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**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

**SUPPLEMENTAL SUBSURFACE
INVESTIGATION REPORT**

Submitted To

**New York State Department of
Environmental Conservation**

September 10, 1993

HAZEN AND SAWYER
Environmental Engineers & Scientists

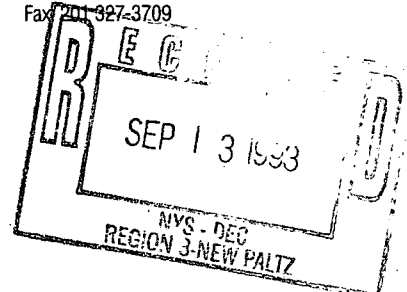
In Association With

**LEGGETTE, BRASHEARS &
GRAHAM, INC.**
Professional Ground-Water Consultants

HAZEN AND SAWYER

Environmental Engineers & Scientists

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September 10, 1993

Mr. Steven J. Parisio
Senior Engineering Geologist
Division of Solid Waste - Region 3
NYS Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561-1696

RE: Town of Saugerties Landfill

Dear Mr. Parisio:

Hazen and Sawyer is pleased to submit the enclosed Supplemental Subsurface Investigation Report (SIR) for the above-referenced facility. This submittal fulfills our contractual scope of work with the Town of Saugerties.

We thank you for your assistance on this project. Please feel free to contact me with any questions you may have.

Very truly yours,

HAZEN AND SAWYER, P.C.

Glenn R. Di Giovanni, P.E.
Solid Waste Manager

GRD:jb

cc: G. Terpening, R. Lindhurst, R. LeBlanc, B. O'Reilly,
M. Post, D. Ellsworth, J. Greco, Esq. - Town of Saugerties
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(rep:saugssir.ltr)

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

SUPPLEMENTAL SUBSURFACE INVESTIGATION REPORT

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1.0 INTRODUCTION

1.1 Purpose

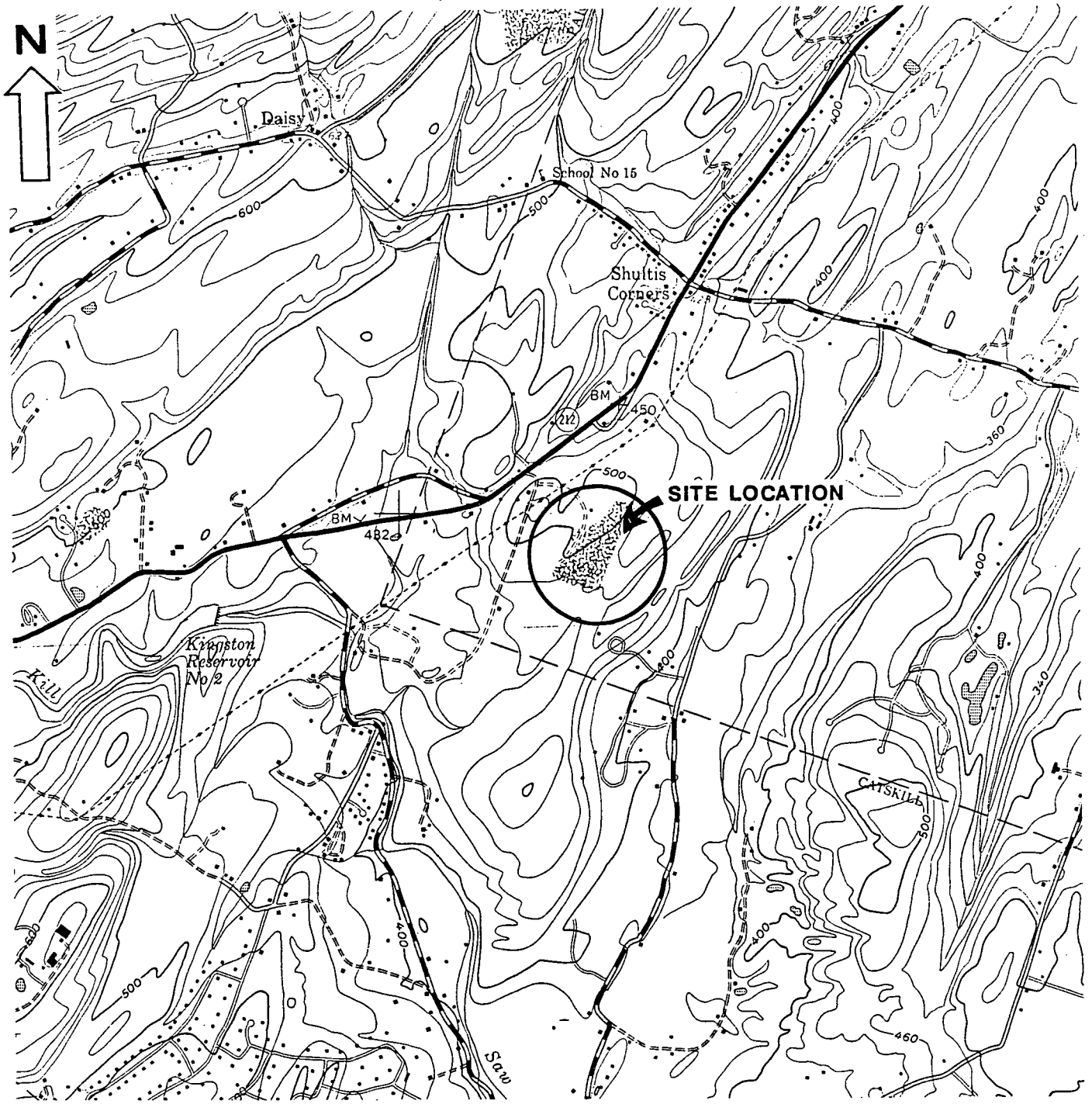
This document is the Supplemental Subsurface Investigation Report (SIR) for the Town of Saugerties Landfill ("the Landfill") prepared by Hazen and Sawyer, P.C., in association with Leggette, Brashears and Graham, Inc. (the "Project Team") on behalf of the Town of Saugerties, New York (the "Town"). The purpose of the investigation was to address the concerns of the New York State Department of Environmental Conservation (NYSDEC) regarding the hydrogeologic characterization of the groundwater bearing formations beneath the Landfill and to further define the extent of groundwater contaminants, if any, migrating from the Landfill.

The Town was required to implement this investigation by the NYSDEC in accordance with their directive letter dated August 19, 1992. The directive required that additional subsurface investigations be performed to supplement the findings of both the Phase I and Phase II engineering investigations completed by others at the Landfill site on behalf of the NYSDEC in June 1987 and March 1990, respectively. These investigations included the installation and sampling of six monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-N and MW-S). Based on the results of both the Phase I and Phase II investigations, the NYSDEC has determined that the Landfill is not in compliance with applicable standards and requirements as set forth in both Federal (Part 257 of 40 CFR) and State (6 NYCRR Part 703.5 and 6 NYCRR Part 360) environmental regulations.

1.2 Background

The Landfill site is located on New York Route 212, south of Shultis Corners, in the Town of Saugerties, Ulster County, New York. Figure 1, the Landfill Site Location Map, illustrates its proximity. The facility is documented to have opened in 1970 to accept refuse generated by the unincorporated part of the Town. In addition, during the early 1970's, some waste products (e.g., grinding swarf and wastewater sludge) from Ferroxcube, a local electronics manufacturing concern, were also disposed of at the Landfill. Records indicate that the initial disposal area consisted of three excavated trenches located in the northern portion of the property. After this initial area was filled in, a second, larger area previously used as a quarry in the southern portion of the property began to be utilized for disposal. This activity continued until recently, when the Landfill was closed as of June 1, 1993.

Previous subsurface investigations at the site have indicated that the Landfill is underlain by a thin layer (zero to 1 foot thick) of unconsolidated glacial till deposits belonging to the Plattekill Formation, overlying Devonian-aged shale and sandstone bedrock. Prior to the opening of the Landfill in 1970, bedrock had been quarried from the site. Portions of the quarried areas were subsequently used as refuse disposal areas. Some quarried bedrock was also used as a Landfill cover material.



**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

SITE LOCATION MAP

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SOURCE: U.S.G.S. 7.5 MINUTE
WOODSTOCK, N.Y. QUADRANGLE

The Landfill is located in a topographic upland area coincident with the divide between two watersheds. In the northern part of the site, surface water drains toward the Plattekill Creek. In the southern part of the site, surface water drains toward the southeasterly-flowing Saw Kill. A southwesterly-flowing tributary of the Saw Kill is located approximately 1,000 feet south of the Landfill, and is the nearest reported perennial surface water body. There are currently nine (9) existing monitoring wells at the Landfill site. The nearest groundwater supply well is located on-site, near the office/garage complex. Figure 2, Site Plan, illustrates the locations of these wells.

1.3 Scope of Investigation

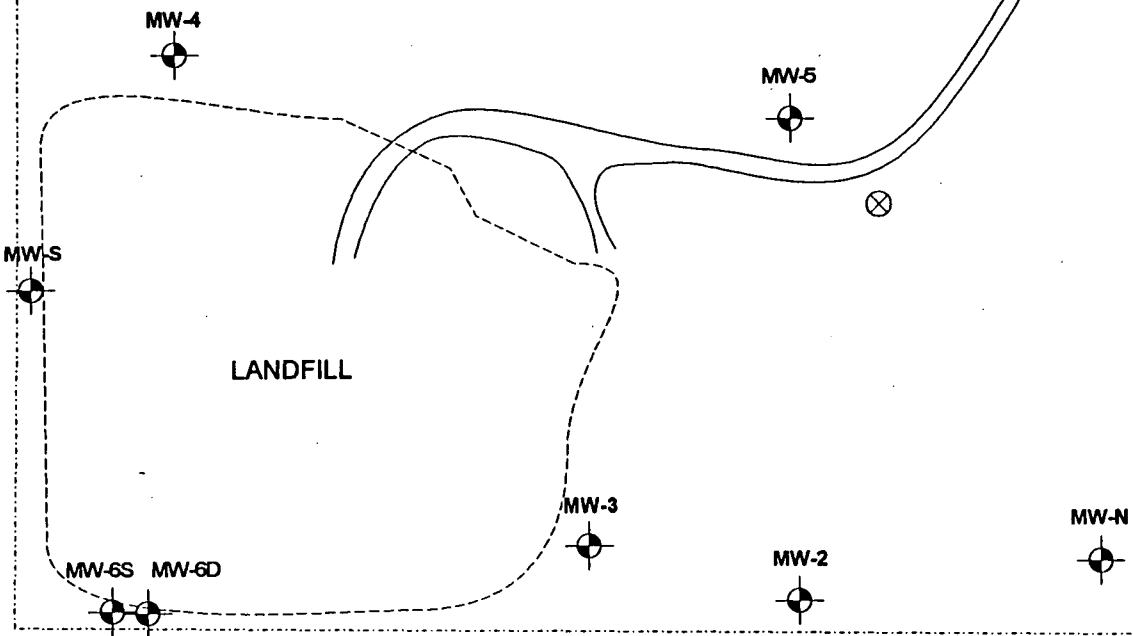
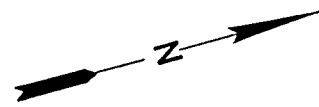
The tasks completed in this scope were based upon several initiatives. These include a review of the concerns of the NYSDEC as presented in both the Consent Order and the aforementioned directive letter to the Town, the Phase I and Phase II Engineering Investigations for the Landfill completed by others on behalf of the NYSDEC, published geologic and hydrogeologic data pertaining to the Landfill site vicinity, and observations made during several site visits conducted by Project Team representatives during March through July, 1993. Meetings and conversations with NYSDEC Region 3 representatives, the Town Council and Supervisor, and the Town Solid Waste Board have also helped shape this scope. Finally, the Proposed Subsurface Investigation Program (PSIP) presented a detailed work plan to execute the Supplemental SIR scope. The PSIP was submitted on April 29, 1993 to NYSDEC and approval was granted on May 21, 1993.

This Supplemental SIR was designed to provide data necessary for completing additional hydrogeologic characterization of the Landfill site. The vertical hydraulic gradient beneath the site was assessed through the installation of a monitoring well cluster and the utilization of groundwater elevation measurements at the on-site supply well. Determination of the vertical hydraulic gradient is necessary for assessment of the potential for vertical migration of Landfill contaminants from shallow to deeper groundwater bearing formations. An additional upgradient monitoring well was also installed to confirm the horizontal flow direction identified during previous site investigations and to assess whether a groundwater flow divide coincides with the location of the Landfill site. The hydrogeologic characteristics of the bedrock beneath the Landfill site were assessed with regard to the impact on the groundwater hydraulics resulting from Landfill construction and fracture orientation, as well as the impacts on potential contaminant migration.



In accordance with NYSDEC requirements, this investigation was designed to further characterize and delineate the extent of potential contamination resulting from the Landfill activities. The scope of the investigation included the installation, development and permeability testing of three additional monitoring wells, and sampling of all new and existing monitoring wells, and selected nearby private residential wells. All work was completed by the Project Team in accordance with applicable health and safety guidelines as specified in the NYSDEC approved PSIP.

PROPERTY BOUNDARY

ROUTE 212



LEGEND

-  EXISTING MONITOR WELL LOCATION
-  EXISTING SUPPLY WELL LOCATION



**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

SITE PLAN

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2.0 SUBSURFACE CONDITIONS

2.1 Introduction

The following discussion on subsurface conditions is primarily based on observations and measurements made during the installation of the new monitoring wells at the Landfill site, as well as published geologic reports regarding the site area (see references). There are currently nine (9) monitoring wells existing on-site, as was shown in Figure 2. The installation of three new monitoring wells (MW-5, MW-6s and MW-6d) and the retrofitting of two existing monitoring wells (MW-N and MW-S) was completed under the direction of the Project Team at the Landfill from June 3 to June 11, 1993. All pertinent monitoring well completion information was recorded on the appropriate log for each well. Copies of the monitoring well completion logs for MW-5, MW-6s and MW-6d are located in Appendix I of this Supplemental SIR. The "upgradient" monitoring well, designated MW-5, was installed in the northwestern portion of the Landfill area. Monitoring wells MW-6s and MW-6d were installed as a "cluster" (i.e., completed adjacent to each other, but constructed with open intakes at isolated depth intervals) in the southeastern portion of the Landfill area. Bedrock cores were obtained from all three monitoring wells to provide continuous samples of the bedrock.

The boreholes for monitoring wells MW-5 and MW-6s were drilled using hollow-stem augers until unweathered bedrock was encountered. The drilling of bedrock at these locations was completed using an "NQ" core barrel until completion depth. The borehole for monitoring well MW-6d was drilled to a depth of 10 feet below grade using hollow-stem augers, followed by roller bit drilling to a depth of 20 feet below grade and NQ coring to the completion depth. The source of water used during drilling operations was a hydrant located at the Town Garage. All drilling equipment was steam-cleaned between work at each monitoring well location.

Monitoring wells MW-5 and MW-6s were constructed using four-inch diameter PVC casing extending from grade to bedrock and an open borehole into the bedrock. Monitoring well MW-6d was constructed using a four-inch diameter PVC "surface" casing extending from zero to 20 feet below grade, and an inner two-inch diameter PVC casing and screen with an intake interval depth from 40 to 50 feet below grade. At grade, the PVC casing for all three new monitoring wells was extended to approximately two feet above the ground surface, and protected by a steel casing with a locking cap. Monitoring well identification numbers were permanently marked on the outside of their respective protective casings. The retrofitting of existing monitoring wells designated MW-N and MW-S consisted of the emplacement of an effective surface seal and protective steel casing with a locking cap.

The new monitoring wells were developed, after installation, to remove fine materials from around the intake zone. Development was conducted by repeated evacuation of each monitoring well by bailing. Well development continued until the discharge was visibly clear and free of fines.

Table 1 summarizes monitoring well completion information for the new wells, along with known information for the prior existing on-site monitoring wells.

2.2 Site Geology

The Landfill site is underlain by an overburden comprised primarily of unconsolidated glacial till deposits and weathered bedrock. The till deposits consist predominantly of silty sand and gravel deposited as a result of past glacial processes. This material apparently thickens toward the southeast area of the Landfill site with a maximum thickness of about 10 feet.

Unweathered bedrock occurs at depths ranging from grade (e.g., at monitoring well MW-N) to at least 10 feet below grade (e.g., at monitoring well MW-6s). The bedrock at the site is comprised of gray, green and red Devonian Age shale and sandstone belonging to the Plattekill Formation. Bedrock crops out along a portion of the northern side of the property (at the entrance to the Landfill), along the eastern side of the site, and along a portion of the western side of the site. The bedrock bedding planes lie nearly horizontal, with a slight dip to the north. Figure 3, Fracture and Bedding Plane Measurements Location Map, illustrates this information.

Stereo aerial photographs of the Landfill site vicinity taken in 1992 were examined by the Project Team to locate fracture traces which might be reflective of bedrock structures underlying the site. The stereo aerial photographs indicate a strong "foliated" topographic pattern from differential weathering of the bedrock surface in the site area. Generally, the more resistant layers of bedrock (e.g., sandstone) underlie higher elevation features, such as ridges and upland protuberancies, while the less resistant bedrock (e.g., shale and highly fractured zones) underlie depressions, such as large gullies. The foliated topographic pattern, which coincides with the preferentially resistant and weathered bedrock features visible in the aerial photographs, generally trends in a northeast/southwest direction.

2.3 Local Bedrock Fracture Systems

The stereo aerial photographs of the Landfill and surrounding area, in conjunction with respective topographic and geologic maps, were reviewed by the Project Team in order to determine the occurrence and location of soil tonal and topographic features (i.e., photo lineaments), potentially related to bedrock structures such as fractures and faults.

In addition, a total of 22 bedrock fracture surfaces in the exposed bedrock outcrops and 3 bedding plane surfaces were located and inspected on April 12, 1993 by Project Team personnel at 7 bedrock outcrops in the site vicinity, as shown in Figure 3. Strike and dip (e.g., orientation and incline) of exposed surfaces were measured, and weathering and staining of fracture surfaces and indications of past movement (i.e., gouge, slickensides, en echelon features, etc.) were noted. A summary of fracture and bedding plane measurements, including strike and dip, is presented in Table 2.

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

TABLE 1
MONITORING WELL COMPLETION INFORMATION

Monitoring Well⁽¹⁾	Reference Elevation (feet MSL)	Total Depth (feet)	Well Diameter (inches)	Depth to Bedrock (feet)	Intake Interval (feet below grade)	Intake Elevation Interval (feet MSL)
MW-1 ⁽²⁾	479.63	27.00	3	0	5 - 27	473.10 - 451.10
MW-2 ⁽²⁾	491.62	28.67	3	0	5 - 28.7	485.50 - 461.80
MW-3 ⁽²⁾	489.74	27.58	3	9.5	14.2 - 27.6	472.50 - 459.10
MW-4 ⁽³⁾	485.08	26.67	3	2.0	7 - 26.7	476.30 - 456.60
MW-5	501.80	18.00	3	3.0	4 - 18	496.50 - 482.50
MW-6s	478.13	25.00	3	10.0	10 - 25	466.70 - 451.70
MW-6d	478.90	50.00	2	10.0	40 - 50	436.90 - 426.90
MW-N	488.58	23.00 ⁽³⁾	4	0	Not Available	Not Available
MW-S	476.16	23.00 ⁽³⁾	4	Not Available	Not Available	Not Available

(1) Monitoring well locations are illustrated on Figure 2, Site Plan.

(2) All information for this monitoring well, except reference elevation, is taken from the Phase II engineering report prepared by Gibbs & Hill.

(3) Depth measured by the Project Team on April 12, 1993.



NOTES:

- BASE MAP PREPARED BY PRAETORIUS & CONRAD, P.C.
- SEE TABLE 2 FOR FRACTURE SURFACE AND BEDDING PLANE INFORMATION.
- T BP1= BEDDING PLANE MEASUREMENT
- T 1= FRACTURE MEASUREMENT

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

FRACTURE AND BEDDING PLANE MEASUREMENTS LOCATION MAP

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TABLE 2

SUMMARY OF FRACTURE AND BEDDING PLANE MEASUREMENTS

Location Identification	Strike	Dip	Remarks
<i>FRACTURE SURFACES</i>			
1	012	90	Red Sandstone and Shale
2	007	90	Red Sandstone and Shale
3	104	77 SW	Red Sandstone and Shale
4	012	86 NW	Red Sandstone and Shale
5	117	90	Red Sandstone and Shale
6	022	80 SE	Red Sandstone and Shale
7	025	88 S	Purple-Red Silt to Fine Sandstone
8	114	82 E	Purple-Red Silt to Fine Sandstone
9	012	84 E	Purple-Red Silt to Fine Sandstone
10	094	80 S	Purple-Red Silt to Fine Sandstone
11	137	88 N	Purple-Red Siltstone
12	057	74 S	Purple-Red Siltstone
13	069	80 S	Iron Stained
14	179	84 W	Minor Iron Staining
15	157	82 W	Iron Stained, Seep
16	065	55 S	Slickensides
17	032	77 S	Red-Purple-Blue Mudstone to Shale
18	142	87 W	Red-Purple-Blue Mudstone to Shale
19	027	90	Green-Grey Mudstone, Siltstone to Shale
20	095	86 E	Green-Grey Mudstone, Siltstone to Shale
21	015	88 W	Seep
22	097	78 S	Seep
<i>BEDDING PLANES</i>			
BP1	109	5 N	None
BP2	69	3 N	None
BP3	57	4 N	None

NOTE: See Figure 3, Fracture and Bedding Plane Measurements Location Map, for outcrop measurement locations.

Analysis of the measured bedrock surfaces indicates the occurrence of a primary fracture system oriented 10° to 20° azimuth (degrees clockwise from north) or north-northeast to south-southwest. Fractures oriented along this trend would be considered "isoclinal," as they parallel the regional foliation pattern in the vicinity of the Landfill site, based on aerial photograph analysis. A secondary fracture system oriented 90° to 110° azimuth or east-southeast to west-north-west also exists. The relationship between the orientations of the primary and secondary fracture systems indicate that they are a "conjugate set." As such, the primary and secondary fractures were produced by the same regional tectonic stress. Both fracture systems exhibit steeply inclined dips.

2.4 Site Hydrogeology

Following completion and development of the new monitoring wells, two rounds of water level measurements were obtained from all of the on-site monitoring wells. The first round of water levels was measured on June 11, 1993, immediately following the completion and development of the new monitoring wells. A second round of water levels was measured on July 20, 1993 during the groundwater sampling program. It should be noted that none of the off-site private residential wells selected for sampling were accessible for measurement of water levels.

During this investigation, saturated conditions were encountered by the Project Team only in the bedrock at the on-site monitoring well locations. Depths to groundwater in the upper 50 feet of the bedrock aquifer ranged from 2.60 to 27.55 feet below grade. Groundwater depth and calculated elevation data collected from the nine monitoring wells are presented in Table 3.

Groundwater elevation measurements obtained from the nine monitoring wells indicate that a groundwater divide occurs in the bedrock aquifer at the site. The potentiometric surface (defined as the level to which groundwater rises due to hydrostatic pressure) within the upper portion of the bedrock aquifer slopes towards the north-northeast under approximately one-half of the Landfill site, and south-southeast under the remaining half. This is consistent with the on-site occurrence of the local surface-water divide. Interpretive maps of groundwater elevation distributions in the bedrock aquifer, based upon June 11, 1993 and July 20, 1993 measurements, are presented in Figures 4 and 5, respectively.

Based on the Project Team's inspection of cores retrieved during monitoring well drilling, groundwater in the bedrock aquifer most likely moves primarily through fractures and bedding planes (i.e., secondary porosity). As a result, the orientation of these bedrock features can locally control the rate and direction of groundwater movement. The observation that fracture and bedding plane inclinations range from almost vertical to almost horizontal, respectively, suggest that groundwater in the upper portion of the bedrock aquifer can exist under conditions ranging from water-table to confined.

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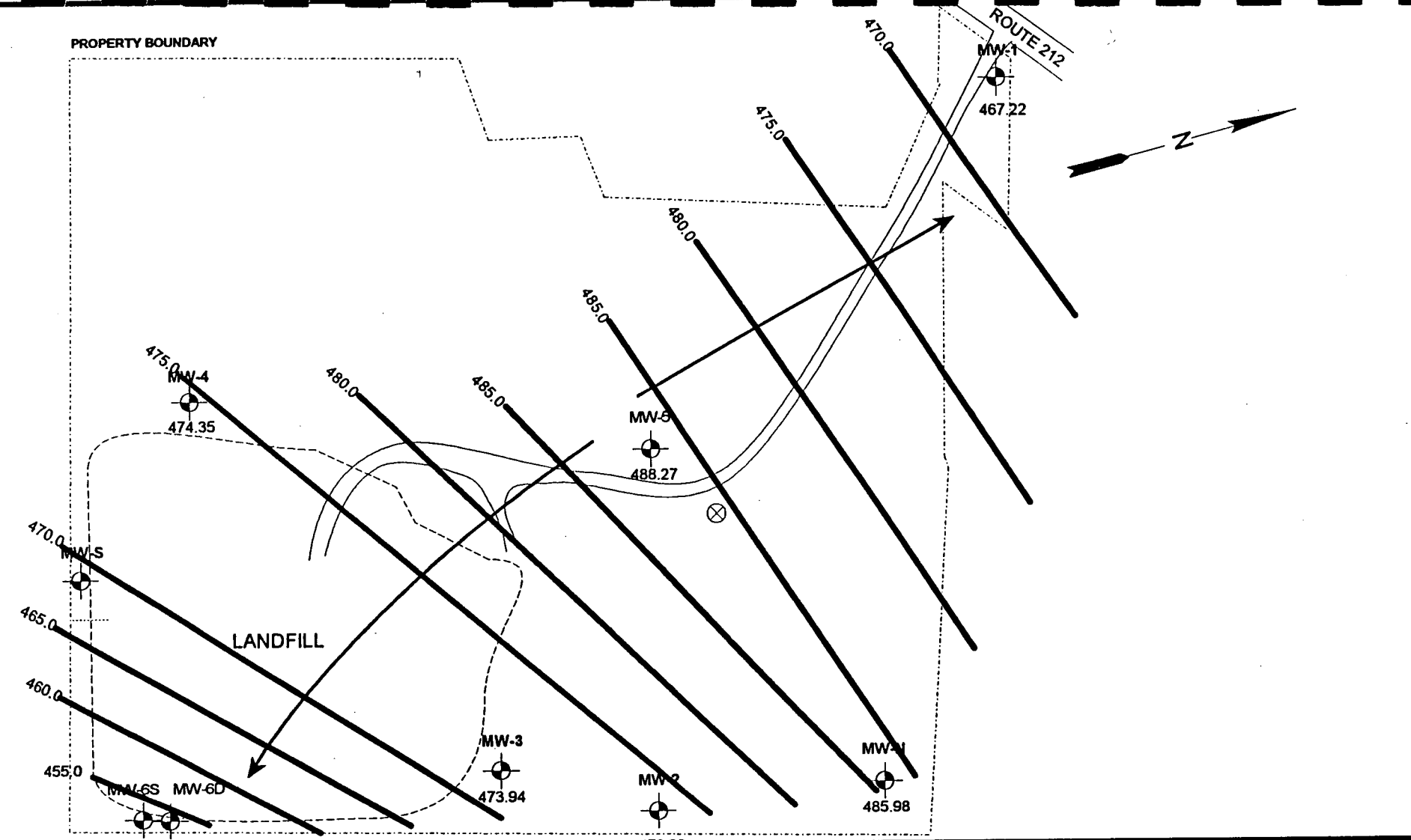
TABLE 3

SUMMARY OF ON-SITE GROUNDWATER LEVEL MEASUREMENTS

Monitoring Well	June 16, 1993		July 20, 1993	
	Depth To Water (Feet)	Groundwater Elevation (feet MSL)	Depth To Water (Feet)	Groundwater Elevation (feet MSL)
MW-1	12.41	467.22	13.32	466.31
MW-2	19.34	472.28	23.32	468.30
MW-3	15.80	473.94	20.48	469.26
MW-4	10.73	474.35	15.00	470.08
MW-5	13.53	488.27	14.38	487.42
MW-6s	24.09	454.04	Dry	Not Available
MW-6d	24.75	454.15	27.57	451.33
MW-N	2.60	485.98	5.00	483.58
MW-S	6.37	469.81	9.68	466.50
Supply Well	Not Available	Not Available	128.70	377.51

PROPERTY BOUNDARY




ROUTE 212



LANDFILL



LEGEND

-  MW-1 EXISTING MONITOR WELL LOCATION WITH GROUND-WATER ELEVATION IN FEET
-  EXISTING SUPPLY WELL LOCATION
-  GROUND-WATER ELEVATION CONTOUR, IN FEET, WITH FLOW DIRECTION

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

GROUND-WATER ELEVATIONS MEASURED ON JUNE 11, 1993

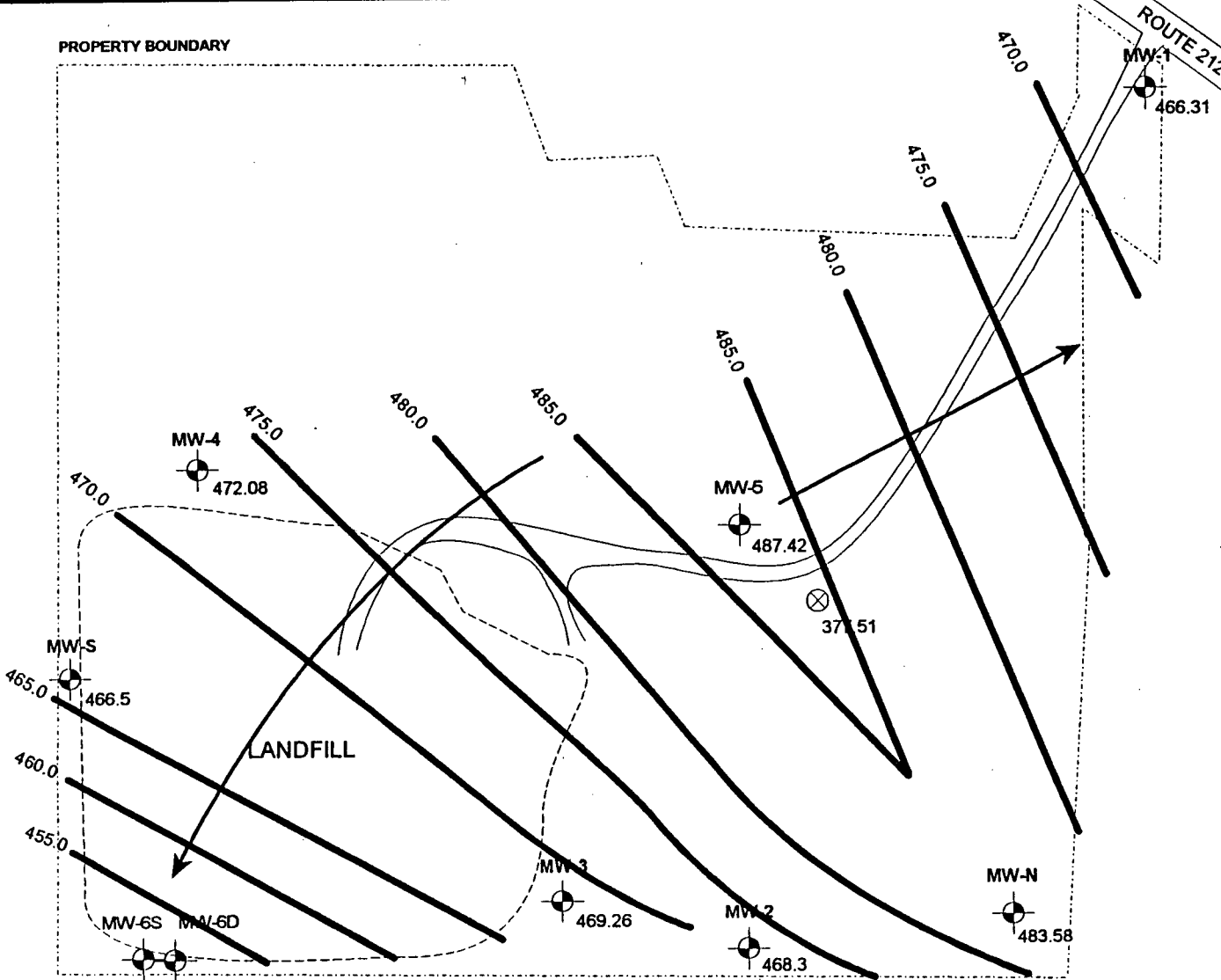
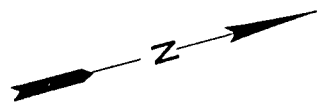
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

DATE: 7/12/93 FIGURE: 4

PROPERTY BOUNDARY

ROUTE 212



LEGEND

-  MW-1
466.31 EXISTING MONITOR WELL LOCATION WITH GROUND-WATER ELEVATION IN FEET
-  377.51 EXISTING SUPPLY WELL LOCATION WITH GROUND-WATER ELEVATION IN FEET
-  GROUND-WATER ELEVATION CONTOUR, IN FEET, WITH FLOW DIRECTION



**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

GROUND-WATER ELEVATIONS MEASURED ON JULY, 20 1993

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A comparison between groundwater elevations measured at wells completed in the shallow and deep portions of the bedrock aquifer (monitoring well MW-5 and the Landfill supply well, respectively) indicate a downward vertical gradient in the vicinity of the groundwater divide.

The hydraulic gradient determined from groundwater elevations measured on June 11, 1993 within that portion of the bedrock aquifer north of the divide, is approximately 0.03 feet vertical per foot horizontal and also 0.03 feet vertical per foot horizontal for that portion of the bedrock aquifer south of the divide. Hydraulic gradients calculated from groundwater elevations measured on July 20, 1993 essentially confirm these gradients.

Tests were conducted by the Project Team on July 19, 1993 to determine the local hydraulic conductivity of the tapped groundwater bearing formation at the new monitoring wells MW-5 and MW-6d. Monitoring well MW-6s was not used since it was dry. Testing was completed using a "slug-test" methodology with data evaluated using the method of Bouwer and Rice (1976) for water-table aquifers. With this method, the hydraulic conductivity of an aquifer is determined by analyzing the rate of change of water level induced in the well by displacing a known volume, or "slug," of water.

Monitoring well MW-5 and MW-6d were tested by completely evacuating the standing volume of water and measuring the rate of water level recovery for 15 minutes. A pressure transducer and data logger were utilized to assure rapid data acquisition during the test period. The initial static water level was measured using an electric water level probe. The pressure transducer was cleaned and rinsed with distilled water and submerged in the well to a predetermined depth. The data logger was programmed to record water levels at intervals appropriate to the expected monitoring well response, as observed during well development.

The relationship of the change in water level to hydraulic conductivity is governed by the Thiem equation as follows:

$$Q = 2\pi KL \left(\frac{y}{\ln \frac{R_e}{r_w}} \right)$$

where:

- Q = rate of flow into the well (L³/T);
- K = hydraulic conductivity of the aquifer (L/T);
- L = length of intake portion of well (L);
- y = rise or fall of water level in well above the static water level following introduction or removal of slug (L);
- R_e = effective radius of influence of y (L);
- r_w = borehole radius (L).

Calculations of hydraulic conductivity using this method assume homogeneity throughout the saturated section of the intake zone. At the Landfill site, most of the groundwater flow in the bedrock aquifer occurs through localized fractures separated by relatively impermeable rock. Thus, hydraulic conductivity values calculated at each well approximate an average of the saturated bedrock interval.

Semi-log time versus water level plots of slug-test data for monitoring wells MW-5 and MW-6d are presented in Appendix II. The hydraulic conductivity values calculated for monitoring wells MW-5 and MW-6d are 15.4 feet per day and 0.041 feet per day, respectively.

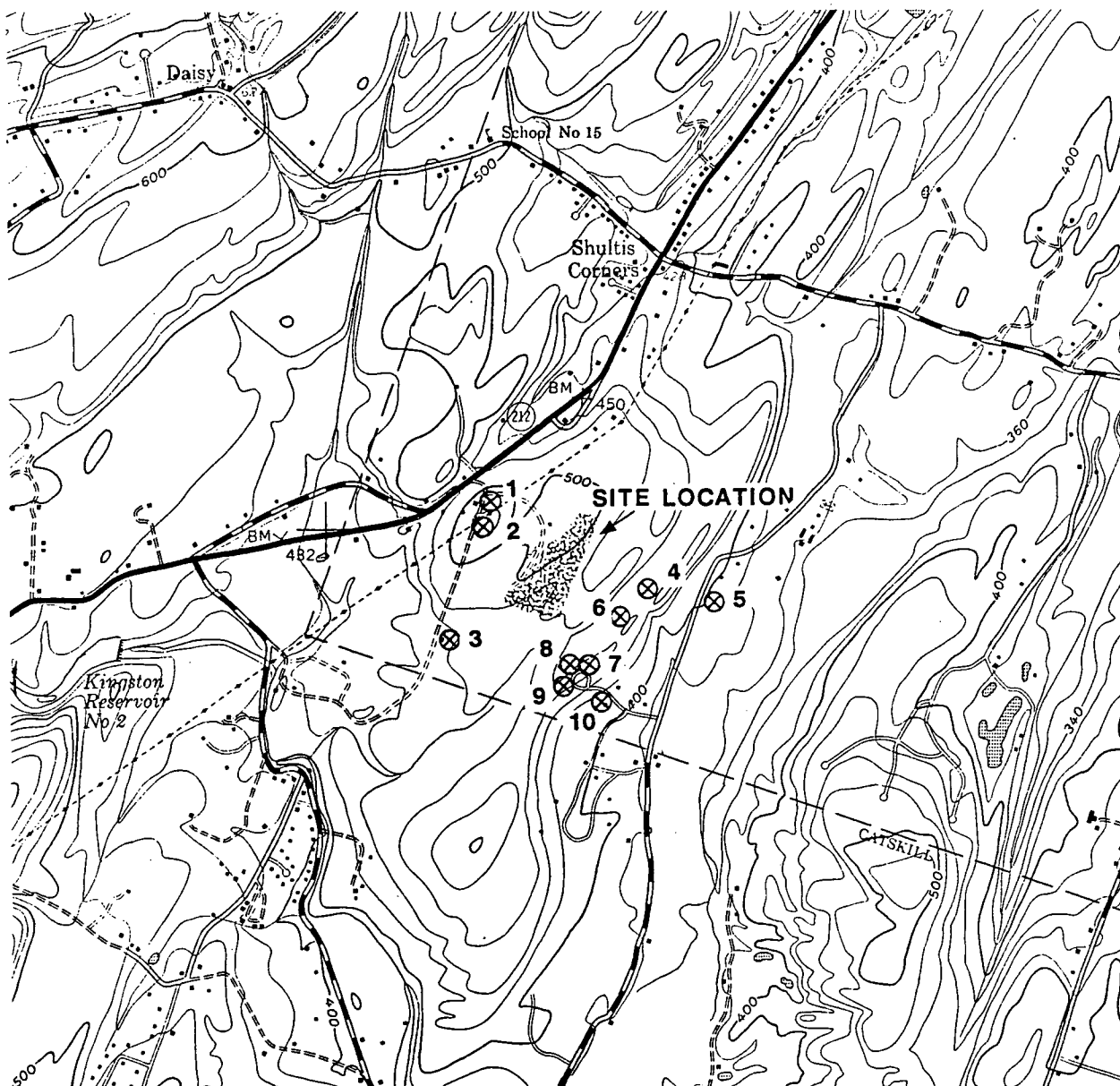
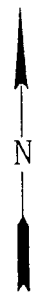


TABLE 4
GROUNDWATER SAMPLE ANALYSIS PARAMETERS

Parameters	Monitoring Wells	Private Residences ⁽¹⁾
Priority Pollutants	X	
Boron	X	
Total Kjeldahl Nitrogen	X	
Ammonia	X	X
Nitrate	X	X
BOD ₅	X	
COD	X	X
TOC	X	
TDS	X	X
Sulfate	X	X
Aluminum	X	
Chromium (Hexavalent)	X	
Sodium	X	X
Detergent (MBAS)	X	X
Calcium	X	
Alkalinity	X	X
Color	X	
Odor	X	
Hardness (Total)	X	
Chloride	X	X
Iron	X	X
Manganese	X	X
Dissolved Oxygen	X	
Specific Conductivity ⁽²⁾	X	X
Static Water Level in Wells ⁽²⁾	X	X
pH ⁽²⁾	X	X
Turbidity	X	X
Arsenic	X	X
Lead	X	X

(1) Including on-site Landfill supply well.

(2) Field measured.



LEGEND:

LOCATION OF OFFSITE RESIDENTIAL WELLS
TARGETED FOR SAMPLING

- 1 DAPOLITO
- 2 SCHUMAKER
- 3 CHANCE
- 4 RENGERS
- 5 CITRIN
- 6 HOFFMAN (DECLINED ACCESS AT TIME OF SAMPLING)
- 7 PEREZ
- 8 KANOVER
- 9 LERNER

NOTE: SEE TABLES 5 AND 7 FOR
RESIDENTIAL WELL INFORMATION

SOURCE: U.S.G.S. 7.5 MINUTE
WOODSTOCK, N.Y. QUADRANGLE



**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

LOCATION MAP OF SAMPLED RESIDENTIAL WELLS

DATE:	REVISED:	PREPARED BY:
		HAZEN AND SAWYER, P.C.
		In Association With
		LEGGETTE, BRASHEARS & GRAHAM, INC.
DRAWN BY:	CHECKED BY:	
FILE:		DATE: 09/08/93
		FIGURE: 6

3.0 GROUNDWATER CONDITIONS

3.1 Introduction

Groundwater sampling was conducted by the Project Team on July 19 and 20, 1993, utilizing both on-site monitoring wells and selected off-site private residential wells. The quantitative analyses of all samples collected during this investigation were completed in accordance with applicable NYSDEC guidelines. The analytical laboratory selected to conduct this work was Toxikon, which is a New York State (NYS) Certified Laboratory. The groundwater samples collected from respective wells were analyzed for the parameters requested by the NYSDEC and identified in the approved PSIP. Table 4 summarizes the groundwater analysis parameters for the investigation.

A chain-of-custody record was maintained to trace the possession and handling of each sample from the time it was collected. The accountability of a sample began when the sample containers were distributed to the Project Team field samplers. Sample labels indicating the client, project site, sample identification number, sample location, date, time, sample collector, preservatives, the chain-of-custody forms and field data record were completed at the time of sampling. All entries were made with waterproof ink at the time of sample collection. Each sample was preserved in accordance with United States Environmental Protection Agency (USEPA) SW-846 guidelines.

All sample bottles were shipped via Federal Express over a two-day period. One cooler containing groundwater samples collected from selected private residential wells was shipped on July 19, 1993. A second shipment of five coolers containing groundwater samples collected from both private residential wells and monitoring wells was sent on July 20, 1993. The sample containers in one of the coolers shipped on July 20 were broken in transit and the cooler was rerouted by Federal Express back to the Project Team office. The containers that were destroyed consisted of partial sample aliquots collected from monitoring wells MW-1, MW-2, MW-5, MW-6d, MW-N, and MW-S. The Project Team contacted Mr. Steven Parisio of NYSDEC Region 3 to notify him of this situation and to discuss the alternatives. It was agreed upon that the few analyses that could not be completed due to the breakage were not the most critical to the investigation, and Mr. Parisio stated that the sampling would not have to be duplicated.

3.2 Groundwater Sampling

3.2.1 Monitoring Well Sampling

On July 19 and 20, 1993, eight of the nine monitoring wells at the Landfill site were sampled in accordance with approved PSIP. Monitoring well MW-6s was completely dry and therefore could not be sampled. Water levels in the other monitoring wells were approximately 2 to 3 feet lower than measured on June 16, 1993.

Water levels were measured to the nearest 0.01 foot using an electronic water measuring device prior to purging and sampling each well. Three times the volume of standing water in each monitoring well was removed using a surface-suction pump prior to groundwater sample collection. The pump and tubing was decontaminated with deionized water and soap between use at each monitoring well to avoid cross contamination.

Groundwater samples were withdrawn from each monitoring well using dedicated, disposable teflon bailers to preclude cross-contamination. The collected samples were placed in the appropriate containers supplied by Toxikon. The sample was transferred from the bailer directly into the container by pouring it down the inner side of the container to minimize aeration. Temperature, pH and specific conductance were measured for each sample by Project Team personnel in the field.

3.2.2 Residential Well Sampling

Private residential well sampling was completed in accordance with the approved PSIP to determine the off-site quality of groundwater in the Landfill area, and to assess the potential impact of Landfill operations on local water supplies. The distribution of the private residential wells selected for sampling by the Project Team, and approved by the NYSDEC, encompasses the entire area surrounding the Landfill as shown in Figure 6, Location Map of Sampled Residential Wells.

Prior to sampling, questionnaires were developed by the Project Team and mailed by the Town to 54 residences within approximately a one-mile radius of the Landfill. Twenty-nine of the questionnaires were returned. Copies of the returned, completed questionnaires are found in Appendix III. Table 5 summarizes the responses of the twenty-nine questionnaires found in Appendix III.

Ten of the mailed questionnaires also included a letter from the Town Supervisor requesting permission to sample their respective private residential wells. Nine of the ten responded positively. However, when scheduling the sampling, one resident (Hoffman) decided not to participate because of dry conditions. In summary, the following private residential wells were sampled:

NO.	RESIDENCE	ADDRESS
1	Dapolito	7337 Artist Lane
2	Schumacher	7336 Artist Lane
3	Chance	7338 Artist Lane
4	Rengers	391 John Joy Road
5	Citrin	404 John Joy Road

NO.	RESIDENCE	ADDRESS
6	Hoffman	365 John Joy Road (Not Sampled)
7	Perez	14 Sawood Lane
8	Kanover	13 Sawood Lane
9	Lerner	12 Sawood Lane

Copies of nine signed access forms are included with the respective returned completed questionnaires found in Appendix III.

Water levels at the private residential wells were not measured by the Project Team prior to sampling due to the lack of access. Prior to sampling, water was discharged to waste from each respective residential water system until the well pump was confirmed to be operating. Once the well pump was on, discharge was maintained for a time adequate to remove approximately three volumes of water from the residents' storage/pressure tank. With the single exception of the Schumacher residence, the water samples were obtained by the Project Team from the tap located closest to the well storage/pressure tank, upstream of any treatment devices. Due to the design of the Schumacher residence's treatment system, this water sample was collected from a tap downstream of an "alum and chlorine" line.

3.3 On-Site Groundwater Quality

Eight of the on-site monitoring wells were sampled for the parameters delineated in Table 4.

Nineteen of the parameters analyzed in the monitoring well groundwater samples collected from the Landfill site exceeded NYS Drinking Water Standards as specified in 6 NYCRR, Chapter 10, Parts 700-705 (the "NYS Standards") in at least one or more of the monitoring wells. Copies of the sample analyses reports from Toxikon are provided in Appendix IV. Table 6 summarizes the analytical results for the on-site monitoring well reports found in Appendix IV.

Concentrations of the inorganic parameters boron, chloride, ammonia, sodium, turbidity, total dissolved solids (TDS), iron, manganese and hardness exceeded the NYS Standards in at least one of the on-site monitoring wells. Concentrations of boron, chloride and ammonia, generally considered to be leachate indicators, exceeded the NYS Standards in monitoring wells MW-3 and MW-S, both located on the southern flank of the Landfill. Sodium concentrations exceeded standards at all of the monitoring wells, with the exception of monitoring well MW-N. Concentrations of turbidity and TDS were exceeded in all of the monitoring wells.

Iron, manganese and hardness exceeded the Federal secondary drinking water standard at nearly all of the monitoring wells, but this is not considered necessarily meaningful for the results of this investigation since these are common constituents in the bedrock aquifer in the area.

Concentrations of five priority pollutant metals were detected in excess of applicable standards in four of the monitoring wells (MW-1, MW-5, MW-6d and MW-N). These metals are silver, cadmium, chromium, lead and zinc, all of which may be leachate indicators. Monitoring well MW-N showed the highest concentrations of priority pollutant metals. This may be, at least in part, due to the very high levels of dissolved silt in the water from this monitoring well, since all of the samples were unfiltered. With the exception of monitoring well MW-6d, in which only silver slightly exceeded the applicable standard, the remaining monitoring wells (MW-1, MW-5 and MW-N) are located along the northern portion of the Landfill site, which reportedly received waste materials from industrial concerns such as Ferroxcube.

Organic compound concentrations for total phenols and four volatile organic compounds (VOCs) exceeded the NYS Standards in at least one of the monitoring wells. Total phenols were detected only in monitoring well MW-N. This compound may be derived from Landfill waste. Of the six VOCs detected in the monitoring well samples, 1,1-dichloroethane (in monitoring well MW-4), benzene (in monitoring wells MW-3, MW-6d and MW-S), toluene (in monitoring wells MW-3 and MW-4) and chlorobenzene (in monitoring wells MW-3 and MS-S) exceeded the applicable standards.

The water sample collected from the on-site supply well only exceeded standards for sodium and TDS, as presented in the next section.

3.4 Off-Site Groundwater Quality

Eight private residential supply wells and the on-site supply well were sampled for the parameters delineated in Table 4.

Of the parameters analyzed, the concentrations of six parameters exceeded the NYS Standards at one or more of the sampled supply wells. Copies of the sample analysis reports from Toxikon are provided in Appendix IV. Table 7 summarizes the analytical results for the off-site supply well reports found in Appendix IV.

Concentrations of the inorganic parameters iron, manganese, sodium, turbidity and TDS exceeded the NYS Standards in at least one of the sampled private residential wells. The standard for sodium was exceeded at all of the wells. Although sodium is considered a leachate indicator, it is also a component of domestic septage, and all of the sampled residences have on-site septic systems. Based on the stated distances and relative concentrations of sodium in the off-site wells, the occurrence of sodium cannot be attributed solely to the Landfill.

Concentrations of iron, manganese, turbidity and TDS were exceeded in nearly all of the sampled private residential wells. Silt seams in the shale bedrock are a common occurrence in this area. Many domestic wells in this region are affected by iron, manganese and suspended sediment problems. As such, the results of these analyses are not considered to be meaningful with respect to impacts directly attributable from the Landfill.

Concentrations of the priority pollutant metal lead exceeded applicable standards at four of the eight sampled private residential wells. The occurrence of lead may be the result of off-site migration of Landfill leachate. However, domestic water and sanitary piping is also a potential contributor to this occurrence.

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

TABLE 5

SUMMARY OF WATER WELL QUESTIONNAIRES

Name & Address	Well Type/ Depth Below Grade (feet)	Pump Type/ Depth Below Grade (feet)	Water Quality	Water Treatment	Septic Field Distance From Well (feet)	Storage Tanks	Remarks
Abrams 9 Sawood Lane	Drilled/ Not Available	Not Available/ Not Available	Odor, Staining of Fixtures	Water Softener	Not Available	Underground Oil Storage Tank	Pump got clogged
Bessmer 336 John Joy Road	Drilled/ 110	Submersible Pump/ 90	Hardness, Staining of Fixtures	None	130	Aboveground Oil Storage Tank	None
Blickstein & Chill 1 Meher Circle	Drilled/ Not Available	Submersible Pump/ Not Available	Odor (sulfur at times)	None	40	None	None
Cassedy 5 Meher Circle	Drilled/ Not Available	Submersible Pump/ Not Available	Good, pH = 9	None	100	Aboveground Storage Tank	None
Chase 457 John Joy Road	Drilled/ 92	Submersible Pump/ 34	Good, Some Staining of Fixtures	None	40	Aboveground Propane Storage Tank	Static = 4 feet
Citrin 404 John Joy Road	Drilled/ Not Available	Submersible Pump/ Not Available	Odor, Staining of Fixtures, Silt or Turbidity	In-Line Filter	20	Aboveground Gas Storage Tank	None
Crist 10 Sawood Lane	Drilled/ 150	Submersible Pump/ 135	Good	None	150	Aboveground Oil Storage Tank	Static = 30 to 40 feet
Dapolito 7337 Artist Lane	Drilled ⁽¹⁾ / Not Available	Submersible Pump ⁽¹⁾ /Not Available	Good	Iron Treatment System, pH Adjustment	75	None	None
Day 523 John Joy Road	Drilled/ 80	Submersible Pump/ Not Available	Good, Silt or Turbidity	None	800	Aboveground Oil Storage Tank	None
Fleischner 286 John Joy Road	Drilled/ Not Available	Not Available/ Not Available	Odor, Staining of Fixtures	Calcium Permanganate	500	Underground Oil Storage Tank	None
Geuss 364 John Joy Road	Drilled /145	Submersible Pump /110	Hardness, Odor (sulfur), Staining of Fixtures	Water Softener, Iron Treatment System	100	None	Soluble red iron, above normal magnesium levels

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

TABLE 5

SUMMARY OF WATER WELL QUESTIONNAIRES

Name & Address	Well Type/ Depth Below Grade (feet)	Pump Type/ Depth Below Grade (feet)	Water Quality	Water Treatment	Septic Field Distance From Well (feet)	Storage Tanks	Remarks
Gillett & Weber 7 Meher Circle	Drilled/ Not Available	Submersible Pump/ Not Available	Good, Odor	None	50	Aboveground Oil Storage Tank	Replaced oil tank because of age; no leakage reported
Gundersen 320 John Joy Road	Drilled/ 75	Submersible Pump/ Not Available	Good	pH Adjustment	100	None	Coliform detected in summer of 1991
Hoffman 365 John Joy Road	Not Available/ Not Available	Not Available/ Not Available	Good, Odor (Sulfur)	Culligan to remove sulfur odor	Not Available	None	None
Husted 29 Gitnick Road	Drilled/ 40	Suction Pump/ Not Applicable	Good, Hardness, Staining of Fixtures, Silt or Turbidity	Iron Treatment System	75	Aboveground Oil Storage Tank	Well drilled extension of an initially dug well
Kanover 13 Sawood Lane	Drilled/ Not Available	Submersible Pump/ Not Available	Not Provided	Water Softener	200	Underground & Aboveground Oil Storage Tanks	Leak in oil supply line, tank drained and oil put in aboveground storage tank.
Lane 309 John Joy Road	Drilled/ 114	Submersible Pump/ Not Available	Odor, Silt or Turbidity, Gas Bubbles	None	100+	Aboveground Oil Storage Tank	Static = 15 feet; uses bottled water
Larkin 479 John Joy Road	Drilled/ Not Available	Submersible Pump/ Not Available	Good, Silt or Turbidity, Acidity- Adjusted	pH Adjustment, Ultraviolet Light, In-Line Filter	200	Two Aboveground Oil Storage Tanks	Replaced septic drain- field in 1991; has swimming pool
Lerner 12 Sawood Lane	Drilled/ 210	Submersible Pump/ 200	Hardness, Odor, Staining of Fixtures	Water Softener	150	None	Static = 60 feet; reports problems with As, Mg, Fe, S and bacteria ⁽²⁾

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

TABLE 5

SUMMARY OF WATER WELL QUESTIONNAIRES

Name & Address	Well Type/ Depth Below Grade (feet)	Pump Type/ Depth Below Grade (feet)	Water Quality	Water Treatment	Septic Field Distance From Well (feet)	Storage Tanks	Remarks
Perez 14 Sawood Lane	Drilled/ 198	Submersible Pump/ 160	Hardness, Staining of Fixtures, Silt or Turbidity	Water Softener, Ultraviolet Light	100	Underground Oil Storage Tank	Taste (awful), replace- ment of "young" pump because of silt and bacteria in well; uses one gallon of bleach in well per month to reduce bacteria
Rengers 391 John Joy Road	Drilled/ 240	Submersible Pump/ Not Available	Hardness, Odor, Silt or Turbidity	Water Softener	150	None	Static = 95 feet
Reimer 1795 Route 212	Drilled/ 120	Submersible Pump/ 120	Hardness, Staining of Fixtures	In-Line Filter, Ultraviolet Light	200	Aboveground Oil Storage Tank	High bacteria noted
Schumacher 33 Artist Lane	Drilled/ 180	Submersible Pump/ Not Available	Hardness, Staining of Fixtures, Silt or Turbidity	Charcoal Filter, Chlorine Tank, Clay Treatment System	35-40	None	Water quality erratic; discoloration from clay
Sharpe 3 Sawood Lane	Drilled/ 110	Submersible Pump/ 108	Good, Odor (slight sulfur)	None	40	Underground Oil Storage Tank	Chemical reaction with metal boiler caused staining in hot water
Simon 11 Sawood Lane	Not Available/ Not Available	Submersible Pump/ Not Available	Hardness, Staining of Fixtures	Reverse Osmosis, In-Line Filter	75	Underground Oil Storage Tank	Frequent laundering
Syracuse 378 John Joy Road	Drilled/ 125	Submersible Pump/ Not Available	Odor, Staining of Fixtures	In-Line Filter, Ultraviolet Light	100	None	Static = 21 feet, high coliform count, petroleum base smell noted in water
Tarsia 240 John Joy Road	Drilled/ 130	Submersible Pump/ 120	Good	In-Line Filter	78	Aboveground Oil Storage Tank	None
Torkelsen 6 Meher Circle	Drilled/ 210	Submersible Pump/ 180	Good, Odor, Staining of Fixtures	None	100	None	None

TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK

TABLE 5

SUMMARY OF WATER WELL QUESTIONNAIRES

Name & Address	Well Type/ Depth Below Grade (feet)	Pump Type/ Depth Below Grade (feet)	Water Quality	Water Treatment	Septic Field Distance From Well (feet)	Storage Tanks	Remarks
Weinstein (Address Not Provided)	Drilled/ Not Available	Submersible Pump/ Not Available	Good	None	30	None	None

- (1) Determined by the Project Team during sampling activities.
(2) As is arsenic, Mg is magnesium, Fe is iron, S is sulfur.

(rep:saugsdirt:5:090993:jb)

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

TABLE 6

WATER QUALITY RESULTS FOR MONITORING WELLS⁽¹⁾

Parameters	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6s	MW-6d	MW-N	MW-S	Standards
Aluminum	4.71	1.33	1.04	1.33	22.0	Dry	0.904	71.7	0.378	None
Alkalinity	152	149	1,030	193	107	Dry	570	163	1,520	None
Boron	0.118	0.266	0.884	0.283	0.107	Dry	0.373	0.348	1.82	1.0
BOD ₅	ND	15.6	68.4	ND	ND	Dry	1.8	14.4	21.3	None
Calcium	6.46	97.9	206	126	80.1	Dry	172	90.3	214	None
Chloride	4.00	60.0	272	64.0	74.0	Dry	245	11.0	653	250
COD	ND	25.0	150	45.0	10.0	Dry	55.0	90.0	350	None
Color	10	10	70	5.0	5.0	Dry	10	20	>70	15
Iron	8.66	1.50	6.67	3.34	25.2	Dry	3.43	112	12.4	0.300
Hardness	ND	380	880	500	284	Dry	660	520	1,000	250
Manganese	1.39	0.895	15.2	4.54	4.20	Dry	3.17	2.05	13.9	0.300
Sodium	70.7	30.2	153	26.2	22.0	Dry	87.5	13.6	370	20
Nitrate	ND	0.094	0.074	ND	0.361	Dry	0.035	0.068	ND	10
Ammonia	ND	0.610	51.3	0.050	0.028	Dry	0.720	1.26	192	2.0
TKN	0.099	1.17	54.8	0.680	1.30	Dry	1.91	44.4	373	None
Odor	1.0	1.0	1.0	1.0	1.0	Dry	1.0	1.0	1.0	3.0
Dissolved Oxygen	11.2	10.4	6.40	10.8	11.2	Dry	10.8	6.40	3.40	None
Total Phenol	NA	ND	ND	ND	ND	Dry	ND	0.029	ND	0.001
Sulfates	14.0	162	12.6	178	54.4	Dry	31.9	36.3	23.2	250
Surfactants-MBAS	ND	ND	0.29	ND	ND	Dry	ND	ND	0.41	0.50

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

TABLE 6

WATER QUALITY RESULTS FOR MONITORING WELLS⁽¹⁾

Parameters	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6s	MW-6d	MW-N	MW-S	Standards
TDS	234	526	1,380	628	360	Dry	948	540	2,360	200
TOC	ND	10.3	71.5	12.3	3.64	Dry	22.2	16.7	144	None
Turbidity	100	42.0	28.0	40.0	700	Dry	50.0	18,000	78.0	5.0
pH ⁽²⁾	8.3	7.1	6.5	6.8	7.3	Dry	6.3	7.5	6.3	6.5 to 8.5
Conductivity ⁽²⁾	330	810	2,540	910	630	Dry	1,530	310	4,600	None
1,1-Dichloroethane	ND	ND	ND	0.00648 ⁽³⁾	ND	Dry	ND	ND	ND	0.005 ⁽³⁾
1,1,1-Trichloroethane	ND	ND	ND	0.00296 ⁽³⁾	ND	Dry	ND	ND	ND	0.005 ⁽³⁾
Benzene	ND	ND	0.00864 ⁽³⁾	ND	ND	Dry	0.0133 ⁽³⁾	ND	0.00529 ⁽³⁾	0.0007 ⁽³⁾
Toluene	ND	ND	0.0656 ⁽³⁾	0.00545 ⁽³⁾	ND	Dry	ND	ND	ND	0.005 ⁽³⁾
Chlorobenzene	ND	ND	0.00271 ⁽³⁾	ND	ND	Dry	ND	ND	0.0211 ⁽³⁾	0.005 ⁽³⁾
Total Xylenes	ND	ND	0.00412 ⁽³⁾	ND	ND	Dry	ND	ND	0.0133 ⁽³⁾	0.015 ⁽³⁾
1,4-Dichlorobenzene	ND	ND	0.00386 ⁽³⁾	ND	ND	Dry	ND	ND	0.00675 ⁽³⁾	0.030 ⁽³⁾
Silver	0.054	ND	ND	ND	0.139	Dry	0.072	0.023	ND	0.050
Cadmium	ND	ND	ND	ND	ND	Dry	ND	0.017	ND	0.010
Chromium	0.022	ND	0.011	ND	0.032	Dry	ND	0.139	0.011	0.050
Copper	0.045	0.027	0.016	0.010	0.077	Dry	0.022	0.142	0.014	0.200
Nickel	ND	ND	ND	ND	ND	Dry	ND	0.177	ND	None
Lead	ND	ND	ND	ND	0.058	Dry	ND	0.173	ND	0.025

**TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK**

TABLE 6

WATER QUALITY RESULTS FOR MONITORING WELLS⁽¹⁾

Parameters	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6s	MW-6d	MW-N	MW-S	Standards
Zinc	0.067	ND	0.045	0.099	0.181	Dry	0.055	0.890	0.131	0.300
Beryllium	0.005	ND	ND	ND	ND	Dry	ND	0.009	ND	None
Mercury	ND	ND	ND	ND	ND	Dry	ND	0.001	ND	0.002

ND = Not Detected

NA = Not Available

⁽¹⁾ All concentrations expressed in parts per million (ppm) unless noted otherwise.

⁽²⁾ Measured by the Project Team in the field at time of sampling.

⁽³⁾ Results expressed by Toxicon in units of parts per billion (ppb).

TABLE 7
WATER QUALITY RESULTS FOR RESIDENTIAL WELLS⁽¹⁾

Parameters	Residents								Landfill Supply Well	Standards
	Chance	Citrin	Dapolito	Kanover	Lerner	Perez	Rengers	Schumacher		
Alkalinity	166	194	147	350	228	42	238	360	430	None
Chloride	65.0	56.0	51.0	140	91.0	143	65.0	47.0	78.0	250
COD	20.0	15.0	10.0	45.0	35.0	45.0	10.0	5.00	20.0	None
Iron	5.82	0.103	3.37	5.40	2.65	1.71	0.027	1.81	0.112	0.300
Manganese	1.40	0.011	0.050	5.15	8.52	6.08	0.541	0.043	0.048	0.300
Sodium	71.0	149	135	83.6	119	91.5	139	231	215	20
Nitrate	ND	ND	0.291	0.055	ND	ND	0.045	ND	3.41	10
Ammonia	0.116	0.039	ND	0.522	1.61	0.972	ND	ND	0.061	2.0
Sulfates	24.1	4.68	ND	32.3	ND	27.2	21.1	12.9	11.0	250
Surfactants-MBAS	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50
TDS	330	406	366	722	630	722	394	444	618	200
Turbidity	38.0	1.00	100	24.0	24.0	6.2	ND	58.0	ND	5.0
Lead	0.245	ND	ND	0.147	ND	ND	0.237	0.227	ND	0.025
pH ⁽²⁾	7.3	7.4	7.5	6.4	7.2	8.7	7.7	8.2	7.6	6.5 to 8.5
Conductivity ⁽²⁾	640	535	550	894	1,090	1,040	720	660	830	None

ND = Not Detected

⁽¹⁾ All concentrations expressed in parts per million (ppm).

⁽²⁾ Measured by the Project Team in the field at time of sampling.



4.0 SUMMARY

The Landfill site is underlain by a thin layer of overburden deposits of zero to 10 feet thick. The bedrock consists of Devonian-age sandstone and shale which outcrops in several areas at the site. The bedding planes on site lie nearly horizontal, dipping slightly to the north. Primary and secondary fracture sets in the bedrock at the site are oriented 10° to 20° azimuth, and 90° to 110° azimuth, respectively. Both fracture sets are inclined relatively steep.

Saturated conditions in the immediate vicinity of the Landfill occurs in the bedrock. A northeast-southwest oriented groundwater divide underlies the site. A comparison between groundwater elevations measured in the shallow and deep bedrock indicates a downward vertical gradient in the vicinity of the groundwater divide.

Groundwater sampling of the on-site monitoring wells, on-site supply well and off-site private residential supply wells indicates the occurrence of several parameters exceeding the NYS Standards. Several inorganic parameters which could be considered leachate indicators (e.g., chloride and ammonia) exceed the NYS Standards in the monitoring wells, but not in any of the private residential wells. Inorganic parameters detected in the private residential wells at concentrations exceeding the NYS Standards can be attributed to several sources (including on-site septic systems, water supply piping, as well as the Landfill). The presence of priority pollutant metals and VOCs in samples collected from Landfill monitoring wells may be related to the historical disposal of industrial waste.



5.0 REFERENCES

The following references were utilized by the Project Team in completing this Supplemental SIR:

- Bower, H. and Rice, R.C., 1976; "A Slug Test For Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells", Water Resources Research, Vol. 12, No. 3.
- Caldwell, D.H. and others, 1987; "Surficial Geologic Map of New York, New York State Museum", Geological Survey, Map and Chart Series No. 40.
- EA Science and Technology, June 1987; "Engineering Investigations at Inactive Hazardous Waste Sites in the State of New York, Phase I Investigation, Saugerties Landfill, Town of Saugerties, Ulster County, Site #356003" prepared for NYSDEC Division of Hazardous Waste Remediation.
- Fisher, W.F., Isachsen, Y.W. and Richard, L.V., 1970; "Geologic Map of New York", New York State Museum and Science Service, Map and Chart Series No. 15.
- Frimpter, M.H., 1972; "Ground-Water Resources of Orange and Ulster Counties, New York", United States Geological Survey Water-Supply Paper 1985.
- Gibbs & Hill, March 1990; "Engineering Investigations at Inactive Hazardous Waste Sites in the State of New York, Phase II Investigation, Saugerties Landfill, Town of Saugerties, Ulster County, Site #356003" prepared for NYSDEC Division of Hazardous Waste Remediation.
- Hazen and Sawyer, P.C. and Leggette, Brashears and Graham, Inc., April 1993; "Draft Proposed Subsurface Investigation Program" for the Town of Saugerties Landfill.
- Isachsen, Y.W. and McKendree, W.G., 1977; "Preliminary Brittle Structures Map of New York", New York State Museum, Map and Chart Series No. 31B.

APPENDIX I

**Well Geologic Logs for
Monitoring Wells MW-5, MW-6s, MW-6d**

GEOLOGIC LOG LEGGETTE, BRASHEARS & GRAHAM, INC. RAMSEY, NEW JERSEY		OWNER: Town of Saugerties
		WELL NO.: MW-5
		PAGE: 1 OF 1 PAGES
SITE LOCATION: Town of Saugerties Landfill Saugerties, New York		SCREEN SIZE & TYPE: NA
		SLOT NO.: NA SETTING: NA
DATE COMPLETED: June 7, 1993		SAND PACK SIZE & TYPE: NA
DRILLING COMPANY: Aquifer Drilling and Testing, Inc. Long Island City, NY		SETTING: NA
		CASING SIZE & TYPE: 4" Schedule 40 PVC
DRILLING METHOD: Hollow-Stem Auger/ NQ-Coring		SETTING: 0 - 4 feet
SAMPLING METHOD: SS, C, Core		SEAL TYPE: Cement/Bentonite Grout
OBSERVER: Paul E. Lindell		SETTING: 0 - 4 feet
REFERENCE POINT (RP): Ground-Surface		BACKFILL TYPE: NA
ELEVATION OF RP: 500.46		STATIC WATER LEVEL: 13.40 from top of PVC
STICK-UP: 1.34 feet above grade		DEVELOPMENT METHOD: Bailer
SURFACE COMPLETION: NA		DURATION: NA YIELD: NA
REMARKS: Highly fractured.		
ABBREVIATIONS: SS = split spoon W = wash C = cuttings G = grab ST = shelly tube REC = Recovery PPM = parts per million		

DEPTH (FEET)		SAMPLE TYPE	BLOW COUNT	REC. (FEET)	PID READING (PPM)	DESCRIPTION
FROM	TO					
0	2	SS	7/3/8/13	1.3	0.4	0-0.3': GRAVEL; trace silt; red; dry.
						0.3-1.3': Silt and fine sand; trace clay; trace shaly gravel; red; slightly moist.
2	4	SS	50/4"	0.2	0	2.0-2.2': GRAVEL; some clay; red; dry.
						Bedrock at approximately 2.5 feet.
4	18	Cores	-	-	0	Mudstone and siltstone; red.
						5-7.5': Highly fractured.
						8.3': Fractured with pulverized material.
						9-9.2': Highly fractured.
						9-14': Fractures approximately every 0.2 feet with iron staining on most fracture surfaces.
						14-14.5': Soft, highly fractured with a mineralized surface.
						14.5-17.4': Fractures approximately every 0.1 to 0.2 feet.
						17.4-18': Highly fractured.
						End of boring: 18 feet.

GEOLOGIC LOG		OWNER: Town of Saugerties	
LEGGETTE, BRASHEARS & GRAHAM, INC.		WELL NO.: MW-6s	
RAMSEY, NEW JERSEY		PAGE: 1 OF 2 PAGES	
SITE LOCATION: Town of Saugerties Landfill Saugerties, New York		SCREEN SIZE & TYPE: NA	
DATE COMPLETED: June 7, 1993		SLOT NO.: NA SETTING: NA	
DRILLING COMPANY: Aquifer Drilling and Testing, Inc. Long Island City, NY		SAND PACK SIZE & TYPE: NA	
DRILLING METHOD: Hollow-Stem Auger/ NQ-Coring		SETTING: NA	
SAMPLING METHOD: SS, C, Core		CASING SIZE & TYPE: 4" Schedule 40 PVC	
OBSERVER: Paul E. Lindell		SETTING: 0 - 10 feet	
REFERENCE POINT (RP): Ground-Surface		SEAL TYPE: Cement/Bentonite Grout	
ELEVATION OF RP: 476.73		SETTING: 0 - 10 feet	
STICK-UP: 1.4 feet above grade		BACKFILL TYPE: NA	
SURFACE COMPLETION: NA		STATIC WATER LEVEL: 20.52 from top of PVC	
REMARKS: Fairly fractured.		DEVELOPMENT METHOD: Bailer	
ABBREVIATIONS: SS = split spoon W = wash C = cuttings G = grab ST = shelly tube REC = Recovery PPM = parts per million		DURATION: NA YIELD: NA	

DEPTH (FEET)		SAMPLE TYPE	BLOW COUNT	REC. (FEET)	PID READING (PPM)	DESCRIPTION
FROM	TO					
0	2	SS	10/12/8/9	1.1	<1	GRAVEL; little fine to medium sand; light brown; dry.
2	4	SS	6/7/10/9	0.7	<1	Same.
4	5	Core	-	-	<1	Cobbles.
5	7	SS	5/1/2/7	1.2	<1	Silt and fine sand; some shaly gravel; light brown; very moist.
7	9	SS	13/22/43/46	1.8	<1	Silt and sand; light brown; some clay; some gravel; red; very moist.
						Bedrock at 10 feet.
10	14	Cores			<1	Siltstone; red.
						11-11.2': Fractured; some iron staining.
14	16	Cores			<1	Mudstone; grey to green.
						15-16.0': Fractured.
16	23.9	Cores			<1	Siltstone; red.
						16-16.5': Weathered.
						16.6': Fracture with iron-staining and mineralization.
						17.0': Fracture with iron staining.

GEOLOGIC LOG		OWNER: Town of Saugerties	
LEGGETTE, BRASHEARS & GRAHAM, INC.		WELL NO.: MW-6d	
RAMSEY, NEW JERSEY		PAGE: 1 OF 1 PAGES	
SITE LOCATION: Town of Saugerties Landfill Saugerties, New York		SCREEN SIZE & TYPE: 2" Schedule 40 PVC	
		SLOT NO.: 020 SETTING: 40-50 feet	
DATE COMPLETED: June 11, 1993		SAND PACK SIZE & TYPE: Morie #2	
DRILLING COMPANY: Aquifer Drilling and Testing, Inc. Long Island City, NY		SETTING: 38-50 feet	
		CASING SIZE & TYPE: Outer 4" Schedule 40 PVC; Inner 2" Schedule 40 PVC	
DRILLING METHOD: Hollow-Stem Auger/Roller Bit/NQ-Coring		SETTING: 4": 0-20 feet 2": 0-40 feet	
SAMPLING METHOD: Cuttings and Cores		SEAL TYPE: Cement/Bentonite Grout	
OBSERVER: Paul E. Lindell		SETTING: 0 - 38 feet	
REFERENCE POINT (RP): Ground-Surface		BACKFILL TYPE: NA	
ELEVATION OF RP: 475.71		STATIC WATER LEVEL: 24.75 from top 2" PVC	
STICK-UP: 2.0 feet above grade		DEVELOPMENT METHOD: Bailer	
SURFACE COMPLETION: NA		DURATION: NA YIELD: NA	
REMARKS: Few fractures overall.			
ABBREVIATIONS: SS = split spoon W = wash C = cuttings G = grab ST = shelly tube REC = Recovery PPM = parts per million			

DEPTH (FEET)		SAMPLE TYPE	BLOW COUNT	REC. (FEET)	PID READING (PPM)	DESCRIPTION
FROM	TO					
0	10	Core	-	-	<1	GRAVEL; little fine to medium sand; light brown; dry.
10	30.2	Core				Mudstone; dark red. 23-25': Highly fractured. 25-26': Fractures approximately 0.3 feet apart. 26-30.2': Fractures approximately 1.0 feet apart.
30.2	39					Siltstone to fine sandstone; red and grey. 32.2': Fracture. 33.8': Fracture.
39	43					Siltstone to fine sandstone; grey. 42': Steep-angle fracture with some weathering.
43	43.5					Mudstone; grey.
43.5	50					Siltstone to fine sandstone; grey. 45.5': Fracture with slight mineralization.
						End of boring: 50 feet.

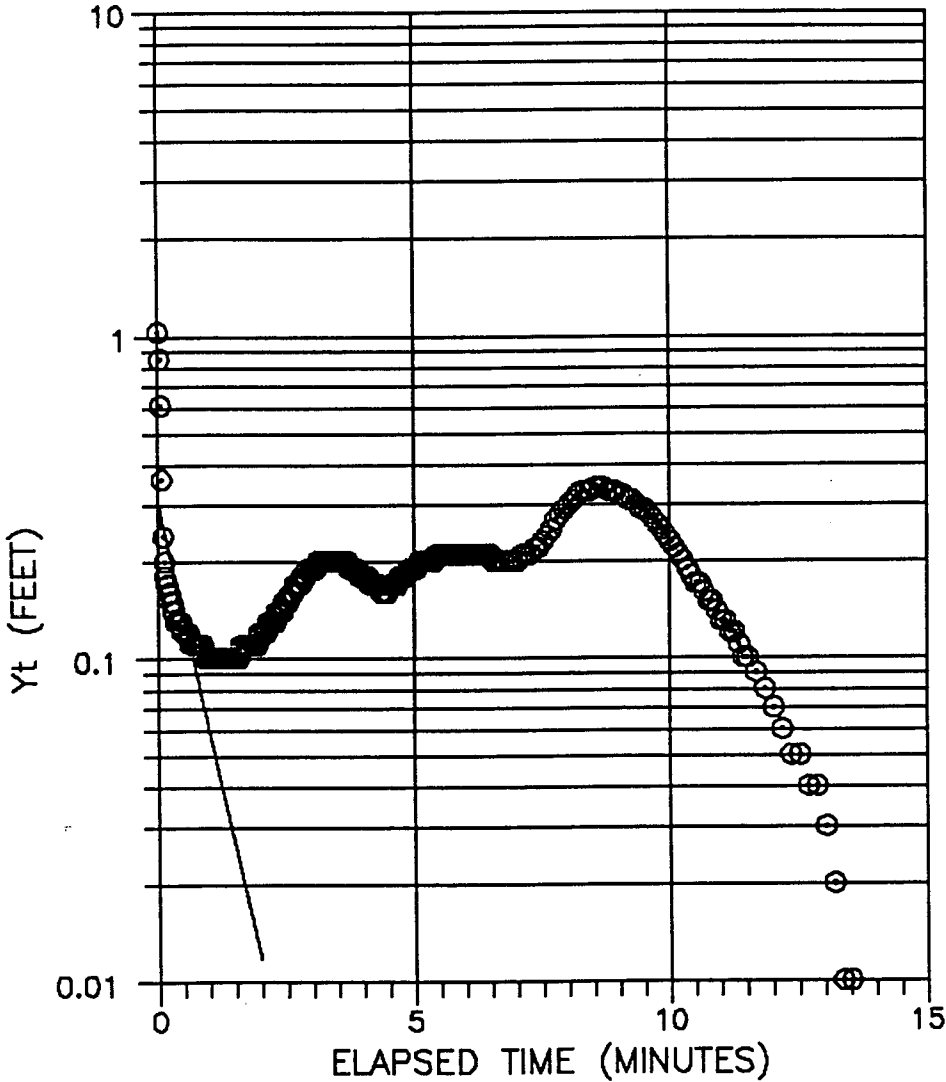
APPENDIX II

**Hydraulic Conductivity Analyses for
Monitoring Wells MW-5 and MW-6d**

TOWN OF SAUGERTIES LANDFILL
 SAUGERTIES, NEW YORK

HYDRAULIC CONDUCTIVITY ANALYSIS
 WELL MW-5

SLUG TEST, 7/20/93

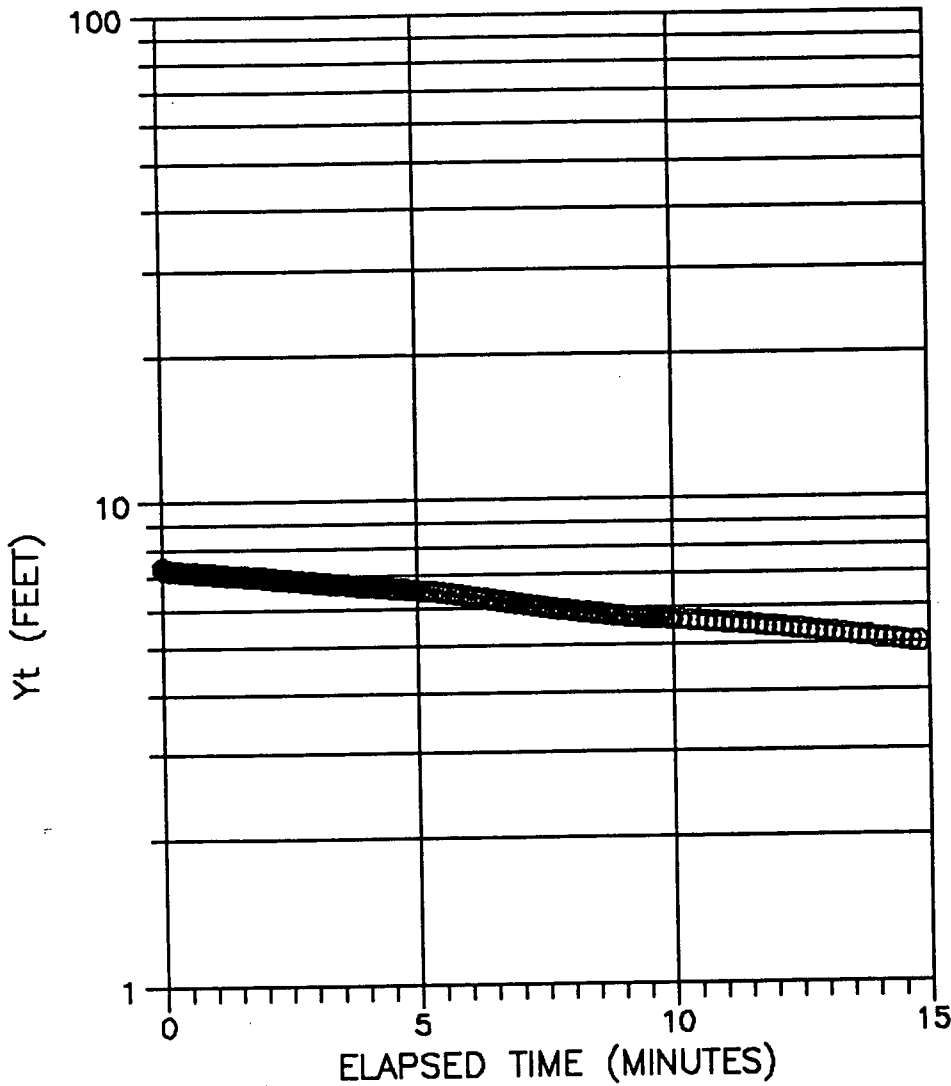


- WELL MW-5
- D = 3.62 feet
- H = 3.62 feet
- L = 3.62 feet
- rce = .125 feet
- rw = .125 feet
- re = 2.129318 feet
- yo = .24 feet
- yt = .1 feet
- t = 30 seconds
- K = 1.785629E-04 feet/sec
- K = 115.4002 gal/day/ft2
- K = 15.42783 feet/day
- K = 5.442596E-03 cm/sec

TOWN OF SAUGERTIES LANDFILL
SAUGERTIES, NEW YORK

HYDRAULIC CONDUCTIVITY ANALYSIS
WELL MW-6d

SLUG TEST, 7/19/93



WELL MW-6d
D = 22.46 feet
H = 22.46 feet
L = 10 feet
rc = .0833 feet
rw = .125 feet
re = 5.849594 feet
yo = 7.3 feet
yt = 6 feet
t = 555 seconds
K = 4.714828E-07 feet/sec
K = .3047061 gal/day/ft²
K = 4.073611E-02 feet/day
K = 1.43708E-05 cm/sec

APPENDIX III

**Completed Water Well Questionnaires
(in Alphabetical Order)**

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: Sharon + Bruce Abrams, 9 Sawood Ln, Saugerties
 Mailing Address: RD 1 Box 9 Woodstock NY 12498
 Telephone: Home: 914 679 7523 Business: 914 246 5816 (Sharon)
 Please check one: Owner Renter: I/We have lived here for 8 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.

Well Depth: ? feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: ? feet

Drilling Contractor Name & Address:
Possibly Titan Drilling, Margaretville NY

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 8 years Depth of Pump: ? feet

Pump Service Contractor Name & Address:
Jeff Lowe, Kingston NY

Water Quality (check one or more): Good Silt or turbidity Odors trace of arsenic
 Hardness Stains Fixtures
 Other Problems high iron content

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? Iron Treatment System? pH Adjustment?
 In-Line Filter? Other Water Treatment Devices? (please explain): _____

Do you have on-site septic? If so, how far is it located from the well? _____

Have you had any problems with your septic? No If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? oil
 Are any of these tanks buried? yes Have you had to replace any of these tanks? no
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: no

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain:
Pump got clogged - Jeff Lowe serviced

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address:	Bruce Beesmer 336 John Jay Rd.
Mailing Address:	336 John Jay Rd. Woodstock, NY 12498
Telephone:	Home: (914) 679-2584 Business: ()
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/>	I/We have lived here for <u>10</u> years.
WELL INFORMATION	
No. of wells serving your property: <u>1</u>	Please provide the following information for each well.
Well Depth: <u>110</u> feet	Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>
Depth to static (non-pumping) water level: _____ feet	
Drilling Contractor Name & Address: Howard May	
Type of Pump (check one):	Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>
Age of Pump: <u>3</u> years	Depth of Pump: <u>90</u> feet
Pump Service Contractor Name & Address: None	
Water Quality (check one or more):	Good <input type="checkbox"/> Silt or turbidity <input type="checkbox"/> Odors <input type="checkbox"/> Hardness <input checked="" type="checkbox"/> Stains Fixtures <input checked="" type="checkbox"/> Other Problems _____
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have:	Water Softener? <input type="checkbox"/> Iron Treatment System? <input type="checkbox"/> pH Adjustment? <input type="checkbox"/> In-Line Filter? <input type="checkbox"/> Other Water Treatment Devices? (please explain): _____
Do you have on-site septic? <u>Yes</u> If so, how far is it located from the well? <u>130'</u>	
Have you had any problems with your septic? <u>No</u> If so, please describe: _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>Yes</u>	
Are any of these tanks buried? <u>No</u> Have you had to replace any of these tanks? <u>No</u> If yes, why? _____	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: <u>No</u>	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: <u>No</u>	
Is the top of your well buried or is the cap above ground?: Buried <input checked="" type="checkbox"/> Above ground <input type="checkbox"/>	
Is the well inside of a building?: Inside <input checked="" type="checkbox"/> Outside <input type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: Lester Blickstein and Polly Chill, One Meher Circle, Woodstock NY 12498

Mailing Address: same

Telephone: Home: (212) 679-6933 Business: ()

Please check one: Owner Renter: I/We have lived here for 21 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.

Well Depth: ? feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: ? feet

Drilling Contractor Name & Address: Don't remember

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 21 years Depth of Pump: ? feet

Pump Service Contractor Name & Address: none

Water Quality (check one or more): Good Silt or turbidity Odors (sulphur at times)
 Hardness Stains Fixtures
 Other Problems

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well. Report from testing lab due after deadline for this report

Do you have: Water Softener? Iron Treatment System? pH Adjustment?
 In-Line Filter? Other Water Treatment Devices? (please explain): none of the above

Do you have on-site septic? Yes If so, how far is it located from the well? 40 feet

Have you had any problems with your septic? no If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? no
 Are any of these tanks buried? _____ Have you had to replace any of these tanks? _____
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: none

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: none

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: Bernice Herman Cassedy #5 Meher Circle Woodstock 12498 NY

Mailing Address: Same as above

Telephone: Home: (914) 679-9620 Business: (212) 599-0666

Please check one: Owner Renter: I/We have lived here for Five years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.

Well Depth: ? feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: ? feet deep

Drilling Contractor Name & Address: ?

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 20 years Depth of Pump: ? feet

Pump Service Contractor Name & Address:

Water Quality (check one or more): Good Silt or turbidity Odors
Hardness Stains Fixtures
Other Problems

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well. Test of 4/15/92 attached

Do you have: Water Softener? no Iron Treatment System? no pH Adjustment? pH = 9
In-Line Filter? no Other Water Treatment Devices? (please explain): no

Do you have on-site septic? yes If so, how far is it located from the well? ~ 100 ft

Have you had any problems with your septic? no If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? yes
Are any of these tanks buried? no Have you had to replace any of these tanks? no
If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: no

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: no

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(cmemouques1.sau:062193;jb)

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION (Address <u>Citrus</u>)	
Name & Street Address: <u>404 Johnson Rd Woodstock NY 12498</u>	
Mailing Address: <u>Same</u>	
Telephone: Home: <u>(914) 6796308</u>	Business: <u>(518) 463 4573</u>
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/> If <input checked="" type="checkbox"/> We have lived here for <u>21</u> years.	
WELL INFORMATION	
No. of wells serving your property: <u>1</u> Please provide the following information for each well.	
Well Depth: _____ feet	Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>
Depth to static (non-pumping) water level: <u>2</u> feet	
Drilling Contractor Name & Address: _____	
Type of Pump (check one): Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>	
Age of Pump: <u>5</u> years	Depth of Pump: <u>?</u> feet
Pump Service Contractor Name & Address: _____	
Water Quality (check one or more): Good <input type="checkbox"/> Silt or turbidity <input checked="" type="checkbox"/> Odors <input checked="" type="checkbox"/> Hardness _____ Stains <input checked="" type="checkbox"/> <u>Furnish</u> Other Problems _____	
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have: Water Softener? <input type="checkbox"/> Iron Treatment System? <input type="checkbox"/> pH Adjustment? <input type="checkbox"/> In-Line Filter? <input checked="" type="checkbox"/> Other Water Treatment Devices? (please explain): _____	
Do you have on-site septic? <input checked="" type="checkbox"/> If so, how far is it located from the well? <u>20 ft</u>	
Have you had any problems with your septic? <u>No</u> If so, please describe: _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>Gas</u> Are any of these tanks buried? <u>No</u> Have you had to replace any of these tanks? _____ If yes, why? _____	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: _____	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: _____	
Is the top of your well buried or is the cap above ground?: Buried <input type="checkbox"/> Above ground <input checked="" type="checkbox"/>	
Is the well inside of a building?: Inside <input checked="" type="checkbox"/> Outside <input checked="" type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

ACCESS PERMISSION FORM

This will authorize representatives of Hazen and Sawyer and/or Leggette, Brashears & Graham, Inc., acting on behalf of the Town of Saugerties, to enter upon my property for the purpose of making water-level measurements in my water-supply well, and collecting a sample from my water system. I understand that I will receive copies of the data collected, as described in the letter.

Signature: Adrenne Citron Michael Citron

Printed Name: Adrenne Citron Michael Citron

Address of Premises: 404 John Jay Rd.
Woodstock NY 12498

Date: June 28, 1993

Mailing Address: Same as above

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address: <u>JUDITH CRIST - 10 SAWOOD LN.</u>	
Mailing Address: <u>" " " WOODSTOCK 12498</u>	
Telephone: Home: <u>(914) 679-7520</u> Business: <u>()</u>	
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/> I/We have lived here for <u>6</u> years.	
WELL INFORMATION	
No. of wells serving your property: <u>1</u> Please provide the following information for each well.	
Well Depth: <u>150</u> feet Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>	
Depth to static (non-pumping) water level: <u>30-40</u> feet	
Drilling Contractor Name & Address: <u>Builder (Peter Lang) thinks he's out of business</u>	
Type of Pump (check one): Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>	
Age of Pump: <u>11</u> years Depth of Pump: <u>135</u> feet	
Pump Service Contractor Name & Address: <u>Builder + 5-year owner (Peter Lang) says contractor did it for him</u>	
Water Quality (check one or more): Good <input checked="" type="checkbox"/> Silt or turbidity <input type="checkbox"/> Odors <input type="checkbox"/> Hardness <input type="checkbox"/> Stains Fixtures <input type="checkbox"/> Other Problems <input type="checkbox"/>	
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well. <u>Have no copies but 5/92 analysis by Watercheck found it OK</u>	
Do you have: Water Softener? <input type="checkbox"/> Iron Treatment System? <input type="checkbox"/> pH Adjustment? <input type="checkbox"/> In-Line Filter? <input type="checkbox"/> Other Water Treatment Devices? (please explain): _____ _____	
Do you have on-site septic? <u>yes</u> If so, how far is it located from the well? <u>on other side of house - 150ft?</u>	
Have you had any problems with your septic? <u>No</u> If so, please describe: _____ _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>yes</u> Are any of these tanks buried? <u>No</u> Have you had to replace any of these tanks? <u>No</u> If yes, why? _____	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: <u>No</u> _____ _____	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: <u>No</u> _____ _____	
Is the top of your well buried or is the cap above ground?: Buried <input type="checkbox"/> Above ground <input checked="" type="checkbox"/>	
Is the well inside of a building?: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(c:\mcom\ques1.sau:062193:jb)

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address:	MR. & MRS DAPOLIT 7337 ARTIST R
Mailing Address:	7337 RT. 212 SAUGERTIES NY. 12477
Telephone: Home:	607-5121 Business: NO
Please check one: Owner	<input checked="" type="checkbox"/> Renter: _____ I/We have lived here for 14 years.
WELL INFORMATION	
No. of wells serving your property:	1 Please provide the following information for each well.
Well Depth:	2 feet Well Type (check one): Drilled <input type="checkbox"/> Dug <input checked="" type="checkbox"/>
Depth to static (non-pumping) water level:	2 feet
Drilling Contractor Name & Address:	?
Type of Pump (check one):	Submersible <input checked="" type="checkbox"/> Jet <input checked="" type="checkbox"/> Suction _____
Age of Pump:	3 or 4 years Depth of Pump: 2 feet
Pump Service Contractor Name & Address:	HECKEROTH WOODSTOCK
Water Quality (check one or more):	Good <input checked="" type="checkbox"/> Silt or turbidity _____ Odors _____ Hardness 2 Stains Fixtures _____ Other Problems?
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have:	Water Softener? <input checked="" type="checkbox"/> Iron Treatment System? <input checked="" type="checkbox"/> pH Adjustment? _____ In-Line Filter? _____ Other Water Treatment Devices? (please explain): _____
Do you have on-site septic?	<input checked="" type="checkbox"/> If so, how far is it located from the well? 75 FT.
Have you had any problems with your septic?	_____ If so, please describe: _____
Do you have any on-site storage tanks (e.g., heating oil)?	<input checked="" type="checkbox"/>
Are any of these tanks buried?	_____ Have you had to replace any of these tanks? _____ If yes, why? _____
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.?	If so, please describe: _____ NO
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain:	_____ <input checked="" type="checkbox"/> _____ NO
Is the top of your well buried or is the cap above ground?	Buried _____ Above ground <input checked="" type="checkbox"/>
Is the well inside of a building?	Inside _____ Outside <input checked="" type="checkbox"/>

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(cmcmoe:ques1.sau.062193:jb)

ACCESS PERMISSION FORM

This will authorize representatives of Hazen and Sawyer and/or Leggette, Brashears & Graham, Inc., acting on behalf of the Town of Saugerties, to enter upon my property for the purpose of making water-level measurements in my water-supply well, and collecting a sample from my water system. I understand that I will receive copies of the data collected, as described in the letter.

Signature: DORIS DAPOLITO

Printed Name: Doris Dapolito

Address of Premises: 7337 RT 212 ARTIST BK.

Saugerties, N. Y. 12477

Date: June 26. 93

Mailing Address: 7337 Rt 212.

Saugerties, N. Y. 12477

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: SYLVIA DAY 523 John Jay Pl. Woodstock, NY 12488
 Mailing Address: Same as above
 Telephone: Home: (914) 246-8865 Business: (914) 246-8865
 Please check one: Owner Renter: I/We have lived here for 8 1/2 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.

Well Depth: 50 feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: _____ feet ?

Drilling Contractor Name & Address: Harry Park, Woodstock, NY 12498

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 8 1/2 years Depth of Pump: _____ feet ?

Pump Service Contractor Name & Address: David Guido 62 Lauren Ct. Woodstock, NY 12498

Water Quality (check one or more): Good Silt or turbidity Odors _____
 Hardness _____ Stains Fixtures _____
 Other Problems _____

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? No Iron Treatment System? No pH Adjustment? No
 In-Line Filter? No Other Water Treatment Devices? (please explain): No

Do you have on-site septic? Yes If so, how far is it located from the well? 800 ft

Have you had any problems with your septic? No If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? ~~No~~ Yes
 Are any of these tanks buried? No Have you had to replace any of these tanks? No
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: No

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: When I first moved in pump failed because it was put in incorrectly. I had it replaced.

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: Peter & Jeannette Fleischer 286 John Jay Rd

Mailing Address: Box 133 Woodstock NY 12498-0133

Telephone: Home: (914) 679 4525 Business: (201) 478 3700

Please check one: Owner Renter: I/We have lived here for 4 years.

WELL INFORMATION

No. of wells serving your property: _____ Please provide the following information for each well.

Well Depth: 2 feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: 2 feet

Drilling Contractor Name & Address: ?

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 2 years Depth of Pump: _____ feet

Pump Service Contractor Name & Address: None

Water Quality (check one or more): Good Silt or turbidity Odors
 Hardness Stains Fixtures
 Other Problems _____

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? Iron Treatment System? pH Adjustment?
 In-Line Filter? Other Water Treatment Devices? (please explain): treats with calcium ~~manganese~~ permanganate.

Do you have on-site septic? Yes If so, how far is it located from the well? 500 feet

Have you had any problems with your septic? No If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? Yes
 Are any of these tanks buried? Yes Have you had to replace any of these tanks? No
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: No

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: No

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(continued on ques. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: RANDALL C BEUSS
 Mailing Address: 364 JOHN JOY ROAD, WOODSTOCK N.Y. 12498
 Telephone: Home: (914) 679-5700 Business: (914) 385-3597
 Please check one: Owner Renter: _____ I/We have lived here for 8 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.
 Well Depth: 145 feet Well Type (check one): Drilled Dug _____
 Depth to static (non-pumping) water level: 20 feet
 Drilling Contractor Name & Address:
SHAMRO, KERKONSON N.Y.
 Type of Pump (check one): Submersible Jet _____ Suction _____
 Age of Pump: 6 years Depth of Pump: 110 feet
 Pump Service Contractor Name & Address:
SHAMRO, KERKONSON N.Y.
 Water Quality (check one or more): Good _____ Silt or turbidity High Odors SULFUR (AT TIMES)
 Hardness 6.0 Stains Fixtures _____
 Other Problems RED IRON (SOLUBLE)
 Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? In-Line Filter? _____
 Iron Treatment System? Other Water Treatment Devices? (please explain): _____
 pH Adjustment? _____

Do you have on-site septic? YES If so, how far is it located from the well? 100 FT

Have you had any problems with your septic? NO If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? NO
 Are any of these tanks buried? _____ Have you had to replace any of these tanks? _____
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: NO

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: NO
COPY OF WATER ANALYSIS IS AVAILABLE UPON REQUEST
ABOVE NORMAL MAGNESIUM LEVELS.

Is the top of your well buried or is the cap above ground? Buried _____ Above ground

Is the well inside of a building?: Inside _____ Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address: <u>JOHN GILLET & PAM WEBER, 7 MEHER CIRCLE</u>	
Mailing Address: <u>WOODSTOCK, NY 12498</u>	
Telephone: Home: <u>(914) 679-9439</u> Business: <u>(914) 339-4092</u>	
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/> I/We have lived here for <u>18</u> years.	
WELL INFORMATION	
No. of wells serving your property: <u>1</u> Please provide the following information for each well.	
Well Depth: _____ feet Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>	
Depth to static (non-pumping) water level: _____ feet	
Drilling Contractor Name & Address: <u>TOM RILEY CONTRACTOR</u>	
Type of Pump (check one): Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>	
Age of Pump: _____ years Depth of Pump: _____ feet	
Pump Service Contractor Name & Address:	
Water Quality (check one or more): Good <input checked="" type="checkbox"/> Silt or turbidity _____ Odors <input checked="" type="checkbox"/> Hardness _____ Stains Fixtures _____ Other Problems _____	
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have: Water Softener? _____ Iron Treatment System? _____ pH Adjustment? _____ In-Line Filter? _____ Other Water Treatment Devices? (please explain): _____	
Do you have on-site septic? <u>YES</u> If so, how far is it located from the well? <u>~ 50 feet</u>	
Have you had any problems with your septic? <u>NO</u> If so, please describe: _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>YES</u> Are any of these tanks buried? <u>NO</u> Have you had to replace any of these tanks? <u>YES</u> If yes, why? <u>AGE - NO LEAKAGE.</u>	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: <u>NO</u>	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: <u>NO</u>	
Is the top of your well buried or is the cap above ground?: Buried <input type="checkbox"/> Above ground <input checked="" type="checkbox"/>	
Is the well inside of a building?: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: HARVEY & CAROL HOFFMAN
 Mailing Address: 365 TOLAN JOY ROAD WOODSTOCK NY 1498
 Telephone: Home: (914) 679-6358 Business: ()
 Please check one: Owner Renter: I/We have lived here for 10 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.
 Well Depth: _____ feet Well Type (check one): Drilled Dug
 Depth to static (non-pumping) water level: _____ feet
 Drilling Contractor Name & Address: _____
 Type of Pump (check one): Submersible Jet Suction
 Age of Pump: 10 years Depth of Pump: _____ feet
 Pump Service Contractor Name & Address: HECKEROTH PLUMBING - WOODSTOCK NY
 Water Quality (check one or more): Good Silt or turbidity Odors
 Hardness Stains Fixtures
 Other Problems _____

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? Iron Treatment System? pH Adjustment?
 In-Line Filter? Other Water Treatment Devices? (please explain): OLLIGANT SYSTEM TO REMOVE SULFUR ODOR

Do you have on-site septic? YES If so, how far is it located from the well? _____

Have you had any problems with your septic? NO If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? NO
 Are any of these tanks buried? _____ Have you had to replace any of these tanks? _____
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: NO

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: NO

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

ACCESS PERMISSION FORM

This will authorize representatives of Hazen and Sawyer and/or Legette, Brashears & Graham, Inc., acting on behalf of the Town of Saugerties, to enter upon my property for the purpose of making water-level measurements in my water-supply well, and collecting a sample from my water system. I understand that I will receive copies of the data collected, as described in the letter.

Signature:

Harvey B. Hoffman

Printed Name:

HARVEY B. HOFFMAN

Address of Premises:

365 JOHN JOY ROAD
WOODSTOCK NY 12498

Date:

7/5/93

Mailing Address:

SAME

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: Richard and Francesca Husted

Mailing Address: 29 Gitnick Road, Woodstock, New York 12498

Telephone: Home: (914) 679-6910 Business: (914) 679-8720

Please check one: Owner Renter: I/We have lived here for 40 years.

WELL INFORMATION

No. of wells serving your property: one Please provide the following information for each well.

Well Depth: 40 feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: _____ feet

Drilling Contractor Name & Address:
Unknown---well was drilled in the 1940's to extend an early dug well from the 1800's.

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 10+ years Depth of Pump: _____ feet (Pump is located in our basement.)

Pump Service Contractor Name & Address:
Heckeroth Plumbing, Electric & Heating, 13 Rock City Road, Woodstock, NY 12498

Water Quality (check one or more): Good Silt or turbidity Odors
Hardness Stains Fixtures
Other Problems _____

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well. See attached two tests.

Do you have: Water Softener? Iron Treatment System? pH Adjustment?
In-Line Filter? Other Water Treatment Devices? (please explain): _____

Do you have on-site septic? Yes. If so, how far is it located from the well? 75'

Have you had any problems with your septic? No. If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? Yes.
Are any of these tanks buried? No. Have you had to replace any of these tanks? No.
If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: _____
None.

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: _____
None.

Is the top of your well buried or is the cap above ground? Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggett, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(c:\memos\ques1.suu:062193;jb)

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address: <u>BURT CAWNER, 13 SAWOOD LN</u>	
Mailing Address: <u>WOODSTOCK, N.Y. 12498</u>	
Telephone: Home: <u>(914) 679-6775</u> Business: <u>(914) 255-0460</u>	
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/> We have lived here for <u>8</u> years.	
WELL INFORMATION	
No. of wells serving your property: <u>1</u> Please provide the following information for each well.	
Well Depth: <u>?</u> feet Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>	
Depth to static (non-pumping) water level: <u>?</u> feet	
Drilling Contractor Name & Address: <u>?</u>	
Type of Pump (check one): Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>	
Age of Pump: <u>7</u> years Depth of Pump: <u>?</u> feet	
Pump Service Contractor Name & Address: <u>FLOYD KRUM WEST HURLEY</u>	
Water Quality (check one or more): Good <input type="checkbox"/> Silt or turbidity <input type="checkbox"/> Odors <input type="checkbox"/> Hardness <input type="checkbox"/> Stains Fixtures <input type="checkbox"/> Other Problems <u>ENCLOSED REPORT</u>	
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have: Water Softener? <input checked="" type="checkbox"/> Iron Treatment System? <input type="checkbox"/> pH Adjustment? <input type="checkbox"/> In-Line Filter? <input type="checkbox"/> Other Water Treatment Devices? (please explain): _____	
Do you have on-site septic? <u>YES</u> If so, how far is it located from the well? <u>~ 200'</u>	
Have you had any problems with your septic? <u>NO</u> If so, please describe: _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>YES</u>	
Are any of these tanks buried? <u>1</u> Have you had to replace any of these tanks? <u>YES</u>	
If yes, why? <u>LEAK IN SUPPLY LINE. TANK WAS DRAIN AND OIL WAS PUT INTO AN ABOVE GROUND TANK</u>	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: _____	
<u>I PURCHASE WATER EACH SEASON FROM TURCO BROTHERS</u>	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: _____	
Is the top of your well buried or is the cap above ground?: Buried <input type="checkbox"/> Above ground <input checked="" type="checkbox"/>	
Is the well inside of a building?: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

ACCESS PERMISSION FORM

This will authorize representatives of Hazen and Sawyer and/or Leggette, Brashears & Graham, Inc., acting on behalf of the Town of Saugerties, to enter upon my property for the purpose of making water-level measurements in my water-supply well, and collecting a sample from my water system. I understand that I will receive copies of the data collected, as described in the letter.

Signature: Burt Kanover

Printed Name: BURT KANOVER

Address of Premises: 13 SAWOOD LN
WOODSTOCK, NY

Date: 6/27/93

Mailing Address: SAME AS ABOVE

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address:	Louis A. Lane 309 John Jay Road
Mailing Address:	Woodstock NY 12497
Telephone: Home:	(914) 679-7567
Business:	(914) 635-2136
Please check one: Owner	<input checked="" type="checkbox"/> Renter: <input type="checkbox"/> I/We have lived here for <u>11</u> years.
WELL INFORMATION	
No. of wells serving your property:	<u>1</u> Please provide the following information for each well.
Well Depth: <u>114</u> feet	Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>
Depth to static (non-pumping) water level: <u>15</u> feet	
Drilling Contractor Name & Address: Howard May - Out of Business Now - Address unknown	
Type of Pump (check one):	Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>
Age of Pump: <u>11</u> years	Depth of Pump: <u> </u> feet
Pump Service Contractor Name & Address: Self!	
Water Quality (check one or more):	Good <input type="checkbox"/> Silt or turbidity <input checked="" type="checkbox"/> Odors <input checked="" type="checkbox"/> Hardness <input type="checkbox"/> Stains Fixtures <input type="checkbox"/> Other Problems <u>Gas Bubbles</u>
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have:	Water Softener? <input type="checkbox"/> Iron Treatment System? <input type="checkbox"/> pH Adjustment? <input type="checkbox"/> In-Line Filter? <input type="checkbox"/> Other Water Treatment Devices? (please explain): <u>NONE - Drink bottled water</u>
Do you have on-site septic?	<u>Yes</u> If so, how far is it located from the well? <u>100 + ft</u>
Have you had any problems with your septic?	<u>No</u> If so, please describe: <u> </u>
Do you have any on-site storage tanks (e.g., heating oil)?	<u>Yes</u>
Are any of these tanks buried?	<u>No</u> Have you had to replace any of these tanks? <u>No</u>
If yes, why? <u> </u>	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: <u>NONE</u>	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: <u>NONE</u>	
Is the top of your well buried or is the cap above ground?:	Buried <input checked="" type="checkbox"/> Above ground <input type="checkbox"/>
Is the well inside of a building?:	Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
(P.O. CHANGED 372 TO 479 JOHN JOY RD.)	
Name & Street Address:	JOHN T. LARKIN, 479 JOHN JOY RD, WOODSTOCK NY
Mailing Address:	PO BOX 1089, WOODSTOCK, NY 12498
Telephone: Home:	(914) 679-6338 Business: <input type="checkbox"/>
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/>	I/We have lived here for <u>7</u> years.
WELL INFORMATION	
No. of wells serving your property: <u>1</u>	Please provide the following information for each well.
Well Depth: <u>UNKNOWN</u> feet	Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>
Depth to static (non-pumping) water level: <u>2</u> feet	<u>UNKNOWN</u>
Drilling Contractor Name & Address: <u>UNKNOWN</u>	
Type of Pump (check one): Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>	
Age of Pump: <u> </u> years	Depth of Pump: <u> </u> feet <u>AGE + DEPTH UNKNOWN</u>
Pump Service Contractor Name & Address: <u>HEYER CO., WEST HURLEY, NY.</u>	
Water Quality (check one or more):	Good <input checked="" type="checkbox"/> Silt or turbidity <input checked="" type="checkbox"/> Odors <input type="checkbox"/> Hardness <input type="checkbox"/> Stains Fixtures <input type="checkbox"/> Other Problems <u>ACIDITY-ADJUSTED</u>
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have: Water Softener? <input type="checkbox"/> In-Line Filter? <input checked="" type="checkbox"/>	Iron Treatment System? <input type="checkbox"/> Other Water Treatment Devices? (please explain): <u>ULTRA VIOLET LIGHT</u> pH Adjustment? <input checked="" type="checkbox"/>
Do you have on-site septic? <u>YES</u> If so, how far is it located from the well? <u>200 FT.</u>	
Have you had any problems with your septic? <u>REPLACED DRAIN FIELD - 1991</u> If so, please describe:	
Do you have any on-site storage tanks (e.g., heating oil)? <u>YES - 2</u> Are any of these tanks buried? <u>NO</u> Have you had to replace any of these tanks? <u>NO</u> If yes, why? <u> </u>	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: <u>SWIMMING POOL</u>	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: <u>NO</u>	
Is the top of your well buried or is the cap above ground?: Buried <input type="checkbox"/> Above ground <input checked="" type="checkbox"/>	
Is the well inside of a building?: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address: <u>Jerrold Lerner 12 Sawood Ln, Woodstock, NY 12498</u>	
Mailing Address: <u>Same</u>	
Telephone: Home: <u>(514) 679-9049</u>	Business: <u>(514) 338-2887</u>
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/> I/We have lived here for <u>12</u> years.	
WELL INFORMATION	
No. of wells serving your property: <u>1</u> Please provide the following information for each well.	
Well Depth: <u>210</u> feet	Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>
Depth to static (non-pumping) water level: <u>60</u> feet	
Drilling Contractor Name & Address: <u>Frank Sebrese Modawa NY</u>	
Type of Pump (check one): Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>	
Age of Pump: <u>8</u> years	Depth of Pump: <u>200</u> feet
Pump Service Contractor Name & Address:	
Water Quality (check one or more): Good <input type="checkbox"/> Silt or turbidity <input type="checkbox"/> Odors <input checked="" type="checkbox"/> Hardness <input checked="" type="checkbox"/> Stains Fixtures <input checked="" type="checkbox"/> Other Problems <u>Arsenic, Manganese, Iron, Sulfur Bacteria</u>	
<u>Note:</u> Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have: Water Softener? <input checked="" type="checkbox"/> In-Line Filter? <input type="checkbox"/>	Iron Treatment System? <input type="checkbox"/> pH Adjustment? <input type="checkbox"/> Other Water Treatment Devices? (please explain): _____
Do you have on-site septic? <input checked="" type="checkbox"/> If so, how far is it located from the well? <u>150 ft</u>	
Have you had any problems with your septic? <u>No</u> If so, please describe: _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>No</u> Are any of these tanks buried? <input type="checkbox"/> Have you had to replace any of these tanks? <input type="checkbox"/> If yes, why? _____	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: _____	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: _____	
Is the top of your well buried or is the cap above ground?: Buried <input type="checkbox"/> Above ground <input checked="" type="checkbox"/>	
Is the well inside of a building?: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

ACCESS PERMISSION FORM

This will authorize representatives of Hazen and Sawyer and/or Leggette, Brashears & Graham, Inc., acting on behalf of the Town of Saugerties, to enter upon my property for the purpose of making water-level measurements in my water-supply well, and collecting a sample from my water system. I understand that I will receive copies of the data collected, as described in the letter.

Signature:

Jerrold M. Lerner

Printed Name:

Jerrold M. Lerner

Address of
Premises:

12 Sawood Ln

Woodstock, NY 12498

Date:

6/28/93

Mailing
Address:

Same

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address: <u>MARK & ANDREA PEREZ</u>	
Mailing Address: <u>14 SAWOOD LANE Woodstock, N.Y. 12498-9716</u>	
Telephone: Home: <u>(914) 679-4252</u> Business: <u>()</u>	
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/> I/We have lived here for <u>3 1/2</u> years.	
WELL INFORMATION	
No. of wells serving your property: <u>1</u> Please provide the following information for each well.	
Well Depth: <u>198</u> feet Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/>	
Depth to static (non-pumping) water level: <u>198</u> feet?	
Drilling Contractor Name & Address: <u>TITAN Drilling Corporation Arkville, N.Y. 12406</u>	
Type of Pump (check one): Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>	
Age of Pump: <u>3</u> years Depth of Pump: <u>160</u> feet?	
Pump Service Contractor Name & Address: <u>TITAN Drilling Corporation, Arkville, N.Y. 12406</u>	
Water Quality (check one or more): Good <input type="checkbox"/> Silt or turbidity <input checked="" type="checkbox"/> Odors <input type="checkbox"/> Hardness <input checked="" type="checkbox"/> Stains Fixtures <input checked="" type="checkbox"/> Other Problems <u>TASTES awful</u>	
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have: Water Softener? <input checked="" type="checkbox"/> Iron Treatment System? <input type="checkbox"/> pH Adjustment? <input type="checkbox"/> In-Line Filter? <input type="checkbox"/> Other Water Treatment Devices? (please explain): <u>ultraviolet light to kill bacteria</u>	
Do you have on-site septic? <u>yes</u> If so, how far is it located from the well? <u>100 ft? well is in front septic is in back of house.</u>	
Have you had any problems with your septic? <u>NO</u> If so, please describe: _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>yes</u> Are any of these tanks buried? <u>yes</u> Have you had to replace any of these tanks? <u>NO</u> If yes, why? _____	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: <u>NO</u>	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: <u>In Feb of 1990 the submersible pump needed the motor replaced and 6 mo. later the (10/16/90) the other part of the pump (L.E.?) needed replacement. The contractor said the pump (which was only 7 years old) gave out so young because of the silt + bacteria sludge in the</u>	
Is the top of your well buried or is the cap above ground?: Buried <input type="checkbox"/> Above ground <input checked="" type="checkbox"/>	
Is the well inside of a building?: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

That it had to work 2 times as hard as normal. He suggested we pour 1 gal. of sea salt down the well once a month to cut back on the bacteria - which we have been doing.

ACCESS PERMISSION FORM

This will authorize representatives of Hazen and Sawyer and/or Leggette, Brashears & Graham, Inc., acting on behalf of the Town of Saugerties, to enter upon my property for the purpose of making water-level measurements in my water-supply well, and collecting a sample from my water system. I understand that I will receive copies of the data collected, as described in the letter.

Signature: Andrea Perez

Printed Name: ANDREA PEREZ

Address of Premises: 14 SAWOOD LANE (we are actually in Town of Saugerties. We pay Saugerties taxes.)
Woodstock, N.Y.
12498-9716

Date: 7/6/93

Mailing Address: 14 SAWOOD LANE
Woodstock, N.Y.
12498-9716

ACCESS PERMISSION FORM

This will authorize representatives of Hazen and Sawyer and/or Leggette, Brashears & Graham, Inc., acting on behalf of the Town of Saugerties, to enter upon my property for the purpose of making water-level measurements in my water-supply well, and collecting a sample from my water system. I understand that I will receive copies of the data collected, as described in the letter.

Signature: Edward Rengers

Printed Name: Edward G. Rengers

Address of Premises: 391 John Joy Rd.
Woodstock, N.Y. 12498

Date: 6/28/93

Mailing Address: 391 John Joy Rd
Woodstock, N.Y. 12498

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: Jesse Judy Remon 1795 St 212
 Mailing Address: Saug NY 12477
 Telephone: Home: (914) 679 2319 Business: (679) 7034 - 679 4299
 Please check one: Owner Renter: _____ I/We have lived here for 2 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.
 Well Depth: 120'? feet Well Type (check one): Drilled Dug _____
 Depth to static (non-pumping) water level: ? feet
 Drilling Contractor Name & Address: ?
 Type of Pump (check one): Submersible Jet _____ Suction _____
 Age of Pump: 8 years Depth of Pump: 120' feet
 Pump Service Contractor Name & Address: Bill Hekerath Woodstock
 Water Quality (check one or more): Good _____ Silt or turbidity _____ Odors _____
 Hardness Stains Fixtures
 Other Problems It took 3 samples to Bank to get Morgan & High Bac. Count
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? _____ Iron Treatment System? _____ pH Adjustment? _____
 In-Line Filter? Other Water Treatment Devices? (please explain): Water Violet

Do you have on-site septic? yes If so, how far is it located from the well? 200'
 Have you had any problems with your septic? no If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? yes
 Are any of these tanks buried? no Have you had to replace any of these tanks? no
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: _____

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: _____

Is the top of your well buried or is the cap above ground?: Buried _____ Above ground
 Is the well inside of a building?: Inside _____ Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(ccm em os: ques 1 Jan 06 21 93: jpb)

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address: <u>Gayle Schumacher, 33 Artist Lane, Saugerties</u>	
Mailing Address: <u>same as above</u>	
Telephone: Home: <u>(914) 679-8147</u> Business: <u>(914) 331-6340</u>	
Please check one: Owner <input checked="" type="checkbox"/> Renter: <input type="checkbox"/> I/we have lived here for <u>4 1/2</u> years.	
WELL INFORMATION	
No. of wells serving your property: <u>1</u> Please provide the following information for each well.	
Well Depth: <u>180</u> feet τ Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug <input type="checkbox"/> ?	
Depth to static (non-pumping) water level: <u>?</u> feet	
Drilling Contractor Name & Address: <u>?</u>	
Type of Pump (check one): Submersible <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Suction <input type="checkbox"/>	
Age of Pump: <u>1</u> year ^{month} Depth of Pump: <u>?</u> feet	
Pump Service Contractor Name & Address: <u>A+D Pumps + Well Service, 318C Birch Street, West Hurley, NY 12491</u>	
Water Quality (check one or more): Good <input type="checkbox"/> Silt or turbidity <input checked="" type="checkbox"/> Odors <input type="checkbox"/> Hardness <input checked="" type="checkbox"/> Stains Fixtures <input checked="" type="checkbox"/> Other Problems _____	
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have: Water Softener? <u>no</u> Iron -Treatment System? <u>yes</u> pH Adjustment? <u>no</u> Charcoal In-Line Filter? <u>yes</u> Other Water Treatment Devices? (please explain): <u>Chlorine tank</u>	
Do you have on-site septic? <u>yes</u> If so, how far is it located from the well? <u>35-40 feet?</u>	
Have you had any problems with your septic? <u>no</u> If so, please describe: _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>no</u> Are any of these tanks buried? _____ Have you had to replace any of these tanks? _____ If yes, why? _____	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: <u>no</u>	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: <u>Pump recently (and replaced) burned out - may have been lightning surge. Water quality is erratic in terms of discoloration from clay.</u>	
Is the top of your well buried or is the cap above ground?: ? Buried <input type="checkbox"/> Above ground <input type="checkbox"/>	
Is the well inside of a building?: Inside <input checked="" type="checkbox"/> Outside <input type="checkbox"/>	

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

ACCESS PERMISSION FORM

This will authorize representatives of Hazen and Sawyer and/or Leggette, Brashears & Graham, Inc., acting on behalf of the Town of Saugerties, ~~to enter upon my property~~ for the purpose of making water-level measurements in my water-supply well, and collecting a sample from my water system. I understand that I will receive copies of the data collected, as described in the letter. * if I am informed when

Signature: Gayle Schumacher

Printed Name: Gayle Schumacher

Address of Premises: 33 Artist Lane

Saugerties, NY 12477

Date: 6/29/93

Mailing Address: Same as above

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: HEEK & LINDA SHARPE, 3 SAWOOD LANE
 Mailing Address: 3 SAWOOD LANE, WOODSTOCK, N.Y. 12498
 Telephone: Home: (914) 679-7965 Business: (914) 331-4700 EXT 221 LINDA
 Please check one: Owner Renter: I/We have lived here for 19 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.

Well Depth: 110 feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: 100 feet

Drilling Contractor Name & Address:

UNKNOWN

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 1 years Depth of Pump: 100 feet pump just replaced - 1st pump lasted 18 years

Pump Service Contractor Name & Address:

HECKEROTH PLUMBING & HEATING, WOODSTOCK, N.Y. 12498

Water Quality (check one or more): Good Silt or turbidity NONE Odors Sulfur (SLIGHT)
 Hardness 0 Stains Fixtures HOT WATER ONLY DUE TO A CHEMICAL
 Other Problems REACTION WITH METAL ACID

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well. WATER TESTS SOFT - 0 GRAINS HARDNESS / PH 7

Do you have: Water Softener? NO Iron Treatment System? NO pH Adjustment? NONE
 In-Line Filter? NO Other Water Treatment Devices? (please explain): NO

Do you have on-site septic? YES If so, how far is it located from the well? 40' APPROX

Have you had any problems with your septic? NO If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? YES

Are any of these tanks buried? YES Have you had to replace any of these tanks? NO
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: NO

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: NO - ~~SEE ABOVE~~
PUMP REPLACED ONE YEAR AGO - 1st pump lasted 18 years.

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: Robert / Kathy Simon 11 Sawood Lane

Mailing Address: Woodstock NY 12498

Telephone: Home: (914) 679-9378 Business: (914)

Please check one: Owner Renter: I/We have lived here for 5 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.

Well Depth: _____ feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: _____ feet

Drilling Contractor Name & Address: _____

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 10 years Depth of Pump: _____ feet

Pump Service Contractor Name & Address: _____

Water Quality (check one or more): Good Silt or turbidity Odors
 Hardness Stains Fixtures
 Other Problems _____

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? Iron Treatment System? pH Adjustment?
 In-Line Filter? Other Water Treatment Devices? (please explain): Reverse Osmosis system

Do you have on-site septic? yes - If so, how far is it located from the well? 75'

Have you had any problems with your septic? no If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? heating oil
 Are any of these tanks buried? yes Have you had to replace any of these tanks? no
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: frequent laundering

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: _____

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggett, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION	
Name & Street Address:	<u>Charles J. Fargia</u> <u>240 John Jay Road, Woodstock, New York 12478</u>
Mailing Address:	<u>Same</u>
Telephone: Home: <input checked="" type="checkbox"/>	Business: <input type="checkbox"/>
Please check one: Owner <u>yes</u> Renter: _____ I/We have lived here for <u>42</u> years.	
WELL INFORMATION	
No. of wells serving your property: <u>1</u> Please provide the following information for each well.	
Well Depth: <u>130</u> feet	Well Type (check one): Drilled <input checked="" type="checkbox"/> Dug _____
Depth to static (non-pumping) water level: <u>?</u> feet	
Drilling Contractor Name & Address: <u>Harold Lapo, Woodstock, Deseased</u>	
Type of Pump (check one):	Submersible <input checked="" type="checkbox"/> Jet _____ Suction _____
Age of Pump: <u>35</u> years	Depth of Pump: <u>120</u> feet
Pump Service Contractor Name & Address: <u>Herberoth Plumbing & Heating</u> <u>13 - Rock City Rd. Woodstock, 679-2413</u>	
Water Quality (check one or more):	Good <input checked="" type="checkbox"/> Silt or turbidity _____ Odors _____ Hardness _____ Stains Fixtures _____ Other Problems _____
Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.	
Do you have:	Water Softener? _____ Iron Treatment System? _____ pH Adjustment? _____ In-Line Filter? <input checked="" type="checkbox"/> Other Water Treatment Devices? (please explain): _____
Do you have on-site septic? <u>yes</u> If so, how far is it located from the well? <u>78 feet</u>	
Have you had any problems with your septic? <u>NO</u> If so, please describe: _____	
Do you have any on-site storage tanks (e.g., heating oil)? <u>yes</u> Are any of these tanks buried? <u>NO</u> Have you had to replace any of these tanks? <u>NO</u> If yes, why? _____	
Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: <u>NONE</u>	
Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: <u>NONE</u>	
Is the top of your well buried or is the cap above ground?:	Buried _____ Above ground <u>Cap above ground</u>
Is the well inside of a building?:	Inside _____ Outside <u>Outside</u>

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(c:\mcom\ques1.sau:062193;b)

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: Thomas M. Torkelson
 Mailing Address: 6. Meher Circle, Woodstock New York 12498
 Telephone: Home: (914) 679-6053 Business: (914) 334-3592 / 331-1510
 Please check one: Owner Renter: I/We have lived here for 18 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.

Well Depth: 280 feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: 7 feet

Drilling Contractor Name & Address: ?

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 18 years Depth of Pump: 180 feet

Pump Service Contractor Name & Address: owner -

Water Quality (check one or more): Good Silt or turbidity Odors
 Hardness Stains Fixtures
 Other Problems

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? Iron Treatment System? pH Adjustment?
 In-Line Filter? Other Water Treatment Devices? (please explain): none

Do you have on-site septic? If so, how far is it located from the well? 100ft

Have you had any problems with your septic? no If so, please describe: _____

Do you have any on-site storage tanks (e.g., heating oil)? no
 Are any of these tanks buried? Have you had to replace any of these tanks?
 If yes, why? _____

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: _____
no

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: _____
no

Is the top of your well buried or is the cap above ground?: Buried Above ground

Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(c:\memos\ques1.sau:062193:jb)

WATER WELL QUESTIONNAIRE

Please fill out as completely as you can. If you are unsure of any item, add a question mark after your response.

IDENTIFICATION

Name & Street Address: LOIS + BERNARD WEINSTEIN

Mailing Address: 315 EAST 86 ST, NY NY 10024

Telephone: Home: (41) 831-7513 Business: (94) 285-7580

Please check one: Owner: Renter: I/We have lived here for 19 years.

WELL INFORMATION

No. of wells serving your property: 1 Please provide the following information for each well.

Well Depth: 2 feet Well Type (check one): Drilled Dug

Depth to static (non-pumping) water level: 2 feet

Drilling Contractor Name & Address: 2

Type of Pump (check one): Submersible Jet Suction

Age of Pump: 20 years Depth of Pump: feet

Pump Service Contractor Name & Address: NONE

Water Quality (check one or more): Good Silt or turbidity Odors
 Hardness Stains Fixtures
 Other Problems

Note: Please attach copies of any laboratory analytical results you may have for water samples collected from your well.

Do you have: Water Softener? Iron Treatment System? pH Adjustment?
 In-Line Filter? Other Water Treatment Devices? (please explain): NONE

Do you have on-site septic? YES If so, how far is it located from the well? 30 feet

Have you had any problems with your septic? NO If so, please describe:

Do you have any on-site storage tanks (e.g., heating oil)? NO
 Are any of these tanks buried? Have you had to replace any of these tanks?
 If yes, why?

Any large water uses, e.g., swimming pool, automatic sprinklers, hot tub, etc.? If so, please describe: NONE

Any well or pump problems? If so, when? Still occurring? How resolved? Please explain: NONE

Is the top of your well buried or is the cap above ground? Buried Above ground
 Is the well inside of a building?: Inside Outside

If you have any questions regarding this questionnaire, please call Karen McGahan of Leggette, Brashears & Graham, Inc. at (201) 818-0700. PLEASE RETURN THIS QUESTIONNAIRE IN THE ENVELOPE PROVIDED TO MR. GEORGE TERPENING, TOWN SUPERVISOR, TOWN HALL, MAIN STREET, SAUGERTIES, NEW YORK 12477.

(continued on ques 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20)

APPENDIX IV

Water Quality Analysis Results

In The Following Order:

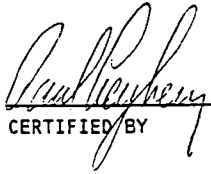
- Toxikon Work Order #93-07-344 for samples taken on July 19, 1993
- Toxikon Work Order #93-07-361 for samples taken on July 20, 1993

Received: 07/20/93

08/05/93 08:29:53

REPORT LEGGETTE BRASHEARS & GRAHAM
TO 500B LAKE STREET
RAMSEY, NJ 07446
(201)818-0700 FAX:0505

PREPARED TOXIKON CORPORATION
BY 225 WILDWOOD AVE
WOBBURN, MA 01801


CERTIFIED BY

ATTEN FRANK J. GETCHELL

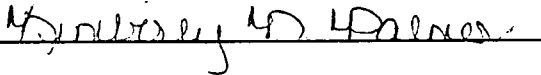
ATTEN PAUL LEZBERG
PHONE (617)933-6903

CONTACT DAVID

CLIENT LBG NJ SAMPLES 5
COMPANY LEGGETTE BRASHEARS & GRAHAM
FACILITY 500B LAKE STREET
RAMSEY, NJ 07446

MA CERT # MA064: TRACE METALS, SULFATE, CYANIDE, TURN., RES. FREE
CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST., NUTRIENTS.
DEMAND. O&G, PHENOLICS, PCBs (OIL). CT DHS #PH-0563, NY #10778
FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID SAUCERTIES LANDFILL
TAKEN 7/19/93
TRANS _____
TYPE WATER
P.O. # _____
INVOICE under separate cover

Verified By: 

SAMPLE IDENTIFICATION

TEST CODES and NAMES used on this workorder

- 01 SCHUMACHER
- 02 REMGERS
- 03 DAPALITO
- 04 CHANCE
- 05 LEANER

- ALKAL ALKALINITY
- AS ARSENIC
- CL CHLORIDE
- COD COD
- FE IRON
- MEX TW METALS, TOTAL EXT., WATER
- MN MANGANESE
- NA SODIUM
- NO3 N NITRATE
- N AMM NITROGEN AMMONIA
- PB LEAD
- SO4 SULFATE
- SURFAC SURFACTANTS - MBAS
- TDS TOTAL DISSOLVED SOLIDS
- TURB TURBIDITY

Received: 07/20/93

Results by Sample

SAMPLE ID <u>SCHUMACHER</u>		SAMPLE # <u>01</u>		FRACTIONS: <u>A</u>	
		Date & Time Collected <u>07/19/93 12:25:00</u>		Category <u>WATER</u>	
ALKAL	<u>360</u>	AS	<u>ND</u>	CL	<u>47.0</u>
mg/L	DL=1.0	mg/L	DL=0.100	mg/L	DL=1.0
COD	<u>5.00</u>	FE	<u>1.81</u>	MN	<u>0.043</u>
mg/L	DL=5.0	mg/L	DL=0.010	mg/L	DL=0.002
NA	<u>231</u>	NO3 N	<u>ND</u>	N AMM	<u>ND</u>
mg/L	DL=0.500	mg/L	DL=0.03	mg/L	DL=0.01
PB	<u>0.227</u>	SO4	<u>12.9</u>	SURFAC	<u>ND</u>
mg/L	DL=0.050	mg/L	DL=1.0	mg/L	DL=0.1
TDS	<u>444</u>	TURB	<u>58.0</u>		
mg/L	DL=10.0	NTU	DL = 0.5		

SAMPLE ID <u>REMGERS</u>		SAMPLE # <u>02</u>		FRACTIONS: <u>A</u>	
		Date & Time Collected <u>07/19/93 13:25:00</u>		Category <u>WATER</u>	
ALKAL	<u>238</u>	AS	<u>ND</u>	CL	<u>65.0</u>
mg/L	DL=1.0	mg/L	DL=0.100	mg/L	DL=1.0
COD	<u>10.0</u>	FE	<u>0.027</u>	MN	<u>0.541</u>
mg/L	DL=5.0	mg/L	DL=0.010	mg/L	DL=0.002
NA	<u>139</u>	NO3 N	<u>0.045</u>	N AMM	<u>ND</u>
mg/L	DL=0.500	mg/L	DL=0.03	mg/L	DL=0.01
PB	<u>0.237</u>	SO4	<u>21.1</u>	SURFAC	<u>ND</u>
mg/L	DL=0.050	mg/L	DL=1.0	mg/L	DL=0.1
TDS	<u>394</u>	TURB	<u>ND</u>		
mg/L	DL=10.0	NTU	DL = 0.5		

SAMPLE ID <u>DAPALITO</u>		SAMPLE # <u>03</u>		FRACTIONS: <u>A</u>	
		Date & Time Collected <u>07/19/93 11:44:00</u>		Category <u>WATER</u>	
ALKAL	<u>147</u>	AS	<u>ND</u>	CL	<u>51.0</u>
mg/L	DL=1.0	mg/L	DL=0.100	mg/L	DL=1.0
COD	<u>10.0</u>	FE	<u>3.37</u>	MN	<u>0.050</u>
mg/L	DL=5.0	mg/L	DL=0.010	mg/L	DL=0.002
NA	<u>135</u>	NO3 N	<u>0.291</u>	N AMM	<u>ND</u>
mg/L	DL=0.500	mg/L	DL=0.03	mg/L	DL=0.01
PB	<u>ND</u>	SO4	<u>ND</u>	SURFAC	<u>ND</u>
mg/L	DL=0.050	mg/L	DL=1.0	mg/L	DL=0.1
TDS	<u>366</u>	TURB	<u>100</u>		
mg/L	DL=10.0	NTU	DL = 0.5		

SAMPLE ID <u>CHANCE</u>		SAMPLE # <u>04</u>		FRACTIONS: <u>A</u>	
		Date & Time Collected <u>07/19/93 14:15:00</u>		Category <u>WATER</u>	
ALKAL	<u>166</u>	AS	<u>ND</u>	CL	<u>65.0</u>
mg/L	DL=1.0	mg/L	DL=0.100	mg/L	DL=1.0
COD	<u>20.0</u>	FE	<u>5.82</u>	MN	<u>1.40</u>
mg/L	DL=5.0	mg/L	DL=0.010	mg/L	DL=0.002
NA	<u>71.0</u>	NO3 N	<u>ND</u>	N AMM	<u>0.116</u>
mg/L	DL=0.500	mg/L	DL=0.03	mg/L	DL=0.01
PB	<u>0.245</u>	SO4	<u>24.1</u>	SURFAC	<u>ND</u>
mg/L	DL=0.050	mg/L	DL=1.0	mg/L	DL=0.1
TDS	<u>330</u>	TURB	<u>38.0</u>		
mg/L	DL=10.0	NTU	DL = 0.5		

SAMPLE ID <u>LEANER</u>		SAMPLE # <u>05</u>		FRACTIONS: <u>A</u>	
		Date & Time Collected <u>07/19/93 15:15:00</u>		Category <u>WATER</u>	
ALKAL	<u>228</u>	AS	<u>ND</u>	CL	<u>91.0</u>
mg/L	DL=1.0	mg/L	DL=0.100	mg/L	DL=1.0
COD	<u>35.0</u>	FE	<u>2.65</u>	MN	<u>8.52</u>
mg/L	DL=5.0	mg/L	DL=0.010	mg/L	DL=0.002

NA	<u>119</u>	NO3 N	<u>ND</u>	N AMM	<u>1.61</u>	PB	<u>ND</u>	SO4	<u>ND</u>	SURFAC	<u>ND</u>
mg/L	DL=0.500	mg/L	DL=0.03	mg/L	DL=0.01	mg/L	DL=0.050	mg/L	DL=1.0	mg/L	DL=0.1
TDS	<u>630</u>	TURB	<u>24.0</u>								
mg/L	DL=10.0	NTU	DL = 0.5								

Received: 07/20/93

Test Methodology

TEST CODE ALKAL NAME ALKALINITY

EPA METHOD: 310.2

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE AS NAME ARSENIC

TEST CODE CL NAME CHLORIDE

EPA METHOD: 325.3. Chloride Titrimetric, Mercuric Nitrate.

Reference: Methods For Chemical Analyssis of Water and Wastes. Revised March
1983. U.S. Environmental Protection Agency, Cincinnati, OH.

EPA METHOD: 9250

Reference: Test methods for evaluating Solid Waste. Phsical/Chemical
Methods. EPA SW-846 (Third Edition) 1986.
Office of Solid Waste, USEPA.

TEST CODE COD NAME COD

EPA METHOD: 410.4

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE MEX TV NAME METALS, TOTAL EXT., WATER

REFERENCE:

EPA METHOD 3005. Acid Digestion of Waters for Total Recoverable or
Dissolved Metals for Analysis by Flame Atomic Absorption Spectroscopy or
Inductively Coupled Plasma Spectroscopy. Test Methods for Evaluating
Physical/Chemical Methods. SW 846, 3rd Edition.

Wastewater digestion
40CFR Part 136 Appendix C-Preparation for Inductively Coupled Plasma-
Atomic Emission Spectrometric Method for Trace Element Analysis of
Water and Wastes Method 200.7. Protection of Environment, 1991.

TEST CODE NO3 N NAME NITRATE

EPA METHOD: 353.2

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

Received: 07/20/93

Test Methodology

TEST CODE N AMN NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.TEST CODE SO4 NAME SULFATE

EPA METHOD: 375.4

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

EPA METHOD: 9035:

Reference: Test Methods for Evaluating Solid Waste: Physical/Chemical
Methods. EPA SW-846 (Third Edition) 1986.
Office of Solid Waste, USEPA.TEST CODE SURFAC NAME SURFACTANTS - MBAS

STANDARD METHOD: 512B

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 16th Edition. 1985. APHA Washington D.C.TEST CODE TDS NAME TOTAL DISSOLVED SOLIDS

EPA METHOD: 160.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.TEST CODE TURB NAME TURBIDITY

EPA METHOD: 180.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

Received: 07/21/93

08/05/93 12:02:56

REPORT LEGGETTE BRASHEARS & GRAHAM
TO 500B LAKE STREET
RAMSEY, NJ 07446
(201)818-0700 FAX:0505

PREPARED TOXIKON CORPORATION
BY 225 WILDWOOD AVE
WOBURN, MA 01801

Paul Lezberg
CERTIFIED BY

ATTEN MICHAEL GOMSALVES

ATTEN PAUL LEZBERG
PHONE (617)933-6903

CONTACT DAVID

CLIENT LBG NJ SAMPLES 13

COMPANY LEGGETTE BRASHEARS & GRAHAM
FACILITY 500B LAKE STREET
RAMSEY, NJ 07446

MA CERT # MA064: TRACE METALS, SULFATE, CYANIDE, TURN., RES. FREE
CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST., NUTRIENTS,
DEMAND. O&G, PHENOLICS, PCBs (OIL). CT DHS #PH-0563, NY #10778
FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID S.GEENTIES LANDFILL

TAKEN 7/20/93

Verified By: *[Signature]*

TRANS _____

TYPE WATER

P.O. # _____

INVOICE under separate cover

SAMPLE IDENTIFICATION

TEST CODES and NAMES used on this workorder

- 01 MW-1
- 02 MW-2
- 03 MW-3
- 04 MW-4
- 05 MW-5
- 06 MW-6D
- 07 MW-NORTH
- 08 MW-SOUTH
- 09 LANDFILL
- 10 CITRIN
- 11 KANOVER
- 12 PEREZ
- 13 FB

- 624 PURGEABLE ORGANICS VOA
- 625 A/BN EXTRACTABLES WATER
- AL ALUMINUM
- ALKAL ALKALINITY
- AS ARSENIC
- B BORON
- BOD BOD
- CA CALCIUM
- CL CHLORIDE
- CN TOT CYANIDE TOTAL
- COD COD
- COLOR COLOR
- CR HEX CHROMIUM HEXAVALENT
- FE IRON
- HARDNE TOTAL HARDNESS
- MEX HG METALS, EXT. FOR MERCURY
- MEX TW METALS, TOTAL EXT., WATER
- MN MANGANESE
- NA SODIUM
- NO3 N NITRATE
- N AMM NITROGEN AMMONIA
- N TKN NITROGEN KJELDAHL, TOTAL
- ODOR ODOR
- O DIS DISSOLVED OXYGEN
- PB LEAD
- PHENOL PHENOL

- PP13 METALS, 13 PRI. POLL.
- PPCBW PESTICIDES/PCB (WATER)
- SO4 SULFATE
- SURFAC SURFACTANTS - MBAS
- TDS TOTAL DISSOLVED SOLIDS
- TOC TOC
- TURB TURBIDITY

Received: 07/21/93

Results by Sample

SAMPLE ID <u>MW-1</u>		SAMPLE # <u>01</u>		FRACTIONS: <u>A,B</u>	
Date & Time Collected <u>07/20/93 10:05:00</u> Category <u>WATER</u>					
AL <u>4.71</u>	ALKAL <u>152</u>	AS <u>ND</u>	B <u>0.118</u>	BOD <u>ND</u>	CA <u>6.46</u>
mg/L DL=0.200	mg/L DL=1.0	mg/L DL=0.100	mg/L DL=0.020	mg/L DL=1.0	mg/L DL=0.010
CL <u>4.00</u>	CN_TOT <u>ND</u>	COD <u>ND</u>	COLOR <u>10</u>	CR_HEX <u>ND</u>	FE <u>8.66</u>
mg/L DL=1.0	mg/L DL=0.01	mg/L DL=5.0	COLOR UNIT	mg/L DL=0.05	mg/L DL=0.010
HARDNE <u>ND</u>	MIN <u>1.39</u>	NA <u>70.7</u>	NO3_N <u>ND</u>	N_ANH <u>ND</u>	N_TKN <u>0.099</u>
mg/L DL=1.0	mg/L DL=0.002	mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.03
ODOR <u>1.0</u>	O_DIS <u>11.2</u>	PB <u>07/27/93</u>	SO4 <u>14.0</u>	SURFAC <u>ND</u>	TDS <u>234</u>
TON DL=1.0	mg/L	mg/L DL=0.050	mg/L DL=1.0	mg/L DL=0.1	mg/L DL=10.0
TOC <u>ND</u>	TURB <u>100</u>				
mg/L DL=1.0	NTU DL = 0.5				

Received: 07/21/93

Results by Sample

SAMPLE ID MW-1 FRACTION Q1B TEST CODE 624 NAME PURGEABLE ORGANICS VOA
 Date & Time Collected 07/20/93 10:05:00 Category WATER

PURGEABLE ORGANICS VOA

RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	2.0	Trichloroethene	ND 2.0
Bromomethane	ND	2.0	Dibromochloromethane	ND 2.0
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND 2.0
Chloroethane	ND	2.0	Benzene	ND 2.0
Methylene Chloride	ND	10	cis-1,3-Dichloropropene	ND 2.0
Acetone	ND	50	2-Chloroethylvinylether	ND 2.0
Carbon Disulfide	ND	2.0	Bromoform	ND 2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND 4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND 4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND 2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND 2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND 2.0
2-Butanone	ND	10	Chlorobenzene	ND 2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND 2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND 2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND 2.0
Bromodichloromethane	ND	2.0	Trichlorofluoromethane	ND 2.0
1,2-Dichloropropane	ND	2.0	1,2-Dichlorobenzene	ND 2.0
trans-1,3-Dichloropropene	ND	2.0	1,3-Dichlorobenzene	ND 2.0
			1,4-Dichlorobenzene	ND 2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93
 ANALYST XL
 INSTRUMENT HP-2
 DIL. FACTOR 1
 UNITS = ug/L

ND = not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MW-1FRACTION 01A TEST CODE PP13 NAME METALS, 13 PRI. POLL.Date & Time Collected 07/20/93 10:05:00 Category WATER**13 PRIORITY POLLUTANT METALS**

	RESULT	LIMIT
Silver	<u>0.054</u>	<u>0.020</u>
Cadmium	<u>ND</u>	<u>0.010</u>
Chromium	<u>0.022</u>	<u>0.010</u>
Copper	<u>0.045</u>	<u>0.010</u>
Nickel	<u>ND</u>	<u>0.040</u>
Lead	<u>ND</u>	<u>0.050</u>
Zinc	<u>0.067</u>	<u>0.0060</u>
Arsenic	<u>ND</u>	<u>0.10</u>
Selenium	<u>ND</u>	<u>0.25</u>
Beryllium	<u>0.005</u>	<u>.0040</u>
Antimony	<u>ND</u>	<u>0.15</u>
Thallium	<u>ND</u>	<u>0.30</u>
Mercury	<u>ND</u>	<u>0.0005</u>

Notes and Definitions for this Report:

EXTRACTED 07/23/93DATE RUN 07/27/93ANALYST SNINSTRUMENT JADIL. FACTOR 1.0UNITS mcg/L

ND = Not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID <u>MW-2</u>		SAMPLE # <u>02</u>		FRACTIONS: <u>A,B</u>	
Date & Time Collected <u>07/20/93 14:30:00</u> Category <u>WATER</u>					
AL <u>1.33</u>	ALKAL <u>149</u>	AS <u>ND</u>	B <u>0.266</u>	BOD <u>15.6</u>	CA <u>97.9</u>
mg/L DL=0.200	mg/L DL=1.0	mg/L DL=0.100	mg/L DL=0.020	mg/L DL=1.0	mg/L DL=0.010
CL <u>60.0</u>	CN_TOT <u>ND</u>	COD <u>25.0</u>	COLOR <u>10</u>	CR_HEX <u>ND</u>	FE <u>1.50</u>
mg/L DL=1.0	mg/L DL=0.01	mg/L DL=5.0	COLOR UNIT	mg/L DL=0.05	mg/L DL=0.010
HARDNE <u>380</u>	MN <u>0.895</u>	NA <u>30.2</u>	NO3_N <u>0.094</u>	N_AMM <u>0.610</u>	N_TKN <u>1.17</u>
mg/L DL=1.0	mg/L DL=0.002	mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.03
ODOR <u>1.0</u>	O_DIS <u>10.4</u>	PB <u>07/27/93</u>	PHENOL <u>ND</u>	SO4 <u>162</u>	SURFAC <u>ND</u>
TON DL=1.0	mg/L	mg/L DL=0.050	mg/L DL=0.01	mg/L DL=1.0	mg/L DL=0.1
TDS <u>526</u>	TOC <u>10.3</u>	TURB <u>42.0</u>			
mg/L DL=10.0	mg/L DL=1.0	NTU DL = 0.5			

Received: 07/21/93

Results by Sample

SAMPLE ID MW-2 FRACTION 02B TEST CODE 624 NAME PURGEABLE ORGANICS VOA
 Date & Time Collected 07/20/93 14:30:00 Category WATER

PURGEABLE ORGANICS VOA

	RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	2.0	Trichloroethene	ND	2.0
Bromomethane	ND	2.0	Dibromochloromethane	ND	2.0
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND	2.0
Chloroethane	ND	2.0	Benzene	ND	2.0
Methylene Chloride	ND	10	cis-1,3-Dichloropropene	ND	2.0
Acetone	ND	50	2-Chloroethylvinylether	ND	2.0
Carbon Disulfide	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	Trichlorofluoromethane	ND	2.0
1,2-Dichloropropane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0	1,3-Dichlorobenzene	ND	2.0
			1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93
 ANALYST XL
 INSTRUMENT HP-2
 DIL. FACTOR 1
 UNITS = ug/L

ND = not detected at detection limit

SAMPLE ID MW-2 FRACTION 02B TEST CODE 625 NAME A/BN EXTRACTABLES WATER
 Date & Time Collected 07/20/93 14:30:00 Category WATER

PARAMETER	RESULT	LIMIT	PARAMETER	RESULT	LIMIT
BASE NEUTRAL EXTRACTABLES					
bis(-2-Chloroethyl) ether	ND	10			
1,3-Dichlorobenzene	ND	10	Chrysene	ND	10
1,4-Dichlorobenzene	ND	10	Di-n-octyl phthalate	ND	10
1,2-Dichlorobenzene	ND	10	Benzo(b)fluoranthene	ND	10
bis(2-Chloroisopropyl) ether	ND	10	Benzo(k)fluoranthene	ND	10
N-Nitroso-Di-N-Propylamine	ND	10	Benzo(a)pyrene	ND	50
Hexachloroethane	ND	10	Indeno(1,2,3-cd)pyrene	ND	10
Nitrobenzene	ND	10	Dibenz(a,h)anthracene	ND	10
Isophorone	ND	10	Benzo(g,h,i)perylene	ND	50
bis(2-Chloroethoxy) methane	ND	10	ACID EXTRACTABLES	RESULT	LIMIT
1,2,4-Trichlorobenzene	ND	10	Phenol	ND	10
Naphthalene	ND	10	2-Chlorophenol	ND	10
Hexachlorobutadiene	ND	10	Benzyl Alcohol	ND	20
Hexachlorocyclopentadiene	ND	10	2-Methylphenol	ND	10
2-Chloronaphthalene	ND	10	4-Methylphenol	ND	10
Dimethyl phthalate	ND	10	2-Nitrophenol	ND	10
Acenaphthylene	ND	10	2,4-Dimethylphenol	ND	10
Acenaphthene	ND	10	Benzoic Acid	ND	50
2,4-Dinitrotoluene	ND	20	2,4-Dichlorophenol	ND	10
2,6-Dinitrotoluene	ND	10	4-Chloroaniline	ND	20
Diethylphthalate	ND	10	4-Chloro-3-methylphenol	ND	10
4-Chlorophenyl phenyl ether	ND	10	2-Methylnaphthalene	ND	10
Flourene	ND	10	2,4,6-Trichlorophenol	ND	10
N-Nitrosodiphenylamine	ND	10	2,4,5-Trichlorophenol	ND	10
4-Bromophenyl phenyl ether	ND	10	2-Nitroaniline	ND	50
Hexachlorobenzene	ND	10	3-Nitroaniline	ND	50
Phenanthrene	ND	10	2,4-Dinitrophenol	ND	10
Anthracene	ND	10	4-Nitrophenol	ND	10
Di-n-butylphthalate	ND	10	Dibenzofuran	ND	10
Fluoranthene	ND	10	4-Nitroaniline	ND	10
Pyrene	ND	10	4,6-Dinitro-2-methylphenol	ND	10
Butyl benzyl phthalate	ND	20	Pentachlorophenol	ND	10
3,3'-Dichlorobenzidine	ND	10	Benzidine	ND	10
Benzo (a) anthracene	ND	20	N-Nitrosodimethylamine	ND	10
bis (2-ethylhexyl)phthalate	ND	10			

Additional Analytes

1,2-Diphenylhydrazine	ND	10
3-Methylphenol (m-Cresol)	ND	10

Notes and Definitions for this Report:

Units:..... ug/L
 EXTRACTED..... 07/27/93
 DATE RUN..... 08/04/93
 ANALYST..... KKP
 INSTRUMENT..... HP-3
 DILUTION FACTOR.. 1.0
 ND = Not Detected at Detection Limits.

SAMPLE ID MW-2 FRACTION 02A TEST CODE PP13 NAME METALS,13 PRI.POLL.
Date & Time Collected 07/20/93 14:30:00 Category WATER

13 PRIORITY POLLUTANT METALS

	RESULT	LIMIT
Silver	<u> </u>	<u>ND 0.020</u>
Cadmium	<u> </u>	<u>ND 0.010</u>
Chromium	<u> </u>	<u>ND 0.010</u>
Copper	<u>0.027</u>	<u>0.010</u>
Nickel	<u> </u>	<u>ND 0.040</u>
Lead	<u> </u>	<u>ND 0.050</u>
Zinc	<u> </u>	<u>ND 0.0060</u>
Arsenic	<u> </u>	<u>ND 0.10</u>
Selenium	<u> </u>	<u>ND 0.25</u>
Beryllium	<u> </u>	<u>ND 0.0040</u>
Antimony	<u> </u>	<u>ND 0.15</u>
Thallium	<u> </u>	<u>ND 0.30</u>
Mercury	<u> </u>	<u>ND 0.0005</u>

Notes and Definitions for this Report:

EXTRACTED 07/23/93
DATE RUN 07/27/93
ANALYST SN
INSTRUMENT JA
DIL. FACTOR 1.0
UNITS mg/L

ND = Not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID <u>MW-3</u>		SAMPLE # <u>03</u>		FRACTIONS: <u>A,B</u>			
Date & Time Collected <u>07/20/93 14:30:00</u>				Category <u>WATER</u>			
AL	<u>1.04</u>	ALKAL	<u>1030</u>	AS	<u>ND</u>	B	<u>0.884</u>
	mg/L DL=0.200		mg/L DL=1.0		mg/L DL=0.100		mg/L DL=0.020
BOD	<u>68.4</u>	CA	<u>206</u>				
	mg/L DL=1.0		mg/L DL=0.010				
CL	<u>272</u>	CN_TOT	<u>ND</u>	COD	<u>150</u>	COLOR	<u>70</u>
	mg/L DL=1.0		mg/L DL=0.01		mg/L DL=5.0		COLOR UNIT
CR_HEX	<u>ND</u>	FE	<u>6.67</u>				
	mg/L DL=0.05		mg/L DL=0.010				
HARDNE	<u>880</u>	MN	<u>15.2</u>	NA	<u>153</u>	NO3_N	<u>0.074</u>
	mg/L DL=1.0		mg/L DL=0.002		mg/L DL=0.500		mg/L DL=0.03
N_AMH	<u>51.3</u>	N_TKN	<u>54.8</u>				
	mg/L DL=0.01		mg/L DL=0.03				
ODOR	<u>1.0</u>	O_DIS	<u>6.40</u>	PB	<u>07/27/93</u>	PHENOL	<u>ND</u>
	TON DL=1.0		mg/L		mg/L DL=0.050		mg/L DL=0.01
SO4	<u>12.6</u>	SURFAC	<u>0.29</u>				
	mg/L DL=1.0		mg/L DL=0.1				
TDS	<u>1380</u>	TOC	<u>71.5</u>	TURB	<u>28.0</u>		
	mg/L DL=10.0		mg/L DL=1.0		NTU DL = 0.5		

Received: 07/21/93

Results by Sample

SAMPLE ID MW-3FRACTION Q3BTEST CODE 624NAME PURGEABLE ORGANICS VOADate & Time Collected 07/20/93 14:30:00Category WATER**PURGEABLE ORGANICS VOA**

	RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	2.0	Trichloroethene	ND	2.0
Bromomethane	ND	2.0	Dibromochloromethane	ND	2.0
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND	2.0
Chloroethane	ND	2.0	Benzene	8.64	2.0
Methylene Chloride	ND	10	cis-1,3-Dichloropropene	ND	2.0
Acetone	ND	50	2-Chloroethylvinylether	ND	2.0
Carbon Disulfide	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	65.6	2.0
2-Butanone	ND	10	Chlorobenzene	27.1	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	4.12	2.0
Bromodichloromethane	ND	2.0	Trichlorofluoromethane	ND	2.0
1,2-Dichloropropane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0	1,3-Dichlorobenzene	ND	2.0
			1,4-Dichlorobenzene	3.86	2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93ANALYST XLINSTRUMENT HP-1DIL. FACTOR 1UNITS = ug/L

ND = not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MU-3 FRACTION 03B TEST CODE 625 NAME A/BN EXTRACTABLES WATER
 Date & Time Collected 07/20/93 14:30:00 Category WATER

PARAMETER	RESULT	LIMIT	PARAMETER	RESULT	LIMIT
BASE NEUTRAL EXTRACTABLES					
bis(-2-Chloroethyl) ether	ND	10			
1,3-Dichlorobenzene	ND	10	Chrysene	ND	10
1,4-Dichlorobenzene	ND	10	Di-n-octyl phthalate	ND	10
1,2-Dichlorobenzene	ND	10	Benzo(b)fluoranthene	ND	10
bis(2-Chloroisopropyl) ether	ND	10	Benzo(k)fluoranthene	ND	10
N-Nitroso-Di-N-Propylamine	ND	10	Benzo(a)pyrene	ND	50
Hexachloroethane	ND	10	Indeno(1,2,3-cd)pyrene	ND	10
Nitrobenzene	ND	10	Dibenz(a,h)anthracene	ND	10
Isophorone	ND	10	Benzo(g,h,i)perylene	ND	50
bis(2-Chloroethoxy) methane	ND	10	ACID EXTRACTABLES		RESULT LIMIT
1,2,4-Trichlorobenzene	ND	10	Phenol	ND	10
Naphthalene	ND	10	2-Chlorophenol	ND	10
Hexachlorobutadiene	ND	10	Benzyl Alcohol	ND	20
Hexachlorocyclopentadiene	ND	10	2-Methylphenol	ND	10
2-Chloronaphthalene	ND	10	4-Methylphenol	ND	10
Dimethyl phthalate	ND	10	2-Nitrophenol	ND	10
Acenaphthylene	ND	10	2,4-Dimethylphenol	ND	10
Acenaphthene	ND	10	Benzoic Acid	ND	50
2,4-Dinitrotoluene	ND	20	2,4-Dichlorophenol	ND	10
2,6-Dinitrotoluene	ND	10	4-Chloroaniline	ND	20
Diethylphthalate	ND	10	4-Chloro-3-methylphenol	ND	10
4-Chlorophenyl phenyl ether	ND	10	2-Methylnaphthalene	ND	10
Flourene	ND	10	2,4,6-Trichlorophenol	ND	10
N-Nitrosodiphenylamine	ND	10	2,4,5-Trichlorophenol	ND	10
4-Bromophenyl phenyl ether	ND	10	2-Nitroaniline	ND	50
Hexachlorobenzene	ND	10	3-Nitroaniline	ND	50
Phenanthrene	ND	10	2,4-Dinitrophenol	ND	10
Anthracene	ND	10	4-Nitrophenol	ND	10
Di-n-butylphthalate	ND	10	Dibenzofuran	ND	10
Fluoranthene	ND	10	4-Nitroaniline	ND	10
Pyrene	ND	10	4,6-Dinitro-2-methylphenol	ND	10
Butyl benzyl phthalate	ND	20	Pentachlorophenol	ND	10
3,3'-Dichlorobenzidine	ND	10	Benzdine	ND	10
Benzo (a) anthracene	ND	20	N-Nitrosodimethylamine	ND	10
bis (2-ethylhexyl)phthalate	ND	10			
Additional Analytes					
1,2-Diphenylhydrazine	ND	10			
3-Methylphenol (m-Cresol)	ND	10			

Notes and Definitions for this Report:

Units:..... ug/L
 EXTRACTED..... 07/27/93
 DATE RUN..... 08/04/93
 ANALYST..... KKP
 INSTRUMENT..... HP-3
 DILUTION FACTOR.. 1.0
 ND = Not Detected at Detection Limits.

Received: 07/21/93

Results by Sample

SAMPLE ID MW-3FRACTION 03A TEST CODE PP13 NAME METALS, 13 PRI. POLL.Date & Time Collected 07/20/93 14:30:00 Category WATER13 PRIORITY POLLUTANT METALS

	RESULT	LIMIT
Silver	_____	ND 0.020
Cadmium	_____	ND 0.010
Chromium	_____	0.011 0.010
Copper	_____	0.016 0.010
Nickel	_____	ND 0.040
Lead	_____	ND 0.050
Zinc	_____	0.045 0.0060
Arsenic	_____	ND 0.10
Selenium	_____	ND 0.25
Beryllium	_____	ND 0.0040
Antimony	_____	ND 0.15
Thallium	_____	ND 0.30
Mercury	_____	ND 0.0005

Notes and Definitions for this Report:

EXTRACTED 07/23/93
DATE RUN 07/27/93
ANALYST SN
INSTRUMENT JA
DIL. FACTOR 1.0
UNITS mg/L

ND = Not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MW-3FRACTION Q3B TEST CODE PPCBW NAME PESTICIDES/PCB (WATER)Date & Time Collected 07/20/93 14:30:00 Category WATERPESTICIDESPCB

	RESULT	LIMIT		RESULT	LIMIT
Alpha-BHC	ND	0.010	Aroclor 1016	ND	0.10
Gamma-BHC (Lindane)	ND	0.010	Aroclor 1221	ND	0.10
Beta-BHC	ND	0.010	Aroclor 1232	ND	0.10
Heptachlor	ND	0.010	Aroclor 1242	ND	0.10
Delta-BHC	ND	0.010	Aroclor 1248	ND	0.10
Aldrin	ND	0.010	Aroclor 1254	ND	0.10
Heptachlor Epoxide	ND	0.010	Aroclor 1260	ND	0.10
Endosulfan I	ND	0.010	Aroclor 1262	ND	0.10
4,4'-DDE	ND	0.010	Aroclor 1268	ND	0.10
Dieldrin	ND	0.010			
Endrin	ND	0.010			
4,4'-DDD	ND	0.010			
Endosulfan II	ND	0.010			
4,4'-DDT	ND	0.010			
Endrin Aldehyde	ND	0.010			
Endosulfan Sulfate	ND	0.010			
Chlordane	ND	0.010			
Toxaphene	ND	0.010			
Methoxychlor	ND	0.010			

Notes and Definitions for this Report:

EXTRACTED: 07/27/93
 UNITS: ug/L
 DATE RUN: 07/29/93
 ANALYST: AP
 INSTRUMENT: HP 2
 DIL. FACTOR: 1

ND = not detected at detection limit

SAMPLE ID <u>MW-4</u>		SAMPLE # <u>04</u>		FRACTIONS: <u>A,B</u>	
Date & Time Collected <u>07/20/93 15:30:00</u> Category <u>WATER</u>					
AL <u>1.33</u>	ALKAL <u>193</u>	AS <u>ND</u>	B <u>0.283</u>	BOD <u>ND</u>	CA <u>126</u>
mg/L DL=0.200	mg/L DL=1.0	mg/L DL=0.100	mg/L DL=0.020	mg/L DL=1.0	mg/L DL=0.010
CL <u>64.0</u>	CN_TOT <u>ND</u>	COD <u>45.0</u>	COLOR <u>5.0</u>	CR_HEX <u>ND</u>	FE <u>3.34</u>
mg/L DL=1.0	mg/L DL=0.01	mg/L DL=5.0	COLOR UNIT	mg/L DL=0.05	mg/L DL=0.010
HARDNE <u>500</u>	MN <u>4.54</u>	NA <u>26.2</u>	NO3_N <u>ND</u>	N_AMM <u>0.050</u>	N_TKN <u>0.680</u>
mg/L DL=1.0	mg/L DL=0.002	mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.03
ODOR <u>1.0</u>	O_DIS <u>10.8</u>	PB <u>07/27/93</u>	PHENOL <u>ND</u>	SO4 <u>178</u>	SURFAC <u>ND</u>
TON DL=1.0	mg/L	mg/L DL=0.050	mg/L DL=0.01	mg/L DL=1.0	mg/L DL=0.1
TDS <u>628</u>	TOC <u>12.3</u>	TURB <u>40.0</u>			
mg/L DL=10.0	mg/L DL=1.0	NTU DL = 0.5			

SAMPLE ID MW-4 FRACTION 04B TEST CODE 624 NAME PURGEABLE ORGANICS VOA
 Date & Time Collected 07/20/93 15:30:00 Category WATER

PURGEABLE ORGANICS VOA

	RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	2.0	Trichloroethene	ND	2.0
Bromomethane	ND	2.0	Dibromochloromethane	ND	2.0
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND	2.0
Chloroethane	ND	2.0	Benzene	ND	2.0
Methylene Chloride	ND	10	cis-1,3-Dichloropropene	ND	2.0
Acetone	ND	50	2-Chloroethylvinylether	ND	2.0
Carbon Disulfide	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	6.48	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	5.45	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	2.96	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	Trichlorofluoromethane	ND	2.0
1,2-Dichloropropane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0	1,3-Dichlorobenzene	ND	2.0
			1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93
 ANALYST XL
 INSTRUMENT HP-2
 DIL. FACTOR 1
 UNITS = ug/L

ND = not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MU-4

FRACTION 04B

TEST CODE 625

NAME A/BN EXTRACTABLES WATER

Date & Time Collected 07/20/93 15:30:00

Category WATER

PARAMETER	RESULT	LIMIT	PARAMETER	RESULT	LIMIT
BASE NEUTRAL EXTRACTABLES					
bis(-2-Chloroethyl) ether	ND	10			
1,3-Dichlorobenzene	ND	10	Chrysene	ND	10
1,4-Dichlorobenzene	ND	10	Di-n-octyl phthalate	ND	10
1,2-Dichlorobenzene	ND	10	Benzo(b)fluoranthene	ND	10
bis(2-Chloroisopropyl) ether	ND	10	Benzo(k)fluoranthene	ND	10
N-Nitroso-Di-N-Propylamine	ND	10	Benzo(a)pyrene	ND	50
Hexachloroethane	ND	10	Indeno(1,2,3-cd)pyrene	ND	10
Nitrobenzene	ND	10	Dibenz(a,h)anthracene	ND	10
Isophorone	ND	10	Benzo(g,h,i)perylene	ND	50
bis(2-Chloroethoxy) methane	ND	10	ACID EXTRACTABLES		
1,2,4-Trichlorobenzene	ND	10		RESULT	LIMIT
Naphthalene	ND	10	Phenol	ND	10
Hexachlorobutadiene	ND	10	2-Chlorophenol	ND	10
Hexachlorocyclopentadiene	ND	10	Benzyl Alcohol	ND	20
2-Chloronaphthalene	ND	10	2-Methylphenol	ND	10
Dimethyl phthalate	ND	10	4-Methylphenol	ND	10
Acenaphthylene	ND	10	2-Nitrophenol	ND	10
Acenaphthene	ND	10	2,4-Dimethylphenol	ND	10
2,4-Dinitrotoluene	ND	20	Benzoic Acid	ND	50
2,6-Dinitrotoluene	ND	10	2,4-Dichlorophenol	ND	10
Diethylphthalate	ND	10	4-Chloroaniline	ND	20
4-Chlorophenyl phenyl ether	ND	10	4-Chloro-3-methylphenol	ND	10
Flourene	ND	10	2-Methylnaphthalene	ND	10
N-Nitrosodiphenylamine	ND	10	2,4,6-Trichlorophenol	ND	10
4-Bromophenyl phenyl ether	ND	10	2,4,5-Trichlorophenol	ND	10
Hexachlorobenzene	ND	10	2-Nitroaniline	ND	50
Phenanthrene	ND	10	3-Nitroaniline	ND	50
Anthracene	ND	10	2,4-Dinitrophenol	ND	10
Di-n-butylphthalate	ND	10	4-Nitrophenol	ND	10
Fluoranthene	ND	10	Dibenzofuran	ND	10
Pyrene	ND	10	4-Nitroaniline	ND	10
Butyl benzyl phthalate	ND	20	4,6-Dinitro-2-methylphenol	ND	10
3,3'-Dichlorobenzidine	ND	10	Pentachlorophenol	ND	10
Benzo (a) anthracene	ND	20	Benzidine	ND	10
bis (2-ethylhexyl)phthalate	ND	10	N-Nitrosodimethylamine	ND	10
Additional Analytes					
	1,2-Diphenylhydrazine		ND	10	
	3-Methylphenol (m-Cresol)		ND	10	
Notes and Definitions for this Report:					
Units:..... ug/L					
EXTRACTED..... 07/27/93					
DATE RUN..... 08/03/93					
ANALYST..... KKP					
INSTRUMENT..... HP-3					
DILUTION FACTOR.. 1.0					
ND = Not Detected at Detection Limits.					

Received: 07/21/93

Results by Sample

SAMPLE ID MV-4 FRACTION 04A TEST CODE PP13 NAME METALS, 13 PRI. POLL.
Date & Time Collected 07/20/93 15:30:00 Category WATER

13 PRIORITY POLLUTANT METALS

	RESULT	LIMIT
Silver	<u>ND</u>	<u>0.020</u>
Cadmium	<u>ND</u>	<u>0.010</u>
Chromium	<u>ND</u>	<u>0.010</u>
Copper	<u>0.010</u>	<u>0.010</u>
Nickel	<u>ND</u>	<u>0.040</u>
Lead	<u>ND</u>	<u>0.050</u>
Zinc	<u>0.099</u>	<u>.0060</u>
Arsenic	<u>ND</u>	<u>0.10</u>
Selenium	<u>ND</u>	<u>0.25</u>
Beryllium	<u>ND</u>	<u>0.0040</u>
Antimony	<u>ND</u>	<u>0.15</u>
Thallium	<u>ND</u>	<u>0.30</u>
Mercury	<u>ND</u>	<u>0.0005</u>

Notes and Definitions for this Report:

EXTRACTED 07/23/93
DATE RUN 07/27/93
ANALYST SN
INSTRUMENT JA
DIL. FACTOR 1.0
UNITS mg/L

ND = Not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MW-4FRACTION 04B TEST CODE PPCBW NAME PESTICIDES/PCB (WATER)Date & Time Collected 07/20/93 15:30:00 Category WATERPESTICIDESPCB

	RESULT	LIMIT		RESULT	LIMIT
Alpha-BHC	ND	0.010	Aroclor 1016	ND	0.10
Gamma-BHC (Lindane)	ND	0.010	Aroclor 1221	ND	0.10
Beta-BHC	ND	0.010	Aroclor 1232	ND	0.10
Heptachlor	ND	0.010	Aroclor 1242	ND	0.10
Delta-BHC	ND	0.010	Aroclor 1248	ND	0.10
Aldrin	ND	0.010	Aroclor 1254	ND	0.10
Heptachlor Epoxide	ND	0.010	Aroclor 1260	ND	0.10
Endosulfan I	ND	0.010	Aroclor 1262	ND	0.10
4,4'-DDE	ND	0.010	Aroclor 1268	ND	0.10
Dieldrin	ND	0.010			
Endrin	ND	0.010			
4,4'-DDD	ND	0.010			
Endosulfan II	ND	0.010			
4,4'-DDT	ND	0.010			
Endrin Aldehyde	ND	0.010			
Endosulfan Sulfate	ND	0.010			
Chlordane	ND	0.010			
Toxaphene	ND	0.010			
Methoxychlor	ND	0.010			

Notes and Definitions for this Report:

EXTRACTED: 07/27/93
 UNITS: ug/L
 DATE RUN: 07/29/93
 ANALYST: AP
 INSTRUMENT: HP 2
 DIL. FACTOR: 1

ND = not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID <u>MW-5</u>		SAMPLE # <u>05</u>		FRACTIONS: <u>A,B</u>	
Date & Time Collected <u>07/20/93 12:30:00</u> Category <u>WATER</u>					
<u>AL</u> <u>22.0</u>	<u>ALKAL</u> <u>107</u>	<u>AS</u> <u>ND</u>	<u>B</u> <u>0.107</u>	<u>BOD</u> <u>ND</u>	<u>CA</u> <u>80.1</u>
mg/L DL=0.200	mg/L DL=1.0	mg/L DL=0.100	mg/L DL=0.020	mg/L DL=1.0	mg/L DL=0.010
<u>CL</u> <u>74.0</u>	<u>CN_TOT</u> <u>ND</u>	<u>COD</u> <u>10.0</u>	<u>COLOR</u> <u>5.0</u>	<u>CR_HEX</u> <u>ND</u>	<u>FE</u> <u>25.2</u>
mg/L DL=1.0	mg/L DL=0.01	mg/L DL=5.0	COLOR UNIT	mg/L DL=0.05	mg/L DL=0.010
<u>HARDNE</u> <u>284</u>	<u>MN</u> <u>4.20</u>	<u>NA</u> <u>22.0</u>	<u>NO3_N</u> <u>0.361</u>	<u>N_AMM</u> <u>0.028</u>	<u>N_TKN</u> <u>1.30</u>
mg/L DL=1.0	mg/L DL=0.002	mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.03
<u>ODOR</u> <u>1.0</u>	<u>O_DIS</u> <u>11.2</u>	<u>PB</u> <u>07/27/93</u>	<u>PHENOL</u> <u>ND</u>	<u>SO4</u> <u>54.4</u>	<u>SURFAC</u> <u>ND</u>
TON DL=1.0	mg/L	mg/L DL=0.050	mg/L DL=0.01	mg/L DL=1.0	mg/L DL=0.1
<u>TDS</u> <u>360</u>	<u>TOC</u> <u>3.64</u>	<u>TURB</u> <u>700</u>			
mg/L DL=10.0	mg/L DL=1.0	NTU DL = 0.5			

Received: 07/21/93

Results by Sample

SAMPLE ID MW-5FRACTION 05BTEST CODE 624NAME PURGEABLE ORGANICS VOADate & Time Collected 07/20/93 12:30:00Category WATER**PURGEABLE ORGANICS VOA**

	RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	2.0	Trichloroethene	ND	2.0
Bromomethane	ND	2.0	Dibromochloromethane	ND	2.0
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND	2.0
Chloroethane	ND	2.0	Benzene	ND	2.0
Methylene Chloride	ND	10	cis-1,3-Dichloropropene	ND	2.0
Acetone	ND	50	2-Chloroethylvinylether	ND	2.0
Carbon Disulfide	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	Trichlorofluoromethane	ND	2.0
1,2-Dichloropropane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0	1,3-Dichlorobenzene	ND	2.0
			1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93
 ANALYST XL
 INSTRUMENT HP-2
 DIL. FACTOR 1
 UNITS = ug/L

ND = not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MW-5 FRACTION 05B TEST CODE 625 NAME A/BN EXTRACTABLES WATER
 Date & Time Collected 07/20/93 12:30:00 Category WATER

PARAMETER	RESULT	LIMIT	PARAMETER	RESULT	LIMIT
BASE NEUTRAL EXTRACTABLES					
bis(-2-Chloroethyl) ether	ND	10			
1,3-Dichlorobenzene	ND	10	Chrysene	ND	10
1,4-Dichlorobenzene	ND	10	Di-n-octyl phthalate	ND	10
1,2-Dichlorobenzene	ND	10	Benzo(b)fluoranthene	ND	10
bis(2-Chloroisopropyl) ether	ND	10	Benzo(k)fluoranthene	ND	10
N-Nitroso-Di-N-Propylamine	ND	10	Benzo(a)pyrene	ND	50
Hexachloroethane	ND	10	Indeno(1,2,3-cd)pyrene	ND	10
Nitrobenzene	ND	10	Dibenz(a,h)anthracene	ND	10
Isophorone	ND	10	Benzo(g,h,i)perylene	ND	50
bis(2-Chloroethoxy) methane	ND	10	ACID EXTRACTABLES		
1,2,4-Trichlorobenzene	ND	10		RESULT	LIMIT
Naphthalene	ND	10	Phenol	ND	10
Hexachlorobutadiene	ND	10	2-Chlorophenol	ND	10
Hexachlorocyclopentadiene	ND	10	Benzyl Alcohol	ND	20
2-Chloronaphthalene	ND	10	2-Methylphenol	ND	10
Dimethyl phthalate	ND	10	4-Methylphenol	ND	10
Acenaphthylene	ND	10	2-Nitrophenol	ND	10
Acenaphthene	ND	10	2,4-Dimethylphenol	ND	10
2,4-Dinitrotoluene	ND	20	Benzoic Acid	ND	50
2,6-Dinitrotoluene	ND	10	2,4-Dichlorophenol	ND	10
Diethylphthalate	ND	10	4-Chloroaniline	ND	20
4-Chlorophenyl phenyl ether	ND	10	4-Chloro-3-methylphenol	ND	10
Flourene	ND	10	2-Methylnaphthalene	ND	10
N-Nitrosodiphenylamine	ND	10	2,4,6-Trichlorophenol	ND	10
4-Bromophenyl phenyl ether	ND	10	2,4,5-Trichlorophenol	ND	10
Hexachlorobenzene	ND	10	2-Nitroaniline	ND	50
Phenanthrene	ND	10	3-Nitroaniline	ND	50
Anthracene	ND	10	2,4-Dinitrophenol	ND	10
Di-n-butylphthalate	ND	10	4-Nitrophenol	ND	10
Fluoranthene	ND	10	Dibenzofuran	ND	10
Pyrene	ND	10	4-Nitroaniline	ND	10
Butyl benzyl phthalate	ND	20	4,6-Dinitro-2-methylphenol	ND	10
3,3'-Dichlorobenzidine	ND	10	Pentachlorophenol	ND	10
Benzo (a) anthracene	ND	20	Benzidine	ND	10
bis (2-ethylhexyl)phthalate	ND	10	N-Nitrosodimethylamine	ND	10
Additional Analytes					
1,2-Diphenylhydrazine				ND	10
3-Methylphenol (m-Cresol)	ND	10			
Notes and Definitions for this Report:					
Units:..... ug/L					
EXTRACTED..... 07/27/93					
DATE RUN..... 08/04/93					
ANALYST..... KKP					
INSTRUMENT..... HP-3					
DILUTION FACTOR.. 1.0					
ND = Not Detected at Detection Limits.					

Received: 07/21/93

Results by Sample

SAMPLE ID MW-5 FRACTION 05A TEST CODE PP13 NAME METALS,13 PRI.POLL.
 Date & Time Collected 07/20/93 12:30:00 Category WATER

13 PRIORITY POLLUTANT METALS

	RESULT	LIMIT
Silver	<u>0.139</u>	<u>0.020</u>
Cadmium	<u>ND</u>	<u>0.010</u>
Chromium	<u>0.032</u>	<u>0.010</u>
Copper	<u>0.077</u>	<u>0.010</u>
Nickel	<u>ND</u>	<u>0.040</u>
Lead	<u>0.058</u>	<u>0.050</u>
Zinc	<u>0.181</u>	<u>.0060</u>
Arsenic	<u>ND</u>	<u>0.10</u>
Selenium	<u>ND</u>	<u>0.25</u>
Beryllium	<u>ND</u>	<u>0.0040</u>
Antimony	<u>ND</u>	<u>0.15</u>
Thallium	<u>ND</u>	<u>0.30</u>
Mercury	<u>ND</u>	<u>0.0005</u>

Notes and Definitions for this Report:

EXTRACTED 07/23/93
 DATE RUN 07/27/93
 ANALYST SN
 INSTRUMENT JA
 DIL. FACTOR 1.0
 UNITS mg/L

ND = Not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID <u>MW-6D</u>		SAMPLE # <u>06</u>		FRACTIONS: <u>A,B</u>	
Date & Time Collected <u>07/20/93 14:15:00</u> Category <u>WATER</u>					
AL <u>0.904</u>	ALKAL <u>570</u>	AS <u>ND</u>	B <u>0.373</u>	BOD <u>1.8</u>	CA <u>172</u>
mg/L DL=0.200	mg/L DL=1.0	mg/L DL=0.100	mg/L DL=0.020	mg/L DL=1.0	mg/L DL=0.010
CL <u>245</u>	CN_TOT <u>ND</u>	COD <u>55.0</u>	COLOR <u>10</u>	CR_HEX <u>ND</u>	FE <u>3.43</u>
mg/L DL=1.0	mg/L DL=0.01	mg/L DL=5.0	COLOR UNIT	mg/L DL=0.05	mg/L DL=0.010
HARDNE <u>660</u>	HN <u>3.17</u>	NA <u>87.5</u>	NO3_N <u>0.035</u>	N_ANH <u>0.720</u>	N_TKN <u>1.91</u>
mg/L DL=1.0	mg/L DL=0.002	mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.03
ODOR <u>1.0</u>	O_DIS <u>10.8</u>	PB <u>07/27/93</u>	PHENOL <u>ND</u>	SO4 <u>31.9</u>	SURFAC <u>ND</u>
TON DL=1.0	mg/L	mg/L DL=0.050	mg/L DL=0.01	mg/L DL=1.0	mg/L DL=0.1
TDS <u>948</u>	TOC <u>22.2</u>	TURB <u>50.0</u>			
mg/L DL=10.0	mg/L DL=1.0	NTU DL = 0.5			

Received: 07/21/93

Results by Sample

SAMPLE ID MV-6DFRACTION 06BTEST CODE 624NAME PURGEABLE ORGANICS VOADate & Time Collected 07/20/93 14:15:00Category WATER**PURGEABLE ORGANICS VOA**

	RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	2.0	Trichloroethene	ND	2.0
Bromomethane	ND	2.0	Dibromochloromethane	ND	2.0
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND	2.0
Chloroethane	ND	2.0	Benzene	13.3	2.0
Methylene Chloride	ND	10	cis-1,3-Dichloropropene	ND	2.0
Acetone	ND	50	2-Chloroethylvinylether	ND	2.0
Carbon Disulfide	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	Trichlorofluoromethane	ND	2.0
1,2-Dichloropropane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0	1,3-Dichlorobenzene	ND	2.0
			1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93ANALYST XLINSTRUMENT HP-2DIL. FACTOR 1UNITS = ug/L

ND = not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MW-6D FRACTION 06B TEST CODE 625 NAME A/BN EXTRACTABLES WATER
 Date & Time Collected 07/20/93 14:15:00 Category WATER

PARAMETER	RESULT	LIMIT	PARAMETER	RESULT	LIMIT
BASE NEUTRAL EXTRACTABLES					
bis(-2-Chloroethyl) ether	ND	10			
1,3-Dichlorobenzene	ND	10	Chrysene	ND	10
1,4-Dichlorobenzene	ND	10	Di-n-octyl phthalate	ND	10
1,2-Dichlorobenzene	ND	10	Benzo(b)fluoranthene	ND	10
bis(2-Chloroisopropyl) ether	ND	10	Benzo(k)fluoranthene	ND	10
N-Nitroso-Di-N-Propylamine	ND	10	Benzo(a)pyrene	ND	50
Hexachloroethane	ND	10	Indeno(1,2,3-cd)pyrene	ND	10
Nitrobenzene	ND	10	Dibenz(a,h)anthracene	ND	10
Isophorone	ND	10	Benzo(g,h,i)perylene	ND	50
bis(2-Chloroethoxy) methane	ND	10	ACID EXTRACTABLES	RESULT	LIMIT
1,2,4-Trichlorobenzene	ND	10	Phenol	ND	10
Naphthalene	ND	10	2-Chlorophenol	ND	10
Hexachlorobutadiene	ND	10	Benzyl Alcohol	ND	20
Hexachlorocyclopentadiene	ND	10	2-Methylphenol	ND	10
2-Chloronaphthalene	ND	10	4-Methylphenol	ND	10
Dimethyl phthalate	ND	10	2-Nitrophenol	ND	10
Acenaphthylene	ND	10	2,4-Dimethylphenol	ND	10
Acenaphthene	ND	10	Benzoic Acid	ND	50
2,4-Dinitrotoluene	ND	20	2,4-Dichlorophenol	ND	10
2,6-Dinitrotoluene	ND	10	4-Chloroaniline	ND	20
Diethylphthalate	ND	10	4-Chloro-3-methylphenol	ND	10
4-Chlorophenyl phenyl ether	ND	10	2-Methylnaphthalene	ND	10
Flourene	ND	10	2,4,6-Trichlorophenol	ND	10
N-Nitrosodiphenylamine	ND	10	2,4,5-Trichlorophenol	ND	10
4-Bromophenyl phenyl ether	ND	10	2-Nitroaniline	ND	50
Hexachlorobenzene	ND	10	3-Nitroaniline	ND	50
Phenanthrene	ND	10	2,4-Dinitrophenol	ND	10
Anthracene	ND	10	4-Nitrophenol	ND	10
Di-n-butylphthalate	ND	10	Dibenzofuran	ND	10
Fluoranthene	ND	10	4-Nitroaniline	ND	10
Pyrene	ND	10	4,6-Dinitro-2-methylphenol	ND	10
Butyl benzyl phthalate	ND	20	Pentachlorophenol	ND	10
3,3'-Dichlorobenzidine	ND	10	Benzdine	ND	10
Benzo (a) anthracene	ND	20	N-Nitrosodimethylamine	ND	10
bis (2-ethylhexyl)phthalate	ND	10			

Additional Analytes

1,2-Diphenylhydrazine	ND	10
3-Methylphenol (m-Cresol)	ND	10

Notes and Definitions for this Report:

Units:..... ug/L
 EXTRACTED..... 07/27/93
 DATE RUN..... 08/04/93
 ANALYST..... KKP
 INSTRUMENT..... HP-3
 DILUTION FACTOR.. 1.0
 ND = Not Detected at Detection Limits.

Received: 07/21/93

Results by Sample

SAMPLE ID MW-6DFRACTION 06ATEST CODE PP13NAME METALS,13 PRI.POLL.Date & Time Collected 07/20/93 14:15:00Category WATER**13 PRIORITY POLLUTANT METALS**

	RESULT	LIMIT
Silver	<u>0.072</u>	<u>0.020</u>
Cadmium	<u>ND</u>	<u>0.010</u>
Chromium	<u>ND</u>	<u>0.010</u>
Copper	<u>0.022</u>	<u>0.010</u>
Nickel	<u>ND</u>	<u>0.040</u>
Lead	<u>ND</u>	<u>0.050</u>
Zinc	<u>0.055</u>	<u>0.0060</u>
Arsenic	<u>ND</u>	<u>0.10</u>
Selenium	<u>ND</u>	<u>0.25</u>
Beryllium	<u>ND</u>	<u>0.0040</u>
Antimony	<u>ND</u>	<u>0.15</u>
Thallium	<u>ND</u>	<u>0.30</u>
Mercury	<u>ND</u>	<u>0.0005</u>

Notes and Definitions for this Report:

EXTRACTED 07/23/93DATE RUN 07/27/93ANALYST SNINSTRUMENT JADIL. FACTOR 1.0UNITS mg/L

ND = Not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID <u>MJ-NORTH</u>		SAMPLE # <u>07</u>		FRACTIONS: <u>A,B</u>		Date & Time Collected <u>07/20/93 14:05:00</u>		Category <u>WATER</u>			
AL	<u>71.7</u> mg/L DL=0.200	ALKAL	<u>163</u> mg/L DL=1.0	AS	<u>ND</u> mg/L DL=0.100	B	<u>0.348</u> mg/L DL=0.020	BOD	<u>14.4</u> mg/L DL=1.0	CA	<u>90.3</u> mg/L DL=0.010
CL	<u>11.0</u> mg/L DL=1.0	CN_TOT	<u>ND</u> mg/L DL=0.01	COD	<u>90.0</u> mg/L DL=5.0	COLOR	<u>20</u> COLOR UNIT	CR_HEX	<u>ND</u> mg/L DL=0.05	FE	<u>112</u> mg/L DL=0.010
HARDNE	<u>520</u> mg/L DL=1.0	MN	<u>2.05</u> mg/L DL=0.002	NA	<u>13.6</u> mg/L DL=0.500	NO3_N	<u>0.068</u> mg/L DL=0.03	N_AMH	<u>1.26</u> mg/L DL=0.01	N_TKN	<u>44.4</u> mg/L DL=0.03
ODOR	<u>1.0</u> TON DL=1.0	O_DIS	<u>6.40</u> mg/L	PB	<u>07/27/93</u> mg/L DL=0.050	PHENOL	<u>0.029</u> mg/L DL=0.01	SO4	<u>36.3</u> mg/L DL=1.0	SURFAC	<u>ND</u> mg/L DL=0.1
TDS	<u>540</u> mg/L DL=10.0	TOC	<u>16.7</u> mg/L DL=1.0	TURB	<u>18000</u> NTU DL = 0.5						

Received: 07/21/93

Results by Sample

SAMPLE ID MU-NORTH FRACTION 07B TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 07/20/93 14:05:00 Category WATER

PURGEABLE ORGANICS VOA

	RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	2.0	Trichloroethene	ND	2.0
Bromomethane	ND	2.0	Dibromochloromethane	ND	2.0
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND	2.0
Chloroethane	ND	2.0	Benzene	ND	2.0
Methylene Chloride	ND	10	cis-1,3-Dichloropropene	ND	2.0
Acetone	ND	50	2-Chloroethylvinylether	ND	2.0
Carbon Disulfide	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	Trichlorofluoromethane	ND	2.0
1,2-Dichloropropane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0	1,3-Dichlorobenzene	ND	2.0
			1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93
ANALYST XL
INSTRUMENT HP-2
DIL. FACTOR 1
UNITS = ug/L

ND = not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MV-NORTH FRACTION 07B TEST CODE 625 NAME A/BN EXTRACTABLES WATER
 Date & Time Collected 07/20/93 14:05:00 Category WATER

PARAMETER	RESULT	LIMIT	PARAMETER	RESULT	LIMIT
BASE NEUTRAL EXTRACTABLES					
bis-(2-Chloroethyl) ether	ND	10			
1,3-Dichlorobenzene	ND	10	Chrysene	ND	10
1,4-Dichlorobenzene	ND	10	Di-n-octyl phthalate	ND	10
1,2-Dichlorobenzene	ND	10	Benzo(b)fluoranthene	ND	10
bis(2-Chloroisopropyl) ether	ND	10	Benzo(k)fluoranthene	ND	10
N-Nitroso-Di-N-Propylamine	ND	10	Benzo(a)pyrene	ND	50
Hexachloroethane	ND	10	Indeno(1,2,3-cd)pyrene	ND	10
Nitrobenzene	ND	10	Dibenz(a,h)anthracene	ND	10
Isophorone	ND	10	Benzo(g,h,i)perylene	ND	50
bis(2-Chloroethoxy) methane	ND	10	ACID EXTRACTABLES	RESULT	LIMIT
1,2,4-Trichlorobenzene	ND	10	Phenol	ND	10
Naphthalene	ND	10	2-Chlorophenol	ND	10
Hexachlorobutadiene	ND	10	Benzyl Alcohol	ND	20
Hexachlorocyclopentadiene	ND	10	2-Methylphenol	ND	10
2-Chloronaphthalene	ND	10	4-Methylphenol	ND	10
Dimethyl phthalate	ND	10	2-Nitrophenol	ND	10
Acenaphthylene	ND	10	2,4-Dimethylphenol	ND	10
Acenaphthene	ND	10	Benzoic Acid	ND	50
2,4-Dinitrotoluene	ND	20	2,4-Dichlorophenol	ND	10
2,6-Dinitrotoluene	ND	10	4-Chloroaniline	ND	20
Diethylphthalate	ND	10	4-Chloro-3-methylphenol	ND	10
4-Chlorophenyl phenyl ether	ND	10	2-Methylnaphthalene	ND	10
Flourene	ND	10	2,4,6-Trichlorophenol	ND	10
N-Nitrosodiphenylamine	ND	10	2,4,5-Trichlorophenol	ND	10
4-Bromophenyl phenyl ether	ND	10	2-Nitroaniline	ND	50
Hexachlorobenzene	ND	10	3-Nitroaniline	ND	50
Phenanthrene	ND	10	2,4-Dinitrophenol	ND	10
Anthracene	ND	10	4-Nitrophenol	ND	10
Di-n-butylphthalate	ND	10	Dibenzofuran	ND	10
Fluoranthene	ND	10	4-Nitroaniline	ND	10
Pyrene	ND	10	4,6-Dinitro-2-methylphenol	ND	10
Butyl benzyl phthalate	ND	20	Pentachlorophenol	ND	10
3,3'-Dichlorobenzidine	ND	10	Benzidine	ND	10
Benzo (a) anthracene	ND	20	N-Nitrosodimethylamine	ND	10
bis (2-ethylhexyl)phthalate	ND	10			
Additional Analytes					
	1,2-Diphenylhydrazine	ND	10		
	3-Methylphenol (m-Cresol)	ND	10		
Notes and Definitions for this Report:					
Units:..... ug/L					
EXTRACTED..... 07/27/93					
DATE RUN..... 08/04/93					
ANALYST..... KKP					
INSTRUMENT..... HP-3					
DILUTION FACTOR.. 1.0					
ND = Not Detected at Detection Limits.					

SAMPLE ID MW-NORTH FRACTION 07A TEST CODE PP13 NAME METALS,13 PRI.POLL.
Date & Time Collected 07/20/93 14:05:00 Category WATER

13 PRIORITY POLLUTANT METALS

	RESULT	LIMIT
Silver	<u>0.023</u>	<u>0.020</u>
Cadmium	<u>0.017</u>	<u>0.010</u>
Chromium	<u>0.139</u>	<u>0.010</u>
Copper	<u>0.142</u>	<u>0.010</u>
Nickel	<u>0.177</u>	<u>0.040</u>
Lead	<u>0.173</u>	<u>0.050</u>
Zinc	<u>0.890</u>	<u>0.0060</u>
Arsenic	<u>ND</u>	<u>0.10</u>
Selenium	<u>ND</u>	<u>0.25</u>
Beryllium	<u>0.009</u>	<u>.0040</u>
Antimony	<u>ND</u>	<u>0.15</u>
Thallium	<u>ND</u>	<u>0.30</u>
Mercury	<u>0.001</u>	<u>0.0005</u>

Notes and Definitions for this Report:

EXTRACTED 07/23/93
DATE RUN 07/27/93
ANALYST SN
INSTRUMENT JA
DIL. FACTOR 1.0
UNITS mg/L

ND = Not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID <u>MW-SOUTH</u>		SAMPLE # <u>08</u>		FRACTIONS: <u>A,B</u>			
Date & Time Collected <u>07/20/93 15:30:00</u>				Category <u>WATER</u>			
AL <u>0.378</u>	ALKAL <u>1520</u>	AS <u>ND</u>	B <u>1.82</u>	BOD <u>21.3</u>	CA <u>214</u>		
mg/L DL=0.200	mg/L DL=1.0	mg/L DL=0.100	mg/L DL=0.020	mg/L DL=1.0	mg/L DL=0.010		
CL <u>653</u>	CN_TOT <u>ND</u>	COD <u>350</u>	COLOR <u>>70</u>	CR_HEX <u>ND</u>	FE <u>12.4</u>		
mg/L DL=1.0	mg/L DL=0.01	mg/L DL=5.0	COLOR UNIT	mg/L DL=0.05	mg/L DL=0.010		
HARDNE <u>1000</u>	MN <u>13.9</u>	NA <u>370</u>	NO3_N <u>ND</u>	N_AMM <u>192</u>	N_TKN <u>373</u>		
mg/L DL=1.0	mg/L DL=0.002	mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.03		
ODOR <u>1.0</u>	O_DIS <u>3.40</u>	PB <u>07/27/93</u>	PHENOL <u>ND</u>	SO4 <u>23.2</u>	SURFAC <u>0.41</u>		
TON DL=1.0	mg/L	mg/L DL=0.050	mg/L DL=0.01	mg/L DL=1.0	mg/L DL=0.1		
TDS <u>2360</u>	TOC <u>144</u>	TURB <u>78.0</u>					
mg/L DL=10.0	mg/L DL=1.0	NTU DL = 0.5					

Received: 07/21/93

Results by Sample

SAMPLE ID MW-SOUTHFRACTION 088TEST CODE 624NAME PURGEABLE ORGANICS VOADate & Time Collected 07/20/93 15:30:00Category WATER**PURGEABLE ORGANICS VOA**

	RESULT	LIMIT		RESULT	LIMIT
Chloromethane	ND	2.0	Trichloroethene	ND	2.0
Bromomethane	ND	2.0	Dibromochloromethane	ND	2.0
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND	2.0
Chloroethane	ND	2.0	Benzene	5.29	2.0
Methylene Chloride	ND	10	cis-1,3-Dichloropropene	ND	2.0
Acetone	ND	50	2-Chloroethylvinylether	ND	2.0
Carbon Disulfide	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	21.1	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	13.3	2.0
Bromodichloromethane	ND	2.0	Trichlorofluoromethane	ND	2.0
1,2-Dichloropropane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0	1,3-Dichlorobenzene	ND	2.0
			1,4-Dichlorobenzene	6.75	2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93ANALYST XLINSTRUMENT HP-1DIL. FACTOR 1UNITS = ug/L

ND = not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID MW-SOUTH FRACTION O8A TEST CODE PP13 NAME METALS,13 PRI.POLL.
 Date & Time Collected 07/20/93 15:30:00 Category WATER

13 PRIORITY POLLUTANT METALS

	RESULT	LIMIT
Silver	<u>ND</u>	<u>0.020</u>
Cadmium	<u>ND</u>	<u>0.010</u>
Chromium	<u>0.011</u>	<u>0.010</u>
Copper	<u>0.014</u>	<u>0.010</u>
Nickel	<u>ND</u>	<u>0.040</u>
Lead	<u>ND</u>	<u>0.050</u>
Zinc	<u>0.131</u>	<u>0.0060</u>
Arsenic	<u>ND</u>	<u>0.10</u>
Selenium	<u>ND</u>	<u>0.25</u>
Beryllium	<u>ND</u>	<u>0.0040</u>
Antimony	<u>ND</u>	<u>0.15</u>
Thallium	<u>ND</u>	<u>0.30</u>
Mercury	<u>ND</u>	<u>0.0005</u>

Notes and Definitions for this Report:

EXTRACTED 07/23/93
 DATE RUN 07/26/93
 ANALYST SN
 INSTRUMENT ICP
 DIL. FACTOR 1
 UNITS mg/L

ND = Not detected at detection limit

Received: 07/21/93

Results by Sample

SAMPLE ID <u>LANDFILL</u>		SAMPLE # <u>09</u>		FRACTIONS: <u>A</u>	
Date & Time Collected <u>07/20/93 16:45:00</u> Category <u>WATER</u>					
ALKAL <u>430</u>	AS <u>ND</u>	CL <u>78.0</u>	COD <u>20.0</u>	FE <u>0.112</u>	MN <u>0.048</u>
mg/L DL=1.0	mg/L DL=0.100	mg/L DL=1.0	mg/L DL=5.0	mg/L DL=0.010	mg/L DL=0.002
NA <u>215</u>	NO3_N <u>3.41</u>	N_ANH <u>0.061</u>	PB <u>ND</u>	SO4 <u>11.0</u>	SURFAC <u>ND</u>
mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.050	mg/L DL=1.0	mg/L DL=0.1
TDS <u>618</u>	TURB <u>ND</u>				
mg/L DL=10.0	NTU DL = 0.5				

SAMPLE ID <u>CITRIN</u>		SAMPLE # <u>10</u>		FRACTIONS: <u>A</u>	
Date & Time Collected <u>07/20/93 17:15:00</u> Category <u>WATER</u>					
ALKAL <u>194</u>	AS <u>ND</u>	CL <u>56.0</u>	COD <u>15.0</u>	FE <u>0.103</u>	MN <u>0.011</u>
mg/L DL=1.0	mg/L DL=0.100	mg/L DL=1.0	mg/L DL=5.0	mg/L DL=0.010	mg/L DL=0.002
NA <u>149</u>	NO3_N <u>ND</u>	N_ANH <u>0.039</u>	PB <u>ND</u>	SO4 <u>4.68</u>	SURFAC <u>ND</u>
mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.050	mg/L DL=1.0	mg/L DL=0.1
TDS <u>406</u>	TURB <u>1.00</u>				
mg/L DL=10.0	NTU DL = 0.5				

SAMPLE ID <u>KANOVER</u>		SAMPLE # <u>11</u>		FRACTIONS: <u>A</u>	
Date & Time Collected <u>07/20/93 15:25:00</u> Category <u>WATER</u>					
ALKAL <u>350</u>	AS <u>ND</u>	CL <u>140</u>	COD <u>45.0</u>	FE <u>5.40</u>	MN <u>5.15</u>
mg/L DL=1.0	mg/L DL=0.100	mg/L DL=1.0	mg/L DL=5.0	mg/L DL=0.010	mg/L DL=0.002
NA <u>83.6</u>	NO3_N <u>0.055</u>	N_ANH <u>0.522</u>	PB <u>0.147</u>	SO4 <u>32.3</u>	SURFAC <u>ND</u>
mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.050	mg/L DL=1.0	mg/L DL=0.1
TDS <u>722</u>	TURB <u>24.0</u>				
mg/L DL=10.0	NTU DL = 0.5				

SAMPLE ID <u>PEREZ</u>		SAMPLE # <u>12</u>		FRACTIONS: <u>A</u>	
Date & Time Collected <u>07/20/93 09:15:00</u> Category <u>WATER</u>					
ALKAL <u>42</u>	AS <u>ND</u>	CL <u>143</u>	COD <u>45.0</u>	FE <u>1.71</u>	MN <u>6.08</u>
mg/L DL=1.0	mg/L DL=0.100	mg/L DL=1.0	mg/L DL=5.0	mg/L DL=0.010	mg/L DL=0.002
NA <u>91.5</u>	NO3_N <u>ND</u>	N_ANH <u>0.972</u>	PB <u>ND</u>	SO4 <u>27.2</u>	SURFAC <u>ND</u>
mg/L DL=0.500	mg/L DL=0.03	mg/L DL=0.01	mg/L DL=0.050	mg/L DL=1.0	mg/L DL=0.1
TDS <u>722</u>	TURB <u>6.2</u>				
mg/L DL=10.0	NTU DL = 0.5				

Received: 07/21/93

Results by Sample

SAMPLE ID FB FRACTION 13A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
 Date & Time Collected 07/20/93 19:20:00 Category WATER

PURGEABLE ORGANICS VOA

RESULT	LIMIT	RESULT	LIMIT
Chloromethane	ND 2.0	Trichloroethene	ND 2.0
Bromomethane	ND 2.0	Dibromochloromethane	ND 2.0
Vinyl Chloride	ND 10	1,1,2-Trichloroethane	ND 2.0
Chloroethane	ND 2.0	Benzene	ND 2.0
Methylene Chloride	ND 10	cis-1,3-Dichloropropene	ND 2.0
Acetone	ND 50	2-Chloroethylvinylether	ND 2.0
Carbon Disulfide	ND 2.0	Bromoform	ND 2.0
1,1-Dichloroethene	ND 2.0	2-Hexanone	ND 4.0
1,1-Dichloroethane	ND 2.0	4-Methyl-2-pentanone	ND 4.0
Trans-1,2-Dichloroethene	ND 2.0	Tetrachloroethene	ND 2.0
Chloroform	ND 2.0	1,1,2,2-Tetrachloroethane	ND 2.0
1,2-Dichloroethane	ND 2.0	Toluene	ND 2.0
2-Butanone	ND 10	Chlorobenzene	ND 2.0
1,1,1-Trichloroethane	ND 2.0	Ethyl Benzene	ND 2.0
Carbon Tetrachloride	ND 2.0	Styrene	ND 2.0
Vinyl Acetate	ND 2.0	Total Xylenes	ND 2.0
Bromodichloromethane	ND 2.0	Trichlorofluoromethane	ND 2.0
1,2-Dichloropropane	ND 2.0	1,2-Dichlorobenzene	ND 2.0
trans-1,3-Dichloropropene	ND 2.0	1,3-Dichlorobenzene	ND 2.0
		1,4-Dichlorobenzene	ND 2.0

Notes and Definitions for this Report:

DATE RUN 07/22/93ANALYST XLINSTRUMENT HP-1DIL. FACTOR 1UNITS = ug/L

ND = not detected at detection limit

Received: 07/21/93

Test Methodology

TEST CODE 624 NAME PURGEABLE ORGANICS VOA

EPA METHOD: 624

Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A. 40CFR Part 136. Federal Register Vol. 49, No. 209, 1984.

TEST CODE 625 NAME A/BN EXTRACTABLES WATER

EPA METHOD: 625: Base / Neutral, Acids GCMS.

Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A. 40CFR Part 136. Federal Register Vol. 49, No. 209, 1984.

TEST CODE ALKAL NAME ALKALINITY

EPA METHOD: 310.2

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE AS NAME ARSENICTEST CODE BOD NAME BOD

EPA METHOD: 405.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE CL NAME CHLORIDE

EPA METHOD: 325.3. Chloride Titrimetric, Mercuric Nitrate.

Reference: Methods For Chemical Analyssis of Water and Wastes. Revised March 1983. U.S. Environmental Protection Agency, Cincinnati, OH.

EPA METHOD: 9250

Reference: Test methods for evaluating Solid Waste. Phsical/Chemical Methods. EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.

TEST CODE CN TOT NAME CYANIDE TOTAL

EPA METHOD: 335.3 for water sample

Reference: Methods for Chemical Analysis of Water and Wastes.

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Test Methodology

Continued From Above

TEST CODE CN TOT NAME CYANIDE TOTAL

EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

EPA METHOD: 9010 for soil sample

Reference: Methods for Evaluating Solid Waste: Physical/Chemical Methods.
EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.TEST CODE COD NAME COD

EPA METHOD: 410.4

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.TEST CODE COLOR NAME COLOR

STANDARD METHOD: 204A

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 16th Edition. 1985. APHA Washington D.C.TEST CODE CR HEX NAME CHROMIUM HEXAVALENT

EPA METHOD: 7196

Reference: Test Methods for Evaluating Solid Waste: Physical/Chemical Methods.
EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.TEST CODE HARDNE NAME TOTAL HARDNESS

EPA METHOD: 130.2

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.TEST CODE HGX HG NAME METALS, EXT. FOR MERCURY

REFERENCE:

EPA METHOD 245.1 Mercury. Methods for Chemical Analysis of Water and
Wastes. EPA 600/4-79-020.TEST CODE HGX TW NAME METALS, TOTAL EXT., WATER

REFERENCE:

EPA METHOD 3005. Acid Digestion of Waters for Total Recoverable or
Dissolved Metals for Analysis by Flame Atomic Absorption Spectroscopy or
Inductively Coupled Plasma Spectroscopy. Test Methods for Evaluating
Physical/Chemical Methods. SW 846, 3rd Edition.Wastewater digestion
40CFR Part 136 Appendix C-Preparation for Inductively Coupled Plasma-

TEST CODE HEX TV NAME METALS, TOTAL EXT., WATER

Atomic Emission Spectrometric Method for Trace Element Analysis of
Water and Wastes Method 200.7. Protection of Environment, 1991.

TEST CODE NO3 N NAME NITRATE

EPA METHOD: 353.2

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE N TKN NAME NITROGEN KJELDAHL, TOTAL

EPA METHOD: 351.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE ODOR NAME ODOR

STANDARD METHOD: 207

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 16th Edition. 1985. APHA Washington D.C.

TEST CODE O DIS NAME DISSOLVED OXYGEN

STANDARD METHOD: 421

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 16th Edition. 1985. APHA Washington D.C.

TEST CODE PHENOL NAME PHENOL

EPA METHOD: 420.1 for water sample

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

EPA METHOD: 9065 for soil sample

Reference: Test Methods for Evaluating Solid Waste: Physical/Chemical Methods.
EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.

Received: 07/21/93

Test Methodology

TEST CODE PPCBW NAME PESTICIDES/PCB (WATER)

EPA METHOD: 608 for water sample

Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A. 40 CFR Part 136. Federal Register Vol. 49, No. 209, 1984.

TEST CODE SO4 NAME SULFATE

EPA METHOD: 375.4

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

EPA METHOD: 9035:

Reference: Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.

TEST CODE SURFAC NAME SURFACTANTS - MBAS

STANDARD METHOD: 512B

Reference: Standard Methods for Examination of Water and Wastewater. APHA-AWWA-WACF. 16th Edition. 1985. APHA Washington D.C.

TEST CODE TDS NAME TOTAL DISSOLVED SOLIDS

EPA METHOD: 160.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE TOC NAME TOC

EPA Method: 9060. Total Organic Carbon.

Reference: Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.

TEST CODE TURB NAME TURBIDITY

EPA METHOD: 180.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

