

QUARTERLY GROUND WATER REPORT
MAY 1990
SUNNYSIDE NURSERY
HAYWARD, CALIFORNIA
PROJECT 4454/2

FOR

THE PLYMOUTH GROUP
1616 NORTH SHORELINE BOULEVARD
MOUNTAIN VIEW, CALIFORNIA 94043

BY

TERRATECH, INC.
1365 VANDER WAY
SAN JOSE, CALIFORNIA 95112

JUNE 26, 1990





June 26, 1990
Project 4454/2

Mr. Scott Ward
The Plymouth Group
1616 North Shoreline Boulevard
Mountain View, California 94043

Subject: Quarterly Ground Water Report - May 1990
Area of Former Diesel Tank
Sunnyside Nursery
Hayward, California

Dear Mr. Ward:

This letter report describes the field work performed and the findings gained from Terratech's recent ground water quality test at the Sunnyside Nursery site in Hayward, California.

The objective of this testing was document the continued absence of ground water impact after a nearby underground diesel tank (see Figure 1) and its associated backfill soil were removed (ref. Project 4454/2 letter reports dated February 26, 1990 and March 13, 1990). NOTE: A concurrent study on an adjacent site has confirmed our assumed westerly ground water gradient direction.

WORK PERFORMED

On May 18, 1990 MW-1 was purged and sampled using a pre-cleaned Teflon bailer. Approximately four well volumes of water were removed and drummed. Final pH measurements stabilized to ± 0.1 pH units; final temperature to within 0.3°F ; and final conductivity to ± 10 micromhos/cm. Water samples were placed in containers supplied by the laboratory - two volatile organic analysis (VOA) vials (no headspace) and two amber-colored glass bottles.

All samples were kept iced or refrigerated from the time of collection to the time of testing. Standard chain-of-custody records were prepared to document sample collection, handling and analysis requests (see Appendix).

FINDINGS AND COMMENTS

The analytical results to date are summarized in Table 1. The latest laboratory report is presented in the Appendix. No detectable amount of diesel or volatile organics was found in the collected sample.

This ground water finding continues to support our opinion that the trace amounts of methylene chloride and 1,1,1-trichloroethane (TCA) detected in the DH-2 grab sample from our original investigation were somehow introduced during the sampling or analytical processes. Further, there does not appear to be a ground water impact from the former diesel fuel system.

In accordance with the present California Regional Water Quality Control Board (RWQCB) guidelines, verification sampling and analysis of ground water should be continued for two more quarters (i.e. August and November). If these samples also indicate nondetectable amounts of contamination we would then recommend discontinuation of ground water monitoring and well closure (subject to RWQCB approval).

Sincerely,

TERRATECH, INC.

Thomas C. Morin

Thomas C. Morin

Reviewed by:

E. R. Lautenbach

Eric R. Lautenbach
CE 42437, exp. 3/31/92

Attachments



TABLE 1

SUMMARY OF ANALYTICAL RESULTS FOR MONITORING WELL MW-1

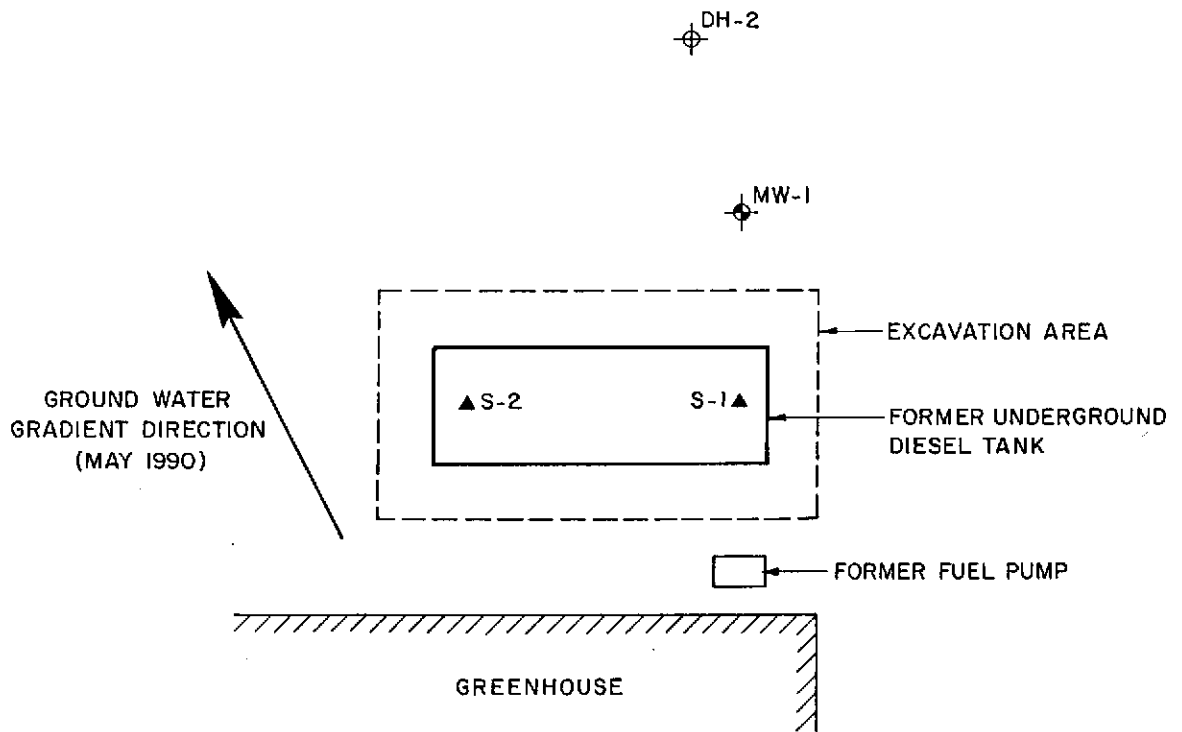
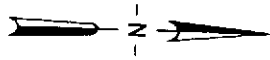
Sunnyside Nursery
Hayward, California

SAMPLE & DATE	BENZENE (ppm)	TOLUENE (ppm)	ETHYL- BENZENE (ppm)	XYLENES (ppm)	TPH as DIESEL (ppm)	VOLATILE ORGANICS (ppm)
SOIL @ 12.5' 2/15/90	< 0.005	< 0.005	< 0.005	< 0.005	< 10	---
GROUND WATER 2/21/90	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	N.D.
5/18/90	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	N.D.




Note:

N.D. indicates that all compounds in the analysis were below the detection limits of the method (see lab report, Appendix A).





LEGEND

-  DRILL HOLE (PHASE I STUDY)
-  MONITORING WELL
-  TANK REMOVAL SOIL SAMPLE

SCALE: 1" = 10'



6-90

TERRATECH

SUNNYSIDE NURSERY
HAYWARD, CALIFORNIA

LOCATION OF MONITORING WELL MW-1

FIGURE
1

PROJECT
4454/2

APPENDIX
CHAIN OF CUSTODY RECORD
AND
ANALYTICAL LABORATORY RESULTS



TERRATECH

CHAIN OF CUSTODY RECORD

P.O. NO. 0488

TURNAROUND: NORMAL

PROJECT NUMBER: <u>4454/2</u>						Number of Containers	Analysis Required <u>EPA 8240</u> <u>TPH-DIESEL</u>	REMARKS				SAMPLE DEPTH
SAMPLERS (signature): <u>T. Marin</u>												
Station Number	Date MM/DD	Time	Comp.	Grab	Station Location							
<u>MW-1</u>	<u>5/18</u>	<u>9:45</u>		<input checked="" type="checkbox"/>	<u>SUNNYSIDE I</u>	<u>2 JGA</u> <u>2 LITRE</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Relinquished by(signature):		Date / Time		Received by (signature):		Relinquished by(signature):		Date / Time		Received by (signature):		
Company or Agency:				Company or Agency:		Company or Agency:				Company or Agency:		
Relinquished by(signature): <u>Thomas Marin</u>		Date / Time <u>5/18/90</u>		Received by (signature): <u>[Signature]</u>		Relinquished by:		Date / Time		Received by (signature):		
Company or Agency: <u>TERRATECH</u>				Company or Agency: <u>TERRATECH</u>		Company or Agency:				Company or Agency:		
Relinquished by(signature): <u>[Signature]</u>		Date / Time <u>5/18/90</u>		Received for Laboratory by: (signature) <u>[Signature]</u>		Date / Time <u>5-18-90</u>		Remarks/Shipping Information				
Company or Agency: <u>TERRATECH, INC</u>		<u>15:15</u>				<u>15:15</u>		Send reports to: Eric Laufenbach 1365 VANDER WAY, SAN JOSE 95112				

ANAMETRIX INC

Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

TERRATECH

JUN 05 1990

**REPORT****RECEIVED**

Eric Lautenbach
Terratech, Inc. - San Jose
1365 Vander Way
San Jose, CA 95112

May 30, 1990
Anamatrix W.O.#: 9005242
Date Received : 05/18/90
Purchase Order#: 0488
Project Number : 4454/2

Dear Mr. Lautenbach:

Your sample has been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS.

NOTE: 1) Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Burt Sutherland
Laboratory Director

BWS/dag

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

Client : Terratech, Inc. - San Jose
Address : 1365 Vander Way
City : San Jose, CA 95112
Attn. : Eric Lautenbach

Anamatrix W.O.#: 9005242
Date Received : 05/18/90
Purchase Order#: 0488
Project No. : 4454/2
Date Released : 05/30/90

Anamatrix I.D.	Sample I.D.	Matrix	Date Sampled	Method	Date Extract	Date Analyzed	Inst I.D.
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RESULTS

9005242-01	MW-1	WATER	05/18/90	TPHd	05/23/90	05/24/90	N/A
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ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/2 MW-1
 Matrix : WATER
 Date sampled : 05/18/90
 Date anl.TPHg: N/A
 Date ext.TPHd: 05/23/90
 Date anl.TPHd: 05/24/90

Anamatrix I.D. : 9005242-01
 Analyst : *E.V.*
 Supervisor : *ODG*
 Date released : 05/30/90
 Date ext. TOG : N/A
 Date anl. TOG : N/A

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
	TPH as Diesel	50	ND

ND - Below reporting limit.
 TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following either EPA Method 3510 or 3550.

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

REPORT ORGANIZATION & FORM DESCRIPTION

GC/MS

Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number. EPA Method 624/8240 will be first, followed by EPA Method 625/8270, followed by the method blank results.

Tentatively Identified Compounds (TIC)

TIC forms contain tabulated results for non-target compounds detected in the analyses. TIC forms are organized in the same order as the OADS form. TICs must be requested at the time samples are submitted at Anametrix. If TICs are requested but not found, then TIC forms will not be included with the report.

Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. One SRS form will be printed for each method requested. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "**", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "**", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

NOTE: Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.

DEFINITION OF TERMS

GC/MS

Qualifiers

Anamatrix uses several data qualifiers (Q) in its report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the amount reported exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.
- A - Indicates that the tentatively identified compound is a suspected aldol condensation product. This is common in EPA Method 8270 soil analyses.

NOTE: Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

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

MR. ERIC LAUTENBACH
TERRATECH, INC. - SAN JOSE
1365 VANDER WAY
SAN JOSE, CA 95112

Workorder # : 9005242
Date Received : 05/18/90
Project ID : 4454/2
Purchase Order: 0488
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9005242- 1	MW-1	H2O	05/18/90	8240

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

MR. ERIC LAUTENBACH
TERRATECH, INC. - SAN JOSE
1365 VANDER WAY
SAN JOSE, CA 95112

Date Released : 06/04/90
Workorder # : 9005242
Date Received : 05/18/90
Project ID : 4454/2
Purchase Order: 0488
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- No QA/QC problems.

Paul Gowan 6-4-90
Department Supervisor Date

macll 06.04.90
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
 ANAMETRIX, INC. (408)432-8192

Project ID : 4454/2
 Sample ID : MW-1
 Matrix : WATER
 Date Sampled : 5/18/90
 Date Analyzed : 5/23/90
 Instrument ID : F3

Anamatrix ID : 9005242-01
 Analyst : M U
 Supervisor : PG
 Dilution Factor : 1.00
 Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	CHLOROMETHANE	10.	ND	U
75-01-4	VINYL CHLORIDE	10.	ND	U
74-83-9	BROMOMETHANE	10.	ND	U
75-00-3	CHLOROETHANE	10.	ND	U
75-69-4	TRICHLOROFLUOROMETHANE	5.	ND	U
75-35-4	1,1-DICHLOROETHENE	5.	ND	U
76-13-1	TRICHLOROTRIFLUOROETHANE	5.	ND	U
67-64-1	ACETONE	20.	ND	U
75-15-0	CARBON DISULFIDE	5.	ND	U
75-09-2	METHYLENE CHLORIDE	5.	ND	U
156-60-5	1,2-DICHLOROETHENE (TRANS)	5.	ND	U
75-34-3	1,1-DICHLOROETHANE	5.	ND	U
78-93-3	2-BUTANONE	20.	ND	U
156-59-2	CIS-1,2-DICHLOROETHENE	5.	ND	U
67-66-3	CHLOROFORM	5.	ND	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	ND	U
56-23-5	CARBON TETRACHLORIDE	5.	ND	U
71-43-2	BENZENE	5.	ND	U
107-06-2	1,2-DICHLOROETHANE	5.	ND	U
79-01-6	TRICHLOROETHENE	5.	ND	U
78-87-5	1,2-DICHLOROPROPANE	5.	ND	U
75-27-4	BROMODICHLOROMETHANE	5.	ND	U
110-75-8	2-CHLOROETHYL VINYL ETHER	5.	ND	U
108-05-4	VINYL ACETATE	10.	ND	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	ND	U
108-10-1	4-METHYL-2-PENTANONE	10.	ND	U
108-88-3	TOLUENE	5.	ND	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	ND	U
79-00-5	1,1,2,-TRICHLOROETHANE	5.	ND	U
127-18-4	TETRACHLOROETHENE	5.	ND	U
591-78-6	2-HEXANONE	10.	ND	U
124-48-1	DIBROMOCHLOROMETHANE	5.	ND	U
108-90-7	CHLOROBENZENE	5.	ND	U
100-41-4	ETHYLBENZENE	5.	ND	U
1330-20-7	XYLENE (TOTAL)	5.	ND	U
100-42-5	STYRENE	5.	ND	U
75-25-2	BROMOFORM	5.	ND	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	ND	U
541-73-1	1,3-DICHLOROBENZENE	5.	ND	U
106-46-7	1,4-DICHLOROBENZENE	5.	ND	U
95-50-1	1,2-DICHLOROBENZENE	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
 ANAMETRIX, INC. (408)432-8192

Project ID :
 Sample ID : BLANK
 Matrix : WATER
 Date Sampled : 0/ 0/ 0
 Date Analyzed : 5/23/90
 Instrument ID : F3

Anamatrix ID : 3CB0523V00
 Analyst : MCT
 Supervisor : PG
 Dilution Factor : 1.00
 Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	CHLOROMETHANE	10.	ND	U
75-01-4	VINYL CHLORIDE	10.	ND	U
74-83-9	BROMOMETHANE	10.	ND	U
75-00-3	CHLOROETHANE	10.	ND	U
75-69-4	TRICHLOROFLUOROMETHANE	5.	ND	U
75-35-4	1,1-DICHLOROETHENE	5.	ND	U
76-13-1	TRICHLOROTRIFLUOROETHANE	5.	ND	U
67-64-1	ACETONE	20.	6.	J
75-15-0	CARBON DISULFIDE	5.	ND	U
75-09-2	METHYLENE CHLORIDE	5.	1.	J
156-60-5	1,2-DICHLOROETHENE (TRANS)	5.	ND	U
75-34-3	1,1-DICHLOROETHANE	5.	ND	U
78-93-3	2-BUTANONE	20.	ND	U
156-59-2	CIS-1,2-DICHLOROETHENE	5.	ND	U
67-66-3	CHLOROFORM	5.	ND	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	ND	U
56-23-5	CARBON TETRACHLORIDE	5.	ND	U
71-43-2	BENZENE	5.	ND	U
107-06-2	1,2-DICHLOROETHANE	5.	ND	U
79-01-6	TRICHLOROETHENE	5.	ND	U
78-87-5	1,2-DICHLOROPROPANE	5.	ND	U
75-27-4	BROMODICHLOROMETHANE	5.	ND	U
110-75-8	2-CHLOROETHYL VINYL ETHER	5.	ND	U
108-05-4	VINYL ACETATE	10.	ND	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	ND	U
108-10-1	4-METHYL-2-PENTANONE	10.	ND	U
108-88-3	TOLUENE	5.	ND	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	ND	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	ND	U
127-18-4	TETRACHLOROETHENE	5.	ND	U
591-78-6	2-HEXANONE	10.	ND	U
124-48-1	DIBROMOCHLOROMETHANE	5.	ND	U
108-90-7	CHLOROBENZENE	5.	ND	U
100-41-4	ETHYLBENZENE	5.	ND	U
1330-20-7	XYLENE (TOTAL)	5.	ND	U
100-42-5	STYRENE	5.	ND	U
75-25-2	BROMOFORM	5.	ND	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	ND	U
541-73-1	1,3-DICHLOROBENZENE	5.	ND	U
106-46-7	1,4-DICHLOROBENZENE	5.	ND	U
95-50-1	1,2-DICHLOROBENZENE	5.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 4454/2
Matrix : WATER

Anamatrix ID : 9005242
Analyst : MCT
Supervisor : PG

	SAMPLE ID	SU1	SU2	SU3	TOTAL OUT
1	BLANK	102	85	102	0
2	MW-1	98	88	103	0
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

QC LIMITS

SU1 = 1,2-DICHLOROETHANE-D4 (75-113)
 SU2 = TOLUENE-D8 (83-110)
 SU3 = BROMOFLUOROBENZENE (82-114)

* Values outside of Anamatrix QC limits