

Kost Environmental Services, Inc.

167 North Broadway
Lindenhurst, New York 11757
(516) 226-2156 Fax (516) 957-0646

GROUNDWATER INVESTIGATION UPDATE
AT
351 BAY SHORE ROAD
DEER PARK, NEW YORK
1-52-107

NOVEMBER, 1994

Prepared For: Evelyn and Stephen Trimboli
52 Collins Avenue
Deer Park, NY 11729

Prepared By: Kost Environmental Services, Inc.
167 N. Broadway
Lindenhurst, NY 11757

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BACKGROUND AND OBJECTIVES

The previous groundwater investigation report of September, 1994, recommended the installation of "an additional monitoring well and subsequent sampling" in order to reevaluate subsurface conditions based upon a revised groundwater flow direction obtained during the September study. The immediate area surrounding the subject site consists of numerous possible dischargers of 1,1,1 trichloroethane and other solvents which could possibly impact the Trimboli site based upon revised groundwater contours.

The objective of this project was to evaluate the impacts to the groundwater by:

- * Installing a "high-spec" monitoring well immediately upgradient of RCMW3 to assess the contribution of off-site sources of contamination.
- * Reaffirm groundwater contours as established in the previous groundwater study of September, 1994.



FIGURE 1

LOCATION MAP

FIELD INVESTIGATION

Well Installation

A "new" monitoring well identified as RCMW-4 was installed on October 6, 1994 by Land, Air, Water Environmental Services, Inc. (LAWES). The well was located on the adjacent westerly property to the subject site and was upgradient of well RCMW-3. (See Figure 2).

The soil encountered during the drilling consisted of light brown to tan sand and gravel. Groundwater was encountered at a depth of approximately 14 feet.

The well was constructed with 10 ft. of screen: 6 ft. of screen penetrated the water table; 4 ft. extended above the water table. The well casing and screen were 4 in. diameter PVC with threaded endcaps and joints; screen slot size was 0.020 in. Filter packs consisting of No. 2 Morie sand extended 2 ft. above the top of the screen section. A 2 ft. seal of thoroughly hydrated bentonite pellets was installed above the sand pack. Bentonite-cement grout used to fill the borehole above the bentonite formed a second seal and anchored the well casing in place. Locking well caps and flush-mount curb boxes were installed at each well.

Well Development

The monitoring well was developed subsequent to their installation. A submersible pump was used to develop the well. The well was pumped at an approximate rate of 5 to 10 gallons per minute for a 30 minute period and was surged at the bottom, middle and top of the water column at various times throughout development. The groundwater was clear and free of sand when pumping operations were terminated.

Groundwater Monitoring Well Sampling

On October 25, 1994, the new monitoring well was sampled. Prior to sampling the monitoring well was measured for depth to water. The interface probe was decontaminated with detergent and distilled water prior to measurement.

Five well volumes were purged from the well with a dedicated bailer and subsequently sampled with a dedicated bailer.

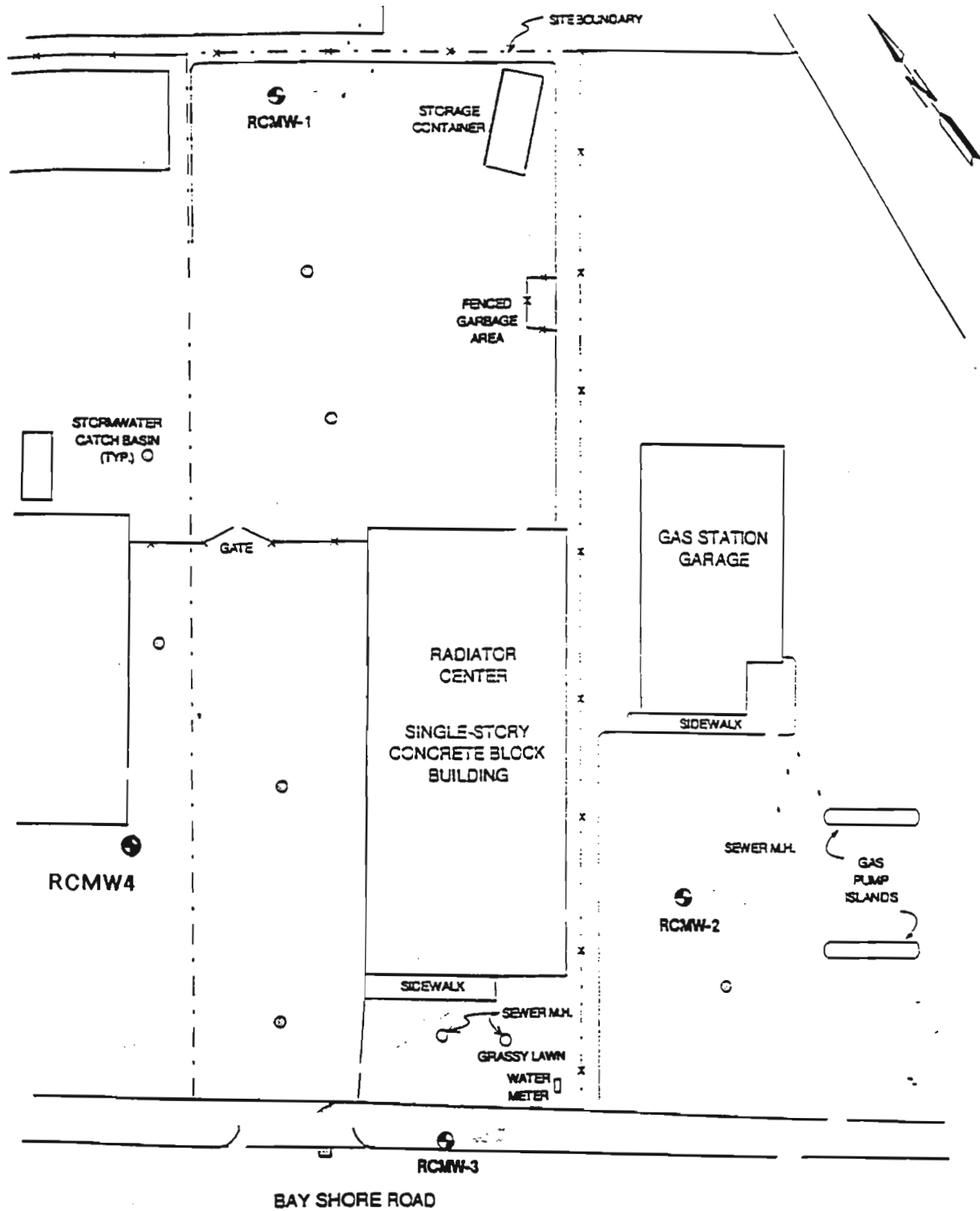
Groundwater samples were preserved on ice and delivered to EcoTest Laboratories, Inc., in North Babylon, New York, for analysis on the same day as sampling. The samples were analyzed for purgeable halocarbons (EPA Method 601).

Field Survey and Groundwater Contours

On November 12, 1994, the new monitoring well was surveyed for elevation and depth to groundwater. (Table I). The monitoring well was surveyed on the north side of the

casing and measured to groundwater from the same point. The depths to groundwater were also recorded at the three other monitoring wells. The depths varied between 13.62 ft. and 14.54 ft.

Groundwater contours were then developed utilizing a topographic survey of the area and the calculated groundwater elevations. (Figure 3).



LEGEND

-  Monitoring well location with water table elevation in feet above MSL
- 35.81
-  Water table contours (dashed where inferred)

0 30 ft



SCALE
1 in. = 30 ft

FIGURE 2

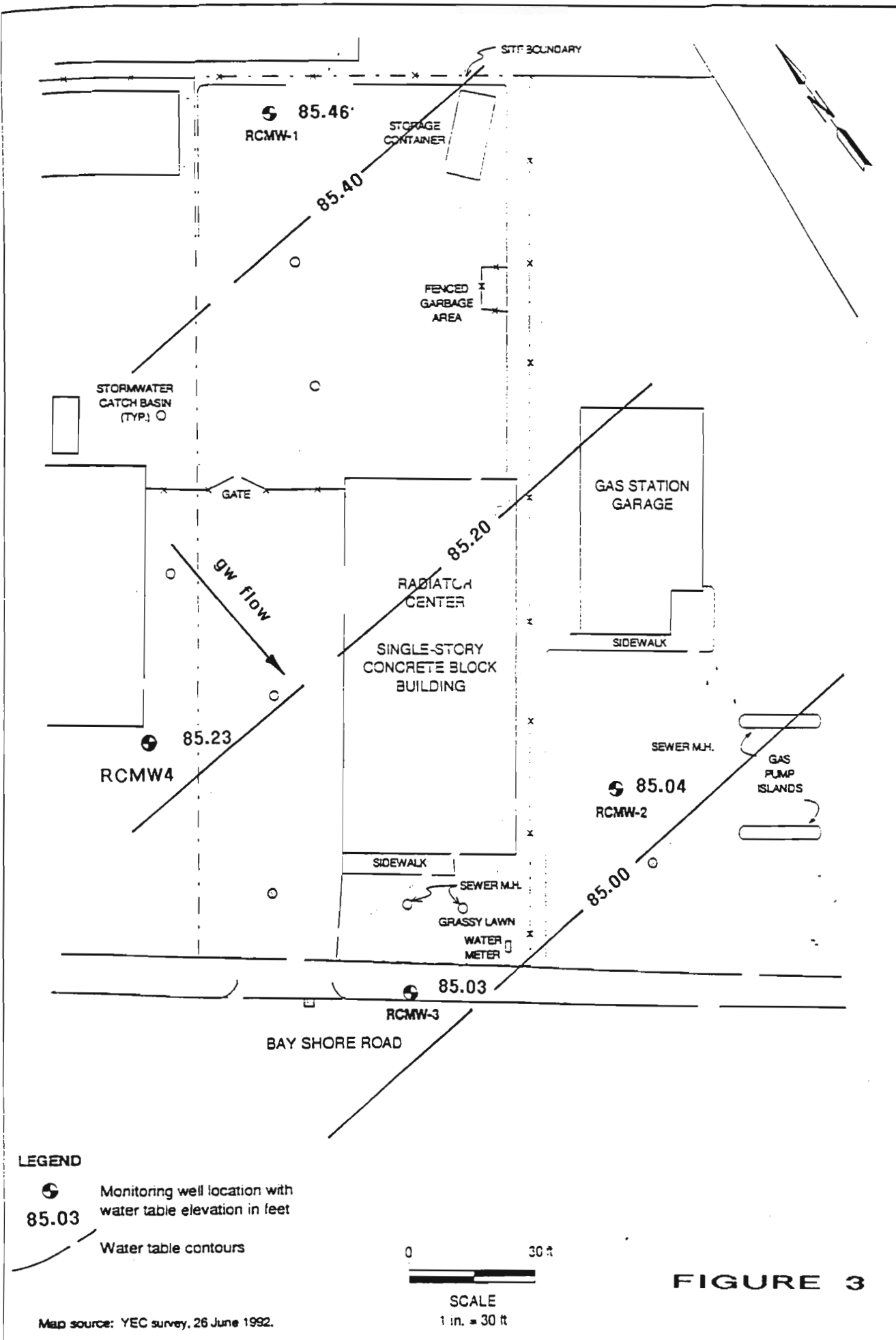


TABLE 1

GW DATA

	RCMW1	RCMW2	RCMW3	RCMW4
TOP PVC	100.00	98.67	98.91	99.50
DTW	14.54	13.63	13.88	14.27
GW ELEV.	85.46	85.04	85.03	85.23

RESULTS

Results of the sample analysis from RCMW-4 indicated the presence of chlorinated hydrocarbon compounds at low concentrations.

The concentration of contaminants were detected at 14 ppb for 1,1,1 trichloroethane, 7 ppb for 1,1 dichloroethane, and 1 ppb for tetrachlorethene accordingly. (Table 2)

The concentrations of 1,1,1 trichloroethane and 1,1 dichlorethane exceed the NYSDEC Class GA groundwater standard of 5 ppb.

The results of the groundwater contour survey indicated a south-southwesterly flow as previously reported.

TABLE 2

GROUNDWATER ANALYSIS(ppb)

	RCMW1 8/16/94	RCMW2 8/16/94	RCMW3 8/16/94	RCMW4 10/25/94
1,2 dichloroethane			5	
1,2 dichloroethene		2		
1,1,1 trichloroethane	1		11	14
trichloroethylene		2		
1,1 dichloroethane				7
tetrachloroethene				1

CONCLUSIONS

The analytical results for the groundwater sample obtained from the recently installed monitoring well, RCMW-4, in conjunction with previous analytical results for RCMW-1, RCMW-2, RCMW-3, confirms the presence of low level chlorinated hydrocarbon contamination in the project area. (Table 2).

However, the concentrations of the chlorinated hydrocarbons were detected at their highest levels in well RCMW-4 which is located "upgradient to" and "off" the Trimboli site. This finding indicates that the chlorinated hydrocarbons detected in RCMW-3 are not a result of dry well contamination as reported in the NYSDEC Phase II Investigation but rather a result of off-site contamination.

The concentrations of chlorinated hydrocarbons detected in RCMW-1 and RCMW-2 are below NYSDEC groundwater standards. In addition, RCMW-2 is situated downgradient of the suspect leaching basins on the Trimboli property.

In summary, the groundwater contamination detected at the Trimboli site which exceeds groundwater standards is apparently a result of "off-site" sources and not the result of activities performed on the Trimboli site.

APPENDIX

LAND, AIR, WATER ENVIRONMENTAL SERVICES, INC.

file



16 COZINE ROAD PO BOX 372 CENTER MORICHES, NY 11934

(516) 874-2112 FAX (516) 874-4547

DRILLER'S LOGS

SITE: Trimboli
Bayshore Road

DATE: October 6, 1994

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOG

Well MSW-#4

Page 1 of 1

Site Location: Trimboli
Bayshore RoadClient: Kost Environmental Services
167 No. Broadway
Lindenhurst, N.Y.

Date: 10/06/94

Total Depth Drilled 22 ft.

Depth to Water: 14 ft.

Casing Installed: 10 ft.

Casing Size: 4 in. PVC

Screen Installed 10 ft.

Slot Size: .020

Well Grouted: yes

Size of Coring Device: 2 in x 24 in

Drilling Fluid Used: none

Drilling Method: h/s auger

Hammer Weight: 140 lbs.

Hammer Drop: 30 in.

Driller: C. Pedersen

Helper: T.Lamprecht

DEPTH FROM	TO	CORE RECOVERY	BLOWS/ 6 INCHES	SAMPLE DESCRIPTION
0'	6'	-	HAND /A/C	2" Asphalt, light brown sand, coarse to medium, 10% gravel
6'	13'	-	A/C	Tan sand, coarse to medium, 20% gravel
13'	15'	15"	5-9-12-14	Tan sand, coarse to medium, 20% gravel, wet, (SP)
15'	22'	-	A/C	Tan sand, coarse to medium, 20% gravel, wet

A/C - Auger Cuttings

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO.C944713

11/04/94

Kost, Mr. Darrel, P.E.
167 North Broadway
Lindenhurst, NY 11757

ATTN:

SOURCE OF SAMPLE: Trimboli, Deer Park
COLLECTED BY: Client DATE COL'D:10/25/94 RECEIVED:10/25/94

SAMPLE: Water sample, RCMW-4, 11:15 am

ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	7
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	14
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
t-1,3Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	1

ANALYTICAL PARAMETERS

Chlorobenzene	ug/L	<1
1,3 Dichlorobenzene	ug/L	<2
1,2 Dichlorobenzene	ug/L	<2
1,4 Dichlorobenzene	ug/L	<2

cc:

REMARKS:

DIRECTOR 

CHAIN OF CUSTODY RECORD

CHAIN OF CUSTODY RECORD

CONTAINERS 7



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[illegible]