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



September 24, 1991

Clayton Project No. 36080.00

Ms. Cynthia Chapman
ALAMEDA COUNTY HEALTH AGENCY
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, CA 94621

Dear Ms. Chapman:

Enclosed is Clayton's *Update on Remedial Investigative Tasks Completed at the South Shore Shopping Center*, for the property owned by Harsch Investment Corporation and located at the corner of Shore Line Drive and Park Street in Alameda, California.

If you have any questions regarding this report, please call me at (415) 426-2671, or Mr. Alan Gibbs at (415) 426-2676.

Sincerely,

Laurene Compton

Geologist

cc: Mr. Michael Dosen

Ms. Rose Coughlin

SEP 25 El Gal

6 (and GA altached)

PLTFOEFDEXINDIT

DATE 11/22/91 ERE

ELYSER GARDNER, CSR

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



Update on Remedial Investigative Tasks
Completed at South Shore Shopping Center
Park Street and Shore Line Drive
Alameda, California
December 1990 - July 1991

Clayton Project No: 36080.00

September 24, 1991



CONTENTS

Sect	<u>tîon</u>	Page
Exec	cutive Summary	. iv
1.0 1.1	INTRODUCTION SCOPE OF WORK	
2.0 2.1 2.2	BACKGROUND PREVIOUS SITE INVESTIGATIONS HYDROGEOLOGY	1
3.0 3.1 3.2	GROUNDWATER MONITORING WELLS PURPOSE AND SCOPE BOREHOLE INSTALLATION AND MONITORING WELL	
3.3 3.4	CONSTRUCTION	4
4.0 4.1 4.2	LABORATORY ANALYSES SOIL SAMPLE ANALYTICAL RESULTS GROUNDWATER SAMPLE ANALYTICAL RESULTS, NOVEMBER 19 4.2.1 Petroleum Hydrocarbons	. 4
4.3	4.2.2 <u>Purgeable Halocarbons</u> GROUNDWATER SAMPLE ANALYTICAL RESULTS, APRIL 1991 4.3.1 <u>Petroleum Hydrocarbons</u>	6
4.4	 4.3.2 <u>Purgeable Halocarbons</u> GROUNDWATER SAMPLE ANALYTICAL RESULTS, JULY 1991 4.4.1 <u>Petroleum Hydrocarbons</u> 4.4.2 <u>Purgeable Halocarbons</u> 	7
5.0	TIDAL INFLUENCE STUDY	8
6.0	WELLS WITHIN 1/2-MILE OF SUBJECT SITE	8
7.0	UNDERGROUND UTILITY TRENCHES	8
8.0	INSTALLATION OF REMEDIATION PIPING	9
9.0 9.1 9.2	AQUIFER TESTING VARIABLE RATE WELL PERFORMANCE TEST SLUG TESTS	9 9 10
10.0	CONCLUSIONS AND RECOMMENDATIONS	11

Figures

- 1 Site Location Map
- 2 Diagrammatic Site Plan
- 3 Groundwater Contour Map
- 4 Utility Trenches
- 5 Detail of Well Head

Tables

- 1 Depth to Groundwater and Groundwater Elevations, July 10, 1991
- 2 Well Construction Details
- 3 Summary of Analytical Results of Soil Samples Collected on April 10, 1991
- 4 Summary of Analytical Results of Quarterly Groundwater Sampling, November 1990
- 5 Summary of Analytical Results of Quarterly Groundwater Sampling, April 1991
- 6 Summary of Analytical Results of Quarterly Groundwater Sampling, July 1991
- 7 Depths to Groundwater through a 12-hour Tidal Cycle
- 8 Wells Within 1/2-Mile Radius of Subject Site

Appendices

- A Borehole Logs
- B Drilling/Monitoring Well Permits
- C Clayton Drilling, Well Construction, and Sampling Protocols for Borehole/Monitoring Well Installation
- D Monitoring Well Schematics
- E Water Sampling Field Data Sheets
- F Laboratory Analytical Results and Chain-of-Custodies for Soil Samples Collected from Boreholes B-8B and B-14
- G Laboratory Analytical Results and Chain-of-Custodies for Quarterly Groundwater Sampling November 1990
- H Laboratory Analytical Results and Chain-of-Custodies for Quarterly Groundwater Sampling April 1991
- I Laboratory Analytical Results and Chain-of-Custodies for Quarterly Groundwater Sampling July 1991



Executive Summary

Clayton Environmental Consultants, Inc, was retained by Harsch Investment Corporation to conduct a remedial investigation at the South Shore Shopping Center located at the north corner of Park Street and Shore Line Drive in Alameda, California (Figure 1). Work completed to date has been performed as described in Clayton's Work Plan for Groundwater Remedial Investigation, dated February 28, 1991, and includes the following tasks:

- Task 1: Installation of groundwater monitoring wells MW-14 and MW-8B.

 MW-14 was installed downgradient of the former Texaco station in
 Shore Line Drive. MW-8B replaced MW-8 and was installed
 downgradient of the former dry cleaning site.
- Task 2: Proper abandonment of Woodward-Clyde monitoring well MW-6.
- Task 3: Tidal influence study
- Task 4: Identification of underground utility trenches
- Task 5: Survey of wells within 1/2-mile radius of subject site
- Task 7: Quarterly groundwater sampling, April 1991 and July 1991
- Task 8: Aquifer testing

In addition to completing the tasks listed above, we also:

- Conducted quarterly groundwater sampling in November 1990
- Abandoned MW-7 and replaced it with MW-7B
- Abandoned MW-5 and replaced it with MW-5B
- Abandoned MW-1
- Abandoned MW-9 and replaced it with MW-9B

This report provides an update of activities conducted at the subject site from November 1990 through July 1991.



1.0 INTRODUCTION

Clayton Environmental Consultants, Inc, was retained by Harsch Investment Corporation to conduct a remedial investigation at the South Shore Shopping Center located at the north corner of Park Street and Shore Line Drive in Alameda, California (Figures 1 and 2). This report provides an update of activities conducted at the subject site from November 1990 through July 1991.

1.1 SCOPE OF WORK

Work completed to date has been performed as described in Clayton's Work Plan for Groundwater Remedial Investigation, dated February 28, 1991.

Work plan tasks completed to date include:

- Task 1: Installation of groundwater monitoring wells MW-14 and MW-8B. MW-14 was installed downgradient of the former Texaco station, in Shore Line Drive. MW-8B replaced MW-8 and was installed downgradient of the former dry cleaning site.
- Task 2: Proper abandonment of Woodward-Clyde monitoring well MW-6.
- Task 3: Tidal influence study
- Task 4: Location of underground utility trenches
- Task 5: Survey of wells within 1/2-mile radius of subject site
- Task 7: Quarterly groundwater sampling, April 1991 and July 1991
- Task 8: Aquifer testing

In addition to completing the tasks listed above, we also:

- Conducted quarterly groundwater sampling in November 1990
- Abandoned MW-7 and replaced it with MW-7B
- Abandoned MW-5 and replaced it with MW-5B
- Abandoned MW-1
- Abandoned MW-9 and replaced it with MW-9B

2.0 BACKGROUND

The following subsections provide information on the results of previous investigations at the site and the site hydrogeology.

2.1 PREVIOUS SITE INVESTIGATIONS

In 1989, Harsch contracted Woodward-Clyde Consultants to conduct Phase I and Phase II environmental assessments at the subject site (Woodward-Clyde Project No.

8910116A). These studies determined that the following businesses formerly located on the property had affected the soil and/or groundwater underlying the subject site:

- Dry Cleaner/laundromat
- South Shore Car Wash
- Texaco service station
- Auto repair shop (on the former Texaco site)
- Goodyear

Clayton conducted further soil and groundwater investigations at the site in 1990 (Clayton Project Nos. 29196.00 and 30493.00). These studies revealed that:

- Benzene in monitoring well MW-5 exceeds California Department of Health Services (DHS) maximum contaminant levels (MCL) for drinking water standards.
- Dichloroethene (DCE), trichloroethene (TCE), and tetrachloroethene (PCE)
 concentrations in monitoring well MW-7 exceed DHS MCLs. These constituents
 are also present in well MW-8B in concentrations below or slightly above DHS
 MCLs.
- Diesel concentrations in MW-14 are above the Environmental Protection Agency (EPA) Suggested No Adverse Response Levels (SNARL).

2.2 HYDROGEOLOGY

The site is underlain by dredged fill put in place in the 1950s by Utah International. The medium-grained sand fill material overlies "bay mud", the native sandy clays. As the borehole logs presented in Appendix A indicate, the bay mud underlying the subject site occurs at depths ranging from 12 to 20 feet below ground surface (bgs).

Depth to groundwater ranges from 5 to 7 feet bgs. Well elevations were surveyed to the City of Alameda datum by Nolte and Associates, licensed land surveyors, on June 5, 1991. The United States Geological Survey (USGS) mean sea level equals -3.41 feet on the City of Alameda datum (USGS 0 feet elevation = -3.41 feet elevation on City of Alameda datum). Table 1 presents the monitoring well elevations, depth to groundwater, and groundwater elevations to the City of Alameda datum.

We measured the depth to groundwater in well MW-9B on July 17, 1991. We measured depth to groundwater in the other onsite wells on July 10, 1991. The groundwater elevation data was used to develop the groundwater contour map presented as Figure 3. As shown on the map, the groundwater flow direction changes across the site. On July 10, 1991, there was an elevational high in the groundwater table at the south corner of the South Shore Car Wash. From there, the groundwater flows (1) south and southwest, toward the bay, and across the Texaco and dry cleaning sites, and (2) north and northeast across the former location of the USTs at the South Shore Car Wash.

The groundwater gradient on the site ranges from 0.16 to 1.6 feet of elevation drop per 100 feet horizontal distance. The gradient is much steeper at the southwest corner of the property.

3.0 GROUNDWATER MONITORING WELLS

3.1 PURPOSE AND SCOPE

Since the last update in January 1991, Clayton has installed, replaced, and abandoned monitoring wells as follows:

• April 10, 1991

Monitoring well MW-14 was installed in Shore Line Drive to further define the downgradient extent of the hydrocarbon plume originating at the former Texaco site.

Monitoring well MW-8B was installed downgradient of the former dry cleaners. It was bottomed in the bay mud to further define the vertical extent of the plume of chlorinated solvents. It replaced monitoring well MW-8, which was abandoned in accordance with the County of Alameda guidelines.

Woodward-Clyde monitoring well MW-6 was abandoned. This well had been damaged during activities onsite.

• May 6, 1991

Monitoring well MW-5 was abandoned because of the planned construction of a Lyon's restaurant in that area. It was replaced with monitoring well MW-5B. MW-5B was located downgradient of MW-5, adjacent to the sidewalk.

Monitoring well MW-7 (2-inch diameter) was converted to a 4-inch diameter well.

• May 15, 1991

Monitoring well MW-1 was abandoned because of the planned construction of a Lyon's restaurant in that area.

Monitoring well MW-9 was damaged during soil remediation activities on the Texaco site. It was abandoned and replaced with MW-9B.

The following subsections describe the work performed and results of investigation. Figure 2 shows the locations of all monitoring wells currently located on the site.

3.2 BOREHOLE INSTALLATION AND MONITORING WELL CONSTRUCTION

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

Aqua Science Engineers was contracted to perform the drilling activities under the direct supervision of Clayton personnel. 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. The boreholes were installed on the dates listed in Section 3.1 using a 10-inch hollow-stem auger. Appendix A contains the borehole logs for new well installations.

Soil was screened for hydrocarbon contamination with an organic vapor meter (OVM). We collected discrete soil samples from approximately 5 feet below the ground surface (bgs) in the boreholes for MW-8B and MW-14.

The wells were constructed of 4-inch diameter, schedule 40 PVC, flush-threaded casing. The open portions of the wells were constructed with 0.010-inch slotted screen. We've summarized the well construction details in Table 2. Well schematics are presented in Appendix D.

3.3 WELL DEVELOPMENT AND SAMPLING

Clayton developed the newly installed monitoring wells, MW-5B, MW-7B, MW-8B, MW-9B and MW-14, by pumping with a 4-inch submersible pump. This was done to stabilize the filter material and remove turbid water caused by drilling operations. Clayton does not develop wells until the seal has set for at least 48 to 72 hours.

The wells were sampled at least 48 to 72 hours after development. The field sampling data sheets are included as Appendix E.

3.4 MONITORING WELL DESTRUCTION

Monitoring wells MW-1, MW-5, MW-6, MW-8, and MW-9 were abandoned on the dates listed in Section 3.1. Permits for destruction were obtained from the ACFC&WCD. The wells were abandoned by redrilling the boreholes to the full depth of the original boring and backfilling the borehole to the surface with neat cement.

Well MW-7 was redrilled and replaced with a 4-inch diameter well constructed of schedule 40 PVC.

4.0 <u>LABORATORY ANALYSES</u>

In the following subsections we've presented results of analysis of (1) soil samples collected during monitoring well installation, and (2) groundwater samples collected from onsite monitoring wells in November 1990 and April and July 1991.

4.1 SOIL SAMPLE ANALYTICAL RESULTS

Two soil samples (one sample per borehole) were collected from the borings for wells MW-8B and MW-14, brought to Clayton's laboratory, and analyzed by the following methods:

- EPA Method 5030/8010 for purgeable halocarbons
- EPA Method 5030/8015/8020 for gasoline and volatile hydrocarbons
- EPA Method 3550/8015 for diesel fuel
- Standard Method 5520F for hydrocarbons

• EPA Method 6010 for the metals cadmium, chromium, lead, nickel, and zinc

Table 3 is a summary of the analytical results of soil samples and a comparison with regulatory guidelines. The complete laboratory report is presented as Appendix F.

A toluene concentration of 0.056 ppm was detected in soil from borehole B-8B, 5', and a diesel concentration of 1 ppm was detected in soil from borehole MW-14, 5'. These are well below action levels for these constituents. Neither gasoline or purgeable halocarbons were detected in the borehole samples.

Metals for which analyses were conducted were either below detection limits or were well below the total threshold limit concentrations (TTLC).

4.2 GROUNDWATER SAMPLE ANALYTICAL RESULTS, NOVEMBER 1990

Groundwater samples were collected from wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8, and MW-9 on November 29 and 30, 1990, and analyzed by the following methods:

- EPA Method 5030/8015/8020 for volatile hydrocarbons and gasoline
- EPA Method 3510/8015 for diesel fuel
- EPA Method 418.1 for hydrocarbons
- EPA Method 601 for purgeable halocarbons

In Table 4, we've summarized groundwater analytical results from the November 1990 quarterly sampling event and compared our findings to regulatory guidelines as contained in *A Compilation of Water Quality Goals*, by Jon Marshack, October 1990. Table 4 reports only detected compounds. All other compounds for which analyses were conducted were below detection limits (Appendix G). Notable compounds detected are discussed below.

During the November 1990 sampling, the numbers of monitoring wells MW-7 and MW-8 were mistakenly switched. On the laboratory report and chain-of-custody they are reversed.

4.2.1 Petroleum Hydrocarbons

The following aromatic hydrocarbon concentrations were detected in groundwater samples from MW-5: 800 parts per billion (ppb) benzene, 12 ppb toluene, 320 ppb ethylbenzene, and 66 ppb xylenes. Of these, the benzene concentration exceeds the DHS MCL for drinking water standards of 1 ppb.

The groundwater sample from MW-5 also had a gasoline concentration of 2,900 ppb. Diesel, which was detected in MW-5 at a concentration of 910 ppb in June 1990, was below detectable levels during this round of sampling.

4.2.2 Purgeable Halocarbons

The concentrations of purgeable halocarbons in groundwater samples from MW-7 remain similar to concentrations previously detected and consisted of the following:

440 ppb 1,2-DCE, 520 ppb TCE, and 1,900 ppb PCE. These are all above the DHS standards. DHS standards are included in Table 4.

In contrast, groundwater samples from the downgradient well, MW-8, revealed the following concentrations: 1.2 ppb DCE, 3.0 ppb TCE, and 0.9 ppb PCE.

Low levels of PCE were again detected in groundwater from MW-1 and MW-9; these levels were below the DHS MCL of 5 ppb. In addition, TCE concentrations of 0.5 ppb were detected in wells MW-3 and MW-4. This was the first time that purgeable halocarbons were detected in these two wells. The DHS MCL for TCE is 5 ppb.

4.3 GROUNDWATER SAMPLE ANALYTICAL RESULTS, APRIL 1991

Groundwater samples were collected from wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8B, MW-9, and MW-14 on April 16 and 17, 1991, and analyzed by the following methods:

- EPA Method 5030/8015/8020 for volatile hydrocarbons and gasoline
- EPA Method 3510/8015 for diesel fuel
- EPA Method 5520 for hydrocarbons
- EPA Method 601 for purgeable halocarbons

In Table 5 we've summarized groundwater analytical results from the April 1991 quarterly sampling event. We've also included the regulatory guidelines for comparison. Only compounds that were detected are included in the table. All other compounds for which analyses were conducted were below detection limits (Appendix H). Notable compounds detected are discussed below.

4.3.1 Petroleum Hydrocarbons

The following aromatic hydrocarbon concentrations were detected in groundwater samples from MW-5: 1,300 ppb benzene, 45 ppb toluene, 370 ppb ethylbenzene, and 100 ppb xylenes. Analyses of groundwater samples from MW-14 revealed benzene at 2.9 ppb and xylenes at 0.5 ppb. Benzene exceeds the DHS MCL for drinking water standards of 1 ppb in both wells.

The concentration of gasoline detected in the sample from MW-5 was 4,000 ppb. Gasoline was below detectable levels in MW-14. Diesel, which was again below detectable levels during the April 1991 sampling in MW-5, was detected in MW-14 at a concentration of 230 ppb.

4.3.2 Purgeable Halocarbons

The purgeable halocarbon concentrations in groundwater samples from MW-7 remained similar to concentrations previously detected and consisted of the following: 90 ppb 1.2-dichloroethene (DCE), 200 ppb trichloroethene (TCE), and 1.600 ppb (PCE). These are all above the DHS standards, as shown in Table 5.

Analysis of groundwater samples from the newly installed and deepened downgradient well, MW-8B, revealed the following concentrations of purgeable halocarbons: 6.8 ppb

DCE, 7.7 TCE, and 1.1 PCE. The DCE and TCE levels exceed the DHS regulatory guidelines listed in Table 5.

Low concentrations of PCE were again detected in groundwater samples from MW-1 and MW-9. PCE was also detected in MW-3 and the newly installed MW-14. A concentration of 16 ppb was detected in the sample from MW-14. The samples from MW-14 and MW-7 exceeded the DHS MCL for PCE of 5 ppb.

Concentrations of 0.5 ppb DCE, 4.6 ppb 1,2-dichlorethane (DCA), and 0.4 ppb TCE were also detected in MW-14. TCE was not detected in MW-3 or MW-4 during the April 1991 round of sampling.

4.4 GROUNDWATER SAMPLE ANALYTICAL RESULTS, JULY 1991

Groundwater samples were collected from wells MW-2, MW-3, MW-4, MW-5B, MW-7B, MW-8B, MW-9B, and MW-14 on July 10, 11, and 17, 1991, and analyzed by the following methods:

- EPA Method 5030/8015/8020 for volatile hydrocarbons and gasoline
- EPA Method 3510/8015 for diesel fuel
- EPA Method 5520 for hydrocarbons
- EPA Method 601 for purgeable halocarbons

In Table 6 we've summarized groundwater analytical results from the July 1991 quarterly sampling event. Regulatory guidelines are also listed for comparison. Only compounds that were detected are included in the table. All other compounds for which analyses were conducted were below detection limits (Appendix I). Notable compounds detected are discussed below.

4.4.1 Petroleum Hydrocarbons

The following aromatic hydrocarbon concentrations were detected in groundwater samples from MW-5B: 3.1 ppb benzene, 3.7 ppb toluene, 13 ppb ethylbenzene, and 2.2 ppb xylenes. Analysis of groundwater samples from MW-14 revealed benzene at 0.8 ppb, toluene at 0.8 ppb, and xylenes at 0.8 ppb. Benzene exceeds the DHS MCL for drinking water standards of 1 ppb in well MW-5B.

The concentration of gasoline detected in the sample from MW-5 was 400 ppb. Gasoline was below detectable levels in MW-14. Diesel, which was below detectable levels during the July 1991 sampling in MW-5B, was detected in MW-14 at a concentration of 180 ppb, similar to the concentration detected in April 1991.

MW-5B was installed approximately 20 feet downgradient of MW-5. This would account for the dramatic drop in BTEX and gasoline concentrations from the April 1991 quarterly sampling.

4.4.2 Purgeable Halocarbons

The purgeable halocarbon concentrations in groundwater samples from MW-7B remained similar to concentrations previously detected and consisted of the following:



170 ppb 1,2-dichloroethene (DCE), 660 ppb trichloroethene (TCE), and 7,800 ppb (PCE). These are all above the DHS standards, as shown in Table 6.

Analysis of groundwater samples from the downgradient well, MW-8B, revealed the following concentrations of purgeable halocarbons: 11 ppb DCE, 19 TCE, and 0.9 PCE. The DCE and TCE levels exceed the DHS regulatory guidelines listed in Table 6. The only other purgeable halocarbon detected was 6.6 ppb of 1,2-DCA in the sample from monitoring well MW-14. This exceeds the DHS MCL for DCA of 0.5 ppb.

Purgeable halocarbons, which had previously been detected in groundwater samples from wells MW-3, MW-4, and MW-9B, were below detectable levels during the July 1991 sampling event.

5.0 TIDAL INFLUENCE STUDY

On March 5, 1991, the depths to groundwater in all onsite wells were measured throughout a 12-hour period. The intent was to determine whether the tide affects water elevations onsite. Water levels were measured approximately every hour with an electronic depth sounder. The results are summarized in Table 7.

Groundwater fluctuations ranged from 0.02 feet in well MW-1 to 0.07 feet in MW-10, yielding an average change of 0.04 feet (approximately 0.5 inch) over the site.

6.0 WELLS WITHIN 1/2-MILE OF SUBJECT SITE

Clayton was able to identify the wells within a 1/2-mile radius of the subject site by reviewing a list provided by the Alameda County Flood Control and Water Conservation District, a division of the Alameda County Public Works Agency, and by visiting their offices to review records. The list includes groundwater monitoring, public, private, and other types of wells as of May 14, 1991. Seven monitoring wells, three cathodic wells, two destroyed wells, and one irrigation well are located within a 1/2-mile radius of the subject site. The locations and other information on the wells are summarized in Table 8.

7.0 UNDERGROUND UTILITY TRENCHES

The presence of underground utilities and their associated trenches can disrupt the natural flow of groundwater and act as conduits for contaminant migration.

Clayton has contacted the following agencies and companies to compile a list and map the underground utilities in the vicinity of the subject site:

- City of Alameda Engineering Department water lines and storm drains
- City of Alameda Bureau of Electricity electrical lines
- East Bay Municipal Utilities District (EBMUD) sanitary sewer lines
- Pacific Gas and Electric (PG&E) gas lines

Figure 4 is an illustration of the locations of utility lines around the site. These locations are based on maps from the City of Alameda, EBMUD, the site demolition plan prepared by Nolte and Associates, and telephone conversations with the agencies listed above. There may be other abandoned trenches under the site that our research did not reveal.

Most of the utility trenches are above the level of the groundwater table and should not affect the flow of groundwater. However, the sanitary sewer is near the surface of the groundwater table and may affect the flow of groundwater. Flow lines, where we could find information on them, are indicated on Figure 4.

8.0 INSTALLATION OF REMEDIATION PIPING

A groundwater remediation system and a soil vapor remediation system will be installed at the site. In May 1991, Clayton, in conjunction with Texaco, installed piping in underground trenches to manifold the monitoring wells with the soil vapor extraction system. This was done to facilitate installation of a remediation system at a later date with minimal disruption of onsite activities. EVAX Technologies, Inc., Texaco's subcontractor, will install and operate the soil vapor extraction system. Their work will be reported to ACHA under separate cover.

The work was conducted by Douglass Construction, Inc. Douglass installed 2-inch diameter Schedule 40 PVC for the groundwater extraction system, and 1-inch diameter schedule 40 PVC for electrical conduit for the soil vapor system. The wells were then lowered below grade and secured with concrete and steel traffic boxes approximately 2 feet wide by 3 feet long.

Figure 5 shows a detail of the well heads and associated piping. All wells currently onsite, including the former Texaco station wells (MW-2, MW-3, MW-4, MW-5B, and MW-9B), the former dry cleaning site wells (MW-7B and MW-8B), and the wells on the South Shore Car Wash site (MW-10, MW-11, MW-12, MW-13), are manifolded into the groundwater remediation system. The South Shore Car Wash has chosen not to manifold into Texaco's soil vapor extraction remediation system.

9.0 AQUIFER TESTING

Before designing and installing an extraction system at the site, the hydraulic properties of the water-bearing formation beneath the site must be defined. When certain hydraulic properties of an aquifer, such as hydraulic conductivity, transmissivity, storativity, groundwater velocity, and porosity, can be defined, we can usually predict: (1) drawdown (capture zone) in the aquifer at various distances from the extraction well, (2) how multiple wells in a small area will affect one another, and (3) drawdown in the aquifer at various pumping rates.

9.1 VARIABLE RATE WELL PERFORMANCE TEST

Before beginning an actual pumping test, Clayton conducted a variable rate well performance test (step test) on June 24, 1991. When pumping from an aquifer, there is an optimum pumping rate that will achieve a maximum drawdown in the aquifer.



When the optimum pumping rate is reached, groundwater is being pumped from the largest area possible without drying out the extraction well.

Because the actual pumping test must run continuously, with a constant pumping rate from the extraction well, the most efficient pumping rate must be determined before beginning the pumping test. The purpose of the step test is to pump at different rates to determine the optimum pumping rate to be used during the actual pump test.

The test was set up using a Grundfos submersible electric pump. The pump discharge was controlled with a globe valve and monitored with a flow meter. Monitoring well MW-5B was used as the pumping well, and monitoring wells MW-4, MW-3, and MW-9B were designated as the observation wells. Water was pumped from the well into a 600-gallon tank and stored onsite. Prior to pumping, the water levels in all of the wells were checked by hand with an electric water level meter.

When we implemented the step test, we found that well MW-5B, dried up at a 3 gallons per minute (gpm) flow rate. The well was allowed to fully recharge before we began pumping at 0.5 gpm. From there, the pumping rate was increased in steps to 1.0 gpm.

Clayton estimated that the optimum pumping rate for MW-5B is 0.7 to 0.8 gpm. This low rate is due, in part, to the high amounts of clay in the soils underlying the site. At this low rate of pumping, the drawdown in the observation wells was not detectable.

9.2 SLUG TESTS 20 100' away!

Because the pumping rate was so low, Clayton decided that a full pumping test would not be the most effective way to collect data on aquifer parameters. We decided to perform slug tests on wells MW-5B, MW-8B, and MW-7B and to determine hydraulic conductivity (K) and transmissivity (T) for the soils underlying the site.

Clayton conducted "rising water level" slug tests using the Bouwer and Rice methodology (Bouwer and Rice, 1976) on July 2, 1991. Prior to beginning the test, the static water level was measured by hand with an electric water level meter. A 4 foot long, 3.5 inch diameter PVC casing filled with sand (the "slug") was then immersed in the well. When the water level in the well returned to equilibrium, the slug was abruptly removed, and the resulting rise in water level was measured with the electric water level meter at 5-second intervals.

The tests were conducted on wells MW-5B, MW-7B, and MW-8B. The hydraulic conductivities and transmissivities that we calculated follow:

Well No.	Hydrauhe Conductivity	<u>Transmissivity</u>
MW-5B	3.34×10^{-8} ft/second	44.64 ft²/day
MW-7B	2.31×10^{-5} ft/second	30.85 ft²/day
MW-8B	3.38×10^{-6} ft/second	45.26 ft²/day



Hydraulic conductivity is approximately the same as permeability of the soils. The hydraulic conductivities that we calculated from the slug tests are low. This indicates that the soils under the site have low permeability. This is also evidenced by the low pumping rate achieved during the step pumping test and information from the borehole logs. These hydraulic conductivities will be taken into account when evaluating remediation systems for the site.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Information from the tasks completed to date revealed:

- Benzene is present in concentrations above DHS action levels in monitoring well MW-5B.
- DCE, TCE, and PCE are present in concentration above DHS action levels in monitoring well MW-7B. These constituents are also present in well MW-8B in concentrations below or slightly above DHS action levels.
- The diesel concentration of 230 ppb in the sample from MW-14 is above the EPA SNARL.
- Low levels of purgeable halocarbons are present in several of the other monitoring wells on the site.
- There does not appear to be a significant tidal influence on groundwater levels at the site.
- Most of the utility trenches located on and around the site are above the level of the groundwater table and should not affect the flow of groundwater. However, the sanitary sewer is near the surface of the groundwater table and may affect the flow of groundwater.
- The optimum pumping rate sustained during the step test of monitoring well MW-5B was approximately 0.7 to 0.8 gpm.
- Groundwater onsite occurs from 5 to 7 feet bgs. The flow direction changes across the site. On July 10, 1991, there appeared to be a high spot at the south corner of the South Shore Car Wash. From there, groundwater flows (1) south and southwest, toward the bay, and across the Texaco and dry cleaning sites, and (2) north and northeast across the former location of the USTs at the South Shore Car Wash.



Based on the above conclusions, Clayton makes the following recommendations:

• During quarterly monitoring, sample only wells in which compounds analyzed for have been detected. Sample the remaining wells on an annual basis.

This report prepared by:

Laurene E. Compton

Geologist

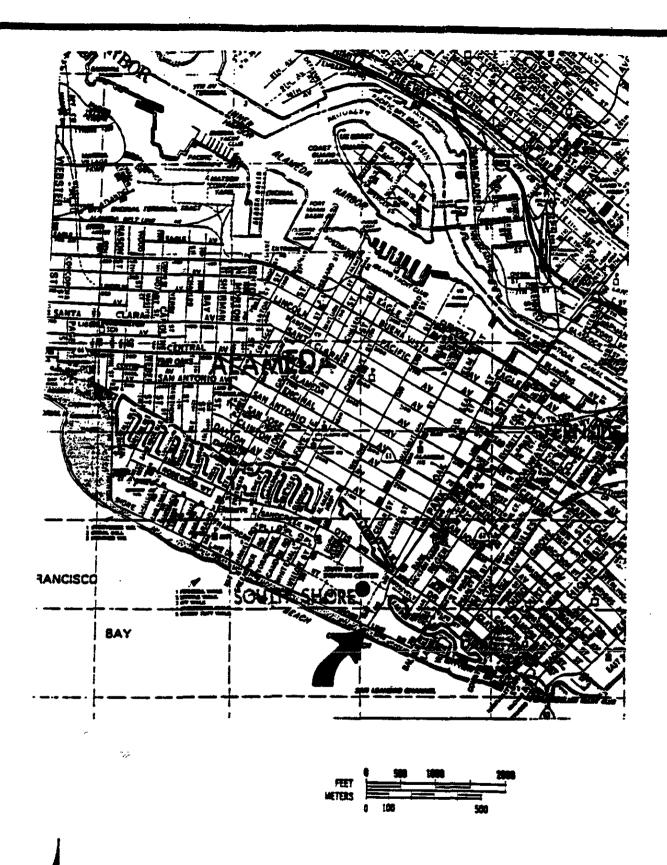
This report reviewed by:

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

September 24, 1991



FIGURES



Site Location Map Harsch Investment Corporation Park Street and Shore Line Drive Alameda, California

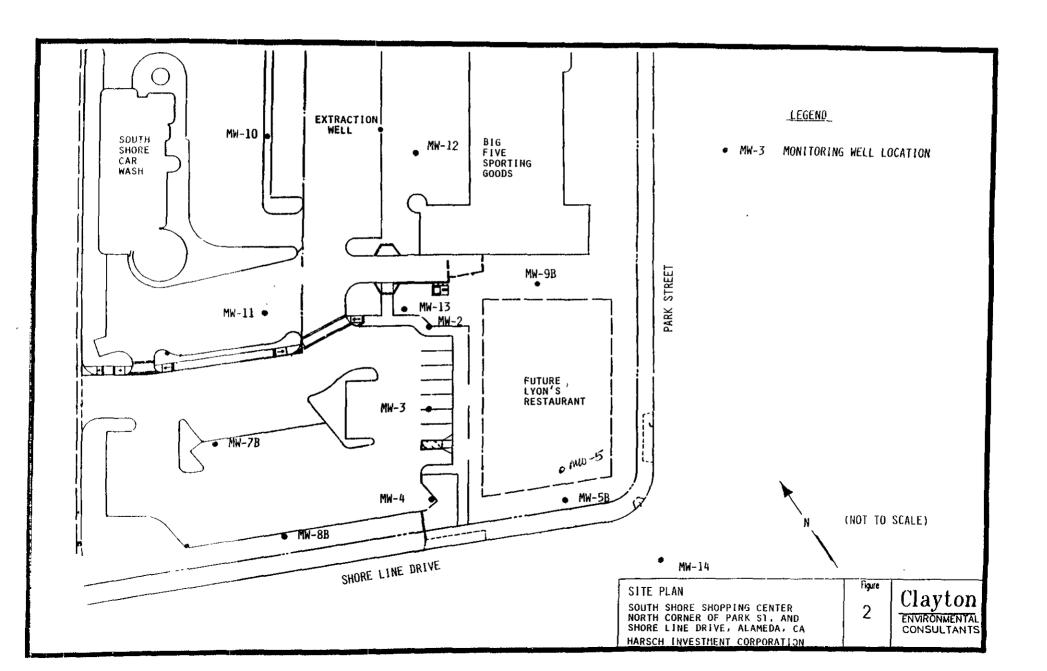
Clayton Project No. 29196.00

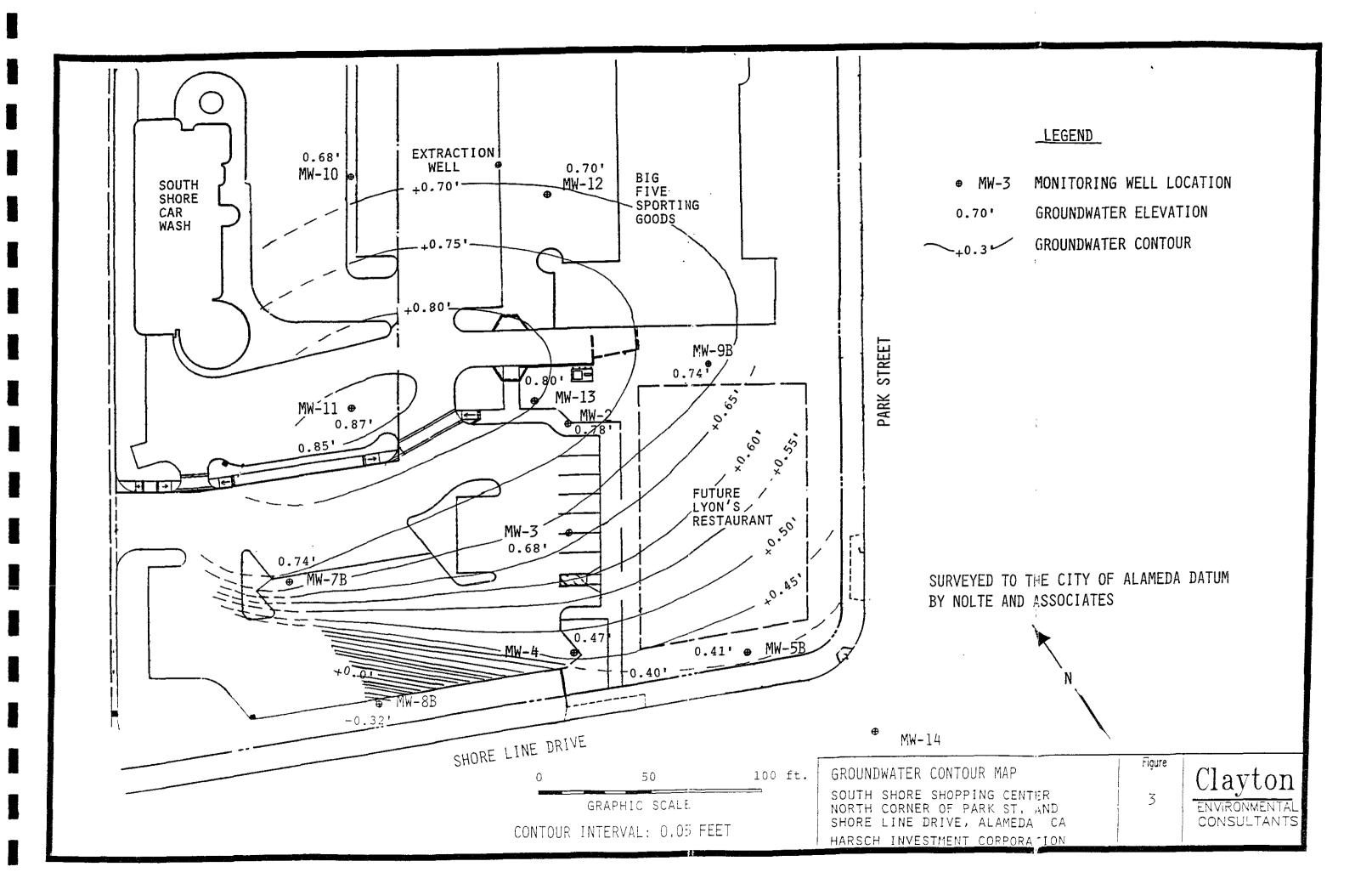
Figure

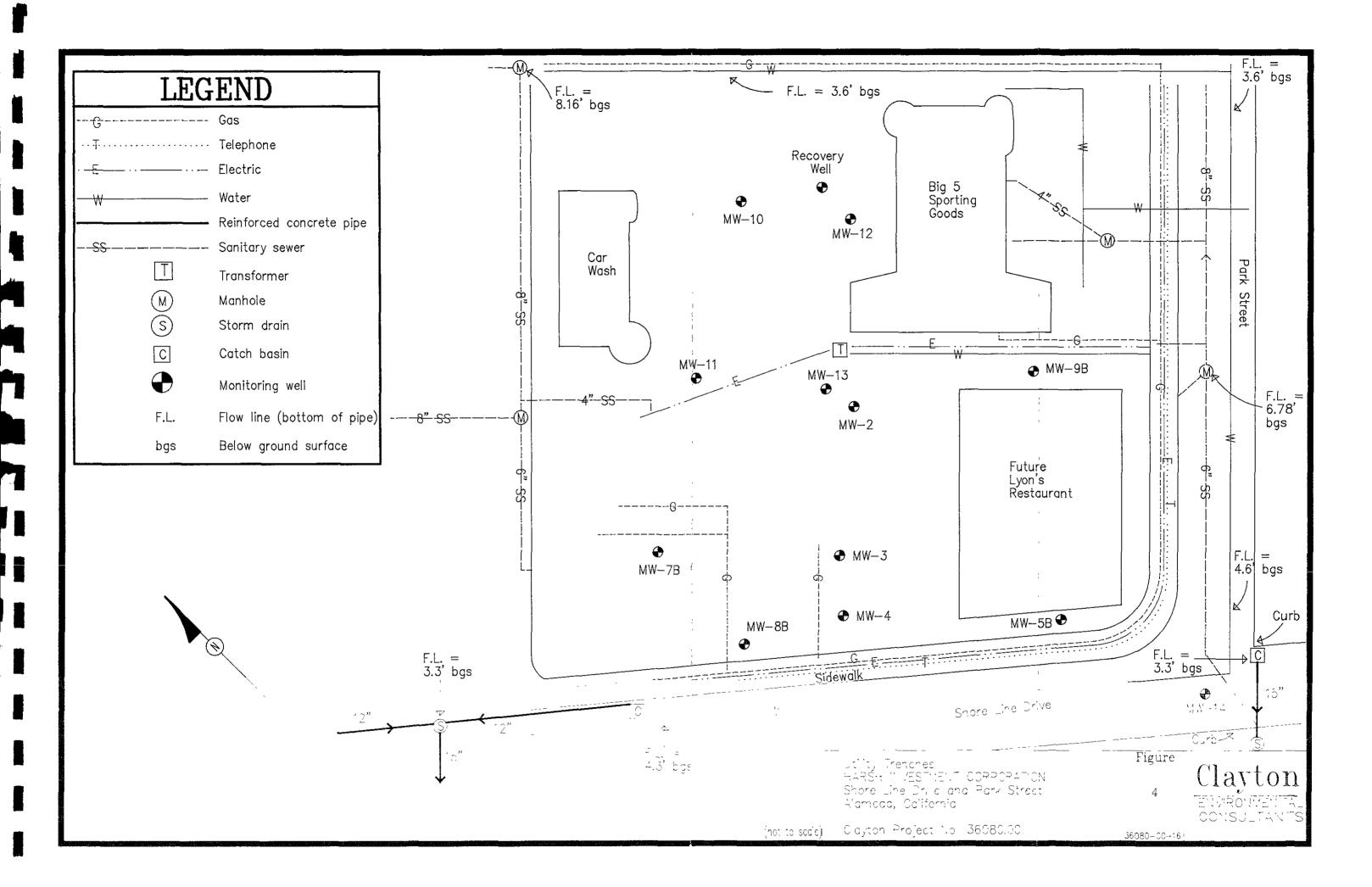
•

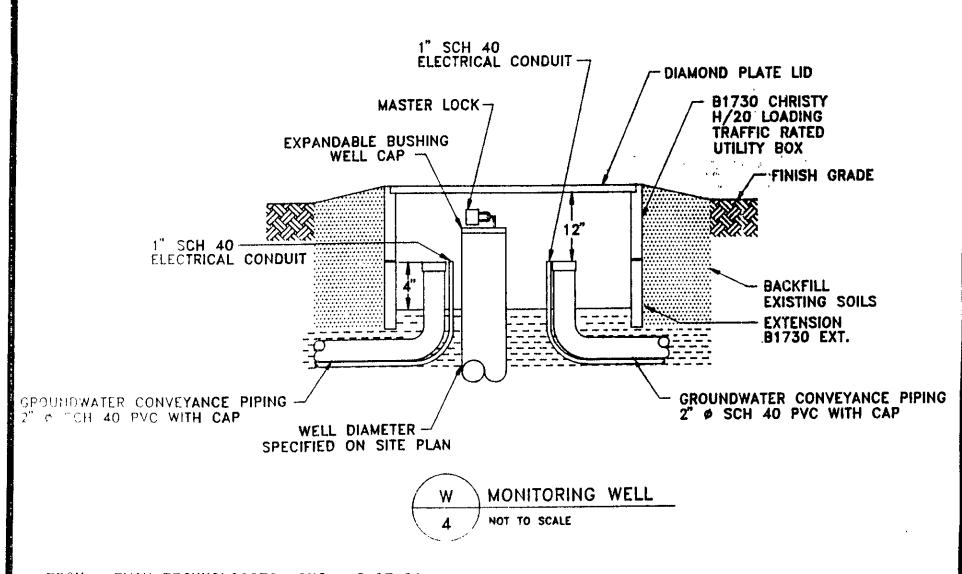
Clayton ENVIRONMENTAL CONSULTANTS

29196-01-17









FROM: EVAX TECHNOLOGIES, INC., 6-13-91

WELL HEAD DETAIL	Figure	Clayton
South Shore Center Park Street and Shore Line Drive Alameda, California	5	Clayton ENVIRONMENTAL CONSULTANTS
Harsch Investment Corporation		





Depth to Groundwater and Groundwater Elevations South Shore Center Corner of Park Street and Shore Line Drive Alameda, California

Collected July 10, 1991 Harsch Investment Corporation

Well Number	Casing Elevation (feet)	Depth to Groundwater (feet bgs)	Groundwater Elevation City of Alameda datum (feer)	Groundwärer Elevation Mean Sea Level (feet)
MW-2	7.49	6.71	0.78	4.19
MW-3	6.84	6.16	0.68	4.09
MW-4	6.51	6.04	0.47	3.88
MW-5B	5.08	4.67	0.41	3.82
MW-7B	5.52	4.78	0.74	4.15
MW-8B	6.15	6.47	-0.32	3.09
MW-9B	7.47	6.73 ⁽¹⁾	0.74	4.15
MW-10 ⁽²⁾	8.10	7.42	0.68	0.77
MW-11 ⁽²⁾	7.01	6.14	0.87	4.09
MW-12 ⁽²⁾	8.33	7.63	0.70	4.28
MW-13 ⁽²⁾	7.45	6.65	0.80	4.11
MW-14	5.98 ⁽³⁾	5.55	not measured	not measured

below ground surface

bgs depth to groundwater was measured on July 17, 1991

(2) well belonging to South Shore Car Wash

(3) surveyed to top of traffic vault

Site is surveyed to the City of Alameda datum by Nolte and Associates, June 5, 1991.

The United States Geological Survey (USGS) mean sea level equals -3.41 feet on the City of Alameda datum (USGS 0 feet elevation = -3.41 feet elevation on City of Alameda datum)



Well Construction Details for Monitoring Wells Located at South Shore Center Corner of Park Street and Shore Line Drive Alameda, California

July 1, 1991 Harsch Investment Corporation

Well Number	Total Depth (feet bgs)	Fop of Screened Interval (feet bgs)	Diameter (inches)
MW-2	14.28	3.78	4
MW-3	12.92	2.45	4
MW-4	15.67	5.17	4
MW-5B	12.70	2.20	4
MW-7B	13.50	3.00	4
MW-8B	21.94	16.44	4
MW-9B	14.80	4.30	4
MW-14	14.17	3.67	4

bgs below ground surface



Summary of Analytical Results of Soil Samples Collected on April 10, 1991

South Shore Center Corner of Park Street and Shore Line Drive Alameda, California

Chemical	B-8, 5'	B-14, 5'	Regulatory Guidelines
Toluene	0.056 ppm	<0.005 ppm	not applicable(1)
Diesel	1 ppm	<1 ppm	100 ppm ⁽¹⁾
Chromium	36 ppm	20 ppm	500 ppm ⁽²⁾
Lead	8 ppm	3 ppm	1,000 ppm ⁽²⁾
Nickel	32 ppm	16 ppm	2,000 ppm ⁽²⁾
Zinc	57 ppm	12 ppm	5,000 ppm ⁽²⁾

ppm parts per million (approximately equal to milligrams per kilogram) not detected at of above the indicated value (detection limit)

- (1) Regulatory guidelines estimated from the Leaching Potential Analysis for Gasoline and Diesel (Table 2-1) in the Leaking Underground Fuel Tank Field Manual (LUFT Manual), October 1989.
- (2) Total Threshold Limit Concentration (TTLC)

This table reports only detected compounds. All other compounds for which analyses were conducted were below analytical detection limits.



Summary of Analytical Results of Quarterly Groundwater Sampling

South Shore Center Corner of Park Street and Shoreline Drive Alameda, California

Collected November 29 and 30, 1990

Chemical	MW-1 (ppb)	MW-2 (ppb)	MW-3 (ppb)	MW-4 (ppb)	MW-5 (ppb)	MW-7 (ppb)	MW-8 (ppb)	MW-9 (ppb)	Regulatory Guidelines (ppb)	
EPA Method 8015/8020 for	EPA Method 8015/8020 for									
Benzene	ND	ND	ND	ND	800	ND	ND	ND	1 ⁽¹⁾	
Toluene	ND	ND	0.5	ND	12	ND	ND	ND	100 ⁽²⁾	
Ethylbenzene	ND	ND	ND	ND	320	ND	ND	ND	680 ⁽¹⁾	
Xylenes	ND	ND	ND	ND	66	ND	ND	ND	1,750 ⁽¹⁾	
Gasoline	ND	ND	ND	ND	2,900	ND	ND	ND	not applicable	
EPA Method 8015 for										
Diesel	ND	ND	ND	ND	ND	ND	ND	ND	100 ⁽³⁾	
EPA Method 418.1 for:					o. Gun rendo Rusia (respecto)					
Hydrocarbons	ND	1 ppm	ND	ND	2 ppm	ND	ND	1 ррт	not applicable	
EPA Method 601 for Purge	áble Haloc	arbons:								
1,1-Dichloroethene	ND	ИD	ND	ND	ND	ND	ND	ND	6 ⁽¹⁾	
Cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	440	1.2	ND	6 ⁽²⁾	
1,2-Dichlorethene (total)	ND	ND	ND	ND	ND	440	1.2	ND	6 ⁽²⁾	
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0.5 ⁽⁴⁾	
Trichloroethene	ND	ND	0.5	0.5	ND	520	3.0	ND	5 ⁽⁴⁾	
Tetrachloroethene	0.6	ND	ND	ND	ND	1,900	0.9	1.5	5 ⁽¹⁾	

ND not detected

ppb parts per billion which is approximately equal to micrograms per liter (µg/L) ppm parts per million which is approximately equal to milligrams per liter (mg/L)

(1) Maximum Contaminant Level for Drinking Water Standards (EPA & DHS)

(2) California State Action Levels (DHS)

(S) Health Advisories of Suggested No-Adverse-Response Levels (SNARLS)

MCI for Drinking Water Standards (DHS)

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



Summary of Analytical Results of Baseline Groundwater Sampling at South Shore Center Corner of Park Street and Shoreline Drive Alameda, California

Collected April 16 and 17, 1991

Chemical	MW-1 (ppb)	MW-2 (ppb)	MW-3 (ppb)	MW-4 (ppb)	MW-5 (ppb)	MW-7 (ppb)	MW-8B (ppb)	MW-9 (ppb)	MW-14 (ppb)	Regulatory Guidelines (ppb)
EPA Method 8015/8020 for										
Benzene	ND	ND	ND	ND	1,300	ND	ND	ND	2.9	1(1)
Toluene	ND	ND	ND	ND	45	ND	ND	ND	ND	100 ⁽²⁾
Ethylbenzene	ND	ND	ND	ND	370	ND	ND	ND	ND	680 ⁽¹⁾
Xylenes	ND	ND	ND	ND	100	ND	ND	ND	0.5	1,750 ⁽¹⁾
Gasoline	ND	ND	ND	ND	4,000	ND	ND	ND	ND	not applicable
EPA Method 3510 for:										
Diesel	ND	ND	230	100 ⁽³⁾						
EPA Method 5520 for										
Hydrocarbons	ND	ND	ND	not applicable						
EPA Method 601 for Purge	able Haloc	arbons.								
1,1-Dichloroethene	ND	ND	0.5	6 ⁽¹⁾						
Cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	90	6.8	ND	ND	6 ⁽²⁾
1,2-Dichlorethene (total)	ND	ND	ND	ND	ND	90	6.8	ND	ND	6 ⁽²⁾
1,2-Dichloroethane	ND	ND	4.6	0.5 ⁽⁴⁾						
Trichloroethene	ND	ND	ND	ND	ND	200	7.7	ND	0.4	5 ⁽⁴⁾
Tetrachloroethene	2.8	ND	3.0	ND	ND	1,600	1.1	3.3	16	5 ⁽¹⁾

ND not detected

ppb parts per billion which is approximately equal to micrograms per liter ($\mu g/L$) ppm parts per million which is approximately equal to milligrams per liter (m g/L)

(1) Maximum Contaminant Level (MCL) for Drinking Water Standards (EPA & DHS)

(2) California State Action Levels (DHS)

(3) Health Advisories or Suggested No Adverse-Response Levels (EPA).

MCL for Drinking Water Standards (DHS)

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



Summary of Analytical Results of Quarterly Groundwater Sampling South Shore Center Park Street and Shoreline Drive Alameda, California

Collected July 1991

Chemical	MW-2 (ppb)	MW-3 (ppb)	MW-4 (ppb)	MW-5B (ppb)	MW-7B (ppb)	MW-8B (ppb)	MW-9B (ppb)	MW-14 (ppb)	Regulatory Guidelines (ppb)
EPA Method 8015/8020 for:									
Benzene	<0.4	<0.4	< 0.4	3.1	NA	NA	< 0.4	0.8	1(1)
Toluene	< 0.3	<0.3	< 0.3	3.7	NA	NA	< 0.3	0.8	100 ⁽²⁾
Ethylbenzene	< 0.3	<0.3	<0.3	13	NA.	NA	<0.3	<0.3	680 ⁽¹⁾
Xylenes	< 0.4	<0.4	< 0.4	2.2	NA	NA	<0.4	0.8	1,750 ⁽¹⁾
Gasoline	<50	<50	<50	400	NA	NA	<50	<50	not applicable
EPA Method 3510 for:			6, 9845, 8(8)					A. 1917 181 318 4818 1	
Diesel	NA	NA	NA	<400 ⁽⁴⁾	NA	NA	NA	180	100 ⁽³⁾
EPA Method 5520 for:									
Hydrocarbons	NA	NA	NA	<5 ppm	NA	NA	NA	<5 ppm	not applicable
EPA Method 601 for Purgeable	Hajocarbor								
1,1-Dichloroethene	< 0.2	<0.2	< 0.2	< 0.2	4.6	<0.2	<0.2	<0.2	6 ⁽¹⁾
Trans-1,2-Dichloroethene	< 0.4	<0.4	< 0.4	< 0.4	2.6	<0.4	<0.4	< 0.4	10 ⁽²⁾
Cîs-1,2-Dichloroethene	< 0.4	< 0.4	< 0.4	< 0.4	170	11	<0.4	< 0.4	$6^{(2)}$
1,2-Dichlorethene (total)	< 0.4	<0.4	<0.4	<0.4	170	11	< 0.4	< 0.4	6 ⁽²⁾
1,2-Dichloroethane	< 0.3	<0.3	< 0.3	< 0.3	<0.3	< 0.3	<0.3	6.6	0.5 ⁽¹⁾
Trichloroethene	< 0.3	<0.3	< 0.3	<0.3	660	19	<0.3	<0.3	5(1)
1,1,2-Trichloroethane	< 0.6	< 0.6	<0.6	<0.6	0.8	< 0.6	<0.6	< 0.6	32 ⁽¹⁾
Bromoform	< 0.7	< 0.7	< 0.7	<0.7	1.7	< 0.7	< 0.7	<0.7	100(1)
Tetrachloroethene	<0.5	< 0.5	<0.5	< 0.5	7,800	0.9	<0.5	< 0.5	5 ⁽¹⁾
Chlorobenzene	<0.7	<0.7	<0.7	< 0.7	4.8	<0.7	<0.7	< 0.7	30 ⁽¹⁾
EPA Method 160.1 for:									
Total Dissolved Solids (TDS)	NA	NA	NA	1,000 ppm	NA	NA	NA	2,000 ppm	3,000 ppm ⁽⁵⁾

parts per billion which is approximately equal to micrograins per later (µg I)

parts per million which is approximately equal to milligrams per liter (mg l) pp.n

< 0.3 detection limit

Massinian Contairmancl evel (MCL) for Drinking Water Standards (DBS)

Cultorata State Action Levels (D18) Health Advisories or Suggested No-Adverse-Response Levels (EPA) (3,

Detection bant increased due to the presence of gasoline in the sample

California State Water Resources Control Board Resolution No. 88-63. Socrees of Drinking Willer

Except for EDS regulatory guidelines are taken from Jon B. Marshaek's A Compilation of Water Quality Goals, October 1990

TABLE 7

Depths to Groundwater Through a 12-Hour Tidal Cycle

South Shore Center Corner of Park Street and Shore Line Drive Alameda, California

Collected March 5, 1991 Clayton Project No. 33909.00

Time	MW-1	M W-2	MW-3	MW-4	MW-5	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13
0630	6.54	7 .02	6.83	6.44	5.28	5.71	6.12	7.92	9.34	5.91	8.07	7.90
0730	6.55	7.03	6.84	6.46	5.24	5.71	6.12	7.92	9.34	5.91	8.09	7.90
0830	6.55	7.01	6.84	6.45	5.25	5.71	6.12	7.91	9.34	5,92	8.10	7.90
0930	6.54	7.00	6.83	6.45	5.25	5.70	6.12	7.92	9.35	5.91	8.09	7.89
1030	6.54	7.00	6.82	6.45	5.25	5.70	6.11	7.91	9.33	5.91	8.09	7.88
1130	6.54	6.99	6.81	6.44	5,24	5.69	6.10	7.91	9.31	5.90	8.08	7.87
1310	6 53	6.98	6.80	6.44	5.23	5.68	6.09	7.90	9.30	5.90	8.06	7.86
1410	6.53	6,98	6.80	6.43	5.23	5.68	6.08	7.90	9.29	5.89	8.06	7.86
1510	6.53	6.97	6.79	6.42	5.22	5.67	6.08	7.89	9.28	5.89	8.07	7.85
1615	6.54	6.97	6.80	6.44	5.23	5.68	6.08	7.90	9.29	5.89	8.07	7.85
1715	6.54	6,98	6.80	6.44	5.23	5.69	6.09	7.90	9.29	5.90	8.08	7.86
1830	6.54	6.98	6.80	6.44	5.24	5.68	6.08	7.91	9.29	5.90	8.08	7.85

All measurements are in feet below ground surface High tide occurred at 1557 and was 4.6 feet Low tide occurred at 0914 and was 2.5 feet

Table 8

Wells Located Within 1/2 Mile of South Shore Center at the Corner of Park Street and Shore Line Drive Alameda, California

Well	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$			Direction/	Total Depth of Well	Depth ta Water	Well Casing Diameter	Well Screen Interval	
Number	Well Owner	Well Location	Distance	Gradient	(feet)	(fert)	(Inches)	(feel)	Well Use
25/3W 18N1	EBMUD	Otis Dr. & Mound St.	1/2 mile	East/ Crossgradient	50	N/A	N/A	N/A	DES
25/3W 18N2	Progressive Electric	Otis Dr. & Mound St.	1/2 mile	East/ Crossgradient	65	N/A	N/A	N/A	CAT
28/3W 18N3	Verner Anderso n	2812 Otis Dr.	1/2 mile	East/ Crossgradient	40	5	N/A	N/A	DES
25/4W 13G1	Shell Oil Co	2160 Otis Dr.	3/8 mile	North/ Up- to Crossgradient	19	4	3	15	MON
2S/4W 13G2	Shell Oil Co	2160 Otis Dr.	3/8 mile	North/ Up- to Crossgradient	17	6	4	13	MON
2S/4W 13G3	Shell Oil Co	2160 Otis Dr.	3/8 mile	North/ Up- to Crossgradient	17	4	4	13	MON
28/4W 13J2	EBMUD	Otis Dr. 90° east of Regent St.	1/4 mile	Northeast/ Upgradient	50	N/A	N/A	N/A	CAT
28/4W 13J3	RL Robinson	1032 Regent St.	3/8 mile	Northeast/ Upgradient	20	?	4	?	IRR
28/4W 13K1	Tucknott Electric (EB MUD)	295 Park St.	~200 ft.	Southwest/ Downgradient	67	N/A	N/A	N/A	CAT
N/A	Murray Stevens	2351 Shore Line Dr.	1/8 mile	Northwest/ Crossgradient	15	8	2	10	MON
N/A	Murray Stevens	2351 Shore Line Dr.	1/8 mile	Northwest/ Crossgradient	15	8	2	10	MON
N/Λ	Murray Stevens	2351 Shore Line Dr.	1/8 mile	Northwest/ Crossgradient	15	8	4	10	MON
N/A	Murray Stevens	2351 Shore Line Dr.	1/8 mile	Northwest/ Crossgradient	15	8	2	10	MON

CAT = Cathodic Well
DLS -- Destroyed Well
MON = Monitoring Well
IRR = Irrigation Well
N/A = Not applicable



APPENDIX A

BOREHOLE LOGS



EXPLO	LOC	OF IRY	BORING		Project No.: 33909.00 Date: 5/6/91 BORING NO. Client: Harsch Investment Corp. Location: Shoreline & Park, Alameda Logged By: R. Seymour Driller: Aqua Science Sheet 1 of 1					
Field Location of Bos Ground Elevation:	ring:			Datum:	Drilling Method: Mobil B-57, hollow stem auger Hole Diameter: 10" Casing Installation Data: TD - 13.5', 10' slotted, 5' blank, sand to 2.5', 1' bentonite seal, 1-1/2' neat cement slurry					
PID Drilling Rate OVA (ppm)	DE F	S M P	Soil Group Symbol (uses)	Litho- graphic Symbol	Water Level					
	1 2 3		SP		Sand, clean, loose, moderate brown (5 YR 4/4), damp, no odor					
	5		4		Hit water between 5' and 6' Color change, medium dark gray (N4), cuttings saturated					
	7 8 9		SP							
	10 11 12									
<u>-</u>	13 14		_		TD = 13.5' Lised 10' slotted, 5' blank, 4-3/4 sacks sand					
	15 16 17									
	18									



EXPLO	LOGO	OF VY BORING		Project No.: 33909.00 Date: 5/6/91 BORING NO. Client: Harsch Investment Corp. Location: Shoreline & Park, Alameda Logged By: R. Seymour Driller: Aqua Science Sheet 1 of 1					
Field Location of Bor Ground Elevation:	ring		Datum:	Drilling Method: Mobil B-57, hollow stem auger Hole Diameter: 10" Casing Installation Data: TD - 13, 10' slotted, 5' blank, sand to 2-1/2', bentonite 1',, cement slurry from 1-1/2 to grade					
Drilling Rate OVA (filmin) (ppm)		S. A. Soil P. Group I. Symbol E. (1805)	Litho- graphic Symbol	Water Level 4' Time 0830 Date 5/6/91 DESCRIPTION					
	1	OL		Drilled out old 2" well Slightly sandy-clay, gray-black (N2), saturated TTD = 13' 10' slotted, 5' blank - left 2' sticking up, it will be graded					



LOG OF EXPLORATORY BORING						Project No.: 33909.00 Date: 4/10/91 Client: Harsch Investment Corporation Location: Park & Shoreline, Alameda Logged By: R. Seymour Driller: Aqua Science				BORING NO. MW-8B Sheet 1 of 2	
Field Location of Boring:						Drilling Method: Mobil B-57, hollow-stem auger Hole Diameter:					
Drilling Rate (tt/min) (1		DERTH	S A M P LIB	Soil Group Symbol (uses)	Lithos graphic Symbol	Water Level	7'	6.86'			
						Time	1500	1340	<u> </u>		
						Date	4/10/91	4/17/91			
	PID OVA (ppm.)						DESC	CRIPTI	ON		
				ose medium							
		1				grained no odor, poorly graded					
		2									
				~~							
		3		SP							
		4			• • •						
		_					#**				
	1.2	5	12 15						- <u>, , , , , , , , , , , , , , , , , , ,</u>		
		6	20		• • •						
		7							· 		
		′		▼	• •	Hit water between 7' and	L8'				
		8							<u></u>		
		ا و				<u> </u>					
					· . · . ·			·			
 	<u> </u>	10					*				
		11									
					· • • •			**			
		12				Color change to dark gre	y (N3), abun	dant shells			
		13									
				SP							
	0	14	12			.Color change to greyish-	black (N2), s	and, fine gra	ined no odor		
	11	15	16								
		16									
		17	.10								
			 			Sand, greyish-black, some	shells "rott	en" odor, 5%	fine		
	0	18	5								



		<u>vaniaas 2</u>	OF OR Y	BORING		Project No.: Client: Location: Logged By:	R. Seymoi		rporation neda Driller: A	Date: 4/10/91 Aqua Science	BORING NO MW-8B Sheet 2 of 2	Э.
Field Loca	ition of Boi	ring:				Drilling Meth		B-57, hollow	-stem auger			
Ground El	evation:				Datum:	Hole Diamete Casing Install		TD of well	20'9". 5' of s	screen		
200						Water Level		7'	6.86'			
			, .			Time		1500	1340			
Drilling	PID	D	M	Soil		Date		4/10/91	4/17/91			
Rate (final)	PID OVA (ppm)	DHALE	91 KM0	Soil Group Symbol (uses)	Lithn- graphic Symbol			DESC	CRIPT	ION		
			7									
		19										\dashv
		20	1									
			.1			Slightly sandy	clay greyis	h-black (N2)	wet soft	~ 10% fine gra	ined sand	
		21	1	OL							·····	-
		22			1111	TD = 22'						
						Filled bottom	up with be	ntonite to an	chor the cas	ing		\dashv
		23				Bottom of car	sin <i>e at 20</i> '9'	<u> </u>				\dashv
		24				Sand at 13'9"	_					
		25				Bentonite at	12'9"		700 - 1747 <u>a</u> .			\dashv
		2					-					
		26										_
		27										
<u> </u>		28										
		29										
							·	 				
		30										
		31										
		32										_
		عد						···				
		33									,	
		34										
		- '										
		35										
		36			:							



Project No.: 35277.00 LOG OF EXPLORATORY BORING Date: 05/15/91 BORING NO. Client: Harsh investment MW-9B Shoreline Drive & Park Street, Alameda Location: Logged By: Richard Silva Driller: Aqua Science Sheet 1 of 1 Field Location of Boring Drilling Method: Continuous flight hollow-stem auger Approximately 20 ft. east of former monitoring well MW-9 Hole Diameter: 10.5 inches Ground Elevation: Casing Installation Data: Screen 15'-5'; solid 5'-0'; Sand 15'-4'; Bentonite 4'-3'; Grout 3' to surface Water Level 7.30 Time 1449 DERT MP PD Saíi 4/16/91 Date Drilling: Group Symbol Lithou OVA Rate graphic Symbol DESCRIPTION (h/min) (ppm) H (uscs) SP Recognish silty sand, poorly graded, moist, no product odor 1 2 3 5 6 7 SP Gray silty sand, trace of shell fragments, coarse-grained, poorly graded, no product 8 9 10 11 12 13 14 15 Terminate boring at 15 feet; set well at 15 feet 16 17 18



	XPLO	LOC	OF RY	BORING		Project No.: 33909.00 Date: 4/10 Client: Harsch Investment Corporation Location: Park & Shoreline, Alameda Logged By: R. Seymour Driller: Aqua Scie	MW-14
Field Loca	ation of Bor	ing:				Drilling Method: Mobil B-57, hollow-stem auger Hole Diameter: 10"	
Ground E	levation:				Datum:	Casing Installation Data: 10' screen. 4' blank, sand to 3'	
Drilling	PID	24480	mrv Ky a	Soil Group		Water Level 5.5 4.74 Time 1100 1230 Date 4/10/91 4/17/91	
Rate. (ft/min)	OVA (ppm)	H		Symbol (uscs)	graphic Symbol	DESCRIPTION	
		1				Asphait	
		3				Sand dark yellowish-brown (10YR 4/2), dry, fine to medin	m grain.
		4		SP		Increasing clay content for 6"	
	12	5	.6. 15	▼		(Wrapped middle sample) Hit water at 5.5'	
		6 7	26				
		8				Color change to pale brown (5YR 5/2)	
		9					
		10 11					
		12					
		13					
		14 15				Sand up to 3' bentonite 1' to 7' bgs, flush mounted the we	II hax
		16				NE TOUR THE	
		17					
		18					



APPENDIX B

DRILLING/MONITORING WELL PERMITS



5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

(415) 484-2600

19 March 1991

Clayton Environmental Consultants P.O. Box 9019 Pleasanton, CA 94566

Gentlemen:

Enclosed is Groundwater Protection Ordinance permit 91147 for a monitoring well construction project at 2375 Shore Line Drive in Alameda for Harsch Investment.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number.

If you have any questions, please contact Todd Wendler or Craig Mayfield at 484-2600.

Very truly yours,

J. Killingstad, Chief

Water Resources Engineering

TW:mm Enc.



5997 PARKSIDE DRIVE

FOR APPLICANT TO COMPLETE

PLEASANTON, CALIFORNIA 94566

√_ Todd N. Wendler

121989

(415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE	FOR OFFICE USE
OCATION OF PROJECT 2375 Shore Line Drive, Alameda, California	PERMIT NUMBER 91147 LOCATION NUMBER
LIENT	
Address 235 W. MacArthur Phone (415) 658-1400	PERMIT CONDITIONS
ty Oakland CA Zip 94611	Circled Permit Requirements Apply
APPLICANT	
Name Clayton Environmental Consultants	(A.) GENERAL
	1. A permit application should be submitted so as
Address P.O. Box 9019 Phone (415) 426-2600	arrive at the Zone 7 office five days prior
City Peasanton, CA Zip 94566	proposed starting date.
	Submit to Zone 7 within 60 days after completic
MPE OF PROJECT #ell Construction Geotechnical investigation	of permitted work the original Department
	Water Resources Water Well Drillers Report
Cathodic Protection General Water Supply Contamination	equivalent for well projects, or drilling to
Monitoring xxx Well Destruction	and location sketch for geotechnical projects. 3. Permit is void if project not begun within
AAA III SUURIN	days of approval date.
OPOSED WATER SUPPLY WELL USE	B) WATER WELLS, INCLUDING PIEZOMETERS
omestic Industrial Other	I. Minimum surface seal thickness is two inches
funicipal Irrigation	cement grout placed by tremie.
	Minimum seal depth is 50 feet for municipal a
MILLING METHOD:	industrial wells or 20 feet for domestic an
Aud Rotary Air Rotary Auger _xxx	irrigation wells unless a lesser depth
other	specially approved. Minimum seal depth f
RILLER'S LICENSE NO. C57 48700	monitoring wells is the maximum depth practicab or 20 feet.
	C. GEOTECHNICAL. Backfill bore hole with compacted cu
LL PROJECTS	tings or heavy bentonite and upper two feet with co
Drill Hole Diameter 10 In. Maximum	pacted material. In areas of known or suspect
Casing Diameter 4 in. Depth 25 ft.	contamination, tremied cement grout shall be used
Surface Seal Depth 3 ft. Number 2 *	place of compacted cuttings.
EOTECHNICAL PROJECTS	D. CATHODIC. Fill hole above anode zone with concre
■ Number of Borings Maximum	placed by tremie. E. WELL DESTRUCTION. See attached.
Hole Diameter In. Depth ft.	c. Well bestwood on. Soo all action.
	* On one of these wells we will be overdrilli:
STIMATED STARTING DATE April 1, 1991	an existing 2" well and replacing it
CIMATED COMPLETION DATE April 1, 1991	with a 4" well.
hereby agree to comply with all requirements of this	
mit and Alameda County Ordinance No. 73-68.	1 0000
	Approved cold of a part 18 Mar 9



5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

(415) 484-2600

22 March 1991

Clayton Environmental Consultants P.O. Box 9019 Pleasanton, CA 94566

Gentlemen:

Enclosed is Groundwater Protection Ordinance permit 91148 for the destruction of wells 2S/3W 13K80 and 13K81 at 2375 Shore Line Drive in Alameda for Harsch Investment Corporation.

Please note that permit condition A-2 requires that a well destruction report be submitted after completion of the work. The report should include a description of methods and materials used to destroy the well, location sketch, date of destruction, and permit number.

If you have any questions, please contact Todd Wendler or Craig Mayfield at 484-2600.

Very truly yours,

J. Killingstad, Chief

Water Resources Engineering

TW:mm Enc.



5997 PARKSIDE DRIVE

FOR APPLICANT TO COMPLETE

PLEASANTON, CALIFORNIA 94566

(415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

EXTIGN OF PROJECT 2373 SIR	ore Line Drive,
lameda, California	
ENT	
Harsch Investment Co	rporation
Harsch Investment Co	Phone (415) 658-1400
y Oakland CA	Zip 94611
	-
APPLICANT	
Vame Clayton Environment	al Consultants
ress P.O. Box 9019	Phone (415) 426-2600
Olty Peasanton, CA	ZIn 94566
3117	
E OF PROJECT	
-	Geotechnical investigation
mathedic Protection	General
	Contamination
ater Supply	Weil Destruction XXX
Monitoring	Met Destruction AAA
THE PARTY OF THE PARTY HELD HELD	
POSED WATER SUPPLY WELL USE	Olt
Omestic Industrial	
Municipal irrigation	_
LLING METHOD:	•
Mud Rotary Air Rotary	Auger <u>xxx</u>
	Auger <u>xxx</u>
Mud Rotary Air Rotary Other	
Mud Rotary Air Rotary	
Air Rotary Other ORILLER'S LICENSE NO. C57 48	
Air Rotary Other Other C57 483	700
Air Rotary Other ORILLER'S LICENSE NO. C57 483 AL PROJECTS Drill Hole Diameter 10 in.	700 Mask I mum
Other ORILLER'S LICENSE NO. C57 48: Drill Hole Diameter 10 In. Casing Diameter 2 In.	700 Maximum Depth <u>15</u> ft.
Air Rotary Other ORILLER'S LICENSE NO. C57 483 AL PROJECTS Drill Hole Diameter 10 in.	700 Maximum Depth <u>15</u> ft.
Air Rotary Other Other ORILLER'S LICENSE NO. C57 483 IL PROJECTS Orill Hole Diameter 10 In. Casing Diameter 2 In. Surface Seal Depth 5 ft.	700 Maximum Depth <u>15</u> ft.
Air Rotary Other Other ORILLER'S LICENSE NO. C57 483 L PROJECTS Drill Hole Diameter 10 In. Casing Diameter 2 In. Surface Seal Depth 5 ft. GEOTECHNICAL PROJECTS	Maximum Depth 15ft. Number 1 **
Air Rotary Other Other ORILLER'S LICENSE NO. C57 483 L PROJECTS Drill Hole Diameter 10 In. Casing Diameter 2 In. Surface Seal Depth 5 ft. SEOTECHNICAL PROJECTS Number of Borings	Maximum Depth 15ft. Number 1**
Air Rotary Other Other ORILLER'S LICENSE NO. C57 483 L PROJECTS Drill Hole Diameter 10 In. Casing Diameter 2 In. Surface Seal Depth 5 ft. GEOTECHNICAL PROJECTS	Maximum Depth 15ft. Number 1 **
Air Rotary Other Other ORILLER'S LICENSE NO. C57 483 IL PROJECTS Drill Hole Diameter 10 In. Casing Otameter 2 In. Surface Seal Depth 5 ft. BEOTECHNICAL PROJECTS Number of Borings Hole Diameter In.	Maximum Depth 15 ft. Number 1 ** Maximum Depth ft.
Air Rotary Other Other ORILLER'S LICENSE NO. C57 483 L PROJECTS Drill Hole Diameter 10 in. Casing Diameter 2 in. Surface Seal Depth 5 ft. BEOTECHNICAL PROJECTS Number of Borings Hole Diameter In. ESTIMATED STARTING DATE API	Maximum Depth 15 ft. Number 1 ** Maximum Depth ft.
Air Rotary Other Other OTILER'S LICENSE NO. C57 483 IL PROJECTS Drill Hole Diameter 10 In. Casing Otameter 2 in. Surface Seal Depth 5 ft. BEOTECHNICAL PROJECTS Number of Borings Hole Diameter In. ESTIMATED STARTING DATE Apr	Maximum Depth 15 ft. Number 1 ** Maximum Depth ft.
Air Rotary Other Other Other ORILLER'S LICENSE NO. C57 483 L PROJECTS Drill Hole Diameter 10 In. Casing Diameter 2 In. Surface Seal Depth 5 ft. SEOTECHNICAL PROJECTS Number of Borings Hole Diameter In. ESTIMATED STARTING DATE API	Maximum Depth 15 ft. Number 1** Maximum Depth ft. 11 1, 1991 11 1, 1991
Air Rotary Other Other Other ORILLER'S LICENSE NO. C57 483 L PROJECTS Drill Hole Diameter 10 in. Casing Diameter 2 in. Surface Seal Depth 5 ft. BEOTECHNICAL PROJECTS Number of Borings Hole Diameter In. ESTIMATED STARTING DATE April MATED COMPLETION DATE April MATED COMPLETION DATE April Material April Material April Material Starting Date April Material Starting Date April Material Completion Date April Material Starting Date April Material Star	Maximum Depth 15 ft. Number 1** Maximum Depth ft. 11 1, 1991 11 1, 1991 all requirements of this
Air Rotary Other Other Other ORILLER'S LICENSE NO. C57 483 L PROJECTS Drill Hole Diameter 10 In. Casing Diameter 2 In. Surface Seal Depth 5 ft. SEOTECHNICAL PROJECTS Number of Borings Hole Diameter In. ESTIMATED STARTING DATE API	Maximum Depth 15 ft. Number 1** Maximum Depth ft. 11 1, 1991 11 1, 1991 all requirements of this
Air Rotary Other Other Other ORILLER'S LICENSE NO. C57 483 VIL PROJECTS Drill Hole Diameter 10 in. Casing Diameter 2 in. Surface Seal Depth 5 ft. BEOTECHNICAL PROJECTS Number of Borings Hole Diameter In. ESTIMATED STARTING DATE April MATED COMPLETION DATE April MATED COMPLETION DATE April Material Alameda County Ordinal	Maximum Depth 15 ft. Number 1** Maximum Depth ft. 11 1, 1991 11 1, 1991 all requirements of this
Air Rotary Other Other Other ORILLER'S LICENSE NO. C57 483 L PROJECTS Drill Hole Diameter 10 in. Casing Diameter 2 in. Surface Seal Depth 5 ft. BEOTECHNICAL PROJECTS Number of Borings Hole Diameter In. ESTIMATED STARTING DATE April MATED COMPLETION DATE April MATED COMPLETION DATE April Material April Material April Material Starting Date April Material Starting Date April Material Completion Date April Material Starting Date April Material Star	Maximum Depth 15 ft. Number 1** Maximum Depth ft. 11 1, 1991 11 1, 1991 all requirements of this

FOR OFFICE USE

PERMIT NUMBER 91148
LOCATION NUMBER 2S/3W 13K80 and 13K81

PERMIT CONDITIONS

Circled Permit Requirements Apply

- A.) GENERAL
 - 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.
 - Permit is void if project not begun within 90 days of approval date.
- B. WATER WELLS, INCLUDING PIEZOMETERS
 - Minimum surface seal thickness is two inches of cement grout placed by tremie.
 - 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.
- * Existing 2-inch monitoring well will be overdrilled and the borehole filled with grout.
- ** Additional monitoring well to be destroyed and replaced with 4-inch diameter. See 91147.

Approved Todd N. Wendler

121989

ZONE 7 WATER RESOURCES ENGINEERING GROUNDWATER PROTECTION ORDINANCE

HARSCH INVESTMENT CORPORATION
2375 SHORE LINE DRIVE
ALAMEDA
WELLS 2S/3W 13K80 THROUGH 13K81
PERMIT 91148

Destruction Requirements

- 1. Drill out the well so that casing, seal, and gravel pack are removed to the bottom of the well.
- 2. Using a tremie pipe, fill the hole to 2 feet below the lower of finished grade or original ground with neat cement.
- 3. After seal has set, backfill the remaining hole with compacted material.

These destruction requirements as proposed by Alan Gibbs of Clayton Environmental meet or exceed the Zone 7 minimum requirements.



5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

(415) 484-2600

1 May 1991

Clayton Environmental Consultants P.O. Box 9019 Pleasanton, CA 94566

Gentlemen:

Enclosed is Drilling Ordinance permit 91236 for a monitoring well construction project at 2375 Shore Line Drive in Alameda for Harsch Investment Corporation.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number.

If you have any questions, please contact Wyman Hong or me at 484-2600.

Very truly yours,

Craig A. Mayfield

Water Resources Engineer

WH:mm Enc.



SIGNATURE

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

(415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE
LOCATION OF PROJECT 2375 Shoreline Drive Alameda, California
me Harsch Investment Corporation
Address 235 W. MacArthur Phone (415) 658-1400 City Oakland zip 94611
A PLICANT
Name Clayton Environmental Consultants
dress P. O. Box 9019 Phone (415) 426-2600
City Pleasanton Phone (415) 426-2600
PE OF PROJECT
Well Construction Geotechnical Investigation
_Cathodic Protection General .
later Supply Contamination
Well Destruction
POSED WATER SUPPLY WELL USE Destic Industrial Other
Municipal irrigation
ELLING METHOD:
Mud Rotary Air Rotary Auger X
Cable Other
DELLER'S LICENSE NO
WEL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 25ft.
Surface Seal Depth 10 ft. Number 1 *
GEOTECHNICAL PROJECTS
Number of Borings Maximum
Hole Diameterin. Depthft.
ESTIMATED STARTING DATE May 3, 1991
MATED COMPLETION DATE May 3, 1991
I hereby agree to comply with all requirements of this
permit and Alameda County Ordinance No. 73-68.

Date 4-20-11

FOR OFFICE USE

PERMIT NUMBER 91236
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

- (A.) GENERAL
 - 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.
 - Permit is void if project not begun within 90 days of approval date.
- B.) WATER WELLS, INCLUDING PIEZOMETERS
 - Minimum surface seal thickness is two inches of cement grout placed by tremie.
 - 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.
- * Add one more monitoring well as discussed with Clayton Environmental representative Alan Gibbs.

Approved_	Maman Hong	Date 29	Apr	91
	Wyman Hong		121	989



5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

(415) 484-2600

2 May 1991

Clayton Environmental Consultants P.O. Box 9019 Pleasanton, CA 94566

Gentlemen:

Enclosed is Groundwater Protection Ordinance permit 91237 for the destruction of wells 2S/4W 13K80 and 13K81 at 2375 Shore Line Drive in Alameda for Harsch Investment Corporation.

Please note that permit condition A-2 requires that a well destruction report be submitted after completion of the work. The report should include a description of methods and materials used to destroy the well, location sketch, date of destruction, and permit number.

If you have any questions, please contact Wyman Hong or me at 484-2600.

Very truly yours,

Craig A. Mayfield

Water Resources Engineer

Craig q. Marsheld

WH:mm Enc.



APPLICANT'S

SLGNATURE

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

FOR OFFICE USE

/ Wyman Hong

121989

(415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR	APPL	<u>ICANT</u>	TO	COMP	LETE

CATION OF PROJECT 2375 Shoreline Drive	PERMIT NUMBER91237
Alameda, California	LOCATION NUMBER 2S/4W 13K80 and 13K81
LIENT	
me <u>Harsch Investment Corporation</u>	PERMIT CONDITIONS
ddress 235 W. MacArthurPhone (415) 658-1400	
ity <u>Oakland</u> Zip <u>94611</u>	Circled Permit Requirements Apply
PPLICANT	
Clayton Environmental Consultants	
Henry D. O. Borr 0010 Phone (415) 426 2600	1. A permit application should be submitted so as to
Address P.O. Box 9019 Phone (415) 426-2600 Pleasanton Zip 94566	arrive at the Zone 7 office five days prior to
11 Teasanton 210 94300	proposed starting date. 2. Submit to Zone 7 within 60 days after completion
PE OF PROJECT	of permitted work the original Department of
ell Construction Geotechnical Investigation	Water Resources Water Well Drillers Report or
Cathodic Protection General .	equivalent for well projects, or drilling logs
Water Supply Contamination	and location sketch for geotechnical projects.
Monitoring Well Destruction X	3. Permit is void if project not begun within 90
MW-7	days of approval date.
OPOSED WATER SUPPLY WELL USE	B. WATER WELLS, INCLUDING PIEZOMETERS
thestic Industrial Other	i. Minimum surface seal thickness is two inches of
unicipal irrigation	cement grout placed by tremie.
ILLING METHOD:	 Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and
ud Rotary Air Rotary Auger X	irrigation wells unless a lesser depth is
ble Other	specially approved. Minimum seal depth for
	monitoring wells is the maximum depth practicable
RILLER'S LICENSE NO. C57 48700	or 20 feet.
1	C. GEOTECHNICAL. Backfill bore hole with compacted cut-
LL PROJECTS	tings or heavy bentonite and upper two feet with com-
Orill Hole Diameter 10 in. Maximum	pacted material. In areas of known or suspected
Casing Diameter 2 in. Depth 15 ft. Surface Seal Depth 5 ft. Number 1 *	contamination, tremied cement grout shall be used in
Surface Seal Depth 5 ft. Number 1 *	place of compacted cuttings. D. CATHODIC. Fill hole above anode zone with concrete
EOTECHNICAL PROJECTS	placed by tremie.
Number of Borings Maximum	(E.) WELL DESTRUCTION. See attached.
Hole Diameterin. Depthft.	
-	* Destroying one more monitoring well as
TIMATED STARTING DATE May 3, 1991	discussed with Clayton Environmental
FIMATED COMPLETION DATE May 3, 1991	representative Alan Gibbs.
hereby agree to comply with all requirements of this	
mit and Alameda County Ordinance No. 73-68.	War III.
	Approved Wiman Hong Date 29 Apr 91

ZONE 7 WATER RESOURCES ENGINEERING GROUNDWATER PROTECTION ORDINANCE

HARSCH INVESTMENT CORPORATION
2375 SHORE LINE DRIVE
ALAMEDA
WELLS 2S/4W 13K80 AND 13K81
PERMIT 91237

Destruction Requirements

- 1. Drill out the well so that casing, seal, and gravel pack are removed to the bottom of the well.
- 2. Using a tremie pipe, fill the hole to 2 feet below the lower of finished grade or original ground with neat cement.
- 3. After seal has set, backfill the remaining hole with compacted material.

These destruction requirements as proposed by Alan Gibbs of Clayton Environmental meet or exceed the Zone 7 minimum requirements.



5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

(415) 484-2600

21 May 1991

Clayton Environmental Consultants P.O. Box 9019 Pleasanton, CA 94566

Gentlemen:

Enclosed is Drilling permit 91269 for a monitoring well construction project at 2375 Shore Line Drive in Alameda for Harsch Investment Corporation.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number.

If you have any questions, please contact Wyman Hong or me at 484-2600.

Very truly yours,

Craig A. Mayfield

Water Resources Engineer

WH:mm

Enc.



SIGNATURE

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE

FOR APPLICANT TO COMPLETE

PLEASANTON, CALIFORNIA 94588

(415) 484-2600

121989

FOR OFFICE USE

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

LOCATION OF PROJECT 2375 Shoreline Drive	PERMIT NUMBER 91269
Alameda, California	LOCATION NUMBER
LIENT	
ame Harsch Investment Corporation	PERMIT CONDITIONS
Address 235 W. MacArthur Phone (415) 658-1400	
Oakland Zip 94611	Circled Permit Requirements Apply
APPLICANT	
Name Clayton Environmental Consultants	(A.) GENERAL
74 P. O. P 0010 Ph. (415) 405 0500	1. A permit application should be submitted so as t
Address P.O. Box 9019 Phone (415) 426-2600 City Pleasanton Zip 94566	arrive at the Zone 7 office five days prior t
City Pleasanton Zip 94566	proposed starting date. 2. Submit to Zone 7 within 60 days after completic
YPE OF PROJECT	of permitted work the original Department of
Well Construction Geotechnical Investigation	Water Resources Water Well Drillers Report of
Cathodic Protection General	equivalent for well projects, or drilling log
Water Supply Contamination	and location sketch for geotechnical projects.
Monitoring X Well Destruction	3. Permit is void if project not begun within 9
ROPOSED WATER SUPPLY WELL USE	days of approval date. (8.) WATER WELLS, INCLUDING PIEZOMETERS
mestic Industrial Other	1. Minimum surface seal thickness is two inches of
funicipal irrigation	cement grout placed by tremie.
I	Minimum seal depth is 50 feet for municipal an
RILLING METHOD:	industrial wells or 20 feet for domestic and
Mud Rotary Air Rotary Auger _X	irrigation wells unless a lesser depth i
VIIII -	specially approved. Minimum seal depth formation monitoring wells is the maximum depth practicables.
RILLER'S LICENSE NO. C5748700	or 20 feet.
	C. GEOTECHNICAL. Backfill bore hole with compacted cut
LL PROJECTS	tings or heavy bentonite and upper two feet with con
Drill Hole Diameter 10 in. Maximum Casing Diameter 4 in. Depth 15 ft.	pacted material. In areas of known or suspecte contamination, tremied cement grout shall be used in
Surface Seal Depth 5 ft. Number 1	place of compacted cuttings.
	D. CATHODIC. Fill hole above anode zone with concret
EOTECHNICAL PROJECTS	placed by tremie.
Number of Borings Maximum	E. WELL DESTRUCTION. See attached.
Hole Dlameter in. Depth ft.	
STIMATED STARTING DATE May 15, 1991	
TIMATED COMPLETION DATE May 15, 1991	
hereby agree to comply with all requirements of this	
ermit and Alameda County Ordinance No. 73-68.	110



APPENDIX C

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

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.

protocol.rep 1



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. Factory-slotted casing is used throughout and extends at least 2 feet above the permeable water-bearing zone. 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

protocol rep 2

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.

3

protocolrep



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.

protocol rep 4



APPENDIX D

MONITORING WELL SCHEMATICS

EXPLANATION Concrete Bentonite 13' Sand #3 10' 0.01" Slotted Screen

Monitoring Weil Diagram (MW-5B)
HARSCH NVESTMENT CORPORATION
South Shore Shopping Center
Park Street and Shore Line Drive
Alameda, California
Clayton Project No. 3608000

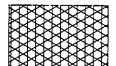
Clayton

EN.ROMENTAL

CONSULTANTS

11'

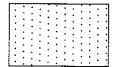
EXPLANATION



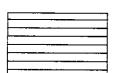
Concrete



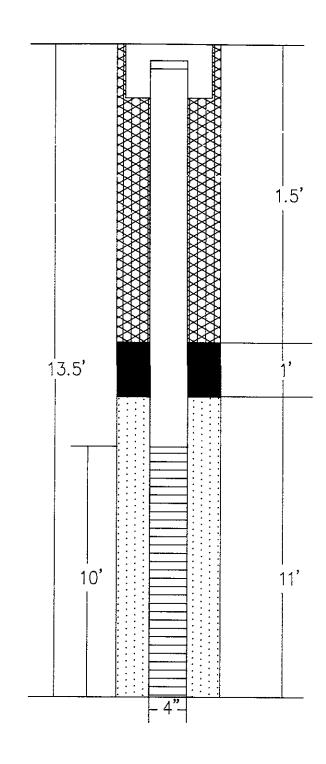
Bentonite



Sand #3



0.01" Slotted Screen

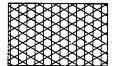


Monitoring Well Diagram (MW-73) HARSOH NIESTMENT CORPORATION South Shore Shopping Center Park Street and Shore Line Drive Alameda, California Clayton Project No. 36080.00

Clayton
ENVPONVENTAL
CONSULTANTS

(not to scale)

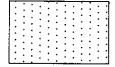
EXPLANATION



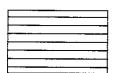
Concrete



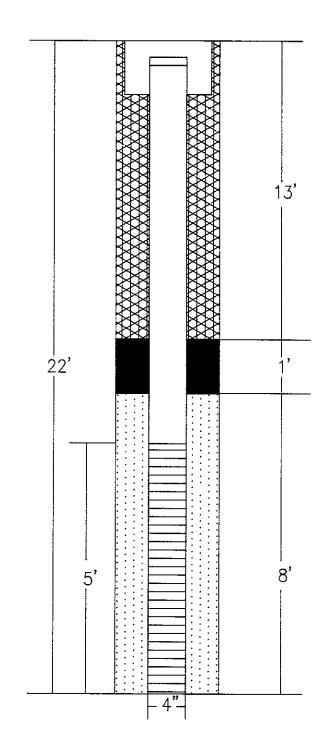
Bentonite



Sand #3



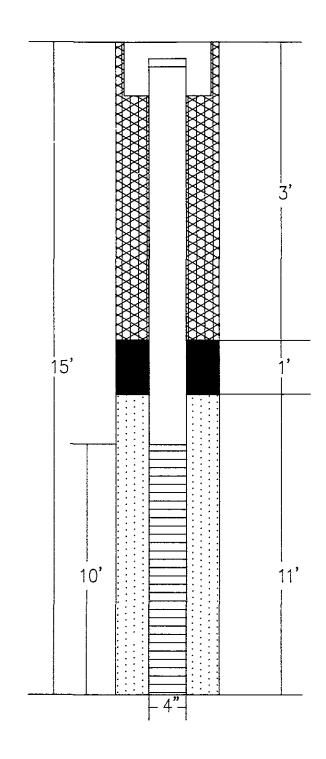
0.01" Slotted Screen



Vonitoring Well Diagram (MW-8B)
-ARSCH N. ESTMENT CORPORATION
South Shore Shopping Center
Park Street and Shore Line Drive
Alameda, California
Clayton Project No. 36080 00



EXPLANATION Concrete Bentonite Sand #3 0.01" Slotted Screen



Monitoring Well Diagram (MW-93)
HARSCH IN ESTMENT CORPORATION
South Share Snopping Center
Park Street and Share Line Drive
Alameda, California
Clayton Project No. 36080.00

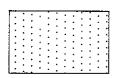
Clayton ENVRONMENTAL CONSULTANTS

(not to scale)

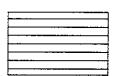
EXPLANATION

Concrete

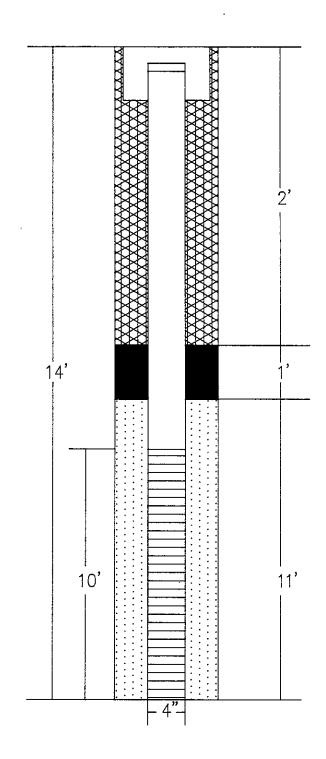
Bentonite



Sand #3



0.01" Slotted Screen



Vonitoring Well Diagram (MW—14)
HARSCH NVESTMENT CORPORATION
South Shore Shopping Center
Park Street and Shore Line Drive
Alameda, California
Clayton Project No. 36080.00

Clayton

ENTRONMENTAL

CONSULTANTS



APPENDIX E

WATER SAMPLING FIELD DATA SHEETS



QUARTERLY SAMPLING

NOVEMBER 1990

CLAYTON ENVIRONMENTAL CONSULTANTS, INC. WATER SAMPLING FIELD SURVEY FORM

Job No: 32645.00

Site: Harsch - Alameda

Date: 11/30/90

Well No:

MW-1

Sampling Team: Mike Springman

Sampling Method: Submersible pump/disposable bailer

Field Conditions: Clear skies, dry, cool

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

to Well:

14.8

Time:

1145

Depth to Water

Before Purging:

7.56

 Volume
 Purge

 Height of Water
 2-inch
 4-inch
 Volume
 Factor
 To Purge

 Column: 7.24
 * .16
 .65
 = 4.7
 * 5
 = 23.5

Depth Purging From: 14

Time Purging Begins: 1200

Notes on Initial Discharge:

Time	Valume Purger	74	Conductivity	T	Comments
1203	5	7.8	4300	68°C	Cloudy into clear
1207	10	7.6	4900	69°C	Slightly cloudy
1212	15	7.8	5000+	69°C	Clear
1215	20	7.8	5000+	68°C	Clear
1220	25	7.8	5000+	69°C	Clear

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

Time Field Parameter Measurement Begins: 1255

	Rep#1	Rep #2	Rep #3	Rep.#4
pН	7.6	7.6	7.6	7.6
Conductivity	5000+	4950	4800	4800
T°C	68°C	68°C	68°C	68°C

Pre-Sample Collection Gallons Purged: 25
Time Sample Collection Begins: 1240
Time Sample Collection Ends: 1250
Total Gallons Purged: 26

Comments: Well locking lid does not close correctly

CLAYTON ENVIRONMENTAL CONSULTANTS, INC. WATER SAMPLING FIELD SURVEY FORM

Job No: 32645.00

Site: Harsch - Alameda

Date: 11/29/90

Well No: MW-2

Sampling Team: Mike Springman

Sampling Method: Submersible pump/disposable bailer

Field Conditions: Partly cloudy, dry

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent cleaner, double rinsed, and steam cleaned

Total Depth

to Well: 14.8

Time: 1140

Depth to Water

Before Purging: 7.92

 Volume
 Purge

 Height of
 2-inch
 4-inch
 Volume
 Factor
 To Purge

 Water
 Column: 6.88
 * .16
 .65
 = 4.47
 * 5
 = 22.35

Depth Purging From: 14.0

Time Purging Begins: 1145

Notes on Initial Discharge: Water sandy, cloudy

Time	Volume Purger	ρĔ	Conductivity	T	Comments
1150	5	7.8	300	66°C	Very cloudy
1200	10	7.6	400	66°C	Cloudy
1207	15	7.7	700	66°C	Cloudy
1220	20	7.8	1000	68°C	Cloudy
1225	25	7.7	1000	66°C	Cloudy

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

Time Field Parameter Measurement Begins: 1300

	Rep #1	Rep #2	Rep #3	Rep #4
pН	7.8	7.6	7.8	7.8
Conductivity	600	500	400	500
T℃	66°C	66°C	66°C	66°C

Pre-Sample Collection Gallons Purged: 25

Time Sample Collection Begins: 1235

Time Sample Collection Ends: 1245

Total Gallons Purged:

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC. WATER SAMPLING FIELD SURVEY FORM

Job No: 32645.00

Site: Harsch - Alameda

Date: 11/29/90

Well No: MW-3

Sampling Team: Mike Springman

Sampling Method: Submersible pump/disposable bailer

Field Conditions: Partly overcast, dry

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent cleaner, double rinsed, and steam cleaned

Total Depth

to Well:

14.2

Time:

1020

Depth to Water

Before Purging:

7.86

Height of Water Column: 6.34

Volume

2-inch

<u>4-inch</u>

Volume

Purge

<u>Factor</u> 5

To Purge

.16

.65

4.12

20.60

Depth Purging From: 13.5

Time Purging Begins: 1025

Notes on Initial Discharge: Water cloudy and sandy

Time	Volume Purged	рĦ	Conductivity	Т	Comments
1030	5	7.3	1150	70°C	Water cloudy
1037	10	7.2	1200	68°C	Slightly clearer
1045	15	7.2	1000	68°C	Slightly cloudy
1050	20	7.3	1150	66°C	Slightly cloudy
1055	25	7.3	1100	66°C	Slightly cloudy

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

Time Field Parameter Measurement Begins: 1125

	Rep #1	Rep #2	Rep #3	Rep #4
рН	7.2	7.2	7.3	7.2
Conductivity	1100	1100	1100	1150
T°C	68°C	68°C	68°C	68°C

25

Pre-Sample Collection Gallons Purged:

Time Sample Collection Begins: 1100

Time Sample Collection Ends: 1115

Total Gallons Purged:

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC. WATER SAMPLING FIELD SURVEY FORM

Job No: 32645.00

Site: Harsch - Alameda

Date: 11/29/90

Well No: MW-4

Sampling Team: Mike Springman

Sampling Method: Submersible pump/disposable bailer

Field Conditions: Partly overcast, dry

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent cleaner, double rinsed, and steam cleaned

1325

Total Depth

to Well: 16.82 Time:

Depth to Water

Before Purging:

7.76

Volume Height of Water

2-inch

<u>4-inch</u>

Volume

Purge <u>Factor</u>

To Purge

Column: 9.06

.16

.65

5.88

5

29.40

Depth Purging From:

Time Purging Begins: 1330

Notes on Initial Discharge: Very cloudy

Time	Volume Purged	pH	Conductivity	T	Comments
1335	5	7.9	1450	68°C	Cloudy, sandy
1340	10	7.8	1450	69°C	Cloudy, sandy
1344	15	7.8	1500	69°C	Cloudy
1350	20	7.9	1550	70°C	Cloudy
1355	25	N/G	2000	70°C	Cloudy
1400	30	N/G	2000	70°C	Cloudy

Time Field Parameter Measurement Begins: 1435

	Rep #1	Rep #2	Rep #3	Rep #4
pН	N/G	N/G	N/G	N/G
Conductivity	1950	1950	1950	1950
T°C	69°C	69°C	69°C	69°C

Pre-Sample Collection Gallons Purged: 30

Time Sample Collection Begins: 1410

Time Sample Collection Ends: 1430

Total Gallons Purged:

Job No: 32645.00

Site: Harsch - Alameda

Date: 11/30/90

Well No: MW-5

Sampling Team: Mike Springman

Sampling Method: Submersible pump/disposal bailer

Field Conditions: Clear skies, dry, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

15.6 to Well:

Time:

1315

Depth to Water

Before Purging:

6.5

Volume Height of Water

<u>2-inch</u>

4-inch

Volume

Purge **Factor**

To Purge

Column: 9.1

.16

.65

5.91

5

29.55

Depth Purging From: 15

Time Purging Begins: 1330

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T	Comments
1335	5	7.2	1600	69°C	Cloudy into clear
1339	10	7.2	1500	68°C	Clear
1343	15	7.2	2100	68°C	Clear
1349	20	7.6	4100	68°C	Clear purged dry
1358_	25	7.8	2100	68°C	Partly cloudy
1403	30	7.8	3900	68°C	Partly cloudy

Time Field Parameter Measurement Begins: 1425

	Rep #1	Rep #2	Rep #3	Rep#4
pH	8	8	8	8
Conductivity	2350	2450	2300	2400
T℃	N/A	N/A	N/A	N/A

Pre-Sample Collection Gallons Purged: 30
Time Sample Collection Begins: 1410
Time Sample Collection Ends: 1420
Total Gallons Purged: 31

Comments: Temperature not taken for field parameters because thermometer was broken.

Job No: 32645.00

Site: Harsch - Alameda

Date: 11/30/90

Well No: MW-7

Sampling Team: Mike Springman

Sampling Method: Disposable bailer

Field Conditions: Clear skies, dry, cool

Describe Equipment Decontamination Before Sampling This Well:

Disposable bailers, no decontamination required

Total Depth

to Well:

12.38

Time:

1445

Depth to Water

Before Purging:

7.86

Volume Height of Water

Column: 4.52

<u>2-inch</u>

4-inch

Volume

Purge **Factor**

To Purge

3.6

....

.65 .16

.72

5

Depth Purging From: 11.5

Time Purging Begins: 1455

Notes on Initial Discharge:

Time	Vojenne Purge	Hq i	Conductivity	T	Comments
1457	1	8	1200	N/A	Clear
1501	2	8	1400	N/A	Clear
1505	3	8	1250	N/A	Clear
1509	4	8	1200	N/A	Clear

Time Field Parameter Measurement Begins: 1539

	Rep #1	Rep #2	Rep #3	Rep #4
pН	12+	8.4	8.4	8.4
Conductivity	1100	1050	1000	1000
TC	N/A	N/A	N/A	N/A

Pre-Sample Collection Gallons Purged: 4
Time Sample Collection Begins: 1520
Time Sample Collection Ends: 1535
Total Gallons Purged: 5

Job No: 32645.00

Site: Harsch - Alameda

Date: 11/30/90

Well No: MW-8

Sampling Team: Mike Springman

Sampling Method: Submersible pump/disposable bailer

Field Conditions: Clear skies, dry, cool

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

to Well: 11.74

Time:

e: 1545

Depth to Water

Before Purging: 7.4

Volume Height of Water

Water Column: 4.34 * 2-inch

4-inch

Volume

Purge <u>Factor</u>

To Purge

3,45

-

.16)

.65

= .69

5

Depth Purging From: 11

Time Purging Begins: 1550

Notes on Initial Discharge:

Time	Yolume Purge	i pH	Conductivity	T	Comments
1555	1	8.4	1600	N/A	Clear
1600	2	8.4	1750	N/A	Clear
1604	3	8.4	1950	N/A	Clear
1608	4	8.4	2000	N/A	Clear

Time Field Parameter Measurement Begins: 1630

	Rep #1 Rep #2 Rep #3 Rep #4					
pН	8.6	8.4	8.6	8.4		
Conductivity	1800	1800	1800	1750		
T℃	N/A	N/A	N/A	N/A		

Pre-Sample Collection Gallons Purged: 4

Time Sample Collection Begins:1615Time Sample Collection Ends:1625

Total Gallons Purged: 5

Job No: 32645.00

Site: Harsch - Alameda

Date: 11/30/90

Well No: MW-9

Sampling Team: Mike Springman

Sampling Method: Submersible pump/disposable bailer

Field Conditions: Clear skies, dry, cool

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

to Well:

15.26

Time:

0950

Depth to Water

Before Purging:

7.88

Volume Height of Water

Water Column: 7.38 2-inch

.16

4-inch

У

<u>Volume</u> 4.79 Purge Factor

5

To Purge

= 23.95

Depth Purging From: 14

Time Purging Begins: 1030

Notes on Initial Discharge: Water slightly cloudy

Time	Volume Purger	Hq	Conductivity	1	Comments
1040	5	7.7	1650	70°C	Slightly cloudy
1045	10	7.8	1850	70°C	Cloudy
1050	15	8.2	1400	69°C	Cloudy, pump rate slowing
1055	20	8.2	1500	69°C	Cloudy
1100	25	8.2	1500	69°C	Cloudy

Time Field Parameter Measurement Begins: 1135

	Rep #1	Rep #2	Rep #3	Rep#4
pН	8.0	8.2	8.0	8.0
Conductivity	1450	1500	1450	1500
T°C	69°C	70°C	70°C	70°C

Pre-Sample Collection Gallons Purged: 25
Time Sample Collection Begins: 1115
Time Sample Collection Ends: 1130
Total Gallons Purged: 26



QUARTERLY SAMPLING

APRIL 1991

Job No: 33909.00

Site: Harsch - Alameda

Date: 4/16/91

Well No: MW-1

Sampling Team: Robyn Seymour/Mike Springman

Sampling Method: Purged with pump, sampled with bailer

Field Conditions: Sunny, windy, 55 to 60°F

Describe Equipment Decontamination Before Sampling This Well:

Used clean pump and disposable bailers

Total Depth

of Well.

14.84 ft.

Time:

1350

Depth to Water

Before Purging

Volume Height of

Water

<u> 2-inch</u>

<u>4-inch</u>

<u>Volume</u>

Purge Factor 5 4 1

To Purge

22.67 gals.

Column: 8.70 ft.

.16

.65

5.65

6.14 ft.

Depth Purging From: 13.5 ft.

Time Purging Begins: 1355

Notes on Initial Discharge: Clear

Time	Volume Purgeo	pН	Conductivity	Т	Comments
1359	5	7.6	5,000	66°C	
1401	10	7.6	4,600	66°C	
1404	15	7.6	5,000	66°C	
1407	20	7.6	5,000	65°C	
1410	23	7.6	5,000	65°C	

Time Field Parameter Measurement Begins.

_	Rep #1 Rep #2 Rep #3 Rep #4					
pН	7.6	7.6	7.6	7.6		
Conductivity	4,000	4,000	4,000	4,000		
T℃	64°C	64°C	64°C	64°C		

Pre-Sample Collection Gallons Purged:	23
Time Sample Collection Begins.	1420
Time Sample Collection Ends.	1430
Total Gallons Purged	25

Job No: 33909.00

Site: Harsch - Alameda

Date: 4/17/91

Well No: MW-2

Sampling Team. Mike Springman

Sampling Method: Purged with pump, sampled with bailer

Field Conditions: Sunny, clear, warm

Describe Equipment Decontamination Before Sampling This Well.

Used clean pump and disposable bailers

Total Depth

of Well: 14.84 ft.

Time: 1100

Depth to Water

Before Purging

6.38 ft.

Volume Height of

<u>2-inch</u>

4-inch

<u>Volume</u>

Purge <u>Factor</u>

To Purge

21.96 gals.

Water Column: 8.46 ft.

.16

(.65)

5.49

4

101 111 20

Depth Purging From: 14 ft.

Time Purging Begins: 1115

Notes on Initial Discharge. Slightly cloudy

Time	Volume Purged	pH	Conductivity	T	Comments
1117	5	7.4	500	62°C	Clear
1120	10	7.6	1200	62°C	Slightly cloudy
1124	15	7.4	1100	64°C	Clear
1128	20	7.4	1100	64°C	Clear
1132	25	7.4	1100	64°C	Clear

Time Field Parameter Measurement Begins: 1207

		Rep #2	Rep #3	Rep #4
pН	7.2	7.2	7.2	7.2
Conductivity	600	600	600	600
TC	64°C	64°C	64°C	64°C

<u>Pre-Sample Collection Gallons Purged</u> :	25
Time Sample Collection Begins.	1155
Time Sample Collection Ends:	1205
Total Gallons Purged:	26

<u>Job No</u>: 33909.00

Site: Harsch - Alameda

Date: 4/17/91

Well No. MW-3

Sampling Team: Mike Springman

Sampling Method: Purged with pump, sampled with bailer

Field Conditions: Sunny, clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Used clean pump and disposable bailers

Total Depth

of Well: 14.4 ft.

Time:

1235

Depth to Water

<u>Before Purging</u>

6.3 ft.

Volume Height of Water

2-inch

<u>4-inch</u>

<u>Volume</u>

Purge <u>Factor</u>

To Purge

Column: 8.1 ft.

.16

(.65)

5.26

4

21.04 gals.

Depth Purging From: 14 ft.

Time Purging Begins: 1242

Notes on Initial Discharge: Clear, no odor

Time	Volume Purge	pН	Conductivity	T	Comments
1244	5	7.4	1,200	64°C	Clear
1247	10	7.4	1,400	64°C	Clear
1250	15	7.4	1,500	64°C	Clear
1253	20	7.4	1,500	64°C	Clear

Time Field Parameter Measurement Begins: 1320

	Rep #1	Rep #2	Rep #3	Rep #4
рН	7.4	7.4	7.4	7.4
Conductivity	1,200	1,200	1,200	1,200
TC	64°C	64°C	64°C	64°C

<u>Pre-Sample Collection Gallons Purged</u> :	20
Time Sample Collection Begins:	1310
Time Sample Collection Ends.	1315
Total Gallons Purged:	21

Job No: 33909.00

Site: Harsch - Alameda

Date: 4/17/91

Well No: MW-4

Sampling Team: Mike Springman

Sampling Method: Purged with pump, sampled with bailer

Field Conditions: Sunny, clear, warm

Describe Equipment Decontamination Before Sampling This Well.

Used clean pump and disposable bailers

Total Depth

16.84 ft. of Well:

Time: 1510 Depth to Water

Before Purging 6.22 ft.

Volume Height of Water

<u>2-inch</u>

<u>4-inch</u>

Volume

Purge <u>Factor</u>

4

To Purge

Column: 10.62 ft.

.16

.65

6.9

27.6 gals.

Depth Purging From: 16 ft.

Time Purging Begins: 1520

Notes on Initial Discharge:

Time	Volume Purge	pH	Conductivity	T	Comments
1522	5	7.4	1,000	64°C	Clear, no odor
1524	10	7.4	1,600	64°C	Clear
1528_	15	7.6	1,700	64°C	Clear
1532	20	7.6	1,800	64°C	Clear
1535	25	7.6	1,800	64°C	Clear

Time Field Parameter Measurement Begins:

	Rep#1 R	ep #2 Rep #3 Rep #4
pН		
Conductivity		
T℃		

Pre-Sample Collection Gallons Purged:	21
Time Sample Collection Begins.	1510
Time Sample Collection Ends.	1520
Total Gallons Purged:	23

Job No. 34683.07

Site: Harsch

Date: May 1, 1991

Well No: MW-5

Sampling Team: Richard Silva

Sampling Method: Disposable bailer for purging and sampling

Field Conditions: Cloudy, windy, light drizzle at times, ~50°F

Describe Equipment Decontamination Before Sampling This Well.

Total Depth

of Well: 14.90 ft. Time. 1145 Depth to Water

Before Purging 5.85 ft.

Volume

Height of Water

2-inch

4-inch

Volume

Purge

Factor 1

To Purge

Column: 9.05 ft.

.16

.65

5.88

23.53 gals.

Depth Purging From:

Time Purging Begins. 1155

Notes on Initial Discharge. Brownish silty water, strong odor

Time	Volume Purged	РĦ	Conductivity	T	Comments
1201	5	7.2	2400	17.2°C	Brownish, silty water, strong odor
1210	10	7.2	2400	17.2°C	Brownish, silty water, strong odor
1221	15	7.2	2400	17.2°C	Brownish, silty water, strong odor
1230	20	7.2	2500	17.2°C	Brownish, silty water, strong odor
1241	25	7.2	2450	17.2°C	Brownish, silty water, strong odor

Time Field Parameter Measurement Begins: 1310

	Rep.#1 Rep.#2 Rep.#3 Rep.#4				
pН	7.2	7.2	7.2	7.2	
Conductivity	2400	2450	2400	2450	
TC	17.2°C	17.2°C	17.2°C	17.2°C	

Pre-Sample Collection Gallons Purged:	25
Time Sample Collection Begins.	1250
Time Sample Collection Ends.	1300
Total Gallons Purged:	27

Job No: 33909.00

Site: Harsch - Alameda

Date: 4/16/91

Well No. MW-7

Sampling Team: Robyn Seymour/Mike Springman

Sampling Method: Purged with pump, sampled with bailer

Field Conditions: Sunny, windy, 55 to 60°F

Describe Equipment Decontamination Before Sampling This Well.

Used clean pump and disposable bailers

Total Depth

of Well:

11.74 ft.

Time:

1120

Depth to Water

Before Purging

5.8 ft.

Volume Height of Water

<u>2-inch</u>

4-inch

<u>Volume</u>

Purge Factor 1 4 1

To Purge

Column: 5.94 ft.

(.16)

.65

.95

2.8 gals.

Depth Purging From: 11 ft.

Time Purging Begins: 1128

Notes on Initial Discharge Cloudy, no odor

Time	Volume Purged	рH	Conductivity	T	Comments
1131	11	7.8	900	64°C	Cloudy
1134	2	7.8	1,500	61°C	
1136	3	7.8	1,500	60°C	
1139	4	7.8	1,200	60°C	Cleared up

Time Field Parameter Measurement Begins: 1200

	Rep #1	Rep #2	Rep #3	Rep #4
pН	7.8	7.8	7.8	7.8
Conductivity	1,000	700	800	800
TC	61°C	60°C	60°C	60°C

Pre-Sample Collection Gallons Purged:4Time Sample Collection Begins:1150Time Sample Collection Ends:1200Total Gallons Purged:5

Job No: 33909.00

Site: Harsch - Alameda

Date: 4/17/91

<u>Well No</u>: MW-8B

Sampling Team. Mike Springman

Sampling Method: Purged with pump, sampled with bailer

Field Conditions: Sunny, windy, 55 to 60°F

Describe Equipment Decontamination Before Sampling This Well.

Used clean pump and disposable bailers

Total Depth

22.6 ft. of Well:

Time:

Depth to Water

<u>Before Purging</u> 6.86 ft.

Volume Height of Water

2-inch

4-inch

Volume

Purge Factor 1 4 1

To Purge

Column: 15.74 ft.

.16

1340

(.65)

10.23

40.92 gals.

Depth Purging From: 15 ft.

Time Purging Begins: 1352

Notes on Initial Discharge: Clear, no odor

Time	Volume Purgeo	Hq	Conductivity	T	Comments
1356	10	7,4	5,000+	67°C	Clear
1400	20	7.6	5,000+	66°C	Clear
1406	30	7.6	5,000+	66°C	Clear
1413	40	7.6	5,000+	66°C	Clear

Time Field Parameter Measurement Begins: 1450

	Rep #1	Rep #2	Rep #3	Rep #4
pH	7.6	7.6	7.6	7.6
Conductivity	5,000+	5,000+	5,000+	5,000+
TC	62°C	62°C	62°C	62°C

Pre-Sample Collection Gallons Purged:	40
Time Sample Collection Begins.	1430
Time Sample Collection Ends.	1445
Total Gallons Purged	41

Job No: 33909.00

Site: Harsch - Alameda

Date: 4/16/91

Well No: MW-9

Sampling Team: Robyn Seymour/Mike Springman

Sampling Method: Purged with pump, sampled with bailer

Field Conditions: Sunny, windy, 55 to 60°F

Describe Equipment Decontamination Before Sampling This Well.

Used clean pump and disposable bailers

Total Depth

of Well:

15.28 ft.

Time:

1449

Depth to Water

Before Purging

7.38 ft.

Volume Height of Water

<u> 2-inch</u>

4-inch

<u>Volume</u>

Purge <u>Factor</u>

To Purge

<u>Column</u>: 7.90 ft.

.16

(.65)

5.13

4

10 Ful 5

20.54 gals.

Depth Purging From: 14.5 ft.

Time Purging Begins:

Notes on Initial Discharge. Clear

Time	Volume Purged	рH	Conductivity	T	Comments
1502	5	7,6	2,000	66°C	
1504	8	7.4	2,000	64°C	
1506	11	7.4	2,000	66°C	Cloudy
1508	17	7.4	2,000	66°C	Cleared
1510	21	7.4	2,000	66°C	

Time Field Parameter Measurement Begins.

	Rep #1	Rep #2	Rep #3	-Rep #4
pH	7.6	7.6	7.6	7.6
Conductivity	2,200	2,200	2,300	2,300
T℃	64°C	64°C	64°C	64°C

Pre-Sample Collection Gallons Purged:	24
Time Sample Collection Begins.	1300
Time Sample Collection Ends.	1310
Total Gallons Purged	26

Job No: 33909.00

Site: Harsch - Alameda

Date: 4/16/91

Well No: MW-14

Sampling Team. Robyn Seymour/Mike Springman

Sampling Method: Purged with pump, sampled with bailer

Field Conditions: Sunny, windy, 55 to 60°F

Describe Equipment Decontamination Before Sampling This Well:

Used clean pump and disposable bailers

Total Depth

of Well: 14 ft.

Time: 1230

Depth to Water

Before Purging 4.74 ft.

Volume Height of Water

2-inch

4-inch

<u>Volume</u>

Purge Factor

To Purge

Column: 9.26 ft.

.16

(.65)

= 6.02

4

24 gals.

Depth Purging From: 13 ft.

Time Purging Begins.

Notes on Initial Discharge: Crystal clear

Time	Volume Purged	ρH	Conductivity	T	Comments
1241	10	7.8	3,500	64°C	Clear
1242	12	7.8	3,500	64°C	
1244	15	7.6	5,000	64°C	
1246	20	7.6	5,000	64°C	
1248	22	7.6	5,000	64°C	
1250	24	7.6	5,000	64°C	

Describe Equipment Decontamination Before Sampling This Well:

Used clean pump and disposable bailers

Total Depth of Well:

14 ft.

Time:

1230

Depth to Water

Before Purging 4.74 ft.

Volume Height of Water *Column*: 9.26 ft.

2-inch

.16

4-inch .65

<u>Volume</u> 6.02

Purge Factor 1

To Purge

4 24 gals.

Depth Purging From: 13 ft.

Time Purging Begins:

Notes on Initial Discharge. Crystal clear

Time	Volume Purged	рÐ	Conductivity	T	Commenta
1241	10	7.8	3,500	64°C	Clear
1242	12	7.8	3,500	64°C	
1244	15	7.6	5,000	64°C	
1246	20	7.6	5,000	64°C	
1248	22	7.6	5,000	64°C	
1250	24	7.6	5,000	64°C	



QUARTERLY SAMPLING

JULY 1991

Job No: 34683.07

Site: Harsch - Alameda

Date: 7/10/91

Well No: MW-2

Sampling Team: G. Williams/L. Compton

Sampling Method: Submersible pump and disposable bailer

Field Conditions: Clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

14.28 ft. of Well:

Time: 1400 Depth to Water

Before Purging:

6.71 ft.

Volume Height of Water

2-inch

<u>4-inch</u>

<u>Volume</u>

Purge Factor 5 4 1

To Purge

Column: 7.57 ft.

.16

.65

4.92 gals

5

24.6 gals.

Depth Purging From: 13 ft.

Time Purging Begins: 1403

Notes on Initial Discharge:

Time	Volume Purgeo	pB I	Conductivity	T	Comments
1405	5	7.4	350	66°	
1409	10	7.4	375	66°	3
1413	15	7.5	700	66°	
1417	20	7.6	700	66°	
1423	25	7.7	1500	66°	

Time Field Parameter Measurement Begins: 1433

	Rep #1	Rep #2	Rep #3	Rcp #4
pН	7.6	7.6	7.6	7.6
Conductivity	400	350	350	500
T°F	68	68	68	68

Pre-Sample Collection Gallons Purged: 25

Time Sample Collection Begins: 1445

Time Sample Collection Ends: 1455

Total Gallons Purged: 26

Job No: 34683.07

Site: Harsch - Alameda

Date: 7/10/91

Well No: MW-3

Sampling Team: G. Williams/L. Compton

Sampling Method: Submersible pump and disposable bailer

Field Conditions: Clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

of Well:

12.92 ft.

Time:

1300

Depth to Water

Before Purging:

6.16 ft.

Volume

Height of Water

<u>2-inch</u>

<u>4-inch</u>

<u>Volume</u>

Purge <u>Factor</u>

To Purge

Column: 6.76 ft.

.16

(.65)

= 4.39 gals

*

5

21.9 gals.

Depth Purging From: 12 ft.

Time Purging Begins: 1306

Notes on Initial Discharge:

Time Volume Purged pH Conductivity T Comments						
1307	5	7.4	950	66°	Clear	
1308	10	7.4	900	66°	Slows at 10 gallons	
1310	15	7.4	1400	66°		
1315	20	7.4	1550	66°		
1318	25	7.4	1600	66°		

Time Field Parameter Measurement Begins: 1325

	Rep #1	Rep #2	Rep #3	Rep #4
pН	7.5	7.4	7.4	7.4
Conductivity	1350	1300	1300	1300
T°F	67	67	67	67

Pre-Sample Collection Gallons Purged:22Time Sample Collection Begins:1335Time Sample Collection Ends:1337Total Gallons Purged:23

' Comments:

<u>Job No</u>: 34683.07

Site: Harsch - Alameda

Date: 7/11/91

Well No: MW-4

Sampling Team: G. Williams

Sampling Method: Submersible pump and disposable bailer

Field Conditions: Clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

of Well:

15.65 ft.

Time: 1210

Depth to Water

Before Purging: 6.05 ft.

Volume

Height of Water

<u>Column</u>: 9.6 ft. *

<u>2-inch</u>

.16

4-inch (.65)

<u>Volume</u>

6.24 gals

Purge <u>Factor</u>

To Purge

5 = 31.2 gals.

Depth Purging From:

Time Purging Begins:

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T	Comments
1215	5	7.8	1600	71°	
1217	10	7.8	1700	71°	
1219	15	7.8	1750	71°	
1221	20	7.8	1750	71°	
1223	25	7.8	1750	71°	
1226	30	7.8	1700	71°	

Time Field Parameter Measurement Begins: 1246

	Rep #1	Rep #2	Rep #3	Rep #4
рН	7.8	7.8	7.75	7.8
Conductivity	1700	1700	1700	1700
T°F	71	71	71	71

Pre-Sample Collection Gallons Purged:32Time Sample Collection Begins:1245Time Sample Collection Ends:1246Total Gallons Purged:33

<u>Job No</u>: 34683.07

Site: Harsch - Alameda

Date: 7/10/91

Well No: MW-5

Sampling Team: G. Williams/L. Compton

Sampling Method: Submersible pump and disposable bailer

Field Conditions: Clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

of Well:

12.70 ft.

Time:

1400

Depth to Water

Before Purging:

4.67 ft.

Volume

Height of Water

<u>2-inch</u>

<u>4-inch</u>

<u>Volume</u>

Purge Factor

To Purge

26.1 gals.

Column: 8.03 ft.

.16

(.65

= 5.21 gals

5

-

Depth Purging From: 11 ft.

Time Purging Begins: 1251

Notes on Initial Discharge: Slightly cloudy

Time	Volume Purgeo	pH	Conductivity	т	Comments
1251	0	7.5	1700	73°	Slightly cloudy
1254	5	7.3	1450	73°	Clears
1257	10	7.2	1450	73°	
1300	15	7.3	1600	73°	
1305	20	7.3	1700	73°	
1310	25	7.3	1650	73°	

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

Time Field Parameter Measurement Begins: 1327

	Rep #1	Rep #2	Rep #3	Rep #4
рН	7.3	7.3	7.3	7.3
Conductivity	1400	1400	1400	1400
T°F	73	73	73	73

Pre-Sample Collection Gallons Purged:25Time Sample Collection Begins:1335Time Sample Collection Ends:1345Total Gallons Purged:26

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC. WATER SAMPLING FIELD SURVEY FORM

Job No: 34683.07

Site: Harsch - Alameda

Date: 7/11/91

Well No: MW-7

Sampling Team: G. Williams

Sampling Method: Submersible pump and disposable bailer

Field Conditions: Clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

of Well: 13 ft. Time:

1300

Depth to Water

Before Purging: 4.8 ft.

Volume

Height of

<u> 2-inch</u>

<u>4-inch</u>

<u>Volume</u>

Purge **Factor**

To Purge

Water *Column*: 8.2 ft.

.16

.65

5.33 gals

5

26.65 gals.

Depth Purging From: 12 ft.

Time Purging Begins: 1258

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T	Comments
1300	5	8.0	1500	71°	
1303	10	7.9	1400	71°	
1306	15	7.9	1900	71°	
1309	20	7.9	2200	71°	
1315	25	7.9	2700	71°	
1318	28	7.9	3500	71°	
1322	33	7.9	1800	71°	
1325	38	7.9	1800	71°	

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

Time Field Parameter Measurement Begins: 1325

	Rep #1	Rep#2	Rep#3	Rep #4
рН	7.9	7.9	7.9	7.9
Conductivity	1800	1700	1700	1700
T°F	71	71	71	71

<u>Pre-Sample Collection Gallons Purged</u>: 38

Time Sample Collection Begins: 1340

Time Sample Collection Ends: 1342

Total Gallons Purged: 39

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC. WATER SAMPLING FIELD SURVEY FORM

<u>Job No</u>: 34683.07

Site: Harsch - Alameda

Date: 7/11/91

Well No: MW-8B

Sampling Team: G. Williams

Sampling Method: Submersible pump and disposable bailer

Field Conditions: Clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

21.95 of Well:

Time:

1005

Depth to Water

Before Purging:

6.46.

Volume

Height of Water

<u>2-inch</u>

<u>4-inch</u>

<u>Volume</u>

Purge **Factor**

To Purge

50.34 gals.

Column: 15.49

.16

10.07 gals

5

Depth Purging From: 20 ft.

Time Purging Begins: 1020

Notes on Initial Discharge:

Time	Volume Purgeo	pH	Conductivity	1	Comments
1035	10	7.6	>5000*	72°	Strong hydrogen sulfide odor
1050	20	7.7	*	72°	Strong hydrogen sulfide odor
1105	30	7.8	*	72°	Strong hydrogen sulfide odor
1120	40	7.9	*	72°	Strong hydrogen sulfide odor
1135	50	7.8	*	72°	Strong hydrogen sulfide odor

Off scale

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

Time Field Parameter Measurement Begins: 1145

	Rep #1	Rep #2	Rep #3	Rep #4
pН	8.2	8.3	8.3	8.3
Conductivity	2200	2000	2000	2000
T°F	71	71	71	71

Pre-Sample Collection Gallons Purged: 50

Time Sample Collection Begins: 1150

Time Sample Collection Ends: 1156

Total Gallons Purged: 51

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC. WATER SAMPLING FIELD SURVEY FORM

<u>Job No</u>: 34683.07

Site: Harsch - Alameda

Date: 7/17/91

Well No: MW-9B

Sampling Team: M. Springman

Sampling Method: Submersible pump and disposable bailer

Field Conditions: Clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

of Well:

14.8 ft.

Time:

1225

Depth to Water

Before Purging:

6.73 ft.

Volume

Height of

<u>2-inch</u>

<u>4-inch</u>

<u>Volume</u>

Purge **Factor**

To Purge

20.93 gals.

Water

Column: 8.05 ft.

.16

.65

5.23 gals

4

Depth Purging From: 14 ft.

Time Purging Begins: 1240

Notes on Initial Discharge: Clear, no odor

Time '	Volume Purged	pH	Conductivity	т	Comments
1243	5	7.7	1900	60°	Clear
1247	10	7.6	1230	60°	Clear
1250	15	7.65	1170	60°	Clear
1305	20	7.6	1200	60°	Clear

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

Time Field Parameter Measurement Begins: 1330

	Rep #1	Rep #2	Rep #3	Rep #4
рН	7.6	7.6	7.6	7.6
Conductivity	1200	1200	1200	1200
T°F	60	60	60	60

Pre-Sample Collection Gallons Purged:20Time Sample Collection Begins:1320Time Sample Collection Ends:1325Total Gallons Purged:22

Comments:

CLAYTON ENVIRONMENTAL CONSULTANTS, INC. WATER SAMPLING FIELD SURVEY FORM

Job No: 34683.07

Site: Harsch - Alameda

Date: 7/10/91

Well No: MW-14

Sampling Team: G. Williams/L. Compton

Sampling Method: Submersible pump and disposable bailer

Field Conditions: Clear, warm

Describe Equipment Decontamination Before Sampling This Well:

Submersible pump decontaminated with detergent wash, double rinsed, and steam cleaned

Total Depth

of Well: 14.17 ft. Time:

1130

Depth to Water

Before Purging:

Volume

Height of Water

<u>2-inch</u>

<u>4-inch</u>

<u>Volume</u>

Purge <u>Factor</u>

5

To Purge

28.02 gals.

Column: 8.62 ft.

.16

.65

5.60 gals

5.55 ft.

Depth Purging From: 13 ft.

Time Purging Begins: 1145

Notes on Initial Discharge:

Time	Volume Purged	pH	Conductivity	T	Comments
1145	3	7.4	2600	74°	Clear
1147	10	7.4	4200	72°	Slows after ~5 gallons
1149	15	7.4	3800	72°	
1151	20	7.4	4800	72°	
1154	25	7.4	5000	72°	
1157	30	7.4	5300	72°	
1158	35	7.4	5400	72°	
1159	36	7.4	4400	72°	
1200	37	7.4	4400	72°	
1201	40	7.4	3700	72°	
1206	50	7.4	3800	72°	

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

Time Field Parameter Measurement Begins: 1215

	Rep #1	Rep #2	Rep #3	Rep#4
pН	7.5	7,5	7.8	7.5
Conductivity	2900	2900	2750	2900
T℉	72	72	72	72

Pre-Sample Collection Gallons Purged:50Time Sample Collection Begins:1220Time Sample Collection Ends:1230Total Gallons Purged:51

Comments:



APPENDIX F

LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS FOR SOIL SAMPLES COLLECTED FROM BOREHOLES B-8B AND B-14 Western Operations

1252 Quarry Lane P.O. Box 9019 Pleasanton. CA 94566 (415) 426-2600 Fax (415) 426-0106



April 23, 1991

Ms. Robyn Seymour CLAYTON ENVIRONMENTAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, Ca. 94566

> Client Ref. 33909.00 Clayton Project No. 91041.16

Dear Ms. Seymour:

Attached is our analytical laboratory report for the samples received on April 10, 1991. On April 15, 1991 you requested that Sample Rinse be analyzed for BTEX also. 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 (415) 426-2657.

Sincerely,

Ronald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/dt

Attachments

CE 00778



Page 2 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: B-14, 5'
Lab Number: 9104116-01A Date Received: 04/10/91
Sample Matrix/Media: SOIL Date Prepared: 04/11/91
Preparation Method: EPA 5030 Date Analyzed: 04/11/91

EPA 8010

Analytical Method:

Limit of Concentration Detection Analyte CAS # (mg/kg) (mg/kg) Purgeable Halocarbons Chloromethane 74-87-3 ND 0.06 Bromomethane 74-83-9 ND 0.07 Vinyl chloride 75-01-4 ND 0.05 Chloroethane 75-00-3 ND 0.05 Methylene chloride 75-09-2 ND 0.2 1,1-Dichloroethene 75-35-4 ND 0.02 1,1-Dichloroethane 75-35-3 0.04 ND Trans-1,2-Dichloroethene 156-60-5 ND 0.04 Cis-1,2-Dichloroethene 156-59-2 ND 0.04 1,2-Dichloroethene (total) 540-59-0 ND 0.04 Chloroform 67-66-3 ND 0.05 1,2-Dichloroethane 107-06-2 ND 0.03 1,1,1-Trichloroethane 71-55-6 ND 0.05 56-23-5 Carbon tetrachloride ND 0.06 Bromodichloromethane 75-27-4 ND 0.07 1,2-Dichloropropane 78-87-5 ND 0.05 Cis-1,3-Dichloropropene 10061-01-5 ND 0.05 Trichloroethene 79-01-6 ND 0.03 Dibromochloromethane 124-48-1 ND 0.06 1,1,2-Trichloroethane 79-00-5 ND 0.06 Trans-1,3-Dichloropropene 10061-02-6 ND 0.06 2-Chloroethylvinylether 100-75-8 ND 0.1 Bromoform 75-25-2 ND 0.07 Tetrachloroethene 127-18-4 ND 0.05 1,1,2,2-Tetrachloroethane 79-34-5 ND 0.05 Chlorobenzene 108-90-7 ND 0.07 1,3-Dichlorobenzene 541 - 73 - 7ND 0.2 1,2-Dichlorobenzene 95 - 50 - 1ND 0.4 1,4-Dichlorobenzene 106 - 46 - 70.4 ND Dichlorodifluoromethane 75-71-8 ND 0.1 Trichlorofluoromethane 75-69-4 0.04 ND Freon 113 76 - 13 - 1ND 0.06

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

Page 3 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: B-8B, 5' Date Sampled: 04/09/91 Lab Number: 9104116-02A Date Received: 04/10/91 Sample Matrix/Media: SOIL Date Prepared: 04/11/91 Preparation Method: EPA 5030 Date Analyzed: 04/11/91 Analytical Method: EPA 8010

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.02
1,1-Dichloroethane	75-35 - 3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
1,2-Dichloroethene (total)	540-59-0	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06
2-Chloroethylvinylether	100-75-8	ND	0.1
Bromoform	75-25 - 2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541-73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75 - 71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ОИ	0.04
Freon 113	76-13 - 1	ND	0.06

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



Page 4 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9104116-04A

Date Received:

Sample Matrix/Media:

SOIL

EPA 5030

Date Prepared:

Preparation Method: Analytical Method:

EPA 8010

04/11/91 Date Analyzed: 04/11/91

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	0.06
Bromomethane	74-83-9	ND	0.07
Vinyl chloride	75-01-4	ND	0.05
Chloroethane	75-00-3	ND	0.05
Methylene chloride	75-09-2	ND	0.2
1,1-Dichloroethene	75-35-4	ND	0.02
1,1-Dichloroethane	75-35-3	ND	0.04
Trans-1,2-Dichloroethene	156-60-5	ND	0.04
Cis-1,2-Dichloroethene	156-59-2	ND	0.04
1,2-Dichloroethene (total)	540-59-0	ND	0.04
Chloroform	67-66-3	ND	0.05
1,2-Dichloroethane	107-06-2	ND	0.03
1,1,1-Trichloroethane	71-55-6	ND	0.05
Carbon tetrachloride	56-23-5	ND	0.06
Bromodichloromethane	75-27-4	ND	0.07
1,2-Dichloropropane	78-87-5	ND	0.05
Cis-1,3-Dichloropropene	10061-01-5	ND	0.05
Trichloroethene	79-01-6	ND	0.03
Dibromochloromethane	124-48-1	ND	0.06
1,1,2-Trichloroethane	79-00-5	ND	0.06
Trans-1,3-Dichloropropene	10061-02-6	ND	0.06
2-Chloroethylvinylether	100-75-8	ND	0.1
Bromoform	75-25-2	ND	0.07
Tetrachloroethene	127-18-4	ND	0.05
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.05
Chlorobenzene	108-90-7	ND	0.07
1,3-Dichlorobenzene	541 - 73-7	ND	0.2
1,2-Dichlorobenzene	95-50-1	ND	0.4
1,4-Dichlorobenzene	106-46-7	ND	0.4
Dichlorodifluoromethane	75-71-8	ND	0.1
Trichlorofluoromethane	75-69-4	ND	0.04
Freon 113	76-13-1	ND	0.06



Page 5 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: B-14, 5'
Lab Number: 9104116-01A
Sample Matrix/Media: SOIL
Preparation Method: EPA 5030
Analytical Method: EPA 8015/8020

Date Sampled: 04/09/91
Date Received: 04/10/91
Date Prepared: 04/11/91
Date Analyzed: 04/12/91

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	ND	0.005
Gasoline		ND	0.3

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

Page 6 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: B-8B, 5'

Lab Number:

9104116-02A

Date Sampled: 04/09/91 Date Received: 04/10/91

Sample Matrix/Media: Preparation Method:

SOIL EPA 5030 Date Prepared: 04/11/91

Analytical Method:

EPA 8015/8020

Date Analyzed: 04/12/91

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.056	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	ND	0.005
Gasoline		ND	0.3

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



Page 7 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: METHOD BLANK

Lab Number:

9104116-04A SOIL

Date Sampled: Date Received:

Date Prepared: 04/11/91

Sample Matrix/Media: Preparation Method:

EPA 5030

Date Analyzed: 04/11/91

Analytical Method:

EPA 8015/8020

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	ND	0.005
Gasoline		ND	0.3

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

Page 8 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: RINSE SAMPLE

Lab Number:

9104116-03A

WATER

Sample Matrix/Media: Analytical Method:

EPA 8020

Date Sampled:

04/09/91

04/10/91

Date Received: Date Analyzed: 04/17/91

Analyte	Concentration CAS # (ug/L)			
BTEX				
Benzene	71-43-2	ND	0.4	
Ethylbenzene	100-41-4	ND	0.3	
Toluene	108-88-3	ND	0.3	
Xylenes	1330-20-7	ND	0.4	

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



Page 9 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: METHOD BLANK

Lab Number:

9104116-04A

Date Sampled:

Date Received:

Sample Matrix/Media: Analytical Method:

SOIL EPA 8020 Date Analyzed: 04/17/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
Xylenes	1330-20-7	ND	0.4

NDNot detected at or above limit of detection Information not available or not applicable

Page 10 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification:

See below

04/10/91

Lab Number:

9104116

Date Received:

Sample Matrix/Media:

SOIL

Date Extracted: 04/12/91 Date Analyzed: 04/14/91

Analytical Method:

EPA 8015

Extraction Method: EPA 3550

Lab No.	Sample I.D.	Date Collected	Diesel Fuel (mg/kg)	Detection Limit (mg/kg)
-01A	B-14, 5'	04/09/91	1	1
-02A	B-8B, 5'	04/09/91	ND	1
-04A	METHOD BLANK		ND	1

ND = Less than the indicated limit of detection (LOD)

^{-- =} Information not available or not applicable



Page 11 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: B-14, 5' Lab Number: Sample Matrix/Media:

9104116-01A

Date Sampled: 04/09/91 Date Received: 04/10/91 Date Digested: 04/16/91

Digestion Method: Analytical Method:

SOIL EPA 3050 EPA 6010

Date Analyzed: 04/16/91

Analyte	Concentration (mg/kg)	Limit of Detection (mg/kg)	
Cadmium	<0.1	0.1	
Chromium	20	1	
Lead	3	1	
Nickel	16	1	
Zinc	12	1	

Less than, below limit of detection

Information not available or not applicable



Page 12 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: B-8B, 5' Date Sampled: 04/09/91 Lab Number: 9104116-02A Date Received: 04/10/91 Sample Matrix/Media: SOIL Date Digested: 04/16/91 EPA 3050 Digestion Method: Date Analyzed: 04/16/91 Analytical Method: EPA 6010

analyte	Concentration yte (mg/kg)		
Cadmium	<0.1	0.1	
Chromium	36	1	
Lead	8	1	
Nickel	32	1	
Zinc	57	1	

< Less than, below limit of detection

⁻⁻ Information not available or not applicable

Page 13 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification: METHOD BLANK

Lab Number:

9104116-04A

SOIL

Digestion Method: Analytical Method:

Sample Matrix/Media:

EPA 3050 EPA 6010

Date Sampled: Date Received:

Date Digested: 04/16/91 Date Analyzed: 04/16/91

Analyte	Concentration (mg/kg)	Limit of Detection (mg/kg)	
Cadmium	<0.1	0.1	
Chromium	<1	1	
Lead	<1	1	
Nickel	<1	1	
Zinc	<1	1	

Less than, below limit of detection

Information not available or not applicable



Page 14 of 14

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.16

Sample Identification:
Lab Number:
Sample Matrix/Media:
Extraction Method:
Analytical Method:

See below 9104116 Soil

Std. Method 5520E Std. Method 5520F Date Sampled: 04/09/91
Date Received: 04/10/91
Date Extracted: 04/16/91
Date Analyzed: 04/16/91

Laboratory No.	Sample Identification	Hydrocarbons (mg/kg)		
-01	B-14, 5'	<50		
-02	B-8B, 5'	<50		
-MB	Method Blank	<50		
imit of Detection	:	50		

< Less than the indicated limit of detection (LOD)



REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page,		of		
Project No.					
Batch No. 9104	1116				
Client No.		· · · · · · · · · · · · · · · · · · ·	, , , ,		
Date Logged In 14 Luc	Ja.	By	O.B.	`	

CONJULIMINIS	11.		Fig. 100 d						Dai	CII 140.	<u> </u>	10	<u> 111 (</u>	0			
A Marsh & McLennan Company	H	WSC11	Invest	rvei	77 C	UV.,	_		Client No.					\neg			
									Date	e Logg	jed In	411	0/91	8	y Rofo	·	┪
Name Coby O Scance Company (In 11-2) Mailing Address City, State, Zip Telephone No	Title ('-(1)	Locus	E	Purcl	nase Or	der No),			 	Clie	ent Job	No.	33	909		
Company (104/67)		Dept.	· C	щ	Nam						<u> </u>				1		
Mailing Address	1			SEND	O Con	npany									Dept.		\neg
City, State, Zip City, State, Zip Telephone No Telef:				∦ઝ્ટ્રે	Add	ress											
Date Results Required. Rush Charges Authorized? F	ax No.	т		<u> </u>	[City,	, State	, Zip										
Yes Wo	IIONA MASONS	Sample	s are: f applicable)	ers	(Enter	an 'X'	in the	box be	AN. low to	ALYSI: indical	S REC le requ	≀UEST ≀est; E	ED inter a	'P' if F	⁾ reservat	ive added	• н
pecial Instructions (method, limit of detection, etc.)			ing Water	Containers		···	7	75	X	()	37.50	V	1	7	7	//	刂
			cted in the	ģ			SY	\%\Q	Y X		4,2,2	<i>y</i>	/ /	/ ,			
Explanation of Preservative			of New York	ਰ	/	/ _S								/.	/ /		
CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)		, i			No.			1	<i>}/</i>				FOR LAB JSE ONLY	
B-14, 5	419191	Soil	246	1	V	1	N			-					DIA		
B E.B. 5	419191	Soil	4	1	V	1	V	^ L	7	/					02	······································	\neg
RINGSOMARE	419191	4att/	24 40ml	2											034	B	╗
	1															}	ヿ
· · · · · · · · · · · · · · · · · · ·	 																ㅓ
4 N. C.	 	<u> </u>												 			-
	- 			<u> </u>	<u> </u>										<u> </u>		\dashv
								:			i						ı
																	٦
				-					-					 			\dashv
	1						,	İ				ì			į		
CHAIN Relinquished by: Robin Semin		Date/Time		Rece	ived by		1 4	Clo	\cap					Daje/	[ipe, 60]	11:00	م
OF Relinquished by: Rolling Stanton	<u> </u>	Date Fines			ived at	Year h				- .	01	CT4			I me 10/9/		_1
I ICAULT TO THE PARTY OF THE PA		CATION	12:33		ple Con								وسأ	- 3/	<i>10/4 /</i> 1er (expl	<u>/ン: 33</u>	4
Method of Shipment.				J Sam	bia cou	UILIQA (opon i	eceibi	بر "	Acc	Pahrao	и	L	_ ~	ier (avbi	aiii)	
Authorized by: Robins Sund of W (Client Signature Must Accompany F	Da	ate <u>4//</u>	0/9/	ŀ					/								J
(Client Signature Must Accompany F	Request)		•												,		
lease return completed form and samples to one of the	Clayton Envir	ronmental (Consultants, Inc	. labs	listed b	elow:	— C	E 00	792			T	IC TO	BUTIO	NI:	-	ヿ
												ا ا	13 1718	- -	// T.	_	

22S45 Roethel Drive Novi, MI 48050 (313) 344-1770 Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040 400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144

(404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Copy

6/90



APPENDIX G

LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS FOR QUARTERLY GROUNDWATER SAMPLING NOVEMBER 1990 1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 Fax (415) 426-0106



December 12, 1990

Ms. Laurene Compton CLAYTON ENVIRONMENTAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, Ca. 94566

> Client Ref. 29196.00 Clayton Project No. 90112.61

Dear Ms. Compton:

Attached is our analytical laboratory report for the samples received on November 29, 1990. 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 (415) 426-2657.

Sincerely,

Ronald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/dt

Attachments

CE 00888

Page 2 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: MW-2 Lab Number:

9011261-01A

Date Sampled: 11/29/90

Sample Matrix/Media:

WATER

Date Received: 11/29/90 Date Prepared: 12/04/90

Preparation Method:

EPA 5030

Date Analyzed: 12/04/90

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ир	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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



Page 3 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: MW-3

Lab Number:

9011261-02A

WATER

EPA 5030

Date Sampled: Date Received:

11/29/90 11/29/90

Date Prepared: Date Analyzed:

12/04/90 12/04/90

Preparation Method: Analytical Method:

Sample Matrix/Media:

EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	0.5	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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



Page 4 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: MW-4 Lab Number: 9011261

9011261-03A

Date Sampled: 11/29/90 Date Received: 11/29/90 Date Prepared: 12/04/90

Sample Matrix/Media: Preparation Method:

Analytical Method:

WATER EPA 5030 EPA 8015/8020

Date Analyzed: 12/04/90

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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

Page 5 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.51

Sample Identification: METHOD BLANK

Sample Matrix/Media:

Lab Number:

WATER

Preparation Method: Analytical Method:

9011261~05A

EPA 5030

EPA 8015/8020

Date Sampled:

Date Received: ___

Date Prepared: 12/04/90 Date Analyzed: 12/04/90

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ИД	0.3
Ethylbenzene	100-41-4	ИD	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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

Clayton

Page 6 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: MW-2

Date Sampled: 11/29/90

Lab Number:

9011261-01G

Date Received: 11/29/90

Sample Matrix/Media: Analytical Method:

WATER **EPA** 601 Date Analyzed: 12/04/90

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
1,2-Dichloroethene (total)	540-59-0	ИО	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
2-Chloroethylvinylether	100-75-8	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



Page 7 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: MW-3 Lab Number: 9011

9011261-02G

Date Sampled: 11/29/90 Date Received: 11/29/90

Sample Matrix/Media:

WATER

Date Analyzed: 12/05/90

Analytical Method: EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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	ИД	0.6
Bromodichloromethane	75-27-4	ND	0.7
1,2-Dichloropropane	78-8 <i>7</i> -5	ND	0.5
Cis-1,3-Dichloropropene	10061-01-5	ND	0.5
Trichloroethene	79-01-6	0.5	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
2-Chloroethylvinylether	100-75-8	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	i
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



Page 8 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: MW-4

Date Sampled:

Lab Number:

9011261-03G

11/29/90 Date Received: 11/29/90

Sample Matrix/Media: Analytical Method:

WATER EPA 601 Date Analyzed: 12/05/90

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	ОИ	0.4
Cis-1,2-Dichloroethene	156-59-2	ND	0.4
1,2-Dichloroethene (total)	540-59-0	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	0.5	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
2-Chloroethylvinylether	100-75-8	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

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



Page 9 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: METHOD BLANK

911. 141 Q*(*

9011261-05A

Date Sampled: - Date Received: -

Lab Number:

WATER

Date Analyzed: 12/05/90

Sample Matrix/Media: Analytical Method:

EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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	ИD	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
2-Chloroethylvinylether	100-75-8	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

Page 10 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: See below Date Sampled: 11/29/90 Lab Number: 9011261 Date Received: 11/29/90 Sample Matrix/Media: Water Date Extracted: 12/06/90 Analytical Method: EPA 8015 Date Analyzed: 12/07/90 Extraction Method: EPA 3510

Laboratory No.	Sample Identification	Diesel (mg/L)
-01	MW-2	ND
-02	MW-3	ND
-03	MW-4	ND
-МВ	Method Blank	ND
Limit of Detecti	ion:	50

ND = Not detected at or above the limit of detection.

Page 11 of 11

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90112.61

Sample Identification: Lab Number: Sample Matrix/Media: Analytical Method: See below 9011261 Water EPA 418.1 Date Sampled: 11/29/90 Date Received: 11/29/90 Date Analyzed: 12/06/90

Laboratory No.	Sample Identification	Total Recoverable Petroleum Hydrocarbons (mg/L)
-01	MW-2	1
-02	MW-3	<1
-03	MW-4	<1
-MB	Method Blank	<1
Limit of detecti	ion:	1

< Less than the indicated below limit of detection (LOD)



REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton I	Jse Only	Pag	je_		
Project No.	27%	16	1	1	
Batch No.	91	01	Ī.	2/	T

A Marsh & McLennan Company

											ent No.				·		
C Name Laurene Compton	Title				ln.	l				Dat	e Logged	In //	130	90	By TE)	ㅓ
Name L QUE PL Company Company Mailing Address City, State, Zip Telephone No Date Results Required: Rush Charges Authorized? P		······································	Dep		Purc	hase O	rder N	lo.	<i>(</i>			Client (lob Nd		Starte	ly Camp	12
City State Zin			· · · · ·		188	Cor	npany	tar	SCN]	Vice	mint						三
τ Telephone No Telefi	ax No.]88 ₹	P Cor Add City	ress								Dept.		}
Date Results Required: Rush Charges Authorized? F	hone Resul	ts Sa	mple	s are:	 	City	, Stat	e, Zip									\dashv
TOURGE IND		— (cl	neck	if applicable)	Pers	(Ente	r an 'X	in the	e box b	AN. elow to	ALYSIS Findicate i	REQUE: request:	STED Enter	a 'P' if I	Presenta	ive added	
Special Instructions (method, limit of detection, etc.)			Drink	ing Water	Containers	i		1	1.	2/	//		7		/ /	7 20000	-4
Explanation of Preservative. Pres. Hcl			Colle State	cted in the of New York	õ			8 X	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			//	//	//	//		
CLIENT SAMPLE IDENTIFICATION	DATE SAMPLE		TRIX/	AIR VOLUME (specify units)				いかりょう	(a./			//	//	//	/ /	FOR LAB	\dashv
MW-2				40 ML	2	XP		7		7-1				_		ISE ONLY	
1	11/8///	NA NA	<u> 1ек</u> 1	Liter	2	VI.	X	 	}					1	OLA,	B	
	 		 		2			(a)	ļ.——			 			10	D	
_	 	1-1		Liter 40 ML	3			×Ρ					- 		JΕ,	<u> </u>	_
mw-3	1	 			2	XΦ			X				<u> </u>		VG.	H	
	 			40 ML	┝╼╼╼	XT						4	<u> </u>		02 A	B	
	 	+		LITER	2		×						 		C	_	
				LITER	2			XP						1 1	E	F	7
V				40ML	2		_	\$	×						VG		7
												 	1		V G	, []	\dashv
	1		,									+	 		- -		\dashv
CHAIN Relinquished by: M Spangman		Date/	Tiggs	4:1091	Recei	ved by:							<u> </u>	Date/T	ime		-
OF Relinquished by:		Date/				ved at I			1	eur		1		Date/T	imel	4/21	-
Method of Shipment:						le Cond			Receipt		Accept	abie		7 Othe	177 29 er (expla	20 4:15	2/04
Authorized by:		Date							-	V			L		- Marchan	,	
(Client Signature Must Accompany Re	quest)																
Please return completed form and samples to one of the	Clayton Env	ironme	ntal C	onsultants, Inc.	labs li	sted be	low:	CE	მ00	::9			NETOI				1

22345 Roethel Drive Novi, MI 48050 (313) 344-1770

Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

DISTRIBUTION;

6/90

WHITE Clayton Laboratory YELLOW - Clayton Accounting - Client Copy PINK

ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use	Only Page of	
Project No. 🍃	7/9:	 -
Batch No.	9011261	
Client No.	- turia wi	
		

	A Marsh & M	ctennan Company													/· 		90	Щ	261		ļ
														ient No			• •				╛
_ Q Nam	ne Laure npany (1) o ing Address , State, Zip	ne Compton	Title					10					Da	ate Log	ged In	113	309	U E	y TS		٦
E & Con	npany (1)	auten) Оерг		Purc	hase (order N	lo.	1			Ci	ient Jol	b No.	Q	varterly.	Sand	
	ing Address	0			L			اج چ		mpany	essi	人 (JUC	stru	ont					-	۶
Tele	phone No							\#\ 	Na Co Ad Cit	dress									Dept.		
Date Resu	Its Required.	Rush Charges Authorized	elefax No.]	Cit	y, Stat	e, Zip										4
Normal	TAT	Rush Charges Authorized Yes X No		esuns	San		'S are:		!				Al	VALYS	SRE	QUEST	ED				┥
Special Ins	structions: (me	ethod, limit of detection, et	c.)		7 (0)		if applicable) ing Water	Containers	Cine	I dil A	/			indica	te req	uest; E	nter a	'P' il F	reservative	added.	<u>-)</u>
							ong vvater cted in the	Į	ł	,	164		//	/ ,			/ /				1
 Explanat 	юл of Preserv	vative. Pres. Hcl					of New York	7	1										'//		1
			 		 			ğ	,	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	16	/~ ·	/	/\\	Y .	/ ,	/ /			_	1
	CLIENT SAM	PLE IDENTIFICATION	DA SAMF		MATE							/0./ /) }	Hale					FO	RLAB	7
MW-	4						(specify units)	-	1	7	~	/	Z	<u> </u>		<u> </u>				ONLY	١
1119				1/10	IM FIT	<i>B</i> 2.	40 ML	12	X	4			<u> </u>					ļ	03A B		7
+					$\vdash \vdash$		LITER	2		X									CD		7
							LITER	12	 		X								EF		1
<u> </u>			<u> </u>	-	1		40ML	2				X							V GH		┨
<u> </u>	ip bla	nk (0112690	7		Hal	0	40al	1					XP					_	ч- 6.П С)Ч А		┨
								-					~						CHY		-
													-								1
						{															}
					!										1						1
				Į		ł						-						_			
																					-
CHAIN	Relinquishe	d by. M Socrete			Date/Ti	me.	1/110	Popoli		L								10 (T			
OF					<i>⁄/-,2 </i>		4:10 PM	Received by: Date/Time Date/Time													
CUSTODY	Method of S			L									y	MA	W	0	D	ate/Ti	7 29/90	4:15	04
Authorized		,						Samp	le Con	aition (Jbou F	teceipt	: (/[Acc	eptabl	e		Othe	(explain)		
Auutottzea		Signature Must Accompan		_ Da	te								•								Ì
ilaaaa ratii																		•		ı	
		orm and samples to one of	the Clayton	Enviro	onment	al C	onsultants, Inc.	labs l	sted be	elow:	CE	009	00		-	Die	STRIBU	ITION			
2224E Da	athat D	n A														- LUN	טמותוכ	UUN	40		

22345 Roethel Drive Novi, MI 48050 (313) 344-1770

Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144

(404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

WHITE - Clayton Laboratory YELLOW - Clayton Accounting - Client Copy

PINK

6/90

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 Fax (415) 426-0106

Clayton ENVIRONMENTAL CONSULTANTS

December 14, 1990

Ms. Laurene Compton CLAYTON ENVIRONMENTAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, CA 94566

> Client Ref. 29196.00 Clayton Project No. 90120.05

Dear Ms. Compton:

Attached is our analytical laboratory report for the samples received on November 30, 1990. 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 (415) 426-2657.

Sincerely

Ronald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/tb

Attachments

CE 00869



Page 2 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-1

Lab Number:

Sample Matrix/Media: Preparation Method:

Analytical Method:

9012005-01A

WATER EPA 5030

EPA 8015/8020

Date Sampled: 11/30/90 Date Received: 11/30/90

Date Prepared: 12/08/90

Date Analyzed: 12/08/90

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ИД	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50



Page 3 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-5

Lab Number:

9012005-02A

Date Sampled: Date Received: 11/30/90 11/30/90

Sample Matrix/Media: Preparation Method:

WATER EPA 5030 Date Prepared:

12/08/90

Analytical Method:

Date Analyzed:

12/08/90

EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	800	4
Toluene	108-88-3	12	3
Ethylbenzene	100-41-4	320	3
Xylenes	1330-20-7	66	4
Gasoline		2,900	500



Page 4 of 15

11/30/90

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-9 Date Sampled:

Lab Number: 9012005-03A Date Received: 11/30/90 Sample Matrix/Media: WATER Date Prepared: 12/08/90 Preparation Method: EPA 5030 Date Analyzed: 12/08/90

Analytical Method: EPA 8015/8020

			•
Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50



Page 5 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-8

Lab Number:

MM-6

9012005-04A

Date Sampled: Date Received: 11/30/90 11/30/90

Sample Matrix/Media:

WATER

Date Prepared:

12/08/90

Preparation Method:

EPA 5030

Date Analyzed:

12/08/90

Analytical Method:

EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ир	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50



Page 6 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-7

Lab Number:

1114-7

9012005-05A

Sample Matrix/Media:

WATER

Preparation Method: Analytical Method: EPA 5030

EPA 8015/8020

Date Sampled: 11/30/90 Date Received: 11/30/90

Date Prepared: 12/08/90 Date Analyzed: 12/08/90

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline	ar	ND	50



Page 7 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: METHOD BLANK

Lab Number:

Sample Matrix/Media: Preparation Method:

Analytical Method:

9012005-07A

WATER EPA 5030

EPA 8015/8020

Date Sampled:

Date Received: --

Date Prepared: 12/08/90 Date Analyzed: 12/08/90

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50



Page 8 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-1

Lab Number: 9012

9012005-01G

Date Sampled: 11/30/90 Date Received: 11/30/90

Sample Matrix/Media:

WATER

Date Analyzed: 12/11/90

Analytical Method: EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	0.6	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



Page 9 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-5

0012005

Lab Number:

Freon 113

9012005-02G

Date Sampled:
Date Received:

11/30/90 11/30/90

Sample Matrix/Media:

WATER

Date Analyzed:

12/11/90

Analytical Method:

EPA 601

Limit of Concentration Detection Analyte CAS # (ug/L) (ug/L) Purgeable Halocarbons Chloromethane 74-87-3 ND 0.6 74-83-9 Bromomethane 0.7 ND 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 1,2-Dichloroethene (total) 540-59-0 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 0.6 ND 2-Chloroethylvinylether 100-75-8 ND 1 Bromoform 75-25-2 ND 0.7 Tetrachloroethene 127-18-4 0.5 ND 1,1,2,2-Tetrachloroethane 79-34-5 0.5 ND Chlorobenzene 108-90-7 ND 0.7 1,3-Dichlorobenzene 541-73-7 ND 2 1,2-Dichlorobenzene 95 - 50 - 1ND 4 1,4-Dichlorobenzene 106-46-7 ND 4 Dichlorodifluoromethane 75-71-8 ND 1 Trichlorofluoromethane 75-69-4 ND 0.4

76-13-1

0.6

ND

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



Page 10 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-9

Date Sampled:

11/30/90

Lab Number:

9012005-03G

Date Received: 11/30/90

Sample Matrix/Media:

WATER

Date Analyzed: 12/05/90

Analytical Method:

EPA 601

Limit of Concentration Detection Analyte CAS # (ug/L) (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 0.2 ND 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 1,2-Dichloroethene (total) 540-59-0 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 0.6 ND 2-Chloroethylvinylether 100-75-8 ND 1 Bromoform 75-25-2 0.7 ND Tetrachloroethene 0.5 127-18-4 1.5 1,1,2,2-Tetrachloroethane 79-34-5 ND 0.5 Chlorobenzene 0.7 108-90-7 ND 1,3-Dichlorobenzene 541-73-7 ND 2 1,2-Dichlorobenzene 95-50-1 4 ND 1,4-Dichlorobenzene 106-46-7 4 ND Dichlorodifluoromethane 75 - 71 - 8ND 1 Trichlorofluorcmethane 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



Page 11 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-8

Date Sampled:

11/30/90

Lab Number:

9012005-04G

Date Received: 11/30/90

Sample Matrix/Media: Analytical Method:

EPA 601

WATER Date Analyzed: 12/07/90

		Concentration	Limit of
Analyte	CAS #	(nd/r)	Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	60
Bromomethane	74-83-9	ND	70
Vinyl chloride	75-01-4	ND	50
Chloroethane	75-00-3	ND	50
Methylene chloride	75-09-2	ND	200
1,1-Dichloroethene	75-35-4	ND	20
1,1-Dichloroethane	75-35-3	ND	40
Trans-1,2-Dichloroethene	156-60-5	ND	40
Cis-1,2-Dichloroethene	156-59-2	440	40
1,2-Dichloroethene (total)	540-59-0	440	40
Chloroform	67-66-3	ND	50
1,2-Dichloroethane	107-06-2	ND	30
1,1,1-Trichloroethane	71-55-6	ND	50
Carbon tetrachloride	56-23-5	ND	60
Bromodichloromethane	75-27-4	ND	70
1,2-Dichloropropane	78-87-5	ND	50
Cis-1,3-Dichloropropene	10061-01-5	ND	50
Trichloroethene	79-01-6	520	30
Dibromochloromethane	124-48-1	ND	60
1,1,2-Trichloroethane	79-00-5	ND	60
Trans-1,3-Dichloropropene	10061-02-6	ND	60
2-Chloroethylvinylether	100-75-8	ND	100
Bromoform	75-25-2	ND	70
Tetrachloroethene	127-18-4	1,900	50
1,1,2,2-Tetrachloroethane	79-34-5	ND	50
Chlorobenzene	108-90-7	ND	70
1,3-Dichlorobenzene	541-73-7	ND	200
1,2-Dichlorobenzene	95-50-1	ND	400
1,4-Dichlorobenzene	106-46-7	ND	400
Dichlorodifluoromethane	75-71-8	ND	100
Trichlorofluoromethane	75-69-4	ND	40
Freon 113	76-13-1	ND	60

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



Page 12 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: MW-7

Lab Number:

9012005-05G

Date Sampled: Date Received: 11/30/90

Sample Matrix/Media:

WATER

Date Analyzed:

11/30/90 12/05/90

Analytical Method:

EPA 601

Limit of Concentration Detection Analyte CAS # (ug/L) (uq/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 0.2 ND 1,1-Dichloroethane 75 - 35 - 3ND 0.4 Trans-1,2-Dichloroethene 156-60-5 ND 0.4 Cis-1,2-Dichloroethene 156-59-2 1.2 0.4 1,2-Dichloroethene (total) 540-59-0 1.2 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 3.0 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 2-Chloroethylvinylether 100-75-8 ND 1 Bromoform 75-25-2 ND 0.7 Tetrachloroethene 127-18-4 0.9 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 - 1ND 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



Page 13 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: METHOD BLANK

Lab Number:

9012005-07A

WATER

Date Sampled:

Date Received:

Date Analyzed: 12/05/90

Sample Matrix/Media: Analytical Method:

EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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	i
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

Page 14 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: See below 11/30/90 Date Sampled: Lab Number: 9012005 Date Received: 11/30/90 Sample Matrix/Media: Water Date Extracted: 12/05/90 Extraction Method: EPA 3510 Date Analyzed: 12/08/90 Analytical Method: EPA 8015

Laboratory No.	Sample Identification	Diesel (µg/L)	Limit of Detection (µg/L)				
-01	MW-1	ND	50				
-02	MW-5	ND	800ª				
-03	MW-9	ND	50				
-04	MW-8	ND	50				
-05	MW-7	ND	50				
-MB	METHOD BLANK	ND .	50				

ND = Not detected at or above limit of detection

a Detection limit increased due to weatherd gasoline present in sample.

Page 15 of 15

Results of Analysis for Harsch Investments

Client Reference: 29196.00 Clayton Project No. 90120.05

Sample Identification: See below Date Sampled: 11/30/90
Lab Number: 9012005 Date Received: 11/30/90
Sample Matrix/Media: Water Date Analyzed: 12/06/90
Analytical Method: EPA 418.1

Laboratory No.	Sample Identification	Total Recoverable Petroleum Hydrocarbons (mg/L)
-01	MW-1	<1
-02	MW-5	2
-03	MW-9	1
-04	MW-8	<1
-05	MW-7	<1
-MB	METHOD BLANK	<1
Limit of detecti	ion:	1

< Less than the indicated below limit of detection (LOD)



A Marsh & McLennan Company

DEVILLE EUD I YDUDATURY

IIL MOL	חטווכ	LADONA I OR I
ANA	LYTICAL	SERVICES

For Clayton Use Only	Page of
Project No.	
Batch No. 90	12005
Client No.	
Date Logged In 2	3 90 By

	T								Dai	e Lugi	Jeo III	<u> 100 J</u>	<u> </u>	() py		
Name Laurene Compton	Title				ase Or						Clie	∍nt Jot	o No. (Quart	ely S	ampling
Name Laurent Compton Company Claurtur Mailing Address City, State, Zip Telephone No Tele		Dept		, H	Nam Con Add City	10 H	0-(5	ch	True	c stro	مدما			3.8.4.	-15/	pr
Mailing Address		·		1X 유	<u>ල (Con</u>	pany								1	Dept.	
City, State, Zip				lg ≶	Add	ress										
Date Results Required Rush Charges Authorized?	ax No.				City	State	i, Zip									
Normal TAT Ses 12 No	Phone Result	Campic	I Samplee are:			an 'X'	in the	box be	AN. elow to	ALYSI indica	S REC	UEST Jost; E	ED Inter a	'P' if Pre	servative	e added. *)
Special Instructions (method, limit of detection, etc.)			ing Water	Containers			Ly as	d/		/		7	7	7	77	
		1 .	cted in the	ો હૈ			(a)	Y 5%	" /			/ /	/ /	/ /		
Explanation of Preservative: Pres. WHU		State of New York			/a5		7	/ /	Ζ,	/	Ι.	Ι,	//		, 	
CLIENT SAMPLE IDENTIFICATION	DATE SAMPLEI	MATRIX/ D MEDIA	AIR VOLUME (specify units)		d									/,		OR LAB E ONLY
$m\omega$ -1	11-30-9	U WATER	40ML	12	XP			<u>-</u>						C	IAB	
			LITER	2		×								Ĭ	Ch	
			LITER	2			K								FF	<u> </u>
—		1	40ML	2				X							/G,H	
MW-5			40 ML	2	X										2 A)B	
1		1 1	LITER	2		×										<u> </u>
			LITTER	2		-	X								Ft	-
			40ML	2	-		•	×							10	
	+	+- v -	70/110		·			-^-					 		KG,t	1
	_		<u> </u>													
												لــــــ				
CHAIN Relinquished by M. Souhaman		Date/Time 11-30-50		Rece	ived by	:		1.1	1.		21/	<u>/</u>	1	Date/Tin		
OF Relinquished by:		Date/Time		Rece	ived at	Lab b	y:LC	10/6	/ A	SU	18			Date/Tin	79 130/4	105:4
CUSTODY Method of Shipment:			Sam	ole Con	dition	Upon I	Roceip	t: C	Ac	ceptat	əle		Other	r (explain	1)	
Authorized by:		Date														ţ
(Client Signature Must Accompany	(Client Signature Must Accompany Request)															
Piease return completed form and samples to one of th	e Clayton En	vironmental	Consultants, Inc	. labs	listed b	elow:	CE	008	84		•		DISTRIE	BUTION:	;	

22345 Roethel Drive Novi, MI 48050 (313) 344-1770

Raritan Center 160 Fieldcrest Ave, Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

WHITE - Clayton Laboratory YELLOW - Clayton Accounting PINK - Client Copy

6/90



REQUEST FOR LABORATORY ANALYTICAL SERVICES

A Marsh & McLennan Company

	يان جيزين بتناقا عنباك
For Clayton Use Only	Page of
Project No.	
Batch No. 90	12005
Client No.	
Date Logged In 12	3/90 By TS
Client Job	Nd. Quarterly Samo
Questone	

O Name / Quick / Cov of	T:41								Dat	e Logo	ged In	121	3/9	О Ву	IS	
Q Name / awene Compton	Title	 			hase O						Cli	ent Jól	b No.		vacterly	2
Company Clayton Mailing Address City, State, Zip		Dept		亅╮씱	O Cor Add City	ne /	ars	sch	T_{Ω}	105/1	nes	+			W I Care) Sarah
City, State, Zip				Ϋ́Ε̈́	Θ Cor	npany								1	Dept.	
Telephone No.	ax No			≩ تا⊦	Add	ress										
Date Results Required. Rush Charges Authorized? P	hone Results	Sample		├	City	, State	, Zip			11110						
Normal TAT Yes SINO		1 campic	is are: if applicable)	STG	(Enter	an 'X	' in the	box b	MA ot wole	ALYSI	S REC	QUEST	ED	Drif Dea	servative a	ارو د داده
Special Instructions. (method, limit of detection, etc.)			ing Water	Containers	<u> </u>		_/s	. /		7	7	7	7	7	Servative a	100eo.
,		1	-	T To			63		//	/ /	/		//	/ /		
Explanation of Preservative: Prus. w) Hc	l		cted in the of New York	ठ				3/1					/	//	//	
CLIENT SAMPLE IDENTIFICATION	DA'TE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)		O	100								/,		LAB ONLY
MW-9	11/30/90	WATER	40 ML	2	X									10	3AP	
			LITER	2		X								-	I Cal	
	1 1	\	40 Liner	2			X								1	
1			40 ML	2				X							EF	
MW-8			40 ML	2	XP			-							V C,H	
			LITER	2		X	-								24 A, E	
	 					\sim	-12								1-6-1	
	 		LITER	2			K								EF	=
V	V	\downarrow	40 ML	2				×	!					1	V Cot	
														~- -	¥	
											_					
CHAIN Relinquished by M Sourcement	/	Date/Time 11-30-90	5735	Rece	ived by				L		1!	<u>-</u> -	D	ate/Tim	8	
OF Relinquished by:		Date/Time	<u> </u>		ived at		1. /./	///	<u> </u>	C///	//-			ate/Tim	10.11/20 /	
CUSTODY Method of Shipment					le Con			ass.	71.] Acc	<u></u>	lo.			e ///30/ (explain)	90 5:40
· · · · · · · · · · · · · · · · · · ·				Camp		-11011	SPOIL E	Accelli	· L	1 Yec	abiao	ie	il	Other	(axhigin)	1
Authorized by:	Da	ite														}
(Chent Signature Must Accompany Re																1
Flease return completed form and samples to one of the	Clayton Envir	onmental C	Consultants, Inc.	labs l	isted be	olow:	CE	800	85		~		~~~			

22345 Roethel Drive Novi, ML 48050 (313) 344-1770 Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040 400 Chastain Center Blvd., N.W. Suite 490

Suite 490 Kennesaw, GA 30144 (404) 499-7500 1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 DISTRIBUTION:

WHITE - Clayton Laboratory
YELLOW - Clayton Accounting

6/90

PINK - Client Copy



A Marsh & McLennan Company

REQUEST FOR LABORATORY

ANALYTICAL SERVICES

	For Claylon Use Only Page of
	Project No.
İ	Batch No. 9012005
	Client No.
	Date Logged In 12 3 90 By 15
	Client Job No. Quarterly Sampling
١٠	restment
_	Dept.
ΟV	ANALYSIS REQUESTED v to indicate request; Enter a 'P' if Preservative added. ')
/	
,	
7	FOR LAB USE ONLY
	O SAJB
	Cip
	EE
	V G.H

O NI	1				T										Da	te Log	ged In	12	3_1	90 By	15	
E P Name	Laure.		empton		Title			·				Order N					Cli	ent Jot	b No.	Dunc	tecly	sampling
Name Comp Mailin City, Telep	Dany Jany	aytor	Δ					Dept.	,	SEND	Nar	me H	arso	h 1	nues	1ne	_t_	<u>-</u>		A Aira	<u> </u>	
DO City.	State Zio						——			વ	O Co	mpany									Dept.	
Telep	hone No			Telef	fax No.					่ ไผู ≧ี	Add	dress										
Date Result	ts Required:	Rush Cl	harges Author	orized? P	Phone R	esults	Tea	la		+	UR	y, State	e, Zip			****	·^ 255	-				
Hormal	TXIT		Yes LAN	Vo			1 04	•	s are: if applicable)	ers !	(Ente	r an 'X	' in the	box b	Aiv elow to	indica	IS HEU ite req	QUEST pest; E	[ED Inter a	ı 'P' if Pr	eservativ	/e added. *
Special Inst	ructions: (me	∍thod, lim ^r	nit of detection	n, etc.)		,	1		ing Water	Containers			15	+/		7	7	7	7	7	77	
* Explanation	on of Preserv	vative: ∓	nes.u	U/H	l_				cted in the of New York	ठ		/							/	//	/_	/
(CLIENT SAM	PLE IDEN	NTIFIC ATION	1		ATE IPLED		TRIX/ DIA	AIR VOLUME (specify units)) Z	/			Ž	<i>?</i> \`					//		OR LAB SE ONLY
Mw-	-7				11-3	50-90	W	ATEC	40 ML		X	7)5A	. R
						'			LITTER	1		×									1	. N
									LITTER	2			×Υ	·							E	.E
<u></u>						↓	7	-	40 ML	2				X							V/C2	
Tri	b B	lank	(OIIIa	90)			H	20	40ml	1					X						₩,	}
	T																					
					1					1		1	 					 		 	· 	
					+					 			 			 	 	 		 	·	
	,,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>				_		<u> </u>		<u> </u>	1												
·					<u></u>		<u></u>										 					
CHAIN	Relinquishe	ad pa. W	Spangon	ronl	1		Date/ 7/-3	Time ウ <u>タ</u> り	5:35 PM	Recei	ived by	y:		11	10	01	11			Date/Tir		
OF	Relinquishe	ad by:	Julib St	ZIV			Date/	Time		Rece	ived at	t Lab b	y:W-	46	HIS	1/1				Date/Ti	ne///30	90 5:40
CUSTODY	Method of S	Shipment:	. /							Samp	ole Cor	ndition	Upon 🗗	eceipt	r: [Acc	ceptab	ole		Othe	r (explair	n)
Authorized	by:					Da	ate			1												
	(Clien	it Signatur	ure <u>Must Acco</u> i	mpany P	lequest)					1					- - -							
Please retur	rn completed	form and	J sampl es to r	one of the	e Claytor	n Envir	ronme	ental C	Consultants, Inc	. labs	isted t	pelow:	- CE	300	385					DUTION		

22345 Roethel Drive Novi MI 48050

(313) 344-1770

Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

DISTRIBUTION:

6/90

WHITE - Clayton Laboratory YELLOW - Clayton Accounting Client Copy PINK



APPENDIX H

LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS FOR QUARTERLY GROUNDWATER SAMPLING APRIL 1991 1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 Fax (415) 426-0106



April 18, 1991

Ms. Robyn Seymour CLAYTON ENVIRONMETAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, CA 94566

> Client Ref. 33909.00 Clayton Project No. 91041.76

Dear Ms. Seymour:

Attached is our analytical laboratory report for the samples received on April 16, 1991. 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 (415) 426-2657.

Sincerely,

Ronald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/tb

Attachments

CE 00833



Page 2 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: MW-7
Lab Number: 9104176-01A
Sample Matrix/Media: WATER
Preparation Method: EPA 5030

Date Sampled: 04/16/91
Date Received: 04/16/91
Date Prepared: 04/17/91
Date Analyzed: 04/17/91

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50



Page 3 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: MW-14

Date Sampled: 04/16/91

Lab Number:

9104176-02A

Date Received: 04/16/91

Sample Matrix/Media: Preparation Method:

WATER EPA 5030

Date Prepared: 04/17/91 Date Analyzed: 04/17/91

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	2.9	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	0.5	0.4
Gasoline		ND	50



Page 4 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: MW-1

Lab Number:

9104176-03A

WATER

Preparation Method: Analytical Method:

Sample Matrix/Media:

EPA 5030

EPA 8015/8020

Date Sampled: 04/16/91 Date Received: 04/16/91

Date Prepared: 04/17/91 Date Analyzed: 04/17/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline	 ,	ND	50

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



Page 5 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: METHOD BLANK

Sample Matrix/Media:

Lab Number:

9104176-04A

WATER

Preparation Method: Analytical Method:

EPA 5030 EPA 8015/8020 Date Sampled: Date Received:

Date Prepared: 04/17/91

Date Analyzed: 04/17/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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

Page 6 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: Lab Number:

See below 9104176 Date Received: 04/16/91 Date Extracted: 04/16/91 Date Analyzed: 04/17/91

Sample Matrix/Media: Analytical Method:

Extraction Method:

WATER EPA 8015 EPA 3510

Lab No.	Sample I.D.	Date Collected	Diesel Fuel (ug/L)	Detection Limit (ug/L)		
-01C	MW-7	04/16/91	ND	50		
-02C	MW-14	04/16/91	230	50		
-03C	MW-1	04/16/91	ND	50		
-04A	METHOD BLANK		ОИ	50		

ND = Less than the indicated limit of detection (LOD)

^{-- =} Information not available or not applicable



Page 7 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: MW-7

Date Sampled:

04/16/91

Lab Number:

9104176-01E

Date Received: 04/16/91

Sample Matrix/Media: Analytical Method:

WATER EPA 601 Date Analyzed: 04/17/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons	-		
Chloromethane	74-87-3	ND	20
Bromomethane	74-83-9	ND	20
Vinyl chloride	75-01-4	ND	10
Chloroethane	75-00-3	ND	10
Methylene chloride	75-09-2	ND	50
1,1-Dichloroethene	75-35-4	ND	5
1,1-Dichloroethane	75-35-3	ND	10
Trans-1,2-Dichloroethene	156-60-5	ND	10
Cis-1,2-Dichloroethene	156-59-2	90	10
1,2-Dichloroethene (total)	540-59-0	90	10
Chloroform	67-66-3	ND	10
1,2-Dichloroethane	107-06-2	ND	8
1,1,1-Trichloroethane	71-55-6	ND	10
Carbon tetrachloride	56-23-5	ND	20
Bromodichloromethane	75-27-4	ND	20
1,2-Dichloropropane	78-87-5	ND	10
Cis-1,3-Dichloropropene	10061-01-5	ND	10
Trichloroethene	79-01-6	200	8
Dibromochloromethane	124-48-1	ND	20
1,1,2-Trichloroethane	79-00-5	ND	20
Trans-1,3-Dichloropropene	10061-02-6	ND	20
2-Chloroethylvinylether	100-75-8	ND	30
Bromoform	75-25-2	ND	20
Tetrachloroethene	127-18-4	1,600	10
1,1,2,2-Tetrachloroethane	79-34-5	ND	10
Chlorobenzene	108-90-7	ND	20
1,3-Dichlorobenzene	541-73-7	ND	50
1,2-Dichlorobenzene	95-50-1	ND	100
1,4-Dichlorobenzene	106-46-7	ND	100
Dichlorodifluoromethane	75-71-8	ND	30
Trichlorofluoromethane	75-69-4	ND	10
Freon 113	76-13-1	ND	20

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



Page 8 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: MW-14

Lab Number: 9104176-02E Sample Matrix/Media: WATER

Analytical Method: EPA 601

Date Sampled: 04/16/91 Date Received: 04/16/91 Date Analyzed: 04/17/91

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	0.5	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
1,2-Dichloroethene (total)	540-59-0	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	4.6	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	0.4	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
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachlor oethene	127-18-4	16	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	i
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



Page 9 of 1:

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: MW-1 Lab Number: 9104

9104176-03E

Date Sampled: 04/16/91 Date Received: 04/16/91

Sample Matrix/Media:

WATER

Date Received: 04/16/91 Date Analyzed: 04/17/91

Analytical Method:

EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	2.8	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



Page 10 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: METHOD BLANK

Lab Number:

9104176-04A

WATER

Date Sampled:

Date Received:

Sample Matrix/Media: Analytical Method: EPA 601 Date Analyzed: 04/17/91

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		
1,2-Dichloroethene (total)	540-59-0	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		
2-Chloroethylvinylether	100-75-8	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	ИД	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



Page 11 of 11

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.76

Sample Identification: See below Date Sampled: 04/16/91 Lab Number: 9104176 Date Received: 04/16/91 Sample Matrix/Media: Water Date Extracted: 04/17/91 Extraction Method: Std. Method 5520B Date Analyzed: 04/18/91 Analytical Method: Std. Method 5520F

Laboratory No.	Sample Identification	Hydrocarbons (mg/L)
-01	MW-7	<5
-02	MW-14	<5
-03	MW-1	<5
-MB	METHOD BLANK	<5

< Less than the indicated limit of detection (LOD)



REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page
Project No.	

 L of	

	, , ,	*****	IOME SE	HVI	したさ	.			lo.	tch No.	$\overline{}$				
A Marsh & McLennan Company									Da	ich No.	_9	LO^{*}	41	7L	
· •									Cli	ent No.		1			
O Name Pober Summara	T								Da	te Lagge	d In 1	I /10	191	0	
Company Clay to Mailing Address City, State, Zip	Title GCO	Locu	14	Purc	hase (Order N	Jo.		1	coggo				By TS	·
Mailing Address		ODep	t.			me					Client	Jop No:	,		
City State Zio				10 0	ဥင	moany									
M. Talanka and A.				SEND		dress					<u></u>			Dept.	
	ifax No.			1 ‴≊	C	y, Stat	a 7ia		<u> </u>		you				
Date Results Required: Rush Charges Authorized?	Phone Results	Sample	es are:	1	T 1 <u>~</u>	, otal	9, ZIP	V.	44	ALVOID					
	<u></u>			Se	(Ente	r an 'X	" in the		AN of wole	ALYSIS	HEQUE	STED	= imi iz	Preservativ	
Someth Multi-T FDA A A Comment	-A.T	Drin!	cing Water	Containers			Z	77.		3	equesi	Liller	a P II	Preservativ	e added.
Sample Mill-14 1905, And Vaci Keno	191	* T C-"	and the	5	ł		ÓΥ	Y .3		YY W					
Special Instructions. (method, limit of detection, etc.) Sample MW-7, EPA601-48 hours Sample MW-14, 1905, PTE 1,051, 5520 Explanation of Preservative:	- 40Mous	State	of New York	8	ŀ	- Fi		.9	(0)(0)			/ /	/ ,		
		State	OLINEM LOUK	ă	1	LOS (\mathcal{S}_{1}	$\mathcal{X}_{\mathbf{\zeta}}$	y /				//	,
CLIENT SAMPLE IDENTIFICATION	DATE	MATRIX	AIR VOLUME	Number	1	(n'n		/	6.3				Ι.	/ . <i>F</i>	
TO THE TOTAL	SAMPLED	MEDIA	(specify units)	Ž	13		OV.	S	∾∕		/ /	′ /			OR LAB
MW-7	4116190	12.64	340ml (4) 816 (2)	7	1 7 .		/	Side of the state	Y	indicate.		{		US	E ONLY
MW-14		apter	8 1L (2)	9	100	IV						- 1	1	014	• F
	4/10/91	urte		17	1	X	大	1			T			02 A	<u> </u>
MW-1	4/16/91	lur. La	a	V	1/							+	 		2F
			- · · · ·	<u> </u>	-	 -	-	<u> </u>					 	03 A -	∍F
		 											<u> </u>	1	
		<u> </u>								Į.	[
	_1	}									_	 	 -	 	
· 						├─┤							 !		
	 									İ	1	1			
	1			1							 	1			
	1														
	·		<u> </u>				ı	ľ	1		1	1 /			
	1					-					+		 		
CHAIN Relinquished by: Promosum		Date/Time	(222		ـــــا	$\frac{\pi}{1}$	- 								
OF Relinquished by	na	7/16/9	C 2:20	Recei	ved by	N/V	~vt.	Well	,	//	, ,	1	P#9/	ingg, @	7-10
CUSTODY Heindustied by A The		439/179	@315	Recei	ved at	tab by	: 🚅	Lus	- /	3/2	///		Dail	Time 4/16/9	5.00
Method of Shipment:		11.0						leceipt	7	Accept	abla			· //	<i>' - '' - '</i> N
Authorized by: Robin Sumous		4 111					lanes 1			₹ vrcahi	avie	Ļ	7 00	er (explain)	′ 1
(Client Signature Must Accompany R	Da	te 4//4	2/7/	,	•										
				•	•										1
lease return completed form and samples to one of the	Clayton Enviro	onmental C	onsultants, Inc.	labs li	sted be	low:	·	CE (0849		_				
											ſ				

22345 Roethel Drive Novi, MI 48050 (313) 344-1770

Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144

(404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 DISTRIBUTION:

WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Copy

6/90

Western Operations

1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (415) 426-2600 Fax (415) 426-0106



April 24, 1991

Ms. Robyn Seymour CLAYTON ENVIRONMENTAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, Ca. 94566

> Client Ref. 33909.00 Clayton Project No. 91041.78

Dear Mr. Seymour:

Attached is our analytical laboratory report for the samples received on April 16, 1991. 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 (415) 426-2657.

Sincerely,

Ronald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/dt

Attachments

CE 00852



Page 2 of 7

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.78

Sample Identification: MW-9

Lab Number:

Sample Matrix/Media: Preparation Method: Analytical Method:

9104178-01A WATER

EPA 5030 EPA 8015/8020

Date Sampled: 04/16/91 Date Received: 04/16/91 Date Prepared: 04/18/91 Date Analyzed: 04/18/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50



Page 3 of 7

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.78

Sample Identification: METHOD BLANK Lab Number:

Sample Matrix/Media: Preparation Method: Analytical Method:

9104178-02A

WATER EPA 5030 EPA 8015/8020 Date Sampled: Date Received:

Date Prepared: 04/18/91 Date Analyzed: 04/18/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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

Page 4 of 7

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.78

Sample Identification: See below Lab Number: 9104178 Sample Matrix/Media: WATER Analytical Method: EPA 8015 Extraction Method: EPA 3510

Date Received: 04/16/91 Date Extracted: 04/18/91 Date Analyzed: 04/20/91

Lab No.	Sample I.D.	Date Collected	Diesel Fuel (ug/L)	Detection Limit (ug/L)
-01C	MW-9	04/16/91	ND	50
-02A	METHOD BLANK		ND	50

ND = Less than the indicated limit of detection (LOD)

^{-- =} Information not available or not applicable



Page 5 of 7

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.78

Sample Identification: MW-9

Date Sampled:

04/16/91

Lab Number:

9104178-01G

Date Received: 04/16/91

Sample Matrix/Media:

WATER

Date Analyzed: 04/19/91

Analytical Method: EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	3.3	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



Page 6 of 7

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.78

Sample Identification: METHOD BLANK

9104178-02A

Date Sampled:

Lab Number:

Date Received:

Sample Matrix/Media: Analytical Method:

WATER EPA 601 Date Analyzed: 04/19/91

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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

Page 7 of 7

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.78

Sample Identification: Lab Number:

Lab Number: Sample Matrix/Media: Extraction Method:

Analytical Method:

•••

See below 9104178 Water

Std. Method 5520B Std. Method 5520F Date Sampled: 04/16/91 Date Received: 04/16/91

Date Extracted: 04/18/91 Date Analyzed: 04/22/91

Laboratory No.	Sample Identification	Hydrocarbons (mg/kg)
-01	MW-9	<5
-MB	Method Blank	<5
imit of Detection:	•	5

< Less than the indicated limit of detection (LOD)

ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only Page of	,
Project No.	
Batch No. 9104178	
Client No.	
Date Logged In 4/14/91 By Rotar	

A Marsh & McLennan Company		ac	nach						Cli	ent No.		09	1 10)	
		3391	09									1 ,			
Company Sympan	Title (240)	olog	110-1	Pivo	hase O	rdon M			Da	te Logg		14/9		By Rotor	
Company Mailing Address City, State, Zip		1040	d.				0.				Client	Job No.			
Mailing Address		!!		실하	Co	mpany									
		· · · · · · · · · · · · · · · · · · ·		SEND	PAdd	dress								Dept.	
	fax No.			1 ‴≊	City	, State	a. Zio								
Date Results Required. Rush Charges Authorized? Yes X No	Phone Results	1 Campi	es are:	1					AN	AL YSIS	REQUE	STED			
Special Instructions: (method, limit of detection, etc.)	<u></u>	(check	if applicable)	Į	(Ente	r an 'X	in the	box b	elow to	indicate	e (eques	t; Enter	a 'P' if	Preservative	added. *\
papers manachons: (method, limit of detection, etc.)			king Water	Containers			B	_/		10 K	7			//	
* Explanation of Preservative		Colle	cted in the	ΙĒ]	A	949	y y	ON.	D ON					
	= HCP	State	of New York	₫		15	Z.	NA			/ /	/ /	′ /	' / /	
	DATE	1447004	LAIDVOLUME	Number	1	(0,0	X85	539	(3,9)	/ /					
CLIENT SAMPLE IDENTIFICATION	SAMPLED	MATRIX/ MEDIA		15	3	Zoo C		W	À.			/ /	′ /		RLAB
Muj-9				1-	1.96	Ym'c	8/	<u> </u>	Z	/				USE	ONLY
	4/16/91	wter	·	12	10	15/		-2-	4			- }		OIA	B
			12-11	2					[1	1 1 -	
		1.//	91	2			VP						+	- C.	
V		V	8400	2								- 	┼──	E	
		Ť	1000					V					 	VG.	H
	- 		<u> </u>								L	_1	1	Ì	
		<u></u>					- 1						1		
	· :												 	 	
							 [<u> </u>	
		`	:	, ,						ŀ	ļ	ŀ		ł	
		•										1			
				-				-	 -	 -			 		
Relinquished by: O /	<u> </u>	Date/Time					<u> l</u>		[_
CHAIN Relinquished by: Robum Sum	unu	Date/Time		Recei	ved by:	M	Son	ngr	n	1	<i>.</i>		Date/	Jimes, 4	9000
CLISTORY TRAINIQUISTION BY. // Son conce		Date/Time	1 57520	Recei	ved at	Lab by		Fia	- 1	215				Time #/	
Method of Shipment:				Samp	le Cond	fition U	pon A	leceipt)	Acce	otable			ner (explain)	2/3/4
Authorized by: Rohum Serial 1911	D-	A -		-			•	•			- 1070	L.		.e. (expidity	- 1
Authorized by: Robins Sund Accompany R (Client Signature Must Accompany R	eguest)				• •										
						<u> </u>									-
Please return completed form and sampl <mark>es to one of the</mark>	Clayton Enviro	onmental (Zonsultants, Inc.	labs li	sted be	low:	CI	E 00	859		1				

22345 Roethel Drive

Novi, MI 48050 160 Fieldcrest Ave. (313) 344-1770 Edison, NJ 08837 (201) 225-6040

Raritan Center

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

DISTRIBUTION:

WHITE - Clayton Laboratory YELLOW - Clayton Accounting PINK - Client Copy

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 Fax (415) 426-0106



April 30, 1991

Ms. Robyn Seymour CLAYTON ENVIRONMENTAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, Ca. 94566

> Client Ref. 33909.00 Clayton Project No. 91041.97

Dear Ms. Seymour:

Attached is our analytical laboratory report for the samples received on April 17, 1991. 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 (415) 426-2657.

Sincerely,

Ronald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/dt

Attachments

Page 2 of 13

Results of Analysis for Harsch Investments

33909.00 Client Reference: Clayton Project No. 91041.97

Sample Identification: MW 2

Lab Number: Sample Matrix/Media: 9104197-01A

WATER

Preparation Method: Analytical Method:

EPA 5030

EPA 8015/8020

04/17/91 Date Sampled: Date Received: 04/17/91

Date Prepared: 04/23/91

Date Analyzed: 04/23/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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



Page 3 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: MW 3 Lab Number:

9104197-02A

Date Sampled: 04/17/91 Date Received: 04/17/91

Sample Matrix/Media: Preparation Method:

WATER EPA 5030 Date Prepared: 04/23/91

Analytical Method:

EPA 8015/8020

Date Analyzed: 04/23/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline	172		
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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

Page 4 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: MW 8B

Lab Number:

9104197-03A

Date Sampled: 04/17/91
Date Received: 04/17/91
Date Prepared: 04/23/91

Sample Matrix/Media: Preparation Method:

WATER EPA 5030 Date Prepared: 04/23/91 Date Analyzed: 04/23/91

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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

Page 5 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: MW 4

Lab Number:

9104197-04A

Date Received:

04/17/91 04/17/91

Sample Matrix/Media: Preparation Method:

WATER EPA 5030 Date Prepared:

Date Sampled:

04/23/91

Analytical Method:

EPA 8015/8020

04/23/91 Date Analyzed:

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			,
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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

Page 6 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: METHOD BLANK

9104197-06A

Date Sampled:

Lab Number:

Date Received:

Sample Matrix/Media: Preparation Method:

WATER EPA 5030

Date Prepared: 04/23/91 Date Analyzed: 04/23/91

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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

Page 7 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: MW 2

Lab Number:

9104197-01E

Sample Matrix/Media: Analytical Method:

WATER

EPA 601

Date Sampled: 04/17/91 Date Received: 04/17/91

Date Analyzed: 04/23/91

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
1,2-Dichloroethene (total)	540-59-0	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	78-8 7- 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
2-Chloroethylvinylether	100-75-8	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	i
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



of 13 Page 8

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: MW 3 Lab Number:

9104197-02C

Sample Matrix/Media:

WATER

Date Sampled: Date Received:

04/17/91

Analytical Method:

EPA 601

04/17/91 Date Analyzed: 04/23/91

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	3.0	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	ИD	0.4

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

Page 9 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: MW 8B

Lab Number: 9104197-03E

Sample Matrix/Media: WATER

Date Sampled: 04/17/91

Date Received: 04/17/91

Date Analyzed: 04/24/91

Analytical Method: EPA 601

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	ИD	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	ИД	0.4
Cis-1,2-Dichloroethene	156-59-2	6.8	0.4
1,2-Dichloroethene (total)	540-59-0	6.8	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	7. <i>7</i>	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
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	1.1	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



Page 10 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: MW 4

Date Sampled: 04/17/91

Lab Number:

9104197-04C

Date Received: 04/17/91 Date Analyzed: 04/23/91

Sample Matrix/Media: Analytical Method:

WATER EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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

Page 11 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: METHOD BLANK

Date Sampled: Date Received:

Lab Number:

9104197-06A WATER

Date Analyzed: 04/23/91

Sample Matrix/Media: Analytical Method:

EPA 601

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 chloriđe	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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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

Page 12 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: See below
Lab Number: 9104197
Sample Matrix/Media: WATER
Analytical Method: EPA 8015
Extraction Method: EPA 3510

Date Received: 04/17/91 Date Extracted: 04/18/91 Date Analyzed: 04/20/91

Lab No.	Sample I.D. Date Collected		Diesel Fuel (ug/L)	Detection Limit (ug/L)
-01I	MW 2	04/17/91	ND	50
-02E	MM 3	04/17/91	ND	50
-03I	MW 8B	04/17/91	ND	50
-04E	MW 4	04/17/91	ND	50
-06A	METHOD BLANK		ИД	50

ND = Less than the indicated limit of detection (LOD)

-- = Information not available or not applicable

Page 13 of 13

Results of Analysis for Harsch Investments

Client Reference: 33909.00 Clayton Project No. 91041.97

Sample Identification: See below Date Sampled: 04/17/91 Lab Number: 9104197 Date Received: 04/17/91 Sample Matrix/Media: Water Date Extracted: 04/18/91 Extraction Method: Std. Method 5520B Date Analyzed: 04/22/91 Analytical Method: Std. Method 5520F

MW 2	<5
MW 3	<5
MW 8B	<5
MW 4	<5
ethod Blank	<5
1	

< Less than the indicated limit of detection (LOD)



REQUEST FOR LABORATORY ANALYTICAL SERVICES

A Marsh & McLennan Company

For Clayton	Use Only Page
Project No.	
Batch No.	9/04/97
Client No.	
Date Logge	d In 4/18/91 By 75
	Client Job No. 33909,00
	Dept.

a reception company							Clie	nt No.		 ,]
O Name Ko							Date	Logged I	ባ 4/	18/9	1 By 15	
Company Clauton Title			ase Or					C	lient Jo	b No.	33909,00	
Mailing Address Dep	l.		Nan	10								\neg
Company Court Do Dep		볿호	Nam Com Add City	pany							Dept.	
Telephone No Telefax No.		ਲੋ≧	Add	ress	 -			···				
Date Results Required: Rush Charges Authorized? Phone Results Complete	o oro:	-	City	State	, Zip		A A 1 A	1 1/0/0 5/5	OUEO			\Box
I I Yes I'l No I I I'm I Ouripie		ers	(Enter	an 'X'	in the	box be	ANA low to i	ALYSIS FIE	:QUEST quest: F	IED Intera '	P' il Preservative added	۱. ۱
Special Instructions (method, limit of detection, etc.) (check if applicable) Drinking Water					6	1/6	1	161	7	7	///////////////////////////////////////	-4
I	cted in the	Containers			O'N'		Y /	N. C.		/ /		- 1
l' Explanation of Preservative: PIEX 5320 Crate	of New York			15		÷.//5	The s	Y /				
P= Hel P= Hel State	· · · · · · · · · · · · · · · · · · ·	ĕ	X	(C)	X 755	Yu Lif	9 89		/ ,		///_	
CLIENT SAMPLE IDENTIFICATION DATE MATRIX/ SAMPLED MEDIA	AIR VOLUME (specify units)	Number of	KA KA	`` \\	X			//	//		FOR LAB USE ONLY	
MW 2 4-17-91 WATES	, , , , , , , , , , , , , , , , , , , ,	4	\mathbf{X}								DIABCD	\dashv
	40 mc	4	-22-3	X					 		I F. F.Co. H	廾
	Liter	2		/ `	X					┝╼╾┼		4
	Liter	2				X						
mw 3	40 ML	2	X			4			 		0010	\dashv
	40 ML	2	7.	X					 	╌┼	02AB	\dashv
		~		-^`	$\overline{}$				 			
	LITER	_'_			\triangle				-		<u> </u>	
V V	LHER	1				X				·	WF	
											4	٦
									1			\neg
CHAIN Relinquished by M Spanner P-17-11	5:15 PM	Recei	ved by:							1,3D	ate/Time	\dashv
OF Relinquished by: Date/Time			ved at		/: /	<i></i>		BR			ate/Time 24/17 6, 51	<u>;</u> +
CUSTODY Method of Shipment:		~				Receipt:	70	Accepta	ble		Other (explain)	2/
Authorized by: M. Son upnor Date 4.7 (Client Signature Must Accompany Request)		•			•		<i>,</i> ↔	,		hl	(+ 	
Please return completed form and samples to one of the Clayton Environmental	Consultants, Inc.	labs li	sted be	elow:	-	വെ	25		7.	ISTRIBI	UTCOM	\dashv

22345 Roethel Drive Novi, MI 48050 (313) 344-1770

Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144

(404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

6/90

WHITE - Clayton Laboratory YELLOW - Clayton Accounting PINK - Client Copy

layton ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

A Marsh & McLennan Company

For Clayton Use Only	Page Z of Z
Project No.	
Batch No. 910	1197
Client No.	
Date Logged In 4/18	91 By 75
Client Nob No	33909.00
<u> </u>	Dept.
ANALYSIS REQUESTED below to indicate request; Enter	r a 'P' if Preservative added. *
2/ / 2/ /	/////
7 / 37 (/ /	
	FOR LAB
	USE ONLY
	O3ABCD
	F.E.G.H
	1 1 7 7
	I VKL
	OYA.B
	1 2
	1 1/1/ =
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ 	1 V F
1 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	1 05A
LAPI I	Date/Time
- A 11/12	
of Black	Date/Time 4 7 9 513
f: Acceptable	Other (explain)

P Name Kobyn Scymour	Title			Durah						35-	/	<u> </u>	
			Purch	nase C	rder N	D				Chent	ob No.	33909.00	
Mailing Address	Mailing Address				Na	ne							
Company Clayton Mailing Address City, State, Zip			······································	温草	5	ne npany dress v. State		<u>.</u> .					Dept.
Telephone No Telefa	y No			∞ੁ≨	Add	ress	-p:						
Date Results Required. Rush Charges Authorized? P	hone Results	Commis		 -	I CII	, State	, ZIP	·					
☐ Yes ☐ No		Cumpic		٤	(Ente	ran 'X'	in the	box he	AN.	ALYSIS indicate	REQUES	STED	'P' if Preservative added. *)
Special Instructions (method, limit of detection, etc.)			f applicable)	Containers	7=:::0		-			/ 3	/ June St.	Enter a	Preservative added. 1)
,			ing Water	Pork DLUME by units)					/////				
Explanation of Preservative: BTEX	20		cted in the	Įğ						<u>بر کرنم</u>	0	/ /	/////
Partie Partie Partie		State	of New York	ŏ		6° 0		% 04	Z^{ζ} &	1/29			
	DATE	MATRIX/	AIR VOLUME	Number	10	1° 2%		0.X	899	dal I		/ /	/ / /
CLIENT SAMPLE IDENTIFICATION	SAMPLED		(specify units)	힐	15		18	アス	-\$ / \	XX	/ /		FOR LAB
mw 8 B	4-17-91		r .	4	\checkmark			$\overline{}$	" —1			/ _	USE ONLY
	1	WHIEK	40 mc		20						 		03ABCD
	 		40 ML	4		$ \Delta $]						E E GH
			LITER	2			\times	 	1				177
√			LITER	2				X					V/RI.
mw 4			40 ML	2	\overline{X}								OYAB
			40ML	2	<u> </u>							+	- 0,4
				-			$\overline{}$						La Carl
			LITER				\bowtie						II. E
V	V	•\/	LITER					\bowtie	- [[VF
TRIP BLANK		WATER	8 40m	7					X				OSA
TRIP BLANK Hel		N	d	7					Yρ			 	1/2
CHAIN Relinquished by: M. Sprigner		Date/Time	515 PM	Receiv	ved by		/		<i>/</i> ///		171		Date/Time
OF Relinquished by:		Date/Time	5/3 MM				/	<u>/</u>	- A	1	18/	$^{2}-1$	Date/Time
CUSTODY CUSTODY													
Method of Shipment:		,-		Samp	ie Con	aition	rbou F	recept:	12	Accep	otable		Other (explain)
Authorized by. M Sprigman	Da	ate <u>4-1</u>	7-91										
(Client Signature Must Accompany Re			,										·
Please retern completed form and samples to one of the	Clayton Envir	onmental C	Consultants, Inc.	labs li	isted b	elow:	- CI	€ 008	336		Т		

22345 Roethel Drive Novi, MI 48050 (313) 344-1770

Rantan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144

(404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

DISTRIBUTION:

WHITE - Clayton Laboratory YELLOW - Clayton Accounting PINK - Client Copy

6/90

Western Operations

1252 Quarry Lane P.O. Box 9019 Pleasanton, CA 94566 (415) 426-2600 Fax (415) 426-0106



May 8, 1991

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

> Client Ref. 34683.07 Clayton Project No. 91050.24

Dear Mr. Silva:

Attached is our analytical laboratory report for the samples received on May 1, 1991. 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 (415) 426-2657.

Sincerely,

Ronald H. Peters, CIH

Foreldt. Pet

Director, Laboratory Services

Western Operations

RHP/dt Attachments

CE 00860



Page 2 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91050.24

Sample Identification: MW-5 Lab Number: 9105024-01A Sample Matrix/Media: WATER

EPA 5030

Preparation Method: Analytical Method: EPA 8015/8020

Date Sampled: 05/01/91 Date Received: 05/01/91 Date Prepared: 05/02/91 Date Analyzed: 05/02/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			<u> </u>
Benzene	71-43-2	1,300	8
Toluene	108-88-3	45	6
Ethylbenzene	100-41-4	370	6
Xylenes	1330-20-7	100	8
Gasoline		4,000	1,000

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



Page 3 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91050.24

Sample Identification: METHOD BLANK Lab Number:

9105024-03A

Date Sampled:

Date Received:

Sample Matrix/Media: Preparation Method:

WATER EPA 5030 Date Prepared: 05/02/91 Date Analyzed: 05/02/91

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline	·	ND	50

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



Page 4 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91050.24

Sample Identification:

See below 9105024 WATER Date Received: 05/01/91
Date Extracted: 05/02/91

Lab Number: Sample Matrix/Media:

a:

Date Extracted: 05/02/91 Date Analyzed: 05/03/91

Analytical Method: Extraction Method:

EPA 8015 EPA 3510

Lab No.	Sample I.D.	Date Collected	Diesel Fuel (ug/L)	Detection Limit (ug/L)
-01F	MW-5	05/01/91	ND	500
-03A	METHOD BLANK		ND	50

ND = Less than the indicated limit of detection (LOD)

^{-- =} Information not available or not applicable



Page 5 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91050.24

Sample Identification: MW-5

Lab Number:

9105024-01C

WATER

Sample Matrix/Media: Analytical Method:

EPA 601

Date Sampled: Date Received: 05/01/91 05/01/91

Date Analyzed: 05/04/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Purgeable Halocarbons			
Chloromethane	74-87-3	ND	6
Bromomethane	74-83-9	ND	7
Vinyl chloride	75-01-4	ND	, 5
Chloroethane	75-00-3	ND	5
Methylene chloride	75-09-2	ND	20
1,1-Dichloroethene	75-35-4	ND	20
1,1-Dichloroethane	75-35-3	ND	4
Trans-1,2-Dichloroethene	156-60-5	ND	4
Cis-1,2-Dichloroethene	156-59-2	ND	4
1,2-Dichloroethene (total)	540-59-0	ND	4
Chloroform	67-66-3	ND	5
1,2-Dichloroethane	107-06-2	ND	3
1,1,1-Trichloroethane	71-55-6	ND	ა 5
Carbon tetrachloride	56-23-5	ND	6
Bromodichloromethane	75-27-4	ND	7
1,2-Dichloropropane	78-87-5	ND	5
Cis-1,3-Dichloropropene	10061-01-5	ND	5
Trichloroethene	79-01-6	ND	3
Dibromochloromethane	124-48-1	ND	6
1,1,2-Trichloroethane	79-00-5	ND	6
Trans-1,3-Dichloropropene	10061-02-6	ND	6
2-Chloroethylvinylether	100-75-8	ND	10
Bromoform	75-25-2	ND	
Tetrachloroethene	127-18-4		7
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Chlorobenzene	108-90-7	ND	5
1,3-Dichlorobenzene	541-73-7	ND NO	7
1,2-Dichlorobenzene	95-50-1	ND ND	20
1,4-Dichlorobenzene	106-46-7	ND	40
Dichlorodifluoromethane	75-71-8	ND	40
Trichlorofluoromethane	75-71-8 75-69-4	ND	10
Freon 113		ND	4
	76-13-1	ND	6

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



Page 6 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91050.24

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9105024-03A

Date Received: Date Analyzed: 05/04/91

Sample Matrix/Media: Analytical Method:

WATER **EPA 601**

Limit of Concentration Detection Analyte CAS # (ug/L) (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 1,2-Dichloroethene (total) 540-59-0 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 0.6 ND 1,1,2-Trichloroethane 79-00-5 ND 0.6 Trans-1,3-Dichloropropene 10061-02-6 ND 0.6 2-Chloroethylvinylether 100-75-8 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 - 7ND 2 1,2-Dichlorobenzene 95 - 50 - 1ND 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

0.6

ND

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

Page 7 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91050.24

Sample Identification: Lab Number: Sample Matrix/Media: Extraction Method: Analytical Method: See below 9105024 Water

Std. Method 5520B Std. Method 5520F Date Sampled: 05/01/91 Date Received: 05/01/91

Date Extracted: 05/02/91 Date Analyzed: 05/02/91

Laboratory No.	Sample Identification		Hydrocarbons (mg/L)
-01	MW-5	4	<5
-MB	Method Blank		< 5
imit of Detection	:		5

< Less than the indicated limit of detection (LOD)



REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

A Marsh & McLennan Company

Project No. Batch No. 9/05024 Client No. Date Logged In 5/2/91 By 75 Client Jbb Nb. 34683.07 SILVA
Client No. Date Logged In 5/2/91 By 75 Client Job No. 346.63.07
Client No. Date Logged In 5/2/91 By 75 Client Job No. 346.63.07 SILVA
SILVA
SILVA
SILVA
/ Dept.

ONama	. 7										Dat	te Log	ged In	<u>.5</u> /	29	<u>/В</u>	<u> 75</u>	
L Come	RICHARD	>/LVA	Title			L	ase O						Cli	ent Jot	b Nb.	346	B3.0	7
P P Mailin	on Address	H FNVESTM	LEUT	Dept	·	! ~ !!	Nan Con Add	10 Z	1641	4~D	5	LL-YA						
Best	State, Zio					Äğ	O Cou	npany	CH	4717	21/						Dept.	
Teleo	hone No		Felefax No.			l¤ ₹	Add	ress										
		h Charges Authorized					City	, State	, Zip			44.345					·	
MORMA	LTAT	Yes No		Carripio	s are: if applicable)	Containers	(Enter	an 'X'	in the	box be	AN of wole	ALYSI indica	S REC	JUES I Jest; E	TED Enter a	'P' if P	reservativ	added. *)
		, limit of detection, etc			ing Water	Itai			D.	1	M	13/	7	$\overline{\mathcal{I}}$	7	7	17	
14012,	MAZ 2 4	EEK TURNA	ROUND		cted in the	ું હું			6 6 6	Wast.	8° /	~ /			/ /			
* Explanation	on of Preservative	Pres. W/H	cl		of New York	ğ	ر ا	60,0							/	/,	/	
(CLIENT SAMPLE	IDENTIFIC ATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Numbe	15 4			10 K	16		3/×	3/				OR LAB E ONLY
	MW-5		5-1-91	HZO	HOMES	2	XP									[,	OLAF	_
					40mis	3		X									1	SE
					LITER	2				X								0
	<u> </u>		业	*	LITER	2					Xρ						V H.	٢
TRIP	BLAUK	£0041991	5-1-91	K20	40 mes	I						XΡ					024	
TRIP	BLANK	#0042491	5-1-91	<u>*</u>	40mls	1					_		X				NB	
										ļ								
				,													·	
				1														
-														$\neg \dagger$		 -		
CHAIN	Relinquished by	Fichand for	ha	Date/Time	1420 pm.	Rece	ived by	 :				- -1		J		Date/T	ime	
OF	Relinquished by			Date/Time	1 100 100	Rece	ived at	Lab by	y: 7		1/.	10	lus	——— —		Date/L	imp, 19,	4:200
CUSTODY	Method of Shipn	nent:	•			Samp	ole Con	dition	Upon F	leceipt	1	Acc				Oth	e/ (explain)
Authorized	by: Zich			ate <u>5-/</u>	-9/	1	, :		* . * * f *									
<u> </u>	, ,	nature <u>Must Accompa</u>									- m							
Please retu	in completed form	and samples to one o	of the Clayton Envir	onmental (Consultants, Inc	. labs	listed b	elow:	CE	008	67			1	четріє	וחודווו	M٠	j

22345 Roethel Drive

Raritan Center Novi, MI 48050 160 Fieldcrest Ave. Edison, NJ 08837 (313) 344-1770 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144 (404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

WHITE - Clayton Laboratory YELLOW - Clayton Accounting

- Client Copy PINK

6/90



APPENDIX I

LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS FOR QUARTERLY GROUNDWATER SAMPLING JULY 1991 1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 Fax (415) 426-0106

Clayton ENVIRONMENTAL CONSULTANTS

July 24, 1991

Ms. Laurene Compton CLAYTON ENVIRONMENTAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, CA 94566

> Client Ref. 34683.07 Clayton Project No. 91070.80

Dear Ms. Compton:

Attached is our analytical laboratory report for the samples received on July 10, 1991. 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 (415) 426-2657.

Sincerely,

Rónald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/ca

Attachments



Page 2 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: MW-2

9107080-01A

Date Sampled: 07/10/91

Lab Number: Sample Matrix/Media:

WATER

Date Received: 07/10/91 Date Prepared: 07/22/91

Preparation Method:

EPA 5030

Date Analyzed: 07/22/91

Analytical Method:

EPA 8015/8020

Analyte	Concentration CAS # (ug/L)				
BTEX/Gasoline					
Benzene	71-43-2	ND	0.4		
Toluene	108-88-3	ND	0.3		
Ethylbenzene	100-41-4	ND	0.3		
Xylenes	1330-20-7	ND	0.4		
Gasoline		ND	50		

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



Page 3 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: MW-3

Lab Number:

9107080-02A

Date Received:

07/10/91 07/10/91

Sample Matrix/Media:

WATER EPA 5030 Date Prepared: Date Analyzed:

Date Sampled:

07/22/91 07/22/91

Preparation Method: Analytical Method:

EPA 8015/8020

Limit of Concentration Detection CAS # Analyte (ug/L) (ug/L) BTEX/Gasoline 71-43-2 ND 0.4 Benzene 0.3 108-88-3 ND Toluene Ethylbenzene 100-41-4 ND 0.3 1330-20-7 ND 0.4 Xylenes 50 ND Gasoline

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



Page 4 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: MW-5B

9107080-03A

Date Sampled: 07/10/91

Lab Number:

WATER

Date Received: 07/10/91

Sample Matrix/Media: Preparation Method:

EPA 5030

Date Prepared: 07/22/91 Date Analyzed: 07/22/91

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration CAS # (ug/L)				
BTEX/Gasoline						
Benzene	71-43-2	3.1	0.4			
Toluene	108-88-3	3.7	0.3			
Ethylbenzene	100-41-4	13	0.3			
Xylenes	1330-20-7	2.2	0.4			
Gasoline		400	50			

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



Page 5 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: MW-14 Lab Number:

9107080-06A

Date Sampled: 07/10/91

Sample Matrix/Media:

WATER

Date Received: 07/10/91 Date Prepared: 07/22/91

Preparation Method:

EPA 5030

Date Analyzed: 07/22/91

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	0.8	0.4
Toluene	108-88-3	0.8	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	0.8	0.4
Gasoline		ND	50

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



Page 6 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9107080-07A

Date Received: --

Sample Matrix/Media:

WATER

Date Prepared: 07/22/91

Preparation Method: Analytical Method:

EPA 5030 EPA 8015/8020 Date Analyzed: 07/22/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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



Page 7 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: MW-2

Date Sampled: 07/10/91

Lab Number:

9107080-01C

Date Received: 07/10/91

Sample Matrix/Media:

WATER

Date Analyzed: 07/11/91

Analytical Method: EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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

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



Page 8 of 19

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: MW-2

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
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
Surrogates		Recovery (%)	QC Limits (%)LCL UCL
Bromofluorobenzene	460-00-4	68	50 - 150



of 19 Page 9

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: MW-3

Date Sampled: 07/10/91

Lab Number:

9107080-02C

Date Received: 07/10/91

Sample Matrix/Media:

WATER

Date Analyzed: 07/11/91

Analytical Method: EPA 601

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Ourgeable 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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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

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



Page 10 of 19

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: MW-3

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
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
			QC Limits (%)
Surrogates		Recovery (%)	LCL UCL
Bromofluorobenzene	460-00-4	68	50 - 150

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



Page 11 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: MW-5B

9107080-03C

Date Sampled: 07/10/91

Lab Number: Sample Matrix/Media:

WATER

Date Received: 07/10/91

Analytical Method:

EPA 601

Date Analyzed: 07/11/91

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	ИD	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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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

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

Page 12 of 19

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: MW-5B

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
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
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromofluorobenzene	460-00-4	75	50 - 150



Page 13 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: MW-14

Date Sampled: 07/10/91

Lab Number:

9107080-06C

Date Received: 07/10/91 07/11/91

Sample Matrix/Media: Analytical Method:

WATER EPA 601

Date Analyzed:

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
1,2-Dichloroethene (total)	540-59-0	ND	0.4
Chloroform	67-66-3	ND	0.5
1,2-Dichloroethane	107-06-2	6.6	0.3
1,1,1-Trichloroethane	71-55-6	ND	0.5
Carbon tetrachloride	56-23-5	ND	0.6
Bromodichloromethane	75-27-4	ИD	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
2-Chloroethylvinylether	100-75-8	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

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



Page 14 of 19

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: MW-14

CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
108-90-7	ND	0.7
541-73-7	ND	2
95-50-1	ND	4
106-46-7	ND	4
75-71-8	ND	1
75-69-4	ND	0.4
76-13-1	ND	0.6
		QC Limits (%)
	Recovery (%)	LCL UCL
460-00-4	64	50 - 150
	108-90-7 541-73-7 95-50-1 106-46-7 75-71-8 75-69-4 76-13-1	CAS # (ug/L) 108-90-7 ND 541-73-7 ND 95-50-1 ND 106-46-7 ND 75-71-8 ND 75-69-4 ND 76-13-1 ND Recovery (%)



Page 15 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9107080-07A

Date Received:

Sample Matrix/Media:

WATER

Date Analyzed: 07/11/91

Analytical Method: EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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

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

Page 16 of 19

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: METHOD BLANK

L

Ā1

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
	100 00 7	ND.	0.7
Chlorobenzene 1,3-Dichlorobenzene	108-90-7 541-73-7	ND ND	0.7 2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ND	4
Dichlorodifluoromethane	75-71-8	ND	i
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6
			QC Limits (%)
Surrogates		Recovery (%)	LCL UCL
Bromofluorobenzene	460-00-4	73	50 - 150



Page 18 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Matrix/Media: WATER Date Received: 07/10/91 Preparation Method: SM 5520B Date Prepared: 07/16/91 Analysis Method: SM 5520F Date Analyzed: 07/16/91

Lab No.	Sample ID	Date Sampled	Hydrocarbons (mg/L)
03E	MW-5B	07/10/91	<5
06E	MW-14	07/10/91	<5
07A	METHOD BLANK		<5
Detect	ion Limit:		5

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



Page 19 of 19

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.80

Sample Matrix/Media: WATER Analysis Method: EPA 16

EPA 160.1

Date Received: 07/10/91 Date Analyzed: 07/12/91

Lab No.	Sample ID	Date Sampled	Total Dissolved Solids (mg/L)
031	MW-5B	07/10/91	1000
06H	MW-14	07/10/91	2000
07A	METHOD BLANK		<10
Detect	cion Limit:		10

ND Not detected at or above limit of detection < Not detected at or above limit of detection

-- Information not available or not applicable

Clayton ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

For Clayton Use Only Page	L a 2
Project No.	
Batch No. 0107080)
Client No.	
Date Received 7 10 91	By ROOL
Date Logged In	Ву
amatan Ittle	

A Marsh & McLennan Company

								4			Date	Logged	tn	<u>+</u>		Ву	
Purchas	e Order No.	Clien	11 Job No. 3	4683.	07	T 。	Name		wre	ne (om	yor	}	Title			
_ W	Name Harsel					REPORT RESULTS TO	Comp	any (YPay	1-100	, 1		-				Dept.
SEND INVOICE TO	Company Clayton			<u> </u>	ept.	187	Mailin	g Addr	ess l	<i>'</i>							
ν ≨	Address	 					City, S	state, Z	þ								
	City, State, Zip	·			·	<u> "</u>	Telepi	hone N	o.					Telefa	x No.		
	sults Required:	Rush Char	ges Authorized	?	D No		(r				ANA	LYSIS F	EQUES	STED			
		on phone re	suffe ruch recu	ite etc.)		-	(Ente			OX Delo	W 10 In	dicate r	equest;	Enter a	7 11 17	reservat	tive added*)
Special instructions: (method, limit of detection, phone results, rush results, etc.) * Explanation of Preservative:						Number of Containers		Show A				2/2/2		//	//	//	
	CLIENT SAMPLE IDENTIFICA	ATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)		8			>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\							FOR LAB USE ONLY
MW	- Z		7-10-91	120	40 ml	2	X										OLAB
1		·	<u> </u>		40 me	Z		X									J CD
MW	-3				40 me	Z	$ \times $										02 A B
1					40ml	2		X									J CD
MW-	5 B				40 ml	2	X					<u> </u>					03A B
					40m-e	2	ļ	\times									1 C.D
	/			<u> </u>	Mliter	Z			X		· 						EF
<u></u>					lito	2				X							G.H.
\\	V				Pint	1		<u> </u>			X						
TCI	**************************************		<u> </u>	<u> </u>	40 me	<u>ک</u>	<u> </u>					X	L				04A 05A
CHAII	Relinquished by:	omph	7	Date/Time	7-10-91		ved by:								Date	/Time	·
custo		/	/	Date/Time	445	Recei	ved at l	ab by:	Robe	cea	$\mathbb{Z}^{\mathbb{N}}$	ure	<u>Ille</u>	areth	Date	/Time/	NS1 4:45
(if requir	ed) Method of Shipment:					Samp	ie cond	ition up	on rece	ipt:						·	
Authoriz	ed by: (Cyent Signature <u>Must</u>		Request)	Date 7	-10-91										,		
Please	return completed form and samples to			mental Con	sultants, Inc. lab	s listed	below:					—Т	DISTR	IBUTI	ON:		

22345 Roethel Drive Novi, MI 48050 (313) 344-1770

Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144

(404) 499-7500

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600

WHITE -Clayton Laboratory YELLOW -Clayton Accounting Client Retains **PINK**

Clayton ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only Page	ol <u>Z</u>
Project No.	
Batch No. 9107080	
Client No.	
Date Received 7 10 Q1	By ROZ
Date Logged In	By

A Marsh & McLennan Company

		7						1				Logged		+		By.	<u> </u>	
Purchas	e Order No.	Clie	ent Job No.346	83.0	7		Name	La	Wr	2110	$_{\mathcal{C}}$	omp	fon	Thie	;			
ш	Name Harsel					RESULTS TO	Compa		dec	744	≥ <u>r1</u>	T.	,				Dept.	
SEND INVOICE TO	Company Clayt	- h		<u>D</u>	ept.	1 <u>8</u> 7	Mailing	Addre		, ,								
88 ₹	Address					ESE SE	City, St	ate, Zi _l	þ									
	City, State, Zip					<u> </u>	Telepho	ne No						Telefa	x No.			
	sults Required:	Rush Cha	rges Authorized	?	ET No		(Enter	an 'X' i	n the bo	x belo		LYSIS R			h 'P' H P	1 000 [V1	ntive add	fed*)
	nstructions: (method, limit	of detection, phone (resulfs, rush resu	ults, etc.)		Number of Containers	A S	16 8 1 X	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			/ N Q/			$\overline{/}$			
	CLIENT SAMPLE I	DENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)		18 3	\$/		7.4	Y'	\sum_{i}					F	OR LAB SE ONLY
111V-	14		7-10-91	H20	40me	7	X									_	067	1 B
					HOMR	て		X									I .	C,D
\ !				1 1	lito	Z			X									E,F
				V	lifes	١			·	X							1	د.
V			1	V	lte-	1					X							+
																•		
																		7.00
				~														
				(PC)	7													
CHAI	N Relinguished by:	Je Compt	7	Date/Time	76-10-91	Recei	ved by:								Date	/Time		
OF CUSTO		//	<i>;</i>	Date/Time	445	Recei	ived at la	b by: /	Pelve	000	ZXV	line	Qu	asil	6 Date	/Time	1/10/91	4:45
(if requi	(ed) Method of Shipment					Samp	le condit	ion up	on rece	ıpı:	-							
Authori		Complexiture Must Accompan	v Request\	Date 7	-10-91		OV											
Please	return completed form and			nmental Cor	sultants Inc. lat	s listed	l below:					—Т	DISTE	RIBUT	ION:			

Please return completed i

22345 Roethel Drive Novi, MI 48050 (313) 344-1770 Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040 400 Chastain Center Blvd., N.W. Suite 490

Kennesaw, GA 30144

(404) 499-7500

I.W. 1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

1252 Quarry Lane Pleasanton, CA 94566 /415) 426-2600 Fax (415) 426-0106 Clayton
ENVIRONMENTAL
CONSULTANTS

July 24, 1991

Ms. Laurene Compton CLAYTON ENVIRONMENTAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, CA 94566

> Client Ref. 34683.07 Clayton Project No. 91070.90

Dear Ms. Compton:

Attached is our analytical laboratory report for the samples received on July 11, 1991. 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 (415) 426-2657.

Sincerely

Ronald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/caa Attachments



Page 2 of 11

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.90

Sample Identification: MW-4

Date Sampled: 07/11/91

Lab Number:

9107090-01C

Date Received: 07/11/91

Sample Matrix/Media:

WATER

Date Analyzed: 07/12/91

Analytical Method: EPA 601

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	ИD	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
1,2-Dichloroethene (total)	540-59-0	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	ИD	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
2-Chloroethylvinylether	100-75-8	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

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



Page 3 of 11

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: MW-4

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
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
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromofluorobenzene	460-00-4	90	50 - 150



Page 4 of 11

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.90

Sample Identification: MW-7B

Date Sampled: 07/11/91

Lab Number:

9107090-02A

Date Received: 07/11/91

Sample Matrix/Media:

WATER

Date Analyzed: 07/12/91

Analytical	Method:	EPA	601
------------	---------	-----	-----

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	4.6	0.2
1,1-Dichloroethane	75-35-3	ND	0.4
Trans-1,2-Dichloroethene	156-60-5	2.6	0.4
Cis-1,2-Dichloroethene	156-59-2	170	0.4
1,2-Dichloroethene (total)	540-59-0	170	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	660	0.3
Dibromochloromethane	124-48-1	ND	0.6
1,1,2-Trichloroethane	79-00-5	0.8	0.6
Trans-1,3-Dichloropropene	10061-02-6	ND	0.6
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	1.7	0.7
Tetrachloroethene	127-18-4	7,800	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5

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



Page 5 of 11

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: MW-7B

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Chlorobenzene	108-90-7	4.8	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
Common to a		B	QC Limits (%)
Surrogates		Recovery (%)	LCL UCL
Bromofluorobenzene	460-00-4	104	50 - 150



Page 6 of 11

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.90

Sample Identification: MW-8B

Date Sampled: 07/11/91

Lab Number:

9107090-03A

Date Received: 07/11/91

Sample Matrix/Media:

WATER

Date Analyzed: 07/12/91

Analytical Method: EPA 601

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	11	0.4
1,2-Dichloroethene (total)	540-59-0	11	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	19	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
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ND	0.7
Tetrachloroethene	127-18-4	0.9	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5

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



Page 7 of 11

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: MW-8B

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
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
Surrogates		Recovery (%)	QC Limits (%)LCLUCL
Bromofluorobenzene	460-00-4	89	50 - 150



Page 8 of 11

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.90

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9107090-04A

Date Received:

Sample Matrix/Media: Analytical Method:

WATER EPA 601 Date Analyzed: 07/12/91

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	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

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



Page 9 of 11

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: METHOD BLANK

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
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
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromofluorobenzene	460-00-4	98	50 - 150

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



Page 10 of 11

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.90

Sample Identification: MW-4 Date Sampled: 07/11/91 Lab Number: 9107090-01A Date Received: 07/11/91

Sample Matrix/Media: WATER Date Prepared: 07/22/91 Preparation Method: EPA 5030 Date Analyzed: 07/22/91

Analytical Method: EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50



Page 11 of 11

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91070.90

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9107090-04A

Date Received:

Sample Matrix/Media:

WATER

07/22/91 Date Prepared:

Preparation Method:

EPA 5030

Date Analyzed: 07/22/91

Analytical Method:

EPA 8015/8020

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50
		210	

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

Clayton ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

For Clayton Use Only Page	ol
Project No.	
Batch No. 9107090	
Client No.	
Date Received 7 11/91	By Roll
Date Logged In	By 🌙

A Marsh & McLennan Company

- Company									ogged		-		Ву	<u> </u>
	ent Job No. 34	1683.	0 ア		Name	Laur	ene		om/) Fo.	1 This	}		
Name Harsch				REPORT RESULTS TO	Compa	ny Cl	ay t	D M	T					Dept.
COMPANY Clayton Address		D	ept.	57	Mailing	Address								
					City, St	ate, Zip								
City, State, Zip			····	<u></u>	Telepho	one No.					Telefa	x No.		
Date Results Required: Rush Ct	arges Authorized	? 🛘 Yes	□ No]	(Enter	an 'X' in the l	box belo			EQUES		• 'P' H P	reserva	ntive added*)
Special Instructions: (method, limit of detection, phone	results, rush res	uits, etc.)		1	<u> </u>	12 4			7	7	7	```	7	77
* Explanation of Preservative:			Number of Containers			//	//	//	//	/,	/,	/,		
CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)		180 V									FOR LAB USE ONLY
MW-4	7-11-91	H=0	40 me	Z	X									DIAB
NW-U			40ml	Z		X								1 LD
NW-4 MW-7B			40ml	Z	"	X								024B
MW-8B	V	1	40ml	2		X								03.6
	į													
						1			-					
				 			1							<u> </u>
				 			 						 	
			\	<u> </u>	 	- -	}					ļI	 	
				 			 							ļ ————
CHAIN Relinguished by:	_ ,	Date/Time	7-11-91	Passi	ved by:		<u> </u>	LI						<u> </u>
OF CUSTODY Relinquished by: Date/Time 445					b by: Rela	20000	×7.		1/4	i as H		/Time	7/11/91 4:45	
(If required) Method of Shipment:			Samp	le condit	ion upon rec	eipt:	2)	<u> </u>	HM	Carre	1) Inaic	Time :	711111 7.10	
Authorized by: Chent Siggature Must Accompany Request) Date 7-11-91														
Please return completed form and samples to one of the Clayton Environmental Consultants, inc. la			s listed	below:					DISTR	IBUTI	ON:			

22345 Roethel Drive Novi, MI 48050 (313) 344-1770

Baritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (201) 225-6040

400 Chastain Center Blvd., N.W. Suite 490

1252 Quarry Lane Pleasanton, CA 94566 Kennesaw, GA 30144 (415) 426-2600 (404) 499-7500

Clayton Laboratory WHITE Clayton Accounting YELLOW -**PINK Client Retains**

1252 Quarry Lane Pleasanton, CA 94566 (415) 426-2600 Fax (415) 426-0106 Clayton ENVIRONMENTAL CONSULTANTS

July 26, 1991

Ms. Laurene Compton CLAYTON ENVIRONMENTAL CONSULTANTS, INC. 1252 Quarry Lane Pleasanton, CA 94566

> Client Ref. 34683.07 Clayton Project No. 91071.54

Dear Ms. Compton:

Attached is our analytical laboratory report for the samples received on July 17, 1991. 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 (415) 426-2657.

Sincerely,

Ronald H. Peters, CIH

Director, Laboratory Services

Western Operations

RHP/caa Attachments



Page 2 of 7

Results of Analysis for Harsch Investments

34683.07 Client Reference: Clayton Project No. 91071.54

Sample Identification: MW-9B

Date Sampled: 07/17/91

Lab Number:

9107154-01A

07/17/91

Sample Matrix/Media:

WATER

EPA 5030

Date Received: Date Prepared: 07/23/91

Preparation Method: Analytical Method:

EPA 8015/8020

Date Analyzed: 07/23/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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



Page 3 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91071.54

Sample Identification: METHOD BLANK

Preparation Method:

Sample Matrix/Media:

Analytical Method:

Lab Number:

9107154-03A

WATER

EPA 5030 EPA 8015/8020 Date Sampled:

Date Received: --

Date Prepared: 07/23/91 Date Analyzed: 07/23/91

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes	1330-20-7	ND	0.4
Gasoline		ND	50

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



Page 4 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91071.54

Sample Identification: MW-9B

Lab Number:

9107154-01C

Date Sampled: 07/17/91 Date Received: 07/17/91

Sample Matrix/Media:

WATER

Date Analyzed: 07/18/91

Analytical Method: EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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	ИD	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
2-Chloroethylvinylether	100-75-8	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

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



Page 5 of 7

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: MW-9B

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Chlorobenzene	108-90-7	ND	0.7
1,3-Dichlorobenzene	541-73-7	ИD	2
1,2-Dichlorobenzene	95-50-1	ND	4
1,4-Dichlorobenzene	106-46-7	ИД	4
Dichlorodifluoromethane	75-71-8	ND	1
Trichlorofluoromethane	75-69-4	ND	0.4
Freon 113	76-13-1	ND	0.6
			QC Limits (%)
Surrogates		Recovery (%)	LCL UCL
Bromofluorobenzene	460-00-4	97	50 - 150

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



Page 6 of 7

Results of Analysis for Harsch Investments

Client Reference: 34683.07 Clayton Project No. 91071.54

Sample Identification: METHOD BLANK

Date Sampled:

Lab Number:

9107154~03A

Date Received: _._

Sample Matrix/Media:

WATER

07/18/91 Date Analyzed:

Analytical Method:

EPA 601

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
1,2-Dichloroethene (total)	540-59-0	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
2-Chloroethylvinylether	100-75-8	ND	1
Bromoform	75-25-2	ИD	0.7
Tetrachloroethene	127-18-4	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5

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



Page 7 of 7

Results of Analysis for Harsch Investments (continued)

Client Reference: 34683.07

Sample Identification: METHOD BLANK

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
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
Surrogates		Recovery (%)	QC Limits (%) LCL UCL
Bromofluorobenzene	460-00-4	97	50 - 150



REQUEST FOR LABORATORY **ANALYTICAL SERVICES**

A Marsh & McLennan Company

22345 Roethel Drive

Novi, MI 48050

(313) 344-1770

Rantan Center

(201) 225-6040

160 Fieldcrest Ave.

Edison, NJ 08837

For Clayton Use Only Pageot		
Batch No. 9 10 7 5 4 Client No. Date Logged In 7 / 7 9 By TS Client pob No. 3 46 83. 07 Dept. ANALYSIS REQUESTED ow to indicate request; Enter a 'P' if Preservative added. ') FOR LAB USE ONLY CI A B OAA Date/Time	For Clayton Use Only Page	ol
Date Logged In 7/79 By TS Client Job No. 34683.00 Dept. ANALYSIS REQUESTED ow to indicate request; Enter a 'P' if Preservative added. ') FOR LAB USE ONLY C. D. O.A. Date/Time	Project No.	
Date Logged In 7/79 By TS Client Job No. 34683.00 Dept. ANALYSIS REQUESTED ow to indicate request; Enter a 'P' if Preservative added. ') FOR LAB USE ONLY C. D. O.A. Date/Time	Batch No. 9107	1.54
ANALYSIS REQUESTED ow to indicate request; Enter a 'P' if Preservative added. *) FOR LAB USE ONLY C. D. O. A. Date/Time	Client No.	
ANALYSIS REQUESTED ow to indicate request; Enter a 'P' if Preservative added. *) FOR LAB USE ONLY C. D. O. A. Date/Time	Date Logged In 7/17/9	By TS
ANALYSIS REQUESTED ow to indicate request; Enter a 'P' if Preservative added. *) FOR LAB USE ONLY C. D. O. A. Date/Time	Client Job No.	34683.00
ANALYSIS REQUESTED ow to indicate request; Enter a 'P' if Preservative added. *) FOR LAB USE ONLY O.J. A. O.J. A. Date/Time		
FOR LAB USE ONLY O A A Date/Time		Uept.
FOR LAB USE ONLY O A A Date/Time	11111/010 DEOLEGATES	
FOR LAB USE ONLY C1 A) B C-1 D O2 A Date/Time	ANALYSIS HEQUESTED ow to indicate request; Enter a 'I	· P' if Preservative added. *)
Date/Time	77777	77//
Date/Time	/////	
Date/Time		
Date/Time	/////	
Date/Time		USE ONLY
Date/Time		QIAJB
		WCD
		OAA
		NB
	- - - - - - - - - - 	
		Date/Time
Acceptable Other (explain)	X Yuw I	-///////
, Sa repopulation	/ A viceobianie	Jor (official)
DISTRIBUTION: WHITE - Clayton Laboratory		

YELLOW - Clayton Accounting

- Client Copy

PINK

6/90

										_	للك		التسلسلا							
← PIName	Layrene Compton I	Title					Purchase Order No.					Client pob No. 34683. 00								
Name Comp Mailing City, S Teleph	any (Layton		Dept.	Dept.		Nar	ne #	acs	ch									_		
T S Cur	g Address /			 '	SEND	O Cor	mpany									Dept.		_		
Teleni	hone No			·	_8 8	Adr	iress											_		
	hone No Telefa s Required Rush Charges Authorized? P	X No.	-		1-	City	y, State	a, Zip										_		
Normal	747 Yes 47%	none Hesuits	1 Campice	es are:	Containers				hay he	AN at wata	ALYSI	IS REC	UEST	(ED	ם אוימו. מואימו	anainth	·= =4dod			
	ructions: (method, limit of detection, etc.)			(check if applicable)			1 011 7.		7	30W 10	7	7	Jesi, L	Enter a 'P' if Preservativ			70 auueu.			
Openia	octions, finemos, finite of obtaining energy	,	1.	Drinking Water						//	/ ,					//				
	e m	'		cted in the										′ /	′ /					
Explanation of Preservative: $P = Hcl$			State of New York		er of		10	b /		/ ,						//	,			
		DATE	MATRIX/	AIR VOLUME	Number	/	" " " " " " " " " " " " " " " " " " "	/ ₃ //	13			′ /	′ /	′ /	′ /	1	FOR LAB			
CLIENT SAMPLE IDENT IFICATION SAMPLED					2	1	A.	% \		/_	/_		/_				SE ONLY			
MW-9B 7-17-91			Water	40 ML	2	X	1									MIA	B	_		
1					2		X										D	_		
MW-9B 7-17-91 Trip Blank					17		1	X					<u> </u>	1	1	OAA	7-1/	_		
	1				17		1							 	f					
		 			+	 		M	{ /	 		 	 -	 '	+	AKD				
		 '		 	 '	 	- '	↓/					 	 '	1					
		<u> </u> '	<u> </u>	1	<u> </u>	<u> </u>	<u></u>				1!		i!	'						
			<u> </u>	1					1											
		 			 	 	 	 					 							
		 '	4	4	 ′		 _'							<u> </u>		·				
		f	1	1	1 1	1	1	1 1	1 1	1 1	1 1	1 1	1 1	1 '				_		
				1			1											_		
	Relinquished by: n/2 C		Date/Time	, <u></u>	1	<u></u>	لسبل	اـــــا	<u></u>			I		لــــا	Date/T	ime				
CHAIN	Relinquished by M Springnon		7-17-91	3:00 PM		Received by:									L_		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
CUSTODY	nemiquished by,	Date/Time			eiv ed at		-	Lu	<u> </u>	ملا		- Date/Jinte-791								
	Method of Shipment.		Sample Condition Upon Receipt: Acceptable Other (explain)																	
Authorized	by M Spagman	D.	ate <u>2-12-</u>	-91	1										•					
		1																		
Please retur	Client Signature Must Accompany Ren n completed form and samples to one of the		-comental (Concultants Inc	- Johe	listed (Solowe											_		
1 16030 16101	in completed form and samples to one of the	, laus	NSIEG F	HOW.						١r	HETRI	BUTION	N.		-					

1252 Quarry Lane

(415) 426-2600

Pleasanton, CA 94566

400 Chastain Center Blvd., N.W.

Kennesaw, GA 30144

Suite 490

(404) 499-7500