to use 8¼" nominal diameter hollow-stem augers for the drilling for the monitoring wells. The proposed drilling date has not been determined and will be dependent upon drill rig availability

and permitting by the regulatory agency. Our schedule is such that we can be available as soon as authorization is given to drill the borings and install the wells. We anticipate this will take place in late August or September.

As described in the preceding section, we will sample using a split-spoon sampler at approximately every five feet, changes in lithology and at the soil/water interface. However, for the boring immediately down-gradient of the previous UST, additional sampling is anticipated.
Well design will consist of 2-inch diameter Schedule 40 PVC, well casing and factory slotted well screen. The casing will be threaded and no solvents will be used. The length of well screen is anticipated to be at least 10 feet and filter material (sand pack) will be dependent upon the lithology of the soils encountered. The slot size for the well screen is anticipated to be 0.02 inches. Based on our review of the boring logs for the R.T. Nahas property, we anticipate that the No. 2 Monterey sand would be an appropriate filter-pack material. After inserting the well screen and blank casing into the hollow-stem auger, the auger will be backed out as sand is tremmied into the boring. Sand will be placed in the annulus around the casing to approximately 18 to 24 inches above the uppermost screened interval. A bentonite seal will then be placed extending at least 24 inches above the top of the sand pack. We anticipate using pellitized bentonite which will be hydrated with potable water prior to completing the well. Above the bentonite seal we will place a neat cement seal to the surface and the uppermost portion of the well will be completed with a traffic-rated christy box and a locking cap will be placed on the top of the well. Plate 3 presents a typical well completion construction diagram. The depth intervals will depend on the actual site conditions.

The well will be allowed to stabilize and the uppermost cement seal will be allowed to cure for a minimum of 48 hours before development of the well. After this period of time, the well will be developed by a combination of surging, bailing or pumping, as deemed appropriate. The adequacy of development will be assessed based on the volume of water, the turbidity, and the recharge achieved after bailing and/or pumping. Well development water will be stored on-site in steel DOT drums which will be labeled as to their content.

After the well is developed additional development in the form of purging will take place. During the purging we will monitor the physical parameters of the groundwater such as pH, conductivity, and temperature, in addition to the turbidity. These parameters will be recorded on a field log sheet, and when the conditions stabilized and a minimum of five well volumes have purged, we will determine if the well as been adequately developed so that representative formation groundwater samples can be obtained. Prior to sampling the water, the well will be allowed to recover to at least 80 percent of its initial (pre-purging) level.

In order to characterize the soil cuttings developed during monitoring well construction and the purge water generated during well development, we will assess the results of the laboratory

analysis of the soil samples as well as the field characteristics of the soils. For the waste water (purged and decontamination water) we will evaluate the laboratory analytical results of the groundwater samples as described in the following section.

In order to determine the local groundwater gradient, we will retain a licensed civil engineer or surveyor to survey the well heads to an established bench mark (relative to mean sea level) to the nearest 0.01 foot.

Groundwater Sampling Plans

Prior to sampling the well, the groundwater level in the well will be measured with an electronic sounding device to the nearest 0.01-foot. If we suspect a free product to be present in the wells we will use a interface probe to check the thickness of potential free product. If no free product is expected, we will purge the well either by bailing with a new disposable PVC bailer or with a precleaned electric purge pump. We will monitor the rate of purging and monitor the physical parameters of the water as it is purged. These parameters will include temperature, pH, conductivity, and turbidity. These parameters will logged on a field sheet during the well purging process. Purged water will be contained on-site in steel DOT drums as described in a preceding section. When the physical parameters of the water are stabilized and we have evacuated the well of at least five well volumes, we will allow the well to recharge to a minimum of 80 percent of its prepurging level and then collect appropriate water samples using a clean, disposable PVC bailer for each well.

For purposed of quality assurance we will collect a field blank consisting of laboratory-provided deionized water. All samples will be labeled in the field and logged on a chain-of-custody form, then the samples will be placed in an ice chest with frozen blue ice along with the chain-of-custody form and transported directly to a state certified laboratory for the appropriate analytical procedures. In addition to the field blank, the laboratory will conduct its own internal quality control procedures which will typically consist of surrogate spikes, method blanks, and other standard protocols.

We propose to use Table 2 of the August 10, 1990 Tri-Regional Board Guidelines as a guide in selecting the compounds to be analyzed for and analytic method to be used. Based on that table and the site history showing the previously removed tank was a waste oil UST, we propose the following analyses:

TABLE II

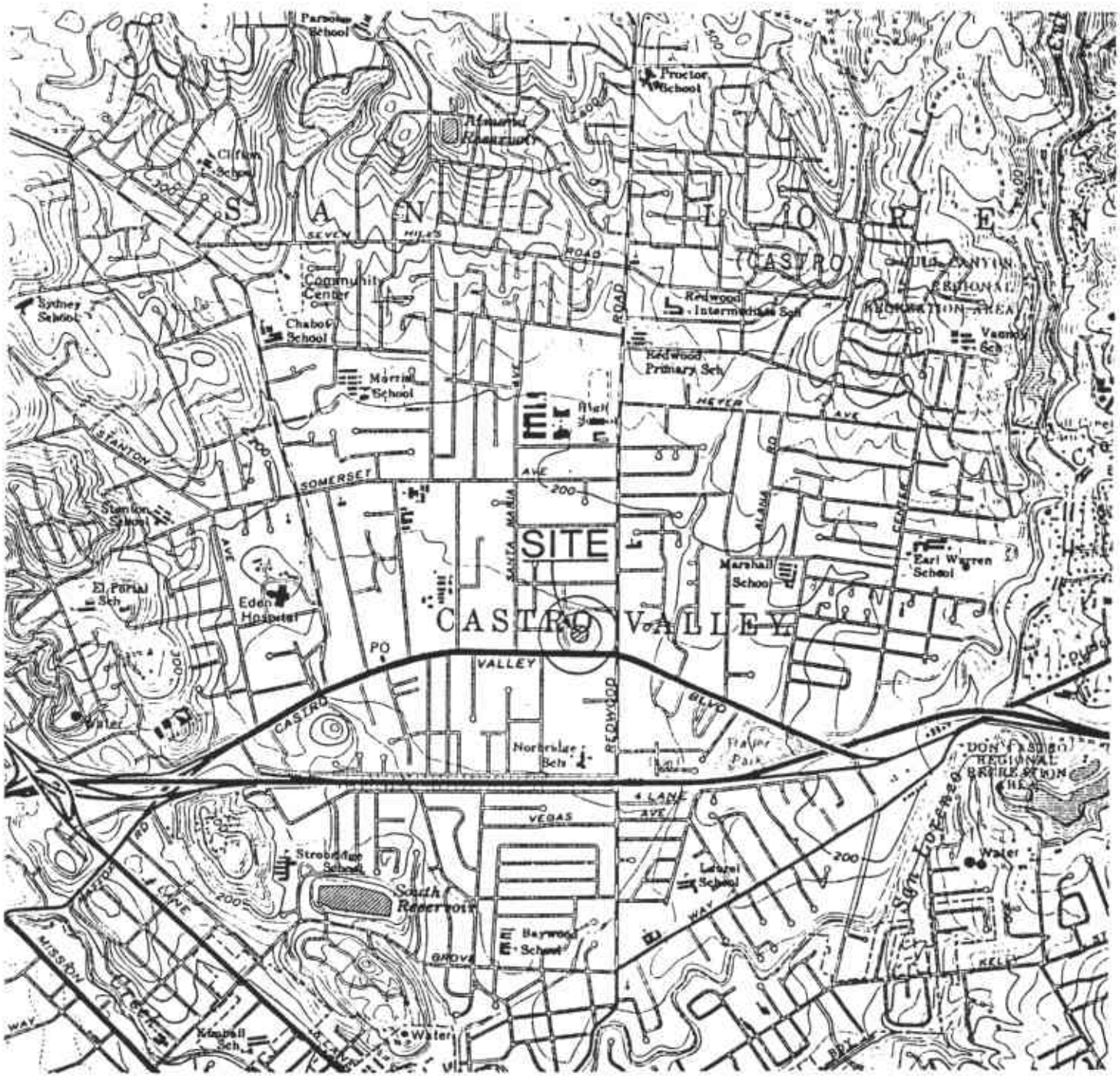
RECOMMENDED MINIMUM VERIFICATION ANALYSES FOR UNDERGROUND TANK LEAKS

Contaminants	Soil Analysis	Water Analysis
TPH-G	GCFID(5030)	GCFID(5030)
TPH-D	GCFID(3550)	GCFID(3510)
BTX&E	8260	602
O & G	5520 D&F	5520 C&F
CL HC	8010 or 8240	601 or 624
PCB*, PCP*, PNA, or Creosote	8270	8270
METALS (Cd, Cr, Pb, Zn, Ni)	ICAP or AA	ICAP or AA

* If found, analyzed for dibenzofurans (PCBs) or dioxins (PCP)

V. SITE SAFETY PLAN

In accordance with the outline for the Work Plan for an initial subsurface investigation provided by the Alameda County Health Services, Department of Environmental Health, we have prepared a Site Safety Plan that describes site operations and safety precautions. This Safety Plan is included as an attachment to this document.



Base Map: USGS Topographic Survey, Hayward Quadrangle Scale: 1"=2000'

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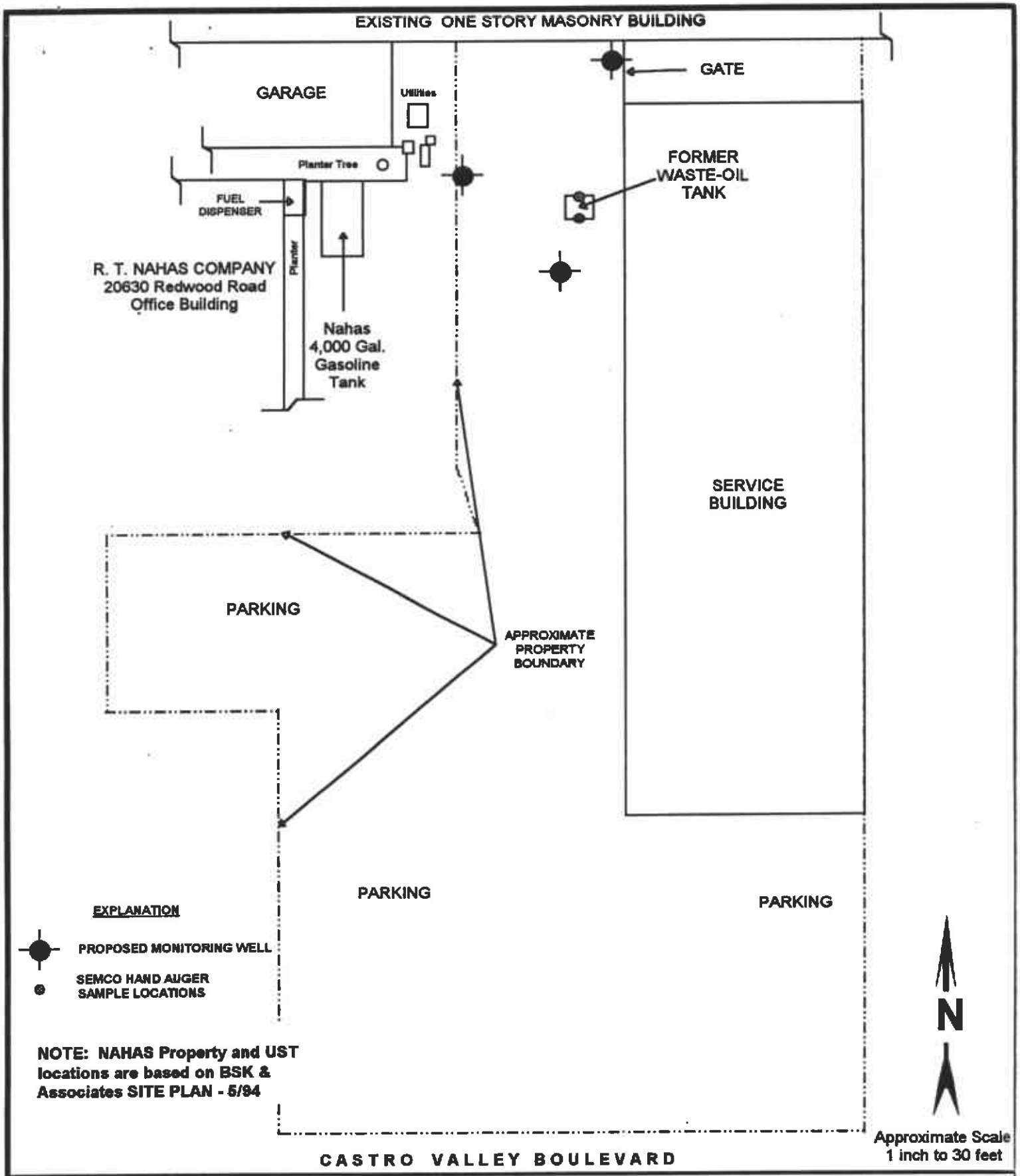
SITE LOCATION MAP

GOODYEAR TIRE & RUBBER COMPANY
3430 Castro Valley Boulevard
Castro Valley, California

FIGURE
1

PROJECT NO.	DATE	DRAWN BY:	BASE MAP:
94-14	8/94	WTJ	USGS TOPO MAP



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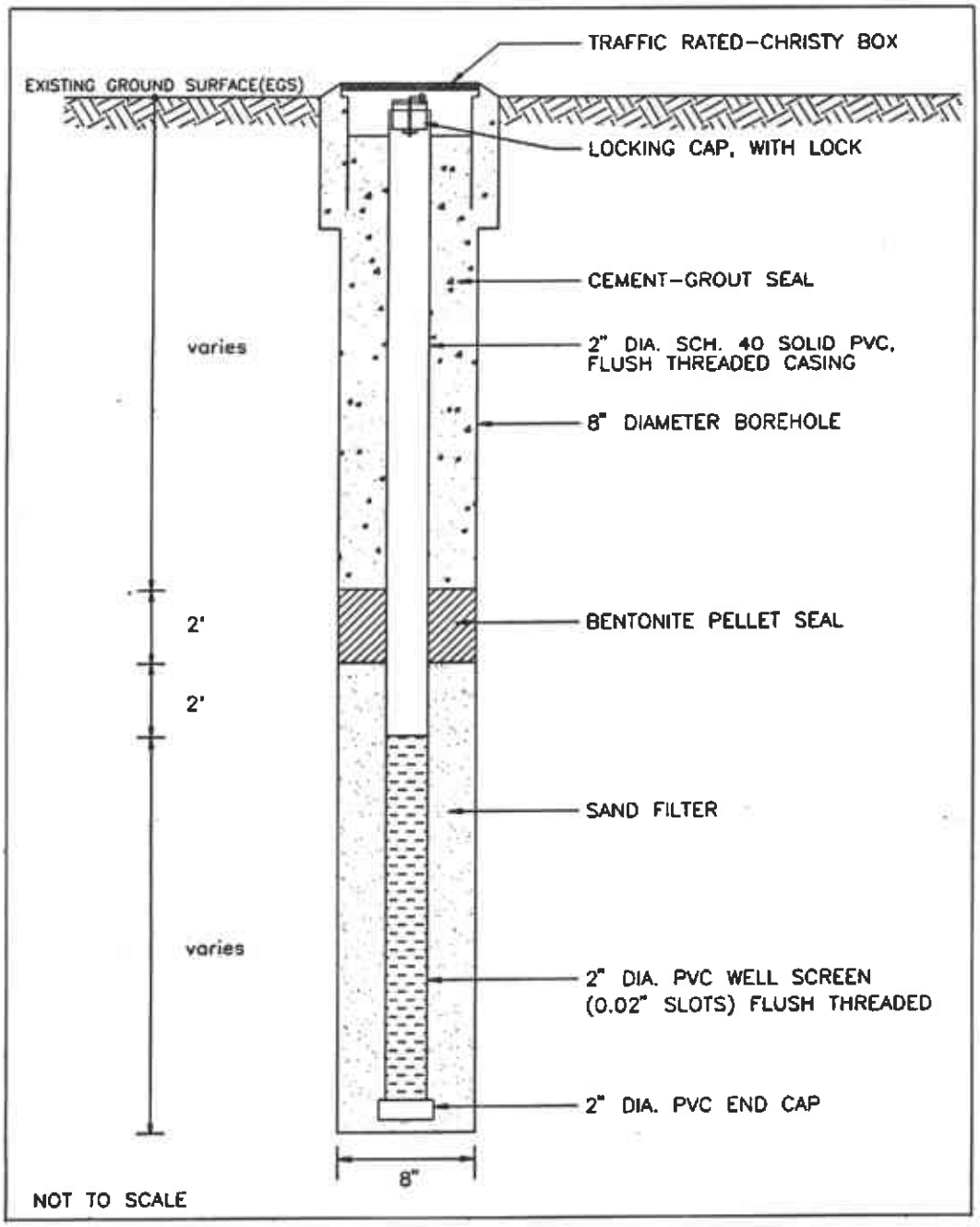
SITE MAP WITH PROPOSED MONITORING WELL LOCATIONS

GOODYEAR SERVICE CENTER
3430 Castro Valley Boulevard
Castro Valley, California

FIGURE
2

PROJECT NO.	DATE	DRAWN BY:	BASE MAP:
94-14	8/94	WTJ	GOODYEAR BLUEPRINT 10/73



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MONITORING WELL CONSTRUCTION DETAIL

GOODYEAR TIRE & RUBBER COMPANY
3430 Castro Valley Boulevard
Castro Valley, California

FIGURE
3

PROJECT NO.	DATE	DRAWN BY:	BASE MAP:
94-14	8/94	MSS	NONE

SITE SAFETY PLAN
Goodyear Service Center

GENERAL INFORMATION:

SITE: Property Owner: Aimee L. West
Location: 3430 Castro Valley Boulevard
City and State: Castro Valley, California

PLAN PREPARED BY: Touchstone Developments

OBJECTIVES: To provide a safety plan for the safe completion of additional site investigation to include drilling exploratory soil borings.

PROPOSED DATE OF SITE WORK: Month of August/September, 1994

DOCUMENTATION/SUMMARY: Hazardous materials may be preset, caution is advised. Site work includes additional subsurface investigation to include exploratory soil borings near former waste-oil tank to collect soil samples.

SITE/WASTE CHARACTERISTICS:

POSSIBLE WASTE TYPES: Liquid Solid Gas Diesel Oil

CHARACTERISTICS: Volatile, Flammable, Toxic

FACILITY DESCRIPTION: Tire Service Center

HAZARDOUS EVALUATION:

PARAMETER: TLV 300 ppm THC
HEALTH: Ingestion, Inhalation, Absorption.

LEL 10% Gastechtor maximum.

SPECIAL PRECAUTIONS
AND COMMENTS: Correct safety procedures must be followed per Touchstone Developments Health and Safety Plan.

SITE SAFETY WORKPLAN:

PERIMETER ESTABLISHMENT: Use barricades and orange traffic cones to secure drilling area and identify work area to nearby traffic flow.

PERSONAL PROTECTION: Level of Protection: EPA Level D
Modifications: Hard Hats, orange traffic vests.
Surveillance Equipment: Gastech or OVM.

SITE ENTRY PROCEDURES: Cone necessary traffic away from drilling equipment and workers.

DECONTAMINATION PROCEDURES: Personal: Wash with detergent and water.
Equipment: Steam clean if necessary.

FIRST AID: As Applicable

WORK LIMITATIONS: None. Utilities will be identified and marked. USA will be notified a minimum of 48hrs. in advance.

TEAM COMPOSITION: Mike Tambroni - Project Manager/Geologist and Site Safety Officer. Drill rig operator and Helper.

EMERGENCY INFORMATION:

LOCAL RESOURCES:	Ambulance/Hospital	Dial 911
	Police/Sheriff/Highway Patrol	Dial 911
	Fire Department	Dial 911

SITE RESOURCES: Fire Extinguisher, First Aid Kit, Sorbant Pads, Visqueen, Telephone and Water onsite.

EMERGENCY CONTACT: Touchstone Developments (707) 538-8818
(415) 386-8791

EMERGENCY ROUTES: Nearest Emergency Hospital:
EDEN MEDICAL CENTER
20103 Lake Chabot Road
Castro Valley, California
(510) 537- 1234

SIGN OFF SHEET

All personnel on site have read and understand the safety plan. All personnel will comply with safety procedures:

NAME (please print)	RESPONSIBILITY	SIGNATURE