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December 30, 2006

Steven Plunkett
Alameda Country Health Care Services ("County")
1131 Harbor Bay Parkway, Suite 250
Alameda County, CA 94502-6577

LUFT Site: 900 Central Ave, Alameda (Site)
Re: Workplan Submittal

Dear Mr. Plunkett:

On behalf of the parties contributing to the 900 Central Avenue Corrective Action Account, please find enclosed herewith a copy of the following technical report prepared by RRM, Inc., Santa Cruz, CA (RRM):

"Subsurface Investigation Workplan," December 29, 2006

The workplan is submitted pursuant to the directives set forth in County correspondence dated July 12, 2006 and November 29, 2006. The objectives of the proposed scope of work include delineating the extent of soil contamination in the vicinity of the former underground tanks and delineating the down-gradient extent of groundwater contamination to the southwest of the site. The workplan also calls for conducting a groundwater monitoring event for the three existing wells. RRM will need to obtain a drilling permit from the County and an encroachment permit from the City of Alameda to conduct the proposed investigations.

We anticipate that RRM will conduct the proposed groundwater monitoring event and commence permitting work by the end of January 2007. Subject to timely County approval of the work plan and securing the necessary permits, we anticipate that RRM will complete work on the proposed subsurface investigations by the end of March 2007.

Sincerely:

Brian T. Kelleher
Court consultant/project coordinator

Cc with enclosures: William Nagle, Esq., Special Master Mediator; Edward Martins, Esq., counsel for Ann Marie Holland and Estate of John Holland Sr.; Hal Reiland, counsel for Barbara Holland; Jack Holland Jr., c/o Mulholland Bros; Robert Bucciere, Esq., and Kim O'Dincel, Esq., Long & Levit counsel for Pearce Parties; Lisa Pan, Esq., counsel for Thompson Parties; Kathleen Friend and Joe Ryan, Esq., Ryan & Lifter, counsel for Thompson Parties; Laurie Sherwood, Esq., , Walsworth & Franklin et al counsel for Peterson Parties. cc cover letter only, Matt Kaempf, RRM

December 29, 2006
RRM Project # KCE514

900 Central Avenue Corrective Action Account
c/o Brian Kelleher
Kelleher & Associates
812 S. Winchester Blvd., Suite 130, #109
San Jose, California 95128

Re: ***Subsurface Investigation Work Plan***
900 Central Avenue
Alameda, California

Dear Mr. Kelleher:

This letter, prepared by RRM, Inc. (RRM), presents a subsurface investigation work plan for the referenced site. This work plan describes proposed field activities that will address the directives issued by the Alameda County Health Care Services (the County) in their letter dated July 12, 2006. The proposed activities are intended to determine the present quality of groundwater using the existing groundwater monitoring wells and to further delineate the extent of petroleum hydrocarbon impacts to soil and groundwater in the vicinity of the source area and down gradient of the source area. The proposed scope of work will include: 1) Pre-field activities, 2) Redevelopment and sampling of existing groundwater monitoring wells, 3) Advancement of soil borings to collect soil and groundwater samples, 4) Construction of groundwater monitoring wells and a recovery well, 5) Laboratory analyses of selected soil and groundwater samples, and 6) Preparation of a Subsurface Investigation Report including an updated site conceptual model, conclusions and recommendations.

This work plan contains site background information, objectives of the proposed scope of work, the proposed scope of work and an implementation schedule. Figure 1 presents a site location map and Figure 2 presents a site map showing proposed soil boring and groundwater monitoring well and recovery well locations. Field and analytical procedures are presented in Attachment A.

BACKGROUND INFORMATION

Site Description and History – The site is a 150-foot long by 150-foot wide square parcel located on the southeast corner of Central Avenue and Ninth Street in Alameda, CA. In September 1975 the site operated as a Holland Oil Company retail gasoline station that consisted of a 50-foot long by 50-foot wide garage at the southwest corner, a pump island canopy in the northeast quadrant, three 550-gallon USTs located beneath the sidewalk on Ninth Street, and a reported a waste oil tank. According to Alameda Fire Department records, the original permit for the tanks was issued in 1931 to Mohawk Oil Company. A 1973 business directory lists the operator as EZ Pickings Gas and a 1975 directory as Holland Service Station No. 1. The tanks were removed by Holland Oil Company in September 1975.

In 1976 the property was sold to the Peterson family. In 1978, the Petersons sold the property to Gary Thompson dba Oak Construction. In October 1978 Oak Construction razed the gas station structures and constructed a residential duplex. The current owners, Karen and Gary Pearce, purchased the property in May 1985. The finding of subsurface contamination in 1994 precipitated a lawsuit among the past and present owners. In 1996, due to the complexity of the lawsuit, the Court appointed Special Master William Nagle to help resolve the case. In 2003, Brian Kelleher of Kelleher & Associates, San Jose, CA was appointed by the court on behalf of the litigating parties to coordinate remedial response actions and associated cost recovery work.

The site is located three blocks east of downtown Alameda and approximately 3,000 feet northeast of San Francisco Bay's Robert Crown Memorial State Beach. The site is on gently sloping terrain approximately 25 feet above mean sea level. There is a man made lagoon system approximately 1,000 feet south of the site.

The property is located in a mixed residential/commercial area. The property located across the street, at the southwest corner of Central and ninth, was a former church that has since been converted to a movie theater. The property across the street from the movie theater (841 Central Avenue) is reportedly the location of a former gas station that operated from approximately 1947 to 1969. Both former gas station properties and the rest of the surrounding properties are currently residential.

Site Geology and Hydrogeology - Based on interpretation of boring logs, the site is underlain by sandy fill to a depth of approximately 3.5 feet, followed by fine sandy silt to approximately 20 feet below ground surface (bgs) the maximum depth explored. Groundwater was encountered in borings between 12 and 13 feet bgs. During two years of quarterly groundwater monitoring for three wells, depth to water seasonally ranged from 6 to 13 feet bgs and flows toward the southwest. *Refs: Lowney, "Soil and Groundwater Quality Reconnaissance" July 20, 1994; and Allwest, "Subsurface Investigation Report," August 5, 1997 and quarterly monitoring reports for 1999 and 2002.*

Historic Remedial Investigations and Groundwater Monitoring – The following is a concise summary of all previous site investigations conducted to date.

April 1994 Subsurface Investigations by Lowney – Lowney Associates, Mountain View, CA (Lowney) conducted a site history review including gathering historic Sanborn maps and aerial photos and conducted the following subsurface investigations: (1) drilled three bore holes (EB-1, -2, -3,) to 20 feet from grade in and around the incorrectly presumed location of the former USTs and pump island; (2) collected soil samples at 5-foot intervals, and prepared geologic logs; (3) collected grab groundwater samples from each boring; (4) provided certified analyses for motor oil range total petroleum hydrocarbons (TPH-mo); diesel range total petroleum hydrocarbons (TPH-d); gasoline range total petroleum hydrocarbons (TPH-g)and benzene, toluene, ethyl benzene and xylenes (BTEX) for three groundwater samples and three soil samples collected at approximately 15 to 16 feet from grade; (5) conducted a leachability test on the sample collected from EB-1. TPH-g and benzene were detected in the soil sample collected from EB-1 at 95 ppm and 400 ppb respectively. In the grab groundwater sample from EB-1, TPH-g and benzene were detected at 76,000 ppb and 2,200 ppb respectively. *Ref: Lowney Associates, "Soil and Groundwater Quality Reconnaissance" July 20, 1994.*

June 1997 Subsurface Investigations and RBCA analyses by Allwest – All-West Environmental Inc., San Francisco, CA (Allwest) conducted a file review to assess potential on-site and off-site sources of subsurface contamination. They also conducted the following subsurface investigations: (1) advanced eight geoprobe-type soil borings (P-1 through P-8) to 16 feet from grade in and around the presumed location of the former USTs and pump island; (2) collected soil samples at 5-foot intervals, prepared geologic logs, and field tested the samples for total volatile hydrocarbons with a field organic vapor analyzer (OVA); (3) collected grab groundwater samples from each boring; (4) provided certified analyses (TPH-g/BTEX) for 31 soil samples and eight groundwater samples. They observed discolored/odorous soils at 10 to 12 feet from grade in borings P-2, P-3, P-4. TPH-g was detected in a soil sample collected at 14.5 feet from grade from P-3 at 4,600 ppm. TPH-g was detected in five of the eight grab groundwater samples with a maximum of 92,000 ppb at P-3. They conducted Tier 1 and Tier 2 risk-based corrective-action evaluations using ASTM methodology. On the basis of the results they concluded that there were no significant human health risks and thus no need for active remediation. *Ref: Allwest, "Subsurface Investigation Report," August 5, 1997.*

November 1998 Well Installations and Sampling (MW-1, -2, -3) – Allwest conducted the following subsurface investigations: (1) drilled three bore holes to 18 feet from grade at the northeast quadrant of the site; (2) collected soil samples at 5-foot intervals, prepared geologic logs, and field tested the samples for TVH using a field OVA; (3) converted the borings to 2-inch diameter monitoring wells; (4) developed the wells; (5) surveyed the well heads for elevation; (6) sounded, purged and sampled the wells; (7) provided certified analysis for TPH-g/BTEX for three groundwater samples. The depth to groundwater was approximately 12 feet bgs. TPH-g and benzene was detected only in the sample from MW-1 at 360 ppb and 5.8 ppb

respectively. The well installation report included a recommendation to monitor the wells quarterly for one year. This recommendation was approved by the County. *Refs: Allwest "Groundwater Monitoring Well Installation and Sampling" February 2, 1999.*

1999-Quarterly Groundwater Monitoring by Allwest – From March 1999 through September 1999, Allwest conducted three quarterly groundwater monitoring events during which they sounded purged and sampled the three wells. The samples were analyzed for TPH-mo, TPH-d, and TPH-g/BTEX. Depth to groundwater ranged seasonally from approximately 6 to 12 feet below grade. TPH-g was detected only in MW-1 in the range of less than 50 ppb to 14,000 ppb. On the basis of the results, Allwest recommended conducting a risk assessment. *Refs: Allwest "Quarterly Groundwater Monitoring Reports" with the following dates: March 3, 1999; July 2, 1999; and October 14, 1999.*

2002-Quarterly Groundwater Monitoring by Allwest– From March 2002 through December 2002, Allwest conducted four quarterly groundwater monitoring events during which they sounded, purged and sampled the three wells. The samples were analyzed for TPH-mo, TPH-d, and TPH-g/BTEX. Depth to groundwater ranged from approximately 8 to 13 feet below grade. TPH-g was detected only in MW-1 in the range of less than 50 ppb to 42,000 ppb. MTBE was not detected. *Refs: Allwest "Quarterly Groundwater Monitoring Reports" with the following dates: June 26, 2002; August 8, 2002; October 25, 2002; and "2002 Annual Groundwater Monitoring & Risk Assessment Report," January 31, 2003.*

2003-Well Survey, Conceptual Model and Risk Assessment – In December 2002, Allwest reviewed agency files to locate nearby production wells and to prepare a site conceptual model consisting of a 3-dimensional drawing showing known areas of subsurface contamination and potential sensitive receptors. They also conducted a cursory risk assessment using risk-based screening levels (RBSLs) in recently published regional board lookup tables. Based on the risk assessment, they concluded that RBSLs for groundwater were exceeded at MW-1 for the vapor migration/indoor-air-inhalation pathway and pose a possible risk to off site receptors. Identified off site receptors include four irrigation wells and one monitoring well located within approximately 500 feet of the site. *Ref: Allwest: "2002 Annual Groundwater Monitoring & Risk Assessment Report," January 31, 2003.*

OBJECTIVES

Site investigation work conducted to date show soil and groundwater contamination beneath the site consisting of TPH-g and BTEX, but not MTBE. Within the site boundaries, the contamination appears to be restricted to the area of the former gasoline USTs in the far northeast corner of the site. The extent of soil contamination in the area of the former tanks has not been delineated. The extent of groundwater contamination emanating from the source area has only been delineated in the upgradient direction (northeast) and in one of the side gradient directions (west). The previous investigations raise the possibility of a commingled plume

resulting from the former gasoline station previously located at the northwest intersection of Central Avenue and Ninth Street.

The objective of this proposed scope of work includes the following: (1) delineate the extent of soil contamination occurring in the vicinity of the former gasoline UST's to the extent required to evaluate corrective action by excavation; (2) provide a means for conducting feasibility testing for other remedial options for source area cleanup including soil vapor extraction and dual-phase or co-extraction, and (3) delineate the downgradient and cross-gradient extent of groundwater contamination southwest of the site.

PROPOSED SCOPE OF WORK

To meet the above objectives, RRM proposes the following scope of work:

- **Pre-field Activities**: Prior to starting any field work, RRM will perform the following pre-field activities: 1) obtain an encroachment permit from the City of Alameda to work in the city right-of-way 2) obtain a subsurface drilling permit from the Alameda County Public Works Agency, and 3) mark drilling locations with white paint and contact USA North to locate members' underground utilities.
- **Redevelopment and Sampling of Existing Groundwater Monitoring Wells:** Prior to performing any site investigation activities, RRM will collect groundwater samples and depth to water measurements from existing wells MW-1, MW-2, and MW-3 to determine present groundwater conditions at the site. Before sampling, the interior and exterior condition of each well will be inspected to determine its suitability for sampling. Based on overall condition, each well may be redeveloped before sampling, as recommended by Alameda County. Groundwater sampling, development, and laboratory analytical procedures are described in Attachment A.
- **Soil Borings:** RRM proposes to advance five to ten exploratory soil borings in step-out fashion to a maximum depth of approximately 25 feet bgs. Data collected from the borings will be used in conjunction with previous investigation data to characterize the lateral and vertical extent of soil contamination in the vicinity of the former underground storage tanks. The proposed soil boring depths are designed to extend approximately 10 to 15 feet into the water bearing zone as based on historical groundwater data gathered at the site since 1998. Because contamination at the site consists of pre-MTBE gasoline, a light, nonaqueous phase liquid typically occurring above and slightly below the water table, it is expected to be vertically defined to within 25 feet of ground surface. In that the contaminant is pre-MTBE gasoline and historical boring log records show that soil conditions beneath the site are homogeneous and consist of relatively permeable silty-sands and fine sands, investigations will be limited to the vadose zone and shallowest water bearing zone using standard soil and grab-groundwater-sampling methodology. Procedures are described in Attachment A.

- **Groundwater-Monitoring-Well Installation and Development:** RRM proposes to install up to three 2-inch diameter groundwater monitoring wells and one 4-inch diameter recovery well to a depth of approximately 25-feet bgs. Groundwater monitoring wells will be installed in the downgradient and laterally downgradient direction of the site along Ninth Street and are intended to at least partially delineate the downgradient extent of contamination and to monitor off-site groundwater conditions. The recovery well will be installed within approximately 10 feet downgradient (southwest) of the former underground storage tanks (UST's) and will be used to monitor source area groundwater conditions and for soil vapor and groundwater extraction feasibility testing. All wells will be constructed, surveyed for elevation, and sampled and developed according to procedures described in Attachment A.
- **Laboratory Analyses:** Selected soil, grab groundwater samples, and groundwater samples collected from new and existing wells will be analyzed for the presence TPH-g; BTEX; MtBE; and other fuel oxygenates. Historically, MtBE has not been detected in any of the groundwater samples collected from the existing monitoring wells. Since MtBE was not available during the time that the site UST's were active only the groundwater samples collected from the existing monitor wells will be analyzed for it on a one time basis. In addition, neither TPH-mo or TPH-d was detected in soil or grab groundwater collected during 1997 site investigation activities. The presence of TPH-d (flagged) in a groundwater sample collected from MW-1 during 2002 did not match the typical pattern for TPH-d and was probably TPH-g.
- **Reporting:** RRM will prepare a comprehensive report summarizing procedures and findings following completion of the proposed scope of work.

IMPLEMENTATION SCHEDULE

Upon approval of this work plan RRM will immediately initiate the pre-field activities and redevelopment and sampling of the existing groundwater monitoring wells. Groundwater data obtained from the initial sampling of these wells will be used to confirm proposed soil boring and groundwater monitoring well locations. At that point, permit applications will be prepared and submitted to the required agencies. Remaining fieldwork will be scheduled and completed with in five weeks of receiving valid permits.

Should you have any questions regarding the contents of this work plan, please call RRM at (831) 475-8141.

Sincerely,

RRM, Inc.

Matt Kaempf
Project Manager

Daniel Hidalgo
Senior Geologist
CHG 659

CERTIFIED HYDROGEOLOGIST
DANIEL J HIDALGO
NO. 659
STATE OF CALIFORNIA

Attachments: Figure 1 - Site Location Map
Figure 2 - Site Map
Attachment A - Field and Analytical Procedures

cc:

ATTACHMENT A

FIELD AND ANALYTICAL PROCEDURES

ATTACHMENT A
FIELD AND ANALYTICAL PROCEDURES

Soil Boring Installation

Soil borings will be permitted and installed in accordance with state and local guidelines using a state licensed well driller. Exploratory soil borings and soil borings intended to be 2-inch diameter groundwater monitoring wells will be drilled using 8-inch diameter hollow-stem augers to a maximum depth of 25 feet below ground surface (bgs). A RRM, Inc. geologist will log each boring from soil samples and auger cuttings. Under the direction of a State of California Registered Geologist, descriptive information denoted on the boring log will include soil and groundwater information. Drilling and sampling equipment will be steam-cleaned or cleaned with tri-sodium phosphate prior to and between uses. The soil boring advanced for the purpose of constructing the 4-inch diameter recovery well will be drilled using 12-inch diameter hollow-stem augers to the same depth.

Soil samples for chemical analysis and logging purposes will be collected at minimum 5-foot depth intervals or changes in lithology. Soil samples for chemical analyses will be collected from 2-inch diameter split-spoon samplers equipped with 4-inch or 6-inch brass liners. The brass liners will be capped with Teflon, plastic end caps, and placed in sealable plastic bags. The brass liners will then be stored in iced coolers and transported to a state certified laboratory, with chain-of-custody documentation. Following the completion of soil boring installation and sampling activities, each boring not converted into a well will be backfilled to grade with neat cement.

Monitoring Well Installation

Groundwater monitoring wells and the recovery well will be permitted and installed in accordance with state and local guidelines using a state licensed well driller.

Groundwater monitoring wells will be constructed to monitor discrete water bearing strata. Well construction information will be denoted on the boring log in the field. Well construction materials will consist of a cement grout or bentonite bottom seal (if necessary), 2-inch diameter flush-threaded Schedule 40 PVC casing and 0.020-inch factory-slotted screen, RMC 2 x 12 graded sand pack, a bentonite and cement grout surface seal, and a locking cap and protective vault box. The recovery well will be constructed at similar depth intervals using 4-inch diameter PVC casing and screen.

The well screen will extend from the maximum depth of 25 feet bgs to approximately 5 feet bgs, with solid casing extending to the ground surface. The sand pack will then be placed from the bottom of the boring and will extend approximately 6-inches above the well screen. A 6-inch thick bentonite seal will then be placed on top of the sand pack, followed by cement grout extending to the ground surface. A traffic-rated vault box will then be placed over each well. Following well completion, all new and existing wells will be surveyed to the nearest 0.01 feet relative to mean sea level datum by a licensed surveyor.

Well Development/Groundwater Sampling

Well development of new wells or redevelopment of existing wells will be performed utilizing surge block/swab and groundwater extraction techniques. Well development will be performed until the majority of suspended fines are removed or until approximately ten casing volumes are removed. Well development documentation consists of recording data including: time, groundwater and total well depth, turbidity, gallons removed, and well stabilization parameters (pH, conductivity, temperature). Development and purge waters will be stored on site in 55-gallon drums pending proper disposal at a State-licensed facility.

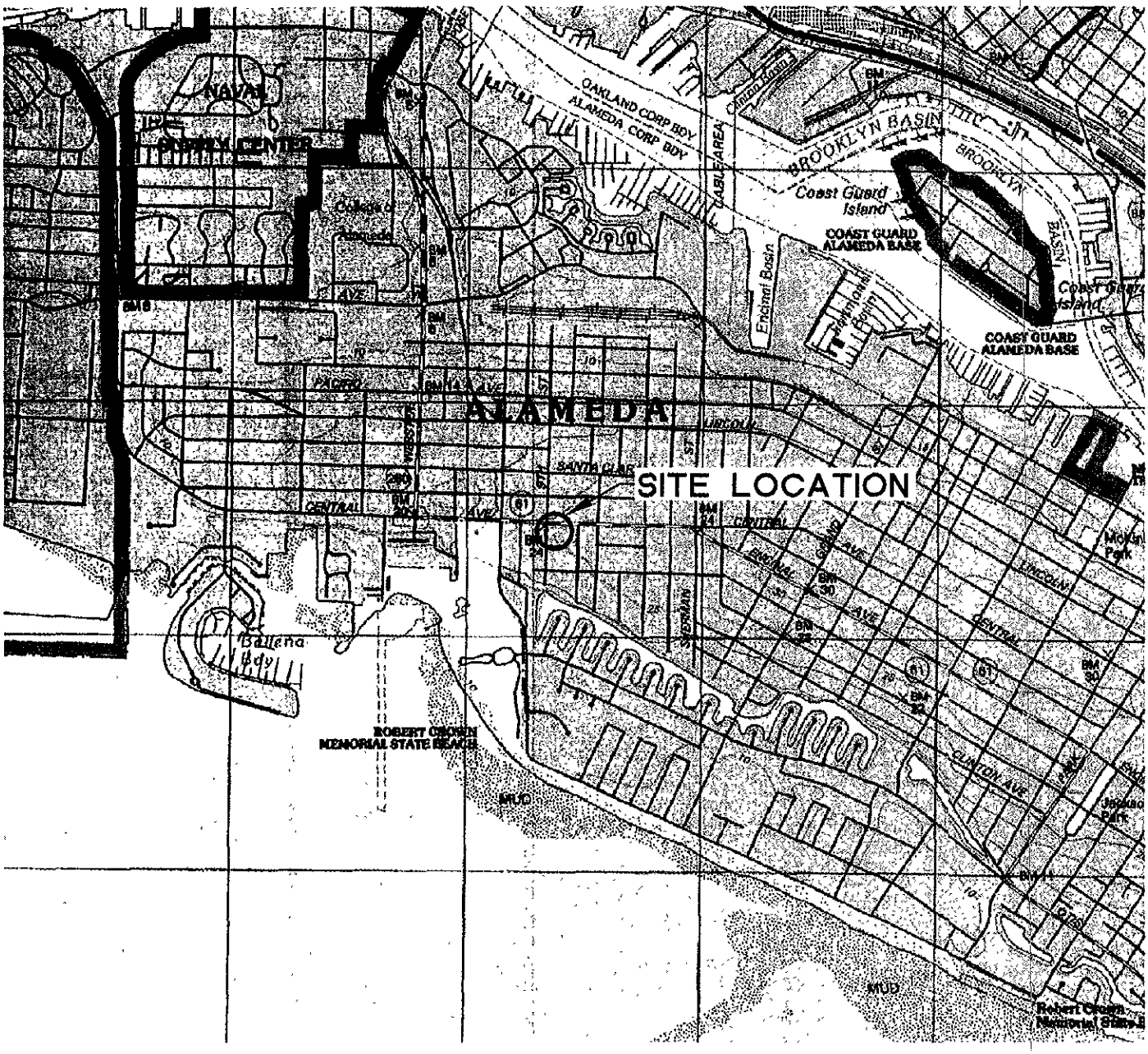
Groundwater sampling procedures will consist of initially measuring and documenting the water level in the well and checking the well for the presence of separate-phase hydrocarbon (SPH) using an oil/water interface probe or a clear Teflon bailer. If the well does not contain SPH, it will be purged a minimum of three casing volumes or until dry. During purging, well stabilization parameters (temperature, pH, and electrical conductivity) will be monitored. After 80% recovery of the water levels, a groundwater sample will be collected with a clean Teflon bailer and placed into the appropriate EPA-approved containers. Sampling equipment will be cleaned with tri-sodium phosphate between uses. The samples will be labeled and transported under iced storage to the laboratory using appropriate chain-of-custody documentation.

Field Hydrocarbon Screening Procedures

Soil samples collected during soil boring activities will be screened in the field for total volatile hydrocarbons (TVH) using a photo-ionization detector (PID). The procedure will consist of obtaining approximately 30 grams of soil and placing it into a clean container. The container will then be warmed for 20 minutes and the headspace within the jar will be measured for TVH, in parts per million by volume (ppmv). The PID will be calibrated in the field prior to use using a 100 ppmv isobutylene in nitrogen standard.

Laboratory Analytical Procedures

Selected soil, grab groundwater samples, and groundwater samples collected from new and existing wells will be analyzed in the laboratory for the presence of gasoline range total petroleum hydrocarbons; benzene, toluene, ethylbenzene, and total xylenes; methyl tertiary butyl ether (MtBE) and other fuel oxygenates including EDB, EDC, TAME, ETBE, DIPE, TBA, and EtOH using, as applicable, EPA Methods 8015, 8020 and 8260B. Only the purged groundwater samples will be analyzed for MtBE and other fuel oxygenates.



QUADRANGLE LOCATION

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SCALE IN FEET

0 2,000

Ref. KCE514/KCE514--SLM.DWG
Base Map from TOPO!! NGH

PREPARED BY

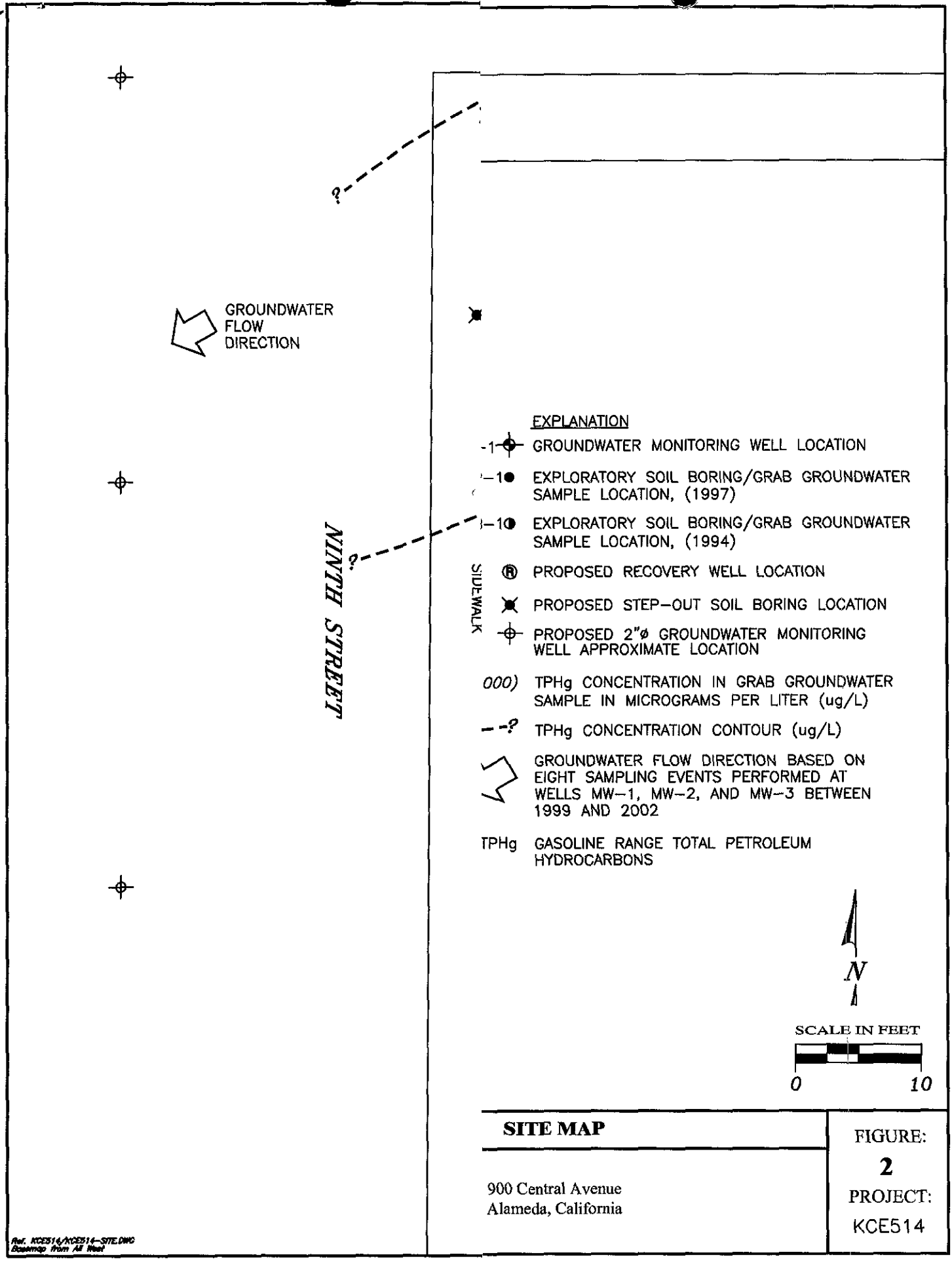
ENVIRONMENTAL ENGINEERING

BRM

SITE LOCATION MAP

900Central Avenue
Alameda, California

FIGURE:
1
PROJECT:
KCE514



SITE MAP

900 Central Avenue
Alameda, California

FIGURE:
2
PROJECT:
KCE514

Ref. KCE514/KCE514-SITE.DWG
Basemap from AA West