



## earth metrics incorporated

December 5, 1991

Mr. Robert Enea  
 Enea Properties  
 6670 Amador Plaza Road  
 Dublin, CA 94568

*Enea Plaza*

Subject: Soil Screening Analysis: 6700/6766/6780 Amador Plaza Road,  
 Dublin, California (Earth Metrics file reference 11583B)

Dear Mr. Enea:

This letter summarizes the program of exploratory soil boring, soil and groundwater sampling, and testing performed on October 14, 1991, according to the work plan approved by Mr. Lin. A Level One Environmental Site Assessment for the subject site was performed by Earth Metrics on August 8, 1991. A copy of this report is provided in Appendix B.

According to Drilling Permit condition A-2, a copy of this report should be submitted to Mr. Craig A. Mayfield, Water Resources Engineer, Alameda County Flood Control and Water Conservation District, 5997 Parkside Drive, Pleasanton, California 94588 (Telephone Number (510) 484-2600). A copy of the Alameda County Flood Control and Water Conservation District Drilling Permit 91558 is provided in Appendix A.

A mechanical auger with an eight-inch-diameter drill bit was used to obtain relatively undisturbed soil samples from five (5) boring holes. Figure 1 illustrates the locations of the borings on the tax assessor's parcel map. Each boring hole was then converted to a temporary groundwater monitoring well by placing well PVC casings, screen, and sand pack into the borings. Appendix C contains the boring logs and groundwater monitoring well construction reports.

Six (6) soil samples and five groundwater samples were collected. With the exception of boring hole B-1 where two soil samples were collected, one soil sample was collected from each boring hole by using a California modified soil sampler driven by 140 lbs hammer with 30-inch drop. Each soil sample represented the subsurface conditions of the soil above the groundwater table at seven feet below grade. Each temporary groundwater monitoring well was purged by bailing approximately five casing well volumes of water and sampled with a disposable teflon bailer.

A composite soil sample was prepared by the laboratory by compositing one soil sample from each boring. A composite groundwater sample was prepared by the laboratory by compositing one groundwater sample from each boring. Soil cuttings from the borings and groundwater from well purging that were

generated during the course of this assignment have been contained in three (3) 55-gallon drums. All temporary monitoring wells were destroyed immediately after sampling by pulling out all well casings and screen and drilling out all sand pack materials. Immediately after collection of all samples, the sample containers were put in a refrigerated ice chest and taken to a DHS-certified laboratory. Documented Chain of Custody procedures were followed to ensure sample integrity. Steam cleaning was performed between borings to ensure sample quality.

Soil and groundwater samples were then submitted to a DHS-certified environmental laboratory for the following analysis: Total Petroleum Fuel Hydrocarbons as gasoline (TPHg) in groundwater with BTEX Distinction (EPA Test # 5030/8015/8020); Industrial Solvent Scan in soil (EPA Test # 3810/8015 Modified); and Total Petroleum Fuel Hydrocarbons as diesel (TPHd) in soil (EPA Test # 8015). Certified laboratory test results and QA/QC reports are provided in Appendix A. Additional groundwater test results for all individual groundwater samples are provided in Appendix D.

## RESULTS

Analysis of composite soil sample C3 indicated the absence of any industrial solvents in the soil. Analysis of composite groundwater sample C1 indicated the presence of 6,500 parts per billion (ppb) of High Boiling Point Hydrocarbons (diesel) in the groundwater. Analysis of composite groundwater sample C2 indicated the presence of 11,000 ppb of Low/Medium Boiling Point Hydrocarbons (gasoline) in the groundwater; also present in sample C2 were 260 ppb of benzene, 50 ppb of toluene, 400 ppb of ethyl benzene, and 1,300 ppb of xylenes. All individual groundwater samples were subsequently analyzed for TPHg/BTEX. Analyses of these samples indicated the presence of TPHg in variable amounts ranging from 99,000 ppb in B1 to ND in B5; also present in sample B1W2 were 1,400 ppb of benzene, 570 ppb of toluene, 2,300 ppb of ethyl benzene, and 9,700 ppb of xylenes. The Maximum Contaminant Level (MCL) for benzene is 1 ppb; MCL for toluene is 2,000 ppb; MCL for ethyl benzene is 700 ppb; and MCL for xylenes is 10,000 ppb. There is no MCL for gasoline or diesel in the groundwater, only for the individually listed toxic constituents. MCLs are benchmarks used by regulatory agencies for assessing groundwater contamination.

## CONCLUSIONS

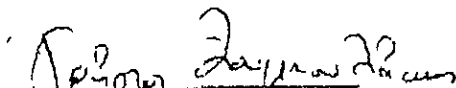
Based on the soil test results which confirm absence of contamination in the soil above groundwater and the fact that the subject site itself has never been involved in any reported spill of hazardous materials, Earth Metrics concludes that no on-site contamination source is present. Absence of industrial solvents and volatile constituents of gasoline in the soil indicated that groundwater contamination is not caused by the soil on the subject site.

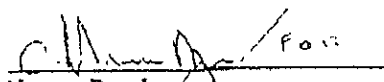
Interpretation of groundwater results suggests the migration of an underground contamination plume from existing or historic leaking underground storage tanks at an off-site location. The Level One Environmental Site Assessment for the subject site that was performed by Earth Metrics on August 8, 1991, identified one upgradient fuel leak incident (located at Montgomery Ward, 6900 Amador Plaza, Dublin) as a potential off-site source that could possibly impact the quality of the groundwater beneath the subject site.

Soil cuttings and groundwater that were generated during the course of this assignment have been contained in three (3) 55-gallon drums. Based on the existing results, these drums cannot be disposed as non-hazardous waste in California (i.e. Class III Landfill). Earth Metrics recommends consultation with Alameda County Hazardous Materials Unit regarding proper management of these drums.

Please feel free to call either of us with any other comments or questions you may have.

Sincerely,

  
Chris Zouboulakis  
Environmental Scientist

  
Marc Papineau  
Manager, Physical Sciences Department  
California REA 00791

Enclosures: Certified Laboratory Test Results and Chain of Custody Records  
Level One Environmental Site Assessment  
Boring Logs  
Additional Groundwater Test Results

APPENDIX C

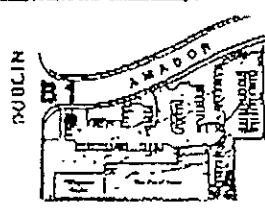
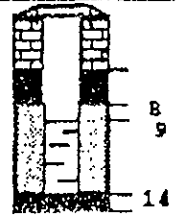
BORING LOGS



**EARTH METRICS  
INCORPORATED**

**Legend**

- ML
- CL
- OL
- SW
- SP
- SM
- SC
- MH
- CH
- OH
- PI



Elevation: 340' above MSL

Job No.: 11583A	Location: Amador Plaza Road
Drilling Method: Truck mounted	Boring # B1
Drilling Company: Bayland Drilling	Sheet # 1/5
Drilling Crew: Bob and Mark	Drilling Time: 6.5hr
Sampler: Chris Zouboulakis	Start Date: 11/30
Sampling Method: California Modified	Finish Date: 5/30
Casing/Sand/Seal Depth: 14 8 N/A	Date: 10/14
Depth to Water/Time: 9.0'/500pm	Date: 10/14

Surface Conditions: Asphalt Pavement

**Soil Description:**

Recovery	Sample Type	Sample Depth	Blows/6 in.	Moisture Content	Product Odor	Depth in Feet	USGS Code
						1	
						2	
						3	
						4	CL
						5	
						6	
good	soil	7/7.5	4/5/7	dry	none	7	
good	water	9.0	n/a	n/a	heavy	8	
						9	
						10	SC
						11	GROUNDWATER
						12	
						13	CL
						14	
						15	
						16	
						17	
						18	
						19	
						20	

Inorganic clay, low plasticity mixed with gravel, dry, no discoloration, no odor


Clayey sand with some small gravels, vary moist, no odor, no discoloration. Thin layer of floating product.

Inorganic clay of low plasticity mixed with light gray sand, dry, no gravel, no discoloration, no odor.

GROUNDWATER ENCOUNTERED AT 11' BELOW GRADE

BORING TERMINATED AT 15' BELOW GRADE

Boring at Area 13a



**EARTH METRICS  
INCORPORATED**

**Legend**

	GW		ML
	GP		CL
	GM		OL
	GC		
	SW		MH
	SP		CH
	SM		OH
	SC		Pt

Job No.: 11583A      Location: Amador Plaza Road

Drilling Method: Truck mounted      Boring # 22

Drilling Company: Bayland Drilling      Sheet # 2/5

Drilling Crew: Bob and Mark      Drilling Time: 7. Bhr

Sampler: Chris Zouboulakis

Sampling Method: California Modified

Casing/Sand/Seal Depth:	14	7.5	N/A
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Start	Finish
900	530
Date	Date
10/14	10/14


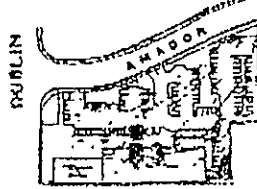
Depth to Water/Time: 6.5' / 300pm

Surface Conditions: Asphalt Pavement

Elevation: 340' above MSL

Recovery	Sample Type	Sample Depth	Blows/6 in.	Moisture Content	Product Odor	Depth in Feet	USGS Code	Soil Description:
						1		Inorganic clay, low plasticity mixed with gravel, dry, no discoloration, no odor
						2		
						3		
						4	CL	
						5		
						6		
						7		
good	soil	6.5	4/6/7	dry	none	7		
good	water	6.5	n/a	n/a	heavy	8		
						9		
						10	▼	GROUNDWATER
						11	SC	Clayey sand with some small gravels, very moist, no odor, no discoloration.
						12		
						13	CL	Inorganic clay of low plasticity mixed with light gray sand, dry, no gravel, no discoloration, no odor.
						14		
						15		
						16		
						17		GROUNDWATER ENCOUNTERED AT 10' BELOW GRADE
						18		BORING TERMINATED AT 15' BELOW GRADE
						19		
						20		

**EARTH METRICS INCORPORATED**

**Legend**

	GW		ML
	GP		CL
	GM		OL
	GC		MI
	SW		CH
	SP		OH
	SM		Pt
	SC		

Elevation: 340' above MSL

Job No.: 11583A      Location: Amador Plaza Road

Drilling Method: Truck mounted      Boring # B3

Drilling Company: Bayland Drilling      Sheet # 3/5

Drilling Crew: Bob and Mark      Drilling Time: 9.5 hr

Sampler: Chris Zouboulakis

Sampling Method: California Modified      Start 800      Finish 530

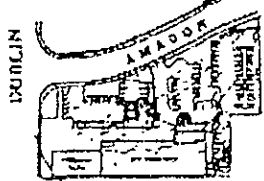
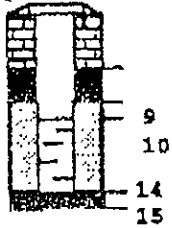
Casing/Sand/Seal Depth: 14      8.0      N/A      Date 10/14      Date 10/14

Depth to Water/Time: 8.0' / 500pm

Surface Conditions: Asphalt Pavement

Recovery	Sample Type	Sample Depth	Blows/6 in.	Moisture Content	Product Odor	Depth in Feet	USCS Code	Soil Description:
						1		Inorganic clay, low plasticity mixed with gravel, dry, no discoloration, no odor.
						2		
						3		
						4	CL	
						5		
						6		
good	soil	6.5	4/5/7	dry	none	7		
good	water			n/a	none	8		
						9		Clayey sand with some small gravel, very moist, no odor, no discoloration.
						10	SC	
						11		GROUNDWATER
						12		Inorganic clay of low plasticity mixed with light gray sand, dry, no gravel, no discoloration, no odor.
						13	CL	
						14		
						15		GROUNDWATER ENCOUNTERED AT 11' BELOW GRADE BORING TERMINATED AT 18' BELOW GRADE
						16		
						17		
						18		
						19		
						20		

**EARTH METRICS INCORPORATED**



Elevation: 340' above MSL

**Legend**

- GW
- GP
- GM
- GC
- ML
- CL
- OL
- SW
- SP
- SM
- SC
- MH
- CH
- OH
- PI

Job No.: 11583A

Location: Amador Plaza Road

Drilling Method: Truck mounted

Boring # B4

Drilling Company: Bayland Drilling

Sheet # 4/5

Drilling Crew: Bob and Mark

Drilling

Sampler: Chris Zemboulakis

Time: 7 hr

Sampling Method: California Modified

Start

Casing/Sand/Seal Depth: 14 8.0 N/A

1030 530

Depth to Water/Time: 8.5'/500pm

Date

10/14 10/14

Surface Conditions: Asphalt Pavement

**Soil Description:**

Recovery	Sample Type	Sample Depth	Blows/6 in.	Moisture Content	Product Odor	Depth in Feet	USCS Code
						1	
						2	
						3	
						4	CL
						5	
						6	
good	soil	6.5	4/3/7	dry	none	7	
good	water	8.5	n/a	n/e	none	8	
						9	
						10	SC
						11	▼
						12	
						13	CL
						14	
						15	
						16	
						17	
						18	
						19	
						20	

Inorganic clay, low plasticity mixed with gravel, dry, no discoloration, no odor.

Clayey sand with some small gravels, very moist, no odor, no discoloration.

GROUNDWATER

Inorganic clay of low plasticity mixed with light gray sand, dry, no gravel, no discoloration, no odor.

GROUNDWATER ENCOUNTERED AT 11.5' BELOW GRADE

BORING TERMINATED AT 15' BELOW GRADE

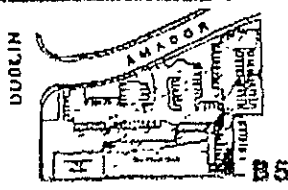
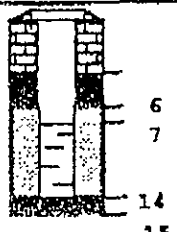




**EARTH METRICS  
INCORPORATED**

**Legend**

- GW
- GP
- GM
- GC
- SW
- SP
- SM
- SC
- ML
- CL
- OL
- MH
- CH
- OH
- Pt



Elevation: 340' above MSL

Job No.: 11583A	Location: Amador Plaza Road
Drilling Method: Truck mounted	Boring # R5
Drilling Company: Bayland Drilling	Sheet # 5/5
Drilling Crew: Bob and Mark	Drilling Time: 5.5hr
Sampler: Chris Zouboulakis	Start Date: 1200
Sampling Method: California Modified	Finish Date: 530
Casing/Sand/Seal Depth: 14 6 N/A	Date: 10/14
Depth to Water/Time: 8.0' / 500pm	Date: 10/14

Recovery	Sample Type	Sample Depth	Blows/6 in.	Moisture Content	Product Odor	Depth In Feet	USGS Code
						1	
						2	
						3	
						4	
						5	
						6	
good	soil	6.5	3/4/5	dry	none	7	
good	water	8.0	n/a	n/a	none	8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

Surface Conditions: Asphalt Pavement

Soil Description:

Inorganic clay, low plasticity mixed with gravel, dry, no discoloration, no odor.

SC

GROUNDWATER

SC

Clayey sand with some small gravels, very moist, no odor, no discoloration.

CL

Inorganic clay of low plasticity mixed with light gray sand, dry, no gravel, no discoloration, no odor.

GROUNDWATER ENCOUNTERED AT 10' BELOW GRADE

BORING TERMINATED AT 15' BELOW GRADE



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Earth Metrics

7000 Marina Blvd.

Brisbane, CA 94005

Attention: Chris Zouboulakis

Client Project ID: ENEA Plaza

Matrix Descript: Water

Analysis Method: EPA 5030/8015/8020

First Sample #: 110-5013

Sampled: Oct 14, 1991

Received: Oct 25, 1991

Analyzed: Oct 28, 1991

Reported: Nov 4, 1991

## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Benzene	Toluene	Ethyl	Xylenes
		Hydrocarbons			Benzene	
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
	S9W2	210	1.5	N.D.	N.D.	N.D.
110-5014	B2W2	8,100	820	8.3	730	38
110-5015	B1W2	99,000	1,400	570	2,300	9,700
110-5016	B4W2	250	2.4	1.4	6.4	28
110-5017	B5W2	N.D.	N.D.	N.D.	N.D.	1.3

Detection Limits:

30

0.30

0.30

0.30

0.30

Low to Medium Boiling Point Hydrocarbons are quantitated against a 100 ppb standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Malle A. Springer  
Project Manager



# SEQUOIA ANALYTICAL

250 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9500 • FAX (415) 364-9233

Earth Metrics

Client Project ID: ENEA Plaza

7000 Marina Blvd.

Brisbane, CA 94005

Attention: Chris Zouboulakis

QC Sample Group: 1105013 - 14

Reported:

1991

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
---------	---------	---------	---------------	---------

Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J Jenks	J Jenks	J Jenks	J Jenks
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Oct 28, 1991	Oct 29, 1991	Oct 29, 1991	Oct 29, 1991
QC Sample #:	GBLK102891	GBLK102891	GBLK102891	GBLK102891

Samp' Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	9.6	9.6	9.4	29
Matrix Spike % Recovery:	96	96	94	97
Conc. Matrix Spike Dup.:	9.7	9.7	9.6	29
Matrix Spike Duplicate % Recovery:	97	97	94	97
Relative % Difference:	1.0	1.0	2.1	0.0

SEQUOIA ANALYTICAL

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$	100
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S. D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S. D.}) / 2} \times 100$	< 100

Malle A. Springer  
Project Manager



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Earth Metrics

Client Project ID: ENEA Plaza

7000 Marina Blvd.

Brisbane, CA 94005

Attention: Chrls Zouboulakis

QC Sample Group: 1105015 - 17

Reported: Nov 3, 1991

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J.Jenks	J.Jenks	J.Jenks	J.Jenks
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Oct 29, 1991	Oct 29, 1991	Oct 29, 1991	Oct 29, 1991
QC Sample #:	GBLK102891	GBLK102891	GBLK102891	GBLK102891
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	11	10	32
Matrix Spike % Recovery:	100	110	100	107
Conc. Matrix Spike Dup.:	11	11	11	33
Matrix Spike Duplicate % Recovery:	110	110	110	110
Relative % Difference:	9.5	0.0	9.5	3.1

SEQUOIA ANALYTICAL

*Malle A. Springer*  
Malle A. Springer  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

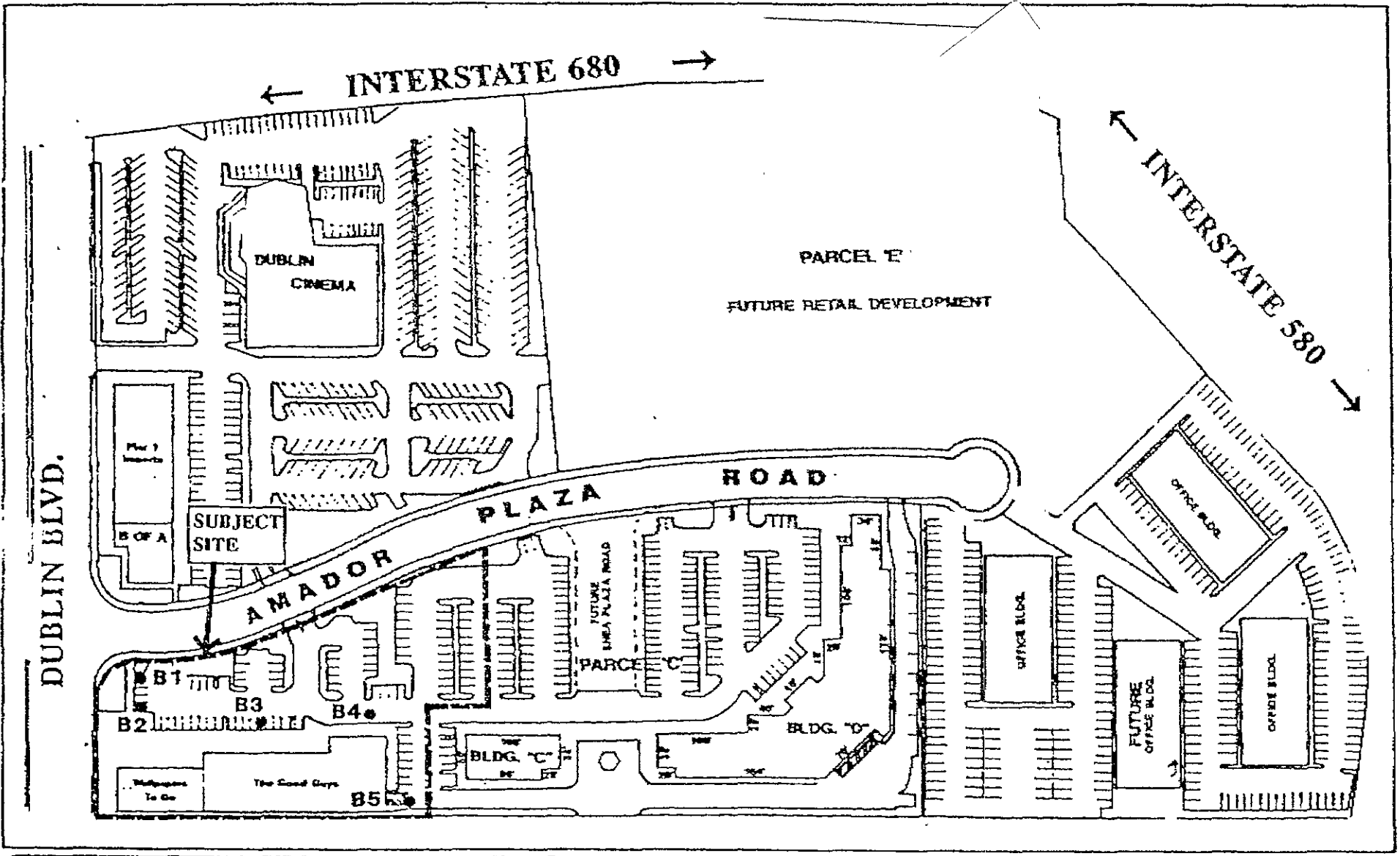


FIGURE 1. BORING LOCATIONS



earth metrics





CHAIN OF CUSTODY REPORT

CLIENT: Earth Metrics				REPORT TO: CHRIS ZOUBOULAKIS				TURNAROUND TIME: (5 Days)					
ADDRESS: 7000 Marina Blvd 4th floor Brisbane CA 94005				BILLING TO: LETICIA MONTGOMERY				24 HR.	48 HR.	72 HR.	5 DAY	10 DAY	15 DAY
PHONE: (415) 742-9900 x 32				PDR/BILLING REFERENCE: PO # 04035									
PROJECT NAME/SITE: ENEA PLAZA 6700/6766/6780 Amador Plaza Rd, Dublin				ANALYSIS REQUESTED				C: Composite & Tech A: Archive					
SAMPLER: Chris Zouboulakis			DATE: 10-14-91										
SAMPLE ID#/ STATION	SAMPLE DESCRIPTION	NUMBER OF CONT.	TYPE CONT.	SAMPLING TIME/DATE	THIS-805 TAP-DIESEL	THIS-805 TAP-805 TAP-8/875K	10-14-91 TAP-875K	REMARKS			SAMPLE NUMBER		
B3W1	Groundwater	1	1Lit Amb	4:30pm	C1								
B3W2	"	4	VOA	4:50 pm	C2		✓						
B2W1	"	1	1Lit Amb	5:00pm	C1								
B2W2	"	4	VOA	5:00pm	C2	A	✓						
B1W1	"	1	1Lit Amb	5:00pm	C1								
B1W2	"	4	VOA	5:00pm	C2	A	✓						
B4W1	"	1	1Lit Amb	6:00pm	C1								
B4W2	"	4	VOA	6:00pm	C2	A	✓						
B5W1	"	1	1Lit Amb	6:00pm	C1	C2							
B5W2	"	4	VOA	6:00pm	C2	A	✓						
RELINQUISHED BY: [Signature]				DATE: 10-14		TIME: 8:00		RECEIVED BY: [Signature]				TRAVEL TIME:	
RELINQUISHED BY:				DATE:		TIME:		RECEIVED BY:				ON SITE TIME:	
RELINQUISHED BY: [Signature]				DATE: 10/14/91		TIME: 15:05		RECEIVED IN LAB BY: [Signature]				OTHER:	
WERE SAMPLES: PRESERVED? Yes for CW IN GOOD CONDITION? Yes										YES	NO		
										HCL			

12. 13. 91 09:00AM + FERRARI AREZ FOS