SDMS DOCID # 1150069

~~DRAFT REPORT~~
SUBSURFACE INVESTIGATION
FORMER GETTY PROPERTY
SANTA FE SPRINGS, CALIFORNIA
FOR WALKER PROPERTIES

DAMES & MOORE
JOB NO. 14315-002-01

July 1, 1985

Dames & Moore

8.1S/4-COV

# TABLE OF CONTENTS


| Section | | Page |
|---|---|---|
| 1.0 | INTRODUCTION | 1 |
| 1.1 | BACKGROUND | 1 |
| 1.2 | PURPOSE AND SCOPE | 2 |
| 2.0 | INVESTIGATIVE METHODS | 2 |
| 2.1 | HEALTH AND SAFETY PLAN | 2 |
| 2.2 | DRILLING AND SAMPLING | 3 |
| 2.3 | ANALYTICAL TESTING PROGRAM | 4 |
| 3.0 | SUMMARY OF BORINGS | 5 |
| 4.0 | SUMMARY OF ANALYTICAL RESULTS | 7 |
| 5.0 | SUMMARY OF FINDINGS | 8 |
| | TABLES | |
| | FIGURES | |
| | APPENDIX A - ANALYTICAL RESULTS | |


# LIST OF TABLES


| Table | |
|---|---|
| 1 | ANALYTICAL TESTING PROGRAM |
| 2 | SUMMARY OF ANALYTICAL RESULTS |

# 1.0 INTRODUCTION

This draft report presents the results of our subsurface investigation and soil sampling program for the property located southeast of the intersection of Lakeland Road and Bloomfield Avenue in Santa Fe Springs, California. This investigation was designed to address concerns expressed by the California Department of Health Services (DHS) regarding the possibility that potentially hazardous substances occur onsite and may still be present either at the surface or in the shallow subsurface.

## 1.1 BACKGROUND

Prior to development of the soil sampling plan, Dames & Moore conducted a review of available data pertaining to site history. Sources of this information included:

- Historical aerial photographs of the site;
- Historical topographic maps from 1925, 1949, and 1972;
- Sladden Engineering Report of September 6, 1967;
- Conversations with the property owner, Mr. George Walker, and with Ms. Harriet Tregoning of the DHS; and
- Preliminary Site Assessment File from the DHS

Review of this information indicated the presence of one existing and two buried sumps as well as several small tanks (see Figure 1). It is our understanding that the sumps were primarily used for disposal of fluids used in drilling operations. In 1967, Sladden Engineering graded the site. Grading activities included the removal of mud and debris from the sumps, spreading these materials onsite in order to promote drying, and placing a mixture of the air dried material and "clean" fill (in proportions varying between one to three parts "clean" dry soil to one part sump material) to the final grade. In addition, a topographic depression (drainage) in the eastern portion of the site was filled to the new grade (Figure 1).

mix

Several above-ground storage tanks are apparent in the 1959 aerial photograph (Figure 1). Two large tanks located near the southwest corner of the property are still present today, while only three of the smaller tanks which were located in the northern portion of the property are still present.

## 1.2 PURPOSE AND SCOPE

The purpose of our investigation was to evaluate whether potentially hazardous substances are present in the shallow soils. Areas of particular concern are: (1) in the vicinity of existing and former locations of storage tanks; (2) areas underlain by air-dried fill material; and, (3) areas identified as sumps in historical aerial photographs and topographic maps.

As defined in our Soil Sampling Plan of March 20, 1985, the objectives of our investigation were accomplished by a scope of work which included the following tasks:

- Preparation of a site-specific Health & Safety Plan;
- Soil Sampling Program;
- Analytical Testing Program; and,
- Data Review and Report Preparation.

These tasks are described in more detail below..

# 2.0 INVESTIGATIVE METHODS

## 2.1 HEALTH AND SAFETY PLAN

A site-specific Health and Safety Plan was developed prior to implementation of site activities. Basically, the plan: (1) identifies and describes the potentially hazardous substances which may be present at the site; (2) specifies protective equipment utilized during onsite activities; and, (3) outlines emergency measures to be implemented in the event unanticipated and/or potentially hazardous conditions are encountered during field activities. All Dames & Moore personnel and subcontractors were required to review

and understand the Health and Safety Plan prior to commencement of the site investigation.

## 2.2 DRILLING AND SAMPLING

11 Borings

During the period 22 April to 26 April 1985, a total of 11 borings were completed at the locations shown on Figure 1. Borings were drilled at locations 1 through 6 as recommended in our Soil Sampling Plan dated 20 March 1985. In concurrence with Ms. Tregoning of the DHS, the borings at locations 7 and 8 were changed to more adequately assess conditions in these two areas. As shown on Figures 2 and 3, angle borings were drilled in these areas in order to obtain soil samples from below underground or above-ground storage tanks.

The borings were drilled using a Mobile B-80-14 drill rig with 8-inch diameter hollow stem augers. A continuous log of the soils and subsurface conditions encountered in each boring was maintained by the site geologist. The boring logs are presented in Figures 4 through 12. Soils were classified in accordance with the Unified Soils Classification System (Figure 13). All borings were advanced until non-oily, natural soil was encountered.

Undisturbed soil samples were collected at regular intervals using a Dames & Moore U-type sampler (Figure 14) equipped with 2.5-inch long stainless steel sample sleeves. The sampler was passed through the hollow stem of the auger and driven 18 inches into undisturbed soil with a 140-pound hammer at a 30-inch drop. Blow counts were recorded at 6-inch intervals for each sample driven. The exposed ends of the soil samples in the stainless steel sleeves were wrapped with teflon sheeting and then covered with tight fitting plastic end caps. The end caps were then secured to the stainless steel sleeves with electrical tape. Samples were appropriately labeled and placed in coolers refrigerated with dry ice. Chain of custody records were completed for all samples, and were transferred with the samples via overnight courier to the analytical laboratory.

Organic vapors emitted from the soil samples were measured using an hnu model PI-101 photoionization detector (PID) calibrated to a benzene reference standard. The measured values are presented in the boring logs (Figures 4 through 12) and are listed in P.I.D. units. These values were used as a guide in sample selection for analytical testing.

Prior to the driving of each sample, the air within the hollow stem of the auger was monitored with an explosimeter for the presence of explosive gases. When explosive gases were detected in concentrations greater than 60% of the Lower Explosive Limit (L.E.L.), the boring was purged with nitrogen to displace the potentially explosive gases.

? 60% LEL

## 2.3 ANALYTICAL TESTING PROGRAM

Analytes

Selected samples and sample composites were analyzed by California Analytical Laboratories in Sacramento, California for total organic carbon (TOC), total organic halogens (TOX), volatile halogenated organics (EPA Method 8010), volatile aromatics (EPA Method 8020), organochlorine pesticides and polychlorinated biphenyls (PCB's) (EPA Method 8080), and inorganic persistent and bioaccumulative toxic substances* (metals). Table 1 lists which samples were composited as well as the sample depths and analyses performed. The samples were composited in consultation with Ms. Tregoning of the DHS, based on physical appearance of the samples and photoionization detector (PID) readings. In general, soil samples with the highest PID ratings in each boring were composited for analysis. The analytical results are contained in Appendix A.

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* As defined in Title 22 of the California Administrative Code Article 11, Section 66699.

Analytes

## 3.0 SUMMARY OF BORINGS

This section presents a brief summary of conditions encountered in each boring. The boring locations are shown in Figures 1, 2, and 3. The instrument readings (explosimeter and photoionization detector values) are given on the boring logs.

Boring 1 Angle boring beneath large storage tank

0'-14' Silty sand (fill).

14'-70' Medium to coarse grained sand (natural soil).

Boring 2 Angle boring beneath large storage tank

0'-9' Silty sand (fill).

9'-13' Silt (fill) with some very fine sand.

13'-40' Fine to coarse sand (natural soil).

Boring 3 Former sump location

0'-2' Silt (fill) with some sand.

2'-7' Silty sand (fill).

7'-14' Fine to coarse sand (natural soil).

Boring 4 Former sump location

0'-7' Sandy silt (fill).

7'-10' Silty clay (fill).

10'-12' Silty sand (fill).

12'-17' Fine to medium grained sand (natural soil).

Boring 5A Location of former drainage

0'-9' Silt with some sand (fill), contains oily material.

9'-15' Silty sand (fill).

15'-21' Medium to coarse sand (natural soil).

Boring 5B Location of former drainage

0'-4' Silts and clay (fill).

5'-18' Silty sand (fill).

18'-21' Medium grained sand (natural soil).

**Boring 6** Former location of sump

0'-4' Silt (fill).

4'-10' Silty sand (fill).

10'-19' Medium to coarse grained sand (natural soil).

**Boring 7A** Angle boring beneath storage tank impound ?

0'-18' Silty sands and clayey silts (fill).

18'-35' Fine to coarse sand (natural soil).

**Boring 7B** Angle boring beneath underground storage tank

0'-13' Clayey silts (fill).

13'-17' Silty sands (fill).

17'-26' Fine to medium sand (natural soil).

Results? ??

**Boring 7C** Angle boring beneath impound at former location of storage tanks

0'-17' Silts and silty sand (fill).

17'-25' Fine to coarse sand (natural soil).

**Boring 8** Angle boring beneath former location of storage tank

0'-14' Silt and silty sand (fill) with oily material present to a depth of about 3 feet.

14'-25' Fine to coarse sand (natural soil).

★ fill avg to 14'?!

~~pg 7 & 8 to these missing~~

## 4.0 SUMMARY OF ANALYTICAL RESULTS

The results of the chemical analyses are contained in Appendix A and summarized in Table 2. ~~The sample composites from Borings 5B and 7B contained significant concentrations of several potentially hazardous compounds.~~ The sample from Boring 5B, which penetrated air-dried sump material mixed with "clean" fill soil, contained relatively low but detectable concentrations of volatile halogenated organic compounds, (1,1,1-trichloroethane, trichloroethylene, tetrachloroethylene (PCE)), and toluene (Appendix A, pages A-10 and A-20).

Boring 7B was drilled at an angle beneath an underground tank (Figure 2). However, the two samples that were composited for chemical analysis were collected at depths of 2 and 3.5 feet probably within the fill material around the tank. The analytical results indicate that the fill material contains significant concentrations of potentially hazardous substances. The composite sample was found to contain several volatile halogenated organic compounds (1,1-dichloroethane, 1,1,1-trichloroethane, trichloroethylene, and tetrachloroethylene (PCE)) in concentrations ranging from about 4 to 32 ppm (Appendix A, page A-13). In addition, the composite sample from Boring 7B was found to contain 94 ppm of PCB-1248 (Appendix A, Page A-32). This value exceeds the Total Threshold Limit Concentration (TTLC) for PCBs (50 ppm) as specified in Title 22 of the California Administrative Code.

In addition to the samples from Borings 5B and 7B, the composite samples from Borings 5A and 7A contain relatively low (<1 ppm) concentrations of toluene (Appendix A, pages A-19 and A-22).

The results of the chemical analysis for inorganic persistent and bioaccumulative substances (metals) are listed in Appendix A (pages A-34 to A-43). Samples were analyzed only for total concentration of these compounds. None of the samples analyzed contained inorganic compounds at a total concentration in excess of the respective TTLCs. However, in two samples, the total concentration of lead found exceeded the Soluble Threshold Limit Concentration (STLC) for lead (5 mg/l or 50 mg/kg). The lead concentration in the sample

from Boring 5B was 88 mg/kg while the concentration of lead in the composite sample from Boring 7B was 1,450 mg/kg. The sample from Boring 5B was also found contain 2,520 mg/kg of barium, which is above the STLC for barium (100 mg/l or 1000 mg/kg).

Ba

1450 ppm Pb = STLC

## 5.0 SUMMARY OF FINDINGS

A total of 11 borings were drilled and sampled at the locations shown on Figures 1, 2, and 3. A description of the materials encountered is contained in boring logs which are presented in Figures 4 through 11. For each boring, samples with relatively high photoionization detector (PID) readings were composited for chemical analyses which were performed as specified in Table 1. The samples and sample composites were analyzed for total organic carbon (TOC), total organic halogens (TOX), volatile halogenated organic compounds (EPA Method 8010), volatile aromatic compounds (EPA Method 8020), organochlorine pesticides and polychlorinated biphenyls (PCBs) (EPA method 8080), and inorganic persistent and bioaccumulative substances (metals). The results of the analyses are contained in Appendix A and summarized in Table 2.

5B

5A-5B

The sample from Boring 5B was found to contain relatively low (less than 1 ppm) but detectable concentrations of several halogenated organic compounds as well as toluene. Toluene was also detected in the composite sample from Boring 5A. Borings 5A and 5B were drilled through the fill which contains air-dried material which was removed from the former sumps.

7B 7B

The composite sample from Boring 7B, an angle boring drilled adjacent to an existing underground tank (Figure 2), contained several volatile halogenated organic compounds in concentrations ranging from 4 to 32 ppm. These compounds include 1,1-dichloroethane, 1,1,1-trichloroethane, trichloroethylene, and tetrachloroethylene (PCE) (Appendix A, page A-13). In addition, 94 ppm of PCB-1248 was detected in this composite sample.

C

TABLE 1

| Boring | Sample(s) | Depth(s) | Analyses Performed |
|---|---|---|---|
| 1 | [6-7-8-9] | 25'-40' | EPA 8010, 8020, TOX, TOC Article 11 Metals |
| 2 | [5-6] | 25'-30" | EPA 8010, 8020, TOX, TOC Article 11 Metals |
| 3 | [5-6] | 11"-13.5" | EPA 8010, 8020, 8080, TOX, TOC, Article 11 Metals |
| 4 | [1-2-3-4] | 1.5'-8.5' | EPA 8010, 8020, 8080, TOX, TOC, Article 11 Metals |
| 5A | [2-3] | 3.5'-6' | EPA 8010, 8020, 8080, TOX, TOC, Article 11 Metals |
| 5B | 2 | 3.5' | EPA 8010, 8020, 8080, TOX, TOC, Article 11 Metals |
| 6 | [3-4-5-6] | 6'-13.5' | EPA 8010, 8020, 8080, TOX, TOC, Article 11 Metals |
| 7A | [2-3-4] | 4.5'-9.5' | EPA 8010, 8020, 8080, TOX, TOC, Article 11 Metals |
| 7B | [1-2] | 2'-3.5' | EPA 8010, 8020, 8080, TOX, TOC, Article 11 Metals |
| 8 | [8-9] | 20.5'-25' | EPA 8010, 8020, 8080, TOX, TOC, Article 11 Metals |

[ ] Indicates composite sample

TABLE 2

SUMMARY OF ANALYTICAL RESULTS

8000 ppm @ 25-40' ?

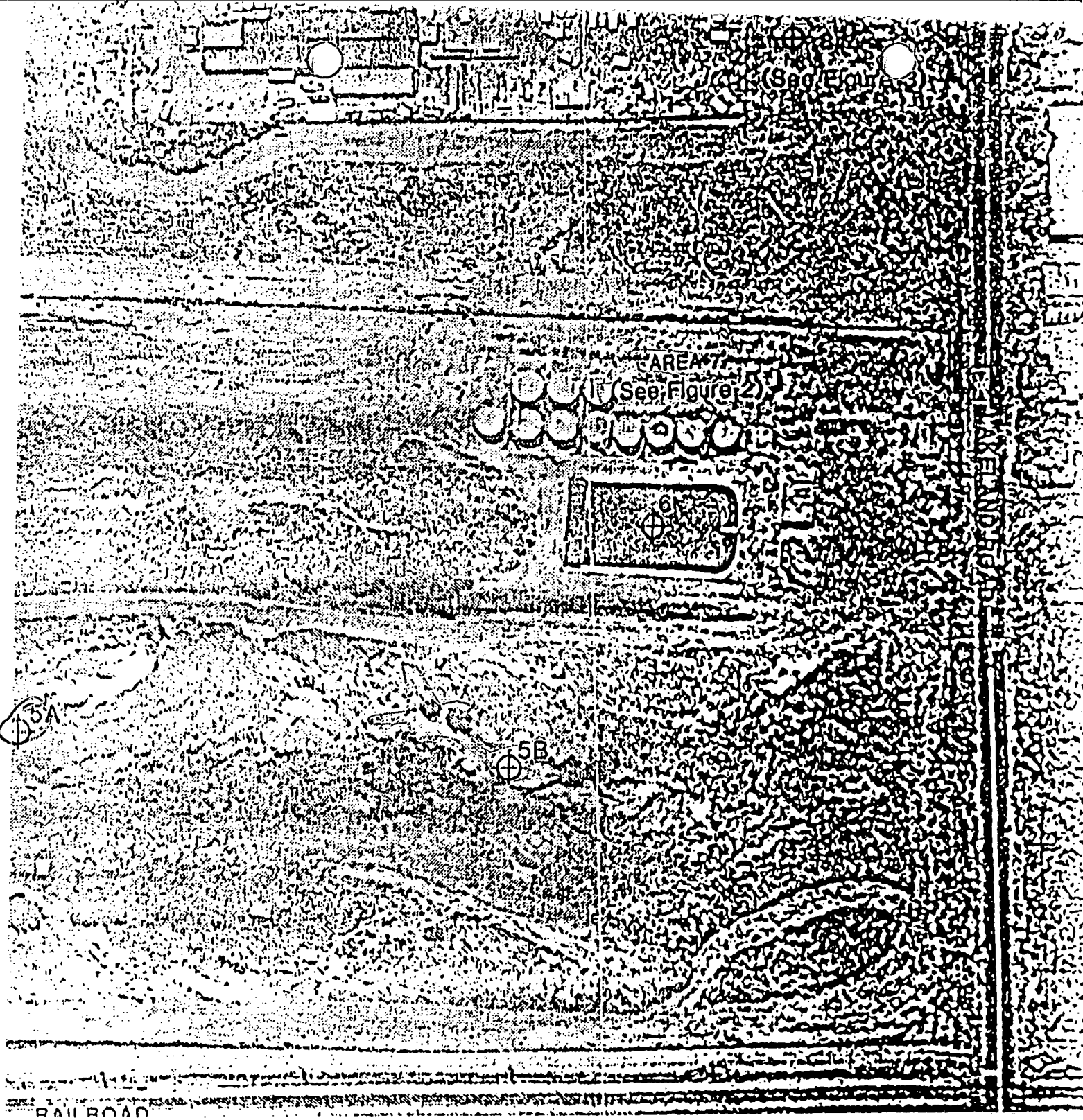
| Boring | Samples | Depth | %TOC | %TOX | Volatile Halogenated Organics 8010 | Volatile Aromatics 8020 | Total Lead (mg/kg) | Other (mg/kg) |
|---|---|---|---|---|---|---|---|---|
| 1 | (4) [6-7-8-9] | 25'-40' | 0.2 ≈0.8 | ND | ND | ND | ND | |
| 2 | (2) [5-6] | 25'-30' | ND | ND | ND | ND | ND | |
| 3 | (2) [5-6] | 11'-13.5' | ND | ND | ND | ND | ND | |
| 4 | (4) [1-2-3-4] | 1.5'-8.5' | ND | ND | ND | ND | 5.1 | |
| 5A | (2) [2-3] | 3.5'-6' | 3 ≈6% | ND | ND | Yes | 30 ≈60 | |
| 5B | (1) 2 | 3.5' | 3 | ND | Yes | Yes | 88 | Ba = 2,520 |
| 6 | (4) [3-4-5-6] | 6'-13.5' | ND | ND | ND | ND | 6.5 | |
| 7A | (3) [2-3-4] | 4.5'-9.5' | 0.2 ≈0.6 | ND | ND | Yes | ND | |
| 7B | (2) [1-2] | 2-3.5' | 7 ≈14 | ND | Yes | Yes | 1,450 ≈2900 | PCB = 94 ppm |
| 8 | (2) [8-9] | 20.5'-25' | ND | ND | ND | ND | ND | |

ND: Not detected (See Appendix A for detection limits).
[ ]: Indicates composite sample.

??? Where was Boring #1?

PCB = 200 (composited) ≈ 3000 ppm

8/IS/4-T2


(See Figure 3)
AREA 7
(See Figure 2)
6
5A
5B
RAILROAD

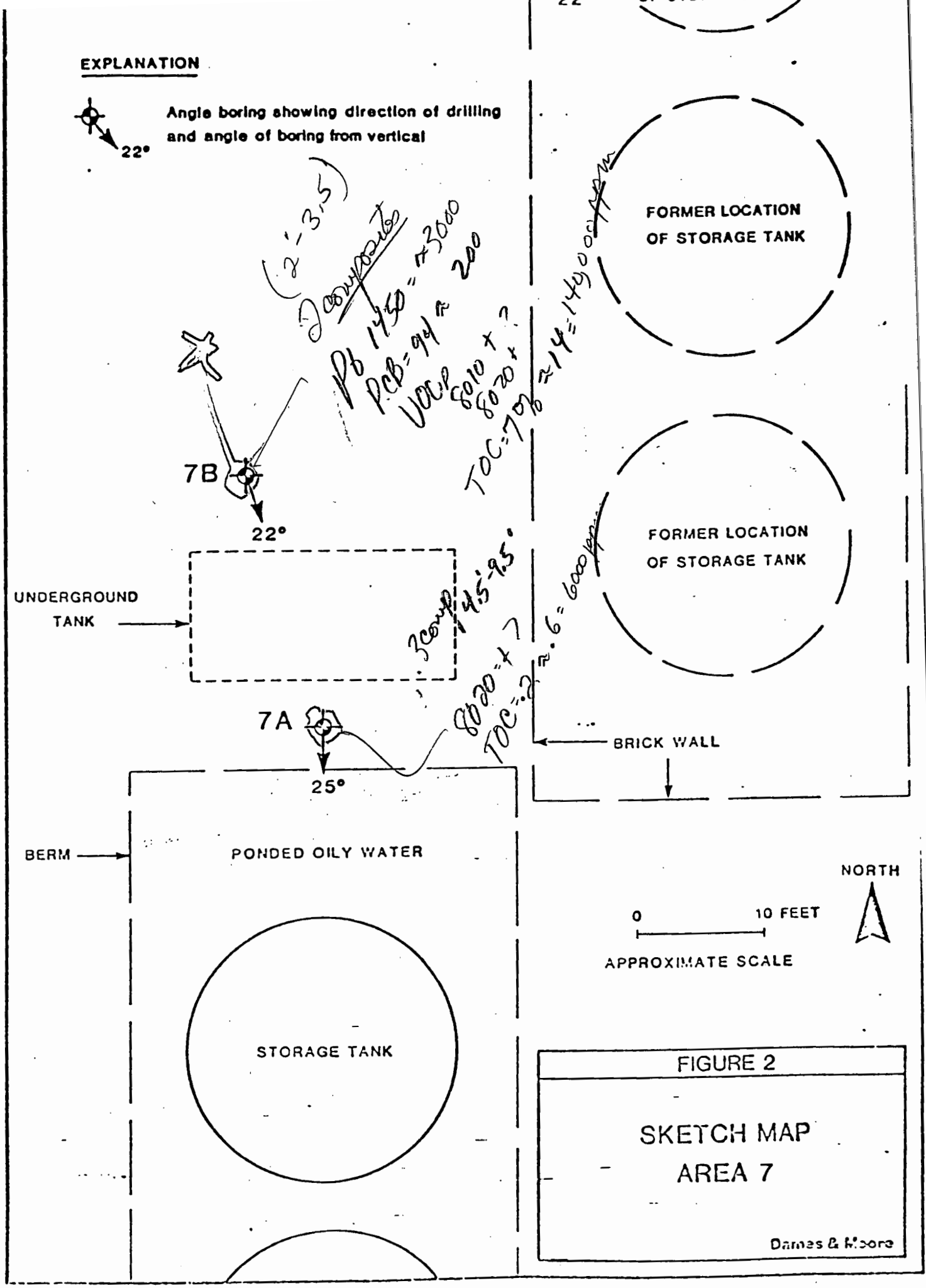
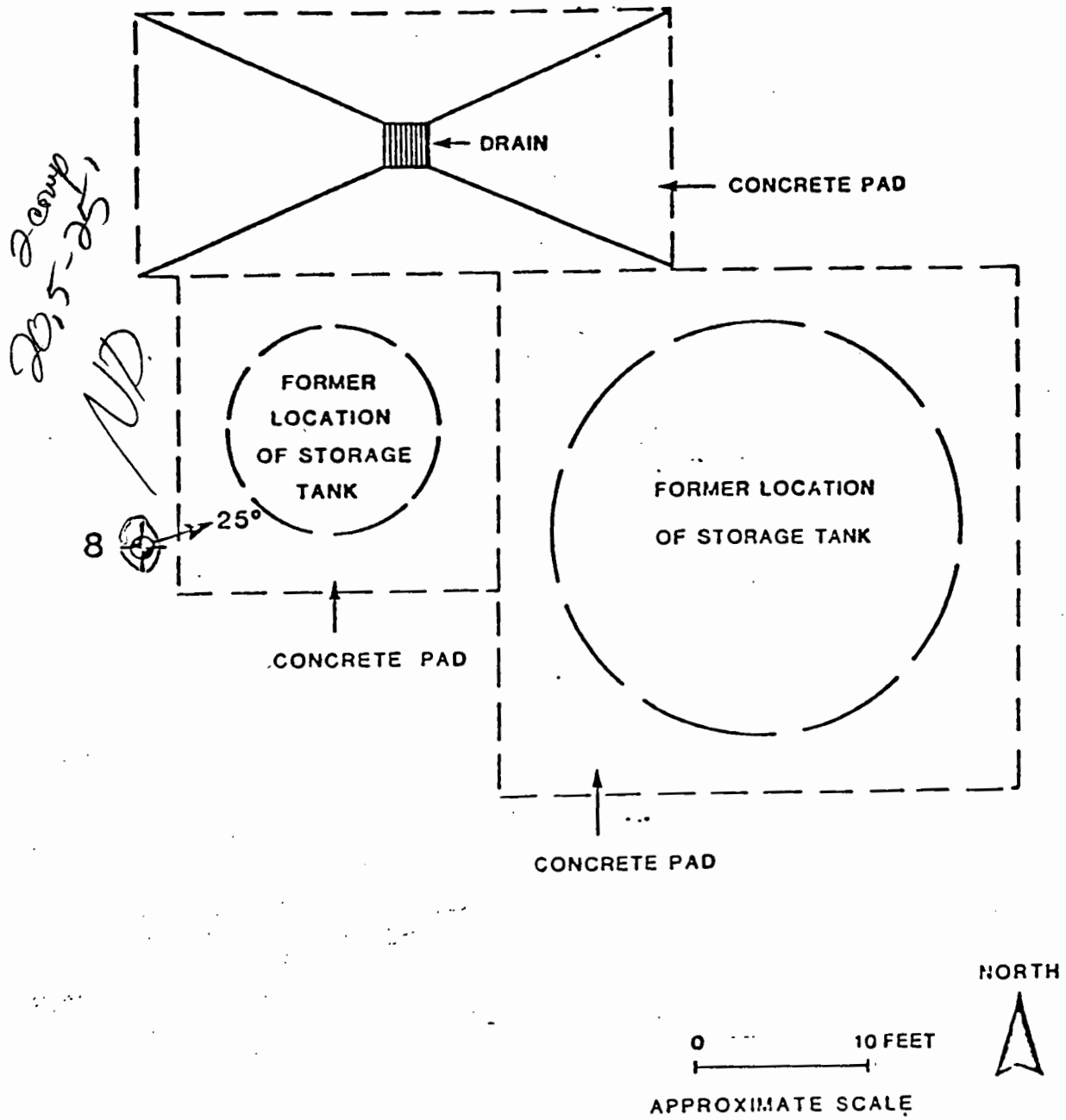



FIGURE 2

SKETCH MAP
AREA 7




EXPLANATION

22° Angle boring showing direction of drilling and angle of boring from vertical

FIGURE 3

SKETCH MAP
VICINITY OF BORING 8

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SAMPLING METHOD: DAMES & MOORE U-TYPE

DRILLING METHOD: 8 INCH HOLLOW STEM AUG.

Boring #1 - See also HRS Report

| DEPTH IN FEET VERTICAL | DEPTH IN FEET LINEAR | ANALYTICAL DATA LABORATORY | | | ANALYTICAL DATA FIELD SOIL pH | ANALYTICAL DATA FIELD P.I.D. | SAMPLE DATA %LEL | SAMPLE DATA BLOWS PER FOOT | SAMPLE DATA SAMPLE DEPTH | SAMPLE DATA SAMPLE NUMBER | SAMPLE DATA SAMPLE TYPE | SOIL TYPE USCS | SOIL TYPE SYMBOLS | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.3 | | | | | | 30 | 0 | 153 | 0.5 | 1 | — | SM | | BLACK TO BROWN SILTY, FINE TO VERY FINE SAND WITH TRACE GRAVEL UP TO 1 CM DIAMETER |
| 4.8 | 5 | | | | | 35 | 0 | 200 | 5 | 2 | — | | | REDDISH-BROWN SILTY SAND AS ABOVE, NO GRAVEL |
| 9.7 | 10 | | | | | 60 | 0 | 45 | 10.5 | 3 | — | | | BROWN SILTY SAND AS ABOVE |
| 13.9 | 15 | | | | | 50 | 100 | 145 | 15 | 4 | — | SP | | GREY FINE TO MEDIUM-GRAINED SAND |
| 18.5 | 20 | | | | | 90 | 100 | 193 | 20 | 5 | — | | | AS ABOVE |
| 23.2 | 25 | | | | | 170 | 100 | 186 | 25 | 6 | — | | | GREY SAND AS ABOVE |
| 27.8 | 30 | | | | | 130 | 100 | 200 | 30 | 7 | — | | | MEDIUM TO COARSE GREY SAND WITH LITTLE GRAVEL UP TO 1 CM DIAMETER |
| 32.5 | 35 | | | | | 110 | 100 | 200 | 35 | 8 | — | | | AS ABOVE |
| 37.1 | 40 | | | | | 100 | 100 | 200 | 40 | 9 | — | | | GREY MEDIUM-GRAINED SAND, WELL-ROUNDED |
| | 45 | | | | | | | | | | | | | (DRILLING GETS HARDER AT 46 FEET) |
| 46.4 | 50 | | | | | 90 | 100 | 156 | 50 | 10 | — | | | BROWN TO GREY MEDIUM TO COARSE SUBROUNDED TO ROUNDED SAND WITH TRACE GRAVEL UP TO 1 CM DIAMETER |
| | 55 | | | | | | | | | | | | | |
| 55.6 | 60 | | | | | 100 | 100 | 100 | 60 | 11 | — | | | BROWN FINE TO MEDIUM SAND, MOIST |
| | 65 | | | | | | | | | | | | | |
| 64.4 | 70 | | | | | | 100 | 200 | 69.5 | 12 | — | | | BROWN TO GREY MEDIUM TO COARSE SAND — BORING TERMINATED AT A DEPTH OF 70 FEET ON 4/25/85 |
| | 75 | | | | | | | | | | | | | |

100% LEL ?

11-65

FIGURE 4

LOG OF BORING

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BORING 2

SAMPLING METHOD: DAMES & MOORE U-TYPE

DRILLING METHOD: 8 INCH HOLLOW STEM AUG

| DEPTH IN FEET | | ANALYTICAL DATA | | | | | SAMPLE DATA | | | | | SOIL TYPE | | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LABORATORY | | | FIELD | | | | | | | | | |
| VERTICAL | LINEAR | | | | SOIL pH | P.I.D. | %LEL | BLOWS PER FOOT | SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE TYPE | USCS | SYMBOLS | |
| 0.83 | | | | | | 10 | 0 | 105 | 1 | 1 | — | SM | | BROWN FINE TO VERY FINE SILTY SAND |
| 5.1 | 5 | | | | | | 0 | 67 | 5.5 | 2 | — | | | AS ABOVE |
| 9.7 | 10 | | | | | 5 | 0 | 200 | 10.5 | 3 | — | ML | | BROWN TO GREEN SILT WITH LITTLE TO SOME VERY FINE SAND |
| 13.9 | 15 | | | | | | 0 | 200 | 15 | 4 | — | SP | | BROWN TO GREY FINE TO VERY FINE MICACEOUS SAND WITH LITTLE SILT |
| | 20 | | | | | | 30 | 200 | | | | | | NO RECOVERY |
| 23.2 | 25 | | | | | 50 | 40 | 250 | 25 | 5 | — | | | MEDIUM TO COARSE WELL-ROUNDED SAND WITH TRACE GRAVEL UP TO 3 CM DIAMETER |
| 27.8 | 30 | | | | | 20 | 40 | 200 | 30 | 6 | — | | | AS ABOVE |
| 32.5 | 35 | | | | | 15 | 50 | 184 | 35 | 7 | — | | | AS ABOVE, SAND IS FINE TO MEDIUM, NO GRAVEL |
| 37.1 | 40 | | | | | 7 | 30 | 250 | 40 | 8 | — | | | LIGHT BROWN FINE TO MEDIUM SAND, GRADES TO CONTAIN GRAVEL AT BIT |
| | 45 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 40.5 FEET ON 4/24/85 |

30-50% LEL
14-37

FIGURE 5

LOG OF BORING

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## BORING 3

SAMPLING METHOD: DAMES & MOORE U-TYPE

DRILLING METHOD: 8 INCH HOLLOW STEM AUGER

| DEPTH METERS | DEPTH FEET | ANALYTICAL DATA LABORATORY | | | ANALYTICAL DATA FIELD SOIL pH | ANALYTICAL DATA FIELD P.I.D. | SAMPLE DATA %LEL | SAMPLE DATA BLOWS PER FOOT | SAMPLE DATA SAMPLE DEPTH | SAMPLE DATA SAMPLE NUMBER | SAMPLE DATA SAMPLE TYPE | SOIL TYPE USCS | SOIL TYPE SYMBOLS | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1 | 0 | 48 | 1 | 1 | ■ | ML | | BROWN SILT WITH SOME MEDIUM SAND |
| | | | | | | 1 | 0 | 30 | 3.5 | 2 | ■ | SM | | BROWN FINE TO MEDIUM SILTY SAND |
| | 5 | | | | | 1 | 0 | 22 | 6.0 | 3 | ■ | | | AS ABOVE |
| | | | | | | 3 | 0 | 18 | 8.5 | 4 | ■ | SP | | BROWN FINE TO MEDIUM SAND WITH SOME SILT |
| | 10 | | | | | 1 | 0 | 44 | 11 | 5 | ■ | | | AS ABOVE, LITTLE TO TRACE SILT |
| | | | | | | 1 | 0 | 64 | 13.5 | 6 | ■ | | | GREY MEDIUM TO COARSE WELL-ROUNDED SAND WITH NO SILT, TRACE OF GRAVEL UP TO 2 CM DIAMETER |
| | 15 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 14 FEET ON 4/23/85 |

## BORING 4

SAMPLING METHOD: DAMES & MOORE U-TYPE

DRILLING METHOD: 8 INCH HOLLOW STEM AUGER

| DEPTH METERS | DEPTH FEET | ANALYTICAL DATA LABORATORY | | | ANALYTICAL DATA FIELD SOIL pH | ANALYTICAL DATA FIELD P.I.D. | SAMPLE DATA %LEL | SAMPLE DATA BLOWS PER FOOT | SAMPLE DATA SAMPLE DEPTH | SAMPLE DATA SAMPLE NUMBER | SAMPLE DATA SAMPLE TYPE | SOIL TYPE USCS | SOIL TYPE SYMBOLS | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1 | 0 | 79 | 1.5 | 1 | ■ | ML | | BROWN SANDY SILT, SAND IS VERY FINE TO FINE |
| | | | | | | 1 | 0 | 46 | 3.5 | 2 | ■ | | | AS ABOVE |
| | 5 | | | | | 1 | 0 | 86 | 6 | 3 | ■ | | | AS ABOVE, TRACE OF ANGULAR GRAVEL UP TO 1 CM DIAMETER |
| | | | | | | 1 | 0 | 123 | 8.5 | 4 | ■ | CL | | BROWN TO GREEN SILTY CLAY |
| | 10 | | | | | 1 | 0 | 128 | 11 | 5 | ■ | SM | | BROWN TO GREEN SILTY FINE SAND |
| | | | | | | 1 | 0 | 104 | 13.5 | 6 | ■ | SP | | BROWN FINE SAND WITH LITTLE SILT |
| | 15 | | | | | 1 | 0 | 94 | 16 | 7 | ■ | | | BROWN TO TAN FINE TO MEDIUM SAND |
| | 20 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 16.5 FEET ON 4/23/85 |

FIGURE 6

LOG OF BORING

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## BORING 5A

SAMPLING METHOD: DAMES & MOORE U-TYPE
DRILLING METHOD: 8 INCH HOLLOW STEM AUGER

| DEPTH METERS | DEPTH FEET | ANALYTICAL DATA LABORATORY | | | ANALYTICAL DATA FIELD SOIL pH | ANALYTICAL DATA FIELD P.I.D. | SAMPLE DATA %LEL | BLOWS PER FOOT | SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE TYPE | SOIL TYPE USCS | SOIL TYPE SYMBOLS | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 10 | 0 | 71 | 1 | 1 | | ML | | BROWN SILT WITH SOME SAND, TRACE GRAVEL |
| | | | | | | 12 | 0 | 42 | 3 | 2 | | | | BLACK SANDY SILT, SAND IS VERY FINE, SMELLS OF OIL |
| | 5 | | | | | 35 | 0 | 57 | 6 | 3 | | | | AS ABOVE, STRONG ODOR |
| | | | | | | 18 | 0 | 43 | 8.5 | 4 | | | | BROWN TO BLACK SILT WITH SOME SAND, SAND IS VERY FINE TO MEDIUM |
| | 10 | | | | | 30 | 0 | 49 | 11 | 5 | | SM | | BROWN TO BLACK SILTY, FINE TO MEDIUM SAND |
| | | | | | | 15 | 0 | 28 | 13.5 | 6 | | SM/SP | | BROWN TO GREY SILTY SAND TO SANDY SILT, SAND IS FINE TO COARSE |
| | 15 | | | | | 13 | 0 | 30 | 16.0 | 7 | | SP | | GREY MEDIUM TO COARSE SAND WITH TRACE GRAVEL UP TO 2 CM DIAMETER |
| | | | | | | 15 | 0 | 150 | 18.5 | 8 | | | | AS ABOVE |
| | 20 | | | | | 1 | 0 | 181 | 21 | 9 | | | | MEDIUM TO COARSE BROWN SAND, MOIST |
| | 25 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 21 FEET ON 4/22/85 |

## BORING 5B

SAMPLING METHOD: DAMES & MOORE U-TYPE
DRILLING METHOD: 8 INCH HOLLOW STEM AUGER

| DEPTH METERS | DEPTH FEET | ANALYTICAL DATA LABORATORY | | | ANALYTICAL DATA FIELD SOIL pH | ANALYTICAL DATA FIELD P.I.D. | SAMPLE DATA %LEL | BLOWS PER FOOT | SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE TYPE | SOIL TYPE USCS | SOIL TYPE SYMBOLS | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1 | 0 | 33 | 1.0 | 1 | | ML | | BROWN SILT WITH LITTLE VERY FINE SAND, CONTAINS ROOTS, SOME GRAVEL UP TO 2 CM DIAMETER |
| | | | | | | 20 | 0 | 37 | 2.5 | 2 | | CL | | BLACK GREASY AND SILTY CLAY WITH TRACE VERY FINE SAND |
| | 5 | | | | | 20 | 0 | 16 | 6.0 | 3 | | SM | | BROWN SILTY VERY FINE TO FINE SAND |
| | | | | | | 20 | 0 | 8 | 8.5 | 4 | | | | AS ABOVE |
| | 10 | | | | | 5 | 0 | 8 | 11 | 5 | | | | BROWN SILTY SAND AS ABOVE, SOME MEDIUM SAND |
| | | | | | | 8 | 0 | 15 | 13.5 | 6 | | | | BROWN SILTY SAND AS ABOVE |
| | 15 | | | | | 6 | 0 | 17 | 15 | 7 | | | | AS ABOVE |
| | | | | | | 5 | 0 | 22 | 18.5 | 8 | | SP | | MEDIUM-GRAINED LIGHT BROWN SAND WITH TRACE COARSE SAND |
| | 20 | | | | | 1 | 0 | 158 | 21 | 9 | | | | LIGHT BROWN MEDIUM SAND AS ABOVE, TRACE COARSE SAND |
| | 25 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 21.5 FEET ON 4/22/85 |

FIGURE 7

LOG OF BORING

BORING 6

SAMPLING METHOD:DAMES & MOORE U-TYP

DRILLING METHOD:8 INCH HOLLOW STEM AU

| DEPTH METERS | DEPTH FEET | ANALYTICAL DATA LABORATORY | | | ANALYTICAL DATA FIELD SOIL pH | ANALYTICAL DATA FIELD P.I.D. | SAMPLE DATA %LEL | SAMPLE DATA BLOWS PER FOOT | SAMPLE DATA SAMPLE DEPTH | SAMPLE DATA SAMPLE NUMBER | SAMPLE DATA SAMPLE TYPE | SOIL TYPE USCS | SOIL TYPE SYMBOLS | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | <1 | 0 | 183 | 1.5 | 1 | | ML | | BROWN SILT WITH SOME FINE TO COARSE ANGULAR SAND |
| | | | | | | 2 | 0 | 186 | 3.5 | 2 | | | | |
| | 5 | | | | | 20 | 0 | 102 | 6 | 3 | | SM | | BROWN SILTY SAND, SAND IS FINE TO VERY FINE |
| | | | | | | 30 | 0 | 74 | 8.5 | 4 | | | | AS ABOVE, SAND IS FINE TO MEDIUM |
| | 10 | | | | | 20 | 0 | 46 | 11 | 5 | | SP | | LIGHT BROWN MEDIUM TO COARSE WELL-ROUNDED SAND, WITH TRACE GRAVEL UP TO 1 CM DIAMETER |
| | | | | | | 20 | 0 | 78 | 13.5 | 6 | | | | AS ABOVE |
| | 15 | | | | | | 0 | 87 | | | | | | AS ABOVE |
| | | | | | | | 0 | 79 | 18.5 | 7 | | | | LIGHT BROWN MEDIUM TO COARSE SAND, AS ABOVE |
| | 20 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 19 FEET ON 4/23/85 |

FIGURE 8

LOG OF BORING

Dames & Moore

BORING 7A

SAMPLING METHOD: DAMES & MOORE U-TYPE

DRILLING METHOD: 8 INCH HOLLOW STEM AUGE

| DEPTH IN FEET | | ANALYTICAL DATA | | | | | SAMPLE DATA | | | | | SOIL TYPE | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LABORATORY | | | FIELD | | | | | | | | | |
| VERTICAL | LINEAR | | | | SOIL pH | P.I.D. | %LEL | BLOWS PER FOOT | SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE TYPE | USCS | SYMBOLS | DESCRIPTION |
| 1.4 | | | | | | 15 | 0 | 47 | 1.5 | 1 | ▬ | SM | | BLACK TO BROWN SILTY SAND, SAND IS VERY FINE |
| 4.2 | 5 | | | | | 25 | 0 | 109 | 4.5 | 2 | ▬ | ML | | BROWN CLAYEY SILT WITH LITTLE TO SOME VERY FINE SAND |
| 6.5 | | | | | | 28 | 0 | 157 | 7.0 | 3 | ▬ | | | AS ABOVE |
| 8.8 | 10 | | | | | 22 | 0 | 112 | 9.5 | 4 | ▬ | | | AS ABOVE |
| 11.1 | | | | | | 9 | 0 | 50 | 12 | 5 | ▬ | SM | | BROWN SILTY VERY FINE SAND |
| 13.4 | 15 | | | | | 12 | 0 | 49 | 14.5 | 6 | ▬ | ML | | BROWN CLAYEY SILT WITH SOME VERY FINE SAND |
| 15.8 | | | | | | 30 | 0 | 77 | 17 | 7 | ▬ | SM | | GREEN SILTY VERY FINE TO FINE SAND |
| 18.1 | 20 | | | | | 30 | 0 | 156 | 19.5 | 8 | ▬ | SP | | GREEN TO GREY VERY FINE SAND |
| | | | | | | | 0 | 142 | | | ▭ | | | NO RECOVERY |
| 23.2 | 25 | | | | | 50 | 50 | 154 | 25 | 9 | ▬ | | | AS ABOVE, GREY VERY FINE TO FINE SAND |
| 27.8 | 30 | | | | | 40 | 60 | 200 | 30 | 10 | ▬ | | | VERY COARSE SAND WITH SOME GRAVEL UP TO 2 CM DIAMETER |
| 32.2 | 35 | | | | | 37 | 60 | 200 | 34.5 | 11 | ▬ | | | GREY VERY COARSE SAND WITH GRAVEL |
| | 40 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 35 FEET ON 4/25/85 |

50-60% LEL

23-32'

FIGURE 9

LOG OF BORING

Dames & Moore

## BORING 7B

SAMPLING METHOD:DAMES & MOORE U-TYPE
DRILLING METHOD:8 INCH HOLLOW STEM AUGER

| DEPTH IN FEET VERTICAL | DEPTH IN FEET LINEAR | ANALYTICAL DATA LABORATORY | | | ANALYTICAL DATA FIELD SOIL pH | ANALYTICAL DATA FIELD P.I.D. | SAMPLE DATA %LEL | SAMPLE DATA BLOWS PER FOOT | SAMPLE DATA SAMPLE DEPTH | SAMPLE DATA SAMPLE NUMBER | SAMPLE DATA SAMPLE TYPE | SOIL TYPE USCS | SOIL TYPE SYMBOLS | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.9 | | | | | | 150 | 0 | 52 | 2.0 | 1 | ▬ | ML | | BROWN TO BLACK CLAYEY SILT WITH LITTLE VERY FINE SAND |
| 3.2 | | | | | | 110 | 0 | 71 | 3.5 | 2 | ▬ | | | AS ABOVE |
| 5.8 | 6 | | | | | 30 | 0 | 96 | 6.0 | 3 | ▬ | | | REDDISH-BROWN CLAYEY SILT WITH LITTLE VERY FINE SAND |
| 7.9 | | | | | | 15 | 0 | 81 | 8.5 | 4 | ▬ | | | AS ABOVE |
| 10.2 | 10 | | | | | 15 | 0 | 28 | 11 | 5 | ▬ | | | AS ABOVE |
| 12.5 | | | | | | 55 | 0 | 200 | 13.5 | 6 | ▬ | | | GREEN TO BROWN CLAYEY SILT WITH SOME VERY FINE SAND |
| 14.8 | 15 | | | | | 70 | 0 | 157 | 16 | 7 | ▬ | SM | | GREEN VERY FINE SILTY SAND |
| 17.2 | | | | | | 110 | 5 | 141 | 18.5 | 8 | ▬ | SP | | GREY VERY FINE TO FINE SAND |
| 19.0 | 20 | | | | | 150 | 10 | 180 | 20.5 | 9 | ▬ | | | AS ABOVE |
| 23.6 | 25 | | | | | 100 | 10 | 200 | 25.5 | 10 | ▬ | | | GREY MEDIUM SAND WITH TRACE TO LITTLE SMALL GRAVEL UP TO 1 CM DIAMETER |
| | 30 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 26.0 FEET ON 4/25/85 |

50% LEL 19-23' ??

## BORING 7C

SAMPLING METHOD:DAMES & MOORE U-TYPE
DRILLING METHOD:8 INCH HOLLOW STEM AUGER

| DEPTH IN FEET VERTICAL | DEPTH IN FEET LINEAR | ANALYTICAL DATA LABORATORY | | | ANALYTICAL DATA FIELD SOIL pH | ANALYTICAL DATA FIELD P.I.D. | SAMPLE DATA %LEL | SAMPLE DATA BLOWS PER FOOT | SAMPLE DATA SAMPLE DEPTH | SAMPLE DATA SAMPLE NUMBER | SAMPLE DATA SAMPLE TYPE | SOIL TYPE USCS | SOIL TYPE SYMBOLS | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4 | | | | | | 20 | 0 | 101 | 1.5 | 1 | ▬ | ML | | BROWN TO BLACK SILT WITH LITTLE VERY FINE SAND AND TRACE SMALL GRAVEL UP TO 1 CM DIAMETER |
| 3.2 | | | | | | 15 | 0 | 103 | 3.5 | 2 | ▬ | SM | | BLACK TO BROWN SILTY, VERY FINE SAND |
| 5.1 | 5 | | | | | 7 | 0 | 95 | 5.5 | 3 | ▬ | ML | | BLACK CLAYEY SILT WITH LITTLE VERY FINE SAND |
| 7.4 | | | | | | 5 | 0 | 127 | 8.0 | 4 | ▬ | | | AS ABOVE |
| 9.7 | 10 | | | | | 2 | 0 | 95 | 10.5 | 5 | ▬ | | | BROWN TO GREEN AS ABOVE |
| 12.1 | | | | | | 7 | 0 | 59 | 13.0 | 6 | ▬ | SM | | GREEN SILTY VERY FINE SAND |
| 14.4 | 15 | | | | | 20 | 0 | 58 | 15.5 | 7 | ▬ | | | VERY FINE TO MEDIUM SAND AS ABOVE |
| 16.7 | | | | | | | 50 | 131 | 18 | | D | SP | | NO RECOVERY |
| 19.0 | 20 | | | | | 18 | 40 | 102 | 20.5 | 8 | ▬ | | | GREY FINE TO VERY FINE SAND |
| 23.2 | 25 | | | | | 9 | 70 | 200 | 25 | 9 | ▬ | | | GREY MEDIUM TO COARSE SAND WITH LITTLE SMALL GRAVEL UP TO 1 CM DIAMETER |
| | 30 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 25.5 FEET ON 4/26/85 |

50-70% LEL @ 17-23'

FIGURE 10

LOG OF BORING

Dames & Moore

BORING 8

SAMPLING METHOD: DAMES & MOORE U-TYPE

DRILLING METHOD: 8 INCH HOLLOW STEM AUGE

| DEPTH IN FEET | | ANALYTICAL DATA | | | | | SAMPLE DATA | | | | | SOIL TYPE | | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LABORATORY | | | FIELD | | | | | | | | | |
| VERTICAL | LINEAR | | | | SOIL pH | P.I.D. | %LEL | BLOWS PER FOOT | SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE TYPE | USCS | SYMBOLS | |
| 1.4 | | | | | | 20 | 0 | 20 | 1.5 | 1 | — | PL | | BLACK GREASY SILT WITH LITTLE VERY FINE SAND |
| 2.7 | | | | | | 20 | 0 | 42 | 3.0 | 2 | — | | | BROWN TO BLACK, AS ABOVE |
| 5.0 | 5 | | | | | 13 | 0 | 106 | 5.5 | 3 | — | | | GREEN TO BROWN, AS ABOVE |
| 7.3 | | | | | | 1 | 0 | 57 | 8.0 | 4 | — | | | BROWN AS ABOVE WITH SOME VERY FINE SAND |
| 9.5 | 10 | | | | | 1 | 0 | 36 | 10.5 | 5 | — | SM | | BROWN SILTY VERY FINE SAND |
| 11.8 | | | | | | 7 | 0 | 145 | 13 | 6 | — | | | GREEN SILTY VERY FINE SAND |
| 14.0 | 15 | | | | | 10 | 0 | 155 | 15.5 | 7 | — | SP | | GREY FINE TO MEDIUM SAND |
| 18.6 | 20 | | | | | 45 | 40 | 127 | 20.5 | 8 | — | | | GREY MEDIUM TO COARSE SAND |
| 22.7 | 25 | | | | | 50 | 50 | 100 | 25 | 9 | — | | | GREY MEDIUM TO COARSE SAND |
| | 30 | | | | | | | | | | | | | BORING TERMINATED AT A DEPTH OF 25.5 FEET ON 4/26/85 |

40-50% LEL
18-23'

FIGURE 11

LOG OF BORING

Dames & Moore

| MAJOR DIVISIONS | | | GRAPH SYMBOL | LETTER SYMBOL | TYPICAL DESCRIPTIONS |
|---|---|---|---|---|---|
| COARSE GRAINED SOILS | GRAVEL AND GRAVELLY SOILS | CLEAN GRAVELS (LITTLE OR NO FINES) | | GW | WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES |
| | | | | GP | POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES |
| | MORE THAN 50 % OF COARSE FRACTION RETAINED ON NO 4 SIEVE | GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | GM | SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES |
| | | | | GC | CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES |
| | SAND AND SANDY SOILS | CLEAN SAND (LITTLE OR NO FINES) | | SW | WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES |
| | | | | SP | POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES |
| MORE THAN 50 % OF MATERIAL IS LARGER THAN NO 200 SIEVE SIZE | MORE THAN 50 % OF COARSE FRACTION PASSING NO 4 SIEVE | SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES) | | SM | SILTY SANDS, SAND-SILT MIXTURES |
| | | | | SC | CLAYEY SANDS, SAND-CLAY MIXTURES |
| FINE GRAINED SOILS | SILTS AND CLAYS | LIQUID LIMIT LESS THAN 50 | | ML | INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY |
| | | | | CL | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS |
| | | | | OL | ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY |
| | SILTS AND CLAYS | LIQUID LIMIT GREATER THAN 50 | | MH | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS |
| MORE THAN 50 % OF MATERIAL IS SMALLER THAN NO 200 SIEVE SIZE | | | | CH | INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS |
| | | | | OH | ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS |
| HIGHLY ORGANIC SOILS | | | | PT | PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS |

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

SOIL CLASSIFICATION CHART

FIGURE 12
UNIFIED SOIL CLASSIFICATION SYSTEM

FORM NO. 4473 (2-64)

EXPLORO O FOOCIIIB

# APPENDIX A

## ANALYTICAL RESULTS

California Analytical Laboratories
Sacramento, California

Please Copy the
Following Sheets

California Analytical Laboratories, Inc.
2544 Industrial Boulevard • West Sacramento, CA 95691 • (916) 372-1393

May 31, 1985
Lab No. 20947
Received: 5/1/85
Project: 14315-002-001
Santa Fe Springs

Bob Troutman
Dames & Moore
812 Anacapa Street
Suite A
Santa Barbara, CA 93101

Ninety-nine soil samples were received in 4 inch stainless steel core tubes to be analyzed for organochlorine pesticides and PCB's (EPA 8080), volatile halocarbons (EPA 8010), volatile aromatics (EPA 8020), CAM-TTLC metals, TOC and TOX.

| CAL I.D. | Sample I.D. | | | | Analytical Composite |
|---|---|---|---|---|---|
| 20947-1 | B1 | S1 | 1' | 4/24 | |
| -2 | B1 | S1 | 5' | 4/24 | |
| -3 | B1 | S3 | 10.5' | 4/24 | |
| -4 | B1 | S4 | 15.5' | 4/24 | |
| -5 | B1 | S5 | 20' | 4/24 | |
| -6 | B1 | S6 | 25' | 4/24 | |
| -7 | B1 | S7 | 30' | 4/24 | 20947-B1-C 25-40' (4) |
| -8 | B1 | S8 | 35' | 4/24 | |
| -9 | B1 | S9 | 40' | 4/24 | |
| -10 | B1 | S10 | 50' | 4/25 | |
| -11 | B1 | S11 | 60' | 4/25 | |
| -12 | B1 | S12 | 70' | 4/25 | |
| -13 | B2 | S1 | 1' | 4/24 | |
| -14 | B2 | S2 | 5.5' | 4/24 | |
| -15 | B2 | S3 | 10.5' | 4/24 | |
| -16 | B2 | S4 | 15' | 4/24 | |
| -17 | B2 | S5 | 25' | 4/24 | 20947-B2-C 25-30' (2) |
| -18 | B2 | S6 | 30' | 4/24 | |
| -19 | B2 | S7 | 35' | 4/24 | |
| -20 | B2 | S8 | 39.5' | 4/24 | |
| -21 | B3 | S1 | .5' | 4/23 | |
| -22 | B3 | S2 | 3.5' | 4/23 | |
| -23 | B3 | S3 | 6' | 4/23 | |
| -24 | B3 | S4 | 8.5' | 4/23 | |
| -25 | B3 | S5 | 11' | 4/23 | 20947-B3-C 11-13.5' (2) |
| -26 | B3 | S6 | 13.5' | 4/23 | |
| -27 | B4 | S1 | 1.5' | 4/23 | |
| -28 | B4 | S2 | 3.5' | 4/23 | 20947-B4-C 1.5-8.5' (1) |
| -29 | B4 | S3 | 6' | 4/23 | (20947-28 excluded) |
| -30 | B4 | S4 | 8.5' | 4/23 | |



This report is for the sole and exclusive use of the client to whom it is addressed.
Samples not destroyed in testing are retained a maximum of thirty (30) days unless otherwise requested.

Dames & Moore
Lab No. 20947
May 31, 1985
Page 2

| CAL I.D. | Sample I.D. | | | | Analytical Composite |
|---|---|---|---|---|---|
| 20947-31 | B4 | S5 | 11' | 4/23 | |
| -32 | B4 | S6 | 13.5' | 4/23 | |
| -33 | B4 | S7 | 16' | 4/23 | |
| -34 | B5A | S1 | 1' | 4/22 | |
| -35 | B5A | S2 | 3.5' | 4/22 | 20947-B5A-C — 3.5-6' (2) |
| -36 | B5A | S3 | 6' | 4/22 | |
| -37 | B5A | S4 | 8.5' | 4/22 | |
| -38 | B5A | S5 | 11' | 4/22 | |
| -39 | B5A | S6 | 13.6' | 4/22 | |
| -40 | B5A | S7 | 16' | 4/22 | |
| -41 | B5A | S8 | 18' | 4/22 | |
| -42 | B5A | S9 | 21' | 4/22 | |
| -43 | B5B | S1 | .5' | 4/22 | |
| -44 | B5B | S2 | 3.5' | 4/22 | 20947-44 — Bory) 5B @ 3.5' |
| -45 | B5B | S3 | 6' | 4/22 | |
| -46 | B5B | S4 | 8' | 4/22 | |
| -47 | B5B | S5 | 11' | 4/22 | |
| -48 | B5B | S6 | 13.5' | 4/22 | |
| -49 | B5B | S7 | 15' | 4/22 | |
| -50 | B5B | S8 | 18.5' | 4/22 | |
| -51 | B5B | S9 | 21' | 4/22 | |
| -52 | B6 | S1 | 1' | 4/23 | |
| -53 | B6 | S2 | 3.5' | 4/23 | |
| -54 | B6 | S3 | 6' | 4/23 | |
| -55 | B6 | S4 | 8.5' | 4/23 | 20947-B6-C 6-13.5' (4) |
| -56 | B6 | S5 | 11' | 4/23 | |
| -57 | B6 | S6 | 13.5' | 4/23 | |
| -58 | B6 | S7 | 18.5' | 4/23 | |
| -59 | B7A | S1 | 1.5' | 4/25 | |
| -60 | B7A | S2 | 4.5' | 4/25 | |
| -61 | B7A | S3 | 7' | 4/25 | 20947-B7A-C 4.5-9.5' (3) |
| -62 | B7A | S4 | 9.5' | 4/25 | |
| -63 | B7A | S5 | 12' | 4/25 | |
| -64 | B7A | S6 | 14.5' | 4/25 | |
| -65 | B7A | S7 | 17' | 4/25 | |
| -66 | B7A | S8 | 19.5' | 4/25 | |
| -67 | B7A | S9 | 25' | 4/25 | |
| -68 | B7A | S10 | 30' | 4/25 | |
| -69 | B7A | S11 | 34.5' | 4/25 | |
| -70 | B7B | S1 | 2' | 4/25 | 20947-B7B-C 2-3.5' (2) |
| -71 | B7B | S2 | 3.5' | 4/25 | |

| CAL I.D. | Sample I.D. | Analytical Composite |
|---|---|---|
| 20947-72 | B7B S3 6' 4/25 | |
| -73 | B7B S4 8.5' 4/25 | |
| -74 | B7B S5 11' 4/25 | |
| -75 | B7B S6 13.5' 4/25 | |
| -76 | B7B S7 16' 4/25 | |
| -77 | B7B S8 18.5' 4/25 | |
| -78 | B7B S9 20' 4/25 | |
| -79 | B7B S10 25.5' 4/25 | |
| -80 | B7C S1 1.5' 4/26 | |
| -81 | B7C S2 3.5' 4/26 | |
| -82 | B7C S3 5.5' 4/26 | |
| -83 | B7C S4 8' 4/26 | |
| -84 | B7C S5 10.5' 4/26 | |
| -85 | B7C S6 13' 4/26 | |
| -86 | B7C S7 15.5' 4/26 | |
| -87 | B7C S8 20.5' 4/26 | |
| -88 | B7C S9 25' 4/26 | |
| -89 | B8 S1 1.5' 4/26 | |
| -90 | B8 S2 3' 4/26 | |
| -91 | B8 S3 5.5' 4/26 | |
| -92 | B8 S4 8' 4/26 | |
| -93 | B8 S5 10.5' 4/26 | |
| -94 | B8 S6 13' 4/26 | |
| -95 | B8 S7 15.5' 4/26 | |
| -96 | B8 S8 20.5' 4/26 | 20947-B8-C |
| -97 | B8 S9 25' 4/26 | |
| -98 | SURFACE SOIL SS-1 4/26 | |
| -99 | SURFACE SOIL SS-2 4/26 | |

No samples for 7C ???

205-25' (2)

Compositing and analysis instructions were received from Bob Troutman on 8 May. Results for TOC and TOX follow; additional results are on the attached data sheets.

| CAL I.D. | value found TOC (%) | value found TOX (ppm) |
|---|---|---|
| 20947-B1-C | 0.2 = 2000 ppm Where? | <5 |
| -B2-C | <0.1 | <5 |
| -B3-C | <0.1 | <5 |
| -B4-C | <0.1 | <5 |
| -B5A-C | 3 30,000 ppm | <5 |
| -B6-C | <0.1 | <5 |
| -B7A-C | 0.2 | <5 |
| -B8-C | <0.1 | <5 |
| -B7B-C | 7 = 70,000 ppm | <5 |
| -44 | 3 | <5 |

Boring 1

4 comp. 25-40'

3.5-6.5' 2 comp 5A

2 comp 2'-3.5' 7B

5B

5B 3.5' 1 sample

Charles J. Soderquist, PhD
Vice President

Anthony S. Wong, PhD
Vice President

nc

# VOLATILE HALOGENATED ORGANICS

EPA Method 8010

Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B1-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | <0.05 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | <0.05 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | <0.05 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

PREPARED BY KP

APPROVED BY CJS

DATE 31 May

# VOLATILE HALOGENATED ORGANICS
## EPA Method 8010
## Data Sheet

Sample I.D. Composite

CAL I.D. 20747-B2-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | <0.05 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | <0.05 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | <0.05 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

PREPARED BY KP

APPROVED BY CJS

DATE 31 May

# VOLATILE HALOGENATED ORGANICS
## EPA Method 8010
## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B3-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | <0.05 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | <0.05 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | <0.05 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

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DATE 31 May

# VOLATILE HALOGENATED ORGANICS

## EPA Method 8010

## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B4-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | <0.05 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | <0.05 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | <0.05 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

PREPARED BY KP

APPROVED BY GS

DATE 31 May

# VOLATILE HALOGENATED ORGANICS

EPA Method 8010

Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B5A-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | <0.05 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | <0.05 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | <0.05 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

PREPARED BY KP

APPROVED BY CJS

DATE 31 May

# VOLATILE HALOGENATED ORGANICS
## EPA Method 8010
## Data Sheet

Boring 5B

Sample I.D. Composite CAL. I.D. 20947-44

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | 0.07 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | 0.25 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | 0.11 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

Boring 5B 3.5'

PREPARED BY KP

APPROVED BY CJS DATE 31 May

# VOLATILE HALOGENATED ORGANICS

## EPA Method 8010

## Data Sheet

B-6

Sample I.D. Composite CAL I.D. 20947-B6-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | <0.05 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | <0.05 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | <0.05 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

PREPARED BY KP

APPROVED BY CJS DATE 31 May

# VOLATILE HALOGENATED ORGANICS

## EPA Method 8010

## Data Sheet

Sample I.D. Composite CAL I.D. 20947-B7A-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | <0.05 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | <0.05 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | <0.05 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

PREPARED BY HP

APPROVED BY GS DATE 31 May

# VOLATILE HALOGENATED ORGANICS

## EPA Method 8010

## Data Sheet

Sample I.D. Composite CAL I.D. 20947-B7B-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <2.0 |
| 1,1-Dichloroethane | 4.4 |
| trans-1,2-Dichloroethylene | <2.0 |
| Chloroform | <2.0 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <2.0 |
| 1,2-Dichloroethane | <2.0 |
| 1,1,1-Trichloroethane | 9.7 |
| Carbon tetrachloride | <2.0 |
| Bromodichloromethane | <2.0 |
| 1,2-Dichloropropane | <2.0 |
| cis-1,3-Dichloropropylene | <2.0 |
| Trichloroethylene | 32 |
| trans-1,3-Dichloropropylene | <2.0 |
| 1,1,2-Trichloroethane | <2.0 |
| Dibromochloromethane | <2.0 |
| 1,2-Dibromoethane | <2.0 |
| Bromoform | <2.0 |
| Tetrachloroethylene | 12 |
| 1,1,2,2-Tetrachloroethane | <2.0 |
| Chlorobenzene | <2.0 |

7B
2-3.5'
2 comp ☆

PREPARED BY [illegible]

APPROVED BY [illegible] DATE 31 May

# VOLATILE HALOGENATED ORGANICS
## EPA Method 8010
## Data Sheet

Sample I.D. Composite CAL I.D. 20947-B8-C

| | ug/g (ppm) |
|---|---|
| 1,1-Dichloroethylene | <0.05 |
| 1,1-Dichloroethane | <0.05 |
| trans-1,2-Dichloroethylene | <0.05 |
| Chloroform | <0.05 |
| 1,1,2-Trichloro-2,2,1-trifluoroethane | <0.05 |
| 1,2-Dichloroethane | <0.05 |
| 1,1,1-Trichloroethane | <0.05 |
| Carbon tetrachloride | <0.05 |
| Bromodichloromethane | <0.05 |
| 1,2-Dichloropropane | <0.05 |
| cis-1,3-Dichloropropylene | <0.05 |
| Trichloroethylene | <0.05 |
| trans-1,3-Dichloropropylene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 |
| Dibromochloromethane | <0.05 |
| 1,2-Dibromoethane | <0.05 |
| Bromoform | <0.05 |
| Tetrachloroethylene | <0.05 |
| 1,1,2,2-Tetrachloroethane | <0.05 |
| Chlorobenzene | <0.05 |

PREPARED BY KP

APPROVED BY GS DATE 31 May

# VOLATILE AROMATICS
## EPA Method 8020
## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B1-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.5 |
| toluene | <0.5 |
| chlorobenzene | <0.5 |
| ethylbenzene | <0.5 |
| xylene (total*) | <0.5 |
| dichlorobenzene (total*) | <50** |

* (includes o, m & p isomers)

** higher detection limit due to matrix interferences

PREPARED BY SB

APPROVED BY CJS

DATE 31 May

# VOLATILE AROMATICS
## EPA Method 8020
## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B2-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.05 |
| toluene | <0.05 |
| chlorobenzene | <0.05 |
| ethylbenzene | <0.05 |
| xylene (total*) | <0.05 |
| dichlorobenzene (total*) | <0.05 |

* (includes o, m & p isomers)

PREPARED BY SB

APPROVED BY CJS

DATE 31 May

# VOLATILE AROMATICS
## EPA Method 8020
## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B3-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.05 |
| toluene | <0.05 |
| chlorobenzene | <0.05 |
| ethylbenzene | <0.05 |
| xylene (total*) | <0.05 |
| dichlorobenzene (total*) | <0.05 |

* (includes o, m & p isomers)

PREPARED BY SB

APPROVED BY CJS

DATE 31 May

# VOLATILE AROMATICS
## EPA Method 8020
## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B4-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.05 |
| toluene | <0.05 |
| chlorobenzene | <0.05 |
| ethylbenzene | <0.05 |
| xylene (total*) | <0.05 |
| dichlorobenzene (total*) | <0.05 |

* (includes o, m & p isomers)

PREPARED BY JB

APPROVED BY CJS

DATE 31 May

# VOLATILE AROMATICS
## EPA Method 8020
## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B5A-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.5 |
| toluene | 0.64 |
| chlorobenzene | <0.5 |
| ethylbenzene | <0.5 |
| xylene (total*) | <1.0** |
| dichlorobenzene (total*) | <1.0** |

5A

3.5'-6'

2 comp

* (includes o, m & p isomers)

** higher detection limit due to matrix interferences

PREPARED BY SR

APPROVED BY GS

DATE 31 May

VOLATILE AROMATICS

EPA Method 8020

Data Sheet

SB

Sample I.D. Composite CAL I.D. 20947-44

| | ug/g (ppm) |
|---|---|
| benzene | <0.05 |
| toluene | <0.49 |
| chlorobenzene | <0.05 |
| ethylbenzene | <0.05 |
| xylene (total*) | <0.05 |
| dichlorobenzene (total*) | <0.05 |

*(includes o, m & p [illegible]

SB 3.5 ft

PREPARED BY SB

APPROVED BY CK

DATE 31 May

# VOLATILE AROMATICS
## EPA Method 8020
## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B6-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.05 |
| toluene | <0.05 |
| chlorobenzene | <0.05 |
| ethylbenzene | <0.05 |
| xylene (total*) | <0.05 |
| dichlorobenzene (total*) | <0.05 |

* (includes o, m & p isomers)

PREPARED BY GB

APPROVED BY CJS

DATE 31 May

# VOLATILE AROMATICS
## EPA Method 8020
## Data Sheet

Sample I.D. Composite CAL I.D. 20947-B7A-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.05 |
| toluene | .06 |
| chlorobenzene | <0.05 |
| ethylbenzene | <0.05 |
| xylene (total*) | <0.05 |
| dichlorobenzene (total*) | <0.05 |

* (includes o, m & p isomers)

7A
3 Comp
4.5-9.5'

PREPARED BY SB

APPROVED BY CJS

DATE 31 May

# VOLATILE AROMATICS

## EPA Method 8020

## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B7B-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.05 |
| toluene | 62 |
| chlorobenzene | <0.05 |
| ethylbenzene | 5.5 |
| xylene (total*) | 44 |
| dichlorobenzene (total*) | <15** |

7B

2-3.5'

2 comp 1

* (includes o, m & p isomers)

** higher detection limit due to matrix interferences

≈ 120 ppm

≈ 90 ppm

PREPARED BY SB

APPROVED BY CK

DATE 31 May

# VOLATILE AROMATICS
## EPA Method 8020
## Data Sheet

Sample I.D. Composite

CAL I.D. 20947-B8-C

| | ug/g (ppm) |
|---|---|
| benzene | <0.05 |
| toluene | <0.05 |
| chlorobenzene | <0.05 |
| ethylbenzene | <0.05 |
| xylene (total*) | <0.05 |
| dichlorobenzene (total*) | <0.05 |

* (includes o, m & p isomers)

PREPARED BY GB

APPROVED BY CJ

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S

## EPA Method 8080

Sample I.D. Composite

CAL I.D. 20947-MB

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.005 |
| gamma-BHC | <0.005 |
| beta-BHC | <0.005 |
| heptachlor | <0.005 |
| delta-BHC | <0.005 |
| aldrin | <0.005 |
| heptachlor epoxide | <0.005 |
| endosulfan I/II | <0.01 |
| p,p'-DDE | <0.01 |
| dieldrin | <0.01 |
| endrin | <0.01 |
| p,p'-DDD | <0.02 |
| p,p'-DDT | <0.02 |
| endrin aldehyde | <0.02 |
| endosulfan sulfate | <0.02 |
| methoxychlor | <0.08 |
| PCB-1242 | <0.08 |
| PCB-1248 | <0.08 |
| PCB-1254 | <0.08 |
| PCB-1260 | <0.08 |
| chlordane | <0.08 |
| toxaphene | <0.8 |

PREPARED BY KP

APPROVED BY CJS

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S

## EPA Method 8080

Sample I.D. Composite

CAL I.D. 20947-B3-C

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.005 |
| gamma-BHC | <0.005 |
| beta-BHC | <0.005 |
| heptachlor | <0.005 |
| delta-BHC | <0.005 |
| aldrin | <0.005 |
| heptachlor epoxide | <0.005 |
| endosulfan I/II | <0.01 |
| p,p'-DDE | <0.01 |
| dieldrin | <0.01 |
| endrin | <0.01 |
| p,p'-DDD | <0.02 |
| p,p'-DDT | <0.02 |
| endrin aldehyde | <0.02 |
| endosulfan sulfate | <0.02 |
| methoxychlor | <0.08 |
| PCB-1242 | <0.08 |
| PCB-1248 | <0.08 |
| PCB-1254 | <0.08 |
| PCB-1260 | <0.08 |
| chlordane | <0.08 |
| toxaphene | <0.8 |

PREPARED BY

APPROVED BY

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S

## EPA Method 8080

Sample I.D. Composite

CAL I.D. 20947-B4-C

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.005 |
| gamma-BHC | <0.005 |
| beta-BHC | <0.005 |
| heptachlor | <0.005 |
| delta-BHC | <0.005 |
| aldrin | <0.005 |
| heptachlor epoxide | <0.005 |
| endosulfan I/II | <0.01 |
| p,p'-DDE | <0.01 |
| dieldrin | <0.01 |
| endrin | <0.01 |
| p,p'-DDD | <0.02 |
| p,p'-DDT | <0.02 |
| endrin aldehyde | <0.02 |
| endosulfan sulfate | <0.02 |
| methoxychlor | <0.08 |
| PCB-1242 | <0.08 |
| PCB-1248 | <0.08 |
| PCB-1254 | <0.08 |
| PCB-1260 | <0.08 |
| chlordane | <0.08 |
| toxaphene | <0.8 |

PREPARED BY KP

APPROVED BY CJS

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S

## EPA Method 8080

Sample I.D. Composite

CAL I.D. 20947-B5A-C

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.005 |
| gamma-BHC | <0.005 |
| beta-BHC | <0.005 |
| heptachlor | <0.005 |
| delta-BHC | <0.005 |
| aldrin | <0.005 |
| heptachlor epoxide | <0.005 |
| endosulfan I/II | <0.01 |
| p,p'-DDE | <0.01 |
| dieldrin | <0.01 |
| endrin | <0.01 |
| p,p'-DDD | <0.02 |
| p,p'-DDT | <0.02 |
| endrin aldehyde | <0.02 |
| endosulfan sulfate | <0.02 |
| methoxychlor | <0.08 |
| PCB-1242 | <0.08 |
| PCB-1248 | <0.08 |
| PCB-1254 | <0.08 |
| PCB-1260 | <0.08 |
| chlordane | <0.08 |
| toxaphene | <0.8 |

PREPARED BY AP

APPROVED BY CS

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S

## EPA Method 8080

5B

Sample I.D. Composite CAL I.D. 20947-44

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.005 |
| gamma-BHC | <0.005 |
| beta-BHC | <0.005 |
| heptachlor | <0.005 |
| delta-BHC | <0.005 |
| aldrin | <0.005 |
| heptachlor epoxide | <0.005 |
| endosulfan I/II | <0.01 |
| p,p'-DDE | <0.01 |
| dieldrin | <0.01 |
| endrin | <0.01 |
| p,p'-DDD | <0.02 |
| p,p'-DDT | <0.02 |
| endrin aldehyde | <0.02 |
| endosulfan sulfate | <0.02 |
| methoxychlor | <0.08 |
| PCB-1242 | <0.08 |
| PCB-1248 | <0.08 |
| PCB-1254 | <0.08 |
| PCB-1260 | <0.08 |
| chlordane | <0.08 |
| toxaphene | <0.8 |

PREPARED BY KP

APPROVED BY CJS

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S

## EPA Method 8080

Sample I.D. Composite CAL I.D. 20947-B6-C

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.005 |
| gamma-BHC | <0.005 |
| beta-BHC | <0.005 |
| heptachlor | <0.005 |
| delta-BHC | <0.005 |
| aldrin | <0.005 |
| heptachlor epoxide | <0.005 |
| endosulfan I/II | <0.01 |
| p,p'-DDE | <0.01 |
| dieldrin | <0.01 |
| endrin | <0.01 |
| p,p'-DDD | <0.02 |
| p,p'-DDT | <0.02 |
| endrin aldehyde | <0.02 |
| endosulfan sulfate | <0.02 |
| methoxychlor | <0.08 |
| PCB-1242 | <0.08 |
| PCB-1248 | <0.08 |
| PCB-1254 | <0.08 |
| PCB-1260 | <0.08 |
| chlordane | <0.08 |
| toxaphene | <0.8 |

PREPARED BY KP

APPROVED BY CB

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S

## EPA Method 8080

Sample I.D. Composite CAL I.D. 20947-B7A-C

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.005 |
| gamma-BHC | <0.005 |
| beta-BHC | <0.005 |
| heptachlor | <0.005 |
| delta-BHC | <0.005 |
| aldrin | <0.005 |
| heptachlor epoxide | <0.005 |
| endosulfan I/II | <0.01 |
| p,p'-DDE | <0.01 |
| dieldrin | <0.01 |
| endrin | <0.01 |
| p,p'-DDD | <0.02 |
| p,p'-DDT | <0.02 |
| endrin aldehyde | <0.02 |
| endosulfan sulfate | <0.02 |
| methoxychlor | <0.08 |
| PCB-1242 | <0.08 |
| PCB-1248 | <0.08 |
| PCB-1254 | <0.08 |
| PCB-1260 | <0.08 |
| chlordane | <0.08 |
| toxaphene | <0.8 |

PREPARED BY KP

APPROVED BY CJS

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S
## EPA Method 8080

Sample I.D. Composite

CAL I.D. 20947-B7B-C

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.5 |
| gamma-BHC | <0.5 |
| beta-BHC | <0.5 |
| heptachlor | <0.5 |
| delta-BHC | <0.5 |
| aldrin | <0.5 |
| heptachlor epoxide | <0.5 |
| endosulfan I/II | <1.0 |
| p,p'-DDE | <1.0 |
| dieldrin | <1.0 |
| endrin | <1.0 |
| p,p'-DDD | <2.0 |
| p,p'-DDT | <2.0 |
| endrin aldehyde | <2.0 |
| endosulfan sulfate | <2.0 |
| methoxychlor | <8.0 |
| PCB-1242 | <8.0 |
| PCB-1248 | 94 |
| PCB-1254 | <8.0 |
| PCB-1260 | <8.0 |
| chlordane | <8.0 |
| toxaphene | <80 |

7B
2 comp
2-3.5'
≈ 180 ppm

PREPARED BY KP

APPROVED BY CJS

DATE 31 May

# ORGANOCHLORINE PESTICIDES AND PCB'S
## EPA Method 8080

Sample I.D. Composite CAL I.D. 20947-B8-C

| OC Compound | ug/g (ppm) |
|---|---|
| alpha-BHC | <0.005 |
| gamma-BHC | <0.005 |
| beta-BHC | <0.005 |
| heptachlor | <0.005 |
| delta-BHC | <0.005 |
| aldrin | <0.005 |
| heptachlor epoxide | <0.005 |
| endosulfan I/II | <0.01 |
| p,p'-DDE | <0.01 |
| dieldrin | <0.01 |
| endrin | <0.01 |
| p,p'-DDD | <0.02 |
| p,p'-DDT | <0.02 |
| endrin aldehyde | <0.02 |
| endosulfan sulfate | <0,02 |
| methoxychlor | <0.08 |
| PCB-1242 | <0.08 |
| PCB-1248 | <0.08 |
| PCB-1254 | <0.08 |
| PCB-1260 | <0.08 |
| chlordane | <0.08 |
| toxaphene | <0.8 |

PREPARED BY KP

APPROVED BY CPS

DATE 31 May

# C.A.M. METALS
## Data Sheet

SAMPLE ID: Composite

CAL ID: 20947-B2-C

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leachable ~~Found~~ (mg/L) |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 36 | 100 | -- |
| Beryllium | 75 | 0.75 | 0.75 | -- |
| Cadmium | 100 | <0.5 | 1 | -- |
| *Chromium III/VI | 2500/500 | 4.9 | 560/5 | -- |
| Cobalt | 8000 | <3 | 80 | -- |
| Copper | 2500 | 9.2 | 25 | -- |
| Lead | 1000 | <5 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 5.6 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 13 | 24 | -- |
| Zinc | 5000 | 22 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

PREPARED BY JRB

APPROVED BY GW DATE 5/31/85

# C.A.M. METALS
## Data Sheet

SAMPLE ID: Composite

CAL ID: 20947-B3-C

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leachable Found (mg/L) |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 47 | 100 | -- |
| Beryllium | 75 | 0.85 | 0.75 | -- |
| Cadmium | 100 | <0.5 | 1 | -- |
| *Chromium III/VI | 2500/500 | 6.5 | 560/5 | -- |
| Cobalt | 8000 | 3.4 | 80 | -- |
| Copper | 2500 | 8.9 | 25 | -- |
| Lead | 1000 | <5 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 6.6 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 13 | 24 | -- |
| Zinc | 5000 | 25 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

PREPARED BY JRB

APPROVED BY [illegible] DATE 5/31/85

# C.A.M. METALS
## Data Sheet

SAMPLE-ID: Composite

CAL ID: 20947-B4-C

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leachable Found (mg/L) |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 163 | 100 | -- |
| Beryllium | 75 | 1.8 | 0.75 | -- |
| Cadmium | 100 | <0.5 | 1 | -- |
| *Chromium III/VI | 2500/500 | 18 | 560/5 | -- |
| Cobalt | 8000 | 6.4 | 80 | -- |
| Copper | 2500 | 27 | 25 | -- |
| Lead | 1000 | 5.1 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 18 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 34 | 24 | -- |
| Zinc | 5000 | 66 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

PREPARED BY JRB

APPROVED BY [illegible] DATE 5/31/85

# C.A.M. METALS
## —Data Sheet

SAMPLE ID: Composite

CAL ID: 20947-B5A-C

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leachable Found (mg/L) |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 760 | 100 | -- |
| Beryllium | 75 | 1.5 | 0.75 | -- |
| Cadmium | 100 | 0.55 | 1 | -- |
| *Chromium III/VI | 2500/500 | 19 | 560/5 | -- |
| Cobalt | 8000 | 9.3 | 80 | -- |
| Copper | 2500 | 29 | 25 | -- |
| Lead | 1000 | 30 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 20 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 30 | 24 | -- |
| Zinc | 5000 | 101 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

PREPARED BY JRB

APPROVED BY [illegible] DATE 5/21/85

# C.A.M. METALS
## Data Sheet

SAMPLE ID: Composite CAL ID: 20947-44

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leacha Foun (mg/L |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 2520 | 100 | -- |
| Beryllium | 75 | 1.5 | 0.75 | -- |
| Cadmium | 100 | 0.85 | 1 | -- |
| *Chromium III/VI | 2500/500 | 27 | 560/5 | -- |
| Cobalt | 8000 | 11 | 80 | -- |
| Copper | 2500 | 35 | 25 | -- |
| Lead | 1000 | 88 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 27 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 41 | 24 | -- |
| Zinc | 5000 | 116 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

SB - 3.5'
1 sample

PREPARED BY JRB

APPROVED BY [illegible] DATE 5/31/85

# C.A.M. METALS
## Data Sheet

SAMPLE ID: Composite

CAL ID: 20947-B6-C

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leachable Found (mg/L) |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 96 | 100 | -- |
| Beryllium | 75 | 1.7 | 0.75 | -- |
| Cadmium | 100 | <0.5 | 1 | -- |
| *Chromium III/VI | 2500/500 | 16 | 560/5 | -- |
| Cobalt | 8000 | 6.4 | 80 | -- |
| Copper | 2500 | 18 | 25 | -- |
| Lead | 1000 | 6.5 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 14 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 27 | 24 | -- |
| Zinc | 5000 | 44 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

PREPARED BY JRB

APPROVED BY [illegible] DATE 5/31/85

# C.A.M. METALS
## Data Sheet

SAMPLE ID: Composite

CAL ID: 20947-B7A-C

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leachable Found (mg/L) |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 221 | 100 | -- |
| Beryllium | 75 | 3.1 | 0.75 | -- |
| Cadmium | 100 | <0.5 | 1 | -- |
| *Chromium III/VI | 2500/500 | 34 | 560/5 | -- |
| Cobalt | 8000 | 16 | 80 | -- |
| Copper | 2500 | 30 | 25 | -- |
| Lead | 1000 | <5 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 25 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 50 | 24 | -- |
| Zinc | 5000 | 77 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

PREPARED BY JRB

APPROVED BY [illegible] DATE 5/31/85

# C.A.M. METALS
## Data Sheet

SAMPLE ID: Composite

CAL ID: 20947-B7B-C

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leacha Foun (mg/L |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 572 | 100 | -- |
| Beryllium | 75 | 2.2 | 0.75 | -- |
| Cadmium | 100 | 1.1 | 1 | -- |
| *Chromium III/VI | 2500/500 | 59 | 560/5 | -- |
| Cobalt | 8000 | 9.5 | 80 | -- |
| Copper | 2500 | 37 | 25 | -- |
| Lead | 1000 | 1450 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 19 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 31 | 24 | -- |
| Zinc | 5000 | 262 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

≈ 2900 ppm Pb
7B
2 comp
2-3.5'

PREPARED BY JRB

APPROVED BY [illegible] DATE 5/31/85

# C.A.M. METALS
## Data Sheet

SAMPLE ID: Composite CAL ID: 20947-B8-C

| Element | Total (TTLC) Regulatory Values (mg/Kg wet wt.) | Total Found (mg/Kg) | Leachable (STLC) Regulatory Values (mg/L in leachate) | Leachable Found (mg/L) |
|---|---|---|---|---|
| Arsenic | 500 | <5 | 5 | -- |
| Antimony | 500 | <5 | 15 | -- |
| Barium | 10000 | 36 | 100 | -- |
| Beryllium | 75 | 0.70 | 0.75 | -- |
| Cadmium | 100 | <0.5 | 1 | -- |
| *Chromium III/VI | 2500/500 | 4.8 | 560/5 | -- |
| Cobalt | 8000 | <3 | 80 | -- |
| Copper | 2500 | 7.3 | 25 | -- |
| Lead | 1000 | <5 | 5 | -- |
| Mercury | 20 | <0.10 | 0.2 | -- |
| Molybdenum | 3500 | <10 | 350 | -- |
| Nickel | 2000 | 5.6 | 20 | -- |
| Selenium | 100 | <1 | 1 | -- |
| Silver | 500 | <2 | 5 | -- |
| Thallium | 700 | <5 | 7 | -- |
| Vanadium | 2400 | 15 | 24 | -- |
| Zinc | 5000 | 26 | 250 | -- |

Regulatory values from January 1984 CAM (California Department of Health Services).

*Reported as Cr III plus Cr VI.

PREPARED BY JRB

APPROVED BY [illegible] DATE 5/21/85

- Sladden Engineering Report of September 6, 1967; and

- Conversations with the property owner, Mr. George Walker, and with Ms. Harriet Tregoning of the DHS.

Attempts to obtain information regarding site use history from Getty (Texaco) were unsuccessful. For the purpose of formulizing the sampling plan, the most useful information was a 1:1200 scale (1 inch = 100 feet) aerial photograph of the site taken in 1959 (Figure 1), as well as the historical topographic maps (Figure 2).

## SOIL SAMPLING PLAN

### BORING/SAMPLING LOCATIONS

Proposed boring and sampling locations are plotted on the 1959 aerial photograph (Figure 1). The proposed boring/sampling locations are discussed individually below.

Borings 1 and 2 - Two angle borings will be drilled beneath the existing tanks in the southwestern corner of the property Parcel 2 (Figure 1). The depths of the borings will be dependent on how close the drill rig can be situated to the tanks. It is anticipated that the angle borings will be in the order of 30 to 50 feet deep with samples collected at 5 or 10 foot intervals.

Borings 3 - Boring 3 will be drilled in the former location of a sump in the southeastern corner of the site. The sump is not apparent on the aerial photograph but is shown on the 1949 topographic map (Figure 2). The boring will be advanced until natural soils are encountered. Samples will be collected at 2-1/2 intervals.

?

Dames & Moore
812 Anacapa Street, Suite A
Santa Barbara, CA 93101
(805) 963-9676 / 963-5976

March 20, 1985

California City Bank
170 South Main Street
Orange, California 92668

Attention: George Walker

Soil Sampling Plan
Former Getty Property
Lakeland Road and Bloomfield Avenue
Santa Fe Springs, California
For Mr. George Walker

## INTRODUCTION

Dames & Moore is pleased to submit this soil sampling plan for the property located southeast of the intersection of Lakeland Road and Bloomfield Avenue in Santa Fe Springs, California. It is our understanding that the California Department of Health Services (DHS) has expressed concern regarding the possibility that potentially hazardous substances were stored onsite and may be still present either at the surface or in the shallow subsurface. In order to address this concern, we have performed a review of available data pertaining to the site history and prepared a plan of soil sampling and analysis. The purpose of the plan is to evaluate whether hazardous substances are in fact present at the site. In preparing this plan we have considered information from the following sources:

- Historical aerial photographs of the site available from the City of Santa Fe Springs, Whittier College Fairchild photo collection, and the Map and Imagery Library at U.C. Santa Barbara;

- Historical topographic maps from 1925, 1949, and 1972;

Boring 4 - Boring 4 will be located in the middle of a former sump, the outline of which can be seen on Figure 1. Soil samples will be collected at 2-1/2 foot intervals until natural soils are encountered.

Borings 5A and 5B - These borings will be drilled through fill material that occupies a former drainage that is apparent on the aerial photograph and the 1925 and 1949 topographic maps. The borings will be sampled at 2-1/2 foot intervals and terminated in natural soils.

Boring 6 - Boring 6 is located where a sump is shown on the 1959 aerial photograph. Sample intervals will be 2-1/2 feet and the boring will be drilled until natural soils are encountered.

Boring 7 - This boring will be drilled in the area of what appear to be small tanks in the 1959 photograph. Samples will be collected at 2-1/2 foot intervals until natural soils are encountered.

Boring 8 - Three borings (8A, 8B, and 8C) will be drilled in the vicinity of three small (above-ground) tanks observed during a recent site visit. These tanks are not apparent on the 1959 photograph. The most recent topographic map (1972) shows five small tanks in this area. It is anticipated that two shallow (less than 20 feet) angle borings will be drilled under the three existing tanks and one vertical boring positioned at the one location of one of the two former tanks.

?

Sample Locality 9 - A sample of the surface soil will be collected at this location where rainfall collects.

BORING/SAMPLING PROCEDURES

Drilling and soil sampling will be accomplished using 8-inch diameter hollow stem auger equipment. This drilling method will allow the collection of depth-discrete, undisturbed soil samples through the hollow stem of the auger.

Samples will be retrieved utilizing a Dames & Moore U-type or Sprague & Henwood sampler. The sampler will be driven 18 inches (or to refusal) with a standard 140 pound hammer. Hammer blow counts will be recorded every 6 inches over the 18-inch sampling interval. The sampler will be fitted with 2.5-inch diameter, 3-inch long stainless steel sleeves. The stainless steel sleeves containing the sample will then be covered with teflon sheeting and sealed with a plastic end cap, and then electrical tape. Chain of custody seals will be applied over the plastic end caps. Sample labels will include the following information: boring number, sample number, depth, date, collector name, owner, sample location, sample time, and soil type. Appropriately sealed and labeled samples will be stored in the field in ice-chests cooled with dry ice. Chain of custody records for samples collected will be completed and transferred with the samples to the analytical laboratory. Steam cleaning of all downhole drilling equipment will be performed prior to initiation of each boring.

A Dames & Moore geologist will prepare a continuous lithologic log of each boring. In addition, a portable organic vapor analyzer (HNu) will be used to measure the concentration of organic vapors emitted from each sample. All activities will be conducted in accordance with a Health and Safety Plan developed specifically for the proposed investigation.

Borings will be backfilled upon completion using a bentonite and/or cement surry. Drill cuttings will be stored onsite in sealed 55 gallon drums until the analytical results are available and a determination made as to whether they contain any hazardous substances.

## ANALYTICAL TESTING PROGRAM

Chemical analysis of sample composites and one surface sample will be performed by California Analytical Laboratories of Sacramento, California. The analytical testing program is summarized in Table 1. We propose to composite

samples from boring(s) at each locatation in order to reduce the number of analyses to be performed. We propose to analyze each composite sample, as well as the surface soil sample at Location 9, by EPA Methods 602 (purgeable aromatics), 610 (Polynuclear Aromatics, $C_8$ to $C_{32}$), Total Organic Carbon, total Organic Halogens, and CAM Inorganics.* All analyses will be performed following approved EPA or DHS methods.

metals water methods ?

## REPORT PREPARATION

Following receipt of all chemical test results, a draft summary of findings will be prepared for your review and comment. This report will contain a summary or descriptions of:

1. field drilling and sample collection procedures;
2. sample composition procedures and rational;
3. analytical procedures;
4. waste and/or geologic materials encountered; and,
5. analytical results.

If desired, we will provide recommendations regarding further investigations.

## SCHEDULE AND COST

Dames & Moore is prepared to initiate drilling and sampling within two weeks of written authorization to proceed. We anticipate boring and sampling to require approximately 1½ to 2 weeks in the field. Adjustments to the schedule and cost may be necessary if problems such as access limitations, inclement weather, obstructions to drilling (buried debris), or drilling equipment breakdown occur.

---

* CAM Inorganics - California Assessment Manual list of persistent and bioaccumulative inorganic compounds.

Chemical testing of samples and sample composites will require approximately four weeks to complete. A draft summary report will be submitted to you within two weeks of our receipt of all analytical data. If desired, results of analytical data can be transmitted to you verbally immediately upon receipt from the analytical laboratory.

We propose to conduct this investigation on a time-and-expsense basis in accordance with our standard Schedule of Charges and General Conditions, which is attached. We estimate the total charges for the services proposed herein will be on the order of $27,010. We will not exceed this amount without prior approval from you. A breakdown of the charges is provided in the attachment to this proposal. This estimate does not include costs associated with the temporary storage and ultimate disposition of drill cuttings.

We trust the proposed sampling plan satisfies your current needs. We look forward to disucssing the plan with you and the DHS at your convenicne. If you have any questions, please contact me.

Very truly yours,
Dames & Moore

Thomas A. Vinckier

Thomas A. Vinckier
Associate

Robert E. Troutman

Robert E. Troutman
Staff Geologist

TAV:RET:dah

This proposal is acceptable and Dames & Moore is authorized to proceed.

By _____ _____
(Signature)* (Printed)

For _____ _____
(Company)* (Date)

_____

* Individual with authority and company responsible for payment of Dames & Moore Services

TABLE 1

Dames & Moore

SOIL SAMPLE ANALYTICAL PROGRAM

| Borings(s) | Sample Number | Sample Type | Analyses to be Performed |
|---|---|---|---|
| 1 | 1 | Composite Soil | EPA 602, 610, TOX, TOC, CAM Metals |
| 2 | 2 | Composite Soil | EPA 602, 610, TOX, TOC, CAM Metals |
| 3 | 3 | Composite Soil | EPA 602, 610, TOX, TOC, CAM Metals |
| 4 | 4 | Composite Soil | EPA 602, 610, TOX, TOC, CAM Metals |
| 5A,5B | 5 | Composite Soil | EPA 602, 610, TOX, TOC, CAM Metals |
| 6 | 6 | Composite Soil | EPA 602, 610, TOX, TOC, CAM Metals |
| 7 | 7 | Composite Soil | EPA 602, 610, TOX, TOC, CAM Metals |
| 8A,8B,8C | 8 | Composite Soil | EPA 602, 610, TOX, TOC, CAM Metals |
| 9[1] | 9 | Surface Soil | EPA 602, 610, TOX, TOC, CAM Metals |

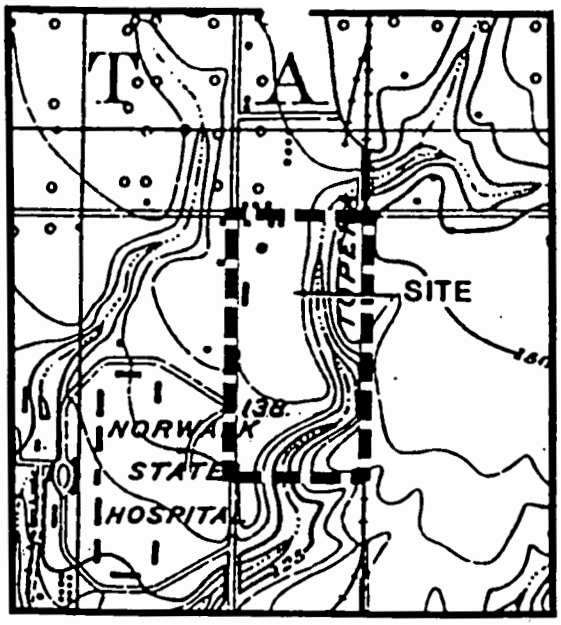
[1] Surface soil sample collected with stainless steel scoop.

TABLE 2

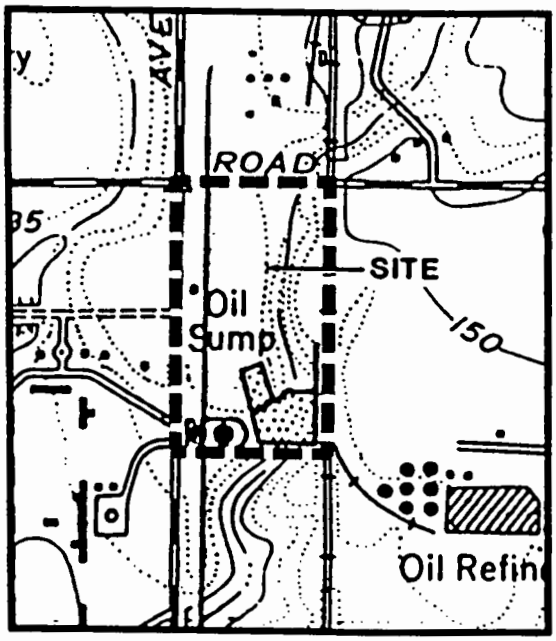
Dames & Moore

COST BREAKDOWN

| | | |
|---|---|---|
| **Surveyor** | | $1,500 |
| **Drilling Subcontractor** | | |
| 8 days at $1000/day | $8,000 | |
| Steam cleaner rental | 500 | |
| Barrels | 500 | |
| Cement | 400 | |
| D&M Handling Fee | 1,410 | |
| | | 10,810 |
| **Dames & Moore** | | |
| Field labor (80 hrs at $45/hour) | 3,600 | |
| Office labor (50 hrs at $45/hour) | 2,250 | |
| Sampling equipment | 1,000 | |
| Clerical, Illustration | 800 | |
| Meetings (2) | 1,200 | |
| | | 8,850 |
| **Analytical Laboratory** | | |
| 9 samples at $565/sample | 5,085 | |
| D&M handling fee | 765 | |
| | | 5,850 |
| TOTAL | | $27,010 |

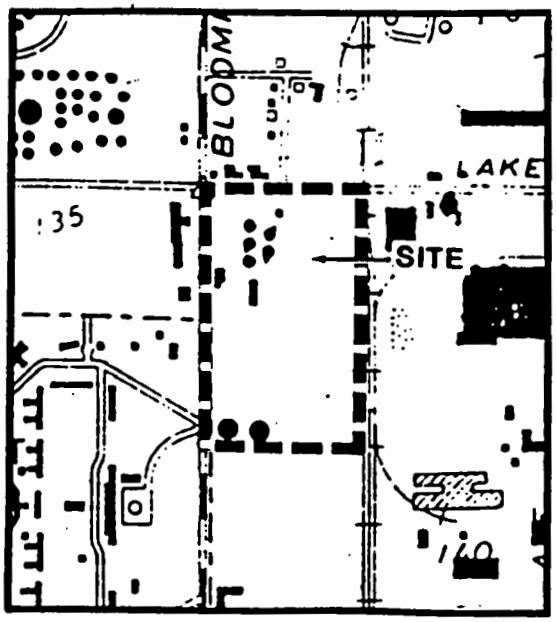



1925




1949

0 1000 2000 FEET
SCALE




1972

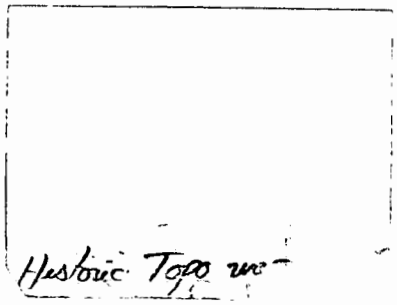



FIGURE 2
HISTORIC TOPOGRAPHIC MAPS

Dames & Moore

# Dames & Moore

ATTACHMENT LW1

Dames & Moore has neither created nor contributed to the creation or existence of any hazardous, radioactive, toxic, irritant, pollutant, or otherwise dangerous substance or condition at the site. Dames & Moore's compensation hereunder is in no way commensurate with the potential risk of injury or loss that may be caused by exposures to such substances or conditions. Accordingly, except as expressly provided, the client hereby waives any claim against Dames & Moore and agrees to defend, indemnify, and hold Dames & Moore harmless from any claim, liability, or defense cost for injury or loss sustained by any party from such exposures allegedly arising out of or related to Dames & Moore's performance of services hereunder.

# Dames & Moore

## EQUIPMENT

### AUTOMOTIVE

| | |
|---|---|
| Vehicle, per hour (maximum of 8 hours per day) | $ 4.00 |
| Mileage, per mile | $ .25 |

### SOIL

| | |
|---|---|
| Soil sampling and compaction control equipment, per shift hour | $ 5.00 |
| Soil sample rings and containers, per sample | $ 5.00 |

### LABORATORY

| | |
|---|---|
| Soil, water and biologic testing equipment – per employee, per hour | $ 10.00 |

Dynamic Testing Equipment will be quoted as required

### DIVING

| | |
|---|---|
| SCUBA diving, per diver, per day | $100.00 |

### REPORT PREPARATION

| | |
|---|---|
| Word Processing Equipment, per hour | $ 10.00 |
| In-House Reproduction, per sheet | $ .10 |

### ENGINEERING COMPUTER SERVICES

The use of Dames & Moore's in-house computer facilities will be charged in accordance with the "Engineering Computer Applications Billing Schedule" (attached). Computer time and other services provided by outside vendors will be charged at cost plus 15%. Terminals, plotters, forms, and computer supplies will be charged at cost plus 15%.

### FIELD

Because of the varied nature of equipment, location and use, these rates will be quoted as required.

SCHEDULE OF CHARGES AND GENERAL CONDITIONS

# Dames & Moore

UNITED STATES & CANADA

The compensation to Dames & Moore for our professional services is based upon and measured by the following elements, which are computed as set forth below.

## PERSONNEL CHARGES

Charges for employees are computed by multiplying the total direct salary cost of our personnel (expressed as an hourly rate) by a factor of 2.5. The total direct salary cost shall be a sum equal to the direct payroll cost (computed by dividing the annual payroll cost by 1,940 hours) plus 30 percent of same to cover payroll taxes, insurance incident to employment, sick leave and other employee benefits. The time of a partner or retained consultant devoted to the project is charged at an assigned billing rate.

The 30 percent employee benefit factor is used for work performed by personnel assigned to offices in the United States and Canada. For work performed by personnel in our offices in other countries, it will vary depending on the employee benefits paid in the particular location.

When outside the United States, employees' and partners' total direct salary cost will be increased by the premium customarily paid by other organizations for work at that location.

Time spent in either local or inter-city travel, when travel is in the interest of the work, will be charged for in accordance with the foregoing schedule; when traveling by public carrier, a maximum charge of eight hours per day will be made.

## EQUIPMENT CHARGES

Computer control of project costs will be billed at a rate of $1.25 per each $50 of job charges or fraction thereof. Other Dames & Moore equipment, if used, will be billed at the rates noted in the Appendix.

## OTHER SERVICES AND SUPPLIES

Charges for services, equipment and facilities not furnished directly by Dames & Moore, and any unusual items of expense not customarily incurred in our normal operations, are computed as follows:

Cost plus 10 percent includes shipping charges, subsistence, transportation, printing and reproduction, long distance communication, miscellaneous supplies and rentals.

Cost plus 15 percent includes surveying services, land drilling equipment, construction equipment, testing laboratories, contract labor.

Cost plus 25 percent includes aircraft, watercraft, helicopter and marine drilling equipment and operation.

## BILLING

Statements will be issued every four weeks, payable upon receipt, unless otherwise agreed.

Interest of 1½% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney's fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

In the event that the Client requests termination of the work prior to completion of a report, we reserve the right to complete such analyses and records as are necessary to place our files in order and, where considered by us necessary to protect our professional reputation, to complete a report on the work performed to date. A termination charge to cover the cost thereof in an amount not to exceed 30 percent of all charges incurred up to the date of the stoppage of the work may, at the discretion of Dames & Moore, be made.

Rates are subject to change upon notification.

## WARRANTY AND LIABILITY

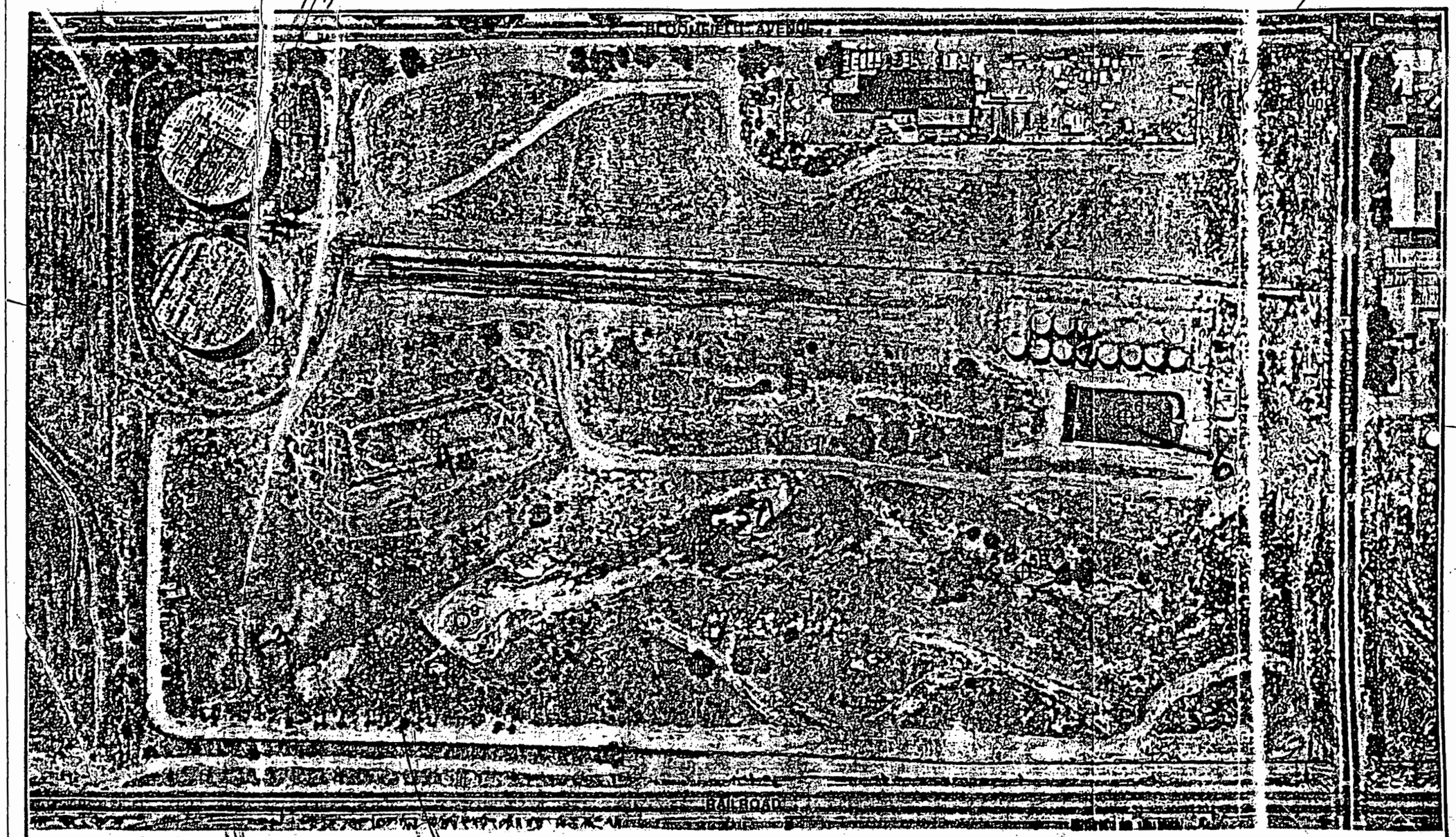
Dames & Moore warrants that our services are performed, within the limits prescribed by our Clients, with the usual thoroughness and competence of the engineering profession. No other warranty or representation, either expressed or implied, is included or intended in our proposals, contracts or reports.

Dames & Moore's liability for all actions, omissions, or negligence, whether active or passive, shall not exceed $100,000 for injury or loss arising out of (1) radiation, nuclear reaction, or radioactive contamination; and/or (2) any release or escape of toxic, irritant, pollutant, or waste gasses, liquids, or solid materials. This limit may be increased up to $5,000,000 for injury or loss arising out of category (2) upon the Client's written request and agreement to pay an additional fee of ½% of any increase.

Dames & Moore's liability for injury or loss not described above shall not exceed $100,000 for professional and $5,000,000 for all other actions, omissions, or negligence, whether active or passive. This limit may be increased up to $5,000,000 for professional liability upon the Client's written request and agreement to pay an additional fee of 1/10% of any increase.

All limit increases must be requested before commencement of services. The Client agrees to indemnify Dames & Moore for all liability in excess of the limits determined above. Computation of liability hereunder shall include all attorney fees and defense costs.

**In the event the Client makes a claim against Dames & Moore, at law or otherwise, for any alleged error, omission or other act arising out of the performance of our professional services, and the Client fails to prove such claim, then the Client shall pay all costs, including attorney's fees, incurred by Dames & Moore in defending itself against the claim.**




EXPLANATION:

⊕ PROPOSED BORING LOCATION

O PROPOSED SURFACE SOIL SAMPLE LOCATION

0 50 100 FEET
SCALE

FIGURE 1
PROPOSED BORING/SAMPLING LOCATIONS
(19[illegible] AERIAL PHOTOGRAPH)