Aug '87

Annotation

EPA Region 5 Records Ctr.
255363

BELOIT CORPORATION
VOC INVESTIGATION

EXECUTIVE SUMMARY

The Illinois Environmental Protection Agency (IEPA) and the Winnebago County Health Department have detected volatile organic compounds (VOCs) in several private water supply wells in Rockton, Illinois. These wells are located east of the Beloit Corporation's Blackhawk Facility. The IEPA has stated in a draft report (IEPA, 1986) that the Blackhawk Facility is the most probable source of this contamination. The Beloit Corporation retained Warzyn Engineering, Inc. (WEI) to design and perform an investigation that would preliminarily evaluate the Beloit property and an abandoned metals reclaimer site (United Recovery) as potential VOCs sources.

The investigation was carried out in two phases. In Phase I, soil gas samples were collected from locations on both properties and soil samples were collected from a fibrous sludge spreading area located on Beloit property. The IEPA had indicated that the sludge spreading area was a potential VOCs source. Soil samples from the sludge spreading area did not have any detectable concentrations of VOCs. Soil gas samples from two locations on the United Recovery site showed detectable levels of VOCs, but the concentrations were not substantially different from those recorded for ambient air. These preliminary results indicate that it is not probable that the sludge spreading area is a VOCs source and that the United Recovery area showed a higher potential for being a VOCs source than did the sludge spreading area.

In Phase II, PVC standpipes and stainless steel monitoring wells were installed to better describe the hydrogeologic setting and, in particular, groundwater flow patterns. The stainless steel wells were also used to collect VOCs concentrations data from locations along the eastern Beloit property boundary. The results of the Phase II investigation indicate that groundwater flows toward the west and south from a groundwater elevation high

located east of the Blackhawk Facility's Research Center. Thus, the data from this study show that groundwater flows away from the neighborhood and toward the Beloit property. This observation suggests that the Beloit property is not likely to be the source of VOCs in private wells that are located upgradient of the property and that it is more probable that the VOCs source is located outside of the plant property boundaries. These conclusions are lent some support by the water quality data collected during Phase II.

A comparison of the Phase II water quality data from on-site monitoring wells with the VOCs concentrations reported by the IEPA for three homes along the southern end of Watts Avenue (909, 910, and 914 Watts Avenue) shows that the VOCs concentrations at the private wells were higher than those recorded at the monitoring wells on the eastern boundary of the plant property. Also, the VOCs concentrations recorded at Monitoring Wells W-9 and W-10 were very similar to those recorded at upgradient Well W-8, which is located approximately 2500 ft east-northeast of Wells W-9 and W-10 and eastern Beloit property boundary. The observation that VOCs concentrations at on-site monitoring wells were either similar to or lower than VOCs concentrations recorded for upgradient wells indicates that under current groundwater flow conditions, it is not probable that the Beloit Corporation's Blackhawk Facility is the source of VOCs in the private wells along Watts Avenue. The VOCs concentration data also suggest that it is more likely that the source or sources of these VOCs are situated to the east of the Beloit property.

APPENDIX J
SUMMARY OF VOLATILE ORGANIC COMPOUNDS
DETECTED IN SAMPLES FROM BELOIT CORPORATION
MONITORING WELLS

Well No.	2-4-84(1)	3-2-84(1)	5-17-84(2)	5-14-85(1)	5-5-86(1)
W-1					
Tetrachloroethene	15(3)	<5	BDL	<5	<5
Trichloroethene	<5	<5	89	<5	<5
1,1,1-Trichloroethane	19	18	47	<5	5.3
1,1-Dichloroethane	18	17	10	<5	7.9
Methylene Chloride	371	<10	BDL	<10	<10
W-2					
Tetrachloroethene	<5	<10	BDL	<5	<5
Trichloroethene	<5	<5	BDL	<5	<5
1,1,1-Trichloroethane	<5	<5	BDL	<5	<5
1,1-Dichloroethane	<5	<5	BDL	<5	<10
Methylene Chloride	142	<10	BDL	<10	<10
W-3					
Tetrachloroethene	18	10	BDL	11	<5
Trichloroethene	142	101	BDL	6	135
1,1,1-Trichloroethane	435	512	47	56	60
1,1-Dichloroethane	678	7.1	BDL	<5	<5
Methylene Chloride	58	<10	BDL	<10	<10
1,1-Dichloroethene	BDL	BDL	BDL	<5	<5 (Trace)
W-5					
Tetrachloroethene			BDL		
Trichloroethene			35		
1, 1, 1-Trichloroethane			340		
1, 1-Dichloroethane			BDL		
Methylene Chloride			BDL		

(1) Analyzed by Northland Environmental Laboratory, South Beloit, Wisconsin

(2) Analyzed by CompuChem Research Triangle Park N.C.

(3) All concentrations reported in ug/l.

[adf-53-4]

[illegible]
[illegible]
[illegible] 608/364-8370

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SUMMARY OF GROUNDWATER INFORMATION REVIEW
BELOIT CORPORATION
BLACKHAWK FACILITY
ROCKTON, ILLINOIS

The following summary is a result of Warzyn's evaluation of existing information pertaining to volatile organic compounds (VOCs) detected in groundwater near the Blackhawk Facility:

1. Existing hydrogeological data reviewed included information contained in Illinois Environmental Protection Agency (IEPA), Winnebago County Health Department, and Warzyn files.

2. The site is located in an area of glacial outwash deposits consisting primarily of sand and gravel. Clay deposits are apparently present near the northern end of Watts Avenue and at IEPA Well G-103D.

3. Private water supply wells located along southern Watts Avenue withdraw water from the sand and gravel aquifer and are typically about 60 ft deep.

4. Groundwater in the sand and gravel aquifer apparently flows away from a groundwater high centered near the intersection of Illinois State Highway 2 and Prairie Hill Drive. Groundwater beneath the Blackhawk Facility property generally flows toward the south, southwest and west.

5. No VOCs have been detected since February 1984 at Well W-2 located between the Blackhawk Facility and homes along southern Watts Avenue. No VOCs were detected at Wells W-4, W-6, W-7, W-8, W-9 or W-10 when these wells were sampled on May 17, 1984.

   VOCs have been detected on Beloit Corporation property at Wells W-3 (trichloroethylene and 1,1,1-trichloroethane on May 5, 1986) and W-5 (trichloroethylene and 1,1,1-trichloroethane on May 17, 1984). VOCs have also been detected at Well W-1 (1,1,1-trichloroethane and 1,1-dichloroethane).

6. VOCs (primarily 1,1,1-trichloroethane, 1,1-dichloroethane, trans 1,2-dichloroethylene and 1,1-dichloroethylene) have been detected by the IEPA and Winnebago County Health Department at private water supply wells located along southern Watts Avenue.

7. No VOCs were detected at IEPA Wells G-103S and G-103D located between the Blackhawk Facility and homes along southern Watts Avenue. VOCs (1,1,1-trichloroethane, 1,1-dichloroethane, tetrachloroethylene and trichloroethylene) were detected at IEPA Well G-104, located southwest of Beloit Corporation Wells W-3 and W-5.

8. No VOCs were detected in the three United Recovery water supply wells, sampled by the IEPA on June 22, 1982. The well which was

in use at the time of sampling was reportedly constructed in bedrock and is therefore deeper than nearby private water supply wells. The other two wells are reportedly deeper than 8[illegible] ft and were not in use at the time the sampling occurred. These two wells were not purged prior to sampling and therefore the samples may not be representative of actual groundwater quality.

c. The VOCs present in Beloit Corporation Monitoring Wells W-3 and W-5 do not appear to be related to landspreading of fibrous sludge which occurred in the open field to the east of the wells based on analyses performed on the sludge. The source of VOCs at these two wells is unknown.

II. The source of VOCs in private water supply wells located along southern Watts Avenue is unknown. There is no evidence suggesting groundwater containing VOCs is leaving beneath the eastern property boundary of the Blackhawk Facility and moving toward the private water supply wells along southern Watts Drive.

III. The files indicate environmentally unsound operational practices have occurred at the United Recovery Facility (and prior to the Soterion Inc.). Therefore the facility warrants further evaluation as a potential source of VOCs in groundwater.

IV. There is very limited information regarding the extent and characteristics of groundwater contamination in this area. A limited number of sampling points and one round of groundwater sampling were utilized by IEPA in their assessment.

[Jam-14-14]

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TABLE 5

SUMMARY OF VOLATILE ORGANICS DETECTED (6-22-87)
BELOIT CORPORATION VOC INVESTIGATION
BLACKHAWK FACILITY

VOC	WELL W-1	WELL W-2	WELL W-3	WELL W-4	WELL W-5	WELL W-8	WELL W-9	WELL W-10	WELL W-11	WELL W-12	WELL W-13	WELL W-14	WELL W-15
Tetrachloroethene	1.95	--	11.8	--	21.9	--	--	--	--	--	2.22	BMDL	--
Trichloroethene	--	--	8.45	--	109	--	--	--	--	--	--	--	--
1,1-Dichloroethene	--	--	BMDL	--	13.7	--	--	--	--	--	--	--	--
1,2-Dichloroethene	BMDL	--	--	--	<10	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	2.22	--	59.2	--	152	44.8	47.6	39.3	--	12.6	--	--	--
1,1-Dichloroethane	2.47	--	--	--	<10	--	--	--	--	--	--	--	--
Toluene	--	--	BMDL	--	<10	--	--	--	--	--	--	--	--

Results reported in ug/L

-- Compound analyzed but not detected.
BMDL Compound detected but below method detection limit. For method detection limit see Appendix J.

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APPENDIX K
SUMMARY OF VOC ANALYSES OF PRIVATE WELL SAMPLES
BELOIT CORPORATION VOC INVESTIGATION
BLACKHAWK FACILITY

Address	5-28-82 (1)	12-08-82 (2)	6-08-83 (2)	1-24-84 (3)	5-08-84 (3)	9-18-84 (3)	7-16-86 (3)	9-18-86 (2)	1-15-87 (2)
908 Blackhawk	*	*		*	*	*	*	*	*
Tetrachloroethene			-						
Trichlorethene			-						
Trans 1,2 Dichloroethene			1						
1,1 Dichloroethene			-						
1,1,1 Trichloroethane			5						
1,2 Dichloroethane			-						
1,1 Dichloroethane			-						
Ethylbenzene			-						
Chloroform			-						
Methylene Chloride			-						
905 Watts Ave.	*	*							*
Tetrachloroethene			-	3	1	-	2	1	
Trichlorethene			-	-	-	-	-	-	
Trans 1,2 Dichloroethene			-	-	-	-	-	-	
1,1 Dichloroethene			-	-	-	-	-	-	
1,1,1 Trichloroethane			4	2	1	1	2	4	
1,2 Dichloroethane			-	-	-	-	-	-	
1,1 Dichloroethane			3	-	-	-	-	-	
Ethylbenzene			-	-	-	-	-	-	
Chloroform			-	1	-	-	-	-	
Methylene Chloride			-	-	-	-	-	-	
909 Watts Ave.	*	*	*	*					*
Tetrachloroethene					-	-	-	48	
Trichlorethene							-	2	
Trans 1,2 Dichloroethene					1	1	-	-	
1,1 Dichloroethene					-	trace	-	7	
1,1,1 Trichloroethane					5	3	1	27	
1,2 Dichloroethane					-	-	-	-	
1,1 Dichloroethane					-	17	-	-	
Ethylbenzene					-	-	-	-	
Chloroform					-	-	1	-	
Methylene Chloride					-	-	-	1	

looks like

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

Address	5-28-82 (1)	12-08-82 (2)	6-08-83 (2)	1-24-84 (3)	5-08-84 (3)	9-18-84 (3)	7-16-86 (3)	9-18-86 (2)	1-15-87 (2)	8/9/87
910 Watts Ave.										
Tetrachloroethene	-	-	-	1	51	-	45	48	300	[redacted]
Trichlorethene	-	-	2	1	-	3	2	2	2	
Trans 1,2 Dichloroethene	-	-	-	-	-	-	-	-	-	
1,1 Dichloroethene	45	-	-	33	trace	177	7	7	17	
1,1,1 Trichloroethane	945/482	120	220	105	142	105	120	27	212	35.3
1,2 Dichloroethane	-	-	-	-	-	-	-	-	-	
1,1 Dichloroethane	-	5	6	15	12	19	-	-	2	
Ethylbenzene	-	-	-	-	-	-	-	-	-	
Chloroform	-	-	-	-	-	-	-	-	-	
Methylene Chloride	-	1	-	-	-	-	-	1	-	5.8
Chlorodibromomethane	-	-	-	-	-	-	-	-	1	
Bromoform	-	-	-	-	-	-	-	-	1	
913 Watts Ave.	*		*	*	*	*	*	*	*	
Tetrachloroethene		-								
Trichlorethene		2								
Trans 1,2 Dichloroethene		-								
1,1 Dichloroethene		-								
1,1,1 Trichloroethane		-								
1,2 Dichloroethane		-								
1,1 Dichloroethane		-								
Ethylbenzene		-								
Chloroform		-								
Methylene Chloride		-								
914 Watts Ave.										
Tetrachloroethene	-	-	-	-	-	-	-	1	2	20.4
Trichlorethene	-	-	-	-	-	1	-	-	-	
Trans 1,2 Dichloroethene	-	-	-	-			-			
1,1 Dichloroethene	-	-	-	24	72	48	-	4	2	
1,1,1 Trichloroethane	95/100	31	32	19	22	20	60	31	31	259
1,2 Dichloroethane	-	-	-	-	-	-	-	-	-	
1,1 Dichloroethane	-	-	-	2	2	6	-	-	-	
Ethylbenzene	-	-	-	-	-	-	-	-	-	
Chloroform	-	-	-	-	-	-	-	-	-	
Methylene Chloride	-	-	-	-	-	-	2	1	1	13.3
918 Watts Ave.	*							*	*	
Tetrachloroethene		-	-	trace	-	3	30	20	29	
Trichlorethene		-	-	trace	-	-	-	-	-	
Trans 1,2 Dichloroethene		-	-	-	-	-	-	-	-	
1,1 Dichloroethene		-	-	-	86	52	-	-	-	
1,1,1 Trichloroethane		197	370	175	47	50	9	6	1	7.7
1,2 Dichloroethane		-	-	-	-	-	-	-	-	
1,1 Dichloroethane		-	4	16	4	17	-	-	-	
Ethylbenzene		-	-	-	-	-	-			
Chloroform		-	-	-	-	-	-	-	-	
Methylene Chloride		-	-	-	-	-	-	3	-	21.6

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

Address	5-28-82 (1)	12-08-82 (2)	6-08-83 (2)	1-24-84 (3)	5-08-84 (3)	9-18-84 (3)	7-16-86 (3)	9-18-86 (2)	1-15-87 (2)
1004 Watts Ave.	*	*						*	
Tetrachloroethene			-	-	-	trace	-	1	-
Trichlorethene			-	1	-	-	-	-	-
Trans 1,2 Dichloroethene			-	-	-	-	-	-	-
1,1 Dichloroethene			-	-	23	21	-	-	-
1,1,1 Trichloroethane			2	4	3	2	-	3	1
1,2 Dichloroethane			-	11	-	-	-	-	-
1,1 Dichloroethane			-	-	-	-	-	-	-
Ethylbenzene			-	-	-	-	-	-	-
Chloroform			-	-	-	-	-	-	-
Methylene Chloride			-	-	-	-	-	2	-

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

[sss-600-61]

APPENDIX K
SUMMARY OF VOC ANALYSES OF PRIVATE WELLS
BELOIT CORPORATION VOC INVESTIGATION
BLACKHAWK FACILITY

	9/86	1/87
403 Dingman		*
Tetrachloroethene	-	
Trichlorethene	-	
Trans 1,2 Dichloroethene	-	
1,1 Dichloroethene	-	
1,1,1 Trichloroethane	-	
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	
Ethylbenzene	-	
Chloroform	-	
Methylene Chloride	1	
409 Dingman		
Tetrachloroethene	-	-
Trichlorethene	3	-
Trans 1,2 Dichloroethene	-	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	2	-
1,2 Dichloroethane	-	-
1,1 Dichloroethane	-	-
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	1	-
916 Blackhawk Blvd.		*
Tetrachloroethene	-	
Trichlorethene	-	
Trans 1,2 Dichloroethene	-	
1,1 Dichloroethene	-	
1,1,1 Trichloroethane	-	
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	
Ethylbenzene	-	
Chloroform	-	
Methylene Chloride	-	

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

	9-18-86 (2)	1-15-87 (2)
1005 Watts Ave.		*
Tetrachloroethene	-	
Trichlorethene	-	
Trans 1,2 Dichloroethene	-	
1,1 Dichloroethene	-	
1,1,1 Trichloroethane	-	
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	
Ethylbenzene	-	
Chloroform	-	
Methylene Chloride	2	
1007 Watts Ave.		
Tetrachloroethene	1	-
Trichlorethene	-	-
Trans 1,2 Dichloroethene	-	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	-	-
1,2 Dichloroethane	-	-
1,1 Dichloroethane	-	-
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	-	-
1012 Watts Ave.		
Tetrachloroethene	-	-
Trichlorethene	-	-
Trans 1,2 Dichloroethene	-	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	-	-
1,2 Dichloroethane	-	-
1,1 Dichloroethane	-	-
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	1	-
1020 Watts Ave.		
Tetrachloroethene	-	-
Trichlorethene	-	-
Trans 1,2 Dichloroethene	-	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	-	-
1,2 Dichloroethane	-	-
1,1 Dichloroethane	-	-
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	2	1

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

	9-18-86 (2)	1-15-87 (2)
1104 Watts Ave.		*
Tetrachloroethene	-	
Trichlorethene	-	
Trans 1,2 Dichloroethene	-	
1,1 Dichloroethene	-	
1,1,1 Trichloroethane	-	
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	
Ethylbenzene	-	
Chloroform	-	
Methylene Chloride	1	
1114 Watts Ave.		*
Tetrachloroethene	-	
Trichlorethene	-	
Trans 1,2 Dichloroethene	-	
1,1 Dichloroethene	-	
1,1,1 Trichloroethane	-	
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	
Ethylbenzene	-	
Chloroform	-	
Methylene Chloride	1	
1140 Watts Ave.		
Tetrachloroethene	-	-
Trichlorethene	1	-
Trans 1,2 Dichloroethene	-	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	1	-
1,2 Dichloroethane	-	-
1,1 Dichloroethane	-	-
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	1	-
1200 Watts Ave.		
Tetrachloroethene	-	-
Trichlorethene	-	-
Trans 1,2 Dichloroethene	-	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	1	-
1,2 Dichloroethane	-	-
1,1 Dichloroethane	-	-
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	2	1

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

	9-18-86 (2)	1-15-87 (2)
1212 Watts Ave.		*
Tetrachloroethene	1	
Trichlorethene	-	
Trans 1,2 Dichloroethene	-	
1,1 Dichloroethene	-	
1,1,1 Trichloroethane	3	
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	
Ethylbenzene	-	
Chloroform	-	
Methylene Chloride	3	
1300/1304 Watts Ave.		
Tetrachloroethene	-	-
Trichlorethene	-	-
Trans 1,2 Dichloroethene	-	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	6	1
1,2 Dichloroethane	-	-
1,1 Dichloroethane	-	-
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	3	-
1306/1308 Watts Ave.		*
Tetrachloroethene	-	
Trichlorethene	-	
Trans 1,2 Dichloroethene	-	
1,1 Dichloroethene	-	
1,1,1 Trichloroethane	2	
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	
Ethylbenzene	-	
Chloroform	-	
Methylene Chloride	3	
1314 Watts Ave.		
Tetrachloroethene	-	-
Trichlorethene	9	10
Trans 1,2 Dichloroethene	11	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	6	4
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	2
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	1	-

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

	9-18-86 (2)	1-15-87 (2)
1402 Watts Ave.		
Tetrachloroethene	-	-
Trichlorethene	-	-
Trans 1,2 Dichloroethene	-	-
1,1 Dichloroethene	-	-
1,1,1 Trichloroethane	-	-
1,2 Dichloroethane	-	-
1,1 Dichloroethane	-	-
Ethylbenzene	-	-
Chloroform	-	-
Methylene Chloride	1	-
Benzene	3	-
1009 Watts Ave.	*	
Tetrachloroethene		-
Trichlorethene		-
Trans 1,2 Dichloroethene		-
1,1 Dichloroethene		-
1,1,1 Trichloroethane		-
1,2 Dichloroethane		-
1,1 Dichloroethane		-
Ethylbenzene		-
Chloroform		-
Methylene Chloride		1
1011 Watts Ave.	*	
Tetrachloroethene		-
Trichlorethene		-
Trans 1,2 Dichloroethene		-
1,1 Dichloroethene		-
1,1,1 Trichloroethane		-
1,2 Dichloroethane		-
1,1 Dichloroethane		-
Ethylbenzene		-
Chloroform		-
Methylene Chloride		1
1102 Watts Ave.	*	
Tetrachloroethene		-
Trichlorethene		-
Trans 1,2 Dichloroethene		-
1,1 Dichloroethene		-
1,1,1 Trichloroethane		-
1,2 Dichloroethane		-
1,1 Dichloroethane		-
Ethylbenzene		-
Chloroform		-
Methylene Chloride		1

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

	9-18-86 (2)	1-15-87 (2)
1113 Watts Ave.	*	
Tetrachloroethene		-
Trichlorethene		-
Trans 1,2 Dichloroethene		-
1,1 Dichloroethene		-
1,1,1 Trichloroethane		-
1,2 Dichloroethane		-
1,1 Dichloroethane		-
Ethylbenzene		-
Chloroform		-
Methylene Chloride		1
1117 Watts Ave.	*	
Tetrachloroethene		-
Trichlorethene		-
Trans 1,2 Dichloroethene		-
1,1 Dichloroethene		-
1,1,1 Trichloroethane		-
1,2 Dichloroethane		-
1,1 Dichloroethane		-
Ethylbenzene		-
Chloroform		-
Methylene Chloride		1
1220 Watts Ave.		*
Tetrachloroethene	-	
Trichlorethene	-	
Trans 1,2 Dichloroethene	-	
1,1 Dichloroethene	-	
1,1,1 Trichloroethane	-	
1,2 Dichloroethane	-	
1,1 Dichloroethane	-	
Ethylbenzene	-	
Chloroform	-	
Methylene Chloride	-	
1301 Watts Ave.	*	
Tetrachloroethene		-
Trichlorethene		-
Trans 1,2 Dichloroethene		-
1,1 Dichloroethene		-
1,1,1 Trichloroethane		-
1,2 Dichloroethane		-
1,1 Dichloroethane		-
Ethylbenzene		-
Chloroform		-
Methylene Chloride		-

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

	9-18-86 (2)	1-15-87 (2)
1402 Watts Ave.	*	
Tetrachloroethene		-
Trichlorethene		-
Trans 1,2 Dichloroethene		-
1,1 Dichloroethene		-
1,1,1 Trichloroethane		-
1,2 Dichloroethane		-
1,1 Dichloroethane		-
Ethylbenzene		-
Chloroform		-
Methylene Chloride		-
1404 Watts Ave.	*	
Tetrachloroethene		-
Trichlorethene		-
Trans 1,2 Dichloroethene		-
1,1 Dichloroethene		-
Tetrachloroethane		-
1,1,1 Trichloroethane		-
1,2 Dichloroethane		-
1,1 Dichloroethane		-
Ethylbenzene		-
Chloroform		-
Methylene Chloride		-

[sss-600-62]

(1) Analysis performed by Sanitary District Laboratory
(2) Analysis performed by Illinois Environmental Protection Agency (IEPA) Laboratory
(3) Analysis performed by Illinois Department of Public Health (IDPH) Labortory
* Well not sampled on this date
- Not detected or below method detection limit
^ Concentrations reported in ppb.

From March '88 ICPA Report

Chemical Analyses of Drinking Water.

Samples taken September, 1986

	1,1,1-Trichloroethane	Tetrachloroethylene	1,1-Dichloroethane	1,1-Dichloroethylene	Trans 1,2-Dichloroethylene	Trichloroethylene	Chloroform	Chlorodibromomethane	Bromoform	Benzene	Methylene Chloride	No VOC's detected
905 Watts	4	1									1	
909 Watts											1	
910 Watts	27	48		7		2					1	
914 Watts	31	1		4							1	
918 Watts	6	70									3	
1004 Watts	3	1									2	
1005 Watts											2	
1007 Watts		1										
1012 Watts											1	
1020 Watts											2	
1104 Watts											1	
1114 Watts											1	
1140 Watts	1					1					1	
1200 Watts	1										2	
1212 Watts	3	1									3	
1304 Watts	6										3	
1308 Watts	2										3	
1314 Watts	6				11	9					1	
1402 Watts										3	1	
916 Blackhawk												0
403 Dingman											1	
409 Dingman	2					3					1	

Values reported in parts per billion.

Chemical Analyses of Drinking Water.

Samples taken January and February, 1987

	1,1,1-Trichloroethane	Tetrachloroethylene	1,1-Dichloroethane	1,1-Dichloroethylene	Trans 1,2-Dichloroethylene	Trichloroethylene	Chloroform	Chlorodibromomethane	Bromoform	Benzene	Methylene Chloride	No VOC's detected
905 Watts												0
909 Watts												0
910 Watts	212	300	2	17		2		1	1		1	
914 Watts	31	2		2							1	
917 Watts												0
918 Watts	1	29										
1004 Watts	1											
1005 Watts												0
1007 Watts												0
1009 Watts											1	
1011 WAtts											1	
1012 Watts												0
1020 Watts											1	
1102 Watts											1	
1113 Watts											1	
1117 Watts											1	
1140 Watts												0
1200 Watts											1	
1215 Watts												0
1220 Watts												0
1301 Watts												0
1304 Watts	1											
1314 Watts	4		2		12	10						
1402 Watts												0
1404 Watts												0

Values reported in parts per billion.

Chemical Analyses of Drinking Water.

Samples taken January and February, 1987

	1,1,1-Trichloroethane	Tetrachloroethylene	1,1-Dichloroethane	1,1-Dichloroethylene	Trans 1,2-Dichloroethylene	Trichloroethylene	Chloroform	Chlorodibromomethane	Bromoform	Benzene	Methylene Chloride	No VOC's detected
1012 Blackhawk												0
1016 Blackhawk												0
1106 Blackhawk												0
1110 Blackhawk												0
1114 Blackhawk												0
1204 Blackhawk												0
1208 Blackhawk												0
1212 Blackhawk												0
1220 Blackhawk							1					
1302 Blackhawk												0
1310 Blackhawk							12					
1314 Blackhawk												0
1404 Blackhawk												0
1408 Blackhawk												0
1416 Blackhawk												0
409 Dingman												0
407 Dingman												0
407 Central												0
410 Kile												0
900 N. Prairie												0
903 N. Prairie												0
Beloit Corp.												0

Values reported in parts per billion.

Chemical Analyses of Drinking Water.
Samples taken May and June, 1987

	1,1,1-Trichloroethane	Tetrachloroethylene	1,1-Dichloroethane	1,1-Dichloroethylene	Trans 1,2-Dichloroethylene	Trichloroethylene	Chloroform	Chlorodibromomethane	Bromoform	Benzene	Methylene Chloride	No VOC's detected
1140 Watts												0
1212 Watts												0
1216 Watts												0
1304 Watts												0
1308 Watts												0
1310 Watts												0
826 Blackhawk												0
908 Blackhawk												0
1220 Blackhawk												0
1310 Blackhawk							5					
409 Dingman												0
407 Central												0

Values reported in parts per billion.

Chemical Analyses of Drinking Water.
Samples taken May and June, 1986

	1,1,1 Trichloroethane	Tetrachloroethylene	1,1 Dichloroethane	1,1,Dichloroethylene	Trans 1,2 Dichloroethylene	Trichloroethylene	Chloroform	Chlorodibromomethane	Bromoform	Benzene	Methylene Chloride	No VOC's detected
905 Watts	2	2					1					
909 Watts	1						1					
910 Watts	120	45	1	7		2						
913 Watts												0
914 Watts	60										2	
917 Watts												0
918 Watts	9	30									1	
1004 Watts	4											
1012 Watts												0
1018 Watts												0
1304 Watts												0
1308 Watts												0
908 Blackhawk												0
403 Dingman												0
409 Dingman												0
900 N. Prairie												0
903 N. Prairie												0

Values reported in parts per billion.

Chemical Analyses of Samples from Monitoring Wells.

Samples taken July, 1986

	1,1,1 Trichloroethane	Tetrachloroethylene	1,1 Dichloroethane	1,1 Dichloroethylene	trans 1,2 Dichloroethylene	Trichloroethylene	Chloroform	Chlorodibromomethane	Bromoform	Benzene	Methylene Chloride	No VOC's detected
EPA G103S												0
EPA G103D												0
EPA G104	90	4	15			10						
EPA G107												0

Samples taken March, 1987

EPA G103D												0
EPA G104	37	4	8			11						
EPA G107												0
EPA G108S												0
EPA G109	43		25			1						
EPA G110												0

Samples taken June, 1987

EPA G108D												0

Values reported in parts per billion.

ATTACHMENT 11

COMPOUNDS (ppb) / LOCATION (DATE OF SAMPLES)	Ethylbenzene	Tetrachloroethane	Tetrachloroethylene	Carbon Tetrachloride	Trichloroethylene	1,1,1 Trichloroethane	Chloroform	Trans 1,2 Dichloroethylene	1,1 Dichloroethylene	1,1 Dichloroethane	1,2 Dichloroethane	Methylene Chloride	TOTAL (ppb)
Beloit Corp MW #1 May 17, 1984 (Warzyn Engineering, Inc.)										10			10
Sept. 17, 1984 (IDPH Lab)			5		2	9				2			18
Beloit Corp MW #2 Sept. 16, 1984 (IDPH Lab)	tr				tr	2							2
Beloit Corp MW #3 May 16, 1984 (Warzyn Engineering, Inc.)					89	47							13
Sept. 17, 1984 (IDPH Lab)			13	160	16					2		19	210
Beloit Corp MW #4 Sept. 17, 1984 (IDPH Lab)			tr									1	1
Beloit Corp MW #5 May 17, 1984 (Warzyn Engineering, Inc.)			12		35	340							38
Sept. 17, 1984 (IDPH Lab)			1		84	41			5	9		tr	13
Beloit Corp MW #6 Sept. 17, 1984 (IDPH Lab)					tr								—
Beloit Corp MW #7 Sept. 17, 1984 (IDPH Lab)						1							1
Beloit Corp MW #8 Sept. 17, 1984 (IDPH Lab)			1		2	tr				1			3
Beloit Corp MW #9 Sept. 17, 1984 (IDPH Lab)			2		2	2		2					9
Beloit Corp MW #10 Sept. 17, 1984 (IDPH Lab)			tr									5	5
Beloit Corp EPA MW #11 Sept. 17, 1984 (IDPH Lab)												tr	—
Beloit Corp EPA MW #102 Sept. 17, 1984 (IDPH Lab)												1	1
108 N. Blackhawk May 8, 1984 (IDPH Lab)						5		1					6
Beloit Corp EPA MW #101 Sept. 17, 1984 (IDPH Lab)			tr			1							1

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COMPOUNDS (ppb) / ATION OF SAMPLES)	Ethylbenzene	Tetrachloroethane	Tetrachloroethylene	Carbon Tetrachloride	Trichloroethylene	1,1,1 Trichloroethane	Chloroform	Trans 1,2 Dichloroethylene	1,1 Dichloroethylene	1,1 Dichloroethane	1,2 Dichloroethane	Methylene Chloride	TOTAL (ppb)
Watts Ave. June 8, 1983 (IDPH Lab)						4				3			7
Jan. 24, 1984 (IDPH Lab)			3			2	1						6
May 8, 1984 (IDPH Lab)			1			1							2
Sept. 18, 1984 (IDPH Lab)				1		2							3
Watts Ave. May 8, 1984 (IDPH Lab)						5		1					6
Sept. 18, 1984 (IDPH Lab)				2		3		1	4r	17			24
Watts Ave. May 28, 1982 (San Dist. Lab) Vial 1						954			45				97
Vial 2						452							48
Dec. 8, 1982 (IEPA Lab)						120				5			12
June 8, 1983 (IEPA Lab)					2	220				6		1	22
Jan. 24, 1984 (IDPH Lab)					1	105			33	15			15
May 8, 1984 (IDPH Lab)			1			142			4r	12			15
Sept. 18, 1984 (IDPH Lab)			51		3	105			177	19			35
13 Watts Ave. Dec. 8, 1982 (IEPA Lab)					2								2
14 Watts Ave. May 27, 1982 (San Dist. Lab) Vial 1						95							95
Vial 2						100							10
Dec. 8, 1982 (IEPA Lab)						31							31
June 8, 1983 (IEPA Lab)						32							32
Jan. 24, 1984 (IDPH Lab						19			24	2			45
May 8, 1984 (IDPH Lab						22			72	2			96
Sept. 16, 1984 (IDPH Lab)					1	20			48	6			75

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IEPA DLPC

COMPOUNDS (ppb) / LOCATION (DATE OF SAMPLES)	Ethylbenzene	Tetrachloroethane	Tetrachloroethylene	Carbon Tetrachloride	Trichloroethylene	1,1,1 Trichloroethane	Chloroform	Trans 1,2 Dichloroethylene	1,1 Dichloroethylene	1,1 Dichloroethane	1,2 Dichloroethane	Methylene Chloride	TOTAL (ppb)
Watts Ave.													
Dec. 8, 1982 (IEPA Lab)						197							19
June 8, 1983 (IEPA Lab)						370				4			37
Jan. 24, 1984 (IDPH Lab)			tr		tr	175				16			19
May 8, 1984 (IDPH Lab)						47			96	4			13
Sept. 18, 1984 (IDPH Lab)			3			50			52	17			12
Watts Ave.													
June 8, 1983 (IEPA Lab)						2							2
Jan. 24, 1984 (IDPH Lab)					1	4				11			16
May 8, 1984 (IDPH Lab)						3			23				26
Sept. 18, 1984 (IDPH Lab)			tr			2			21				23

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IEPA-DLPC

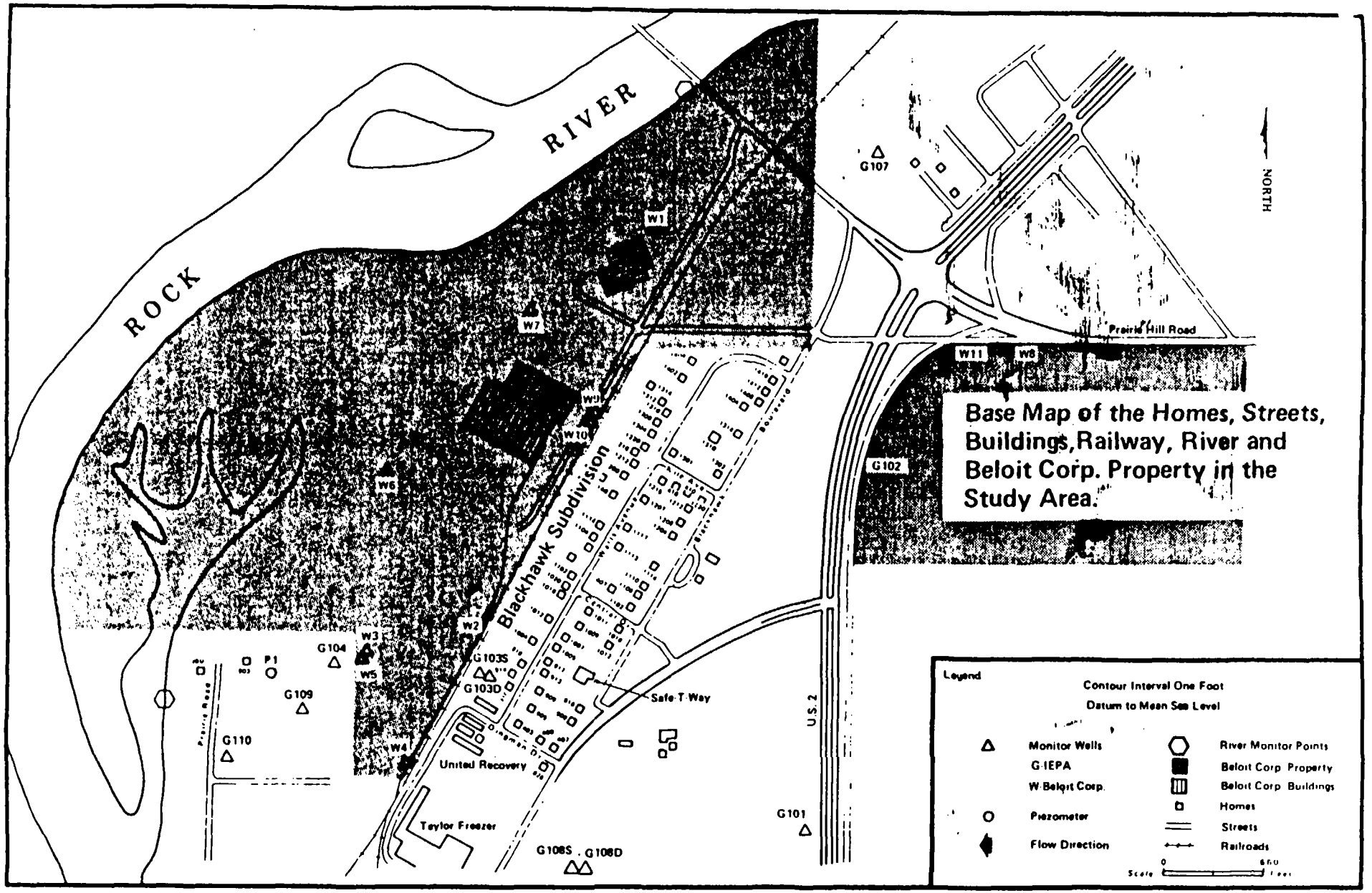
Table 2 : Sampling points and Chemical Analyses (Sept. 86)

Location	Methylene Chloride	Chloroform	1,1,1-Trichloroethane	Tetrachloroethylene	1,1-Dichloroethylene	Trichloroethylene	1,1-Dichloroethane	Sampled VOC's not detected
905 Watts			2	2				
909 Watts		1	1					
910 Watts			120	45	7	2		
913 Watts								X
914 Watts	2		60					
917 Watts								X
918 Watts			9	30				
1004 Watts			4					
1012 Watts								X
1018 Watts								X
1308 Watts								X
403 Dingham								X
409 Dingham								X
908 Blackhawk								X
900 Prairie								X
903 Prairie								X
G103								X
G103D								X
G104			90	4		10	15	
G107								X

USEPA Proposed maximum contaminant levels

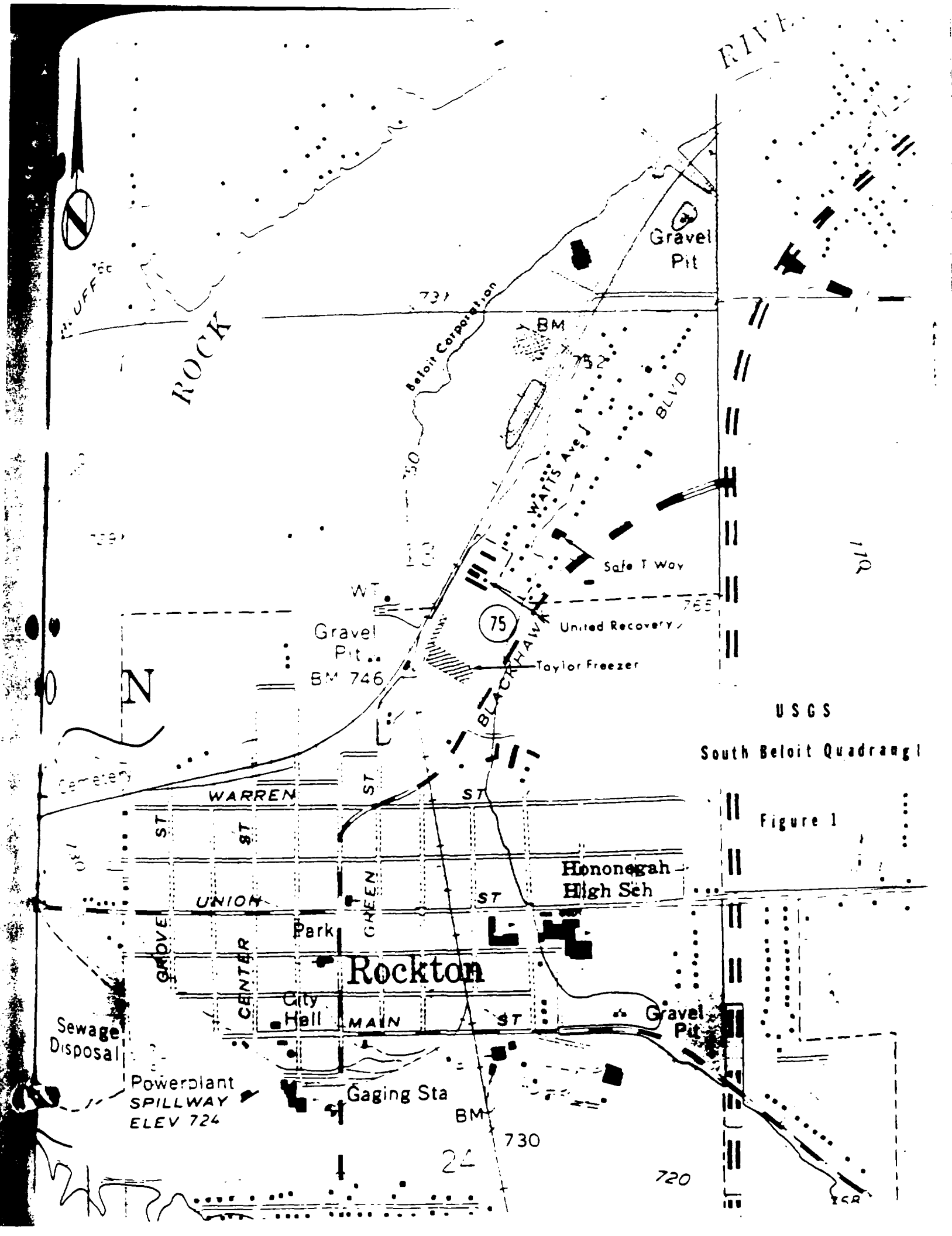
Note: Above Analyses reported in ppb.

1,1,1-Trichloroethane	200 micrograms per liter (ppb)
Tetrachloroethylene(PCE)	5 micrograms per liter
1,1-Dichloroethylene	7 micrograms per liter
Trichloroethylene (TCE)	5 micrograms per liter
1,2, Dichloroethane	5 micrograms per liter (1,1-Dichlorethane is not listed)



Base Map of the Homes, Streets, Buildings, Railway, River and Beloit Corp. Property in the Study Area.

Figure: 2



USGS

South Beloit Quadrangl

Figure 1

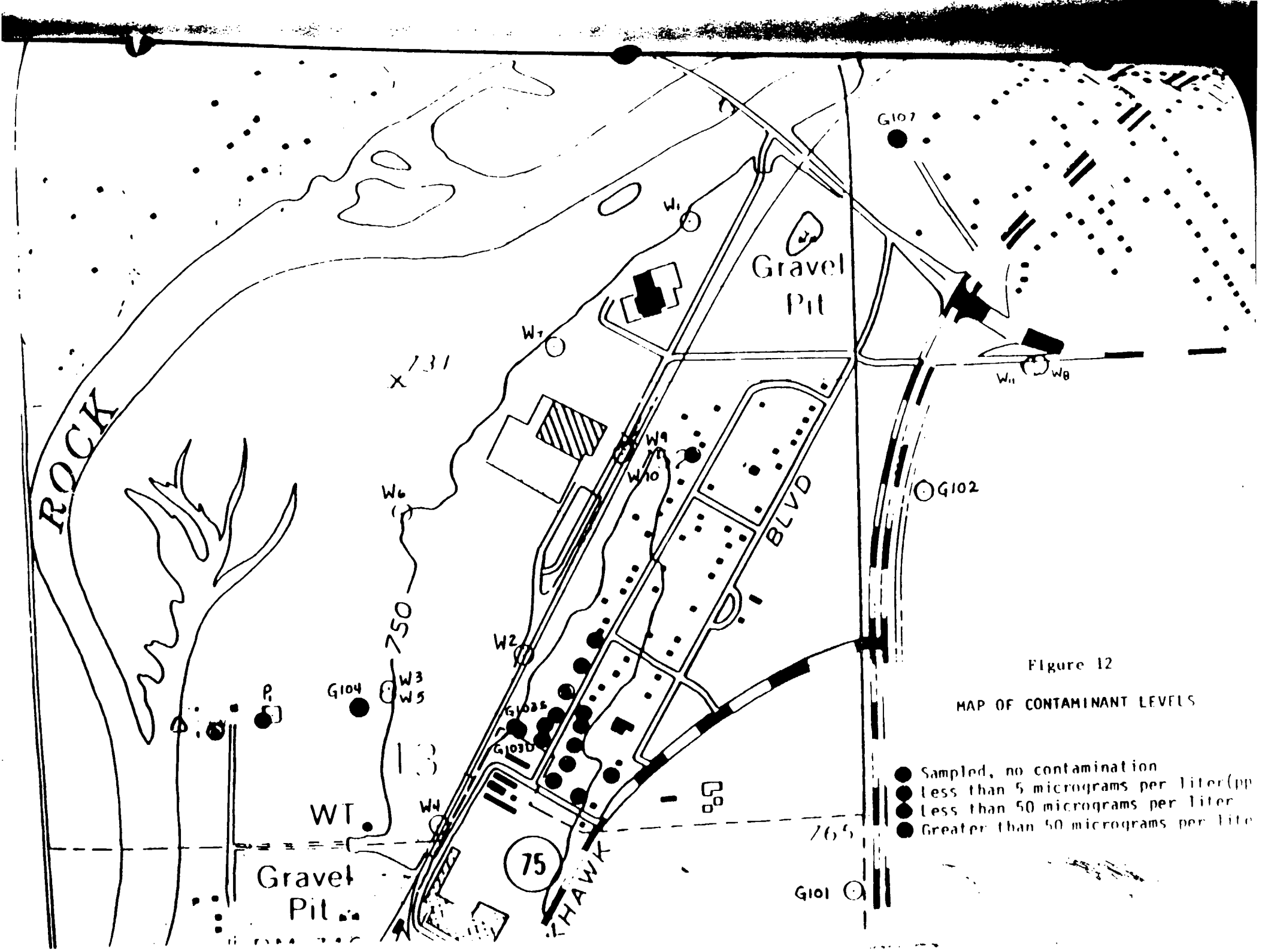
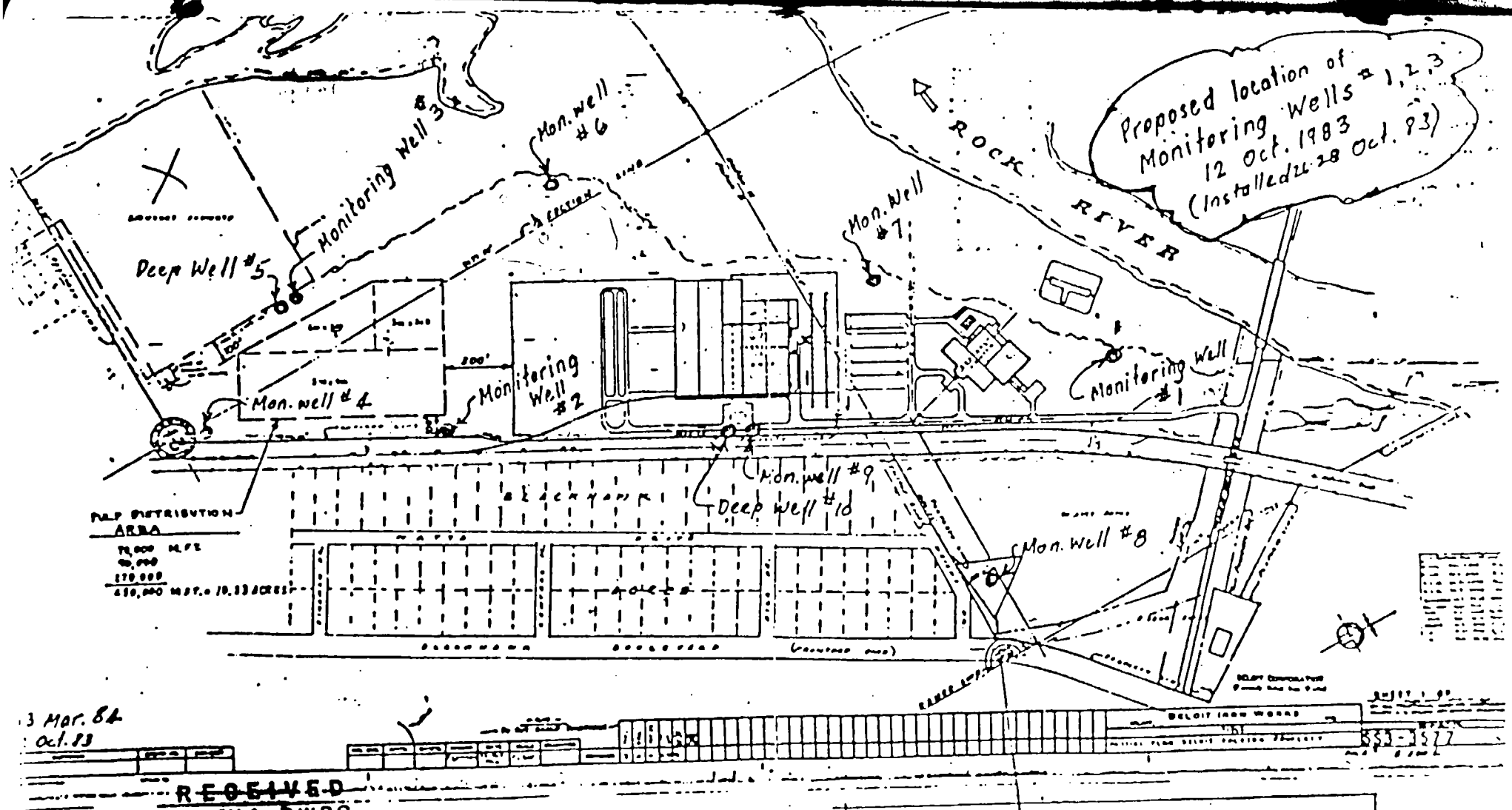


Figure 12

MAP OF CONTAMINANT LEVELS



13 Mar. 84
Oct. 83

RECEIVED
REGION 1 D.W.P.C.
APR 3 1984
ENVIRONMENTAL PROTECTION AGENCY
STATE OF ILLINOIS

Proposed - 13 March 1984
Add'l. Monitor. Wells: 4, 6, 7, 8, 9
Deep Wells: 5, 10.

D. L.

Lagoons

- Wastewater generated during the paper making demonstrations was discharged directly to the lagoons + the paper fiber settled out. The lagoons were dredged + the sediment was collected + stored in a waste pile adjacent to the lagoons until it could be landfarmed.

- settling Ponds are connected in a series of overflow weirs

- Capacity of lagoons/ponds are:
  - .96 million gallons for pond #1
  - 1.18 million gallons for pond #2
  - 2.02 million gallons for pond #3

  4.16 million gallons total

- Wastewater was generated only during the paper making demonstrations averaging ~~100 gpd~~ 100,000 gpd with a maximum of 150,000 gpd. The demonstrations could occur 3-4 days per week.

- Sediment samples were taken in 1983 + 1986, + showed elevated levels of:

	1983	
- TCE	6 ppb	
- Tetrachloroethylene	10 ppb	
- 1,1,1 TCA	9 ppb	10 ppb
- DCA		30 ppb

- Samples of wastewater (collected in 1983) revealed small amounts of TCE ( ) + tetrachloroethylene (6.3 ppb)
  - Toluene was also detected. 76 ppb — purportedly from printers since toluene was not used by Beloit Corp.

To ponds

Lagoons

- Lagoon system was observed to be leaking in 1985 into the Rock River.

- Lagoon system was scheduled for closure in 1986.

- Water is discharged to the groundwater via seepage.

- Water analysis 1983 of

	pond #1	pond #2	pond #3
phenol	.073 ppm	< .07 ppm	.145 ppm
Chromium	1.22 ppm	< 0.001 ppm	.006 ppm
Copper	.23 ppm	.003 ppm	.004 ppm
Manganese	.20 ppm	.168 ppm	.151 ppm
Nickel	.52 ppm	< .01 ppm	.01 ppm
Zinc	.01 ppm	.003 ppm	.004 ppm
1,1,1 TCA	< .5 ppb	2.6 ppb	2.1 ppb
TCE	< .5 ppb	< 5 ppb	< 5 ppb
Tetrachloroethylene	1.4 ppb	< .5 ppb	2.2 ppb

- All 3 ponds are 14 feet deep; pond #1 is 80' x 115'; pond #2 is 82' x 135'; and pond #3 is 71' x 272'.

Beloit Corp., Blackhawk Div.

- Two Facilities - Manufacturing plant for wet end paper making machines
  - R+D Facility for designing + demonstrating these machines

- Contains 3 lagoons used for settling the wastewater generated during the demonstrations of the machines

- 1983 - Beloit Corp was granted a permit to apply the paper fiber sediment from the settling ponds to a 10-acre area on site. The sediment contained chromium, copper, manganese, lead, mercury, nickel, zinc, less than 1 ppm PCB and less than 5 ppm trichlorophenol. These facilities were also known to use volatile organics.

Found ≈ 150' SE of MW #6

(from 4 drums)

- 1985 - IEPA investigated a report of abandoned drums on the Beloit property. Drums contents had spilled and analysis showed the waste contained 20 ppm Methylene Chloride + 130 ppm Carbon Tetrachloride. Beloit Corp. voluntarily removed the drums. Drums were purportedly given to an employee who tried to empty the drums unsuccessfully on their property, but abandoned them when he could not do so.

TCA 20 ppm

- Beloit Corp. began operations at the Rockton site in 1961.

Groundwater Contamination

- First discovered in 1982

- In 1985, Winnebago Co. Health Dept. (WCHD) stated that there were two separate locations of GW contamination & possibly two separate sources of the contamination. WCHD believed that there was one source of contamination from Beloit Corp. indicated by TCE & 1,1,1-TCA contamination of monitoring wells on Beloit Corp.

- Contaminated residential wells on Watts Ave. were also found by WCHD. These wells which were contaminated with 1,1,1-TCA, 1,1-DCA, & 1,1-DCE. ~~were believed by WCHD to be contaminated in~~ WCHD believed that United Recovery was contributing to this contamination.

- WCHD indicated that GW flow is south-southwest.

- An Oct. 1986 IEPA report suggested four possible sources of contamination: Beloit Corp, Safe-T-Way, Taylor Freezer & United Recovery. However, Safe-T-Way & United Recovery did not use the hazardous substances indicated as contaminating the GW & Taylor Freezer is located downgradient of the affected area.

2

GW Contamination

- ~~Taylor Freezer does~~
- United Recovery claimed to have not used any chlorinated organic solvents but rather only inorganic powders + phosphate surfactants. None of the organic solvents were found in IEPA inspections.

- Sampling of Beloit Monitoring wells (w-1, w-2, + w-3) in Feb. 1984 revealed:

TCE	6 - 142 ppb
1,1,1 TCA	5 - 512 ppb
1,1,1 DCA	trace - 18 ppb
Tetrachloroethylene	6 - 18 ppb
Di-N-Octyl Phthalate	17.7 ppb

Land Application

were agitated, and pumped out, and injected into the soil.

- Beloit apparently land applied the sediment from the lagoon systems from ~~two~~ different sources; the first being sediments pumped out of the lagoon + applied directly to an area south of the R+D facility. The sediments from the lagoons were analyzed for solvents in 1983 + found to contain elevated levels of 1,1,1-TCA, TCE, + tetrachloroethylene. Beloit Corp. did not have a permit to apply sediments at the time.

- Fiber sediments were dredged from the lagoons + placed in waste piles. The waste piles were analyzed for solvents in 1983 + no solvents were found.

- Permit was for 152.5 yd^3 per acre per year @ 62.7% solids; with area comprising approximately 10.33 acres.

Waste Piles (Sediments from lagoons)

- 3 piles located adjacent to the lagoons
- Volume of piles in 1986 was estimated as 3000 yd^3
- Beloit Corp. was issued a permit on 11/15/83 (by IEPA) to spread the sediment from the waste pile onto land adjacent to the facility. This spreading was stopped after a few weeks due to neighbors complaints.
- Waste piles were scheduled to be removed in 1986 when the new wastewater treatment system was installed.

#1

905 Watts
909 Co
910 Co
914
918
1004
1005
1007 Co
1012
1020
1104
1114
1140 Co
1200
1212
1304
1308 Co
314
1402 Watts
916 Blackhawk
403 Lingham
409 Lingham
917 Watts
1009 Watts
1011 Watts
1102 Watts
1113
1117
1215
1301 Watts
1404 Watts

1012 Blackhawk
1016
1106
1110
1114
1204
1206
1212
1220
1302
1310
1314
1404
1408
1416 Blackhawk
407 Lingman
410 Kile
900 N. Prairie
903 Prairie
Select Corp.
1216 Watts
1310 Watts
826 Blackhawk
908 Blackhawk
407 Central
913 Watts
1018 Watts

27
2
4
4
4
58

58 wells sampled
17 had detectable levels of contaminants

RI scheduled to begin in fall of 1990

Final IEPA Report of March, 1988.

Where did high TCE # come from?
Of the residential wells, highest values seems to be 45 ppb for 910 Watts; 30 ppb for 918 Watts in 1986. Otherwise almost all other samples seem to be below 10 ppb.

Intend that environmental sampling will be done under the RI/FS, including:
- liquid + sediments/sludges from the lagoons
- soils, including the area where land application took place.

Private wells are continuing to be sampled, as is evidenced by the Oct 13, 1989 TAT report.

If necessary, additional monitoring wells will be installed in an effort to better characterize the extent of contamination, and groundwater flows related to this site.

	Depth of Screen		Elev. of Screen
Boring 1	27' - 37'	or	719.53 - 709.53
Boring 2	27' - 37'		725.9 - 715.9
Boring 3	27' - 37'		716.8 - 706.8
W-4	24' - 38'		724.7 - 714.7
W-5 (P 3A)	47.5' - 52.5'		696.2 - 691.2
W-6 (W-5)	28.4' - 38.4'		716.8 - 706.8
W-7	23.4 - 33.4'		725.1 - 715.1
W-8 (W-6)	44' - 54'		720.49 - 710.49
W-9 (W-8)	24.5' - 34.5'		723.2 - 713.2
W-10 (P 3A)	52.7' - 57.7'		699.9 - 689.9
W-11 (P 6A)	57' - 62'		714.9 - 709.9
W-12	22.9' - 32.9		731.8 - 721.9
W-13	20' - 30'		733.1 - 723.1
W-14	53.4' - 58.4'		699.2 - 694.2
W-15	20.5' - 30.5'		730.5 - 720.5
W-16	20' - 30'		
W-17	4.5' - 15.5'		727.3 - 717.3
SP-3	24.5' - 34.5'		726.7 - 716.7
SP-4	24.5' - 34.5'		725.1 - 715.1
SP-5	23.5' - 33.5'		729.0 - 719.0
SP-6	24' - 34'		726.1 - 716.1
SP-7	24' - 34'		731.7 - 721.7
SP-8	23.5' - 33.5'		725.2 - 715.2
SP-9	34' - 44'		715.5 - 705.5
SP-10	29' - 39'		724 - 714
SP-11	34.7' - 44.7'		728.6 - 718.6
SP-12	34.7' - 48.7'		737.3 - 722.3
SP-1	24.5' - 34.5'		729.2 - 719.2
SP-2	24.5' - 34.5'		727.7 - 717.7

	Depth of Screen	Elev. of Screen
G101	37.3' - 52.3'	726.4 711.4
G102	34.1' - 49.1'	732.8 - 717.8
G103S	20.3' - 25.3'	726.1 - 721.1
G103D	43.6' - 49.0'	702.5 - 697.1
G104	19.6' - 24.6'	722.1 - 717.1
G107	43.6' - 48.5'	725.7 - 720.8
P 1	10' - 20'	722.4 - 712.4

1200 Watts	63' - 65'
1310 Blackhawk	55' 60'
Troll	- 48'
1300 Watts	61' - 63'
409 Dingman	58' - 60'
Beloit Iron Works	175 - 185'
Blackhawk Blvd	
(Rockton Health Ctr.)	240 - 280'