23500

GROUNDWATER MONITORING INVESTIGATION
LEE"S LANE LANDFILL
LOUISVILLE, KENTUCKY
NOVEMBER-DECEMBER, 1978

INTRODUCTION

In response to a request by the Enforcement Division, Region IV, US-EPA, Surveillance and Analysis Division (SAD) personnel collected groundwater samples from eleven private wells in the vicinity of Lee's Lane Landfill. This investigation was conducted as part of an overall waste site investigation in conjunction with the Air Surveillance Branch. The groundwater sampling program was conducted to determine if the aquifer immediately underlying Lee's Lane Landfill was being contaminated by leachate from the landfill. The study was limited to eleven private wells located immediately adjacent to the landfill. These wells were sampled in November during a period of normal Ohio River stage. Five of the eleven wells were resampled during December when the Ohio River was in flood stage.

Data collected during the study and additional hydrogeological data that will be generated from future USGS-Jefferson County Health Department studies can be used to design any needed future monitoring programs for this area.

RESULTS AND DISCUSSION

Based on data gathered during the two sampling investigations, there is no indication that the aquifer immediately underlying the Lee's Lane Landfill is contaminated with either metals or organic compounds from leachate intrusion. Grab samples were collected from eleven private wells in a residential area located in the vicinity of Lee's Lane Landfill in Louisville, KY during November 20-21, 1978 (normal river stage). Five of these wells were resampled on December 14, 1978, during a period of high water in the Ohio River. These wells were resampled because it was thought the local groundwater gradient might reverse during high river stages (ie. , the aquifer might be recharged by the River). If this situation had occurred, leachate that might be draining into the river, could have been forced upgradient into the wells. Figure 1 is a map of the sampling area showing the location of the wells. Table 1 lists addressees of the wells sampled along with the pertinent laboratory and field numbers. Attachments 1-3 contain analytical data for water samples collected during November and December 1978. The field sheets used to document sample collection are included as Attachments 4-21.

No volatile organic compounds were detected in the eleven well samples collected in November, or in the five wells resampled during the December study. See Attachment 1 for analytical results.

Extractable organic analyses using gas chromatography/flame ionization detection (screening techniques) was conducted on all samples collected during both sampling periods. Gas chromatography/mass spectrometry analysis were performed on three well samples, PU-519 (6519 Putman St.), WM-408 (4408 Wilmoth Ave.), and WL-416 (4416 Wilshire Blvd.), which contained chromatographic peaks in the screening process (see Attachment 3). These peaks were tentatively identified as diethyl phthalate which was detected at low concentrations. This compound was also found in the laboratory blank and indicates a contamination problem. Also, 7 to 10 hydrocarbon compounds were detected at an estimated concentration of 510 μg/l in sample PU-519 (6519 Putman St.).

A complete metals analysis was performed for all the samples collected during the November study. No metals of significant concentration were detected, in these samples with the exception of sample PU-519. This sample was collected from a hand pump, and the well had not been used for years. See Attachment 2 for metals data. Metal analyses were not conducted on any of the samples collected in December.

Sample Methodology

The spigots at each well site were allowed to run for approximately five minutes before the samples were collected in standard US-EPA, Region IV sample containers. The samples were kept on ice and chain-of-custody was maintained for all samples collected. In order to meet holding time constraints and sample shipping regulations, the samples were transported by private aircraft.

Sample Analysis

All samples were analyzed by the SAD, Laboratory Services Branch. Specific analytical methodologies are included in Attachments 1 and 3.

TABLE 1
PRIVATE WELLS SAMPLED
VICINITY OF LEE'S LANE LANDFILL
LOUISVILLE, KENTUCKY
NOVEMBER--DECEMBER 1978

US-EPA LAB NO.	US-EPA STATION NO.	DATE	ADDRESS
78C-3302	PU-519	11/20-21/78	Mr. Lowell Wright, 6519 Putman St.
78C-3301	LE-416	"	Mr. Martin Faircloth, 4416 Lee's Lane
78C-3300	HO-508	"	Mr. Cecil Simpson, 6508 Howard Ave.
78C-3307	WL-416	"	Mr. T. O. Frankie, 4416 Wilshire Blvd.
78C-3306	WM-422	"	Mr. Joseph Downs, 4422 Wilmoth Ave.
78C-3308	LE-405	"	Mr. Morris Parker, 4405 Lee's Lane
78C-3309	PU-503	"	Mr. William Hayburn, 6503 Putman St.
78C-3310	LU-614	"	Mr. James Salleng, 6614 Lucerne St.
78C-3305	LU-604	"	Mr. James Mann, 6604 Lucerne St.
78C-3304	ME-616	"	Mr. Ray Wright, 6616 Melrose St.
78C-3303	WM-408	"	Mr. Ashley (tenant), 4408 Wilmoth Sve.
78C-3495	HO-508	12/14/78	Mr. Cecil Simpson, 6508 Howard Ave.
78C-3494	WM-422	"	Mr. Joseph Downs, 4422 Wilmoth Ave.
78C-3496	ME-616	"	Mr. Ray Wright, 6616 Melrose St.
78C-3493	WM-408	"	Mr. Ashley (tenant), 4408 Wilmoth Ave.
78C-3497	PU-503	"	Mr. William Hayburn, 6503 Putman St.

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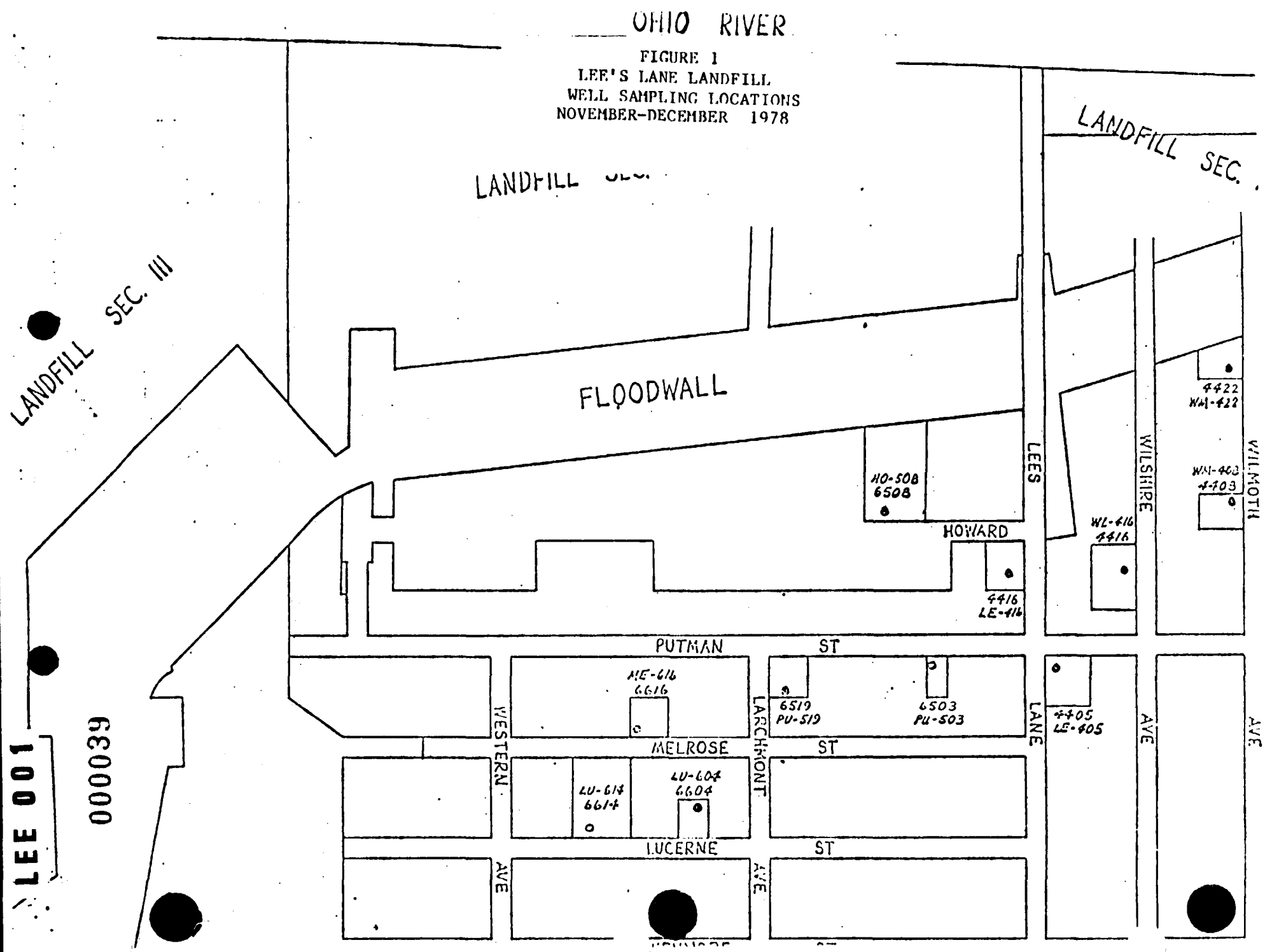
FIGURE 1
LEE'S LANE LANDFILL
WELL SAMPLING LOCATIONS
NOVEMBER-DECEMBER 1978