

RUST Environment & Infrastructure Inc. 12 Metro Park Road Albany, NY 12205 Tel. (518) 458-1313 • FAX (518) 458-2472

October 25, 1994

Joseph S. Moran, Esq.
Assistant General Counsel - Environmental
American National Can Company
Mail Suite 14C
8770 West Bryn Mawr Avenue
Chicago, Illinois 60631-3542

Subject:

Building #12 Samples

American National Can Company Former Oakland, California Facility

Dear Mr. Moran:

This letter provides the results of the recent soil investigation conducted at the northern end of former Building #12. The investigation was conducted on September 27, 1994 to evaluate the extent of impacted soil reportedly encountered during plant demolition activities. The investigation included the drilling and sampling of 9 test borings (T-1 through T-4 and S-1 through S-5) as proposed in our August 30, 1994 letter to you.

Figure 1 is a map that shows the locations of the 9 borings. Borings T-1 and S-1 were drilled immediately adjacent to the respective T-1 and S-1 samples collected by PES Environmental, Inc. in June and July, 1994. A PES representative provided RUST personnel with their sampling locations. Detailed soil boring logs are appended which depict subsurface conditions, and the intervals where samples were collected for laboratory analysis. The logs also show the results of headspace screening for volatile organic compounds with a photoionization detector (PID).

Soil samples collected from borings S-1 (6.0 feet deep), S-5 (5.0 feet deep) and T-4 (5.0 feet deep) contained mineral spirits at a concentration of less than 1 part per million (ppm). Mineral spirits were detected in the sample collected at 3.0 feet from boring S-4 at 9.7 ppm. The sample collected at 6.5 feet from boring T-1 was reported to contain 1700 ppm of mineral spirits. All other samples collected did not reveal the presence of mineral spirits at the detection limit of 0.5 ppm.

Based on laboratory analytical results, a contour map (Figure 2) was prepared to present the lateral and vertical extent of potentially impacted soil. The values used in contouring reflect the deepest contamination that was detected, based on laboratory analytical results and PID headspace screening results. The amount of soil delineated as potentially impacted is roughly 125 to 150 cubic yards.

Joe Moran, Esq. October 25, 1994 Page 2

However, based on the headspace screening results, it is likely that actual contamination is confined to the near surface of less permeable soils (soil class CL and CH shown on the borings logs) as lateral distance increases from boring T-1. It is therefore probable that a substantial amount of surficial soil (0-3 feet) in the contoured area is <u>not</u> impacted.

At this time, we can not determine the potential for contaminants to have reached the water table. The sample from T-1 was collected at a depth of approximately 2.5 feet above the water table. We recommend that PES provide us with the analytical results from the samples they had analyzed so that we may more fully evaluate the results of this investigation. Following review of the PES data, we would prepare a detailed workplan for the excavation and removal of contaminated soil.

The workplan would provide for post excavation confirmatory sampling and would likely incorporate the relocation of the excavated soils to the pad designated for Area 4 soils. Based on a recent telephone conversation with Rob Creps, he concurs with the conceptual plan of staging Building 12 soil alongside, but separate from, Area 4 soil.

Please contact me with any questions.

Edward W. aluxon

Very truly yours,

Edward W. Alusow

Senior Project Manager

EWA/me

cc:

E. Rawlings

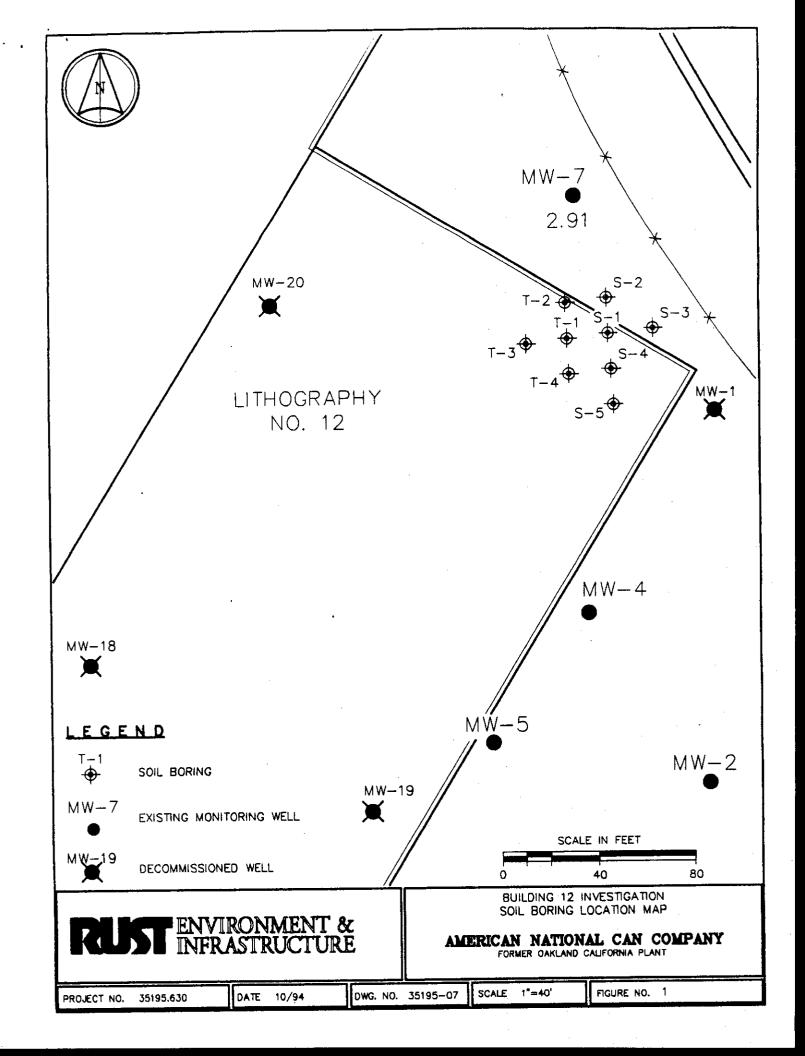
J. Peters

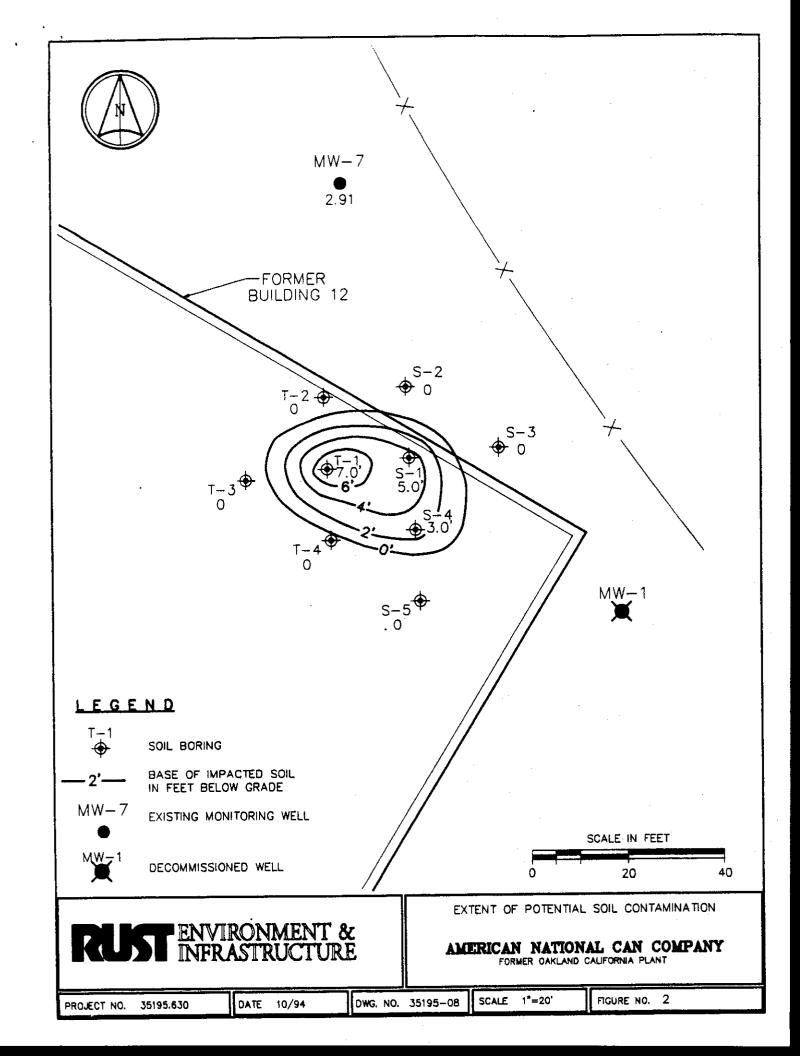
J. Kessler

R. Creps

J. Renauer

**Enclosures** 







1961 Concourse Drive Suite E San Jose, CA 95151 Tel: 408-432-8192 Fax: 408-432-8198

MR. WALTER HOWARD

RUST ENVIRONMENT AND INFRASTRUCTURE

12 METRO PARK ROAD ALBANY, NY 12205

Workorder #

: 9409220

Date Received: 09/27/94 Project ID: 35195.650

Purchase Order: E-25237

The following samples were received at Anametrix for analysis:

9409220- 1 S1	-6 0
9409220-3 9409220-4 9409220-5 9409220-6 9409220-7 9409220-8 9409220-9 S4	-6.0 -6.5 -5.0 -2.0 -4.0 -4.0 -3.0 -4.5 -5.0

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anametrix.

Laboratory Director

This report consists of

#### REPORT SUMMARY ANAMETRIX, INC. (408)432-8192

MR. WALTER HOWARD RUST ENVIRONMENT AND INFRASTRUCTURE

12 METRO PARK ROAD ALBANY, NY 12205

Workorder # : 9409220 Date Received : 09/27/94 Project ID : 35195.650 Purchase Order: E-25237 Department : GC

Sub-Department: TPH

# SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9409220- 1	S1-6.0	SOIL	09/27/94	ТРНд
9409220- 2	T1-6.5	SOIL	09/27/94	TPHg
9409220- 3	T3-5.0	SOIL	09/27/94	TPHg
9409220- 4	T2-2.0	SOIL	09/27/94	TPHg
9409220- 5	T2-4.0	SOIL	09/27/94	TPHg
9409220- 6	S2-4.0	SOIL	09/27/94	TPHg
9409220- 7	S3-4.0	SOIL	09/27/94	TPHg
9409220- 8	S4-3.0	SOIL	09/27/94	TPHg
9409220- 9	S4-4.5	SOIL	09/27/94	TPHg
9409220-10	T4-5.0	SOIL	09/27/94	трнд
9409220-11	S5-5.0	SOIL	09/27/94	TPHg

#### REPORT SUMMARY ANAMETRIX, INC. (408)432-8192

MR. WALTER HOWARD RUST ENVIRONMENT AND INFRASTRUCTURE

12 METRO PARK ROAD ALBANY, NY 12205 Workorder # : 9409220
Date Received : 09/27/94
Project ID : 35195.650
Purchase Order: E-25237

Department : GC Sub-Department: TPH

## QA/QC SUMMARY :

- The concentration reported as mineral spirits for sample S1-6.0 is primarily due to the presence of a petroleum product of hydrocarbon range C6-C12, possibly gasoline.

Oberyl Belman 10/7/54
Department Supervisor Date

Lucia Shar 10/10/94 Chemist Date

#### ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS (MINERAL SPIRITS) ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9409220 Matrix

: SOIL

Project Number: 35195.650 Date Released: 10/05/94

Date Sampled : 09/27/94

	Reporting Limit	Sample I.D.# S1-6.0	Sample I.D.# T1-6.5	Sample I.D.# T3-5.0	Sample I.D.# T2-2.0	Sample I.D.# T2-4.0
COMPOUNDS	(mg/Kg)	-01	-02	-03	-04	-05
TPH as Mineral Spirits % Surrogate Rece Instrument I. Date Analyzed RLMF	D.	0.84 92% HP12 09/29/94	1700 115% HP12 10/04/94 250	ND 90% HP12 LO/04/94	ND 84% HP12 10/03/94 1	ND 68% HP12 10/03/94 1

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as mineral spirits is determined by GC/FID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.

RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

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### ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS (MINERAL SPIRITS) ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9409220 : SOIL Matrix

Project Number: 35195.650 Date Released: 10/05/94

Date Sampled : 09/27/94

	Reporting Limit	Sample I.D.# S2-4.0	Sample I.D.# S3-4.0	Sample I.D.# S4-3.0	Sample I.D.# S4-4.5	Sample I.D.# T4-5.0
COMPOUNDS	(mg/Kg)	-06	-07	-08	-09 	-10
TPH as Mineral Spirits	0.5	ИD	ND	9.7	ND	0.62
<pre>% Surrogate Reco Instrument I.I Date Analyzed RLMF</pre>	overy O.	75% HP12 10/03/94	91% HP12 10/03/94	95% HP12 10/04/94 2.5	94% HP12 10/03/94	91% HP12 10/03/94

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as mineral spirits is determined by GC/FID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.

RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

luca Sher 10/10/44

#### ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS (MINERAL SPIRITS) ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9409220 : SOIL Matrix Date Sampled: 09/27/94 Project Number: 35195.650 Date Released: 10/05/94

	Reporting Limit	Sample I.D.# S5-5.0	Sample I.D.# BS2901E1	Sample I.D.# BO0301E1	Sample I.D.# B00302E1	Sample I.D.# BO0304E1
COMPOUNDS	(mg/Kg)	-11	BLANK	BLANK	BLANK	BLANK
TPH as Mineral Spirits	0.5	0.67	ND	ND	ND	ND
<pre>% Surrogate Reco Instrument I.I Date Analyzed RLMF</pre>	overy ).	86% HP12 10/04/94	108% HP12 09/29/94	95% HP12 10/03/94	104% HP12 10/04/94	91% HP12 10/04/94

ND - Not detected at or above the practical quantitation limit for the method.

TPHg - Total Petroleum Hydrocarbons as mineral spirits is determined by GC/FID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.

RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

un Shar 10/11/97

# TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT EPA METHOD 5030 WITH GC/FID ANAMETRIX, INC. (408) 432-8192

: 35195.650 T2-2.0 Sample I.D.

Anametrix I.D.: 9409220-04

: <u>I</u>S Analyst : SOIL Matrix

Supervisor : ØD Date Released : 10/06/94 Date Sampled : 09/27/94 Date Analyzed: 09/29/94

Instrument ID : HP12

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	REC MS (mg/Kg)	% REC MS	REC MD (mg/Kg)	% REC MD	RPD	% REC LIMITS	*
MINERAL SPIRITS	0.50	0.12	0.67	110%	0.77	130%	17%	48-149	
P-BFB				92%		83%		53-147	

<sup>\*</sup> Quality control limits established by Anametrix, Inc.

# TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT EPA METHOD 5030 WITH GC/FID ANAMETRIX, INC. (408) 432-8192

: LAB CONTROL SAMPLE Sample I.D.

Anametrix I.D.: MS2902E1

: SOIL Matrix

Analyst

: IS

Date Sampled : N/A

Supervisor

Date Analyzed: 09/29/94

Date Released : 10/06/94 Instrument I.D.: HP12

COMPOUND	SPIKE AMT. (mg/Kg)	REC LCS (mg/Kg)	%REC LCS	% REC LIMITS *
MINERAL SPIRITS	0.50	0.56	112%	58-130
p-BFB			104%	53-147

<sup>\*</sup> Quality control limits established by Anametrix, Inc.

## TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT EPA METHOD 5030 WITH GC/FID ANAMETRIX, INC. (408) 432-8192

: LAB CONTROL SAMPLE Sample I.D.

Anametrix I.D.: MO0301E1
Analyst : 45

: SOIL Matrix

Analyst

Date Sampled : N/A

Supervisor

Date Analyzed: 10/03/94

Date Released: 10/06/94 Instrument I.D.: HP12

COMPOUND	SPIKE AMT. (mg/Kg)	REC LCS (mg/Kg)	%REC LCS	% REC LIMITS *
MINERAL SPIRITS	0.50	0.45	90%	58-130
p-BFB			95%	53-147

<sup>\*</sup> Quality control limits established by Anametrix, Inc.

# TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT EPA METHOD 5030 WITH GC/FID ANAMETRIX, INC. (408) 432-8192

: LAB CONTROL SAMPLE Sample I.D.

Anametrix I.D. : MO0401E1

: SOIL Matrix

Analyst

: ፲ン

Date Sampled : N/A
Date Analyzed : 10/04/94

Supervisor : 0 Date Released : 10/06/94 Instrument I.D.: HP12

COMPOUND	SPIKE AMT. (mg/Kg)	REC LCS (mg/Kg)	%REC LCS	% REC LIMITS *
MINERAL SPIRITS	0.50	0.47	94%	58-130
p-BFB			103%	53-147

<sup>\*</sup> Quality control limits established by Anametrix, Inc.

# Inchcape Testing Services Anametrix Laboratories SAMPLE RECEIVING CHECKLIST

WORKORDER NUMBER: 9409230 CLIE	NT PROJECT ID:	36195.650		<del> </del>
COOLER			· · · · · · · · · · · · · · · · · · ·	
Shipping slip (airbill, etc.) present?		YES	NO	(N/A)
If YES, enter carrier name and airbill #:				
Custody Seal on the outside of cooler?		YES	NO	N/A
Condition: INTACT BROKEN				
Temperature of sample (s) within range?		YES	NO	N/A
List temperature of cooler (s): 21°C				
SAMPLES				
Chain of custody seal present for each container?		YES	NO	N/A
Condition: INTACT BROKEN				
Samples arrived within holding time?		ŒS	NO	N/A
Samples in proper containers for methods requested?		YES	NO	
Condition of containers: INTACT BROKEN				'
If NO, were samples transferred to proper container?				
Were VOA containers received with zero headspace?		YES	МО	
If NO, was it noted on the chain of custody?	·			
Were container labels complete? (ID, date, time preservative, etc.)		(TES)	NO	
Were samples preserved with the proper preservative?		YES	NO	N/A
If NO, was the proper preservative added at time of receipt?				
pH check of samples required at time of receipt?		YES	(NO)	
If YES, pH checked and recorded by:				
Sufficient amount of sample received for methods requested?		Œ	NO	
If NO, has the client or lab project manager been notified?				
Field blanks received with sample batch? # of Sets:		YES	NO	N/A
Trip blanks received with sample batch? # of Sets:		YES	NO	Ø/A)
CHAIN OF CUSTODY		<u>,</u>		
Chain of custody received with samples?		<b>(ES)</b>	NO	
Has it been filled out completely and in ink?		(YES)	NO	
Sample ID's on chain of custody agree with container labels?		(FS)	NO	
Number of containers indicated on chain of custody agree with nur	nber received?	(YES)	NO	
Analysis methods clearly specified?		(FS)	NO	
Sampling date and time indicated?		YES	NO	
Proper signatures of sampler, courier, sample custodian in appropr	iate place? with time	and date? (YES)	NO	
Turnaround time? REGULAR RUSH			· .	
Any NO response and/or any "BROKEN" that was checked r	nust be detailed in th	ne Corrective Action	ı Fori	n.

Date: 9/27/94

Sample Custodian:

Project Manager: <u>KD</u> Date: <u>9</u>/



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Rev. 4/93

White Copy - Lab

Yellow Copy - File

Pink Copy - Client

BORING LOCATION: ANC - Building 12 APPROVED BY: RAB GROUND EL:									
DEPTH/ELEV.WATER: NA		ILL CON	TRACTOF				TOTAL DEPT	H: 7.0°	
DRILL RIG: MD-1	BORING DIA.: 2-	1/4"	DATE D		9/27/	4	LOGGED BY	: RAB	
SOIL DESCRI	PTION	DEPTH	SAMPLE NO.	PR	REC.	MODE	REMA	RKS	
GW 0'-1' Baserock and reconcrete. 1'-5' SILTY GRAVEL yellowish brown; dry;	W/SAND: moderate	2				PD	Advanced 2-1/4 casing by percus (PD). Placed cuttings and analyzed he with photoioniza (PID). Measure vapors in parts (ppm).	ssion drilling in plastic bag padspace tion detector d organic	
5'-5.25' GRAVELLY (yellowish brown (10' moderate plasticity; sodor.  5.25'-6.75' SILTY GF same as 1'-5' interva 6.75'-7.0' CLAY; dusi	YR 5/4); damp; stiff; sweet hydrocarbon RAVEL W/SAND:	4	S1-6.0		100%		2.5'-3.0': PID = 4.0'-4.5': PID = 4.5'-5.0': PID = 5.0'-5.5': PID = 5.5'-6.0': PID =	6.5 ppm 32 ppm 2.3 ppm	
Stiff; high plasticity.	ky biowii, dairip,	=	PES		<u> </u>		,		
AND SUBBURFACE CONDITION WAS OBTAINED FROM INDI- POSSIBLY DISTURBED SAMPLI SMALL- DIAMETER HOLES, ROT HAVE FURTHER COMPLICATION THE NEED TO USE ORILLIN ADVANCING HOLES.  THIS LOG INDICATES CONDITION DATE INDICATED AND MAY NO OTHER LOCATIONS AND ON OTH SHOWN ARE SUBJECT TO VARIA  THE STRATIFICATION LINES OR THE STRATIFICATION LINES OR THE APPROXIMATE BOUNDARI AND THE TRANSITIONS MAY BE  SOIL CLASSIFICATIONS SH	ROXIMATION OF THE GEOLOGIC S BECAUSE THE IMPORTMATION RECT, DISCONTINUOUS, AND NG NECESSITED BY USE OF ARY AND WASH BOTHING HOLES S IN THIS REGARD SECAUSE OF G FLUID AND/OR CASING IN NIS IN THIS HOLE ONLY ON THE IT REPRESENT CONDITIONS AT HER DATES, ANY WATER LEVELS TION. CHARLES AND NOT NECESSARILY FOR INTRACTORS.	10 11 12 11 11 11 11 11 11 11 11 11 11 11					Grouted hole to neat cement mix		
RUST	AMERICAN		NAI CA	N E	XPLO	RATION	BORING LOG	BORING	
ENVIRONMENT &		ORNIA		ROJEC	T NO.	SHEET:	NO.		
INFRASTRUCTURE		DING 1			5195	650	1 of 1	S-1	

BORING L	BORING LOCATION: ANC - Building 12 APPROVED BY: RAB GROUND EL								
	EV.WATER: NA		LL CON	TRACTOF	t: Precis	ion Drill	ing	TOTAL DEPT	H: 6.0'
DRILL RIC		BORING DIA.: 2-	1/4"	DATE D		9/27/	)4	LOGGED BY	RAB
SOIL CLASS	DESCRI	PTION	DEPTH	SAMPLE NO.	PR	REC.	MODE	REMAR	RKS
GW CL CH	0'-1' Baserock and resconcrete. 1'-2' SILTY CLAY w/tomoderate olive brown dusky brown (5 YR 2/damp; stiff; moderate 2.0'-5.0' CLAY: dusky damp; stiff; high plast 5.0'-5.5' CLAY: dark y	race sand: (5 Y 4/9) with (2) concretions; plasticity. brown (5 YR 2/2); icity. ellowish brown (10	911111111111111111111111111111111111111			100%	PD	Advanced 2-1/4" casing by percus (PD). Placed cuttings i and analyzed he with photoioniza (PID). Measure vapors in parts p (ppm).	sion drilling n plastic bag adspace tion detector d organic per million 1.7 ppm
E GM b	/R 4/2) w/dusky brow concretions; damp; st weathered rock fragm i.5'-6.0' SILTY CLAY: brown (10 YR 5/4); da plasticity; 5% sand.	iff; inclusions of ents. moderate yellowish mp; firm; moderate	4	S2-4.0 PES				2.5'-3.0': PID =	,
	DATA ON THIS LOG ARE AN APPI AND SUBSURFACE CONDITION WAS OSTAINED FROM HUPE POSSISLY DISTURBED BASILLY HAVE FURTHER COMPLICATION THE NEED TO USE ORILLIN ADVANCING HOUSE.  THIS LOG HONCATES CONDITION DATE INDICATED AND MAY NOT OTHER LOCATIONS AND ON OTH SHOWN ARE SUBJECT TO VARIAN THIS HORSE OF SPECIFIC CO THE STRATIFICATION LINES OR	ROXIMATION OF THE GEOLOGIC B RECAUSE THE INFORMATION LECT. DISCONTINUOUS, AND IS INCESSITATED BY USE OF ARY AND WASH BOMING HOLES IS IN THIS REGARD SECAUSE OF 2 FLUID AND/OR CASING IN HIS IN THIS HOLE ONLY ON THE T REPRESENT CONDITIONS AT ER DATES, ANY WATER LEVELS TION. CH A WAY AS TO PROVIDE DATA LES AND NOT HECESSARILY FOR INTRACTORS.	10 112 114 118 118 118 118 118 118 118 118 118					Grouted hole to neat cement mix	
		BRADUAL DWN ON LOGS ARE FIELD ON THE UNIFIED SOILS	20-						
DIIC	<b></b>	AMERICAN	NIATIO	NIAL CA	N   E	EXPLO	RATION	BORING LOG	BORING
RUS		OAKLAND				ROJE	OT NO.	SHEET:	NO.
	RONMENT &		DING		` ⊢			1 of 1	S-2
INFRA	STRUCTURE	BUIL	שאווע	14		35195	UCO.		

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BORING LOCATION: ANC - Building 12 APPROVED BY: RAB GROUND EL:								
DEPTH/ELEV.WATER: NA		ILL CON	TRACTOR	l: Precis	ion Drill	ing	TOTAL DEPT	H: 6.0'
DRILL RIG: MD-1	BORING DIA.: 2-	-1/4"	DATE D		9/27/9	4	LOGGED BY	RAB
SOIL DESCRI	PTION	DEPTH	SAMPLE NO.	PR RQD	REC.	MODE	REMAR	RKS
O'-0.5' Baserock and concrete.  CL .5'-1.0' SILTY CLAY wolive brown (5 Y 4/4) y YR 2/2) concretions; of moderate plasticity.  1.0'-3.5' CLAY: dusky damp; stiff; high plast 3.5'-4.0' SILTY CLAY brown (5 Y 4/4) w/dus concretions; damp; stiplasticity.  CL .0'-6.0' SILTY CLAY	0'-0.5' Baserock and residual crushed concrete.  .5'-1.0' SILTY CLAY w/gravel: moderate olive brown (5 Y 4/4) with dusky brown (5 YR 2/2) concretions; damp; stiff; moderate plasticity.  1.0'-3.5' CLAY: dusky brown (5 YR 2/2); damp; stiff; high plasticity.  3.5'-4.0' SILTY CLAY: moderate olive brown (5 Y 4/4) w/dusky brown (5 YR 2/2) concretions; damp; stiff; moderate plasticity.  4.0'-6.0' SILTY CLAY: moderate olive brown (5 Y 4/4); damp; stiff; moderate				100%	PD	Advanced 2-1/4" casing by percus (PD). Placed cuttings is and analyzed he with photoioniza (PID). Measured vapors in parts propm).  1.0'-1.5': PID = 2.5'-3.0': PID = 3.5'-4.0': PID = 5.0'-5.5': PID =	in plastic bag nadspace tion detector d organic per million 1.6 ppm 1.1 ppm 0.5 ppm
THE PURPOSES OF SPECIFIC CO. THE STRATIFICATION LINES OR THE APPROXIMATE SOUNDARK AND THE TRANSITIONS MAY BE	ROXIMATION OF THE GEOLOGIC B BECAUSE THE INFORMATION IEGT, DISCONTINUOUS, AND IG NECESSITATED BY USE OF ARY AND WASH BOTHING HOLES B IN THIS REGARD SECAUSE OF G FLUID AND/OR CASING IN HIS IN THIS HOLE ONLY ON THE T REPRESENT CONDITIONS AT HER DATES, ANY WATER LEVELS TION. CH A WAY AS TO PROVIDE DATA MES AND NOT NECESSARILY FOR INTRACTORS. DEPTH INTERVALS REPRESENT LS BETWEEN MATERIAL TYPES.	10					Grouted hole to neat cement mix	
	ON THE UNIFIED SOILS	20-	<u> </u>					BORING
RUST	AMERICAN	NATIO	NAL CA	\N		— Т	BORING LOG	NO.
ENVIRONMENT &	OAKLAND				ROJEC	T NO.	SHEET:	
		DING				650	1 of 1	S-3

BORING	LOCATION: ANC -	Building 12		APPRO	VED BY	r: RAE	3	GROUND EL	
	LEV.WATER: NA		LL CON	TRACTOR	R: Precis	ion Drill	ing	TOTAL DEPT	
DRILL R	IG: MD-1	BORING DIA.: 2-	1/4"	DATE D		9/27/	<del>)</del> 4	LOGGED BY	: RAB
SOIL CLASS	DESCR	IPTION	DEPTH	SAMPLE NO.	PR	REC.	MODE	REMAI	RKS
GW CL CL	0'5' Baserock and residual crushed concrete5'-2.5' SILTY GRAVEL w/sand: moderate yellowish brown; dry; medium dense.  2.5'-4.5' GRAVELLY CLAY: moderate yellowish brown (10 YR 5/4); damp; stiff; moderate plasticity.  4.5'-6.0' SILTY CLAY: moderate olive brown (5 Y 4/4); damp; stiff; moderate plasticity; trace gravel.		2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	S4-3.0 PES S4-4.5 PES		100%	PD	Advanced 2-1/4 casing by percu (PD). Placed cuttings and analyzed he with photoioniza (PID). Measure vapors in parts (ppm). 1.0'-1.5': PID = 2.5'-3.0': PID = 4.0'-4.5': PID =	ssion drilling in plastic bag sadspace tition detector d organic per million  1.1 ppm 149 ppm
	AND SUBSURFACE CONDITION: WAS OBTAINED FROM INDIF POSSIBLY DISTURBED SAMPLE SMALL- DIAMETER HOLES. ROT HAVE FURTHER COMPLICATION THE NEED TO USE DRILLIN ADVANCING HOLES.  THIS LOG INDICATES CONDITIO DATE INDICATED AND MAY NO OTHER LOCATIONS AND ON OTH SHOWN ARE SUBJECT TO VARIA THIS HOLE WAS LOGGED IN SUR PRIMARKY FOR DESIGN PURPO THE PURPOSES OF SPECIFIC CO. THE STRATIFICATION LINES OR THE APPROXIMATE SOUNDARIE AND THE TRANSITIONS MAY BE OR SOIL CLASSIFICATIONS SHIP	ROXIMATION OF THE GEOLOGIC 6 BECAUSE THE IMPORIMATION RECT, DISCONTINUOUS, AND NO RECESSITATED BY USE OF ARY AND WASH BORNING HOLES 6 IN THIS RECARD SECAUSE OF G FLUID AND/OR CASING IN NS IN THIS HOLE ONLY ON THE T REPRESENT CONDITIONS AT HER DATES. ANY WATER LEVELS TION. CHI A WAY AS TO PROVIDE DATA ISES AND NOT NECESSARILY FOR INTRACTORS. DEPTH INTERVALS REPRESENT ES SETWEEN MATERIAL TYPES,	10 11 11 11 11 11 11 11 11 11 11 11 11 1					Grouted hole to neat cement mix	
RUS	T RONMENT &	AMERICAN I OAKLAND,	=		N	XPLOF ROJEC		BORING LOG SHEET:	BORING NO.
	ASTRUCTURE		DING 1		3	5195.	650	1 of 1	S-4

BORING LOCATION: ANC - Building 12 APPROVED BY: RAB GROUND EL:									
DEPTHA	ELEV.WATER: NA	DRI	ILL CON	TRACTOF	R: Precis	ion Drill	ing	TOTAL DEP	
DRILL R	IG: MD-1	BORING DIA.: 2-	1/4"	DATE D		: 9/27/	94	LOGGED BY	: RAB
SOIL CLASS	DESCR	IPTION	DEPTH	SAMPLE NO.	PR RQD	REC.	MODE	REMA	RKS
GM	0'-4.5'? SILTY GRA\ moderate yellowish I dense.		2			100% 67%	PD	Advanced 2-1/4 casing by percu (PD). Placed cuttings and analyzed h with photoionization (PID). Measure vapors in parts (ppm).	in plastic bag eadspace ation detector at organic
H CH	high plasticity. 5.5'-6.0' SILTY CLA'	ky brown; damp; stiff; Y: moderate yellowish	4-	S5-5.0		50%		1.0'-1.5': PID = 2.5'-3.0': PID = 4.5'-5.0': PID =	■ 0.9 ppm
CL E E	brown; damp; firm; n Terminated boring		6	PES				Grouted hole to neat cement mi	
والسواسية			10						
اسيطيسان			12			·			
	AND SUBSURFACE CONDITION WAS OSTAINED FROM INDI POSSIBLY DISTURBED SAMPLI SMALL-OVAMETER HOLES, ROI HAVE FURTHER COMPLICATION THE NEED TO USE DRILLIN ADVANCING HOLES. THIS LOG INDICATES CONDITIO	ROXIMATION OF THE GEOLOGIC SE BECAUSE THE INFORMATION RECT, DISCONTINUOUS, AND NO RECESSITATED BY USE OF ARY AND WASH BORNING HOLES SIM THIS REGARD SECAUSE OF G. FLUID AND/OR CASING IN HIS IN THIS HOLE ONLY ON THE IT REPRESENT COMMITTIONS AT	14						
	OTHER LOCATIONS AND ON OTH SHOWN ARE SUBJECT TO VARIA THIS HOLE WAS LOGGED IN SU	MER DATES. ANY WATER LEVELS TROM. OH A WAY AS TO PROVIDE DATA SES AND NOT NECESSARILY FOR	18				·		
	THE APPROXIMATE BOUNDARK AND THE TRANSITIONS MAY SE SOIL CLASSIFICATIONS SH	DEPTH INTERVALS REPRESENT DS BETWIEN MATERIAL TYPES, 2MADUAL DWM ON LOGS ARE FIELD ON THE UNIFIED SOILS		·	. :			·	
			20-			<u> </u>		ADIMA LAS	PORMO
RUS		AMERICAN N			ΝЬ	XPLOR ROJEC		SHEET:	BORING NO.
	RONMENT & ASTRUCTURE		OAKLAND, CALIFORNIA BUILDING 12			5195.		1 of 1	S-5

BORING LOCATION: ANC - Building 12 APPROVED BY: RAB GROUND EL:									
	LEV.WATER: NA		LL CON	FRACTOF	R: Precis	ion Drill	ing	TOTAL DEPT	H: 7.5'
	IG: MD-1	BORING DIA.: 2-	1/4"	DATE D	RILLED	9/27/9	14	LOGGED BY	: RAB
SOIL CLASS	DESCRI	PTION	DEPTH	SAMPLE NO.	PR RQD	REC.	MODE	REMAR	RKS
GW	0'-1' Baserock and re concrete. 1'-6.5'? SILTY GRAV moderate yellowish b	Juntun		·	100%	PD	Advanced 2-1/4' casing by percus (PD). Placed cuttings and analyzed he	ssion drilling in plastic bag sadspace	
ruhunulu GM	dense.		2			100%		with photoioniza (PID). Measure vapors in parts p (ppm).	d organic per million
ماسيدات			4			10%		1.0'-1.5': PID = 2.5'-3.0': PID =	` '
	O AV		6-	T1-6.5		100% 67%			:
E CH	6.5'-7.5' CLAY: mode stiff; high plasticity.	erate brown; damp;	=	PES		07%			
CH CH	Terminated bo	ring at 7.5'.	8					Grouted hole to neat cement mix	
			10	·					
			12						
سياسيايي	AND SUBBURFACE CONDITIONS WAS OBTAINED FROM INDIF POSSIBLY DISTURBED SAMPLE SMALL-DIAMETER HOLES. ROT	RECT, DISCONTINUOUS, AND NG NECESSITATED BY USE OF ARY AND WASH SORING HOLES IS IN THIS REGARD SECAUSE OF	14-						
	DATE INDICATED AND MAY NO	NS IN THIS HOLE ONLY ON THE IT REPRESENT CONDITIONS AT IER DATES. ANY WATER LEVELS TION,	16-						
E	THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PROVIDE DATA PRIMARKY FOR DESIGN PURPOSES AND NOT NECESSARILY FOR THE PURPOSES OF SPECIFIC CONTRACTORS.  THE STRATIFICATION LINES OR DEPTH INTERVALS REPRESENT		18						•
E	THE APPROXIMATE BOUNDARIE AND THE TRANSITIONS MAY BE O	ES BETWEEN MATERIAL TYPES,							
<b></b>	CLASSIFICATION SYSTEM.		20-	<u> </u>		<u> </u>			BOBINO
RUS		AMERICAN I			'N F	ROJEC		SHEET:	BORING NO.
			, CALIFORNIA DING 12			35195		1 of 1	T-1

BORING LOCATION: ANC - Building 12 APPROVED BY: RAB GROUND EL:									•
DEPTH/ELEV.W/			RILL CON	TRACTOF	R: Precis	ion Driil	ing	TOTAL DEPT	H: 6.0'
DRILL RIG: MC		BORING DIA.:	2-1/4"	DATE D		9/27/	94	LOGGED BY	: RAB
SOIL CLASS	DESCR	PTION	DEPTH	SAMPLE NO.	PR ROD	REC.	MODE	REMAI	RKS
O'-1' Ba concret  GW  1'-2' SII yellowis 2'-4.5' Gdamp; s  CH  4.5'-5.0' YR 4/2) concret  CL  5.0'-6.0' brown (	TY GRAVEL th brown; dry that; dusky l tiff; high plas CLAY: dark; w/dusky brow ons; damp; s SILTY CLAY	yellowish brown (10 vn (5 YR 2/2) tiff; trace pea gravel ': moderate yellowis amp; firm; moderate	. 4 = 1	T2-2.0 PES T2-4.0 PES		100%	PD	Advanced 2-1/4' casing by percus (PD). Placed cuttings and analyzed he with photoioniza (PID). Measure vapors in parts (ppm).  1.0'-1.5': PID =  1.5'-2.0': PID =	ssion drilling in plastic bag eadspace ition detector d organic per million
- plasticit	y; trace sand. iinated boring		-			4		Grouted hole to neat cement mix	
ANO SUBSI WAS OBT POSSIBLY SMALL: OU HAVE FUR THE NEEL ADVANCES OTHER LOG OTHER LOG SHOWN AF THE HOLE PRIMARILY THE PURP AND THE TRANSPIRE AND THE TE SOIL CLASSIFIC CLASSIFIC CLASSIFIC	URFACE CONDITION AINED FROM HIDID DISTURBED RAMPLI METER HOLES. ROT THEN COMPLICATION O TO USE DRILLIN ONDCATES CONDITION CATED AND MAY HO CATEDIA AND THE SUBJECT TO VARIA WAS LOGGED IN SU REPORT ON THE SUBJECT	CH A WAY AS TO PROVIDE DATA SES AND NOT NECESSARILY FOR INTRACTORS.  DEPTH INTERVALS REPRESEN ES BETWEEN MATERIAL TYPES GRADUAL  OWN ON LOGS ARE FIELD ON THE UNIFIED SOIL:	18-			XDI O	2ATON	RORING LOG	BORING
RUST	- N	AMERICAN OAKLANI	_		N F	ROJEC	1	SHEET:	BORING NO.
ENVIRONM INFRASTRI			LDING 1		` ├─	5195		1 of 1	T-2

BORING	BORING LOCATION: ANC - Building 12 APPROVED BY: RAB GROUND EL:									
	LEV.WATER: NA		LL CON	TRACTOR	R: Precis	ion Drill	ing	TOTAL DEPT		
	IG: MD-1	BORING DIA.: 2-	1/4"	DATE D		: 9/27/9	)4	LOGGED BY	: RAB	
SOIL CLASS	DESCRI	PTION	DEPTH	SAMPLE NO.	PR RQD	REC.	MODE	REMA	RKS	
GW	0'-1' Baserock and residual crushed concrete. 1'-5.75' SILTY GRAVEL w/sand: moderate yellowish brown; dry; medium					100%	PD	Advanced 2-1/4' casing by percus (PD). Placed cuttings and analyzed he	ssion drilling in plastic bag	
GM	dense.		2			67%		with photoioniza (PID). Measure vapors in parts p (ppm).	tion detector d organic per million	
			4			33%		1.0'-1.5': PID = 2.5'-3.0': PID =		
E_CH	5.75'-6.0' CLAY: mod stiff;high plasticity. Terminated boring	•	-	T3-5.0 PES				4.5'-5.0': PID =		
والمتعدد المتعدد المتع		<b>.</b>	8 10 10					neat cement mix		
	DATA ON THIS LOG ARE AN APP AND SUBSURFACE CONDITION WAS OSTAINED FROM INDI POSSIBLY DISTURBED SAMPLE SMALL- DIAMETER HOLES. ROT HAVE FURTHER COMPLICATION THE NEED TO USE DRILLIN ADVANCING HOLES.	S BECAUSE THE INFORMATION IECT, DISCONTINUOUS, AND IG NECESSITATED BY USE OF ARY AND WASH BORING HOLES IS IN THIS REGARD BECAUSE OF	12							
سيشيد	THIS LOG INDICATES CONDITIONS IN THIS HOLE ONLY ON THE DATE INDICATED AND MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND ON OTHER DATES. ANY WATER LEVELS SHOWN ARE SUBJECT TO VARIATION.  THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PROVIDE DATA PRIMARLY FOR DESIGN PURPOSES AND NOT NECESSARILY FOR THE PURPOSES OF SPECIFIC CONTRACTORS.		16-						t	
	THE STRATIFICATION LINES ON THE APPROXIMATE SOUNDARK AND THE TRANSITIONS MAY BE ( SOIL CLASSIFICATIONS SHI CLASSIFICATIONS BASED CLASSIFICATION SYSTEM.	IS BETWEEN MATERIAL.TYPES, MADUAL DWN ON LOGS ARE FIELD	18-							
RUS	eT.	AMERICAN I	VATIO	NAL CA	N E	XPLOF	RATION	BORING LOG	BORING	
	PONMENT &	OAKLAND,				RQJEC	T NO.	SHEET:	NO.	
	ASTRUCTURE		DING 1			35195.	650	1 of 1	T-3	

BORING LOCATION: ANC - Building 12 APPROVED BY: RAB GROUND EL:								
DEPTH/ELEV.WATER: NA		ILL CON	TRACTOF	l: Precis	ion Drill	ing	TOTAL DEPT	
DRILL RIG: MD-1	BORING DIA.: 2-	1/4"	DATE D	RILLED	9/27/9	)4	LOGGED BY	: RAB
SOIL DESCRI	PTION	DEPTH	SAMPLE NO.	PR RQD	REC.	MODE	REMAI	RKS
0'-0.5' Baserock and concrete. 0.5'-3' SILTY GRAVE yellowish brown; dry;	L w/sand: moderate	]1111111			67%	PD	Advanced 2-1/4 casing by percu (PD). Placed cuttings and analyzed he	ssion drilling in plastic bag
GM 3'-4.5' Same as 0.5'-	3'??	2			33%		with photoioniza (PID). Measure vapors in parts ( (ppm).	ition detector d organic
GM 4.5'-6.0' SILTY CLAY		4			10%		1.0'-1.5': PID = 2.5'-3.0': PID =	
brown (5 Y 4/4); dar plasticity.		-	T4-5.0 PES		100%		Constant halo to	
THE PURPOSES OF SPECIFIC CO THE STRATIFICATION LINES OR THE APPROXIMATE BOUNDARIE AND THE TRANSITIONS MAY BE OR SOIL CLASSIFICATIONS SHO	ROXIMATION OF THE GEOLOGIC B BECAUSE THE IMPORMATION NECT, DISCONTINUOUS, AND IGN NECESSITATED BY USE OF ARY AND WASH SORING HOLES S IN THIS RECARD SECAUSE OF S FLUID AND/OR CASING IN NS IN THIS HOLE ONLY ON THE T REPRESENT CONDITIONS AT ER DATES. ANY WATER LEVELS TION. CH A WAY AS TO PROVIDE DATA ISS AND NOT NECESSARILY FOR INTRACTORS. DEPTH INTERVALS REPRESENT IS SETWEEN MATERIAL TYPES.	10 11 11 11 11 11 11 11 11 11 11 11 11 1					Grouted hole to next cement mix	
RUST	AMERICAN I	NATIO	VAI CA	N E	XPLOF	ATION	BORING LOG	BORING NO.
ENVIRONMENT &					ROJEC	T NO.	SHEET:	NO.
INFRASTRUCTURE		OAKLAND, CALIFORNIA BUILDING 12			5195.	650	. 1 of 1	T-4