received after 8/13/93

CORRECTIVE ACTION REPORT

FOR

Old Graystone Fueling Area
Santa Rita Correctional Facility,
Dublin, Alameda County,
California

Prepared for:

Alameda County Health Care Services Agency
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 350
Oakland, California 94621

and

Alameda County General Services Agency
4400 MacArthur Boulevard
Oakland, California 94619

Prepared by:

Environmental Science & Engineering, Inc.
4090 Nelson Avenue, Suite J
Concord, California 94520
Tel.: (510) 685-4053

Project No. 6-93-5036
March, 1993

This report has been prepared by Environmental Science & Engineering, Inc. for the exclusive use of the Alameda County General Services Agency as it pertains to their site located at the Old Graystone Fueling Area of the Santa Rita Correctional Facility in Dublin, California. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists and engineers practicing in this field. No other warranty, express or implied, is made as to professional advice in this report.

REPORT PREPARED BY:

Bart S. Miller
Senior Staff Geologist

APRIL 27, 1993
DATE

UNDER THE PRIMARY REVIEW OF:

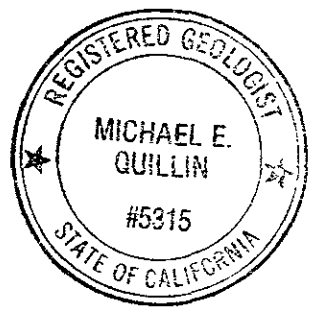
Patrick E. Galvin
Senior Engineer

April 27, 1993
DATE

UNDER THE PROFESSIONAL SUPERVISION OF:

Michael E. Quillin
Senior Hydrogeologist
California Registered Geologist No. 5315

APRIL 27, 1993
DATE



PROJECT NO. 6-93-5036

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1.0 INTRODUCTION

This Corrective Action Report (CAR) has been prepared by Environmental Science & Engineering, Inc. (ESE) to document soil excavation activities conducted on behalf of the Alameda County General Services Agency (GSA) at the Old Graystone Fueling Area at the Santa Rita Correctional facility located in Dublin, Alameda County, California (Figure 1 - Location Map). The GSA formerly owned and operated one 10,000-gallon unleaded gasoline underground storage tank (UST) referred to as UST 2942-11, one 11,000-gallon regular gasoline UST referred to as UST 2942-12, and one 500-gallon waste oil UST referred to as UST 2942-12A. The field activities described herein were conducted by ESE during the period of February 17 through March 2, 1993 pursuant to GSA Authorization under Purchase Order No. 141-00-7921-0.

1.1 Purpose and Scope

The purpose of this corrective action was to remove soil containing detectable concentrations of petroleum hydrocarbons from the vadose zone at the site. This remedial effort was conducted in accordance with guidelines set by the Alameda County Health Care Services Agency (HCSA) and the State Regional Water Quality Control Board (RWQCB). Information from previous subsurface soil and ground water investigations, historical records of previous USTs, and historical ground water elevations and flow directions were utilized in estimating the dimensions of the excavation and approximating the volume of impacted soil to be removed. ESE supervised Golden West Environmental, Inc. of Livermore, California in performing all excavation and soil stockpiling activities. This work was undertaken as part of a Corrective Action Plan (CAP) submitted to the HCSA on February 2, 1993.

The activities described in this report were performed in accordance with procedures outlined in the CAP and are as follows:

- Obtain all required permits and approvals from the pertinent regulatory agencies;

- Prepare a Site Health and Safety Plan (HASP);

- Excavate soil containing detectable concentrations of petroleum hydrocarbons;

- Create separate stockpiles for the impacted and nonimpacted excavated soil.

1.2 Site Information

The subject facility is located at the Santa Rita Correctional Facility immediately north of Interstate 550 at Dublin, California (Figure 1). During this corrective action fieldwork, it was noted that all former building structures once located proximal to the UST site were now completely demolished and removed.

The UST site is best described as a flat, asphalt-covered, rectangular area of approximately 13,000 square feet presently surrounded by soil stockpiles and portable fencing located at the Old Graystone Area of the Santa Rita Correctional Facility (Figure 2 - Site Map). The UST site is surrounded by a field of soil which has been graded in preparation for construction activities.

1.3 Background

Under permit from the HCSA and the Doherty Regional Fire Authority (DRFA), ESE removed and disposed of USTs 2942-11 and 2942-12A on May 18, 1992. UST 2942-12 was removed on May 20, 1992. UST 2942-11 was of single wall fiberglass construction and both UST 2942-12 and 2942-12A were of single wall carbon steel construction. A tar-based outer coating was observed on UST 2942-12 only.

ESE submitted a closure report to the HCSA for the three USTs at the site on July 20, 1992. Under the direction of a HCSA representative ESE collected a total of five soil samples from the bottom of the three UST excavations (Figure 3 - Site Plan) and submitted the samples for analysis. Laboratory results indicated detectable concentrations of total petroleum hydrocarbons as gasoline (TPH-G) in all samples ranging between 13 to 730 milligrams per kilogram (mg/Kg) using Environmental Protection Agency (EPA) analytical method 8015-modified. Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were also detected in all samples analyzed using EPA method 8020.

On November 8th and 9th, 1992 ESE conducted overexcavation (trenching) activities at the site in order to characterize and excavate soil impacted with petroleum hydrocarbons as documented in a letter report by ESE dated January 7, 1993 (Figure 4 - Site Plan, Excavation Activities). During this investigation, ESE observed soil exhibiting a grey-green discoloration and an odor occurring immediately beneath the asphalt pavement to a depth of eight feet below ground surface (bgs). Although not sampled/analyzed at that time, ESE suspected this soil may have been impacted by a fuel spill. The lateral extent of soil exhibiting discoloration/odor was not determined during the November, 1992 excavation activities.

Further, soil occurring at a depth of approximately 22 feet bgs in the UST 2942-11 and 2942-12 excavations was demonstrated to be impacted by gasoline constituents and was characterized by a grey discoloration and a strong fuel odor. The lateral extent of the impacted deeper soil was not determined.

No ground water was encountered during overexcavation activities and it remained unknown as to whether ground water at the site had been impacted by petroleum hydrocarbons and, if so, to what extent.

During November 23 to 25, 1992, ESE drilled a total of 21 soil borings at the site (Figure 5 - Soil Boring Locations) and collected one soil sample from each boring. In addition, ESE utilized a Hydropunch® method to obtain ground water samples from eight of the borings. Soil analytical results indicated that "hot spots" of gasoline exist in the capillary zone at a depth of approximately 25 feet in the immediate area of the former tanks. Drilling defined the approximate limits of soil impacted with petroleum hydrocarbons. Drilling was also utilized to delineate the limits of the shallower grey-green discolored soil.

Hydropunch® ground water sample results indicated detectable concentrations of TPH-G and benzene at the UST area (Figure 6 - TPH-G Concentration in Ground Water; Figure 7 - Benzene Concentration in Ground Water). An approximate plume of gasoline constituents in the ground water was defined and the highest concentrations were noted to occur in ground water near the former USTs. Concentrations decrease radially outward. In a report to the GSA dated January 15, 1993, ESE recommended that the gasoline impacted soil at the site be excavated.

On February 11, 1993, a total of three soil samples (HA-1, HA-2, and HA-3) were collected at the site using a hand auger (Figure 8). The samples were collected at a depth of two feet where the soil was observed to have a grey-green discoloration. No petroleum hydrocarbon odor was noted in any of the samples and no detectable concentrations of TPH-G, BTEX, and Total Petroleum Hydrocarbons as Diesel (TPH-D) were reported by the laboratory (Appendix A - Certified Analytical Results and Chain-of-Custody Documentation).

2.0 SITE ACTIVITIES

Activities conducted at this site included the excavation, sampling, and stockpiling of soil impacted with petroleum hydrocarbons in the vicinity of the former USTs. The size of the excavation was originally estimated using the petroleum hydrocarbon plume presented in Figures 6 and 7). The excavation was not dewatered or backfilled by ESE during this fieldwork.

2.1 Excavation - General Procedure

A 35-ton Mitsubishi 280 excavator equipped with a four cubic yard (cy) capacity mechanical shovel was used to excavate and stockpile soil at the site. Additionally, the excavator was utilized to retrieve soil from locations within the excavation inaccessible to the ESE geologist. A John Deere 544 articulating loader with a 2½ cy loader bucket was also used to stockpile excavated soil.

Excavation was performed to the top of ground water at a depth of approximately 24 feet and encompassed an area of approximately 8,500 square feet (Figure 8 - Site Plan, Excavation Activities). The sides of the excavation were not shored. Instead, they were benched or sloped at an approximate 1:1 ratio. Excavated soil was stockpiled on all sides surrounding the excavation.

Analytical results for soil samples collected at the bottom and sidewalls of the excavation were used to confirm that all soil containing detectable concentrations of petroleum hydrocarbons had been removed. Analyses were performed on a 24-hour turnaround basis.

3.0 SAMPLING PROCEDURES

Utilizing the reach of the excavator, ESE collected soil samples from the sidewalls of the excavation at depths of 10 feet and 24 feet (capillary zone). Soil samples were collected from the bucket of the excavator by driving a precleaned, six-inch long punch auger sampler (sampler) lined with a new, thin-wall brass sleeve into the disturbed soil. The sleeve was two-inches in diameter and six-inches in length. The sampler was advanced into the soil by manually driving the sampler. The ends of the brass sleeve containing sampled soil were then covered with Teflon® sheeting and covered with plastic end caps. The end caps were sealed to the sleeve using organically inert duct tape known not to contain any Volatile Organic Compounds (VOCs). Each sample was then labeled and placed in a cooler with ice for transport under chain of custody documentation to McCampbell Analytical, Inc. (a State-Certified laboratory) of Pacheco, California. Some excess soil was collected from each sample and placed in a Ziploc® plastic bag and set in direct sunlight to enhance the volatization of any VOCs present in the soil. After approximately 15 minutes each sample was screened for VOCs using a photoionization detector (PID). The PID measurements were used as a guide to delineating the periphery of the excavation where only nonimpacted soil occurs. As well, the PID measurements, in conjunction with field observations for soil discoloration and odor, were utilized to segregate petroleum hydrocarbon impacted soil from nonimpacted soil.

The sampler was cleaned before the collection of each sample by washing in an Alconox® and tap water solution followed by a tap water rinse. This cleaning procedure is required to prevent cross-contamination of samples. All wash and rinse water were contained onsite in Department of Transportation approved 55-gallon steel drums pending laboratory analysis and proper disposal.

In the CAP submitted to the HCSA on February 1, 1993, ESE proposed to conduct confirmatory sampling at ten-foot intervals along the capillary zone. In a subsequent addendum to the CAP submitted to the HCSA on February 15, 1993, ESE revised the sampling plan to collect confirmation soil samples along the capillary zone of the excavation sidewall at a frequency of one sample per twenty horizontal feet (Figure 9 - Confirmation Soil Sample Locations). The revised CAP was approved by the HCSA in a letter dated February 16, 1993.

A total of sixteen soil samples were collected from the capillary zone exposed on the excavation sidewalls. Additionally, six soil samples were collected at various sidewall locations at a depth of ten feet below grade (Figure 9). The latter samples were collected to confirm that no petroleum hydrocarbon impacted soil existed beyond the limits of the excavation.

Soil samples were collected and analyzed to confirm the removal of gasoline-impacted soil detected during previous investigations at the site. Because of the former presence of a waste oil UST, some samples were also analyzed for potential waste oil constituents as described below. Of the 22 confirmation soil samples collected the following analyses were performed:

- All samples were analyzed for TPH-G and BTEX using EPA Method 8015 (modified per CA LUFT) and EPA Method 8020, respectively;
- Seven samples were analyzed for Oil and Grease (O&G) using Standard Methods for the Examination of Water and Waste Water (SMWW) 5520 E&F;
- Seven samples were analyzed for TPH-D using EPA Method 8015 (modified per CA LUFT);

- Three samples were analyzed for Halogenated Volatile Organic Compounds (HVOCs) using EPA Method 8010; and

- Three samples were analyzed for Semi-Volatile Organic Compounds (SVOCs) using EPA Method 8270.

All analyses were performed on a 24-hour turn around time.

4.0 RESULTS

4.1 Excavation

During excavation activities, a total of 22 soil samples were analyzed for various compounds as described in section 3.0 of this report. Analytical results with chain of custody documents for these samples are provided in Appendix A. Of all the confirmation samples collected, two samples (samples 1 and 7 as shown in Figure 9) were reported to contain detectable concentrations of BTEX compounds. No samples were reported to contain O&G, TPH-D, HVOCs, or SVOCs. Analytical results are shown in Figure 10 - Analytical Results For Confirmation Samples.

ESE extended the excavation sidewalls back approximately five feet from the two sample locations confirmed to have minor gasoline constituents and collected two more confirmatory soil samples (samples 4 and 8 as shown in Figure 9). The second set of samples were reported not to contain detectable concentrations of BTEX.

4.2 Soil Stockpiles

Excavation activities at the site generated five soil stockpiles comprised of petroleum hydrocarbon impacted soil or nonimpacted clean soil (Figure 11 - Excavated Soil Stockpiles). Differentiating impacted from nonimpacted soil in the field was performed using PID measurements and visual inspection for hydrocarbon staining. Based on field measurements with a tape measure, ESE has estimated the total volume of impacted soil to be approximately 5,000 cubic yards and the total volume of the nonimpacted soil to be approximately 1,500 cubic yards. Stockpile dimensions and estimated volumes are presented in Table 1 - Soil Stockpile Data.

TABLE 1 - SOIL STOCKPILE DATA							
Stock Pile Number	Stock Pile Section	Length (feet)	Width At Top (feet)	Width At Base (feet)	Height (feet)	Volume (cubic yards)	Notes
1		77	51	57	12	1,848	I
2	2A	35	27	30	13	480	NI
2	2B	38	30	35	13	595	NI
TOTAL STOCKPILE 2						1,075	NI
3	3A	50	20	26	14	596	I
3	3B	33	15	20	15	321	I
3	3C	50	20	26	15	639	I
TOTAL STOCKPILE 3						1,556	I
4		70	21	28	6	381	NI
5	5A	40	23	30	10	393	I
	5B	38	19	25	15	464	I
	5C	30	30	36	15	550	I
	5D	47	12	16	8	195	I
TOTAL STOCKPILE 5						1,602	I

NOTES:

- *"I" refers to Soil Impacted With Petroleum Hydrocarbons.*
- *"NI" refers to Soil Not Impacted With Petroleum Hydrocarbons.*
- *Due to large size and variations in dimension, some stockpiles have been subdivided into sections for ease of calculation. The total estimated volume for these stockpiles is the sum of volumes estimated for each section.*

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

During the period of February 17 through March 2, 1993, ESE supervised the excavation of soil impacted with petroleum hydrocarbons as gasoline at the Old Graystone Fueling Area located at the Santa Rita Correctional Facility at Dublin, California. The source of the release was associated with former USTs and UST-related piping at the site.

Soil impacted with gasoline constituents was identified and excavated to a depth of approximately 24 feet at the capillary zone. The lateral extent of sediment impacted with gasoline was approximately 100 feet in a north-south direction by 85 feet in an east-west direction for a total approximate area of 8,500 square feet. The impacted soil was a sandy clay with small sand interbeds being characteristically grey in color and having a noticeable fuel odor. Upon completion, all confirmatory soil samples collected at the periphery of the excavation were reported to have no detectable concentrations of O&G, TPH-D, TPH-G, BTEX, HVOCs, and SVOCs.

5.2 Recommendations

Based on the environmental data collected to date at the site and the completion of this environmental corrective action, ESE recommends the following:

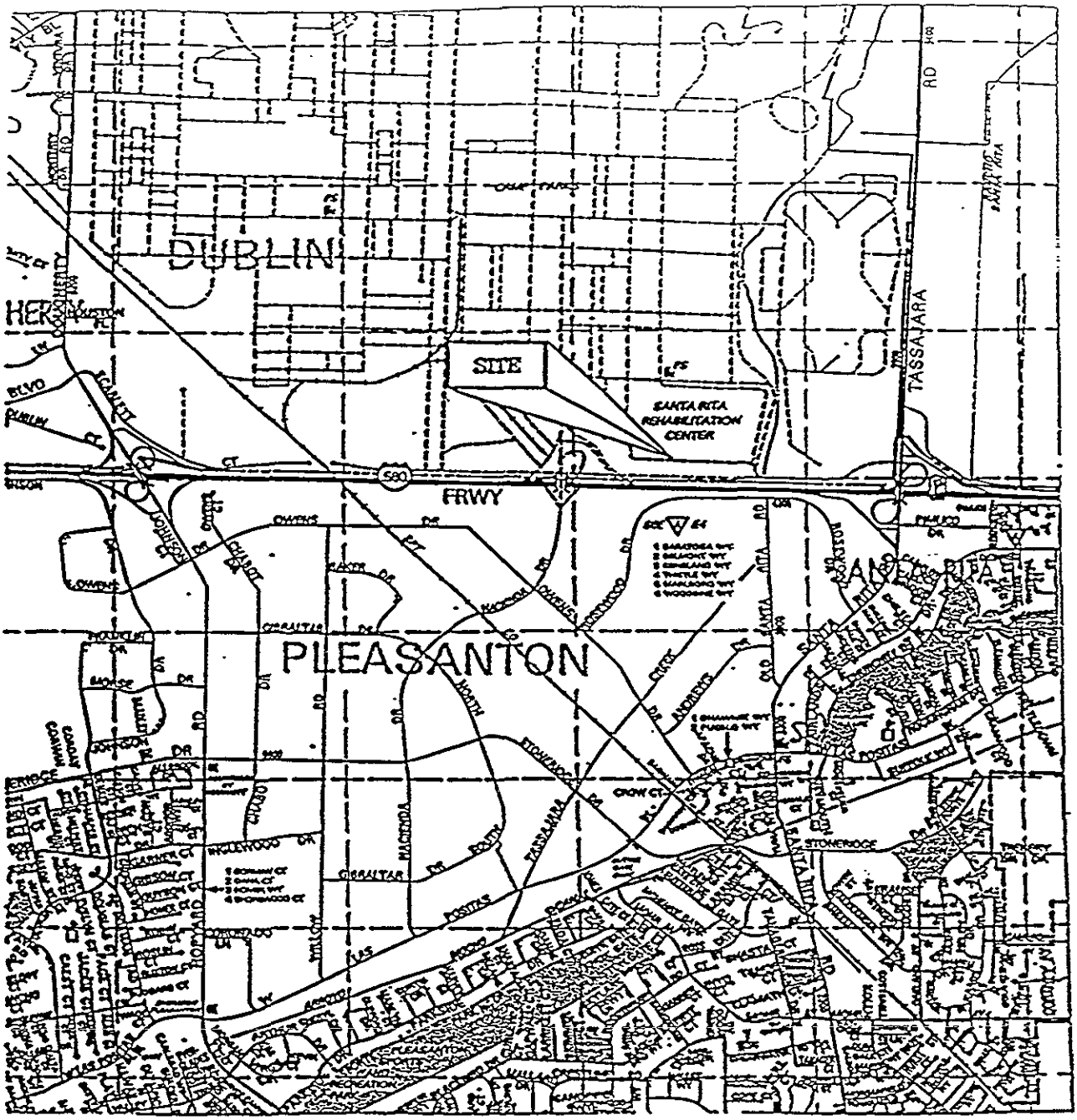
- The excavation should be dewatered in order to reduce any potential impact to ground water caused by the gasoline constituents. This technique can be extremely effective for remediating ground water and may reduce the cost and level of effort required to remediate ground water using monitoring wells.

- The excavation should be backfilled and compacted as soon as possible due to safety and environmental concerns.

- The stockpiled soil at the site known to contain gasoline should be characterized and permitted with the Bay Area Air Quality Management District for aeration. Because the site has adequate area for spreading the soil at suitable thicknesses, the GSA will realize cost savings from minimal soil handling and no disposal fees.

- All stockpiled soil having no detectable concentrations of petroleum hydrocarbons should be placed at GSA-designated areas at the site.

FIGURES

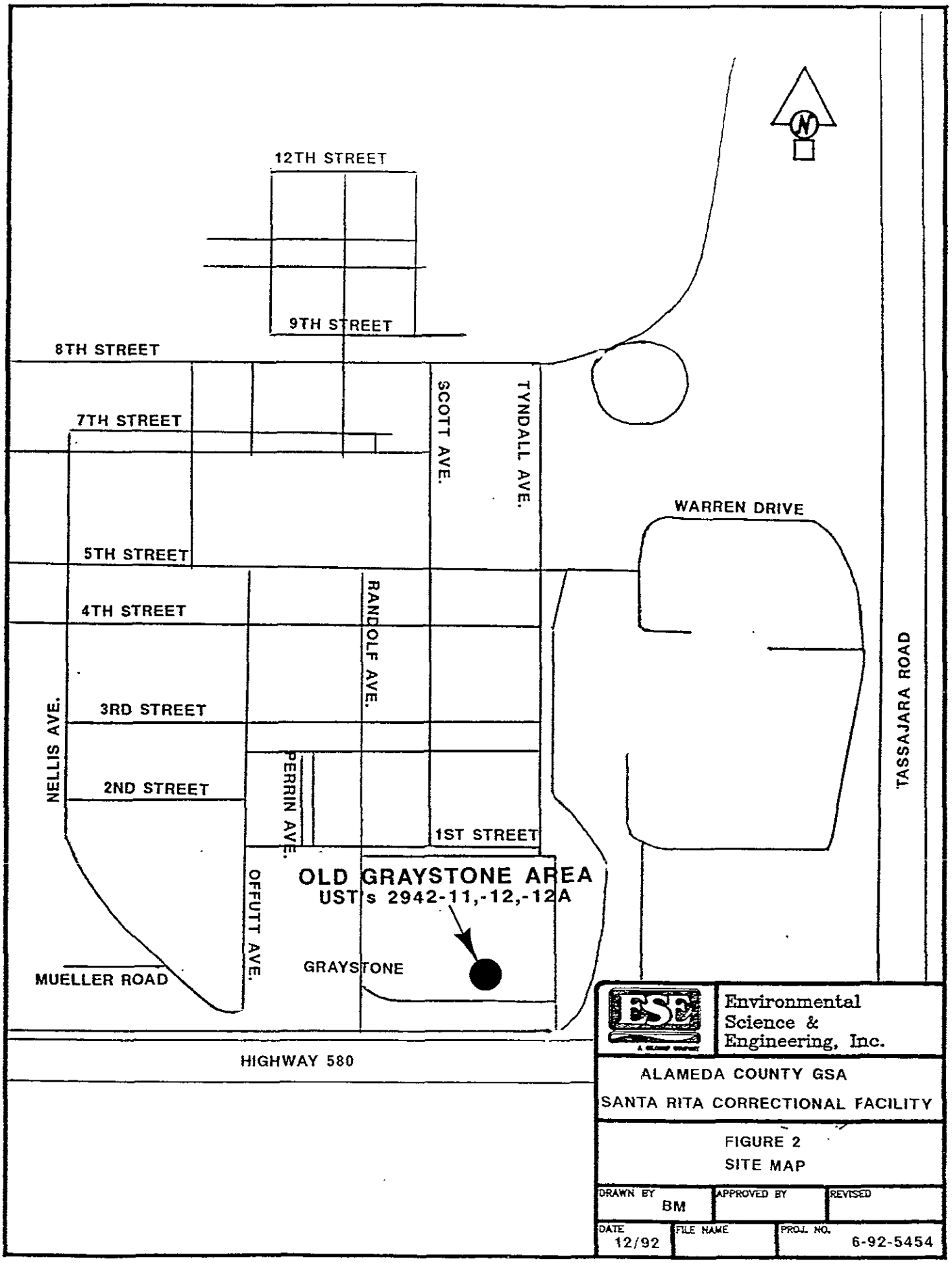


Environmental Science & Engineering, Inc.

ALAMEDA COUNTY GSA
SANTA RITA JAIL FACILITY
DUBLIN, CA

FIGURE 1
LOCATION MAP

DRAWN BY	APPROVED BY	REVISED
RSW		
DATE	FILE NAME	PROJ. NO.
6/25/92		6-92-5442



Environmental Science & Engineering, Inc.

ALAMEDA COUNTY GSA

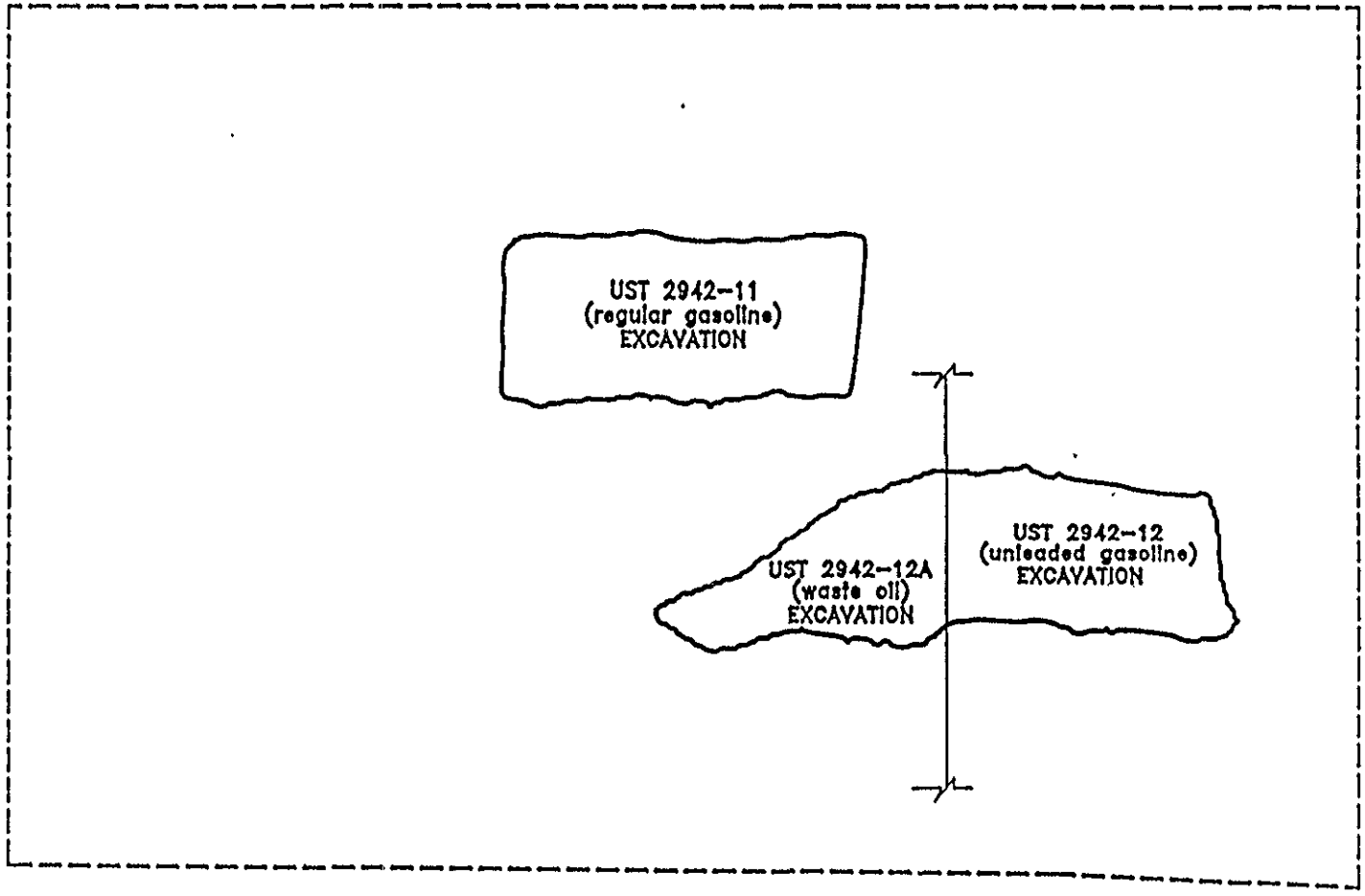
SANTA RITA CORRECTIONAL FACILITY

FIGURE 2

SITE MAP

DRAWN BY	APPROVED BY	REVISED
BM		

DATE	FILE NAME	PROJ. NO.
12/92		6-92-5454



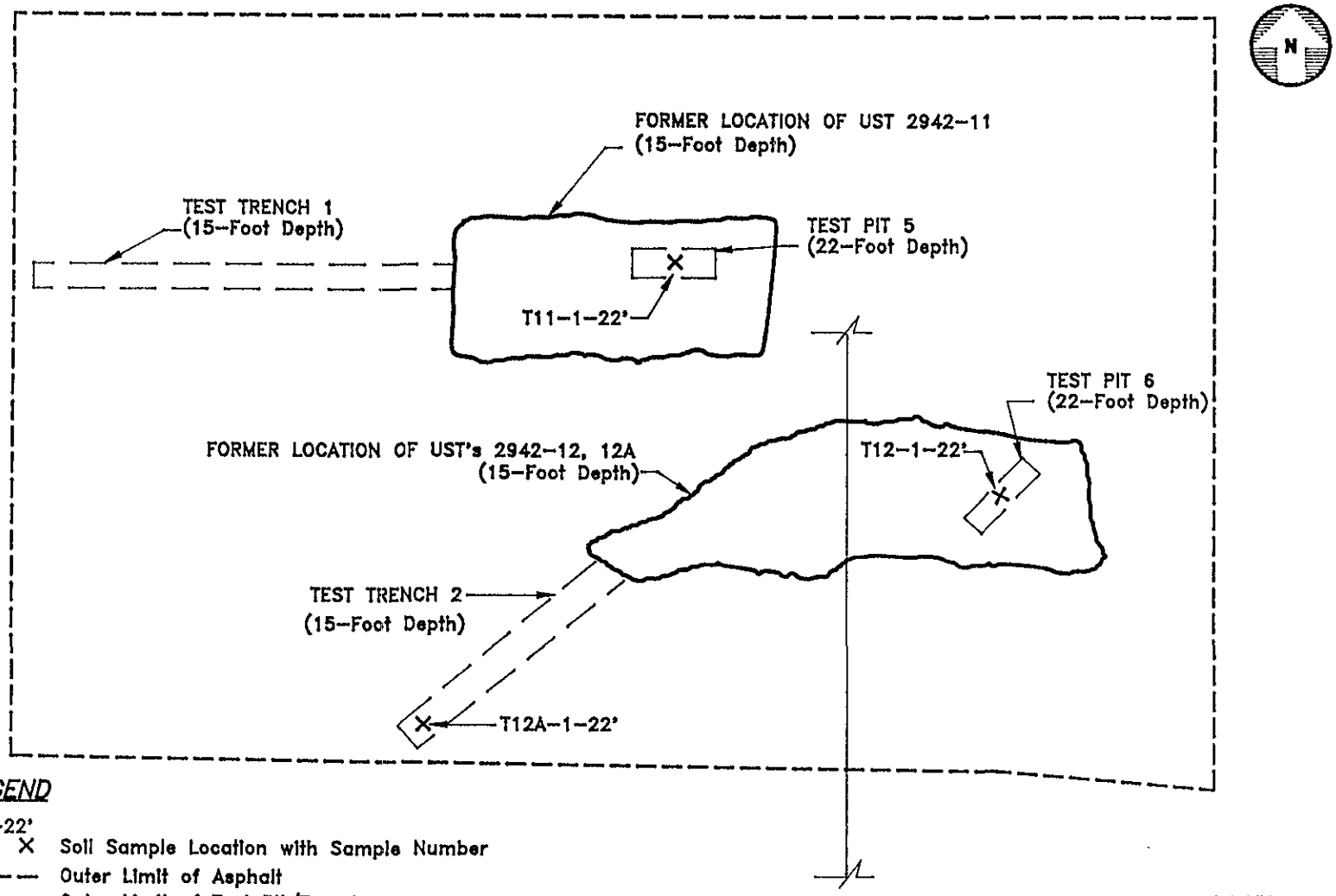
LEGEND

- Boundary of Asphalt
- Steel Pipe
- Boundary of Excavation

SCALE

0 20 FEET

Environmental Science & Engineering, Inc. A CRCORP Company	DATE 12/92	PROJ/PROP 6-92-5454	ALAMEDA COUNTY GSA SANTA RITA JAIL FACILITY DUBLIN, CA
	DRAWN BY DWR	CAD FILE 54542002	
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	APPROVED BY	REVISED	FIGURE 3 SITE PLAN



LEGEND

T12A-1-22' × Soil Sample Location with Sample Number

Outer Limit of Asphalt

Outer Limit of Test Pit/Trench

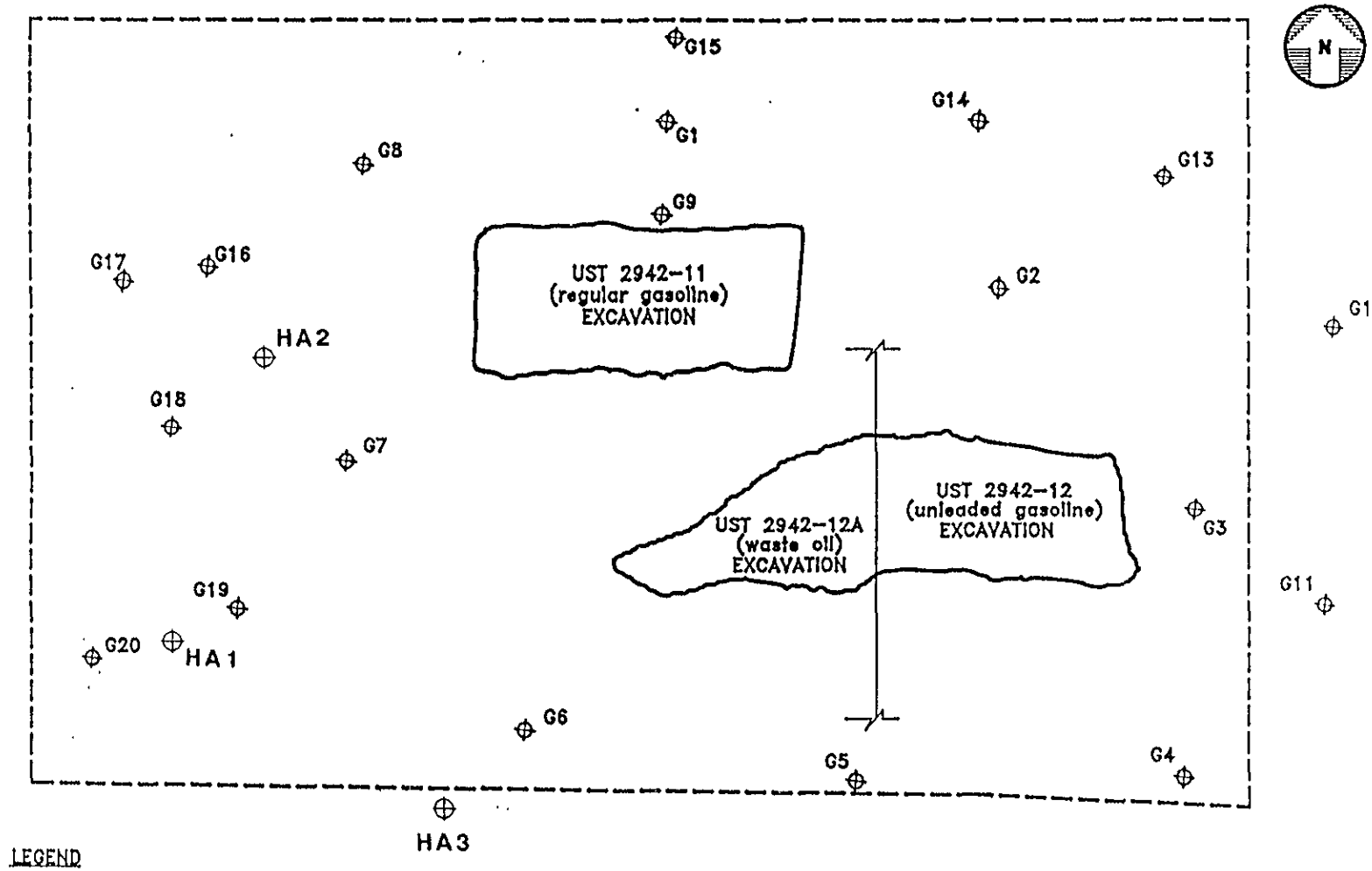
Steel Pipe

Boundary of Excavation

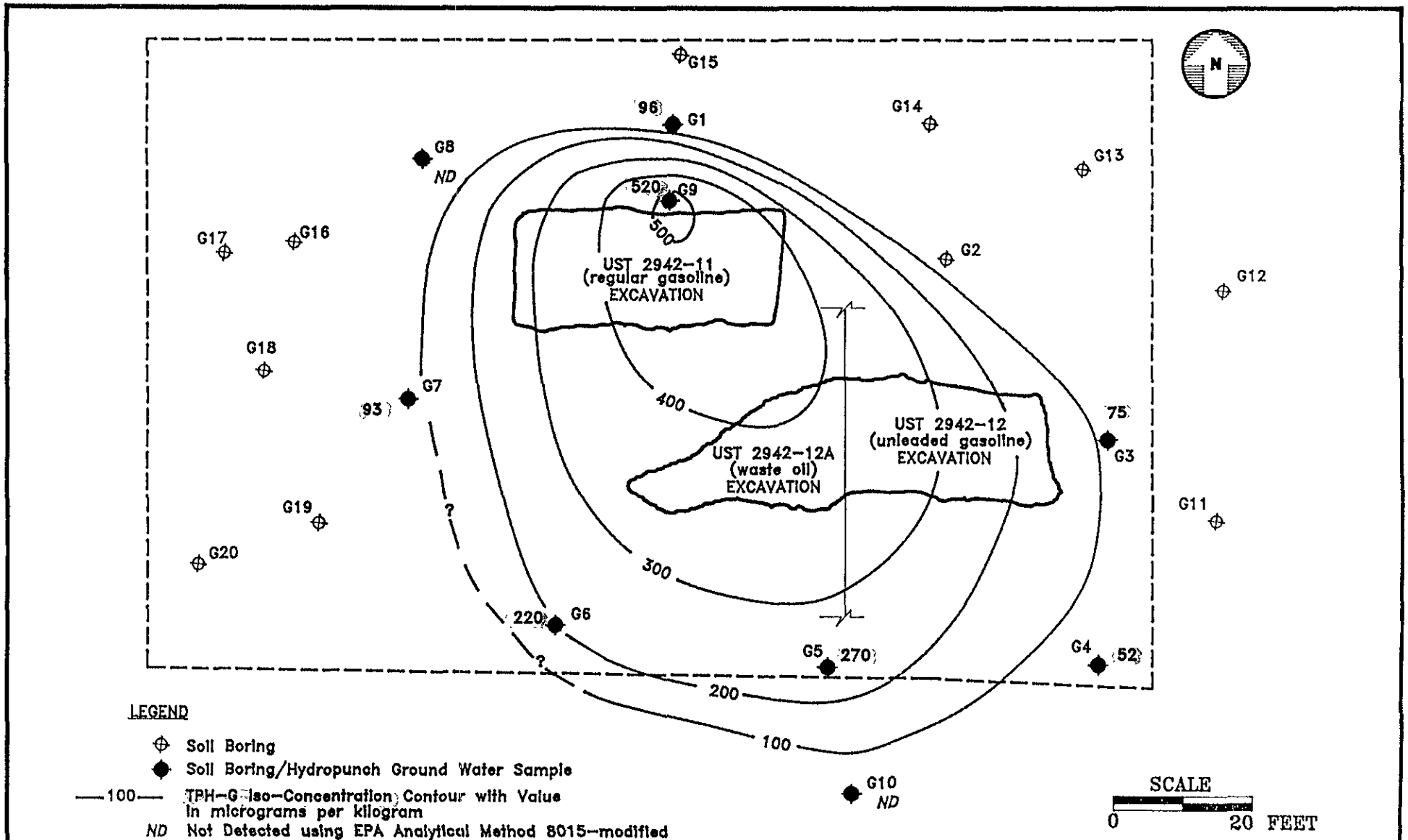
SCALE

0 20 FEET

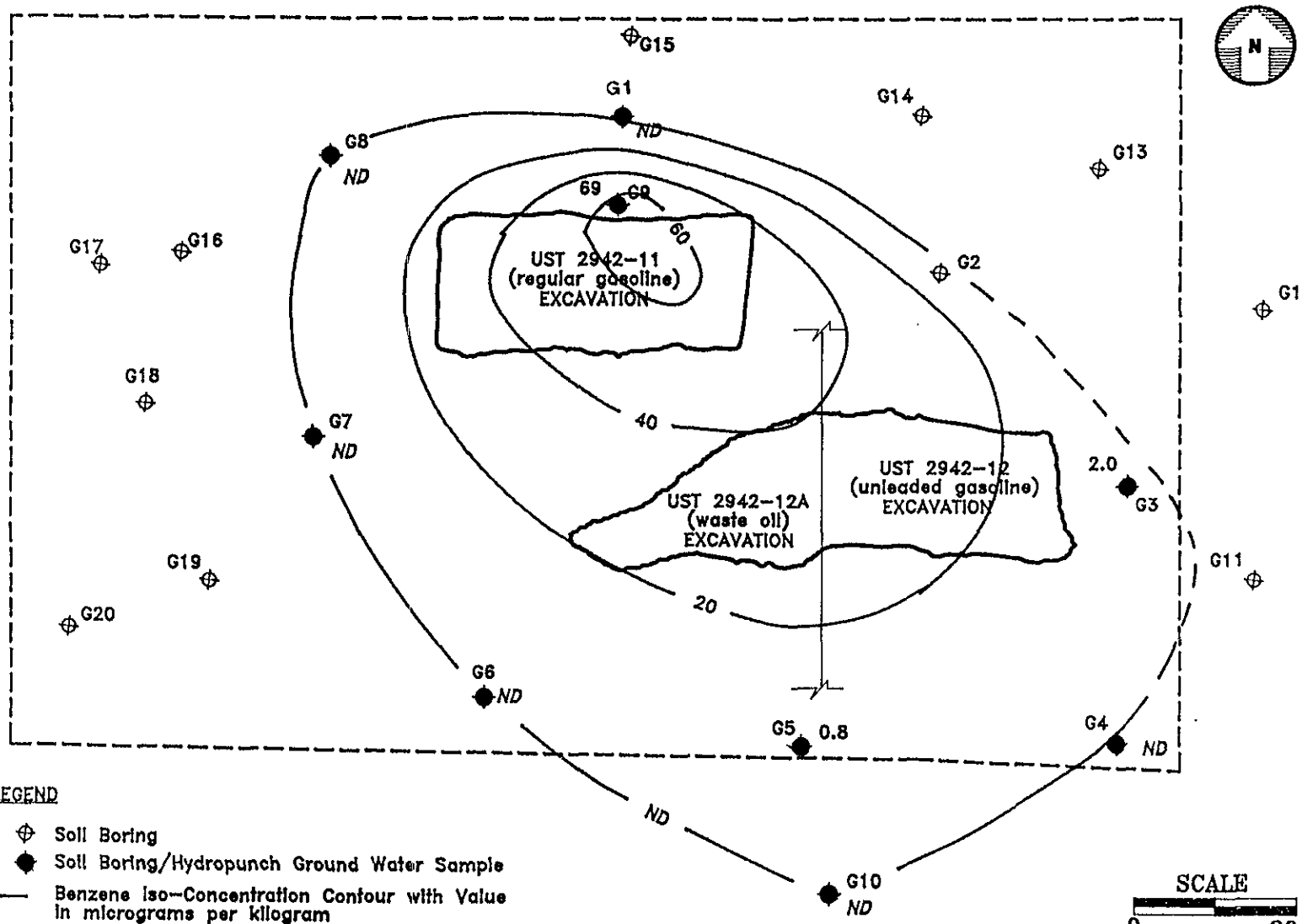
Environmental Science & Engineering, Inc. (A CILCORP Company)	DATE 12/92	PROJ/PROP 6-92-5442	ALAMEDA COUNTY GENERAL SERVICES AGENCY SANTA RITA CORRECTIONAL FACILITY DUBLIN, CALIFORNIA
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DRAWN BY DWR	CAD FILE 54422002	FIGURE 4 SITE PLAN, EXCAVATION ACTIVITIES
	APPROVED BY	REVISED	



Environmental Science & Engineering, Inc. (A CILCORP Company)	DATE 12/92	PROJ/PROP 6-92-5454	ALAMEDA COUNTY GSA SANTA RITA JAIL FACILITY DUBLIN, CA
	DRAWN BY DWR	CAD FILE 54542002	
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	APPROVED BY	REVISED	FIGURE 5 SITE PLAN



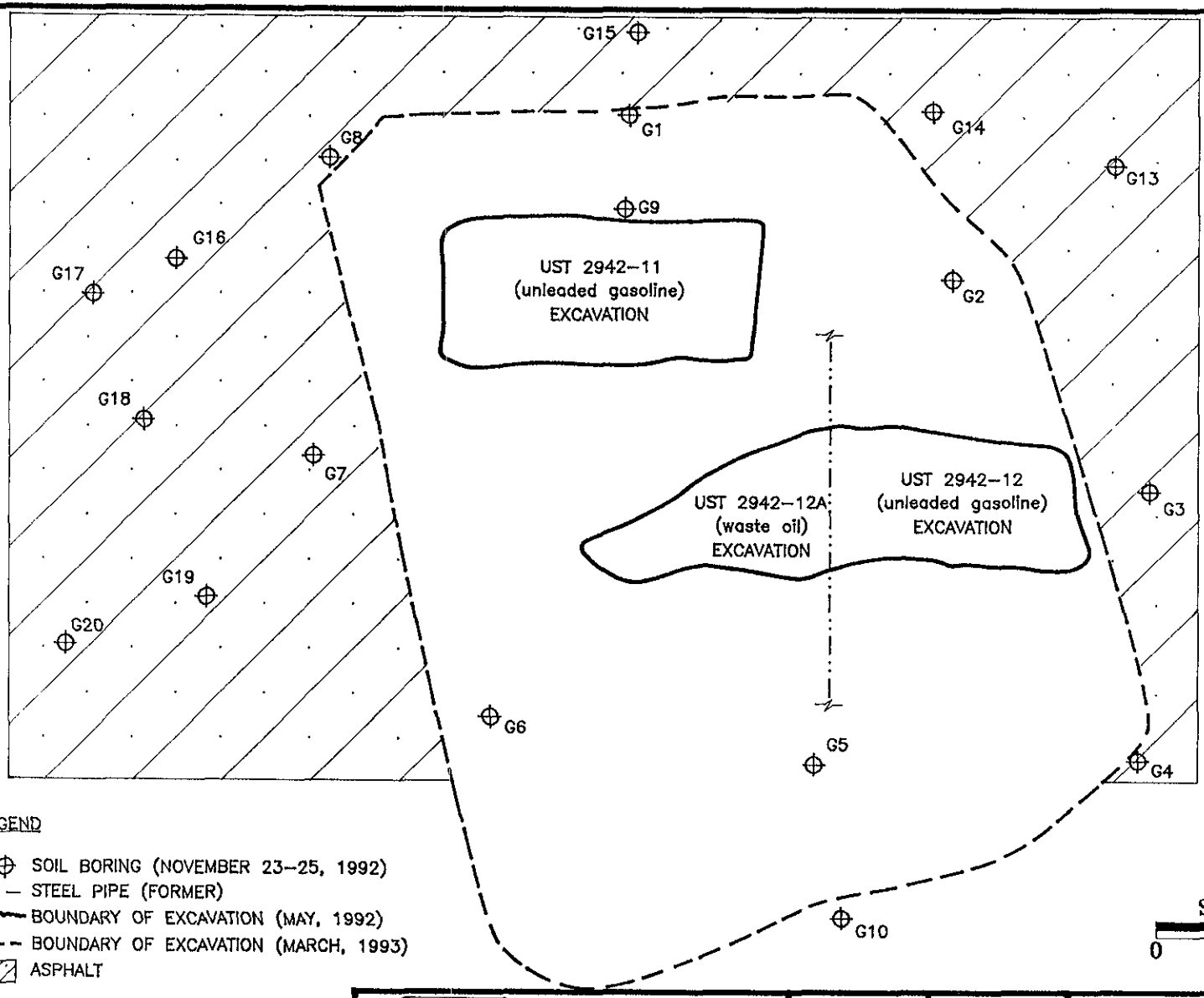
ESE A CILCORP Company — Environmental Science & Engineering, Inc.	DATE 12/92	PROJ/PROP 6-92-5454	ALAMEDA COUNTY GSA SANTA RITA JAIL FACILITY DUBLIN, CA
	DRAWN BY DWR	CAD FILE 54542007	
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	APPROVED BY	REVISED	FIGURE 6 TPH-G CONCENTRATION IN GROUND WATER



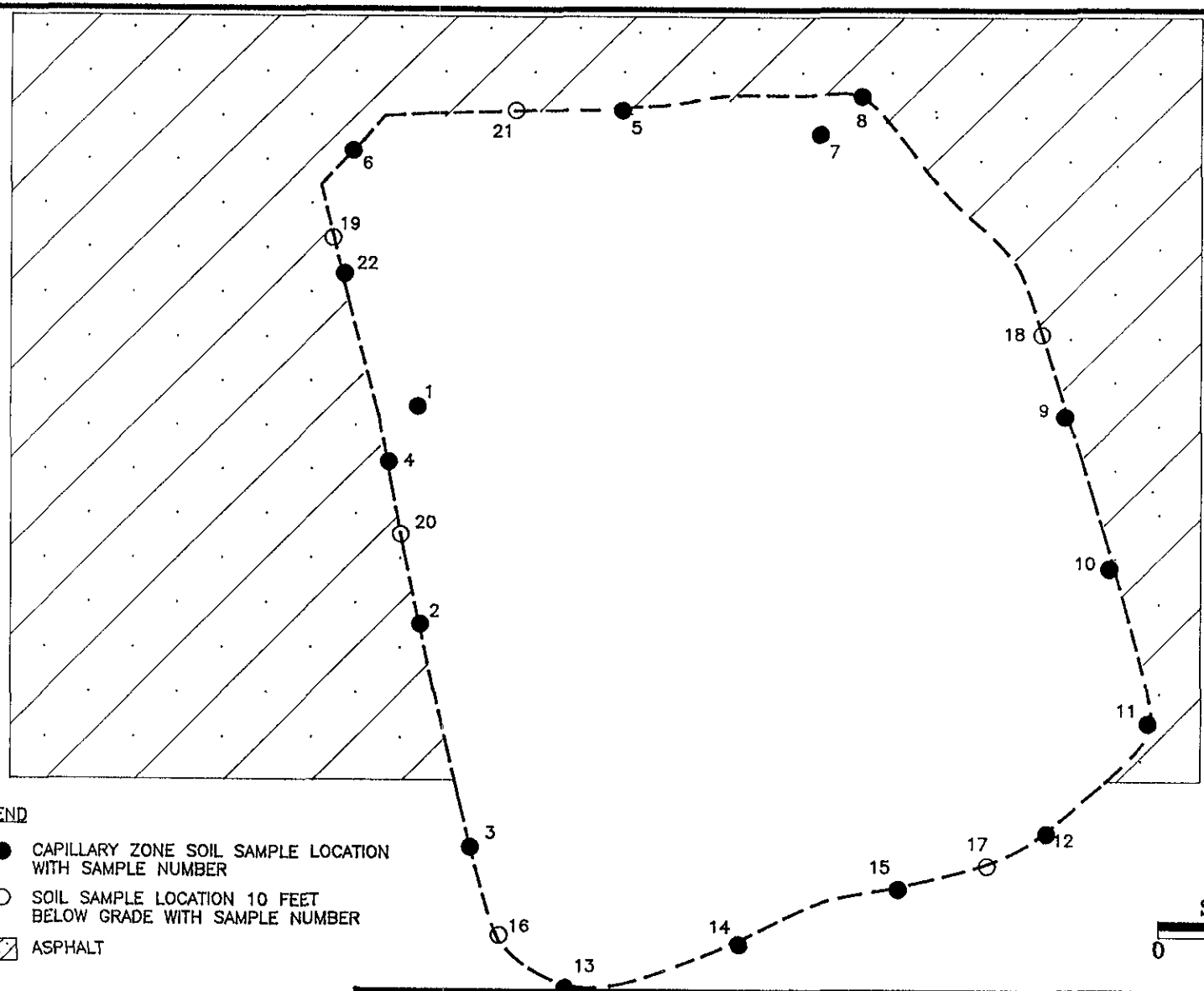
LEGEND

- Soil Boring
- Soil Boring/Hydropunch Ground Water Sample
- — 20 — Benzene Iso-Concentration Contour with Value in micrograms per kilogram
- *ND* Not Detected using EPA Analytical Method 8020
- Boundary of Asphalt
- Steel Pipe
- Boundary of Excavation

Environmental Science & Engineering, Inc. A CILCORP Company	DATE 12/92	PROJ/PROP 6-92-5454	ALAMEDA COUNTY GENERAL SERVICES AGENCY SANTA RITA CORRECTIONAL FACILITY DUBLIN, CALIFORNIA
	DRAWN BY DWR	CAD FILE 54542008	
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	APPROVED BY	REVISED	FIGURE 7 BENZENE CONCENTRATION IN GROUND WATER



ESE A CILCORP Company — Environmental Science & Engineering, Inc.	DATE 3/93	PROJ. NO. 6–93–5036	ALAMEDA COUNTY GSA SANTA RITA JAIL FACILITY DUBLIN, CALIFORNIA
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DRAWN BY DWR	CAD FILE 50362008	FIGURE 8 SITE PLAN, EXCAVATION ACTIVITIES (MARCH, 1993)
	APPROVED BY	REVISED	



LEGEND

4● CAPILLARY ZONE SOIL SAMPLE LOCATION WITH SAMPLE NUMBER

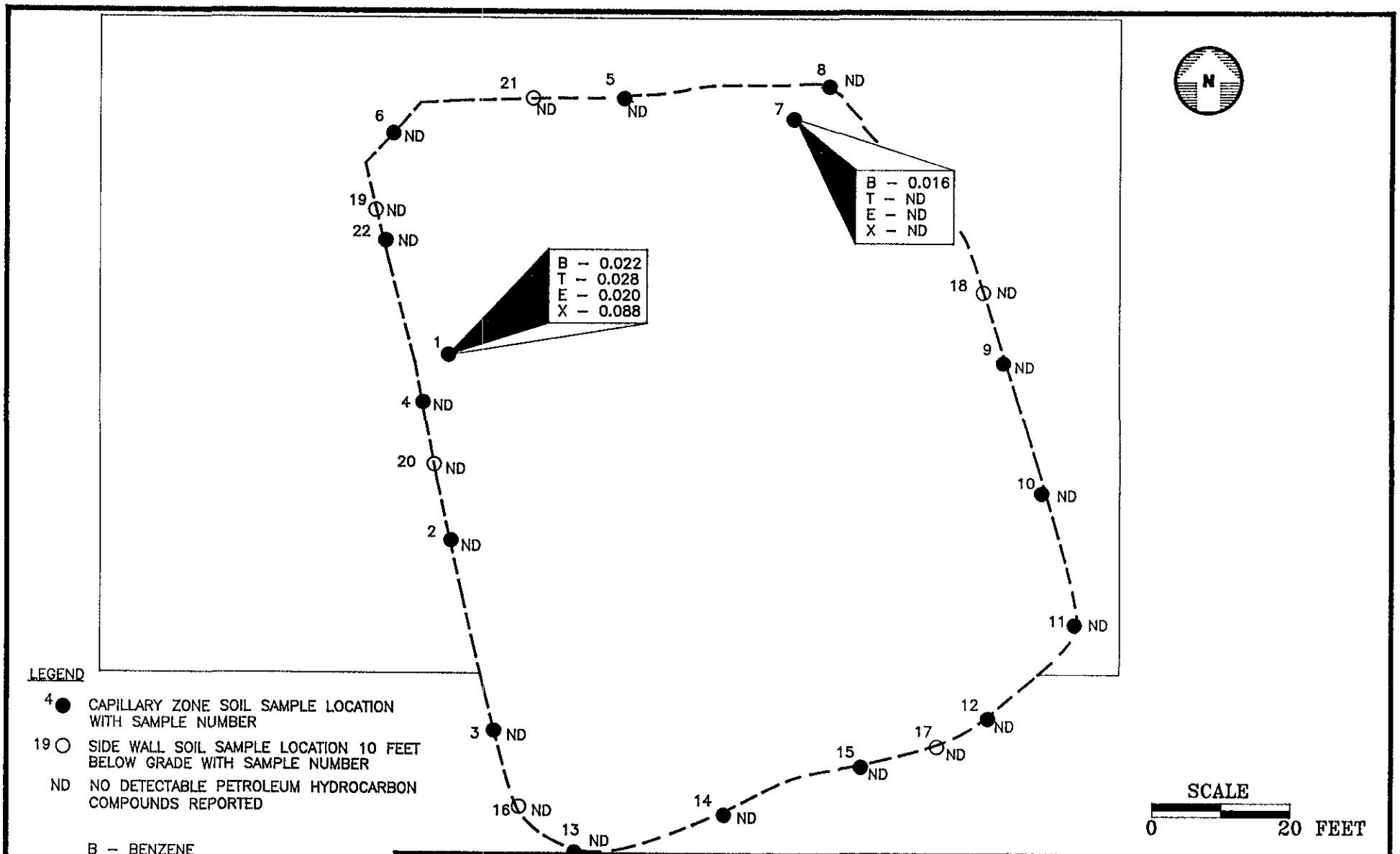
19○ SOIL SAMPLE LOCATION 10 FEET BELOW GRADE WITH SAMPLE NUMBER

▨ ASPHALT

SCALE

0 20 FEET

ESE A CILCORP Company — Environmental Science & Engineering, Inc.	DATE 3/93	PROJ. NO. 6-93-5036	ALAMEDA COUNTY GSA SANTA RITA JAIL FACILITY DUBLIN, CALIFORNIA
	DRAWN BY DWR	CAD FILE 50362009	FIGURE 9 CONFIRMATION SOIL SAMPLE LOCATIONS (MARCH, 1993)
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	APPROVED BY	REVISED	



LEGEND

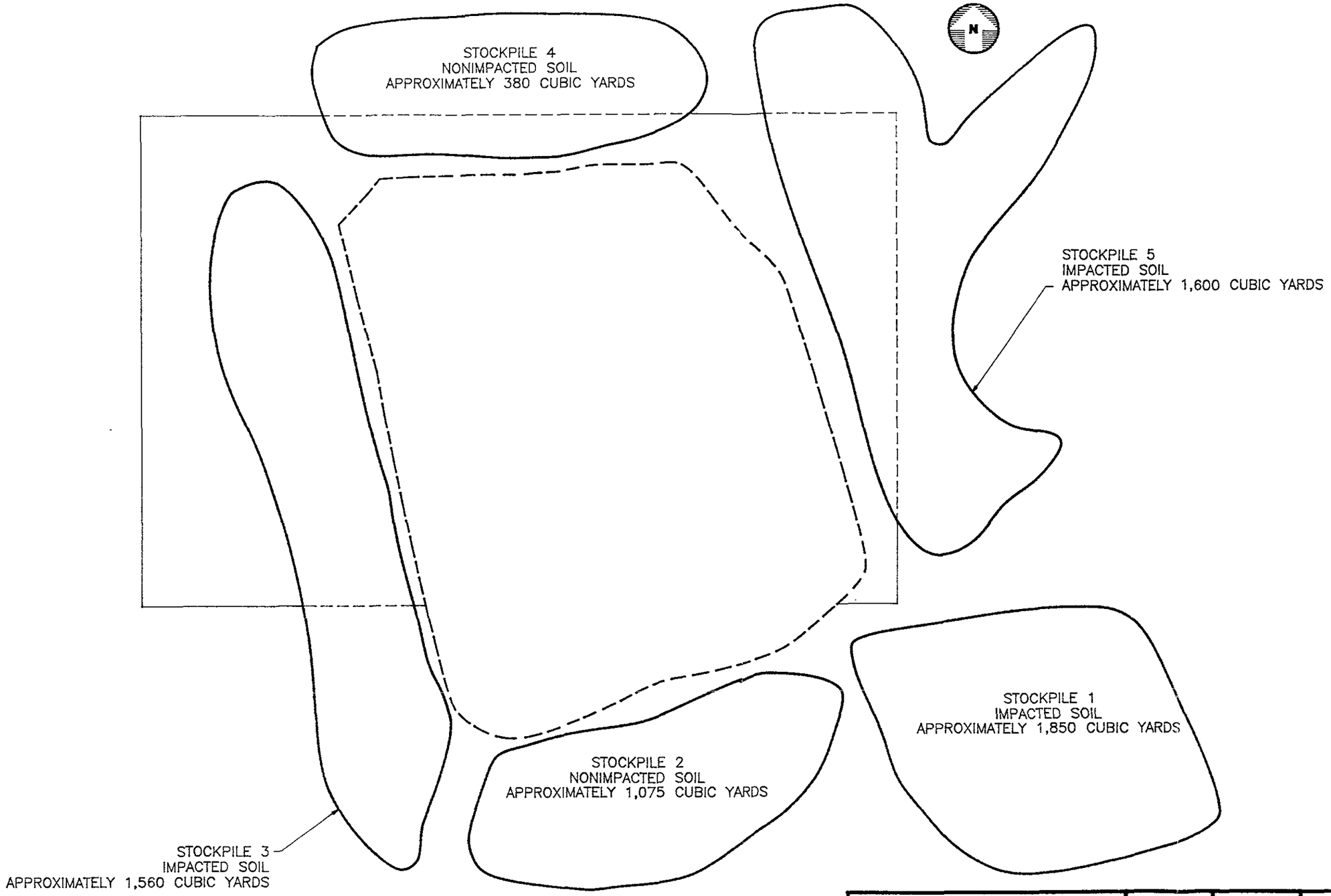
4 ● CAPILLARY ZONE SOIL SAMPLE LOCATION WITH SAMPLE NUMBER

19 ○ SIDE WALL SOIL SAMPLE LOCATION 10 FEET BELOW GRADE WITH SAMPLE NUMBER

ND NO DETECTABLE PETROLEUM HYDROCARBON COMPOUNDS REPORTED

B – BENZENE
T – TOLUENE
E – ETHYLBENZENE
X – TOTAL XYLENES
(all concentrations reported in mg/kg)

ESE A CILCORP Company **Environmental Science & Engineering, Inc.**	DATE 3/93	PROJ. NO. 6-93-5036	ALAMEDA COUNTY GSA SANTA RITA JAIL FACILITY DUBLIN, CALIFORNIA
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DRAWN BY DWR	CAD FILE 50362010	FIGURE 10 ANALYTICAL RESULTS FOR CONFIRMATION SOIL SAMPLES (MARCH, 1993)
	APPROVED BY	REVISED	



ESE A CELCORP Company — Environmental Science & Engineering, Inc.	DATE 3/93	PROJ. NO. 6-93-5036	ALAMEDA COUNTY GSA SANTA RITA JAIL FACILITY DUBLIN, CALIFORNIA
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DRAWN BY DWR	CAD FILE 50362011	FIGURE 11 EXCAVATED SOIL STOCKPILES (MARCH, 1993)
	APPROVED BY	REVISED xx/92	

APPENDIX A

Certified Analytical Results and Chain-of-Custody Documentation

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 12, 1993

ChromaLab File No.: 0293116

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Attn: Pat Galvin

RE: Three soil samples for Gasoline and BTEX analysis

Project Name: AC GSA SANTA RITA JAIL
Project Number: 6925454
Date Sampled: Feb. 11, 1993
Date Analyzed: Feb. 11, 1993

Date Submitted: Feb. 11, 1993

RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
HA-1	N.D.	N.D.	N.D.	N.D.	N.D.
HA-2	N.D.	N.D.	N.D.	N.D.	N.D.
HA-3	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	98%	93%	104%	95%	96%
DUP SPIKE RECOVERY	----	94%	106%	100%	101%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

ChromaLab, Inc.

Billy Thach
Analytical Chemist

Eric Tam
Laboratory Director

cc

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 16, 1993 ChromaLab File No.: 0293116

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Attn: Pat Galvin

RE: Three soil samples for Oil & Grease analysis

Project Name: AC GSA SANTA RITA JAIL
Project Number: 6925454
Date Sampled: Feb. 11, 1993 Date Submitted: Feb. 11, 1993
Date Analyzed: Feb. 12, 1993

RESULTS:

Sample I.D.	Oil & Grease (mg/Kg)
HA-1	N.D.
HA-2	N.D.
HA-3	N.D.
BLANK	N.D.
DETECTION LIMIT	50
METHOD OF ANALYSIS	STD METHOD 5520 E & F

ChromaLab, Inc.

Carolyn M. House
Analyst

Eric Tam
Laboratory Director

cc

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 15, 1993 ChromaLab File No.: 0293116

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Attn: Pat Galvin

RE: Three soil samples for Diesel analysis

Project Name: AC GSA SANTA RITA JAIL
Project Number: 6925454
Date Sampled: Feb. 11, 1993 Date Submitted: Feb. 11, 1993
Date Extracted: Feb. 11, 1993 Date Analyzed: Feb. 11, 1993

RESULTS:

Sample I.D.	Diesel (mg/Kg)
HA-1	N.D.
HA-2	N.D.
HA-3	N.D.
BLANK	N.D.
SPIKE RECOVERY	87%
DUP SPIKE RECOVERY	86%
DETECTION LIMIT	1.0
METHOD OF ANALYSIS	3550/8015

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

cc

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

CHROMALAB FILE # 29311C
ORDER # 10427

CHAIN OF

DATE 2/11/93 PAGE 1 OF 1

PROJECT NAME AC GSA Santa Rita Jail

ADDRESS Santa Rita Jail
Dublin CA

PROJECT NO. 6925454

SAMPLED BY Steve Willetts

LAB NAME Chroma Lab

ESE Environmental Science & Engineering, Inc.
4080 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-5323

SAMPLE #	DATE	TIME	LOCATION	8015M-Gasoline/BTEX	8015M-Diesel	OG (5520) Grav.	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
HA-1	2/11/93	12:05pm	old Greystone	X	X	X		1	Brass Rings
HA-2	2/11/93	10:48am	old Greystone	X	X	X		1	Brass Rings
HA-3	2/11/93	11:30am	old Greystone	X	X	X		1	Brass Rings

ANALYSES TO BE PERFORMED | MATRIX

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. Steve Willetts	Gary Cook	2/11/93	13:05
2.			
3.			
4.			
5.			

3 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: Pat Galvin

SPECIAL SHIPMENT REQUIREMENTS: Keep Cold.

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):
48 Hr. TA

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	
CONFORMS TO RECORD	

ESE-CONCORD FAX 1 510 685 5323 10:56 02/11/93

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: 6-93-5036; Alameda Co. GSA	Date Sampled: 02/18/93
		Date Received: 02/19/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 02/19/93
	Client P.O:	Date Analyzed: 02/20/93

Low Boiling Point (C6-C12) TPH* as Gasoline and BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(G)+	Benzene	Toluene	Ethyl Benzene	Xylenes	% Rec. Surrogate
21568	1	S	ND,a	0.022	0.028	0.020	0.088	104
21569	2	S	ND	ND	ND	ND	ND	105
21570	3	S	ND	ND	ND	ND	ND	105
21571	4	S	ND	ND	ND	ND	ND	105
21572	5	S	ND	ND	ND	ND	ND	104
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L and soils in mg/kg

#cluttered chromatogram; sample peak co-elutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified gasoline; b) heavier gasoline range compounds predominate (aged gasoline?); c) lighter gasoline range compounds predominate (the most mobile gasoline compounds); d) heavy and light gasoline range compounds predominate (aged gasoline together with introduced light compounds?); e) gasoline range compounds predominate; no recognizable pattern; f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds predominate.

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: 6-93-5036; Alameda Co. GSA	Date Sampled: 02/18/93
		Date Received: 02/19/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 02/19/93
	Client P.O:	Date Analyzed: 02/20/93

Medium Boiling Point (C10-C23) TPH* as Diesel

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(D)+
21568	1	S	ND
21569	2	S	ND
21570	3	S	ND
21571	4	S	ND
21572	5	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L
		S	10 mg/kg

*water samples are reported in ug/L and soils in mg/kg

cluttered chromatogram; sample peak co-elutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified diesel; b) diesel range compounds predominate; no recognizable pattern; c) diesel range compounds together with gasoline range compounds; d) gasoline range compounds predominate; e) medium boiling point pattern that does not match diesel(aged diesel?); f) one to a few isolated peaks present; g) oil range compounds predominate.

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: 6-93-5036; Alameda Co. GSA	Date Sampled: 02/18/93
		Date Received: 02/19/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 02/19/93
	Client P.O:	Date Analyzed: 02/20/93

Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) *

Standard Methods 5520 E&F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids

Lab ID	Client ID	Matrix	TRPH
21568	1	S	ND
21569	2	S	ND
21570	3	S	ND
21571	4	S	ND
21572	5	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	5 mg/L
		S	50 mg/kg

*water samples are reported in mg/L and soils in mg/kg

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: 6-93-5036; Alameda Co. GSA	Date Sampled: 02/18/93
		Date Received: 02/19/93
	Client Contact: Peter Kinney;Pat Galvin(ESE)	Date Extracted: 02/23/93
	Client P.O:	Date Analyzed: 02/23/93

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	21570			
Client ID	3			
Matrix	S			
Compound[1]	Concentration*	Concentration*	Concentration*	Concentration*
Chloromethane	ND			
Vinyl Chloride[2]	ND			
Bromomethane	ND			
Chloroethane	ND			
Trichlorofluoromethane	ND			
1,1-Dichloroethene	ND			
Methylene Chloride[3]	ND < 50			
trans 1,2-Dichloroethene	ND			
1,1-Dichloroethane	ND			
cis 1,2-Dichloroethene	ND			
Chloroform [4]	ND			
1,1,1-Trichloroethane	ND			
Carbon Tetrachloride[5]	ND			
1,2-Dichloroethane	ND			
Trichloroethene	ND			
1,2-Dichloropropane	ND			
Bromodichloromethane	ND			
2-Chloroethyl Vinyl Ether[6]	ND			
cis 1,3-Dichloropropene	ND			
trans 1,3-Dichloropropene	ND			
1,1,2-Trichloroethane	ND			
Tetrachloroethene [7]	ND			
Dibromochloromethane	ND			
Chlorobenzene	ND			
Bromoform[8]	ND			
1,1,2,2-Tetrachloroethane	ND			
1,3-Dichlorobenzene	ND			
1,4-Dichlorobenzene	ND			
1,2-Dichlorobenzene	ND			

Detection limit unless otherwise stated: water, ND < 0.5ug/L; soil, ND < 10ug/kg.

* water samples are reported in ug/L and soils in ug/kg

(1) IUPAC allows "ylene" or "ene"; ex. ethylene or ethene; (2) chloroethene; (3) dichloromethane; (4) trichlormethane; (5) tetrachloromethane; (6) (2-chloroethoxy) ethene; (7) perchlorethylene or perclor; (8) tribromomethane; (9) unidentified peak(s) present.

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT

Date: 02/19-02/21/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.615	1.634	2.03	80	80	1.1
Benzene	0.000	0.180	0.180	0.2	90	90	0.0
Toluene	0.000	0.184	0.186	0.2	92	93	1.1
Ethyl Benzene	0.000	0.178	0.180	0.2	89	90	1.1
Xylenes	0.000	0.526	0.530	0.6	88	88	0.8
TPH (diesel)	0	296	293	300	99	98	1.1
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

CHAIN OF CUSTODY RECORD

DATE FEBRUARY 18, 1993 PAGE 1 OF 1

PROJECT NAME ALAMEDA CO. GSA

ADDRESS OLD GRAYSTONE FUELING AREA

PROJECT NO. 6-93-5036

SAMPLED BY [signature]

LAB NAME McCampbells Analytical

ESE Environmental Science & Engineering, Inc.
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-5323

SAMPLE #	DATE	TIME	LOCATION	TPH-G (8015-m)	BTEX (8020)	TPH-D (8015-m)	SVOC's (8270)	HVOC's (8010)	Total LUFT (5520 D:E)	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
1	2/18/93	8:15	CENTER WEST WALL	✓	✓					SOIL	1	2" diameter brass sleeves
2	"	8:50	SW CORNER	✓	✓					"	1	All samples collected at
3	"	12:57	SW END SOUTH WALL	✓	✓	✓	✓	✓	✓	"	1	capillary fringe immediately
4	"	13:42	CENTER WEST WALL	✓	✓					"	1	above groundwater
5	"	15:00	NW CORNER NORTH WALL	✓	✓					"	1	

No. 21568
No. 21569
No. 21570
No. 21571
No. 21572

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature]	2/19/93	1115
2. [signature]	[signature]	2-19-93	11:41
3.			
4.			
5.			

5 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: PATRICK GALVIN

SPECIAL SHIPMENT REQUIREMENTS: COLD TRANSPORT

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	✓
CONFORMS TO RECORD	✓

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):

Bill Alameda County General Services Agency, 4400 MacArthur Blvd., Oakland, CA ~~94~~ 94619, (510) 535-6280, Contact Peter Kinney

McCAMPBELL ANALYTICAL

SAMPLE ID: 3
CLIENT PROJ. ID: AC/955
DATE SAMPLED: 02/18/93
DATE RECEIVED: 02/19/93
REPORT DATE: 03/08/93

QUANTEQ LAB NO: 9302190-03A
QUANTEQ JOB NO: 9302190
DATE EXTRACTED: 02/23/93
DATE ANALYZED: 02/25/93
INSTRUMENT: 11

EPA METHOD 8270 (SOIL MATRIX)
GC/MS SEMI-VOLATILE ORGANIC COMPOUNDS

BASE/NEUTRAL EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
Acenaphthene	83-32-9	ND	330
Acenaphthylene	208-96-8	ND	330
Anthracene	120-12-7	ND	330
Benzidine	92-87-5	ND	1600
Benzoic Acid	65-85-0	ND	1600
Benzo(a)anthracene	56-55-3	ND	330
Benzo(b)fluoranthene	205-99-2	ND	330
Benzo(k)fluoranthene	207-08-9	ND	330
Benzo(g,h,i)perylene	191-24-2	ND	330
Benzo(a)pyrene	50-32-8	ND	330
Benzyl Alcohol	100-51-6	ND	660
Bis(2-chloroethoxy) methane	111-91-1	ND	330
Bis(2-chloroethyl)ether	111-44-4	ND	330
Bis(2-chloroisopropyl) ether	108-60-1	ND	330
Bis(2-ethylhexyl) phthalate	117-81-7	ND	330
4-Bromophenyl phenyl ether	101-55-3	ND	330
Butylbenzyl phthalate	85-68-7	ND	330
4-Chloroaniline	106-47-8	ND	660
2-Chloronaphthalene	91-58-7	ND	330
4-Chlorophenyl phenyl ether	7005-72-3	ND	330
Chrysene	218-01-9	ND	330
Dibenzo(a,h)anthracene	53-70-3	ND	330
Dibenzofuran	132-64-9	ND	330
Di-n-butylphthalate	84-74-2	ND	330
1,2-Dichlorobenzene	95-50-1	ND	330

ND = Not Detected

McCAMPBELL ANALYTICAL

SAMPLE ID: 3
CLIENT PROJ. ID: AC/955
DATE SAMPLED: 02/18/93
DATE RECEIVED: 02/19/93
REPORT DATE: 03/08/93

QUANTEQ LAB NO: 9302190-03A
QUANTEQ JOB NO: 9302190
DATE EXTRACTED: 02/23/93
DATE ANALYZED: 02/25/93
INSTRUMENT: 11

EPA METHOD 8270

BASE/NEUTRAL EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
1,3-Dichlorobenzene	541-73-1	ND	330
1,4-Dichlorobenzene	106-46-7	ND	330
3,3'-Dichlorobenzidine	91-94-1	ND	660
Diethylphthalate	84-66-2	ND	330
Dimethylphthalate	131-11-3	ND	330
2,4-Dinitrotoluene	121-14-2	ND	330
2,6-Dinitrotoluene	606-20-2	ND	330
Di-n-octylphthalate	117-84-0	ND	330
1,2-Diphenylhydrazine	122-66-7	ND	330
Fluoranthene	206-44-0	ND	330
Fluorene	86-73-7	ND	330
Hexachlorobenzene	118-74-1	ND	330
Hexachlorobutadiene	87-68-3	ND	330
Hexachlorocyclopentadiene	77-47-4	ND	330
Hexachloroethane	67-72-1	ND	330
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330
Isophorone	78-59-1	ND	330
2-Methylnaphthalene	91-57-6	ND	330
Naphthalene	91-20-3	ND	330
2-Nitroaniline	88-74-4	ND	1600
3-Nitroaniline	99-09-2	ND	1600
4-Nitroaniline	100-01-6	ND	1600
Nitrobenzene	98-95-3	ND	330
N-Nitrosodimethylamine	62-75-9	ND	330
N-Nitrosodiphenylamine	86-30-6	ND	330
N-Nitroso-di-n-propylamine	621-64-7	ND	330
Phenanthrene	85-01-8	ND	330
Pyrene	129-00-0	ND	330
1,2,4-Trichlorobenzene	120-82-1	ND	330

ND = Not Detected

McCAMPBELL ANALYTICAL

SAMPLE ID: 3
CLIENT PROJ. ID: AC/955
DATE SAMPLED: 02/18/93
DATE RECEIVED: 02/19/93
REPORT DATE: 03/08/93

QUANTEQ LAB NO: 9302190-03A
QUANTEQ JOB NO: 9302190
DATE EXTRACTED: 02/23/93
DATE ANALYZED: 02/25/93
INSTRUMENT: 11

EPA METHOD 8270

ACID EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/kg)	REPORTING LIMIT (ug/kg)
4-Chloro-3-methylphenol	59-50-7	ND	330
2-Chlorophenol	95-57-8	ND	330
2,4-Dichlorophenol	120-83-2	ND	330
2,4-Dimethylphenol	105-67-9	ND	330
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600
2,4-Dinitrophenol	51-28-5	ND	1600
2-Methylphenol	95-48-7	ND	330
4-Methylphenol	106-44-5	ND	330
2-Nitrophenol	88-75-5	ND	330
4-Nitrophenol	100-02-7	ND	1600
Pentachlorophenol	87-86-5	ND	1600
Phenol	108-95-2	ND	330
2,4,5-Trichlorophenol	95-95-4	ND	330
2,4,6-Trichlorophenol	88-06-2	ND	330

ND = Not Detected

CLIENT ID: 3
DATE SAMPLED: 02/18/93
DATE RECEIVED: 02/19/93
CLIENT PROJ. ID: AC/955
REPORT DATE: 03/08/93

QUANTEQ LAB NO: 9302190-03A
QUANTEQ JOB NO: 9302190
DATE EXTRACTED: 02/23/93
DATE ANALYZED: 02/25/93
INSTRUMENT: 11

EPA METHOD 8270
TENTATIVELY-IDENTIFIED COMPOUNDS
(SOIL MATRIX)

Retention Time (min.)	Tentative Identification	Estimated Concentration (ug/kg)
None Detected		

Estimated Reporting Limit 300

QUALITY CONTROL DATA

DATE ANALYZED: 02/25/93

QUANTEQ JOB NO: 9302190

CLIENT PROJ. ID: AC/955

INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY

METHOD 8270
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Extracted	Client Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
02/23/93	3	03A	52.0	55.9	47.8	75.4	72.1	31.1

CURRENT QC LIMITS (REVISED 01/08/92)

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(23-120)
2-Fluorobiphenyl	(30-115)
Terphenyl-d_{14}	(18-137)
Phenol-d_5	(24-113)
2-Fluorophenol	(25-121)
2,4,6-Tribromophenol	(19-122)

QUALITY CONTROL DATA

DATE EXTRACTED: 02/22/93
DATE ANALYZED: 02/26/93
CLIENT PROJ. ID: AC/955

QUANTEQ JOB NO: 9302190
SAMPLE SPIKED: 9302143-04A
INSTRUMENT: 11

MATRIX SPIKE RECOVERY SUMMARY
METHOD 8270
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	ND	1700	1700	51.1	0.0
2-Chlorophenol	3330	ND	1600	1720	49.8	7.2
1,4-Dichlorobenzene	3400	ND	1550	1670	47.4	7.5
N-Nitroso-di-n-propylamine	3320	ND	1820	1930	56.5	5.9
1,2,4-Trichlorobenzene	3330	ND	1460	1520	44.7	4.0
4-Chloro-3-methylphenol	3270	ND	1630	1710	51.1	4.8
Acenaphthene	3330	ND	1650	1830	52.3	10.3
4-Nitrophenol	3300	ND	2240	1840	61.8	19.6
2,4-Dinitrotoluene	3330	ND	1550	1460	45.2	6.0
Pentachlorophenol	3380	ND	1670	1960	53.7	16.0
Pyrene	3320	ND	1580	1890	52.3	17.9

CURRENT QC LIMITS (Revised 01/08/92)

Analyte	Percent Recovery	RPD
Phenol	(35- 81)	33
2-Chlorophenol	(28- 88)	26
1,4-Dichlorobenzene	(28- 81)	9
N-Nitroso-di-n-propylamine	(27- 83)	20
1,2,4-Trichlorobenzene	(30- 82)	22
4-Chloro-3-methylphenol	(31-104)	28
Acenaphthene	(30-101)	17
4-Nitrophenol	(7-102)	32
2,4-Dinitrotoluene	(26- 86)	24
Pentachlorophenol	(11- 94)	41
Pyrene	(23-128)	23

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUANTEX

Routine 9302190

CHAIN OF CUSTODY RECORD

McCAMPBELL ANALYTICAL
110 2nd AVENUE, # D7
PACHECO, CA 94553
(510) 798-1620 FAX (510) 798-1622

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

REPORT TO: Ed Hamilton

BILL TO: AIAI

PROJECT NUMBER:

PROJECT NAME: AC/955

PROJECT LOCATION:

SAMPLER SIGNATURE:

SAMPLE ID	LOCATION	SAMPLING DATE	SAMPLING TIME	# CONTAINERS	TYPE CONTAINERS	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	MATRIX: OTHER	METHOD PRESERVED: HCL	METHOD PRESERVED: HNO_3	METHOD PRESERVED: OTHER (Ice)	ANALYSIS REQUEST: BTEX & TPH as Gasoline (602|8020 & 8015)	ANALYSIS REQUEST: TPH as Diesel (8015)	ANALYSIS REQUEST: Total Petroleum Oil & Grease (5520 E&F/5520 B&F)	ANALYSIS REQUEST: Total Petroleum Hydrocarbons (418.1)	ANALYSIS REQUEST: EPA 601/8010	ANALYSIS REQUEST: EPA 602/8020	ANALYSIS REQUEST: EPA 608/8080	ANALYSIS REQUEST: EPA 608/8080 - PCBs Only	ANALYSIS REQUEST: EPA 624/8240/8260	ANALYSIS REQUEST: EPA 625/8270	ANALYSIS REQUEST: CAM - 17 Metals	ANALYSIS REQUEST: EPA - Priority Pollutant Metals	ANALYSIS REQUEST: LEAD (7240/7421/239.2/6010)	ANALYSIS REQUEST: ORGANIC LEAD	ANALYSIS REQUEST: RCI	OTHER: Hold	OTHER	OTHER	OTHER	COMMENTS
1	01A	2-14-93	8:15	1	Da		X						X										X						X				215-64
2	02A		8:30																										X				576
3	03A		11:57																														5-70
4	04A		13:42																										X				5-71
5	05A		13:00																										X				5-72

REMARKS:
1) We are hoping for results on this 7 days. (Deans Peters)
2) please return cores.
2/22/93 Per client - samples on hold EXCEPT 3/03A

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
	2-19-93	1610	Robert W. Mann
Robert W. Mann	2-19-93	16:10	
	DATE	TIME	RECEIVED BY LABORATORY: 2-19-93 1610

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: Alameda Co. GSA; Santa Rita Jail, Old Greystone; #6-93-5036	Date Sampled: 02/19/93
		Date Received: 02/22/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 02/22/93
	Client P.O:	Date Analyzed: 02/22/93

Low Boiling Point (C6-C12) TPH* as Gasoline and BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(G)+	Benzene	Toluene	Ethyl Benzene	Xylenes	% Rec. Surrogate
21577	6	S	ND	ND	ND	ND	ND	105
21578	7	S	ND	0.016	ND	ND	ND	104
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L and soils in mg/kg

cluttered chromatogram; sample peak co-elutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified gasoline; b) heavier gasoline range compounds predominate (aged gasoline?); c) lighter gasoline range compounds predominate (the most mobile gasoline compounds); d) heavy and light gasoline range compounds predominate (aged gasoline together with introduced light compounds?); e) gasoline range compounds predominate; no recognizable pattern; f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds predominate.

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT

Date: 02/19-02/22/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.936	2.072	2.03	95	102	6.8
Benzene	0.000	0.184	0.184	0.2	92	92	0.0
Toluene	0.000	0.194	0.192	0.2	97	96	1.0
Ethyl Benzene	0.000	0.188	0.188	0.2	94	94	0.0
Xylenes	0.000	0.548	0.550	0.6	91	92	0.4
TPH (diesel)	0	296	293	300	99	98	1.1
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

4 of 2

CHAIN OF CUSTODY RECORD

February 19, 1993 PAGE 1 OF 1

PROJECT NAME ALAMEDA CO. GSA

ADDRESS SANTA RITA JAIL
OLD GRAYSTONE

PROJECT NO. 6-93-5036

SAMPLED BY [signature] BART MILLER

LAB NAME

ESE Environmental Science & Engineering, Inc.
A CH2M HILL company
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-5323

SAMPLE #	DATE	TIME	LOCATION	ANALYSES TO BE PERFORMED: TPH-G (8015m)	ANALYSES TO BE PERFORMED: BTEX (8020)	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
6	2/19/93	8:45	RW CORNER N SIDEWALL	✓	✓	SOIL	1	2" diameter brass sleeves.
7	2/19/93	12:57	NE CORNER N SIDEWALL	✓	✓	SOIL	1	Samples collected at capillary fringe.

No. 21577
No. 21578

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature] (Galvin)	2/22/93	0800
2. [signature]	[signature] (Lackey)	2/22/93	1:50
3.			
4.			
5.			

2 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: PATRICK GALVIN

SPECIAL SHIPMENT REQUIREMENTS: COLD TRANSPORT

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):

48 HR T.A. Please

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	
CONFORMS TO RECORD	

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: Alameda Co. GSA; Santa Rita Jail, Old Greystone; #6-93-5036	Date Sampled: 03/01/93 Date Received: 03/02/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 03/03/93
	Client P.O:	Date Analyzed: 03/04/93

Low Boiling Point (C6-C12) TPH* as Gasoline and BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(G)+	Benzene	Toluene	Ethyl Benzene	Xylenes	% Rec. Surrogate
21667	8	S	ND	ND	ND	ND	ND	108
21668	9	S	ND	ND	ND	ND	ND	107
21669	10	S	ND	ND	ND	ND	ND	107
21670	11	S	ND	ND	ND	ND	ND	107
21671	12	S	ND	ND	ND	ND	ND	108
21672	13	S	ND	ND	ND	ND	ND	108
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L and soils in mg/kg

#cluttered chromatogram; sample peak co-elutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified gasoline; b) heavier gasoline range compounds predominate (aged gasoline?); c) lighter gasoline range compounds predominate (the most mobile gasoline compounds); d) heavy and light gasoline range compounds predominate (aged gasoline together with introduced light compounds?); e) gasoline range compounds predominate; no recognizable pattern; f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds predominate.

EH Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: Alameda Co. GSA; Santa Rita Jail, Old Greystone; #6-93-5036	Date Sampled: 03/01/93 Date Received: 03/02/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 03/03/93
	Client P.O:	Date Analyzed: 03/04/93

Medium Boiling Point (C10-C23) TPH* as Diesel

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(D)+
21672	13	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L
		S	10 mg/kg

*water samples are reported in ug/L and soils in mg/kg

cluttered chromatogram; sample peak co-elutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified diesel; b) diesel range compounds predominate; no recognizable pattern; c) diesel range compounds together with gasoline range compounds; d) gasoline range compounds predominate; e) medium boiling point pattern that does not match diesel(aged diesel?); f) one to a few isolated peaks present; g) oil range compounds predominate.

Edward Hamilton, Lab Director

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Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: Alameda Co. GSA; Santa Rita Jail, Old Greystone; #6-93-5036	Date Sampled: 03/01/93 Date Received: 03/02/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 03/03/93
	Client P.O:	Date Analyzed: 03/03/93

Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) *

Standard Methods 5520 B&F or 503 D&B for solids and 5520 B&F or 503 A&B for liquids

Lab ID	Client ID	Matrix	TRPH
21672	13	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	5 mg/L
		S	50 mg/kg

*water samples are reported in mg/L and soils in mg/kg

Edward Hamilton, Lab Director

ANACH 6

CHAIN OF CUSTODY RECORD

DATE March 1, 1993 PAGE 1 OF 1

PROJECT NAME Alameda Co. GSA

ADDRESS Santa Rita Jail
Old Graystone

PROJECT NO. 6-93-5036

SAMPLED BY [signature] Bart Miller

LAB NAME McCampbell Analytical

SAMPLE #	DATE	TIME	LOCATION	TPH-G (8015M)	BTEX (8020)	TPH-D (8015M)	SVOCs (8270)	HVOCs (8010)	Total Oil & Grease 5520 E&F					MATRIX	NUMBER OF CONTAINERS
														MATRIX	
8	3/1/93	8:40	NE Corner	✓	✓									Soil	1
9	"	10:20	N Sidewall	✓	✓									"	1
10	"	12:00	E Sidewall	✓	✓									"	1
11	"	13:10	E Sidewall	✓	✓									"	1
12	"	14:00	E Sidewall	✓	✓									"	1
13	"	16:00	S Sidewall	✓	✓	✓	✓	✓	✓					"	1

ANALYSES TO BE PERFORMED

Environmental Science & Engineering, Inc.
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-9323

REMARKS (CONTAINER, SIZE, ETC.)

No. 21667
No. 21668
No. 21669
No. 21670
No. 21671
No. 21672

ICE/T° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
APPROPRIATE CONTAINERS ✓

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature]	3/2/93	0700
2. [signature]	[signature]	3/2/93	4:37pm
3.			
4.			
5.			

6 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: Patrick Galvin

SPECIAL SHIPMENT REQUIREMENTS: Cold Transport

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):
Regular Turnaround, Direct Client Billing with Pete Kinney, Alameda County GSA, 4400 MacArthur Bl., Oakland 94619, (510)535-6280.

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS

REC'D GOOD CONDTN/COLD

CONFORMS TO RECORD

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: Alameda Co. GSA; Santa Rita Jail, Old Greystone; #6-93-5036	Date Sampled: 03/02/93
		Date Received: 03/03/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 03/03/93
	Client P.O:	Date Analyzed: 03/04/93

Low Boiling Point (C6-C12) TPH* as Gasoline and BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(G)+	Benzene	Toluene	Ethyl Benzene	Xylenes	% Rec. Surrogate
21673	14	S	ND	ND	ND	ND	ND	109
21674	15	S	ND	ND	ND	ND	ND	108
21675	16	S	ND	ND	ND	ND	ND	108
21676	17	S	ND	ND	ND	ND	ND	109
21677	18	S	ND	ND	ND	ND	ND	108
21678	19	S	ND	ND	ND	ND	ND	104
21679	20	S	ND	ND	ND	ND	ND	108
21680	21	S	ND	ND	ND	ND	ND	106
21681	22	S	ND	ND	ND	ND	ND	106
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L and soils in mg/kg

#cluttered chromatogram; sample peak co-elutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified gasoline; b) heavier gasoline range compounds predominate (aged gasoline?); c) lighter gasoline range compounds predominate (the most mobile gasoline compounds); d) heavy and light gasoline range compounds predominate (aged gasoline together with introduced light compounds?); e) gasoline range compounds predominate; no recognizable pattern; f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds predominate.

Edward Hamilton, Lab Director

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County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: Alameda Co. GSA; Santa Rita Jail, Old Greystone; #6-93-5036	Date Sampled: 03/02/93 Date Received: 03/03/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 03/03/93
	Client P.O:	Date Analyzed: 03/04/93

Medium Boiling Point (C10-C23) TPH* as Diesel

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(D)+
21673	14	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L
		S	10 mg/kg

+water samples are reported in ug/L and soils in mg/kg

cluttered chromatogram; sample peak co-elutes with surrogate peak

*The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified diesel; b) diesel range compounds predominate; no recognizable pattern; c) diesel range compounds together with gasoline range compounds; d) gasoline range compounds predominate; e) medium boiling point pattern that does not match diesel(aged diesel?); f) one to a few isolated peaks present; g) oil range compounds predominate.

Edward Hamilton, Lab Director

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Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: Alameda Co. GSA; Santa Rita Jail, Old Greystone; #6-93-5036	Date Sampled: 03/02/93
		Date Received: 03/03/93
	Client Contact:Peter Kinney,Pat Galvin (ESE)	Date Extracted: 03/03/93
	Client P.O:	Date Analyzed: 03/03/93

Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) *

Standard Methods 5520 E&F or 503 D&E for solids and 5520 B&F or 503 A&B for liquids

Lab ID	Client ID	Matrix	TRPH
21673	14	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	5 mg/L
		S	50 mg/kg

*water samples are reported in mg/L and soils in mg/kg

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

County of Alameda General Services Agency 4400 MacArthur Blvd. Oakland, CA 94619	Client Project ID: Alameda Co. GSA; Santa Rita Jail, Old Greystone; #6-93-5036	Date Sampled: 03/02/93
		Date Received: 03/03/93
	Client Contact:Peter Kinney,Pat Galvin(ESE)	Date Extracted: 03/04/93
	Client P.O:	Date Analyzed: 03/04/93

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	21673			
Client ID	14			
Matrix	S			
Compound(1)	Concentration*	Concentration*	Concentration*	Concentration*
Chloromethane	ND			
Vinyl Chloride(2)	ND			
Bromomethane	ND			
Chloroethane	ND			
Trichlorofluoromethane	ND			
1,1-Dichloroethene	ND			
Methylene Chloride(3)	ND			
trans 1,2-Dichloroethene	ND			
1,1-Dichloroethane	ND			
cis 1,2-Dichloroethene	ND			
Chloroform (4)	ND			
1,1,1-Trichloroethane	ND			
Carbon Tetrachloride(5)	ND			
1,2-Dichloroethane	ND			
Trichloroethene	ND			
1,2-Dichloropropane	ND			
Bromodichloromethane	ND			
2-Chloroethyl Vinyl Ether(6)	ND			
cis 1,3-Dichloropropene	ND			
trans 1,3-Dichloropropene	ND			
1,1,2-Trichloroethane	ND			
Tetrachloroethene (7)	ND			
Dibromochloromethane	ND			
Chlorobenzene	ND			
Bromoform(8)	ND			
1,1,2,2-Tetrachloroethane	ND			
1,3-Dichlorobenzene	ND			
1,4-Dichlorobenzene	ND			
1,2-Dichlorobenzene	ND			

Detection limit unless otherwise stated: water, ND < 0.5ug/L; soil, ND < 50ug/kg.

* water samples are reported in ug/L and soils in ug/kg

(1) IUPAC allows "ylene" or "ene"; ex. ethylene or ethene; (2) chloroethene; (3) dichloromethane; (4) trichloromethane, (5) tetrachloromethane; (6) (2-chloroethoxy) ethene; (7) perchlorethylene or perclor; (8) tribromomethane; (9) unidentified peak(s) present.

Edward Hamilton, Lab Director

ANACS, B

CHAIN OF CUSTODY RECORD

DATE March 2, 1993 PAGE 1 OF 1

PROJECT NAME Alameda Co. GSA

ADDRESS Santa Rita Jail - Old Graystone

PROJECT NO. 6-93-5036

SAMPLED BY [signature] Bart Miller

LAB NAME

ESE Environmental Science & Engineering, Inc.

4080 Nelson Avenue Suite J Concord, CA 94520

(415) 685-4053

Fax (415) 685-3323

SAMPLE #	DATE	TIME	LOCATION	TPH-G (8015m)	BTEX (8020)	8270	8010	TPH-D (8015m)	TOG (5520 B/F)	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
14	3/2/93	9:05	South Wall	✓	✓	✓	✓	✓	✓	Soil	1	Capillary Fringe
15	"	11:05	SE Corner	✓	✓					"	1	"
16	"	11:25	South Wall	✓	✓					"	1	10' Below Grade
17	"	11:35	East Wall	✓	✓					"	1	"
18	"	12:00	North Wall	✓	✓					"	1	"
19	"	13:10	West Wall	✓	✓					"	1	Capillary Fringe (Retake of Sample 4)
20	"	13:55	West Wall	✓	✓					"	1	10' Below Grade
21	"	12:50	North Wall	✓	✓					"	1	"
22	"	12:35	West Wall	✓	✓					"	1	"

No. 21673
No. 21674
No. 21675
No. 21676
No. 21677
No. 21678
No. 21679
No. 21680
No. 21681

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. [signature]	[signature]	3/3	10:02am
2.			
3.			
4.			
5.			

9 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: Patrick Galvin

SPECIAL SHIPMENT REQUIREMENTS: Cold Transport

INSTRUCTIONS TO LABORATORY (handling, analy): Normal T.A.T. (per client instructions)

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS

REC'D GOOD CONDTN/COLD

CONFORMS TO RECORD