Western Operations

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Clayton
ENVIRONMENTAL
CONSULTANTS

Additional Subsurface Investigation
at
Busick Air Conditioning
6341 Scarlett Court
Dublin, California

Clayton Project No. 40739.01
Final Report: December 15, 1992

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(continued)

Appendices

1.0 INTRODUCTION

Clayton Environmental Consultants, Inc., was retained by Busick Air Conditioning to perform an additional subsurface investigation at 6341 Scarlett Court in Dublin, California (Figure 1), pursuant to the advise of their counsel, Carroll, Burdick & McDonough, in anticipation of litigation. Ms. Doreen Green of Busick Air authorized the project on April 1, 1992 and June 9, 1992, by accepting Clayton's Proposal No. 92-B-077 and 92-B-152 and its accompanying terms and conditions.

1.1 BACKGROUND

In July 1990, Decon Environmental Services excavated and removed a sump at the subject site (Figure 2). Chlorinated hydrocarbons were detected in the shallow groundwater that seeped into the excavation pit.

In December, 1990, Clayton completed a preliminary subsurface investigation (Clayton Project No. 31820.00). Clayton installed three temporary monitoring wells and one permanent monitoring well (MW-1) downgradient of the former sump location (Figure 3). Table 1 shows the laboratory analytical results for the permanent monitoring wells, and Table 2 the laboratory data for the temporary monitoring wells.

In July, 1991, Clayton completed an additional subsurface investigation by installing two additional monitoring wells and four temporary monitoring wells located further downgradient to better define the extent of groundwater impacted by chlorinated hydrocarbons (Figure 3).

In February, 1992, Clayton conducted a quarterly monitoring of the three existing monitoring wells. Based on these findings, in April and July, 1992, Clayton installed six additional monitoring wells downgradient to determine the contaminated groundwater plume boundaries (Clayton Project No. 39824.00).

1.2 HYDROGEOLOGY

The site is located within the San Ramon sub-basin of the Livermore Valley groundwater basin. Soil survey maps by the U.S. Department of Agriculture show that the surface soil in the site area is Clear Lake clay. This thick clay has a low permeability and high capacity for holding available water.

During drilling, groundwater was encountered between 12.5 and 15.5 feet below the ground surface (bgs). After we intersected groundwater, the water level in the boreholes and monitoring well rose to approximately 4 or 5 feet bgs.

All monitoring wells on site have been surveyed to mean sea level by Bruce T. Tronoff, a licensed land surveyor, as shown on the enclosed map (Appendix A). The depths to groundwater and groundwater elevations are presented in Table 3. From these elevations we calculated the groundwater flow direction to be south 65° west. We calculated the groundwater gradient to be 0.01 (1.0 feet of vertical drop per 100 feet of horizontal distance).

2.0 FIELD INVESTIGATION

The following subsections present the methodology used to complete the field investigation.

2.1 SOIL BOREHOLE INSTALLATION AND SAMPLING

Before any drilling was performed, well construction applications were filed with the Alameda County Flood Control and Water Conservation District (ACFC&WCD). These are contained in Appendix B.

On April 10, 1992, West Hazmat Drilling Co. was contracted to install three monitoring wells (MW-4, MW-5, and MW-6) to a depth of approximately 15 feet bgs with a 10.5-inch hollow-stem auger from a truck-mounted rig.

On July 31, 1992, three additional monitoring wells (MW-7, MW-8, and MW-9) were installed to a depth of approximately 15 feet bgs.

Lithologic logs recording the soil types underlying the site were maintained by Clayton's geologist. Soil was screened for hydrocarbon contamination with an organic vapor meter (OVM). Soil samples was not collected from any of the boreholes. The borehole logs are presented in Appendix D.

Waste drill cuttings and purge water from well development and sampling were placed into Department of Transportation (DOT)-approved drums. These drums were labeled with the name of the site, address, well number, and drum contents and left at the site.

During the week of August 10, 1992 the waste drill cuttings were removed from the drums and placed into a six cubic yard container, then properly disposed of at the Livermore-Dublin Disposal facility located in Livermore, California. The 13 well purge water drums are currently undergoing the evaporation process at the subject site, as authorized by the Alameda County Health Care Services (ACHCS).

2.2 MONITORING WELL CONSTRUCTION AND SAMPLING

All monitoring wells installed to date have been constructed of 4-inch diameter-schedule 40 PVC flush-threaded casing. The open portions of the wells were constructed using 0.010 inch slotted screen. The schematic for the wells is included as Appendix B.

All work was performed in accordance with Clayton's "Drilling, Well Construction, and Sampling Protocols" (Appendix C), which follow the Alameda County Water District guidelines.

We sampled the wells after purging four well volumes to obtain representative samples of the aquifer. Field sampling data sheets are included as Appendix E.

3.0 GROUNDWATER ANALYTICAL RESULTS

Analyses were selected to assess groundwater for possible contamination from the former sump on the subject site. The groundwater was analyzed for purgeable halocarbons and purgeable aromatics by EPA Method 601/602. Table 1 includes a summary of the results of the analysis of groundwater samples collected on April 20 and August 6, 1992. Regulatory guidelines are included in the table for comparison. The complete laboratory reports and chain-of-custody are presented as Appendix F and G.

Note on Table 1, that of the chemicals detected in the groundwater during this last sampling event, the following concentrations exceeded regulatory guidelines:

- 18 ppb of TCE found in MW-4
- 7.5 ppb of TCE found in MW-5
- 41 ppb of TCE found in MW-6
- 48 ppb of TCE found in MW-7

Figure 3 depicts the concentrations of these solvents relative to the well locations on the subject site. For your convenience, we have also listed the concentrations from the other monitoring wells and boreholes. Note that the sampling dates have taken place at various times and are listed in the legend.

The only other chemical detected was Cis-1,2-DCE with a concentration of 0.5 µg/L in monitoring well MW-4 and 0.8 µg/L in monitoring well MW-7, both of which are well below regulatory action level of 6.0 µg/L.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Groundwater was found to be impacted by the chlorinated solvents dichloroethane (DCE), trichloroethene (TCE), and tetrachloroethene (PCE).

Clayton recommends completing the investigation currently in progress, in anticipation of a remediation plan. A work plan for any additional investigative work needs to be submitted to Ravi Arulanantham, Ph.D. of the Alameda County Health Agency for approval.

Limitations

The information and opinions rendered in this report are exclusively for use by Client. Clayton Environmental Consultants, Inc. will not distribute this report without your consent except as may be required by law or court order. The information and opinions expressed in this report are given in response to our limited assignment and

should be evaluated and implemented only in light of that assignment. We accept responsibility for the competent performance of our duties in executing the assignment and preparing this report in accordance with the normal standards of our profession but disclaim any responsibility for consequential damages.

This report prepared by: Richard J. Silva

Richard J. Silva
Geologist

This report reviewed by:

Alan D. Gibbs, R.G.
Supervisor, Geology
Western Operations

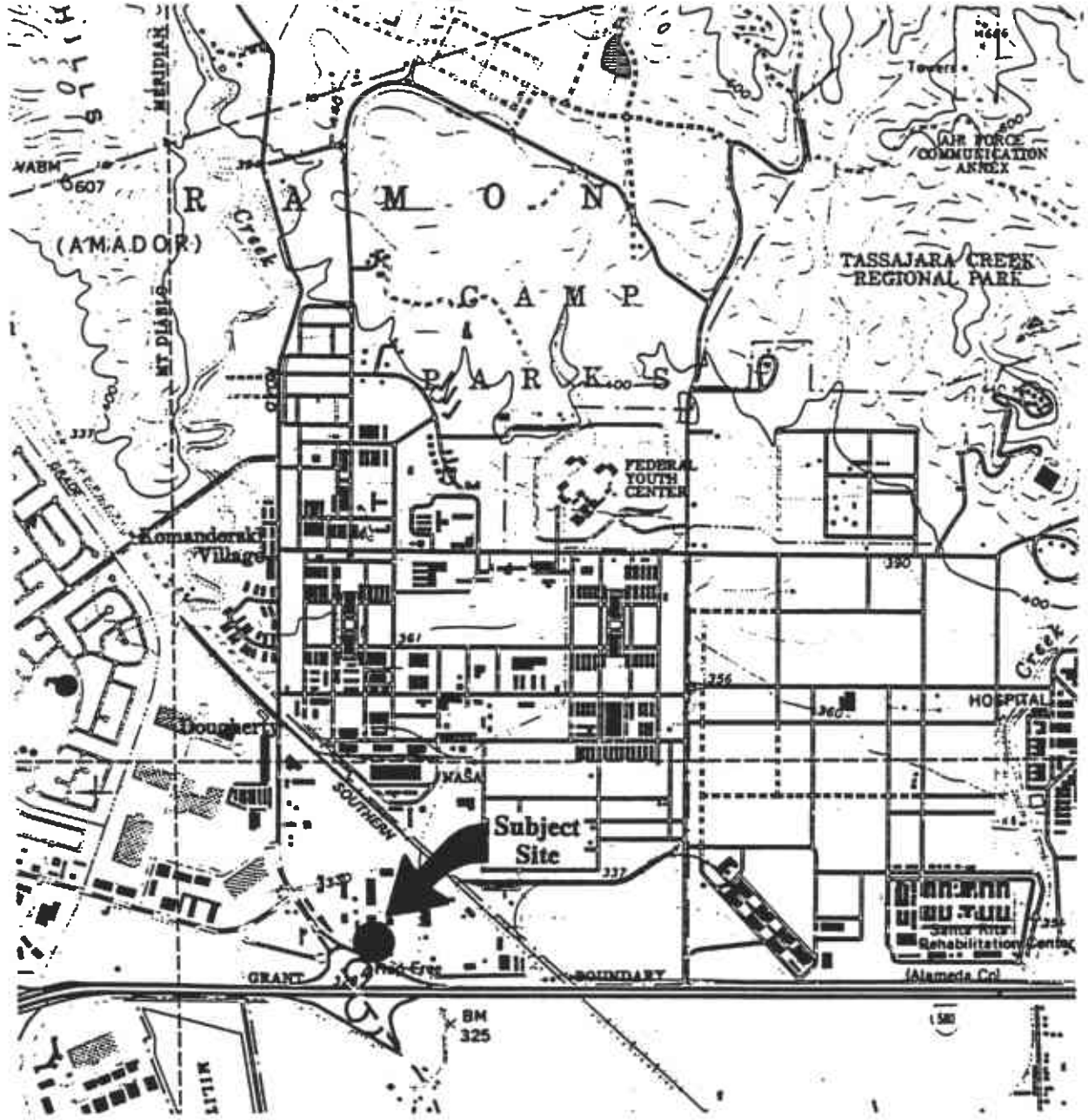
Final Report: December 15, 1992

DUBLIN, CALIF.
NW/4 LIVERMORE 15' QUADRANGLE
N3737.5—W12152.5/7.5

1961
PHOTOREVISED 1980
DMA 1659 III NW—SERIES V895

QUADRANGLE LOCATION

DUBLIN QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 LIVERMORE 15' QUADRANGLE



SCALE 1:24000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

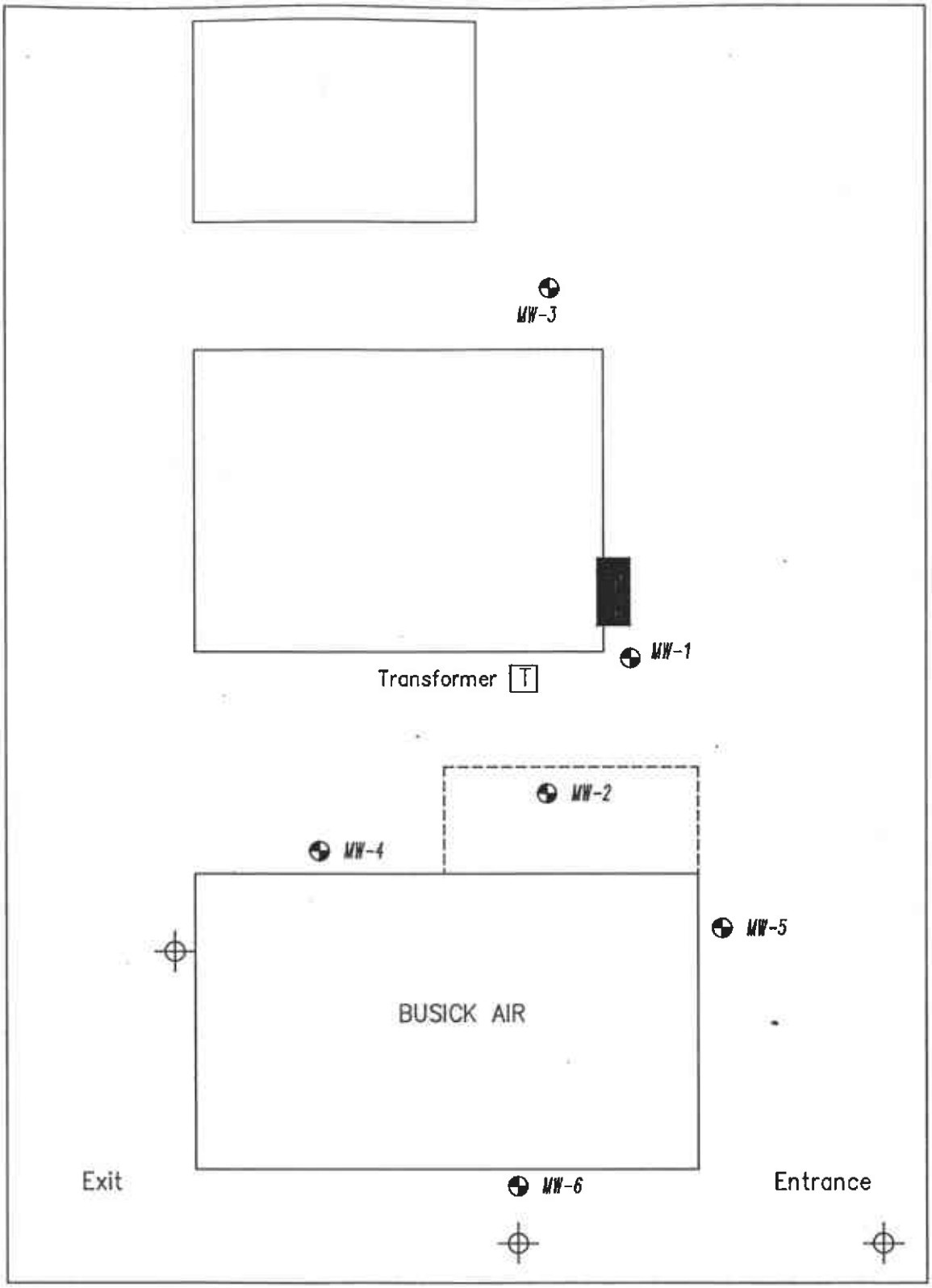
Site Location Map
BUSICK AIR
6341 Scarlett Court
Dublin, California

Clayton Project No. 40739.01

Figure
1

40739-00-16

Clayton
ENVIRONMENTAL CONSULTANTS



Monitoring Well Locations
BUSICK AIR
6341 Scarlett Court
Dublin, California

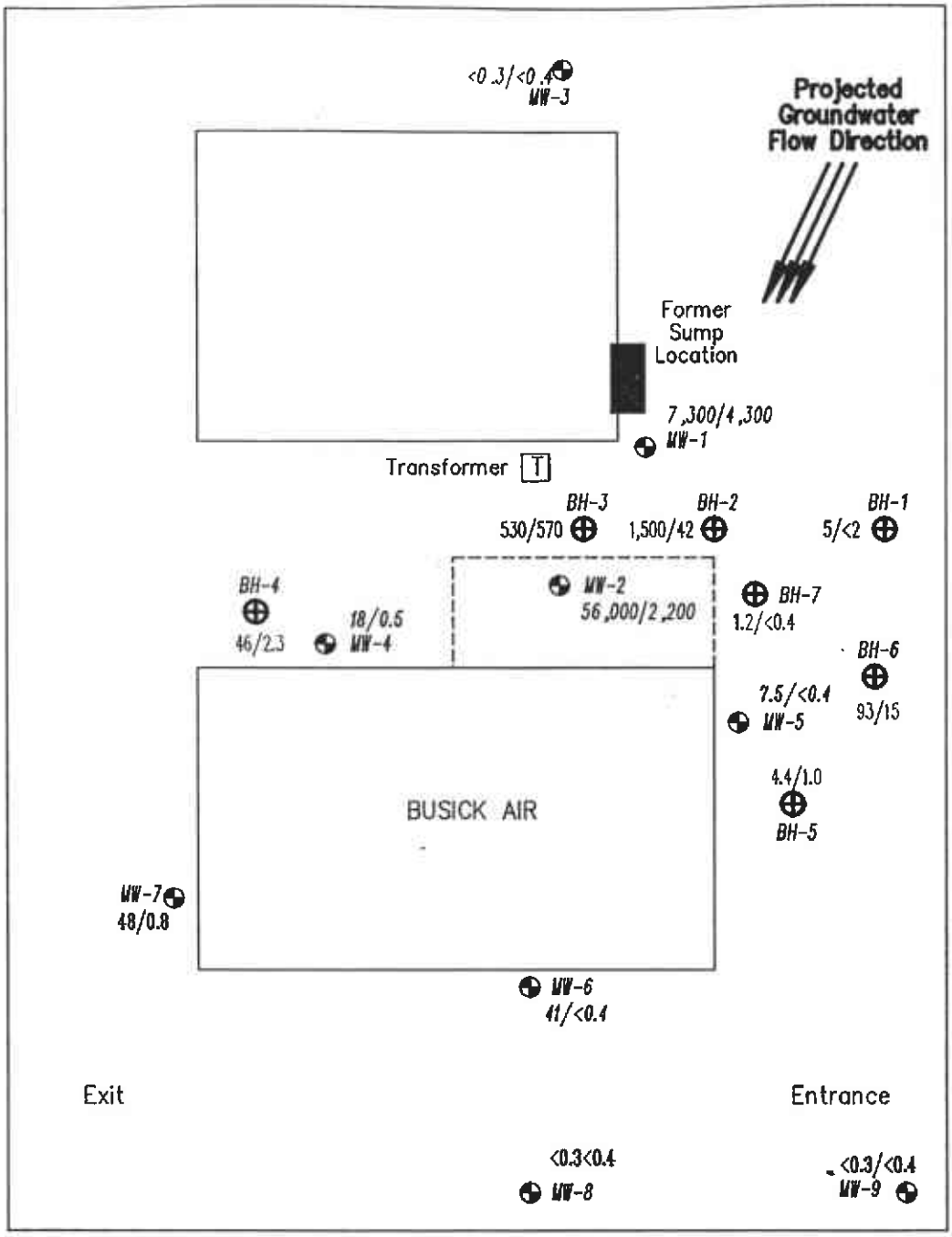
(not to scale)

Clayton Project No. 40739.01

Figure 2

40739-00-16

Clayton ENVIRONMENTAL CONSULTANTS



LEGEND

◒	Existing Monitoring Wells	<0.3	Sampled 08/06/92	<0.3	Sampled 12/90
⊕	Borehole Locations	<0.3	Sampled 04/20/92	<0.3	Sampled 7/91
<0.3/<0.4	TCE/Cis-1,2-DCE Levels in Groundwater	<0.3	Sampled 02/27/92		

(not to scale)

Contaminant Levels in Groundwater
BUSICK AIR
6341 Scarlett Court
Dublin, California

Clayton Project No. 40739.01

Figure 3

40739-00-18

Clayton ENVIRONMENTAL CONSULTANTS

Table 1

Summary of Groundwater Analytical Results
for
The Permanent Monitoring Wells
at
Busick Air Conditioning
6341 Scarlett Court
Dublin, California
November 1990 to August 1992

Clayton Project No. 40739.01

Sample Date	1,1-dichloroethene	1,1-dichloroethane	Trans-1,2-dichloroethene	Cis-1,2-dichloroethene	1,2-dichloroethane	Trichloroethene	Tetrachloroethene
Monitoring Well MW-1							
11/90	*<100*	*<200*	*<200*	*4,400*	*<200*	*10,000*	*<300*
07/91	NA	NA	NA	NA	NA	NA	NA
02/92	*<20*	*<40*	*250*	*4,300*	*<30*	*7,300*	*<50*
04/92	NA	NA	NA	NA	NA	NA	NA
08/92	NA	NA	NA	NA	NA	NA	NA
Monitoring Well MW-2							
11/90	NA	NA	NA	NA	NA	NA	NA
07/91	*<100*	*<200*	*<200*	*1,400*	*<200*	*27,000*	*500*
02/92	*<200*	*<400*	*<400*	*2,200*	*<300*	*56,000*	*600*
04/92	NA	NA	NA	NA	NA	NA	NA
08/92	NA	NA	NA	NA	NA	NA	NA
Monitoring Well MW-3							
11/90	NA	NA	NA	NA	NA	NA	NA
07/91	*9.4*	1.0	<0.4	<0.4	<0.3	<0.3	<0.5
02/92	*11.0*	0.7	<0.4	<0.4	<0.3	<0.3	<0.3
04/92	NA	NA	NA	NA	NA	NA	NA
08/92	NA	NA	NA	NA	NA	NA	NA
Monitoring Well MW-4							
11/90	NA	NA	NA	NA	NA	NA	NA
07/91	NA	NA	NA	NA	NA	NA	NA
02/92	NA	NA	NA	NA	NA	NA	NA
04/92	<0.2	<0.4	<0.4	0.5	<0.3	*18.0*	<0.5
08/92	NA	NA	NA	NA	NA	NA	NA

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Table 1
(continued)

Summary of Groundwater Analytical Results
for
Busick Air Conditioning
6341 Scarlett Court
Dublin, California
November 1990 to August 1992

Clayton Project No. 40739.01

Sample Date	1,1-dichloroethene	1,1-dichloroethane	Trans-1,2-dichloroethene	Cis-1,2-dichloroethene	1,2-dichloroethane	Trichloroethene	Tetrachloroethene
Monitoring Well MW-5							
11/90	NA	NA	NA	NA	NA	NA	NA
07/91	NA	NA	NA	NA	NA	NA	NA
02/92	NA	NA	NA	NA	NA	NA	NA
04/92	<0.2	<0.4	<0.4	<0.4	<0.3	*7.5*	<0.5
08/92	NA	NA	NA	NA	NA	NA	NA
Monitoring Well MW-6							
11/90	NA	NA	NA	NA	NA	NA	NA
07/91	NA	NA	NA	NA	NA	NA	NA
02/92	NA	NA	NA	NA	NA	NA	NA
04/92	<0.2	<0.4	<0.4	<0.4	<0.3	*41.0*	<0.5
08/92	NA	NA	NA	NA	NA	NA	NA
Monitoring Well MW-7							
11/90	NA	NA	NA	NA	NA	NA	NA
07/91	NA	NA	NA	NA	NA	NA	NA
02/92	NA	NA,	NA	NA	NA	NA	NA
04/92	NA	NA	NA	NA	NA	NA	NA
08/92	<0.2	<0.4	<0.4	0.8	<0.3	*48.0*	<0.5
Monitoring Well MW-8							
11/90	NA	NA	NA	NA	NA	NA	NA
07/91	NA	NA	NA	NA	NA	NA	NA
02/92	NA	NA	NA	NA	NA	NA	NA
04/92	NA	NA	NA	NA	NA	NA	NA
08/92	<0.2	<0.4	<0.4	<0.4	<0.3	<0.3	<0.5

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Table 1
(continued)

Summary of Groundwater Analytical Results
for
Busick Air Conditioning
6341 Scarlett Court
Dublin, California
November 1990 to August 1992

Clayton Project No. 40739.01

Sample Date	1,1-dichloroethene	1,1-dichloroethane	Trans-1,2-dichloroethene	Cis-1,2-dichloroethene	1,2-dichloroethane	Trichloroethene	Tetrachloroethene
Monitoring Well MW-9							
11/90	NA	NA	NA	NA	NA	NA	NA
07/91	NA	NA	NA	NA	NA	NA	NA
02/92	NA	NA	NA	NA	NA	NA	NA
04/92	NA	NA	NA	NA	NA	NA	NA
08/92	<0.2	<0.4	<0.4	<0.4	<0.3	<0.3	<0.5
Regulatory Guidelines (ppb)	**6[1]**	**5[2]**	**10[2]**	**6[2]**	**0.5[3]**	**5[3]**	**5[1]**

Table Notes

NA = not analyzed
<0.2 = detection limits
ppb = parts per billion, which is approximately equal to micrograms per liter (µg/L)

1 = Maximum contaminant level (MCL) for Drinking Water Standards (EPA & DHS)
2 = California State Action Levels (DHS)
3 = MCL for Drinking Water Standards (DHS)]

Regulatory Guidelines are taken from Jon B. Marshack's , *A Compilation of Water Quality Goals, October 1990.*

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Table 2

**Summary of Groundwater Analytical Results
for Temporary Wells
at
Busick Air Conditioning
6341 Scarlett Court
Dublin, California**

Compound	BH-1 (ppb)	BH-2 (ppb)	BH-3 (ppb)	BH-4 (ppb)	BH-5 (ppb)	BH-6 (ppb)	BH-7 (ppb)	Regulatory Guidelines
1,1-Dichloroethene	<1	<10	<4	0.6	<0.2	1.7	<0.2	6[1]
1,1-Dichloroethane	<2	<20	<8	<0.4	<0.4	<0.4	<0.4	5[2]
Trans-1,2-Dichloroethene	<2	<20	38	0.6	0.5	1.4	<0.4	10[2]
Cis-1,2-Dichloroethene	<2	42	570	2.3	1.0	15	<0.4	6[2]
1,2-Dichloroethane	150	160	<6	<0.3	<0.3	0.5	<0.3	0.5[3]
Trichloroethene	5	1,500	530	46	4.4	93	1.2	5[3]
Tetrachloroethene	<3	50	<10	0.7	<0.5	0.7	<0.5	5[1]

Table Notes

<0.2 = detection limit
ppb = parts per billion which is approximately equal to micrograms per liter (µg/L)

(1) Maximum Contaminant Level for Drinking Water Standards (EPA & DHS)
(2) California State Action Levels (DHS)
(3) MCL for Drinking Water Standards (DHS)

Regulatory Guidelines are taken from Jon B. Marshack's, *A Compilation of Water Quality Goals, October 1990.*

Table 3

Depth to Groundwater and Groundwater Elevations
on
September 4, 1991

Busick Air Conditioning
6341 Scarlett Court
Dublin, California

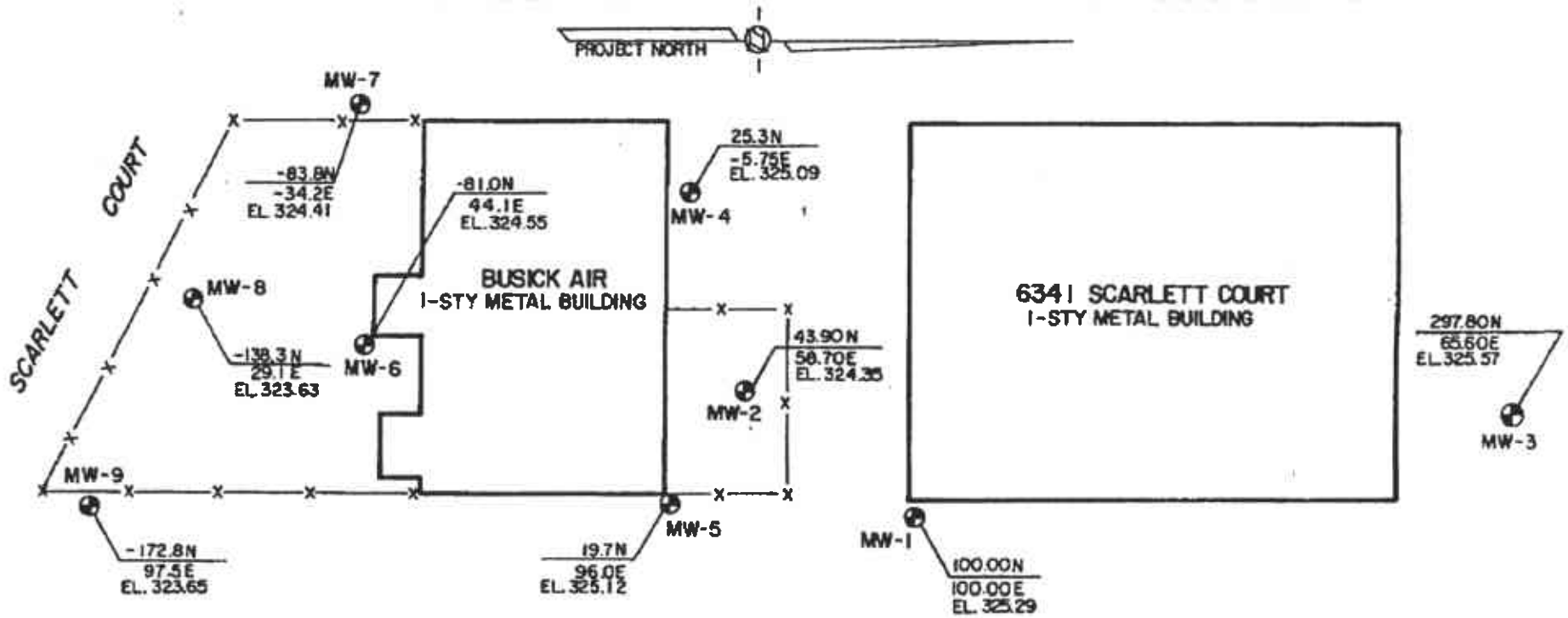
Monitoring Well	Surface Elevation of Well Casing (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-1	325.29	5.25	320.04
MW-2	324.35	4.33	320.02
MW-3	325.57	4.44	321.13
MW-4	325.09	4.40	320.69
MW-5	325.12	4.40	320.72
MW-6	324.55	4.12	320.43
MW-7	324.41	5.12	319.29
MW-8	323.63	4.65	318.98
MW-9	323.65	4.35	319.30

Well elevations are surveyed on the north sides of the PVC casing

Surveyed to mean sea level by licensed land surveyor, Bruce T. Tronoff

APPENDIX A

SURVEYED SITE MAP



NOTES

1. VERTICAL DATUM - MEAN SEA LEVEL.
2. ELEVATIONS ARE ON NORTH SIDE PVC CASING.
3. COORDINATE BASIS: LOCAL

NOTICE: ONLY COPIES OF THIS DOCUMENT BEARING A SIGNATURE AND SEAL IN BLACK INK ARE TO BE CONSIDERED AS THE ORIGINAL AND UNMODIFIED WORK PRODUCT OF TRONOFF LAND SURVEYING.

BTT 2563, 2597, 2615

REVISIONS

1. 05/19/92 - ADDED MW'S 4, 5 & 6.
2. 06/02/92 - MW-6
3. 08/24/92 - ADDED MW'S 7, 8 & 9.

MONITORING WELL LOCATIONS
BUSICK AIR
6341 SCARLETT COURT
DUBLIN, CALIFORNIA

FOR

CLAYTON ENVIRONMENTAL CONSULTANTS

BY

TRONOFF LAND SURVEYING
516 HUBBLE STREET, DAVIS, CALIFORNIA
(916) 758-4599

SCALE 1" = 40' AUGUST 28, 1991

APPENDIX B

MONITORING WELL CONSTRUCTION PERMIT AND SCHEMATIC FOR MW-4, MW-5, MW-6, MW-7, MW-8, AND MW-9

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 6341 Scarlett Court
Dublin, California

CLIENT
Name Busick Air Conditioning
Address 6341 Scarlett CT. Phone (510) 828-1780
City Dublin, Calif. Zip 94568

APPLICANT
Name Clayton Environmental Consultants
Address P.O. Box 9019 Phone (510) 426-2600
City Pleasanton, CA. Zip 94566

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	XX
Monitoring	XX	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger XX
Cable ___ Other ___

DRILLER'S LICENSE NO. C57-554979

WELL PROJECTS

Drill Hole Diameter	10	in.	Maximum Depth	15	ft.
Casing Diameter	4	in.	Number	3	
Surface Seal Depth	4	ft.			

GEOTECHNICAL PROJECTS

Number of Borings	___		Maximum Depth	___	ft.
Hole Diameter	___	in.			

ESTIMATED STARTING DATE July 31, 1992
ESTIMATED COMPLETION DATE July 31, 1992

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date 7-29-92
Alan D. Gibbs, R.G.
Supervisor

FOR OFFICE USE

PERMIT NUMBER 92373
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

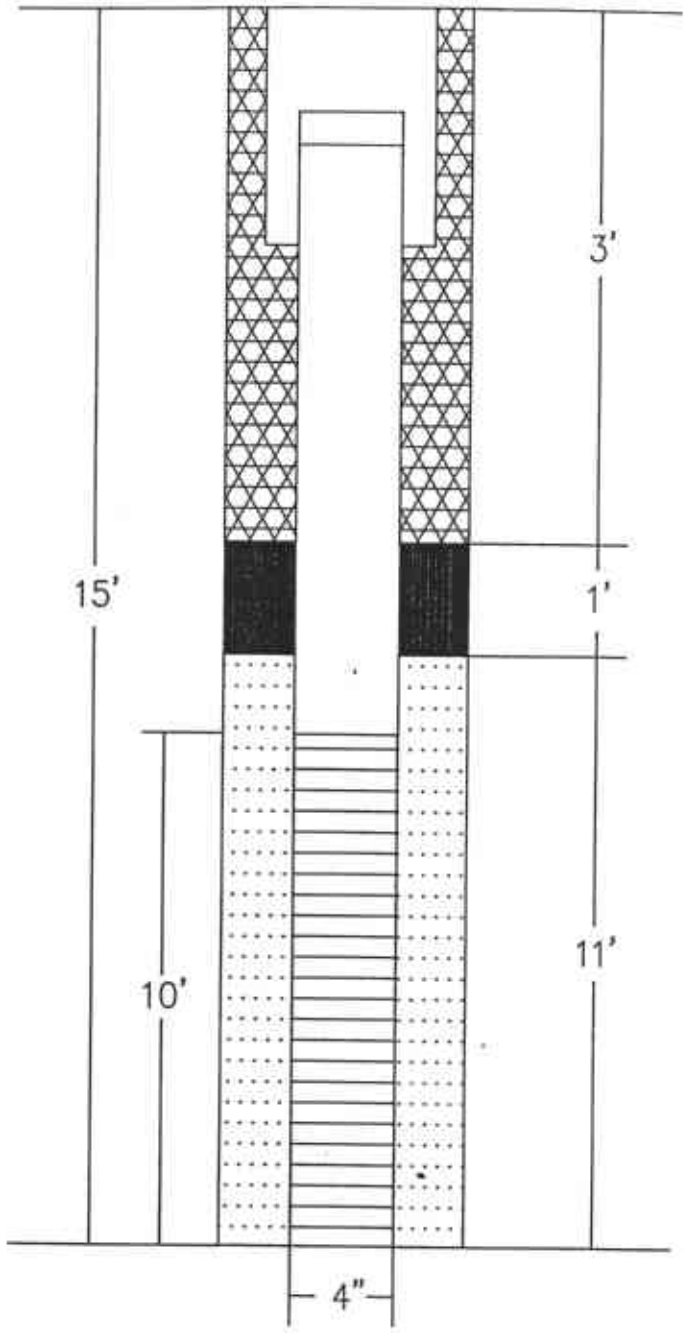
C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved [signature] Date 29 Jul 9
Wyman Hong

31992



Concrete

Bentonite

Sand #2/12

0.01" Slotted Screen

Monitoring Well Diagram (MW-4 thru MW-9)
BUSICK AIR
6341 Scarlett Court
Dublin, California

Clayton Project No. 40739.01

Figure 4

40739-00-19

Clayton ENVIRONMENTAL CONSULTANTS

APPENDIX C

CLAYTON'S DRILLING, WELL CONSTRUCTION, AND SAMPLING PROTOCOLS

DRILLING, WELL CONSTRUCTION, AND SAMPLING PROTOCOLS FOR BOREHOLE/MONITORING WELL INSTALLATION

BOREHOLE INSTALLATION

Clayton Environmental Consultants, Inc. acquires the proper governmental agency permits to bore, drill, or destroy all proposed boreholes and monitoring wells that intersect with groundwater aquifers and writes a health and safety plan.

Clayton subcontracts only with drillers who possess a current C-57 water well contractor's license issued by the State of California and whose personnel have attended the OSHA 40-hour Hazardous Materials Safety Training. Prior to starting work, a "tailgate" safety meeting including discussion of the safety hazards and precautions relevant to the particular job will be held with all personnel working on the job. Well drillers are identified on permit applications.

Borings are drilled dry by hollow- or solid-stem, continuous flight augers. Augers, drill rods, and other working components of the drilling rig are steam-cleaned before arriving onsite to prevent the introduction of contaminants. These components are also steam-cleaned between borings away from boring locations. Cleaned augers, rods, and other components are stored, and/or covered when not in use.

Our bore logs include a detailed description of subsurface stratigraphy. Clayton examines the soil brought to the surface by drilling operations, and samples undisturbed soil every 5 feet or as otherwise specified. Soil cuttings are screened for hydrocarbon contamination using a photoionization detector. Boring logs are filled out in the field by a professional geologist, civil engineer, engineering geologist who is registered by the State of California, or a technician who is trained and working under the supervision of one of the previously mentioned persons, using the Unified Soil Classification System.

SOIL SAMPLING

Soil samples are taken every 5 feet, at areas of obvious contamination, or as otherwise specified, with a California modified split-spoon sampler that is lined with three six-inch brass tubes. The sampler and rod are inserted into the borehole to the current depth and a hammer of known weight and height above the sampler are allowed to free-fall onto the rod, advancing the assembly 18 inches into undisturbed soil. Clayton uses the number of blows necessary to drive the sampler into the ground to help evaluate the consistency of materials encountered. The sampler is then pulled from the borehole and disassembled, and the three brass tubes are separated for inspection and labeling.

Clayton uses new brass liners or liners cleaned with a trisodium phosphate (TSP) solution, double rinsed with clean tap water, and air dried prior to each sampling. The sampler is also cleaned with TSP and rinsed with tap water between sampling events.

Soil samples selected for laboratory analysis are left in the brass liners, sealed with aluminum foil and plastic caps, taped for air tightness, labeled, and immediately placed into a pre-cooled ice chest chilled to less than 4°C. Labels contain the following information: site name, date and time sampled, borehole number and depth, and the sampler's initials. The samples are transported under chain-of-custody to a state-certified laboratory. The laboratory analyzes soil samples within the prescribed holding time, storing them at temperatures below 4°C at all times.

Pending results of laboratory analysis, excess drilling and sampling cuttings are placed into Department of Transportation (DOT)-approved drums, labeled with the name of the site, address, and well number, and left at the site. Uncontaminated soil may be disposed of by the client. Soil found to contain levels of contaminants above local or state action levels will require that the client dispose of it in accordance with hazardous waste regulations. At the client's request, we will assist with the disposal of contaminated soil.

WELL CONSTRUCTION

Boreholes are converted to monitoring wells by placing 2-inch or 4-inch diameter well casing with flush-threaded joints and slotted screen into the borehole. Construction materials include polyvinyl chloride (PVC), stainless steel, or low carbon steel. The most suitable material for a particular installation will depend on the parameters to be monitored. All screens and casings used are in a contaminant-free condition when placed in the ground. No thread lubrication is used, other than teflon tape, for connecting the casing segments.

Wells extend at least 10 feet into the upper saturated zone, but do not extend through any clay layers greater than 5 feet that are below the shallow water table. The standard practice for wells installed at hydrocarbon contamination sites is to construct a well with a 20-foot long perforated interval extending 15 feet below and 5 feet above the water table in an unconfined aquifer. The top of the well is solid casing. The annular space of the borehole is backfilled with washed, kiln-dried sand to a point at least 1 foot above the slotted screen. A seal above the filter pack is formed by placing a 1- to 2-foot layer of bentonite pellets on top of the sand. The bentonite pellets are moistened by pouring clean tap water down the hole so that they can expand and seal the annulus. A neat cement grout is placed above the bentonite seal and brought to the ground surface.

Well casings are protected from surface contamination, accidental damage, and unauthorized entry or tampering with water-tight locking caps on the well casings. The caps are usually surrounded by a concrete vault. Wells are clearly identified with a metal tag or other device where the following information is recorded: well number, depth to water, depth of well, casing data including location of screened interval.

WELL DEVELOPMENT

The well seal in newly developed wells must set up for 48 to 72 hours prior to development. Since development of the well can volatilize contaminants present, the well must also settle for at least 48 to 72 hours between development and the first purging/sampling incident.

All monitoring wells are initially developed to clean the well and stabilize sand, gravel, and disturbed aquifer materials around the screened internal perforations. Wells are developed by pumping (or bailing) and surging until water turbidity and specific conductance stabilize. In some cases, where wells are installed in low permeability formations and the wells purge dry, the well is allowed to recover and is purged dry three times. Clean tap water is introduced into the well if it does not recover rapidly enough.

Pending results by laboratory analysis, purge water from well development and sampling is placed into DOT-approved drums, labeled with the name of the site, address, well number, and left at the site. Uncontaminated water may be disposed of by the client. Water found to contain levels of contaminants above local or state action levels requires that the client dispose of it in accordance with hazardous waste requirements. At the client's request, we can assist with the disposal of contaminated purge water.

GROUNDWATER SAMPLING

To collect a representative sample of the groundwater, stagnant water within the well casing and filter material must be purged and fresh aquifer water allowed to replace it. The water is purged from the well by pumping or bailing at least three well volumes. Well volumes are calculated by measuring depth to groundwater to the nearest 0.01 foot upon arrival at the well before any purging has begun. Groundwater samples are collected only after purging has been of sufficient duration for pH, temperature, and electrical conductivity to stabilize. When purging low-yield wells, the wells are purged to dryness. When the well recovers to 80% of the depth measured upon arrival, samples are collected.

Field sampling logs maintained for each well include:

- Monitoring well identification
- Static water level, before and after pumping
- Well depth
- Condition of water prior to purging (e.g., amount of free product)
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler
- Climatic conditions

Water samples are collected using clean teflon bailers. All equipment that contacts samples is thoroughly cleaned before arrival at the site and between sampling events.

Water is collected in clean laboratory-supplied containers, labeled, placed immediately into an ice chest pre-cooled to 4°C, and transported to Clayton's laboratory for analysis. One trip blank will be furnished in accordance with our quality assurance/quality control (QA/QC) program.

All samples are collected in such a manner so as to minimize the volatilization of a sample due to agitation and/or transfer from bailer to sample container. Samples are collected so that contaminants most sensitive to volatilization are sampled first.

Preservatives are not added to any sample, unless instructed. If requested, they are supplied by Clayton's laboratory.

All sample containers are labeled in the field. Labels contain the following information: project name, sample identification number, project number, date and time of collection, and sampler's initials.

Under no circumstances are sealed sample containers opened by anyone other than the laboratory personnel who perform the requested analyses. If it is necessary for samples or sample chests to leave the immediate control of the sampler prior to delivery to the laboratory, for example during shipment by Federal Express, a custody seal is placed on each sample container and/or sample chest to ensure that the samples have not been tampered with during transportation. The custody seal is signed by the sampler, and the date and time that the seal was placed is recorded. The elapsed time between sample collection and delivery to the laboratory never exceeds 48 hours. Water samples are not held for more than 14 days prior to analysis and are kept at 4°C at all times.

To document and trace samples from time of collection, a signed chain-of-custody record is filled out by the sampler and accompanies the samples through the laboratory analyses. The completed chain-of-custody is included with the analytical report from the laboratory.

REFERENCES

Groundwater Monitoring Guidelines, Revised February 1990. Alameda County District Groundwater Protection Program.

Leaking Underground Fuel Tank (LUFT) Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Tank Closure, May 1988. State of California LUFT Task Force.

Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, Revised November 1989. North Coast, San Francisco Bay, and Central Valley regions of the California State Water Quality Control Board.

Standards for the Construction and Destruction of Wells and Other Deep Excavations in Santa Clara County, Revised June 1989. Santa Clara Valley Water District.

APPENDIX D

BOREHOLE LOGS

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 40739.00 **Date:** April 10, 1992
Client: Busick Air
Location: 6341 Scarlett Court, Dublin, California
Logged By: R. Silva **Driller:** West Hazmat

BORING NO. MW-4
Sheet 1 of 1

Field Location of Boring:
Southwest of former sump (see figures).

Ground Elevation: **Datum:**

Drilling Method: Continuous-flight, hollow-stem auger
Hole Diameter: 10.5"
Casing Installation Data: Screen 15'-5'; solid 5'-0; sand 15'-4'; bentonite 4'-3'; grout 3'-surface

Water Level (feet)	3.65	4.58			
Time (hours)	1520	1321			
Date	4/14/92	4/20/92			

Blow Count	PID / OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (USCS)	Lithographic Symbol	DESCRIPTION
		1		GM		Gravel fill, brownish, moist, poorly graded
		2		CL		Silty clay, very dark gray (7.5 YR 3/0), moist, low plasticity, no odor
		3				
		4		CL		Silty clay, very dark grayish brown (10 YR 3/2), very moist, low plasticity, no odor
		5		▽		Groundwater level
		6				
		7				
		8		CL		Silty clay, grayish brown (10 YR 5/2), saturated, low plasticity, no odor
		9				
		10				
		11				
		12				
		13				
		14				Silty clay, light brownish gray (10 YR 6/2), saturated, low plasticity, no odor
		15				Terminate boring at 15', set well at 15'
		16				
		17				
		18				

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 40739.00 **Date:** April 10, 1992
Client: Busick Air
Location: 6341 Scarlett Court, Dublin, California
Logged By: R. Silva **Driller:** West Hazmat

BORING NO. MW-5

Sheet 1 of 1

Field Location of Boring:
East of main office building and downgradient of former sump (see figures).
Ground Elevation: **Datum:**

Drilling Method: Continuous-flight, hollow-stem auger
Hole Diameter: 10.5"
Casing Installation Data: Screen 15'-5'; solid 5'-0; sand 15'-4'; bentonite 4'-3'; grout 3'-surface

Water Level (feet)	3.82	5.47			
Time (hours)	1440	1228			
Date	4/14/92	4/20/92			

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
				GM		Gravel fill, brownish, moist, poorly graded
		1				
		2		CL		Silty clay, very dark gray (7.5 YR 3/0), moist, low plasticity, no odor
		3				
		4		▽		Groundwater level
		5				
		6				
		7		CL		Silty clay, very dark grayish brown (10 YR 3/2), very moist, low plasticity, no odor
		8				
		9				
		10				
		11				
		12				
		13				
		14		CL		Silty clay, grayish brown (10 YR 5/2), saturated, low plasticity, no odor
		15				Terminate boring at 15'; set well at 15'
		16				
		17				
		18				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 40739.00 **Date:** April 10, 1992
Client: Busick Air
Location: 6341 Scarlett Court, Dublin, California
Logged By: R. Silva **Driller:** West Hazmat

BORING NO. MW-6
Sheet 1 of 1

Field Location of Boring:
South of main office building near Scarlett Court (see figures).
Ground Elevation: **Datum:**

Drilling Method: Continuous-flight, hollow-stem auger
Hole Diameter: 10.5"
Casing Installation Data: Screen 15'-5'; solid 5'-0; sand 15'-4'; bentonite 4'-3'; grout 3'-surface

Water Level (feet)	3.74	3.52			
Time (hours)	1340	1056			
Date	4/14/92	4/20/92			

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		1		GM		Gravel fill, brownish, moist, poorly graded
		2		CL		Silty clay, very dark gray (7.5 YR 3/0), moist, low plasticity, no odor
		3		CL		Silty clay, very dark grayish brown (10 YR 3/2), very moist, low plasticity, no odor
		4				
		5		▽		Groundwater level
		6				
		7				
		8		CL		Silty clay, grayish brown (10 YR 5/2), saturated, low plasticity, no odor
		9				
		10				
		11				
		12				
		13				
		14				
		15				Terminate boring at 15'; set well at 15'
		16				
		17				
		18				

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 40739.01 **Date:** July 31, 1992
Client: Busick Air
Location: 6341 Scarlett Court, Dublin, California
Logged By: Richard Silva **Driller:** West Hazmat

BORING NO. MW-7

Sheet 1 of 1

Field Location of Boring:
Southwest of monitoring well MW-4 (see attached figure)

Ground Elevation: **Datum:**

Drilling Method: Continuous flight hollow-stem auger
Hole Diameter: 10.5"
Casing Installation Data: Screen - 15' to 5'; Solid - 5' to 0'; Sand - 15' to 3'; Bentonite - 3' to 2'; Grout - 2' to surface

Water Level (feet)	5.12				
Time (hours)	1215				
Date	8/6/92				

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (USCS)	Litho-graphic Symbol	DESCRIPTION
		1		GM		Gravel fill, brownish, moist, poorly graded
		2		CL		Silty clay, very dark gray (7.5 YR, 3/0), moist, low plasticity, no odor
		3				
		4				Silty clay, very dark grayish brown (10 YR, 3/2), very moist, low plasticity, no odor
		5		▼		Groundwater level
		6				
		7				
		8		CL		Silty clay, grayish brown (10 YR, 5/2), very moist, low plasticity, no odor
		9				
		10				
		11				
		12				
		13				
		14				
		15				Terminate borehole and set well at 15' bgs
		16				
		17				
		18				

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 40739.01 **Date:** July 31, 1992
Client: Busick Air
Location: 6341 Scarlett Court, Dublin, California
Logged By: Richard Silva **Driller:** West Hazmat

BORING NO. MW-8

Sheet 1 of 1

Field Location of Boring:
South of monitoring well MW-2; near southern edge of property (see attached figure)
Ground Elevation: **Datum:**

Drilling Method: Continuous flight hollow-stem auger
Hole Diameter: 10.5"
Casing Installation Data: Screen - 15' to 5'; Solid - 5' to 0'; Sand - 15' to 3'; Bentonite - 3' to 2'; Grout - 2' to surface

Water Level (feet)	4.65				
Time (hours)	1325				
Date	8/6/92				

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (USCS)	Litho-graphic Symbol	DESCRIPTION
				GM		Gravel fill, brownish, moist, poorly graded
		1		CL		Silty clay, very dark gray (7.5 YR, 3/0), moist, low plasticity, no odor
		2				
		3				
		4				
		5				
				▼		Groundwater level
		6		CL		Silty clay, very dark grayish brown (10 YR, 3/2), very moist, low plasticity, no odor
		7				
		8				
		9				
		10				
				CL		Silty clay, grayish brown (10 YR, 5/2), very moist, low plasticity, no odor
		11				
		12				
		13				
		14				
		15				Terminate borehole and set well at 15' bgs
		16				
		17				
		18				

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 40739.01 **Date:** July 31, 1992
Client: Busick Air
Location: 6341 Scarlett Court, Dublin, California
Logged By: Richard Silva **Driller:** West Hazmat

BORING NO. MW-9
Sheet 1 of 1

Field Location of Boring:
South of monitoring well MW-5, near southern edge of property (see attached figure)
Ground Elevation: **Datum:**

Drilling Method: Continuous flight hollow-stem auger
Hole Diameter: 10.5"
Casing Installation Data: Screen - 15' to 5'; Solid - 5' to 0'; Sand - 15' to 3'; Bentonite - 3' to 2'; Grout - 2' to surface

Water Level (feet)	4.35				
Time (hours)	1020				
Date	8/6/92				

Blow Count	PID / OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (USCS)	Litho-graphic Symbol	DESCRIPTION
				GM		Gravel fill, brownish, moist, poorly graded
		1		CL		Silty clay, very dark gray (7.5 YR, 3/0), moist, low plasticity, no odor
		2				
		3				
		4				Silty clay, very dark grayish brown (10 YR, 3/2) moist, low plasticity, no odor
		5				
		6		▼		Groundwater level
		7				
		8		CL		Silty clay, grayish brown (10 YR, 5/2), very moist, low plasticity, no odor
		9				
		10				
		11				
		12				
		13				
		14				
		15				Terminate borehole and set well at 15' bgs
		16				
		17				
		18				

APPENDIX E

WATER SAMPLING FIELD DATA SHEETS

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **40739.00** *Site*: **Busick Air** *Date*: **April 20, 1992**

Well No: **MW-4** *Sampling Team*: **R. Silva**

Sampling Method: **Electric submersible pump for purging; disposable bailer for sampling**

Field Conditions: **Clear skies, warm, slight breeze, ~65°F**

Describe Equipment Decontamination Before Sampling This Well:

Washed with concentrated cleaning solution, steam cleaned, and rinsed with deionized water

Total Depth of Well: **14.94 ft.** *Time*: **1321** *Depth to Water Before Purging*: **4.58 ft.**

Volume Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*To Purge*
10.36 ft.	*	.16	.65	=	**6.73 gals**	*	**4**	=	**26.94 gals.**

Depth Purging From: **14 ft.** *Time Purging Begins*: **1332**

Notes on Initial Discharge: **Brownish, silty, no odor**

Time	Volume Purged	pH	Conductivity	T°	Comments
1333	10	7.03	415	17.2°C	Brownish, silty, no odor
1335	20	7.06	433	17.2°C	Brownish, silty, no odor
1338	30	7.02	439	17.8°C	Murky, no odor
1340	35	7.00	443	17.8°C	Murky, no odor

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1406**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**7.15**	**7.12**	**7.06**	**7.04**
Conductivity	**434**	**438**	**434**	**430**
T°C	**17.8**	**17.8**	**17.8**	**17.8**

Pre-Sample Collection Gallons Purged: **35**

Time Sample Collection Begins: **1400**

Time Sample Collection Ends: **1403**

Total Gallons Purged: **36**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: 40739.00 *Site*: Busick Air *Date*: April 20, 1992

Well No: MW-5 *Sampling Team*: R. Silva

Sampling Method: Electric submersible pump for purging; disposable bailer for sampling

Field Conditions: Clear skies, warm, slight breeze, ~65°F

Describe Equipment Decontamination Before Sampling This Well:

Washed with concentrated cleaning solution, steam cleaned, and rinsed with deionized water

Total Depth of Well: 14.40 ft. *Time*: 1228 *Depth to Water Before Purging*: 5.47 ft.

Volume Height of Water Column:		*2-inch*		*4-inch*		*Volume*		*Purge Factor*		*To Purge*
8.93 ft.	*	.16		.65	=	5.80 gals	*	4	=	23.22 gals.

Depth Purging From: 13 ft. *Time Purging Begins*: 1243

Notes on Initial Discharge: Brownish, silty, no odor

Time	Volume Purged	pH	Conductivity	T	Comments
1244	5	6.90	557	17.8°C	Brownish, no odor
1245	10	6.91	569	17.8°C	Brownish, no odor
1246	15	6.91	572	17.8°C	Brownish, no odor
1247	20	6.94	561	17.8°C	Brownish, no odor
1248	25	6.87	588	17.8°C	Brownish, no odor

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1307**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**6.93**	**6.94**	**6.94**	**6.95**
Conductivity	**553**	**554**	**545**	**559**
T°C	**17.8**	**17.8**	**17.8**	**17.8**

Pre-Sample Collection Gallons Purged: **25**

Time Sample Collection Begins: **1302**

Time Sample Collection Ends: **1305**

Total Gallons Purged: **26**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: 40739.00 *Site*: Busick Air *Date*: April 20, 1992

Well No: MW-6 *Sampling Team*: R. Silva

Sampling Method: Electric submersible pump for purging; disposable bailer for sampling

Field Conditions: Clear skies, warm, windy, ~60°F

Describe Equipment Decontamination Before Sampling This Well:

Washed with concentrated cleaning solution, steam cleaned, and rinsed with deionized water

Total Depth of Well: 14.21 ft. *Time*: 1056 *Depth to Water Before Purging*: 3.52 ft.

Volume Height of Water Column		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*To Purge*
10.69 ft.	*	.16	.65	=	6.95 gals	*	4	=	27.79 gals.

Depth Purging From: 13 ft. *Time Purging Begins*: 1109

Notes on Initial Discharge: Brownish, silty, no odor

Time	Volume Purged	pH	Conductivity	T	Comments
1112	10	7.35	844	18.9°C	Brownish, no odor
1116	20	6.87	888	18.9°C	Purged dry
1126	30	6.83	898	18.9°C	Brownish, no odor
1131	35	6.81	896	18.9°C	Purged dry

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1205**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**6.71**	**6.69**	**6.69**	**6.69**
Conductivity	**917**	**926**	**937**	**930**
T°C	**18.9**	**18.9**	**18.9**	**18.9**

Pre-Sample Collection Gallons Purged: **35**

Time Sample Collection Begins: **1200**

Time Sample Collection Ends: **1202**

Total Gallons Purged: **36**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **40739.01** *Site*: **Busick Air - Dublin** *Date*: **August 6, 1992**

Well No: **MW-7** *Sampling Team*: **M. Springman**

Sampling Method: **Disposable bailer for purging and sampling**

Field Conditions: **Clear, warm, ~80°**

Describe Equipment Decontamination Before Sampling This Well:

Not Applicable

Total Depth of Well: **14.95 ft.** *Time*: **1215** *Depth to Water Before Purging*: **5.12 ft.**

Height of Water Column:		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
9.83 ft.	*	.16	.65	=	**6.38 gals**	*	**4**	=	**25.52 gals.**

Depth Purging From: **14.0 ft.** *Time Purging Begins*: **1223**

Notes on Initial Discharge: **Clear**

Time	Volume Purged	pH	Conductivity	T°C	Comments
1225	5	7.5	2,000+	22.2	Clear
1228	10	7.0	2,000+	22.5	Clear
1231	15	7.0	2,000+	21.2	Clear
1234	20	7.0	2,000+	20.3	Purged dry
1251	25	7.0	2,000+	20.3	Purged dry

* Cannot lock - well not cut low enough.

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1340**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**7.0**	**7.0**	**7.0**	**7.0**
Conductivity	**2,000+**	**2,000+**	**2,000+**	**2,000+**
T°C	**20.3**	**20.3**	**20.3**	**20.3**

Pre-Sample Collection Gallons Purged: **25**

Time Sample Collection Begins: **1330**

Time Sample Collection Ends: **1335**

Total Gallons Purged: **26**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: **40739.01** *Site*: **Busick Air - Dublin** *Date*: **August 6, 1992**

Well No: **MW-8** *Sampling Team*: **M. Springman**

Sampling Method: **Disposable bailer for purging and sampling**

Field Conditions: **Clear, warm, ~80°**

Describe Equipment Decontamination Before Sampling This Well:

Not Applicable

Total Depth of Well: **14.9 ft.** *Time*: **1325** *Depth to Water Before Purging*: **4.65 ft.**

Height of Water Column:		*2-inch*		*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
10.25 ft.	*	.16		.65	=	**6.66 gals**	*	**4**	=	**26.64 gals.**

Depth Purging From: **14.0 ft.** *Time Purging Begins*: **1330**

Notes on Initial Discharge: **Clear**

Time	Volume Purged	pH	Conductivity	T°C	Comments
1333	5	6.8	2,000+	21.8	Clear
1336	10	6.9	2,000+	20.2	Purged dry, clear
1404	15	6.9	2,000+	19.8	Purged dry, clear

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1440**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**7.0**	**7.0**	**7.0**	**7.0**
Conductivity	**2,000+**	**2,000+**	**2,000+**	**2,000+**
T°C	**19.8**	**19.8**	**19.8**	**19.8**

Pre-Sample Collection Gallons Purged: **15**

Time Sample Collection Begins: **1430**

Time Sample Collection Ends: **1435**

Total Gallons Purged: **16**

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM

Job No: 40739.01 *Site*: Busick Air - Dublin *Date*: August 6, 1992

Well No: MW-9 *Sampling Team*: M. Springman

Sampling Method: Disposable bailer for purging and sampling

Field Conditions: Clear, warm, ~80°

Describe Equipment Decontamination Before Sampling This Well:

Not Applicable

Total Depth of Well: 14.45 ft. *Time*: 1020 *Depth to Water Before Purging*: 4.35 ft.

Height of Water Column		*2-inch*	*4-inch*		*Volume*		*Purge Factor*		*Volume To Purge*
10.10 ft.	*	.16	.65	=	6.56 gals	*	4	=	26.24 gals.

Depth Purging From: 14.0 ft. *Time Purging Begins*: 1030

Notes on Initial Discharge: Clear

Time	Volume Purged	pH	Conductivity	T°C	Comments
1031	5	7.2	2,000+	21.7	Clear
1034	10	7.1	2,000+	21.7	Clear
1037	15	7.1	2,000+	21.6	Clear
1040	20	7.2	2,000+	19.8	Clear, purged dry
1043	25	7.2	2,000+	20.4	Clear, purged dry

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: **1133**

	Rep #1	Rep #2	Rep #3	Rep #4
pH	**7.2**	**7.2**	**7.2**	**7.2**
Conductivity	**2,000+**	**2,000+**	**2,000+**	**2,000+**
T°C	**20.6**	**20.7**	**20.7**	**20.7**

Pre-Sample Collection Gallons Purged: **25**

Time Sample Collection Begins: **1125**

Time Sample Collection Ends: **1130**

Total Gallons Purged: **26**

Comments:

APPENDIX F

LABORATORY ANALYTICAL REPORT FOR GROUNDWATER SAMPLES COLLECTED APRIL 20, 1992

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

April 24, 1992

Mr. Richard Silva
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. 40739.00
Clayton Project No. 92042.32

Dear Mr. Silva:

Attached is our analytical laboratory report for the samples received on April 20, 1992. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Maryann Gambino, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Michael Lynch for

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: MW-4
Lab Number: 9204232-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 04/20/92
Date Received: 04/20/92
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	0.5	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	18	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: MW-4
Lab Number: 9204232-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 04/20/92
Date Received: 04/20/92
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: MW-4
Lab Number: 9204232-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 602

Date Sampled: 04/20/92
Date Received: 04/20/92
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	---	ND	0.4
o-Xylene	95-47-6	ND	0.4
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromochloromethane	74-97-5	87	50 - 150
1,4-Difluorobenzene	540-36-3	98	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: MW-5
Lab Number: 9204232-02A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 04/20/92
Date Received: 04/20/92
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	7.5	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: MW-5
Lab Number: 9204232-02A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 04/20/92
Date Received: 04/20/92
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification:	MW-5	Date Sampled:	04/20/92
Lab Number:	9204232-02A	Date Received:	04/20/92
Sample Matrix/Media:	WATER	Date Analyzed:	04/21/92
Analytical Method:	EPA 602		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	---	ND	0.4
o-Xylene	95-47-6	ND	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	97	50 -	150
1,4-Difluorobenzene	540-36-3	99	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: MW-6
Lab Number: 9204232-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 04/20/92
Date Received: 04/20/92
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	41	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: MW-6
Lab Number: 9204232-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 04/20/92
Date Received: 04/20/92
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: MW-6
Lab Number: 9204232-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 602

Date Sampled: 04/20/92
Date Received: 04/20/92
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	---	ND	0.4
o-Xylene	95-47-6	ND	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	90	50 -	150
1,4-Difluorobenzene	540-36-3	99	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: METHOD BLANK
Lab Number: 9204232-05A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: METHOD BLANK
Lab Number: 9204232-05A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.00
Clayton Project No. 92042.32

Sample Identification: METHOD BLANK
Lab Number: 9204232-05A
Sample Matrix/Media: WATER
Analytical Method: EPA 602

Date Sampled: --
Date Received: --
Date Analyzed: 04/21/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	---	ND	0.4
o-Xylene	95-47-6	ND	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	82	50 -	150
1,4-Difluorobenzene	540-36-3	95	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Clayton ENVIRONMENTAL CONSULTANTS

A Marsh & McLennan Company

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page ____ of ____
Project No.	
Batch No.	9204232
Ind. Code	W.P.
Date Logged In 4/20/92	By AB

REPORT RESULTS TO

Name: RICHARD SILVA | Title:
Company: BUSICK AIR | Dept.:
Mailing Address:
City, State, Zip:
Telephone No.: | Telefax No.:

SEND INVOICE TO

Purchase Order No.: | Client Job No.: 40739.00
Name: RICHARD SILVA
Company: CLAYTON | Dept.:
Address:
City, State, Zip:

Date Results Req.: NORMAL T.A.T. | Rush Charges Authorized? ☐ Yes ☐ No | Phone / Fax Results ☐ ☐

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative:

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	ANALYSIS REQUESTED: EPA 601/602	ANALYSIS REQUESTED: HOLD	FOR LAB USE ONLY
MW-4	4-20-92	H_2O	40 mLs	2	XP		-01 A, B
MW-5	↓	↓	40 mLs	2	XP		02
MW-6			40 mLs	2	XP		03
TRIP BLANKS #0040792	↓	↓	40 mLs	2		XP	04

CHAIN OF CUSTODY

Collected by: RICHARD SILVA (print) | Collector's Signature: Richard Silva
Relinquished by: Richard Silva | Date/Time 4-20-92/1615 | Received by: | Date/Time
Relinquished by: | Date/Time | Received at Lab by: Rebecca L Turner Chiarelli | Date/Time 4/20/92 4:15
Method of Shipment: | Sample Condition Upon Receipt: ☑ Acceptable ☐ Other (explain)

Authorized by: Richard Silva (SAMPLER) Date 4-20-92
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive, Novi, MI 48375, (313) 344-1770
Raritan Center, 160 Fieldcrest Ave., Edison, NJ 08837, (908) 225-6040
400 Chastain Center Blvd., N.W., Suite 490, Kennesaw, GA 30144, (404) 499-7500
1252 Quarry Lane, Pleasanton, CA 94566, (510) 426-2657

2/92

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

APPENDIX G

LABORATORY ANALYTICAL REPORT FOR GROUNDWATER SAMPLES COLLECTED AUGUST 6, 1992

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

August 14, 1992

Mr. Richard Silva
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref. 40739.01
Clayton Project No. 92080.41

Dear Mr. Silva:

Attached is our analytical laboratory report for the samples received on August 6, 1992. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Maryann Gambino, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Michael Lynch for

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-7
Lab Number: 9208041-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	0.8	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	48	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-7
Lab Number: 9208041-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-7
Lab Number: 9208041-01A
Sample Matrix/Media: WATER
Analytical Method: EPA 602

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	---	ND	0.4
o-Xylene	95-47-6	ND	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	92	50 -	150
1,4-Difluorobenzene	540-36-3	100	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-8
Lab Number: 9208041-02A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-8
Lab Number: 9208041-02A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-8
Lab Number: 9208041-02A
Sample Matrix/Media: WATER
Analytical Method: EPA 602

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	---	ND	0.4
o-Xylene	95-47-6	ND	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	88	50 -	150
1,4-Difluorobenzene	540-36-3	99	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-9
Lab Number: 9208041-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-9
Lab Number: 9208041-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: MW-9
Lab Number: 9208041-03A
Sample Matrix/Media: WATER
Analytical Method: EPA 602

Date Sampled: 08/06/92
Date Received: 08/06/92
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	---	ND	0.4
o-Xylene	95-47-6	ND	0.4

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Bromochloromethane	74-97-5	93	50 -	150
1,4-Difluorobenzene	540-36-3	98	50 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: METHOD BLANK
Lab Number: 9208041-05A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.6
Bromomethane	74-83-9	ND	0.7
Vinyl chloride	75-01-4	ND	0.5
Chloroethane	75-00-3	ND	0.5
Methylene chloride	75-09-2	ND	2
1,1-Dichloroethene	75-35-4	ND	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	ND	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-87-5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	ND	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	ND	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: METHOD BLANK
Lab Number: 9208041-05A
Sample Matrix/Media: WATER
Analytical Method: EPA 601

Date Sampled: --
Date Received: --
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons (continued)			
2-Chloroethylvinylether	110-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ND	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Busick Air

Client Reference: 40739.01
Clayton Project No. 92080.41

Sample Identification: METHOD BLANK
Lab Number: 9208041-05A
Sample Matrix/Media: WATER
Analytical Method: EPA 602

Date Sampled: --
Date Received: --
Date Analyzed: 08/10/92

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Aromatics			
Benzene	71-43-2	ND	0.4
Chlorobenzene	108-90-7	ND	0.3
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-7	ND	0.3
1,4-Dichlorobenzene	106-46-7	ND	0.5
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
p,m-Xylenes	---	ND	0.4
o-Xylene	95-47-6	ND	0.4
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromochloromethane	74-97-5	76	50 - 150
1,4-Difluorobenzene	540-36-3	93	50 - 150

ND Not detected at or above limit of detection
-- Information not available or not applicable

Dublin Multilayer
Spill at 6341 Scarlett Court
Dublin 94503

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