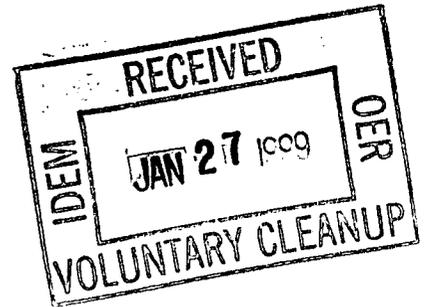


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**SEMI-ANNUAL
GROUNDWATER MONITORING REPORT**
ALLIED SIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA V.R.P.: 6980601



PROJECT NUMBER 9822-02

JULY 1998

**SEMI-ANNUAL
GROUNDWATER MONITORING REPORT**

**ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA**

PREPARED FOR:

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PROJECT NUMBER 9822-02

JULY 1998

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1. INTRODUCTION

AlliedSignal Inc. (AlliedSignal) has retained Harding Lawson Associates (HLA), formerly ABB Environmental Services, Inc. to assist with the quarterly groundwater monitoring program at the AlliedSignal Industrial Complex, 717 N. Bendix Drive, South Bend, Indiana (Figure 1). This report presents the results of the 1st and 2nd Quarter 1998 groundwater sampling events performed by HLA.

1.1 BACKGROUND

Environmental assessment activities at the AlliedSignal facility date back to the 1970s. Investigations have indicated that two groundwater contaminant plumes exist beneath the facility. The two plumes are characterized as a naphtha plume in the area of Plant 6/16 and a dissolved volatile organic compound (VOC) plume in the area of Plant 1.

In 1978, a free-phase plume of naphtha and Stoddard solvent was discovered on the water table beneath the Plant 6/16 area (in the central portion of the facility). A naphtha recovery well was first installed at the Complex in 1978 for removal of naphtha free product from the top of the water table (well E3 on Figure 2). Four additional recovery wells were installed in 1982. Each of the five recovery wells consists of a pumping well and a product collection well. Two of the five naphtha recovery wells have been deactivated because free product is no longer present. The amount of product currently being recovered by the three operating wells is negligible, but operation of the system is beneficial because it maintains an inward gradient of groundwater flow at the site.

In 1988, a VOC recovery well system was installed on the north side of Plant 1 and Plant 9 just south of Bendix Drive and Bertrand Street. The recovery well system included 20 shallow and 1 deep VOC recovery wells, and was installed to inhibit off-site migration of impacted groundwater from the Plant 1/9 area.

Beginning in December 1993, certain shallow wells were taken off-line due to low yield of groundwater. The deep VOC recovery well was taken off-line due to the presence of gravel pack material in the well. In 1997, AlliedSignal modified the well configuration to provide a system that more effectively captures groundwater migrating from the Plant 1/9 area. Three new extraction wells (EW-1, EW-2 and EW-3) were installed and the existing system was abandoned in accordance with Indiana Administrative Code,

Title 310, Article 16 (see Figure 2). Select existing recovery wells (RW-3, RW-4, RW-7, RW-14, RW-16, and RW-17) were retained as groundwater level measurement locations.

A network of monitoring wells has also been installed at the facility to monitor the effectiveness of the recovery systems and the movement and quality of groundwater. In addition to the three VOC and three currently active naphtha recovery wells, the current monitoring network consists of 59 shallow wells, 4 intermediate wells screened in the deep portion of the shallow aquifer, and 12 deep groundwater monitoring wells screened in the deeper aquifer. Monitoring well locations are shown on Figure 2.

1.2 QUARTERLY MONITORING PROGRAM

Groundwater monitoring requirements are set forth in Discharge Permit SB004:4 issued November 9, 1994, by the Department of Public Works, City of South Bend, Indiana. Under the permit, AlliedSignal must report the analytical results of VOCs, total lead, total nickel, total chromium, total phenols and total cyanide for groundwater samples collected from all wells discharging into city sewers. Currently, 15 shallow VOC recovery wells, 1 deep VOC recovery well, and 3 naphtha recovery wells are included under the discharge permit. Changes in the recovery well network have resulted in 3 naphtha and 3 VOC recovery wells discharging to city sewers. These changes to the system were presented to and approved by the City of South Bend.

In addition to groundwater samples collected from the VOC and naphtha recovery wells, AlliedSignal collects groundwater samples from 32 groundwater monitoring wells to obtain information on groundwater quality across the site. As of 1st Quarter 1998, the monitoring program at the facility has been modified as follows:

- Water levels are measured in all wells on a quarterly basis to demonstrate the effectiveness of the naphtha and VOC recovery systems.
- Sampling of the recovery wells is conducted on a quarterly basis to comply with the permit requirements. Discharge water is sampled quarterly for VOCs, and semi-annually for total lead, total chromium, total nickel, total phenols and total cyanide.
- Monitoring well groundwater samples are collected semi-annually for VOCs, and annually for dissolved lead, dissolved chromium, dissolved nickel, total phenols and total cyanide.

- Shallow monitoring wells MW-10, MW-11, MW-12 and MW-13 (installed between June 1997 and May 1998) have been incorporated into the monitoring program as of the 2nd Quarter 1998 sampling event.
- Shallow monitoring well 8-27 was abandoned in May 1998 due to a collapsed well screen.

Quality control (QC) samples are also collected during each sampling event. Duplicate samples are collected at a frequency of 10 percent. Duplicates are analyzed for the same parameters as the respective primary samples to assess the homogeneity of sampled media and the precision of the sampling and analytical protocols. Trip blank samples for VOC analysis are collected at a frequency of one per cooler of VOC samples. Analysis of trip blanks is used to confirm that sample contamination has not occurred during shipment. Equipment blanks are collected during the sampling program when non-dedicated sampling devices are used. Equipment blank results are used to assess whether cross-contamination has occurred between sampling locations due to the sampling device.

2. SAMPLE METHODOLOGY

Procedures for measuring water levels and collecting groundwater samples are described in this section.

2.1 WATER LEVEL MEASUREMENTS

Water level measurements made during the 1st Quarter event at the 70 monitoring wells, 5 naphtha recovery wells, 3 VOC recovery wells, and the 6 former VOC extraction wells were collected in March 1998. At that time, VOC recovery wells EW-2 and EW-3 were off-line for maintenance. As a result, an additional round of water levels was collected in early April 1998 when the three VOC recovery wells and three naphtha wells were fully operational. The April measurements are listed on Table 1. The 2nd Quarter groundwater measurements collected in June from the 84 wells are listed on Table 2. At this time, VOC recovery wells EW-2 and EW-3 were off-line for maintenance.

After opening the well and allowing the water level to equilibrate, the depth to groundwater was measured at each location to the nearest 0.01 foot using an electronic water level indicator. After each measurement, the water level indicator was washed with a solution of LiquiNox and distilled water and rinsed with distilled water. Water level measurements were referenced to the top of the well casing.

Groundwater elevations are calculated by subtracting the depth-to-groundwater at each well from the top-of-well casing elevation. Groundwater elevations based upon the April 1998 event demonstrate the groundwater flow conditions when the 3 VOC and 3 naphtha recovery wells are fully operational.

2.2 GROUNDWATER SAMPLING

During the March 1998 (1st Quarter) sampling event, groundwater discharge samples were collected from the naphtha and VOC recovery wells indicated on Table 1. During the June 1998 (2nd Quarter) sampling event, groundwater samples were collected from the 38 locations indicated on Table 2. Sampling locations in June included 32 monitoring wells on and adjacent to the site, 3 active naphtha recovery wells, and the 3 VOC recovery wells.

Monitoring wells were purged of stagnant groundwater prior to sample collection. During purging, the pH, specific conductivity and temperature of the groundwater was measured in the field with a Horiba U10 Water Checker or an Orion Model 230A temperature/pH meter and VWR Scientific Model 604

conductivity meter. Groundwater was purged from the monitoring wells until a minimum of three well volumes were evacuated and the pH, specific conductivity, and temperature were stabilized (within 10 percent between the final two readings). Once purging was completed, a groundwater sample was collected. Monitoring wells were purged and sampled with either dedicated bladder pumps, dedicated PVC bailers, disposable bailers, or a stainless-steel bailer. Non-dedicated equipment (i.e., the stainless-steel bailer) was washed with a solution of LiquiNox and distilled water and rinsed with distilled water before each use.

Groundwater samples collected for dissolved chromium, lead and nickel were filtered through a disposable, 0.45-micron, in-line filter prior to sample preservation. When the sample was collected with a bladder pump, the aliquot for chromium, lead, and nickel analyses was filtered directly at the sample pump discharge. When the sample was collected with a bailer, the aliquot was collected into a sample container provided by the laboratory, and then filtered into a second preserved sample container using a peristaltic pump and the in-line filter. New tubing and filters were used for filtering each groundwater sample.

VOC and naphtha recovery wells were purged and sampled through existing spigots on discharge lines. In general, approximately 5 gallons of water were purged from each well prior to sampling.

In accordance with QC procedures, duplicate samples were collected at a frequency of 10 percent. Duplicate samples were collected from shallow monitoring wells MW-4 and MW-12 and deep monitoring wells 4D and 5D. A laboratory-prepared trip blank was included with each cooler containing samples for VOC analysis. Trip blanks were analyzed for VOCs. An equipment rinsate blank was collected from the stainless-steel bailer. This sample was collected prior to sampling by pouring distilled water into the bailer and then transferring the distilled water to sample containers. Filtering of the dissolved chromium, lead and nickel sample aliquot was handled in the same manner as other samples collected with bailers.

Samples were placed in insulated coolers with sealed bags of ice and picked up by TriMatrix Laboratories, Inc. of Grand Rapids, Michigan. Chain-of-Custody (COC) documentation accompanied each set of samples and included the following information: date and time of sample collection, sample name, analysis method, and sampler's signature. Details of daily activities (including times, dates and methods of sample collection) were recorded in a site-specific field notebook. Details on the purging and sampling procedures were recorded on groundwater Sample Record Sheets, included as Appendix A.

3. ANALYTICAL PROCEDURES

Analytical methods and QC procedures are discussed below.

3.1 LABORATORY METHODS

Groundwater samples collected from the naphtha and VOC recovery wells during the March 1998 (1st Quarter) sampling event were analyzed for VOCs and total chromium, total lead, total nickel, total phenols, and total cyanide. The VOC and naphtha recovery wells were sampled for VOCs only during the June 1998 (2nd Quarter) sampling event. Monitoring wells sampled during the June 1998 monitoring event were analyzed for VOCs, dissolved chromium, dissolved lead, dissolved nickel, total phenols and total cyanide. Analytical methods are as follows:

Analysis	Method
VOCs	8260
Total phenols	420.2
Dissolved/total chromium, lead and nickel	6010/7471
Total cyanide	335.3

3.2 DATA EVALUATION

TriMatrix Laboratories conducted a systematic review of the data for compliance with the established QC criteria. An evaluation of data accuracy, precision, sensitivity and completeness was performed and presented in the analytical reports. Non-compliant data were qualified and a case narrative prepared to describe the corrective actions taken and the implications on data quality.

Laboratory results were then submitted to HLA in the form of laboratory data sheets and on computer disk. Data was electronically transferred from the computer disk into a database maintained by HLA. Upon transfer of the data, HLA reviewed each data package to evaluate the "usability" of the data. The data was evaluated based upon the following parameters: completeness of the data package, holding times, trip blanks, equipment rinsate blanks, duplicates and laboratory case narratives. Data were flagged with qualifiers as necessary to indicate its usability.

4. RESULTS

Analytical summary tables for the June 1998 sampling event are presented in Appendix B. The tables include a comparison of the analytical results to U.S. Environmental Protection Agency Primary Maximum Contaminant Levels (PMCLs). Data qualifiers are also shown on the tables. A description of the qualifiers is provided in a table at the beginning of Appendix B. Appendix C contains both the current and historic data showing only the constituents reported above the laboratory detection limit for each sampling location (including results for the March 1998 sampling event).

4.1 QUALITY CONTROL REVIEW

For the 1st and 2nd Quarter sampling events, no VOCs were detected in any of the trip blanks, or in the equipment rinsate blank (collected during the 2nd Quarter event). As part of the quality control program, one duplicate sample was collected (at well EW-1) in March 1998. Four duplicate samples were collected (at wells MW-4, MW-12, 4D and 5D) in June 1998. In all cases good correlation was observed between original and duplicate samples for all parameters analyzed, with the exception of total lead in sample EW-1 (and its duplicate) and cyanide in sample 4D (and its duplicate). The variance in concentrations between the two samples and their duplicates resulted in the four samples being flagged with a "J". The "J" flag indicates that the results should be considered estimated because one or more quality control parameters were not met.

4.2 SHALLOW MONITORING WELLS

Figure 3 and Figure 4 are potentiometric surface maps of the water table aquifer based upon water level measurements collected in April and June 1998, respectively. The maps demonstrate shallow groundwater flow patterns based on monitoring wells screened in the shallow portion of the shallow aquifer. Four intermediate wells (7-50, 8D, D8 and I1) are included on the figures as shallow wells, but their measurements are not used for the potentiometric maps due to being screened in the lower portion of the shallow aquifer.

Figure 3 reflects groundwater measurements made in April 1998 when the 3 VOC and 3 naphtha recovery wells were fully operational. As indicated on the figure, shallow groundwater flow from the western and central portions of the site is generally to the east (toward the naphtha recovery wells). Groundwater depressions observed in the vicinity of the VOC and naphtha recovery wells indicate that the recovery

systems are inhibiting off-site migration of site groundwater. Northeast of Plant 1, shallow groundwater flow is generally to the north, toward Kennedy Park.

Figure 4 is a potentiometric map of the water table based upon water levels measured during the 2nd Quarter 1998 sampling event. The naphtha recovery wells and VOC recovery well EW-1 were operational when water level measurements were made in June 1998. Groundwater depressions are observed in the vicinity of these wells, indicating that groundwater is being contained in the areas of these wells.

4.2.1 Volatile Organic Compounds

Total VOC concentrations in shallow monitoring well samples ranged from non-detectable to 2,981 micrograms per liter ($\mu\text{g/l}$). VOCs in groundwater samples from the shallow monitoring wells were highest in on-site wells. VOCs were non-detectable in groundwater from wells located along the downgradient boundary of the western two-thirds of the site (along West Westmoor Street west of Bendix Drive). Consistent with previous sampling events, VOCs were detected in shallow wells located north and northeast of Plant 1. VOC concentrations have remained relatively constant in shallow monitoring wells since the December 1997 sampling event.

Trendline plots for select shallow wells have been prepared using all available analytical data from past sampling events. The plots provide information with regard to the variations in concentrations of VOCs detected in groundwater samples collected from the monitoring well locations over time. Three shallow wells (86-10, 86-15, and S4A) were selected for trendline plotting to represent sampling points near the origin of the groundwater plume. Shallow monitoring wells S9, S24 and S27 were selected to assess the central portion of the groundwater plume, and wells S21, S22, and S25 were selected to represent sampling points along the downgradient boundary of the plume. June 1998 chemical concentration data is not available for well S24 because it was not sampled during the 2nd Quarter event.

The trend plots, provided in Appendix D, indicate that the concentrations of volatile constituents in the shallow aquifer are generally stable or decreasing. Slight increases in trichloroethene (TCE) were observed in wells 86-15, since the December 1997 sampling event. Well 86-15 also showed slight increases in cis-1,2-dichloroethene (cis-DCE) and trans-1,2-DCE (trans-DCE). The remaining shallow well graphs indicate relatively stable trends in VOC concentrations.

4.2.2 Total Phenols

During this sampling event, total phenols were detected in only 1 of the 27 groundwater samples collected from the shallow and intermediate monitoring wells (10 µg/l at well MW-11). This concentration was detected at the instrument reporting limit. Total phenols were previously detected in groundwater samples collected from 3 shallow monitoring wells (wells S4A, MW-2 and MW-9); however, the analytical results from this sampling event exhibited no detectable concentrations of total phenols in these wells.

4.2.3 Inorganic Compounds

Groundwater samples from the 27 shallow and intermediate monitoring wells were analyzed for dissolved chromium, lead, and nickel and total cyanide. The results of these analyses are described below.

No detectable concentrations of dissolved lead or nickel were reported, with the exception of dissolved nickel reported at the reporting limit of 20 µg/l in well MW-9. Dissolved chromium was reported in 11 of the 27 samples, with detected concentrations ranging from 5.9 µg/l to 20 µg/l. All shallow wells reporting dissolved chromium are on or immediately adjacent to the site, and all detections are within the area of VOC impacts to groundwater.

Cyanide was detected in 2 of the 27 groundwater samples from the shallow and intermediate monitoring wells. The detected concentrations ranged from 7 µg/l at well S17 to 11 µg/l at well S23. Historically, total cyanide has not been detected in samples collected from either of these wells. In March and September 1997, low levels of cyanide were reported in groundwater samples collected from well MW-9, but no cyanide was detected in this well during the June 1998 sampling event.

4.3 DEEP MONITORING WELLS

Figure 5 is a potentiometric surface map based on water levels measured in the 12 deep monitoring wells during the 2nd Quarter sampling event. A separate potentiometric map is not included for the April 1998 water level measurements because the deep flow system appears to be unaffected by operation of the VOC and naphtha recovery systems. As indicated on the figure, the deep groundwater flow direction is northeasterly. It should be noted that the potentiometric map for the deeper portion of the aquifer includes groundwater level data from wells ranging in depth from 75 feet to over 200 feet deep. Considering the

range in well depths, the potentiometric map for the deeper portion of the aquifer represents the general direction of groundwater flow but does not consider the potential for vertical gradients within the aquifer.

4.3.1 Volatile Organic Compounds

Five deep monitoring wells (D5, D7, 2D, 4D and 5D) were sampled during the 2nd Quarter 1998 sampling event. VOCs were reported in samples from two of the five sampling locations (wells 2D and 4D), with detected concentrations ranging from 14 µg/l to 22.9 µg/l. The detected concentrations were adjacent to Plant 1. Samples collected from downgradient deep well 5D remain non-detectable for VOCs.

Trendline plots for deep wells 2D and 5D have been prepared using all available VOC analytical data from past sampling events. Well 2D is located within the deep VOC plume and well 5D is located at the leading edge of the plume. The plots, provided in Appendix D, indicate that VOC concentrations in the deep aquifer are generally stable or decreasing.

4.3.2 Total Phenols

Total phenols were not detected in the groundwater samples collected from the five deep monitoring wells during this sampling event. During the June 1997 event, total phenols were reported at low concentrations in the groundwater sample collected from well D7.

4.3.3 Inorganic Compounds

Groundwater samples from the deep monitoring wells were analyzed for dissolved chromium, dissolved lead, dissolved nickel and total cyanide. No detectable concentrations of dissolved chromium, lead, and nickel were reported during this sampling event, with the exception of chromium at 7.6 µg/l in the sample from well 2D. Dissolved chromium was not reported in samples collected from this well in March and September 1997, the first two events in which metals samples were filtered.

4.4 NAPHTHA RECOVERY WELLS

For the 1st and 2nd Quarter 1998 sampling events, VOC constituents detected in the naphtha recovery wells were generally consistent with previous sampling events. The slight increasing trend of benzene concentrations observed in groundwater samples from well RWB16 over the past four events is now decreasing. Naphtha recovery wells were sampled in March 1998 for total lead, total nickel, total

chromium, total cyanide and total phenols. The samples from each well reported detections of total chromium, with concentrations ranging from 18 µg/l at well E3 to 24 µg/l at well RWB16. Total lead was also reported at 4.8 µg/l in the sample from well E3.

4.5 VOC RECOVERY WELLS

Samples are collected from wells EW-1, EW-2 and EW-3 to evaluate the quality of groundwater extracted by the VOC recovery system. A sample was not collected from well EW-2 during the 1st Quarter 1998 sampling event because the well was off-line for maintenance. The VOC samples collected from these wells in June 1998 reported total VOC concentrations ranging from 246 µg/l at well EW-3 to 457 µg/l at well EW-1.

Total chromium (12 µg/l), lead (132 µg/l) and cyanide (20 µg/l) were reported in the sample from EW-1 during the March 1998 sampling event. The total lead results for EW-1 are considered estimated because of the large variance in the total lead concentration in the duplicate sample collected from this well. Total chromium and total lead were reported at 15 µg/l and 5.1 µg/l, respectively, in the sample from well EW-3. No detectable levels of total phenols or total nickel were reported in the two VOC recovery well samples.

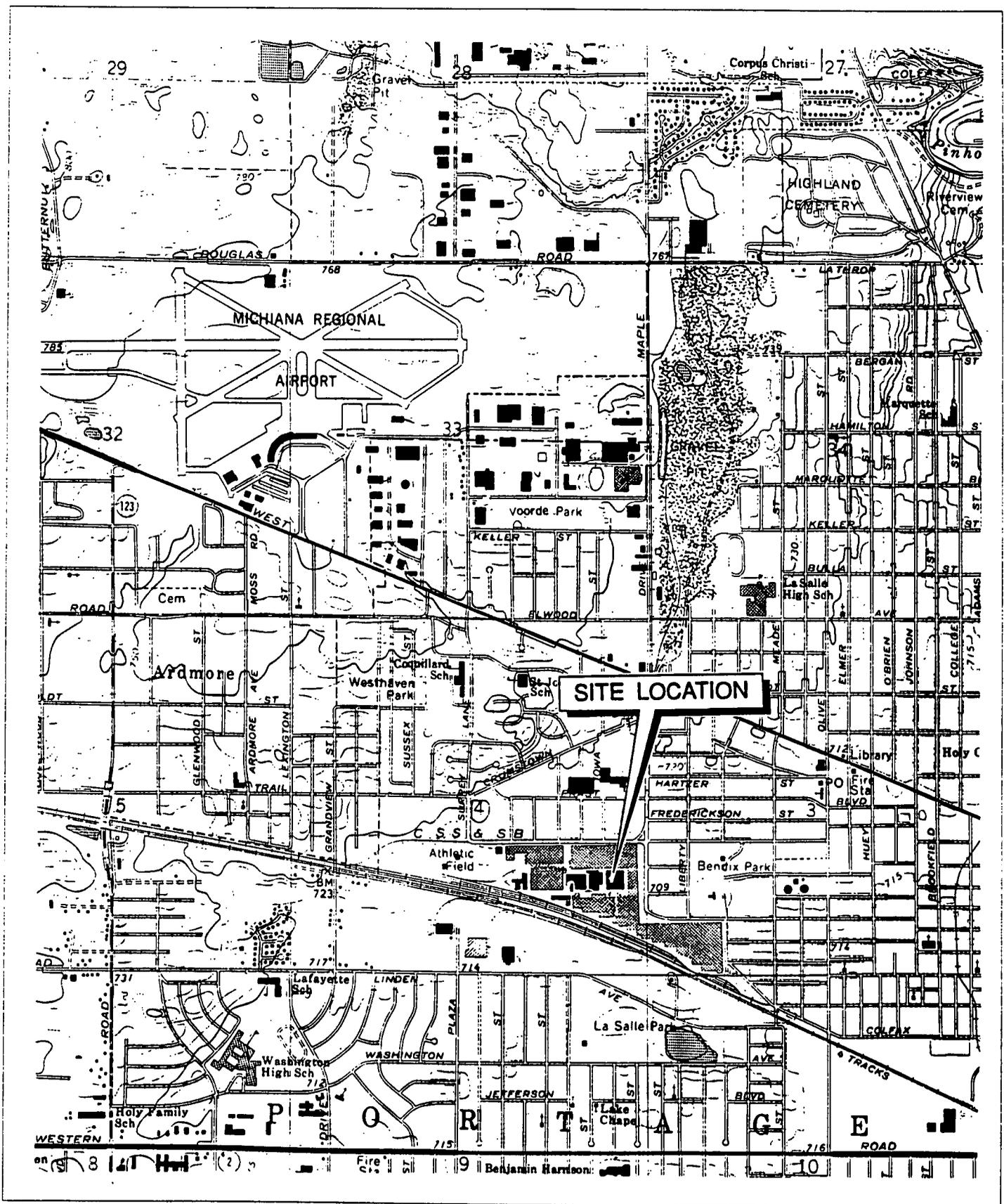
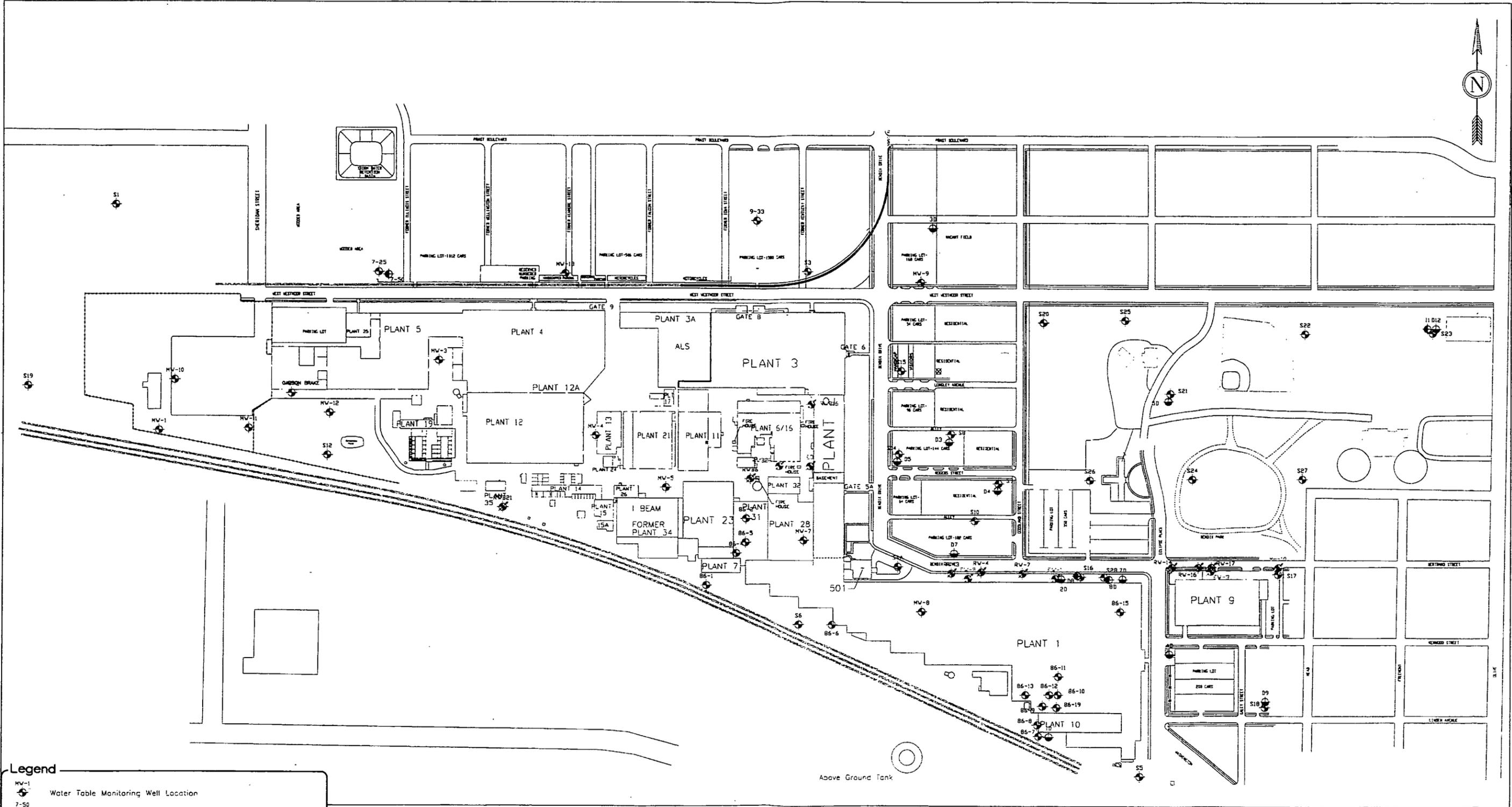


FIGURE 1
 SITE LOCATION MAP
 QUARTERLY GROUNDWATER MONITORING
 ALLIEDSIGNAL INDUSTRIAL COMPLEX
 SOUTH BEND, INDIANA

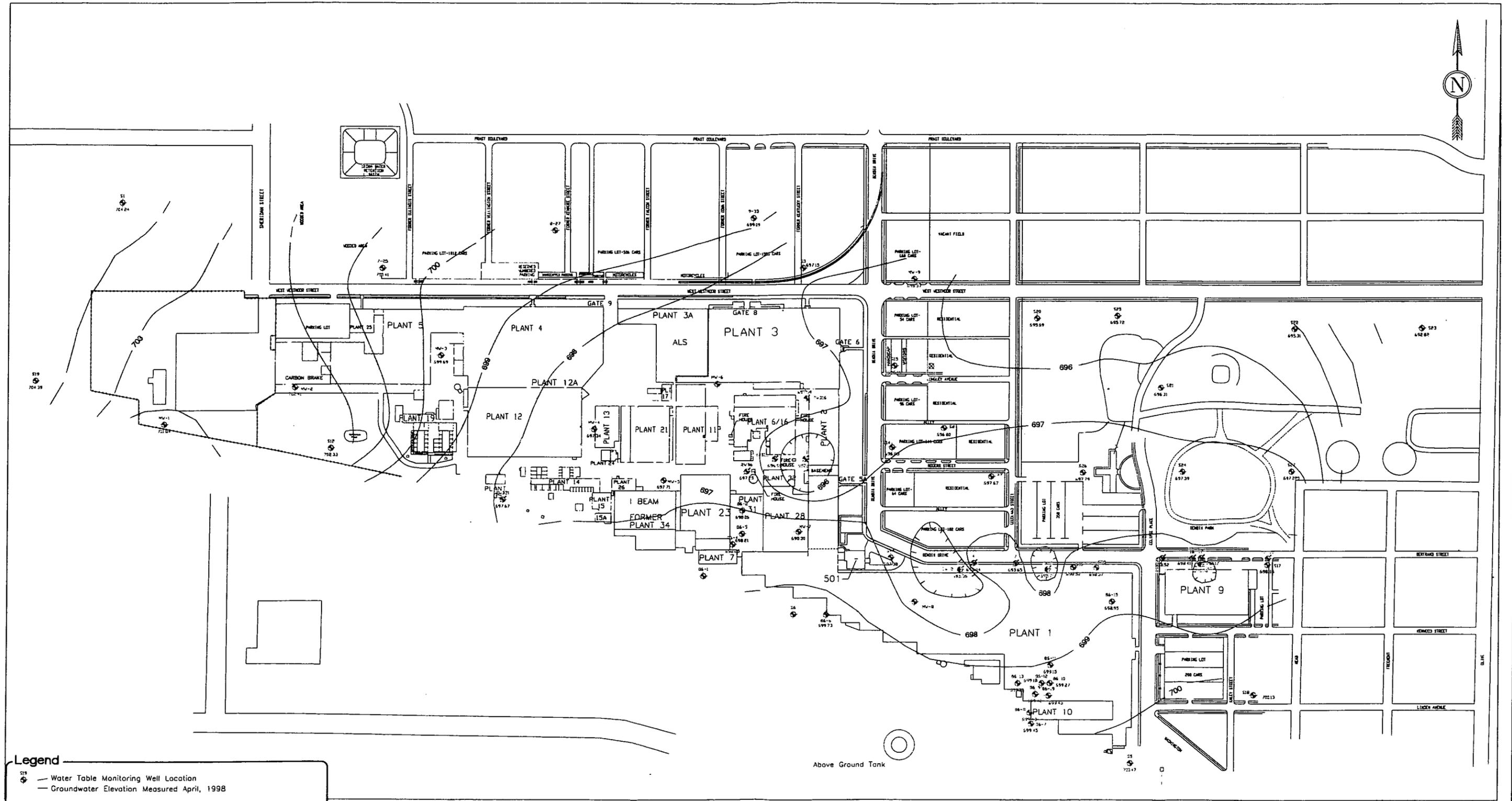
Harding Lawson Associates ES



Legend

- MV-1 Water Table Monitoring Well Location
- 7-50 Intermediate Monitoring Well Location (50 to 100 feet deep)
- 6D Deep Monitoring Well Location (100 to 210 feet deep)
- RVB21 Former Recovery Well Location
- E4-3 Recovery Well Location

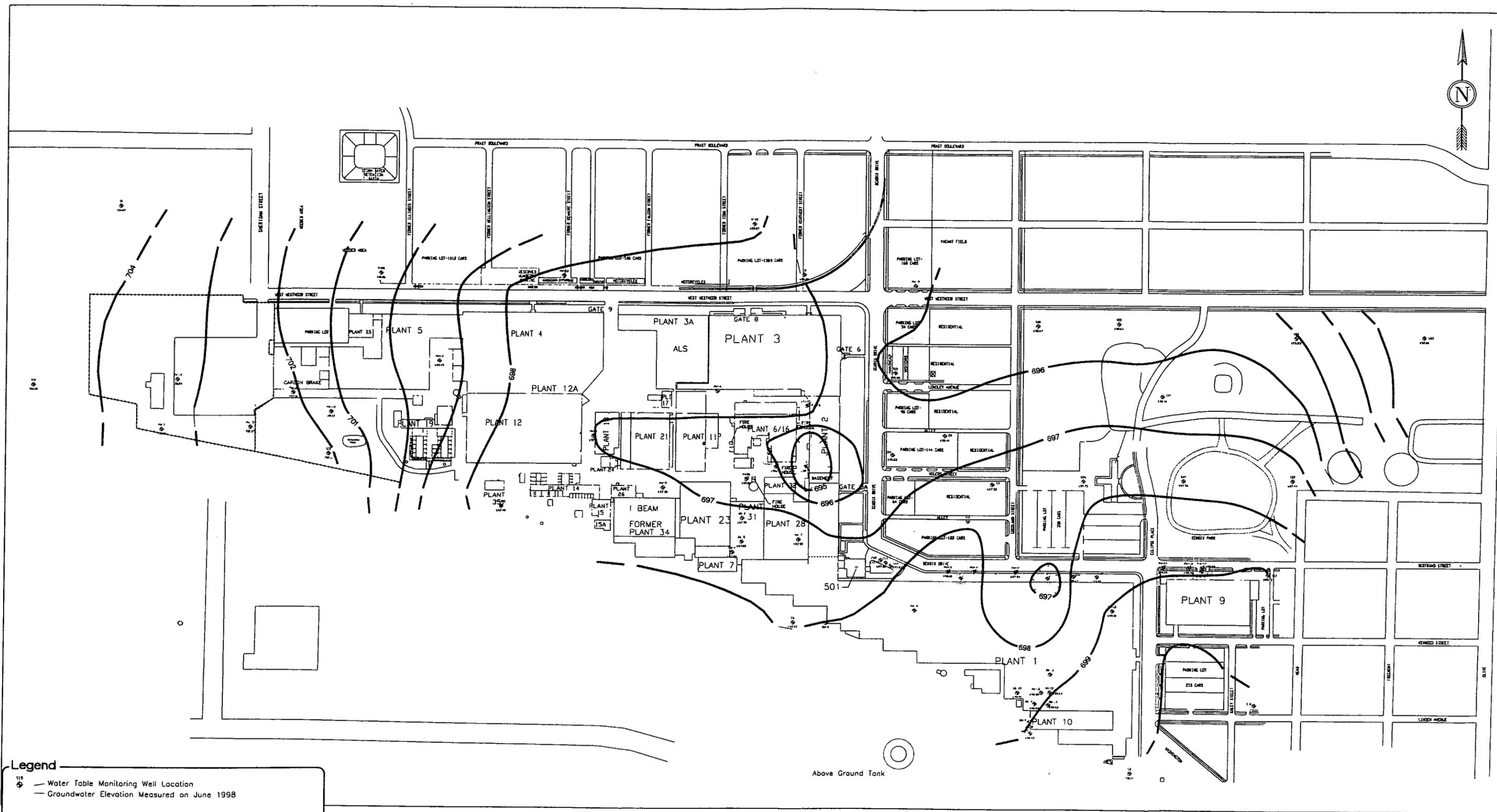
FIGURE 2
MONITORING WELL AND RECOVERY WELL NETWORK
QUARTERLY GROUNDWATER MONITORING
ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA



Legend

- Water Table Monitoring Well Location
 — Groundwater Elevation Measured April, 1998
- Recovery Wells
 — Groundwater Elevation Measured April 1998
- Groundwater Potentiometric Contour, feet above Mean Sea Level

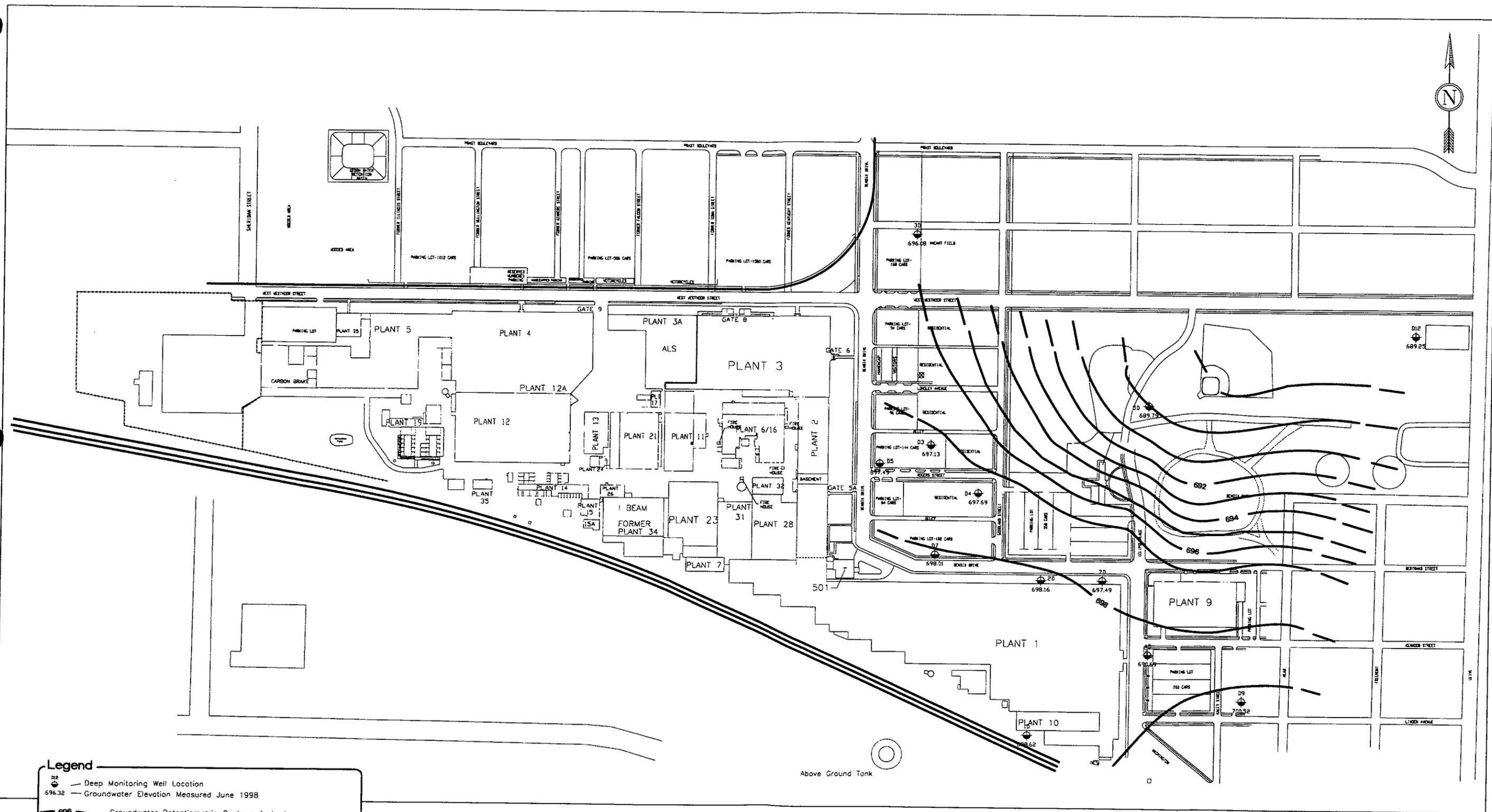
FIGURE 3
POTENTIOMETRIC SURFACE MAP, SHALLOW WELLS, APRIL 1998
QUARTERLY GROUNDWATER MONITORING
ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA



Legend

-  Water Table Monitoring Well Location
 — Groundwater Elevation Measured on June 1998
-  Recovery Wells
 — Groundwater Elevation Measured on June 1998
-  Groundwater Potentiometric Contour, feet above Mean Sea Level
 EW-2 and EW-3 off-line for maintenance.

FIGURE 4
POTENTIOMETRIC SURFACE MAP, SHALLOW WELLS, JUNE 1998
QUARTERLY GROUNDWATER MONITORING
ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA



Legend

- Deep Monitoring Well Location
- Groundwater Elevation Measured June 1998
- 696 Groundwater Potentiometric Contour, feet above Mean Sea Level

Note: Elevation Data for Well 4D was not included due to significant variance in its water level compared to other deep monitoring wells.

FIGURE 5
POTENTIOMETRIC SURFACE MAP, DEEP WELLS, JUNE 1998
QUARTERLY GROUNDWATER MONITORING
ALLIEDSIGNAL INDUSTRIAL COMPLEX
SOUTH BEND, INDIANA

Table 1
Groundwater Elevation Summary
1st Quarter Groundwater Monitoring - March 1998
AlliedSignal Industrial Complex - South Bend, Indiana

Well No.	Well Depth (feet)	Measuring Point Elevation (feet)	Depth to Water (feet) April 1998	Water Elevation (feet) April 1998	Locations Sampled March 1998	Sampling Method
Shallow Monitoring Wells						
7-25	26.6	720.47	20.06	700.41		
8-27	NA	715.45	NM	NM		
86-2	28.3	714.98	16.92	698.06		
86-4	23.8	715.09	16.84	698.25		
86-5	30.1	715.04	16.83	698.21		
86-6	25.9	715.00	15.27	699.73		
86-7	27.2	714.15	14.70	699.45		
86-8	28.5	714.62	15.14	699.48		
86-9	26.8	715.25	15.83	699.42		
86-10	27.1	715.06	15.79	699.27		
86-11	27.0	715.14	15.99	699.15		
86-12	25.4	715.71	16.53	699.18		
86-13	28.8	714.75	15.50	699.25		
86-15	25.3	715.06	16.11	698.95		
86-19	28.1	714.33	14.88	699.45		
9-33	27.3	716.69	17.60	699.09		
MW-1	25.3	719.05	17.21	701.84		
MW-2	15.4	713.93	11.52	702.41		
MW-3	17.2	713.10	13.41	699.69		
MW-4	21.0	712.66	15.32	697.34		
MW-5	20.8	713.21	15.50	697.71		
MW-6 (b)	18.0	709.98	NM	NM		
MW-7	18.2	712.59	14.29	698.30		
MW-8 (b)	19.0	712.79	NM	NM		
MW-9	19.8	710.90	14.33	696.57		
MW-10	19.4	716.01	(d)	(d)		
MW-11	21.7	717.74	(d)	(d)		
MW-12	13.8	711.58	(d)	(d)		
MW-13	NM	712.55	NM	NM		
OW-1	37.4	NA	13.26	NA		
OW-2	35.0	NA	13.33	NA		
S1	35.6	728.09	23.85	704.24		
S3	24.6	716.65	19.50	697.15		
S4A	31.6	711.00	13.12	697.88		
S5	33.0	712.83	12.36	700.47		
S6 (c)	32.4	713.08	18.76	694.32		
S8	22.6	714.65	17.85	696.80		
S9	21.1	714.17	16.50	697.67		
S12	30.0	721.45	19.12	702.33		
S14	20.2	711.86	14.98	696.88		
S15	22.0	714.37	18.21	696.16		
S16	21.5	716.18	17.68	698.50		
S17	24.8	716.97	18.12	698.85		
S18	32.4	715.41	15.28	700.13		
S19	36.4	723.38	18.99	704.39		
S20	18.8	709.97	14.28	695.69		
S21	23.4	711.33	15.02	696.31		
S22	26.0	709.33	14.02	695.31		
S23	28.2	710.24	17.42	692.82		
S24	21.4	713.03	15.64	697.39		
S25	26.8	710.60	14.88	695.72		
S26	26.9	714.50	16.71	697.79		
S27	27.9	715.40	18.18	697.22		
S28	23.5	714.48	15.91	698.57		

Depth to water measured from the top of well casing
Well depth measured April 1998, measured from the top of well casing
Water elevations are referenced to Mean Sea Level

- (a) Well abandoned
- (b) Wells MW-6 and MW-8 not measured due to presence of free product
- (c) Measuring point elevation is suspected to be in error
- (d) Well incorporated into the monitoring program as of June 1998

NA = Not Available
 NM = Not Measured

**Table 1
Groundwater Elevation Summary
1st Quarter Groundwater Monitoring - March 1998
AlliedSignal Industrial Complex - South Bend, Indiana**

Well No.	Well Depth (feet)	Measuring Point Elevation (feet)	Depth to Water (feet) April 1998	Water Elevation (feet) April 1998	Locations Sampled March 1998	Sampling Method
Intermediate Monitoring Wells (50 - 75 feet)						
7-50	50.0	719.84	19.56	700.28		
8D	59.5	714.56	16.52	698.04		
D8	61.9	717.07	18.93	698.14		
I1	47.6	711.58	18.48	693.10		
Deep Monitoring Wells (75 - 210 feet)						
D3	133.1	714.45	16.93	697.52		
D4	118.6	717.85	19.73	698.12		
D5	186.8	712.07	14.21	697.86		
D7	78.4	713.83	15.45	698.38		
D9	96.9	717.00	16.16	701.17		
D12	147.1	710.35	19.71	690.64		
1D	208.6	714.17	15.12	699.05		
2D	188.3	715.36	16.76	698.60		
3D	196.9	713.60	16.61	696.99		
4D (c)	192.7	712.12	19.63	693.21		
5D	192.2	712.01	20.79	691.22		
7D	95.1	714.85	16.83	698.02		
Recovery Wells						
<i>Former VOC System:</i>						
RW-3	30.7	NA	12.36	NA		
RW-4	24.4	710.07	11.23	698.84		
RW-7	21.6	711.08	12.43	698.65		
RW-14	28.8	712.88	14.36	698.52		
RW-16	22.1	712.79	14.38	698.41		
RW-17	28.8	713.08	14.91	698.17		
<i>Naphtha System:</i>						
E3	NM	714.50	22.13	692.37	✓	Spigot
RWB6	29.4	715.80	18.55	697.25		
RWB16	23.6	715.30	17.61	697.69	✓	Spigot
RWB21	27.5	717.62	19.95	697.67		
RWB22	NM	715.11	18.15	696.96	✓	Spigot
<i>VOC System:</i>						
EW-1	56.3	712.57	16.86	695.71	✓ duplicate	Spigot
EW-2	43.2	711.86	16.50	695.36		
EW-3	30.6	712.88	17.58	695.30	✓	Spigot

*Depth to water measured from the top of well casing
Well depth measured April 1998, measured from the top of well casing
Water elevations are referenced to Mean Sea Level*

- (a) Well abandoned
- (b) Wells MW-6 and MW-8 not measured due to presence of free product
- (c) Measuring point elevation is suspected to be in error

NA = Not Available
NM = Not Measured

**Table 2
Groundwater Elevation Summary
2nd Quarter Groundwater Monitoring - June 1998
AlliedSignal Industrial Complex - South Bend, Indiana**

Well No.	Well Depth (feet)	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Locations Sampled	Sampling Method
Shallow Monitoring Wells						
7-25	26.6	720.47	20.21	700.26	✓	Stainless-Steel Bailer
86-2	28.3	714.98	17.28	697.70		
86-4	23.8	715.09	17.20	697.89		
86-5	30.1	715.04	17.19	697.85		
86-6	25.9	715.00	20.21	694.79		
86-7	27.2	714.15	15.18	698.97		
86-8	28.5	714.62	15.60	699.02		
86-9	26.8	715.25	16.26	698.99		
86-10	27.1	715.06	16.17	698.89	✓	Dedicated PVC Bailer
86-11	27.0	715.14	NM	NM		
86-12	25.4	715.71	16.91	698.80		
86-13	28.8	714.75	15.94	698.81		
86-15	25.3	715.06	15.88	699.18	✓	Dedicated PVC Bailer
86-19	28.1	714.33	15.30	699.03		
9-33	27.3	716.20	17.63	698.57	✓	Stainless-Steel Bailer
MW-1	25.3	720.88	17.49	703.39		
MW-2	15.4	713.93	11.75	702.18	✓	Disposable Bailer
MW-3	17.2	713.10	13.61	699.49		
MW-4	21.0	712.66	15.65	697.01	✓ Duplicate	Disposable Bailer
MW-5	20.8	713.21	15.86	697.35	✓	Disposable Bailer
MW-6 (a)	18.0	709.98	NM	NM		
MW-7	18.2	712.59	14.66	697.93	✓	Disposable Bailer
MW-8 (a)	19.0	712.79	NM	NM		
MW-9	19.8	710.90	14.52	696.38	✓	Disposable Bailer
MW-10	19.4	716.01	12.72	703.29	✓	Disposable Bailer
MW-11	21.7	717.74	15.47	702.27	✓	Disposable Bailer
MW-12	13.8	711.58	10.41	701.17	✓ Duplicate	Disposable Bailer
MW-13	18.8	712.55	15.23	697.32	✓	Disposable Bailer
OW-1	37.4	711.48	13.68	697.80		
OW-2	35.0	711.45	13.75	697.70		
S1	35.6	728.09	24.02	704.07		
S3	24.6	716.65	19.76	696.89	✓	Bladder Pump
S4A	31.6	711.37	13.54	697.83	✓	Bladder Pump
S5	33.0	712.83	12.69	700.14		
S6	32.4	716.91	19.14	697.77		
S8	22.6	714.65	18.24	696.41		
S9	21.1	714.17	16.82	697.35	✓	Disposable Bailer
S12	30.0	721.45	19.34	702.11		
S14	20.2	711.86	15.34	696.52		
S15	22.0	714.37	18.57	695.80	✓	Disposable Bailer
S16	21.5	716.18	17.71	698.47	✓	Dedicated PVC Bailer
S17	24.8	716.97	17.84	699.13	✓	Bladder Pump
S18	32.4	715.41	15.34	700.07		
S19	36.4	723.38	19.25	704.13		
S20	18.8	709.97	14.30	695.67	✓	Bladder Pump
S21	23.4	711.33	14.92	696.41	✓	Bladder Pump
S22	26.0	709.33	14.02	695.31	✓	Bladder Pump
S23	28.2	710.24	17.64	692.60	✓	Bladder Pump
S24	21.4	713.03	15.27	697.76		
S25	26.8	710.60	14.96	695.64	✓	Bladder Pump
S26	26.9	714.50	16.75	697.75		
S27	27.9	715.40	17.96	697.44	✓	Bladder Pump
S28	23.5	714.48	15.63	698.85		

Depth to water measured from the top of well casing

Water elevations are referenced to Mean Sea Level

Locations and top-of-well casings for MW-1, MW-10, MW-11, MW-12, MW-13, 9-33, 3D, 4D, EW-1, EW-2, EW-3, RW-3, RW-4, RW-7, RW-14, RW-16, RW-17, OW-1, OW-2 and S4A were surveyed in June 1998.

Wells 8-27, 86-1 and D10 are abandoned.

(a) Wells MW-6 and MW-8 not measured due to presence of free product

NM = Not Measured

Table 2
Groundwater Elevation Summary
2nd Quarter Groundwater Monitoring - June 1998
AlliedSignal Industrial Complex - South Bend, Indiana

Well No.	Well Depth (feet)	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Locations Sampled	Sampling Method
Intermediate Monitoring Wells (50 - 75 feet)						
7-50	50.0	719.84	19.72	700.12	✓	Stainless-Steel Bailor
8D	59.5	714.56	16.93	697.63	✓	Bladder Pump
D8	61.9	717.07	19.32	697.75		
I1	47.6	711.58	18.49	693.09		
Deep Monitoring Wells (75 - 210 feet)						
D3	133.1	714.45	17.32	697.13		
D4	118.6	717.85	20.16	697.69		
D5	186.8	712.07	14.58	697.49	✓	Bladder Pump
D7	78.4	713.83	15.82	698.01	✓	Bladder Pump
D9	96.9	717.00	16.48	700.52		
D12	147.1	710.35	21.10	689.25		
1D	208.6	714.17	15.55	698.62		
2D	188.3	715.36	17.20	698.16	✓	Bladder Pump
3D	196.9	712.91	16.83	696.08		
4D	192.7	711.68	20.99	690.69	✓ Duplicate	Bladder Pump
5D	192.2	712.01	22.22	689.79	✓ Duplicate	Bladder Pump
7D	95.1	714.85	17.36	697.49		
Recovery Wells						
<i>Former VOC System:</i>						
RW-3	30.7	710.93	12.75	NA		
RW-4	24.4	709.81	NM	NM		
RW-7	21.6	710.73	12.79	697.94		
RW-14	28.8	712.63	13.77	698.86		
RW-16	22.1	712.51	13.61	698.90		
RW-17	28.8	712.78	13.90	698.88		
<i>Naphtha System:</i>						
E3	NM	714.50	21.51	692.99	✓	Spigot
RWB6	29.4	715.80	19.94	695.86		
RWB16	23.6	715.30	17.97	697.33	✓	Spigot
RWB21	29.5	717.62	20.13	697.49		
RWB22	NM	715.11	18.85	696.26	✓	Spigot
<i>VOC System:</i>						
EW-1	56.3	712.26	17.32	694.94	✓	Spigot
EW-2	43.2	711.58	13.33	698.25	✓	Spigot
EW-3	30.6	712.59	13.67	698.92	✓	Spigot

Depth to water measured from the top of well casing

Water elevations are referenced to Mean Sea Level

Locations and top-of-well casings for MW-1, MW-10, MW-11, MW-12, MW-13, 9-33, 3D, 4D, EW-1, EW-2, EW-3, RW-3, RW-4, RW-7, RW-14, RW-16, RW-17, OW-1, OW-2 and S4A were surveyed in June 1998.

Wells 8-27, 86-1 and D10 are abandoned.

(a) Wells MW-6 and MW-8 not measured due to presence of free product

NM = Not Measured

GROUNDWATER SAMPLING RECORDS



HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 7-25
 Sample Date: 6/10/98
 Sample Time: 10:56

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1045 Activity End: _____
 Weather: 60%, overcast
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 26.62 feet using Solinst Water Depth: 20.21 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVN 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 1.7 gallons to purge
6.39 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.

Purge Vol. (gal)	<u>0.6</u>	<u>1.2</u>	<u>1.8</u>	_____
Time (Min.)	<u>10:50</u>	<u>10:52</u>	<u>10:54</u>	_____
Temperature (C°)	<u>12.2</u>	<u>11.8</u>	<u>11.6</u>	_____
pH (Units)	<u>7.69</u>	<u>7.67</u>	<u>7.59</u>	_____
Conductivity at 25°C (umhos/cm)	<u>.721</u>	<u>.728</u>	<u>.735</u>	_____
Total Volume Purged	_____	_____	_____	_____ gallons
Water Appearance (describe color, clarity odor):	_____	_____	_____	_____

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?	to 4°C?	Y	N
VOCs	8260	2x40-ml vials	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	N	Y	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 7-50
 Sample Date: 6/10/98
 Sample Time: 10:30

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 09:4 Activity End: 1035
 Weather: _____
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WELL DATA

Well Depth: 50.0 feet using Solinst Water Depth: 19.72 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 8.3 gallons to purge
30.28 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.

Purge Vol. (gal)	<u>2.8</u>	<u>5.6</u>	<u>8.4</u>	
Time (Min.)	<u>0459</u>	<u>10:13</u>	<u>1025</u>	
Temperature (C°)	<u>12.7</u>	<u>13.0</u>	<u>12.5</u>	
pH (Units)	<u>7.75</u>	<u>7.72</u>	<u>7.68</u>	
Conductivity at 25°C (umhos/cm)	<u>.733</u>	<u>.746</u>	<u>.740</u>	
Total Volume Purged	<u>8.5</u> gallons			
Water Appearance (describe color, clarity odor):	<u>clear</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.

Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vials	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	N	Y	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) P Kaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 4-33
 Sample Date: 6/10/98
 Sample Time: 0835

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0800 Activity End: 0842
 Weather: 50% overcast
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 27.3 feet using Solinst Water Depth: 17.63 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: feet Protective Casing Stickup: feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: feet
 Floating Product Thickness: feet using (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: ppm Well Mouth: ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 2.6 gallons to purge
9.67 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): (+) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.

Purge Vol. (gal)	<u>0.9</u>	<u>1.8</u>	<u>2.7</u>	
Time (Min.)	<u>0823</u>	<u>0827</u>	<u>0831</u>	
Temperature (C°)	<u>14.3</u>	<u>14.2</u>	<u>14.0</u>	
pH (Units)	<u>6.99</u>	<u>7.23</u>	<u>7.38</u>	
Conductivity at 25°C ($\mu\text{mhos/cm}$)	<u>1705</u>	<u>(PK) 1724.613</u>	<u>.730</u>	
Total Volume Purged	<u>2.8</u>			gallons
Water Appearance (describe color, clarity, odor):	<u>gray, translucent, suspended particles</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (+) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.
 Sample Water Appearance (color, clarity, odor): same

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vials	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	N	Y	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) P. Kaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 86-10
 Sample Date: 6/11/98
 Sample Time: 1445

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1415 Activity End: 1454
 Weather: Indoors
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WELL DATA

Well Depth: 27.1 feet using Solinst Water Depth: 16.17 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 3 gallons to purge
10.93 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): ~~(1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decon for stainless steel bailer.~~ Dedicated PVC bailer

Purge Vol. (gal)	1	2	3
Time (Min.)	<u>1430</u>	<u>1435</u>	<u>1440</u>
Temperature (C°)	<u>15.4</u>	<u>15.0</u>	<u>14.7</u>
pH (Units)	<u>7.17</u>	<u>7.19</u>	<u>7.21</u>
Conductivity at 25°C (umhos/cm)	<u>1.83</u>	<u>1.94</u>	<u>1.98</u>
Total Volume Purged	_____ gallons		
Water Appearance (describe color, clarity odor):	<u>clear</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): ~~(1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decon for stainless steel bailer.~~ Dedicated PVC bailer
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vials	HCl	Y	(N)	(Y)	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	(Y)	N	(Y)	N
Total CN	335.3	1x500-ml poly	NaOH	Y	(N)	(Y)	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	(N)	(Y)	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) P Kaczor
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 86-15
 Sample Date: 6/11/98
 Sample Time: 1517

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1458 Activity End: 1525
 Weather: indoprs
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WELL DATA

Well Depth: 25.3 feet using Solinst Water Depth: 15.38 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/R (1.5 in)
 Column feet X () .16 gal/R (2 in) X 3 casing volumes = 2.7 gallons to purge
9.42 () .65 gal/R (4 in)
 () _____ gal/R (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer. Dedicated PVC bailer.

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (µmhos/cm) mS/cm	Total Volume Purged	Water Appearance (describe color, clarity odor)
<u>0.9</u>	<u>1504</u>	<u>15.6</u>	<u>7.11</u>	<u>2.48</u>	<u>1.8</u>	<u>Clear</u>
<u>2.7</u>	<u>1508</u>	<u>15.3</u>	<u>7.07</u>	<u>2.43</u>	<u>2.7</u>	<u>Clear</u>
<u>15.3</u>	<u>1513</u>	<u>15.2</u>	<u>7.09</u>	<u>2.32</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer. Dedicated PVC bailer
 Sample Water Appearance (color, clarity, odor): Clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?	to 4°C?	Y	N
VOCs	8260	2x40-ml vials	HCl	Y	(N)	(Y)	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	(Y)	N	(Y)	N
Total CN	335.3	1x500-ml poly	NaOH	Y	(N)	(Y)	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	(N)	(Y)	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) P. Kaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-2
 Sample Date: 6/12/98
 Sample Time: 0834

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0817 Activity End: 0843
 Weather: 70s, Sunny, breezy
 Well Type and Location: 2-inch PVC

WATER LEVEL/WELL DATA

Well Depth: 15.4 feet using Solinst Water Depth: 11.75 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 1.7 gallons to purge
3.65 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Disposable bailer

Purge Vol. (gal)	<u>0.6</u>	<u>1.2</u>	<u>1.8</u>	
Time (Min.)	<u>0828</u>	<u>0829</u>	<u>0831</u>	
Temperature (C°)	<u>13.7</u>	<u>13.1</u>	<u>13.1</u>	
pH (Units)	<u>6.54</u>	<u>6.74</u>	<u>6.89</u>	
Conductivity at 25°C (umhos/cm)	<u>1.21</u>	<u>1.14</u>	<u>1.14</u>	
Total Volume Purged	<u>3.0</u>			gallons
Water Appearance (describe color, clarity odor):	<u>gray translucent, silty</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Disposable bailer

Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?	to 4°C?		
VOCs	8260	2x40-ml vial	HCl	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/>	N	<input checked="" type="checkbox"/>	N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) PKaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES (Dup: MW-103)

GROUNDWATER SAMPLE RECORD

Sample No.: MW-4
 Sample Date: 6/12/98
 Sample Time: 1100

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1053 Activity End: 1115
 Weather: Sunny 80
 Well Type and Location: 2-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 21.0 feet using Solinst Water Depth: 15.65 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVN 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 2.4 gallons to purge
5.35 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Disposable bailer

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (umhos/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor):
<u>0.8</u>	<u>1055</u>	<u>18.1</u>	<u>7.13</u>	<u>1.30</u>	<u>1.6</u>	<u>light brown translucent silty</u>
<u>1.6</u>	<u>1056</u>	<u>18.0</u>	<u>7.14</u>	<u>1.37</u>	<u>2.4</u>	
<u>2.4</u>	<u>1058</u>	<u>17.9</u>	<u>7.14</u>	<u>1.35</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Disposable bailer

Sample Water Appearance (color, clarity, odor): brown, opaque, silty

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vial	HCl	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/> N	Y <input checked="" type="checkbox"/> N

OTHER OBSERVATIONS

collect dup MW-103

NAME (Print) P Kaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-5
 Sample Date: 6/12/98
 Sample Time: 0927

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0918 Activity End: 0933
 Weather: Sunny breezy
 Well Type and Location: 2-inch PVC

WATER LEVEL/WELL DATA

Well Depth: 20.8 feet using Solinst Water Depth: 15.86 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 2.4 gallons to purge
4.94 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Disposable bailer

Purge Vol. (gal)	<u>0.9</u>	<u>1.6</u>	<u>2.4</u>	
Time (Min.)	<u>0922</u>	<u>0923</u>	<u>0924</u>	
Temperature (C°)	<u>11.4</u>	<u>13.3</u>	<u>13.0</u>	
pH (Units)	<u>7.09</u>	<u>7.05</u>	<u>7.03</u>	
Conductivity at 25°C (umhos/cm)	<u>1.37</u>	<u>1.23</u>	<u>1.21</u>	
Total Volume Purged	<u>2.5</u>			gallons
Water Appearance (describe color, clarity odor):	<u>light gray-brown translucent</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Disposable bailer

Sample Water Appearance (color, clarity, odor): light gray translucent

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field	Cool
				Filtered?	to 4°C?
VOCs	8260	2x40-ml vial	HCl	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
				Y N	Y N

OTHER OBSERVATIONS

NAME (Print) PKaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-7
 Sample Date: 6/12/98
 Sample Time: 0951

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0942 Activity End: 0959
 Weather: _____
 Well Type and Location: 2-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 18.2 feet using Solinst Water Depth: 14.66 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)

Well Condition (see Note 1): _____

Measuring Device Decontamination Procedure: Liquinox/Distilled water

PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 1.5 gallons to purge
3.54 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Disposable bailer

Purge Vol. (gal)	0.5	1.0	1.5
Time (Min.)	<u>0947</u>	<u>0948</u>	<u>0949</u>
Temperature (C°)	<u>13.1</u>	<u>12.4</u>	<u>12.3</u>
pH (Units)	<u>7.12</u>	<u>7.14</u>	<u>7.07</u>
Conductivity at 25°C (umhos/cm)	<u>1.17</u>	<u>1.17</u>	<u>1.17</u>
Total Volume Purged			
Water Appearance (describe color, clarity odor):	<u>light brown slightly silty</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Disposable bailer

Sample Water Appearance (color, clarity, odor): light brown slightly silty

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vial	HCl	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
				Y N	Y N

OTHER OBSERVATIONS

NAME (Print) Kaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-9

Sample Date: 6/11/98

Sample Time: 1203

SITE/SAMPLE LOCATION:

Site Name: AlliedSignal South Bend

Project No.: 9822-02

Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)

Activity Start: 1148

Activity End: 1210

Weather: 70s, mostly sunny

Well Type and Location: 2-inch PVC

WATER LEVEL/WELL DATA:

Well Depth: 19.8 feet using Solinst Water Depth: 14.52 feet using Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)

Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet

Floating Product Thickness: _____ feet using _____ (measuring device)

Well Condition (see Note 1): ok, locked

Measuring Device Decontamination Procedure: Liquinox/Distilled water

PI Meter ID: OVM 580 B

Ambient Air: _____ ppm

Well Mouth: _____ ppm

PURGING PROCEDURES:

Height of Water () .092 gal/ft (1.5 in)

Column feet X (X) .16 gal/ft (2 in)

X 3 casing volumes = 2.4 gallons to purge

5.28 () .65 gal/ft (4 in)
() gal/ft (in)

Purge Method (see Note 2): Disposable bailer

Purge Vol. (gal)	0.8	1.6	2.4	
Time (Min.)	<u>1156</u>	<u>1158</u>	<u>1201</u>	
Temperature (C°)	<u>15.9</u>	<u>14.5</u>	<u>14.0</u>	
pH (Units)	<u>6.68</u>	<u>6.66</u>	<u>6.69</u>	
Conductivity at 25°C (umhos/cm) <u>ms/cm</u>	<u>1.68</u>	<u>1.73</u>	<u>1.72</u>	
Total Volume Purged	<u>2.5</u> gallons			
Water Appearance (describe color, clarity, odor):	<u>brown, opaque, silty</u>			

SAMPLING PROCEDURES:

Sampling Procedure (see Note 2): Disposable bailer

Sample Water Appearance (color, clarity, odor): same

ANALYTICAL PARAMETERS:

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vial	HCl	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/>	N	<input checked="" type="checkbox"/>	N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	N	<input checked="" type="checkbox"/>	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) PKaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
(2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-10
 Sample Date: 6/11/98
 Sample Time: 1938

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1920 Activity End: 1951
 Weather: 70s, overcast
 Well Type and Location: 2-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 19.43 feet using Solinst Water Depth: 12.72 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)

Well Condition (see Note 1): _____

Measuring Device Decontamination Procedure: Liquinox/Distilled water

PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 3.3 gallons to purge
6.71 () .65 gal/ft (4 in)

Purge Method (see Note 2): Disposible bailer stainless-steel bailer

Purge Vol. (gal)	1.1	2.2	3.3
Time (Min.)	<u>1928</u>	<u>1931</u>	<u>1934</u>
Temperature (C°)	<u>18.4</u>	<u>17.6</u>	<u>17.8</u>
pH (Units)	<u>7.75</u>	<u>7.65</u>	<u>7.72</u>
Conductivity at 25°C (umhos/cm)	<u>.303</u>	<u>.166</u>	<u>.149</u>
Total Volume Purged	_____ gallons		

Water Appearance (describe color, clarity odor): gray opaque

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Disposible bailer stainless-steel bailer

Sample Water Appearance (color, clarity, odor): brown, opaque, silty

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?	to 4°C?		
VOCs	8260	2x40-ml vial	HCl	Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/>	N	<input checked="" type="checkbox"/>	N
Total CN	335.3	1x500-ml poly	NaOH	Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) P Kaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-11
 Sample Date: 6/1/98
 Sample Time: 5:20 2015

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1955 Activity End: 2030
 Weather: 70s, overcast, breezy, tornado watch
 Well Type and Location: 2-inch PVC

WATER LEVEL/WEIR DATA

Well Depth: 21.73 feet using Solinst Water Depth: 15.47 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: 3/8" max feet using max disposable bailer
 (measuring device)
 Well Condition (see Note 1): OK
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OMV 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/R (1.5 in)
 Column feet X (X) .16 gal/R (2 in) X 3 casing volumes = 3 gallons to purge
6.26 () .65 gal/R (4 in)
 () _____ gal/R (_____ in)
 Purge Method (see Note 2): Disposable bailer

Purge Vol. (gal)	1.0	2.0	3.0	
Time (Min.)				
Temperature (C°)	/	/	/	
pH (Units)	/	/	/	
Conductivity at 25°C (umhos/cm)				
Total Volume Purged	<u>3</u> gallons			
Water Appearance (describe color, clarity, odor):	<u>gray, translucent, product</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Disposable bailer

Sample Water Appearance (color, clarity, odor): gray, translucent, sheen

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field	Cool
				Filtered?	to 4°C?
VOCs	8260	2x40-ml vial	HCl	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
				Y N	Y N

OTHER OBSERVATIONS

Product floating on water table. purge 3 gallons, then sample.

NAME (Print)

P. Kaczor

SIGNATURE:

[Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES (Dup: MW-102)

GROUNDWATER SAMPLE RECORD

Sample No.: MW-12
 Sample Date: 6/12/98
 Sample Time: 0858

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0850 Activity End: 0912
 Weather: Clear Sunny Breezy
 Well Type and Location: 2-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 13.85 feet using Solinst Water Depth: 10.41 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)

Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 1.8 gallons to purge
3.44 () .65 gal/ft (4 in)
 Purge Method (see Note 2): Disposable bailer

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (umhos/cm)	Total Volume Purged	Water Appearance (describe color, clarity odor)
<u>.6</u>	<u>0853</u>	<u>15.0</u>	<u>7.48</u>	<u>.554</u>	<u>3.0</u> gallons	<u>light gray translucent slightly oily -> clear</u>
<u>1.2</u>	<u>0855</u>	<u>14.3</u>	<u>7.34</u>	<u>.564</u>		
<u>1.8</u>	<u>0856</u>	<u>14.2</u>	<u>7.32</u>	<u>.568</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Disposable bailer
light gray drains from slightly silty -> clear
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool to 4°C?
				Filtered?		
VOCs	8260	2x40-ml vial	HCl	Y	<input checked="" type="checkbox"/>	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/>	N	N
Total CN	335.3	1x500-ml poly	NaOH	Y	<input checked="" type="checkbox"/>	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	<input checked="" type="checkbox"/>	N
				Y	N	Y

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: HW-13
 Sample Date: 6/10/98
 Sample Time: 09:19

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0900 Activity End: 09:30
 Weather: overcast
 Well Type and Location: 2-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 18.77 feet using Solinst Water Depth: 15.23 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 1.8 gallons to purge
3.54 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Disposable bailer

Purge Vol. (gal)	<u>0.6</u>	<u>1.2</u>	<u>1.8</u>	
Time (Min.)	<u>0912</u>	<u>0914</u>	<u>0917</u>	
Temperature (C°)	<u>12.4</u>	<u>12.7</u>	<u>12.6</u>	
pH (Units)	<u>7.44</u>	<u>7.48</u>	<u>7.50</u>	
Conductivity at 25°C (umhos/cm)	<u>807</u>	<u>809</u>	<u>807</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity, odor):	<u>Slightly turbid no odor</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Disposable bailer
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vial	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	N	Y	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) P. Kaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: S3
 Sample Date: 6/11/98
 Sample Time: 1805

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1740 Activity End: 1811
 Weather: 70s, rain
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEELS DATA

Well Depth: 24.6 feet using Solinst Water Depth: 19.76 feet using Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____
(measuring device)
 Well Condition (see Note 1): ok, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 9.3 gallons to purge
4.84 (X) .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

	<u>3.1</u>	<u>6.2</u>	<u>9.3</u>
Purge Vol. (gal)	<u>3.1</u>	<u>6.2</u>	<u>9.3</u>
Time (Min.)	<u>1754</u>	<u>1757</u>	<u>1800</u>
Temperature (C°)	<u>13.6</u>	<u>13.9</u>	<u>13.1</u>
pH (Units)	<u>8.04</u>	<u>7.78</u>	<u>7.76</u>
Conductivity at 25°C (umhos/cm)	<u>.530</u>	<u>.510</u>	<u>.519</u>
Total Volume Purged	<u>9.5</u>		
Water Appearance (describe color, clarity odor):	<u>clear, suspended particles</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> Y N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N

OTHER OBSERVATIONS

NAME (Print) P. Kaczor
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 54A
 Sample Date: 6/10/98
 Sample Time: 1247

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1215 Activity End: 1255
 Weather: 60s, partly cloudy, breezy
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 31.6 feet using Solinst Water Depth: 13.54 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 5.0 gallons to purge
18.06 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump or (2) ~~stainless steel bailer~~ Liquinox and distilled water
~~decon for stainless steel bailer.~~

Purge Vol. (gal)	<u>1.7</u>	<u>3.4</u>	<u>5.0</u>
Time (Min.)	<u>12:39</u>	<u>12:42</u>	<u>12:45</u>
Temperature (C°)	<u>13.2</u>	<u>12.6</u>	<u>12.9</u>
pH (Units)	<u>7.25</u>	<u>7.24</u>	<u>7.19</u>
Conductivity at 25°C (umhos/cm)	<u>.979</u>	<u>.980</u>	<u>0.983</u>
Total Volume Purged	<u>6</u> gallons		
Water Appearance (describe color, clarity odor):	<u>Cloudy, some slight odor</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) ~~stainless steel bailer~~ Liquinox and distilled
~~water decon for stainless steel bailer.~~
 Sample Water Appearance (color, clarity, odor): Same

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?	to 4°C?	Y	N
VOCs	8260	2x40-ml vials	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1x500-ml A.G.	H2SO4	Y	N	Y	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 59
 Sample Date: 6/11/98
 Sample Time: 1313

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1249 Activity End: 1323
 Weather: 70s, rain
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEEL DATA

Well Depth: 21.1 feet using Solinst Water Depth: 16.82 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 8.3 gallons to purge
4.28 (X) .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

Purge Vol. (gal)	<u>2.8</u>	<u>5.6</u>	<u>8.3</u>
Time (Min.)	<u>1257</u>	<u>1302</u>	<u>1311</u>
Temperature (C°)	<u>15.7</u>	<u>15.1</u>	<u>15.9</u>
pH (Units)	<u>7.19</u>	<u>7.04</u>	<u>6.98</u>
Conductivity at 25°C (umhos/cm)	<u>1.27</u>	<u>1.31</u>	<u>1.33</u>
Total Volume Purged	_____ gallons		
Water Appearance (describe color, clarity odor):	<u>brown, silty, suspended particles</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
				Y N	Y N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 815

Sample Date: 6/11/98

Sample Time: 1043

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1815 Activity End: 1855
 Weather: 70s, rain
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEEL DATA

Well Depth: 22.0 feet using Solinst Water Depth: 18.57 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 6.6 gallons to purge
6.43 3.43 (X) .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): (4) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.
Disposable bailer

Purge Vol. (gal)	<u>2.2</u>	<u>4.4</u>	<u>6.6</u>
Time (Min.)	<u>1831</u>	<u>1839</u>	<u>1841</u>
Temperature (C°)	<u>14.9</u>	<u>14.7</u>	<u>14.8</u>
pH (Units)	<u>7.24</u>	<u>7.16</u>	<u>7.19</u>
Conductivity at 25°C (umhos/cm) mS/cm	<u>1.54</u>	<u>1.49</u>	<u>1.53</u>
Total Volume Purged	_____ gallons		
Water Appearance (describe color, clarity odor):	<u>brown, opaque, silty</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (4) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.
disposable bailer
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field	Cool
				Filtered?	to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
				Y <input type="checkbox"/>	N <input type="checkbox"/>

OTHER OBSERVATIONS

NAME (Print) Pkaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: SK
 Sample Date: 6/11/98
 Sample Time: 1632

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1550 Activity End: 1640
 Weather: 70s, rain
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEEL DATA

Well Depth: 21.5 feet using Solinst Water Depth: 17.71 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 7.5 gallons to purge
3.79 (X) .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): (1) Dedicated bladder pump; (2) dedicated PVC bailer, or (3) disposable bailer.

	<u>2.5</u>	<u>5.0</u>	<u>7.5</u>
Purge Vol. (gal)	<u>2.5</u>	<u>5.0</u>	<u>7.5</u>
Time (Min.)	<u>1616</u>	<u>1620</u>	<u>1629</u>
Temperature (C°)	<u>13.4</u>	<u>13.1</u>	<u>13.9</u>
pH (Units)	<u>7.32</u>	<u>7.38</u>	<u>7.45</u>
Conductivity at 25°C (umhos/cm) mS/cm	<u>2.41</u>	<u>1.95</u>	<u>1.88</u>
Total Volume Purged			
Water Appearance (describe color, clarity odor)			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump; (2) dedicated PVC bailer, or (3) disposable bailer.
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N

OTHER OBSERVATIONS

NAME (Print) P. Kaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 517
 Sample Date: 6/10/98
 Sample Time: 1621

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1555 Activity End: 1630
 Weather: 80°, sunny
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEEL DATA

Well Depth: 24.8 feet using Solinst Water Depth: 17.94 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 13.5 gallons to purge
6.96 (X) .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

	4.5	9.0	13.5
Purge Vol. (gal)	<u>4.5</u>	<u>9.0</u>	<u>13.5</u>
Time (Min.)	<u>1607</u>	<u>1613</u>	<u>1618</u>
Temperature (C°)	<u>15.9</u>	<u>14.6</u>	<u>15.0</u>
pH (Units)	<u>7.52</u>	<u>7.42</u>	<u>7.41</u>
Conductivity at 25°C (µmhos/cm)	<u>1768</u>	<u>788</u>	<u>789</u>
Total Volume Purged	_____ gallons		
Water Appearance (describe color, clarity odor):	<u>black, opaque, then gray/translucent</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.
 Sample Water Appearance (color, clarity, odor): gray, translucent

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool to 4°C?
				Filtered?		
VOCs	8260	2x40-ml vials	HCl	Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/>	N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> N
				Y	N	Y N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 520
 Sample Date: 6/19/98
 Sample Time: 1250

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1225 Activity End: 1256
 Weather: 50s, overcast, breezy
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEEL DATA

Well Depth: 18.8 feet using Solinst Water Depth: 14.30 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 9 gallons to purge
4.5 (X) .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

	<u>3</u>	<u>6</u>	<u>9</u>	
Purge Vol. (gal)	<u>3</u>	<u>6</u>	<u>9</u>	
Time (Min.)	<u>1237</u>	<u>1240</u>	<u>1243</u>	
Temperature (C°)	<u>12.3</u>	<u>12.0</u>	<u>11.9</u>	
pH (Units)	<u>7.47</u>	<u>7.38</u>	<u>7.31</u>	
Conductivity at 25°C (umhos/cm)	<u>1.46</u>	<u>1.44</u>	<u>1.45</u>	
Total Volume Purged	<u>9</u>			gallons
Water Appearance (describe color, clarity odor):	<u>Clear</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.
 Sample Water Appearance (color, clarity, odor): Clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	N <input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> Y	N <input checked="" type="checkbox"/> N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> Y	N <input checked="" type="checkbox"/> N

OTHER OBSERVATIONS

NAME (Print) P. Kaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 521
 Sample Date: 6/10/98
 Sample Time: 1349

SITE/SAMPLE LOCATION:

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: _____ Activity End: 1355
 Weather: 70s, sunny
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEED DATA:

Well Depth: 23.4 feet using Solinst Water Depth: 14.42 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES:

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 16.5 gallons to purge
8.48 (X) .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

	<u>5.5</u>	<u>11.0</u>	<u>16.5</u>
Purge Vol. (gal)			
Time (Min.)	<u>1334</u>	<u>1344</u>	
Temperature (C°)	<u>13.9</u>	<u>12.3</u>	
pH (Units)	<u>7.50</u>	<u>7.21</u>	<u>7.32</u>
Conductivity at 25°C (umhos/cm)	<u>2.33</u>	<u>2.37</u>	<u>2.45</u>
Total Volume Purged			
Water Appearance (describe color, clarity odor):	<u>Clear (after initial black particulate)</u>		

SAMPLING PROCEDURES:

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS:

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vials	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 522
 Sample Date: 6/9/98
 Sample Time: 1449

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1413 Activity End: 1459
 Weather: 50s, overcast
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEEL DATA

Well Depth: 26.0 feet using Solinst Water Depth: 14.02 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OMV 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 23.3 gallons to purge
11.98 (X) .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVG bailer, or (3) disposable bailer.

Purge Vol. (gal)	<u>7.8</u>	<u>15.6</u>	<u>23.4</u>	
Time (Min.)	<u>1430</u>	<u>1440</u>	<u>1445</u>	
Temperature (C°)	<u>12.1</u>	<u>12.0</u>	<u>11.8</u>	
pH (Units)	<u>7.61</u>	<u>7.44</u>	<u>7.44</u>	
Conductivity at 25°C ^{mS/cm} _(umhos/cm)	<u>1.38</u>	<u>1.34</u>	<u>1.36</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):				

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVG bailer, or (3) disposable bailer.

Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?	to 4°C?		
VOCs	8260	2x40-ml vials	HCl	Y	(N)	(S)	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	(Y)	N	(Y)	N
Total CN	335.3	1x500-ml poly	NaOH	Y	(N)	(Y)	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	(N)	(Y)	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) P. Kaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: S23
 Sample Date: ~~6/9/98~~ 6/10/98
 Sample Time: 1708

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1500 Activity End: 1713
 Weather: 50s, overcast
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEEL DATA

Well Depth: 28.2 feet using Solinst Water Depth: 17.64 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 20.6 gallons to purge
10.56 (X) .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

	<u>6.81</u>	<u>13.5</u>	<u>20.6</u>	<u>13.5</u>	<u>20.6</u>
Purge Vol. (gal)	<u>6.81</u>	<u>13.5</u>	<u>20.6</u>	<u>13.5</u>	<u>20.6</u>
Time (Min.)	<u>1510</u>	<u>1655</u>	<u>1659</u>	<u>1704</u>	<u>1704</u>
Temperature (C°)	<u>12.3</u>	<u>14.2</u>	<u>13.4</u>	<u>14.0</u>	<u>14.0</u>
pH (Units)	<u>7.64</u>	<u>7.67</u>	<u>7.51</u>	<u>7.48</u>	<u>7.48</u>
Conductivity at 25°C (µmhos/cm)	<u>820</u>	<u>.800</u>	<u>.790</u>	<u>.796</u>	<u>.796</u>
Total Volume Purged					
Water Appearance (describe color, clarity odor):	<u>clear</u>				

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

Sample Water Appearance (color, clarity, odor): Same

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool to 4°C?
				Filtered?		
VOCs	8260	2x40-ml vials	HCl	Y	(N)	(Y) N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	(Y)	N	(Y) N
Total CN	335.3	1x500-ml poly	NaOH	Y	(N)	(Y) N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	(N)	(Y) N
				Y	N	Y N

OTHER OBSERVATIONS

Controller quit working at 13 gallons
6/10/98: New controller, complete sampling

NAME (Print)

P. Kaczor

SIGNATURE:

[Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 525
 Sample Date: 6/9/98
 Sample Time: 1344

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: _____ Activity End: 1355
 Weather: 60° overcast
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WEED DATA

Well Depth: 26.3 feet using Solinst Water Depth: 14.88 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 3.3 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.

Purge Vol. (gal)	1.1	2.2	3.3	
Time (Min.)	<u>1337</u>	<u>1339</u>	<u>1341</u>	
Temperature (C°)	<u>13.2</u>	<u>12.9</u>	<u>12.9</u>	
pH (Units)	<u>7.12</u>	<u>7.14</u>	<u>7.11</u>	
Conductivity at 25°C <u>ms/cm</u> (<u>umhos/cm</u>)	<u>1.44</u>	<u>1.44</u>	<u>1.44</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity, odor):	<u>clear then black/opaque</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/>
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/>
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/>
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/>

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 527
 Sample Date: 6/10/98
 Sample Time: 1735

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1715 Activity End: 1740
 Weather: 90° sunny, breezy
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 27.9 feet using Solinst Water Depth: 17.96 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)

Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 2.7 gallons to purge
9.94 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)

Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decan for stainless steel bailer.

Purge Vol. (gal)	Time (Min.)	Temperature (C°)	pH (Units)	Conductivity at 25°C (umhos/cm)	Total Volume Purged
<u>0.9</u>	<u>1729</u>	<u>14.3</u>	<u>7.36</u>	<u>1.10</u>	_____ gallons
<u>1.8</u>	<u>1730</u>	<u>13.0</u>	<u>7.3</u>	<u>1.1</u>	_____ gallons
<u>2.7</u>	<u>1731</u>	<u>12.0</u>	<u>7.2</u>	<u>1.1</u>	_____ gallons

Water Appearance (describe color, clarity, odor): gray cloudy "rotten egg" odor

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decan for stainless steel bailer.

Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?	to 4°C?		
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/>	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/>	N <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/>	N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/>	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/>	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) PKaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 2D
 Sample Date: 6/11/98
 Sample Time: 1520

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1335 Activity End: 1536
 Weather: 70s, rain
 Well Type and Location: 2-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 189.3 feet using Solinst Water Depth: 17.20 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 82.1 gallons to purge
171.1 () .65 gal/ft (4 in)
 Purge Method (see Note 2): ~~Disposable bailer~~ Dedicated bladder pump

Purge Vol. (gal)	<u>27.3</u>	<u>54.5</u>	<u>82.1</u>	
Time (Min.)	<u>1414</u>	<u>1445</u>	<u>1515</u>	
Temperature (C°)	<u>14.7</u>	<u>14.5</u>	<u>14.5</u>	
pH (Units)	<u>7.26</u>	<u>7.38</u>	<u>7.42</u>	
Conductivity at 25°C (umhos/cm)	<u>1.24</u>	<u>1.25</u>	<u>1.26</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>black, opaque, egg-like odor, clearing at 5 gal.</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): ~~Disposable bailer~~ Dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vial	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	N	Y	N
				Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 2D
 Sample Date: 6/11/98
 Sample Time: 1520

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1335 Activity End: 1530
 Weather: 70s, rain
 Well Type and Location: 2-inch PVC

WATER LEVEL/WELL DATA

Well Depth: 188.3 feet using Solinst Water Depth: 17.20 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): ok, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 82.1 gallons to purge
171.1 () .65 gal/ft (4 in)
 Purge Method (see Note 2): ~~Disposable bailer~~ Dedicated bladder pump

Purge Vol. (gal)	<u>27.3</u>	<u>54.5</u>	<u>82.1</u>	
Time (Min.)	<u>1414</u>	<u>1445</u>	<u>1515</u>	
Temperature (C°)	<u>14.7</u>	<u>14.5</u>	<u>14.5</u>	
pH (Units)	<u>7.26</u>	<u>7.38</u>	<u>7.42</u>	
Conductivity at 25°C (umhos/cm)	<u>1.24</u>	<u>1.25</u>	<u>1.26</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>black, opaque, egg-like odor, clearing at 5 gal.</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): ~~Disposable bailer~~ Dedicated bladder pump
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vial	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	N	Y	N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 4D
 Sample Date: 6/10/98
 Sample Time: 1910

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1745 Activity End: 1940
 Weather: 70%, Sunny, breezy
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 192.7 feet using Solinst Water Depth: 20.99 feet using Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____
(measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 47.4 gallons to purge
171.71 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decon for stainless steel bailer.

Purge Vol. (gal)	<u>15.8</u>	<u>31.6</u>	<u>47.4</u>	
Time (Min.)	<u>18:23</u>	<u>18:45</u>	<u>19:05</u>	
Temperature (C°)	<u>15</u>	<u>15</u>	<u>15</u>	
pH (Units)	<u>7.5</u>	<u>7.5</u>	<u>7.5</u>	
Conductivity at 25°C <small>(mhos/cm)</small>	<u>1.3</u>	<u>1.2</u>	<u>1.2</u>	
Total Volume Purged	gallons			
Water Appearance (describe color, clarity, odor):	<u>black, opaque, egg-like odor, then clear</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decon for stainless steel bailer.
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool to 4°C?
				Filtered?		
VOCs	8260	2x40-ml vials	HCl	Y	<input checked="" type="checkbox"/>	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/>	N	<input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y	<input checked="" type="checkbox"/>	N
Total Phenols	420.2	1x500-ml A.G.	H2SO4	Y	<input checked="" type="checkbox"/>	N
				Y	N	Y N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

Dup of 4D

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-101
Sample Date: 6/10/98
Sample Time: _____

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
Activity Start: _____ Activity End: _____
Weather: _____
Well Type and Location: 1.5-inch PVC

WATER LEVEL/WEED DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)
Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet
Floating Product Thickness: _____ feet using _____ (measuring device)
Well Condition (see Note 1): _____
Measuring Device Decontamination Procedure: Liquinox/Distilled water
PI Meter ID: OV M 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
Column feet X () .16 gal/ft (2 in) X 3 casing volumes = _____ gallons to purge
() .65 gal/ft (4 in)
() _____ gal/ft (____ in)
Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.

Purge Vol. (gal) _____
Time (Min.) _____
Temperature (C°) _____
pH (Units) _____
Conductivity at 25°C (umhos/cm) _____
Total Volume Purged _____ gallons
Water Appearance (describe color, clarity odor): _____

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.
Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y N	Y N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y N	Y N
Total CN	335.3	1x500-ml poly	NaOH	Y N	Y N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y N	Y N

OTHER OBSERVATIONS
See Record for 4D
NAME (Print) PKaczor
SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
(2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 5D
 Sample Date: 6/10/98
 Sample Time: 1509

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1355 Activity End: 1525
 Weather: 70s, sunny, breezy
 Well Type and Location: 1.5-inch PVC

WATER LEVEL/WELL DATA

Well Depth: 192.2 feet using Solinst Water Depth: 20.79 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 47.3 gallons to purge
171.41 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decon for stainless steel bailer.

Purge Vol. (gal)	<u>15.8</u>	<u>31.6</u>	<u>47.3</u>	
Time (Min.)	<u>1424</u>	<u>1444</u>	<u>1505</u>	
Temperature (C°)	<u>14.6</u>	<u>14.6</u>	<u>14.3</u>	
pH (Units)	<u>7.56</u>	<u>7.66</u>	<u>7.78</u>	
Conductivity at 25°C (µmhos/cm)	<u>1.21</u>	<u>1.15</u>	<u>1.16</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor)	<u>clear, egg-like odor</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decon for stainless steel bailer.
 Sample Water Appearance (color, clarity, odor): clear "rotten egg" odor

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Preservative/	Field	Cool
		Volume, Type	Volume	Filtered?	to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y N	Y N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y N	Y N
Total CN	335.3	1x500-ml poly	NaOH	Y N	Y N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y N	Y N
				Y N	Y N

OTHER OBSERVATIONS

NAME (Print) PKaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

Dup of 5D

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: MW-100
Sample Date: 6/10/98
Sample Time:

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
Activity Start: _____ Activity End: _____
Weather: 70s, sunny, breezy
Well Type and Location: 1.5-inch PVC

WATER LEVEL/WELL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using _____ Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)
Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet
Floating Product Thickness: _____ feet using _____ (measuring device)
Well Condition (see Note 1): OK, locked
Measuring Device Decontamination Procedure: Liquinox/Distilled water
PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
Column feet X () .16 gal/ft (2 in) X 3 casing volumes = _____ gallons to purge
() .65 gal/ft (4 in)
() _____ gal/ft (_____ in)
Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.
~~Purge Vol. (gal) _____
Time (Min.) _____
Temperature (C°) _____
pH (Units) _____
Conductivity at 25°C (umhos/cm) _____
Total Volume Purged _____ gallons
Water Appearance (describe color, clarity odor): _____~~

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.
Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool	
				Filtered?		to 4°C?	
VOCs	8260	2x40-ml vials	HCl	Y	N	Y	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y	N	Y	N
Total CN	335.3	1x500-ml poly	NaOH	Y	N	Y	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y	N	Y	N
				Y	N	Y	N

OTHER OBSERVATIONS _____
NAME (Print) P. Kaczor
SIGNATURE: [Signature]

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
(2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: 8D
 Sample Date: 6/11/98
 Sample Time: 1730

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1645 Activity End: 1800 1740
 Weather: 70s, intermittent rain
 Well Type and Location: 2 1/2-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: 59.5 feet using Solinst Water Depth: 16.93 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (B)(X) .092 gal/ft (1.5 in)
 Column feet X (X) .16 gal/ft (2 in) X 3 casing volumes = 20.4 gallons to purge
42.57 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decon for stainless steel bailer.

Purge Vol. (gal)	<u>6.8</u>	<u>13.6</u>	<u>20.4</u>	
Time (Min.)	<u>1700</u>	<u>1715</u>	<u>1728</u>	
Temperature (C°)	<u>16.6</u>	<u>16.6</u>	<u>16.3</u>	
pH (Units)	<u>7.31</u>	<u>7.30</u>	<u>7.50</u>	
Conductivity at 25°C (umhos/cm)	<u>1.55</u>	<u>1.51</u>	<u>1.57</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):				

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless steel bailer. Liquinox and distilled water decon for stainless steel bailer.
 Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Preservative/	Field	Cool
		Volume, Type	Volume	Filtered?	to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y N	Y N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y N	Y N
Total CN	335.3	1x500-ml poly	NaOH	Y N	Y N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y N	Y N
				Y N	Y N

OTHER OBSERVATIONS

NAME (Print) PKaczor

SIGNATURE: Rozite

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: D5
 Sample Date: 6/11/98
 Sample Time: 1314

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0730 Activity End: _____
 Weather: 60s, rain
 Well Type and Location: 4-inch galvanized steel
 Project No.: 9822-02

WATER LEVEL/WEEL DATA

Well Depth: 186.8 feet using Solinst Water Depth: 14.58 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 356 gallons to purge
172.22 (X) .65 gal/ft (4 in) _____ gal/ft (_____ in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

Purge Vol. (gal)	<u>112</u>	<u>244</u>	<u>356</u>	
Time (Min.)	<u>0931</u>	<u>11:22</u>	<u>1313</u>	
Temperature (C°)	<u>15.2</u>	<u>16.3</u>	<u>15.1</u>	
pH (Units)	<u>6.75</u>	<u>7.10</u>	<u>7.49</u>	
Conductivity at 25°C (umhos/cm)	<u>484</u>	<u>433</u>	<u>440</u>	
Total Volume Purged				gallons
Water Appearance (describe color, clarity odor):	<u>Clear, gray/semi-opaque at 85 gallons</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	Y <input checked="" type="checkbox"/> N	Y <input checked="" type="checkbox"/> N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/> N	Y <input checked="" type="checkbox"/> N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/> N	Y <input checked="" type="checkbox"/> N

OTHER OBSERVATIONS

NAME (Print) PKaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: D7
 Sample Date: 6/9/98
 Sample Time: 1135

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0840 Activity End: 1145
 Weather: 50% overcast
 Well Type and Location: 4-inch galvanized steel

WATER LEVEL/WEEL DATA

Well Depth: 78.4 feet using Solinst Water Depth: 15.82 feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X 3 casing volumes = 120 gallons to purge
62.58 (X) .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

	40	80	120
Purge Vol. (gal)	<u>40</u>	<u>80</u>	<u>120</u>
Time (Min.)	<u>1000</u>	<u>1041</u>	<u>1131</u>
Temperature (C°)	<u>14.7</u>	<u>14.6</u>	<u>14.7</u>
pH (Units)	<u>6.92</u>	<u>7.70</u>	<u>7.78</u>
Conductivity at 25°C ^{ms/cm} (umho/cm)	<u>.598</u>	<u>.544</u>	<u>.535</u>
Total Volume Purged	<u>122</u> gallons		
Water Appearance (describe color, clarity odor):	<u>clear</u>		

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump, (2) dedicated PVC bailer, or (3) disposable bailer.

Sample Water Appearance (color, clarity, odor): clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field		Cool to 4°C?
				Filtered?		
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	N
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	N
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	N
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	N
				Y N Y N		

OTHER OBSERVATIONS

V: 230 P: 230 PSI: 35

NAME (Print)

Peter Kaczor

SIGNATURE:

[Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: E3
 Sample Date: 6/12/98
 Sample Time: 1034

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1028 Activity End: 1040
 Weather: 80, sunny
 Well Type and Location: Recovery well - naphtha

WATER LEVEL/WELL DATA

Well Depth: _____ feet using _____ Solinst _____ Water Depth: _____ feet using _____ Solinst _____
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well _____
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (____ in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal) 5
 Time (Min.) 1032
 Temperature (C°) 15.5
 pH (Units) 7.38
 Conductivity at 25°C (umhos/cm) 1.29
 Total Volume Purged 5 gallons
 Water Appearance (describe color, clarity odor): gray, translucent, egg-like odor

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="radio"/> N <input type="radio"/>	Y <input checked="" type="radio"/> N <input type="radio"/>
_____	_____	_____	_____	Y <input type="radio"/> N <input type="radio"/>	Y <input type="radio"/> N <input type="radio"/>
_____	_____	_____	_____	Y <input type="radio"/> N <input type="radio"/>	Y <input type="radio"/> N <input type="radio"/>
_____	_____	_____	_____	Y <input type="radio"/> N <input type="radio"/>	Y <input type="radio"/> N <input type="radio"/>

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: RUB 16
 Sample Date: 6/12/98
 Sample Time: 1017

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1810 Activity End: 1020
 Weather: ☀️ sunny
 Well Type and Location: Recovery well -- Naptha

WATER LEVEL/WELL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal) 5
 Time (Min.) 1017
 Temperature (C*) 16.1
 pH (Units) 7.22
 Conductivity at 25°C (umhos/cm) 1.22
 Total Volume Purged 5 gallons
 Water Appearance (describe color, clarity odor): Clear, petroleum-like odor

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 Sample Water Appearance (color, clarity, odor): Clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field	Cool
				Filtered?	to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <u>(N)</u>	<u>(Y)</u> N
				Y N	Y N
				Y N	Y N
				Y N	Y N

OTHER OBSERVATIONS

NAME (Print) PKaczor
 SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: RWB22
 Sample Date: 6/12/98
 Sample Time: 1048 1045

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 1041 Activity End: _____
 Weather: 80°, Sunny
 Well Type and Location: Recovery well - naphtha

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal)	<u>5</u>			
Time (Min.)	<u>1043</u>			
Temperature (C°)	<u>15.1</u>			
pH (Units)	<u>7.24</u>			
Conductivity at 25°C (umhos/cm) / <u>µS/cm</u>	<u>1.23</u>			
Total Volume Purged	<u>5</u> gallons			
Water Appearance (describe color, clarity odor)	<u>black, opaque, egg-like odor</u>			

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot

Sample Water Appearance (color, clarity, odor): same

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
				Y N Y N	
				Y N Y N	
				Y N Y N	
				Y N Y N	

OTHER OBSERVATIONS

NAME (Print) PKaczor

SIGNATURE: [Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: EW-1
 Sample Date: 6/14/98
 Sample Time: 0942

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0930 Activity End: 0945
 Weather: Rainy
 Well Type and Location: Recovery well - VOC

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using _____ Solinst
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal) 5
 Time (Min.) _____
 Temperature (C°) _____
 pH (Units) _____
 Conductivity at 25°C (umhos/cm) _____
 Total Volume Purged _____ gallons
 Water Appearance (describe color, clarity odor): Clear

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 Sample Water Appearance (color, clarity, odor): Clear, air bubbles present

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> N	<input checked="" type="checkbox"/> N
				Y N Y N	
				Y N Y N	
				Y N Y N	
				Y N Y N	

OTHER OBSERVATIONS

Well pump was running, water contained a lot of air bubbles.

NAME (Print) Anne Rozite
 SIGNATURE: Anne Rozite

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: EW-2
 Sample Date: 6/14/98
 Sample Time: 0930

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0920 Activity End: 0935
 Weather: Rainy
 Well Type and Location: Recovery well - VOC

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using _____ Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____
(measuring device)
 Well Condition (see Note 1): OK, locked
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVN 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () gal/ft (in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal) 5
 Time (Min.) _____
 Temperature (C°) _____
 pH (Units) _____
 Conductivity at 25°C (umhos/cm) _____
 Total Volume Purged 5 gallons
 Water Appearance (describe color, clarity odor): Clear

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 Sample Water Appearance (color, clarity, odor): Clear

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/>	Y <input checked="" type="checkbox"/> N
				Y N	Y N
				Y N	Y N
				Y N	Y N
				Y N	Y N

OTHER OBSERVATIONS Well #83 (pump) was not running. Turned on by Reelless then shut off again

NAME (Print) Anne Rozite
 SIGNATURE: Anne Rozite

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: EW-3
 Sample Date: 6/14/98
 Sample Time: 1005

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
 Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
 Activity Start: 0950 Activity End: 1015
 Weather: Cloudy
 Well Type and Location: Recovery well - VOC

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using _____ Solinst _____ Water Depth: _____ feet using _____ Solinst _____
 (from top of well casing) (measuring device) (from top of well casing) (measuring device)
 Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well _____
 (from ground surface) (for above-ground surface) Casing Difference: _____ feet
 Floating Product Thickness: _____ feet using _____ (measuring device)
 Well Condition (see Note 1): _____
 Measuring Device Decontamination Procedure: Liquinox/Distilled water
 PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water () .092 gal/ft (1.5 in)
 Column feet X () .16 gal/ft (2 in) X -- casing volumes = 5 gallons to purge
 () .65 gal/ft (4 in)
 () _____ gal/ft (_____ in)
 Purge Method (see Note 2): Purge 5 gallons through spigot while pump is running

Purge Vol. (gal) 5
 Time (Min.) _____
 Temperature (C°) _____
 pH (Units) _____
 Conductivity at 25°C (umhos/cm) _____
 Total Volume Purged _____ gallons
 Water Appearance (describe color, clarity odor): Very "neaty" for 5 gallons then cleaned up

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): Collect sample directly into sample containers from open spigot
 Sample Water Appearance (color, clarity, odor): clear, slightly murky

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <u>(N)</u>	<u>(Y)</u> N
_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	Y N	Y N
_____	_____	_____	_____	Y N	Y N

OTHER OBSERVATIONS: The pump was not running had to be manually operated to get sample

NAME (Print) Anne Rozite
 SIGNATURE: Anne Rozite

Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
 (2) Describe sequence of purging/sampling including equipment type and decontamination method.

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HARDING LAWSON ASSOCIATES GROUNDWATER SAMPLE RECORD

Sample No.: HW-200
Sample Date: 6/10/98
Sample Time: _____

SITE/SAMPLE LOCATION

Site Name: AlliedSignal South Bend Project No.: 9822-02
Personnel Present: Peter Kaczor (HLA), Anne Rozite (EIS)
Activity Start: _____ Activity End: _____
Weather: _____
Well Type and Location: 1.5-inch PVC

WATER LEVEL/WEEL DATA

Well Depth: _____ feet using Solinst Water Depth: _____ feet using _____ Solinst
(from top of well casing) (measuring device) (from top of well casing) (measuring device)
Historical Well Depth: _____ feet Protective Casing Stickup: _____ feet Protect. Casing Well
(from ground surface) (for above-ground surface) Casing Difference: _____ feet
Floating Product Thickness: _____ feet using _____ (measuring device)
Well Condition (see Note 1): _____
Measuring Device Decontamination Procedure: Liquinox/Distilled water
PI Meter ID: OVM 580 B Ambient Air: _____ ppm Well Mouth: _____ ppm

PURGING PROCEDURES

Height of Water (X) .092 gal/ft (1.5 in)
Column feet X () .16 gal/ft (2 in) X 3 casing volumes = _____ gallons to purge
() .65 gal/ft (4 in)
() _____ gal/ft (____ in)
Purge Method (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.
Purge Vol. (gal) _____
Time (Min.) _____
Temperature (C°) _____
pH (Units) _____
Conductivity at 25°C (umhos/cm) _____
Total Volume Purged _____ gallons
Water Appearance (describe color, clarity odor): _____

SAMPLING PROCEDURES

Sampling Procedure (see Note 2): (1) Dedicated bladder pump or (2) stainless-steel bailer. Liquinox and distilled water decon for stainless-steel bailer.
Sample Water Appearance (color, clarity, odor): _____

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles Volume, Type	Preservative/ Volume	Field Filtered?	Cool to 4°C?
VOCs	8260	2x40-ml vials	HCl	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Diss. Pb, Ni, Cr	6010/7471	1x500-ml poly	HNO3	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Total CN	335.3	1x500-ml poly	NaOH	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Total Phenols	420.2	1X500-ml A.G.	H2SO4	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>

OTHER OBSERVATIONS

Four distilled water into stainless-steel bailer, then transfer into sample containers

NAME (Print)

PKaczor

SIGNATURE:

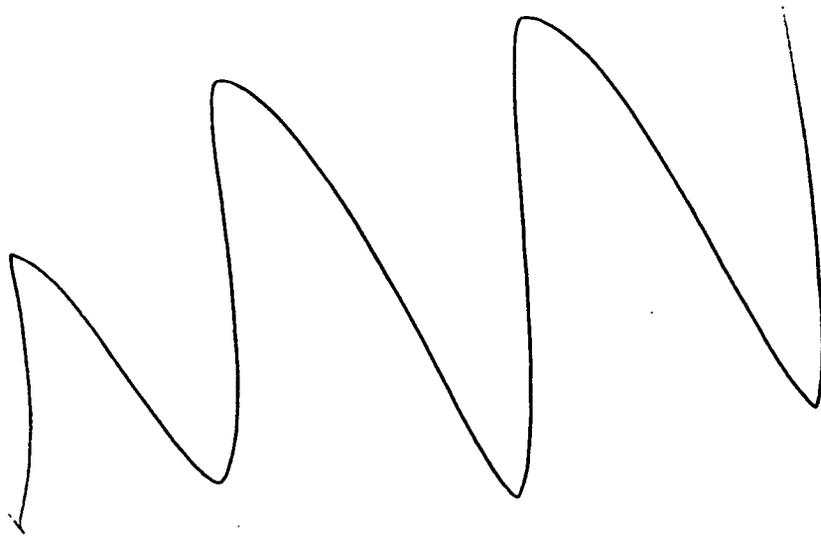
[Signature]

- Notes: (1) Described whether well was locked and the condition of the protective casing and concrete collar.
(2) Describe sequence of purging/sampling including equipment type and decontamination method.

ANALYTICAL RESULTS - JUNE 1998

- **SHALLOW MONITORING WELLS**
- **INTERMEDIATE MONITORING WELLS**
- **DEEP MONITORING WELLS**
- **NAPHTHA RECOVERY WELLS**
- **VOC RECOVERY WELLS**

SHALLOW MONITORING WELLS



Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	7-25	86-10	86-15	9-33	MW-10
				06/09/98	06/11/98	06/11/98	06/10/98	06/11/98
				Primary	Primary	Primary	Primary	Primary
Acrolein				<100	<100	<100	<100	<100
Acrylonitrile				<100	<100	<100	<100	<100
Benzene			5	<5.0	<5.0	<5.0	<5.0	<5.0
Bromoform			100	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane				<10	<10	<10	<10	<10
Carbon tetrachloride			5	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorodibromomethane			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethane				<10	<10	<10	<10	<10
2-Chloroethyl Vinyl Ether				<10	<10	<10	<10	<10
Chloroform			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloromethane				<10	<10	<10	<10	<10
Dichlorobromomethane			100	<5.0	<5.0	<5.0	<5.0	<5.0
Dichlorodifluoromethane				<10	<10	<10	<10	<10
1,1-Dichloroethane				<5.0	<5.0	<5.0	<5.0	12
1,2-Dichloroethane			5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5.0	9.1	86	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5.0	[71]	57	<5.0	[91]
1,2-Dichloropropane			5	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<5.0
Ethyl benzene			700	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride			5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane				<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed.
 [] = Greater than Action Level
 For RCL VOC

Analytical Summary - VOCs in Groundwater
 Shallow Monitoring Wells
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 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	7-25		86-10		86-15		9-33		MW-10			
		DATE		06/09/98		06/11/98		06/11/98		06/10/98		06/11/98	
		RESULT	TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	
Toluene				1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		
1,1,1-Trichloroethane				200	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	43		
1,1,2-Trichloroethane				5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		
Trichloroethane				5	< 5.0	[63]	[350]	< 5.0	< 5.0	< 5.0	[130]		
Trichlorofluoromethane					< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Vinyl Chloride				2	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Acetone					< 100	< 100	< 100	< 100	< 100	< 100	< 100		
2-Butanone (MEK)					< 100	< 100	< 100	< 100	< 100	< 100	< 100		
Styrene				100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		
Xylene (Total)				10000	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Vinyl Acetate					< 50	< 50	< 50	< 50	< 50	< 50	< 50		
2-Hexanone					< 50	< 50	< 50	< 50	< 50	< 50	< 50		
4-Methyl-2-pentanone					< 50	< 50	< 50	< 50	< 50	< 50	< 50		
Carbon disulfide					< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		
1,2-Dichlorobenzene				600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		
1,3-Dichlorobenzene				600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		
1,4-Dichlorobenzene				75	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		

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For RCL VOC

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 Shallow Monitoring Wells
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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-11	MW-12	MW-12	MW-13	MW-2
				06/11/98	06/12/98	06/12/98	06/10/98	06/12/98
				Primary	Primary	Duplicate	Primary	Primary
Acrolein				<100	<100	<100	<100	<400
Acrylonitrile				<100	<100	<100	<100	<400
Benzene			5	<5.0	<5.0	<5.0	<5.0	<20
Bromoform			100	<5.0	<5.0	<5.0	<5.0	<20
Bromomethane				<10	<10	<10	<10	<40
Carbon tetrachloride			5	<5.0	<5.0	<5.0	<5.0	<20
Chlorobenzene			100	<5.0	<5.0	<5.0	<5.0	<20
Chlorodibromomethane			100	<5.0	<5.0	<5.0	<5.0	<20
Chloroethane				<10	<10	<10	<10	<40
2-Chloroethyl Vinyl Ether				<10	<10	<10	<10	<40
Chloroform			100	<5.0	<5.0	<5.0	<5.0	<20
Chloromethane				<10	<10	<10	<10	<40
Dichlorobromomethane			100	<5.0	<5.0	<5.0	<5.0	<20
Dichlorodifluoromethane				<10	<10	<10	<10	<40
1,1-Dichloroethane				36	14	11	<5.0	220
1,2-Dichloroethane			5	<5.0	<5.0	<5.0	<5.0	<20
1,1-Dichloroethene			7	<5.0	<5.0	<5.0	<5.0	<20
trans-1,2-Dichloroethene			100	<5.0	16	15	<5.0	27
cis-1,2-Dichloroethene			70	[90]	[690]	[660]	<5.0	[2100]
1,2-Dichloropropane			5	<5.0	<5.0	<5.0	<5.0	<20
cis-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<20
trans-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<20
Ethyl benzene			700	<5.0	<5.0	<5.0	<5.0	<20
Methylene chloride			5	<5.0	<5.0	<5.0	<5.0	<20
1,1,2,2-Tetrachloroethane				<5.0	<5.0	<5.0	<5.0	<20
Tetrachloroethene			5	<5.0	<5.0	<5.0	<5.0	<20

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- = Not analyzed
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 For RCL VOC

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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-11	MW-12	MW-12	MW-13	MW-2
				06/11/98	06/12/98	06/12/98	06/10/98	06/12/98
				Primary	Primary	Duplicate	Primary	Primary
Toluene			1000	< 5.0	< 5.0	< 5.0	< 5.0	< 20
1,1,1-Trichloroethane			200	18	16	14	< 5.0	[490]
1,1,2-Trichloroethane			5	< 5.0	< 5.0	< 5.0	< 5.0	< 20
Trichloroethene			5	[8.7]	[180]	[180]	< 5.0	[51]
Trichlorofluoromethane				< 10	< 10	< 10	< 10	< 40
Vinyl Chloride			2	< 10	< 10	< 10	< 10	[93]
Acetone				< 100	< 100	< 100	< 100	< 400
2-Butanone (MEK)				< 100	< 100	< 100	< 100	< 400
Styrene			100	< 5.0	< 5.0	< 5.0	< 5.0	< 20
Xylene (Total)			10000	< 10	< 10	< 10	< 10	< 40
Vinyl Acetate				< 50	< 50	< 50	< 50	< 200
2-Hexanone				< 50	< 50	< 50	< 50	< 200
4-Methyl-2-pentanone				< 50	< 50	< 50	< 50	< 200
Carbon disulfide				< 5.0	< 5.0	< 5.0	< 5.0	< 20
1,2-Dichlorobenzene			600	< 5.0	< 5.0	< 5.0	< 5.0	< 20
1,3-Dichlorobenzene			600	< 5.0	< 5.0	< 5.0	< 5.0	< 20
1,4-Dichlorobenzene			75	< 5.0	< 5.0	< 5.0	< 5.0	< 20

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For RCL VOC

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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-4	MW-4	MW-5	MW-7	MW-9
				06/12/98	06/12/98	06/12/98	06/12/98	06/11/98
				Primary	Duplicate	Primary	Primary	Primary
Acrolein				<100	<100	<100	<100	<100
Acrylonitrile				<100	<100	<100	<100	<100
Benzene			5	<5.0	<5.0	<5.0	<5.0	<5.0
Bromoform			100	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane				<10	<10	<10	<10	<10
Carbon tetrachloride			5	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorodibromomethane			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethane				<10	<10	<10	<10	<10
2-Chloroethyl Vinyl Ether				<10	<10	<10	<10	<10
Chloroform			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloromethane				<10	<10	<10	<10	<10
Dichlorobromomethane			100	<5.0	<5.0	<5.0	<5.0	<5.0
Dichlorodifluoromethane				<10	<10	<10	<10	<10
1,1-Dichloroethane				7.8	6.1	<5.0	21	<5.0
1,2-Dichloroethane			5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	6.9	6.4	7.4	[300]	<5.0
1,2-Dichloropropane			5	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<5.0
Ethyl benzene			700	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride			5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane				<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0	[6.8]	<5.0	<5.0

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[] = Greater than Action Level

For RCL VOC

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 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-4	MW-4	MW-5	MW-7	MW-9
				06/12/98	06/12/98	06/12/98	06/12/98	06/11/98
				Primary	Duplicate	Primary	Primary	Primary
Toluene			1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	< 5.0	8.9	< 5.0	< 5.0
1,1,2-Trichloroethane			5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethane			5	[7.0]	[7.4]	[24]	< 5.0	[6.2]
Trichlorofluoromethane				< 10	< 10	< 10	< 10	< 10
Vinyl Chloride			2	< 10	< 10	< 10	[110]	< 10
Acetone				< 100	< 100	< 100	< 100	< 100
2-Butanone (MEK)				< 100	< 100	< 100	< 100	< 100
Styrene			100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylene (Total)			10000	< 10	< 10	< 10	< 10	< 10
Vinyl Acetate				< 50	< 50	< 50	< 50	< 50
2-Hexanone				< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone				< 50	< 50	< 50	< 50	< 50
Carbon disulfide				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene			600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene			600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene			75	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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For RCL VOC

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Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S15	S16	S17	S20	S21
				06/11/98	06/11/98	06/10/98	06/09/98	06/10/98
				Primary	Primary	Primary	Primary	Primary
Acrolein				<100	<100	<100	<100	<100
Acrylonitrile				<100	<100	<100	<100	<100
Benzene			5	<5.0	<5.0	<5.0	<5.0	<5.0
Bromoform			100	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane				<10	<10	<10	<10	<10
Carbon tetrachloride			5	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorodibromomethane			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethane				<10	<10	<10	<10	<10
2-Chloroethyl Vinyl Ether				<10	<10	<10	<10	<10
Chloroform			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloromethane				<10	<10	<10	<10	<10
Dichlorobromomethane			100	<5.0	<5.0	<5.0	<5.0	<5.0
Dichlorodifluoromethane				<10	<10	<10	<10	<10
1,1-Dichloroethane				8.6	<5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	[12]	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-Dichloroethane			100	<5.0	5.5	<5.0	<5.0	24
cis-1,2-Dichloroethene			70	16	[79]	<5.0	<5.0	33
1,2-Dichloropropane			5	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<5.0
Ethyl benzene			700	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride			5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane				<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethane			5	<5.0	<5.0	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S15	S16	S17	S20	S21
				06/11/98	06/11/98	06/10/98	06/09/98	06/10/98
				Primary	Primary	Primary	Primary	Primary
Toluene			1000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	20	26	< 5.0	< 5.0
1,1,2-Trichloroethane			5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloroethene			5	< 5.0	[460]	[19]	< 5.0	[38]
Trichlorofluoromethane				< 10	< 10	< 10	< 10	< 10
Vinyl Chloride			2	[15]	< 10	< 10	< 10	< 10
Acetone				< 100	< 100	< 100	< 100	< 100
2-Butanone (MEK)				< 100	< 100	< 100	< 100	< 100
Styrene			100	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylene (Total)			10000	< 10	< 10	< 10	< 10	< 10
Vinyl Acetate				< 50	< 50	< 50	< 50	< 50
2-Hexanone				< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone				< 50	< 50	< 50	< 50	< 50
Carbon disulfide				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene			600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene			600	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene			75	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S22	S23	S25	S27	S3
				06/09/98	06/10/98	06/09/98	06/10/98	06/11/98
				Primary	Primary	Primary	Primary	Primary
Acrolein				<100	<100	<100	<100	<100
Acrylonitrile				<100	<100	<100	<100	<100
Benzene			5	<5.0	<5.0	<5.0	<5.0	<5.0
Bromoform			100	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane				<10	<10	<10	<10	<10
Carbon tetrachloride			5	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorodibromomethane			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethane				<10	<10	<10	<10	<10
2-Chloroethyl Vinyl Ether				<10	<10	<10	<10	<10
Chloroform			100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloromethane				<10	<10	<10	<10	<10
Dichlorobromomethane			100	<5.0	<5.0	<5.0	<5.0	<5.0
Dichlorodifluoromethane				<10	<10	<10	<10	<10
1,1-Dichloroethane				<5.0	<5.0	<5.0	44	<5.0
1,2-Dichloroethane			5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	71	<5.0	<5.0	14	<5.0
cis-1,2-Dichloroethene			70	53	<5.0	<5.0	29	<5.0
1,2-Dichloropropane			5	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene				<5.0	<5.0	<5.0	<5.0	<5.0
Ethyl benzene			700	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride			5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane				<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- =Not analyzed

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	S22		S23		S25		S27		S3	
		DATE	US-PMCL	06/09/98	06/10/98	06/09/98	06/10/98	06/10/98	06/11/98		
		RESULT TYPE		Primary	Primary	Primary	Primary	Primary	Primary		
Toluene		1000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethane		5	<5.0	[5.2]	<5.0	[32]	<5.0	<5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane			<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride		2	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone			<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Butanone (MEK)			<100	<100	<100	<100	<100	<100	<100	<100	<100
Styrene		100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Xylene (Total)		10000	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Acetate			<50	<50	<50	<50	<50	<50	<50	<50	<50
2-Hexanone			<50	<50	<50	<50	<50	<50	<50	<50	<50
4-Methyl-2-pentanone			<50	<50	<50	<50	<50	<50	<50	<50	<50
Carbon disulfide			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichlorobenzene		600	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene		600	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene		75	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed
 [] = Greater than Action Level
 For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S4A	S9
				06/10/98	06/11/98
				Primary	Primary
Acrolein				<100	<100
Acrylonitrile				<100	<100
Benzene			5	<5.0	<5.0
Bromoform			100	<5.0	<5.0
Bromomethane				<10	<10
Carbon tetrachloride			5	<5.0	<5.0
Chlorobenzene			100	<5.0	<5.0
Chlorodibromomethane			100	<5.0	<5.0
Chloroethane				<10	<10
2-Chloroethyl Vinyl Ether				<10	<10
Chloroform			100	<5.0	<5.0
Chloromethane				<10	<10
Dichlorobromomethane			100	<5.0	<5.0
Dichlorodifluoromethane				<10	<10
1,1-Dichloroethane				33	<5.0
1,2-Dichloroethane			5	<5.0	[170]
1,1-Dichloroethene			7	<5.0	<5.0
trans-1,2-Dichloroethene			100	5.2	7.3
cis-1,2-Dichloroethene			70	[280]	61
1,2-Dichloropropane			5	<5.0	<5.0
cis-1,3-Dichloropropene				<5.0	<5.0
trans-1,3-Dichloropropene				<5.0	<5.0
Ethyl benzene			700	<5.0	<5.0
Methylene chloride			5	<5.0	<5.0
1,1,2,2-Tetrachloroethane				<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- =Not analyzed
 [] =Greater than Action Level
 For RCL VOC

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
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 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S4A	S9
				06/10/98	06/11/98
				Primary	Primary
Toluene			1000	<5.0	<5.0
1,1,1-Trichloroethane			200	<5.0	<5.0
1,1,2-Trichloroethane			5	<5.0	<5.0
Trichloroethene			5	<5.0	<5.0
Trichlorofluoromethane				<10	<10
Vinyl Chloride			2	<10	<10
Acetone				<100	<100
2-Butanone (MEK)				<100	<100
Styrene			100	<5.0	<5.0
Xylene (Total)			10000	<10	<10
Vinyl Acetate				<50	<50
2-Hexanone				<50	<50
4-Methyl-2-pentanone				<50	<50
Carbon disulfide				<5.0	<5.0
1,2-Dichlorobenzene			600	<5.0	<5.0
1,3-Dichlorobenzene			600	<5.0	<5.0
1,4-Dichlorobenzene			75	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Analytical Summary - Phenols in Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 08/06/98

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	MW-4	MW-4	MW-5	MW-7	MW-9
				DATE	DATE	DATE	DATE	DATE
RESULT TYPE				Primary	Duplicate	Primary	Primary	Primary
Total Phenols				< 10	< 10	< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

For RCL PHENOLS

Analytical Summary - Phenols in Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
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CONSTITUENT (Units in ug/l)	SITE	S15	S16	S17	S20	S21
DATE	06/11/98	06/11/98	06/10/98	06/09/98	06/10/98	06/10/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Total Phenols		<10	<10	<10	<10	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

Analytical Summary - Phenols in Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
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CONSTITUENT	(Units in ug/l)	SITE		S22	S23	S25	S27	S3
		DATE		06/09/98	06/10/98	06/09/98	06/10/98	06/11/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary
Total Phenols				<10	<10	<10	<10	<10

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- = Not analyzed

Analytical Summary - Phenols in Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	S4A	S9
	DATE		06/10/98	06/11/98
	RESULT TYPE		Primary	Primary
Total Phenols			< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics in Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	7-25	86-10	86-15	9-33	MW-10
					06/09/98	06/11/98	06/11/98	06/10/98	06/11/98
					Primary	Primary	Primary	Primary	Primary
Chromium, Dissolved					<5	13	18	<5	<5
Lead, Dissolved					<2.0	<2.0	<2.0	<2.0	<2.0
Nickel, Dissolved					<20	<20	<20	<20	<20
Chromium, Total				100	---	---	---	---	---
Lead, Total				15	---	---	---	---	---
Nickel, Total				100	---	---	---	---	---
Cyanide				200	<5	<5	<5	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics in Groundwater
 Shallow Monitoring Wells
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 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-11	MW-12	MW-12	MW-13	MW-2
		DATE	06/11/98	06/12/98	06/12/98	06/10/98	06/12/98
	US-PMCL	RESULT TYPE	Primary	Primary	Duplicate	Primary	Primary
Chromium, Dissolved			< 5	< 5	< 5	< 5	7.8
Lead, Dissolved			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Nickel, Dissolved			< 20	< 20	< 20	< 20	< 20
Chromium, Total	100		---	---	---	---	---
Lead, Total	15		---	---	---	---	---
Nickel, Total	100		---	---	---	---	---
Cyanide	200		< 5	< 5	< 5	< 5	< 5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics in Groundwater
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CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	MW-4	MW-4	MW-5	MW-7	MW-9
				06/12/98	06/12/98	06/12/98	06/12/98	06/11/98
				Primary	Duplicate	Primary	Primary	Primary
Chromium, Dissolved				7.5	7.7	<5	5.9	7.2
Lead, Dissolved				<2.0	<2.0	<2.0	<2.0	<2.0
Nickel, Dissolved				<20	<20	<20	<20	20
Chromium, Total	100			---	---	---	---	---
Lead, Total	15			---	---	---	---	---
Nickel, Total	100			---	---	---	---	---
Cyanide	200			<5	<5	<5	<5	<5

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics in Groundwater
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CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	S15	S16	S17	S20	S21
					06/11/98	06/11/98	06/10/98	06/09/98	06/10/98
					Primary	Primary	Primary	Primary	Primary
Chromium, Dissolved					7.2	20	<5	<5	8.8
Lead, Dissolved					<2.0	<2.0	<2.0	<2.0	<2.0
Nickel, Dissolved					<20	<20	<20	<20	<20
Chromium, Total				100	---	---	---	---	---
Lead, Total				15	---	---	---	---	---
Nickel, Total				100	---	---	---	---	---
Cyanide				200	<5	<5	7	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Analytical Summary - Inorganics in Groundwater
 Shallow Monitoring Wells
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Date: 08/06/98

CONSTITUENT	(Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	S22	S23	S25	S27	S3
						06/09/98	06/10/98	06/09/98	06/10/98	06/11/98
						Primary	Primary	Primary	Primary	Primary
Chromium, Dissolved						<5	<5	<5	<5	<5
Lead, Dissolved						<2.0	<2.0	<2.0	<2.0	<2.0
Nickel, Dissolved						<20	<20	<20	<20	<20
Chromium, Total					100	---	---	---	---	---
Lead, Total					15	---	---	---	---	---
Nickel, Total					100	---	---	---	---	---
Cyanide					200	<5	11	<5	<5	<5

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

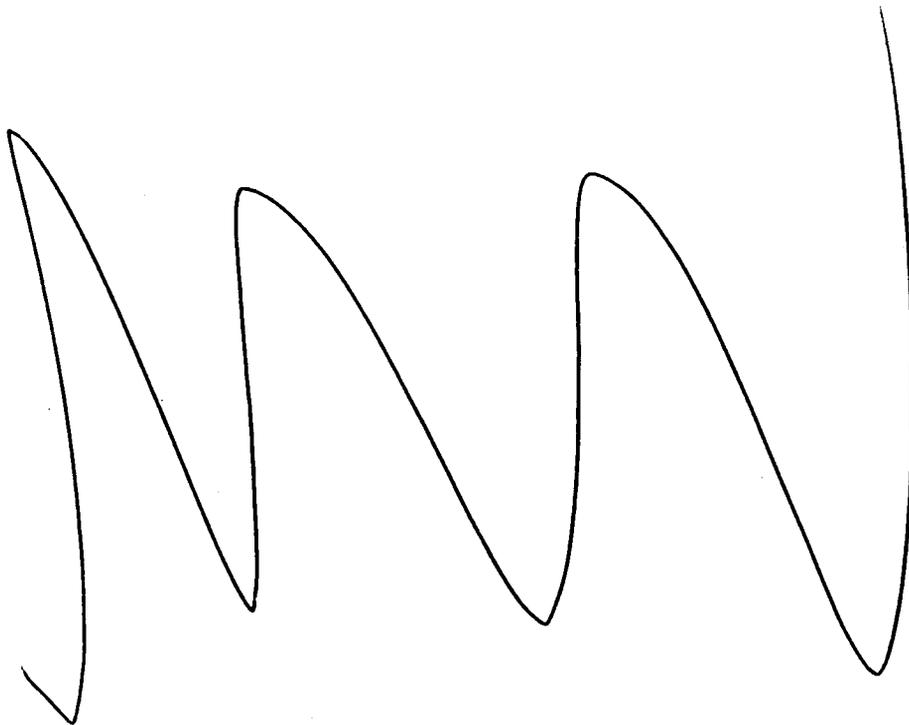
For RCL INORG

Analytical Summary - Inorganics in Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	DATE	S4A		S9	
				US-PMCL	06/10/98	06/11/98	06/11/98
RESULT	TYPE			Primary	Primary		
Chromium, Dissolved					<5	8.9	
Lead, Dissolved					<2.0	<2.0	
Nickel, Dissolved					<20	<20	
Chromium, Total			100		---	---	
Lead, Total			15		---	---	
Nickel, Total			100		---	---	
Cyanide			200		<5	<5	

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---= Not analyzed

INTERMEDIATE MONITORING WELLS



Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	7-50	8D
					06/09/98	06/11/98
					Primary	Primary
Acrolein					<100	<100
Acrylonitrile					<100	<100
Benzene				5	<5.0	<5.0
Bromoform				100	<5.0	<5.0
Bromomethane					<10	<10
Carbon tetrachloride				5	<5.0	<5.0
Chlorobenzene				100	<5.0	<5.0
Chlorodibromomethane				100	<5.0	<5.0
Chloroethane					<10	<10
2-Chloroethyl Vinyl Ether					<10	<10
Chloroform				100	<5.0	<5.0
Chloromethane					<10	<10
Dichlorobromomethane				100	<5.0	<5.0
Dichlorodifluoromethane					<10	<10
1,1-Dichloroethane					<5.0	<5.0
1,2-Dichloroethane				5	<5.0	<5.0
1,1-Dichloroethene				7	<5.0	<5.0
trans-1,2-Dichloroethene				100	<5.0	29
cis-1,2-Dichloroethene				70	<5.0	[260]
1,2-Dichloropropane				5	<5.0	<5.0
cis-1,3-Dichloropropene					<5.0	<5.0
trans-1,3-Dichloropropene					<5.0	<5.0
Ethyl benzene				700	<5.0	<5.0
Methylene chloride				5	<5.0	<5.0
1,1,2,2-Tetrachloroethane					<5.0	<5.0
Tetrachloroethene				5	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	7-50	8D
	DATE	06/09/98	06/11/98
	RESULT TYPE	Primary	Primary
	US-PMCL		
Toluene	1000	<5.0	<5.0
1,1,1-Trichloroethane	200	<5.0	<5.0
1,1,2-Trichloroethane	5	<5.0	<5.0
Trichloroethene	5	<5.0	<5.0
Trichlorofluoromethane		<10	<10
Vinyl Chloride	2	<10	<10
Acetone		<100	<100
2-Butanone (MEK)		<100	<100
Styrene	100	<5.0	<5.0
Xylene (Total)	10000	<10	<10
Vinyl Acetate		<50	<50
2-Hexanone		<50	<50
4-Methyl-2-pentanone		<50	<50
Carbon disulfide		<5.0	<5.0
1,2-Dichlorobenzene	600	<5.0	<5.0
1,3-Dichlorobenzene	600	<5.0	<5.0
1,4-Dichlorobenzene	75	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Intermediate Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	7-50	8D
	DATE		06/09/98	06/11/98
	RESULT TYPE		Primary	Primary
Total Phenols			< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit . -- = Not analyzed

Analytical Summary - Inorganics In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

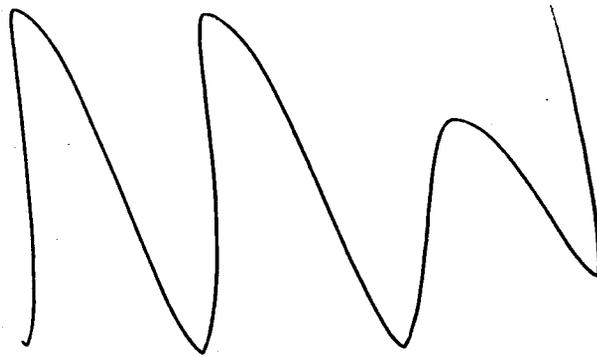
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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	7-50		8D	
		DATE	US-PMCL	06/09/98	06/11/98
				Primary	Primary
Chromium, Dissolved			<5		13
Lead, Dissolved			<2.0		<2.0
Nickel, Dissolved			<20		<20
Chromium, Total		100	---		---
Lead, Total		15	---		---
Nickel, Total		100	---		---
Cyanide		200	<5		110

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---= Not analyzed

For RCL INORG

DEEP MONITORING WELLS



Analytical Summary - VOCs in Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 08/06/98

CONSTITUENT	(Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	2D	4D	4D	5D	5D
						06/11/98	06/10/98	06/10/98	06/10/98	06/10/98
						Primary	Primary	Duplicate	Primary	Duplicate
Acrolein						<100	<100	<100	<100	<100
Acrylonitrile						<100	<100	<100	<100	<100
Benzene					5	<5.0	<5.0	<5.0	<5.0	<5.0
Bromoform					100	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane						<10	<10	<10	<10	<10
Carbon tetrachloride					5	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene					100	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorodibromomethane					100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethane						<10	<10	<10	<10	<10
2-Chloroethyl Vinyl Ether						<10	<10	<10	<10	<10
Chloroform					100	<5.0	<5.0	<5.0	<5.0	<5.0
Chloromethane						<10	<10	<10	<10	<10
Dichlorobromomethane					100	<5.0	<5.0	<5.0	<5.0	<5.0
Dichlorodifluoromethane						<10	<10	<10	<10	<10
1,1-Dichloroethane						<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane					5	[7.9]	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene					7	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene					100	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene					70	15	14	14	<5.0	<5.0
1,2-Dichloropropane					5	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene						<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene						<5.0	<5.0	<5.0	<5.0	<5.0
Ethyl benzene					700	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride					5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane						<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethene					5	<5.0	<5.0	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs in Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE DATE	US-PMCL	2D	4D	4D	5D	5D
				06/11/98	06/10/98	06/10/98	06/10/98	06/10/98
		RESULT TYPE		Primary	Primary	Duplicate	Primary	Duplicate
Toluene	1000			<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	200			<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5			<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethene	5			<5.0	<5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane				<10	<10	<10	<10	<10
Vinyl Chloride	2			<10	<10	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
2-Butanone (MEK)				<100	<100	<100	<100	<100
Styrene	100			<5.0	<5.0	<5.0	<5.0	<5.0
Xylene (Total)	10000			<10	<10	<10	<10	<10
Vinyl Acetate				<50	<50	<50	<50	<50
2-Hexanone				<50	<50	<50	<50	<50
4-Methyl-2-pentanone				<50	<50	<50	<50	<50
Carbon disulfide				<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichlorobenzene	600			<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene	600			<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene	75			<5.0	<5.0	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs in Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	D6	D7
				06/11/98	06/09/98
				Primary	Primary
Acrolein				<100	<100
Acrylonitrile				<100	<100
Benzene			5	<5.0	<5.0
Bromoform			100	<5.0	<5.0
Bromomethane				<10	<10
Carbon tetrachloride			5	<5.0	<5.0
Chlorobenzene			100	<5.0	<5.0
Chlorodibromomethane			100	<5.0	<5.0
Chloroethane				<10	<10
2-Chloroethyl Vinyl Ether				<10	<10
Chloroform			100	<5.0	<5.0
Chloromethane				<10	<10
Dichlorobromomethane			100	<5.0	<5.0
Dichlorodifluoromethane				<10	<10
1,1-Dichloroethane				<5.0	<5.0
1,2-Dichloroethane			5	<5.0	<5.0
1,1-Dichloroethene			7	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5.0	<5.0
1,2-Dichloropropane			5	<5.0	<5.0
cis-1,3-Dichloropropene				<5.0	<5.0
trans-1,3-Dichloropropene				<5.0	<5.0
Ethyl benzene			700	<5.0	<5.0
Methylene chloride			5	<5.0	<5.0
1,1,2,2-Tetrachloroethane				<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- =Not analyzed

For RCL VOC

Analytical Summary - VOCs in Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 08/06/98

CONSTITUENT (Units: in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	D5	D7
				06/11/98	06/09/98
				Primary	Primary
Toluene			1000	< 5.0	< 5.0
1,1,1-Trichloroethane			200	< 5.0	< 5.0
1,1,2-Trichloroethane			5	< 5.0	< 5.0
Trichloroethene			5	< 5.0	< 5.0
Trichlorofluoromethane				< 10	< 10
Vinyl Chloride			2	< 10	< 10
Acetone				< 100	< 100
2-Butanone (MEK)				< 100	< 100
Styrene			100	< 5.0	< 5.0
Xylene (Total)			10000	< 10	< 10
Vinyl Acetate				< 50	< 50
2-Hexanone				< 50	< 50
4-Methyl-2-pentanone				< 50	< 50
Carbon disulfide				< 5.0	< 5.0
1,2-Dichlorobenzene			600	< 5.0	< 5.0
1,3-Dichlorobenzene			600	< 5.0	< 5.0
1,4-Dichlorobenzene			75	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Analytical Summary - Inorganics in Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	2D	4D	4D	5D	5D
	DATE	06/11/98	06/10/98	06/10/98	06/10/98	06/10/98
RESULT TYPE	US-PMCL	Primary	Primary	Duplicate	Primary	Duplicate
Chromium, Dissolved		7.6	<5	<5	<5	<5
Lead, Dissolved		<2.0	<2.0	<2.0	<2.0	<2.0
Nickel, Dissolved		<20	<20	<20	<20	<20
Chromium, Total	100	---	---	---	---	---
Lead, Total	15	---	---	---	---	---
Nickel, Total	100	---	---	---	---	---
Cyanide	200	<5	<5 UJ	19	<5	<5

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Analytical Summary - Inorganics in Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	DATE	D5		D7	
				06/11/98		06/09/98	
				RESULT TYPE	US-PMCL	Primary	Primary
Chromium, Dissolved				< 5		< 5	
Lead, Dissolved				< 2.0		< 2.0	
Nickel, Dissolved				< 20		< 20	
Chromium, Total			100	---		---	
Lead, Total			15	---		---	
Nickel, Total			100	---		---	
Cyanide			200	< 5		< 5	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols in Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	2D	4D	4D	5D	5D
		DATE		06/11/98	06/10/98	06/10/98	06/10/98	06/10/98
		RESULT TYPE		Primary	Primary	Duplicate	Primary	Duplicate
Total Phenols				<10	<10	<10	<10	<10

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- =Not analyzed

Analytical Summary - Phenols in Groundwater
 Deep Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

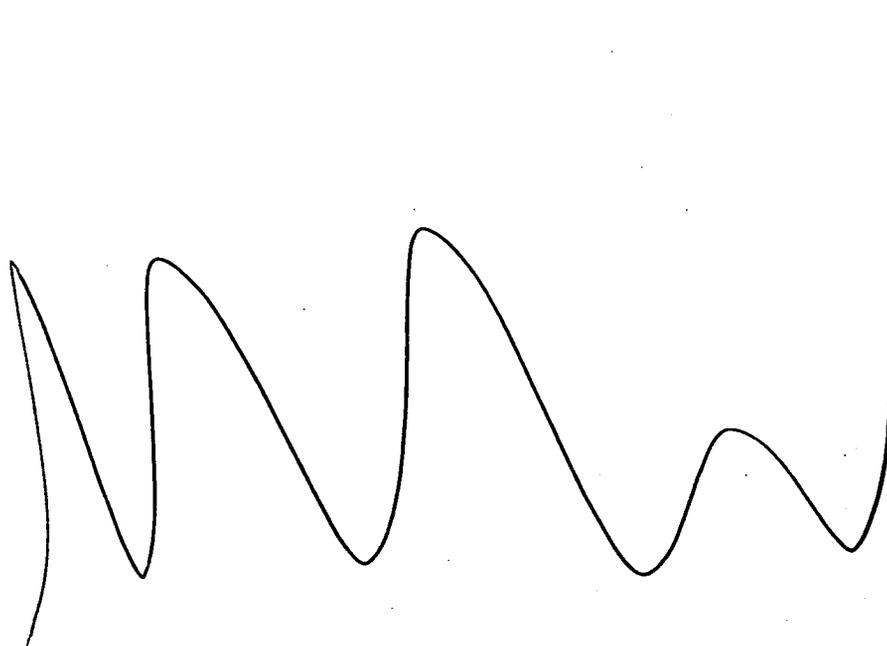
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 Date: 08/06/98

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	D6	D7
		DATE		06/11/98	06/09/98
		RESULT TYPE		Primary	Primary
Total Phenols				<10	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

NAPHTHA RECOVERY WELLS



Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/16/98

CONSTITUENT (Units in ug/l)	SITE		E3	RWB16	RWB22
	SAMPLE ID	DATE	06/12/98	06/12/98	06/12/98
	RESULT TYPE	US-PMCL	Primary	Primary	Primary
Acrolein			<100	<100	<100
Acrylonitrile			<100	<100	<100
Benzene	5		<5.0	[55]	<5.0
Bromoform	100		<5.0	<5.0	<5.0
Bromomethane			<10	<10	<10
Carbon tetrachloride	5		<5.0	<5.0	<5.0
Chlorobenzene	100		<5.0	<5.0	<5.0
Chlorodibromomethane	100		<5.0	<5.0	<5.0
Chloroethane			<10	<10	<10
2-Chloroethyl Vinyl Ether			<10	<10	<10
Chloroform	100		<5.0	<5.0	<5.0
Chloromethane			<10	<10	<10
Dichlorobromomethane	100		<5.0	<5.0	<5.0
Dichlorodifluoromethane			<10	<10	<10
1,1-Dichloroethane			6.1	<5.0	5.2
1,2-Dichloroethane	5		<5.0	<5.0	<5.0
1,1-Dichloroethene	7		<5.0	<5.0	<5.0
trans-1,2-Dichloroethene	100		<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	70		18	<5.0	17
1,2-Dichloropropane	5		<5.0	<5.0	<5.0
cis-1,3-Dichloropropene			<5.0	<5.0	<5.0
trans-1,3-Dichloropropene			<5.0	<5.0	<5.0
Ethyl benzene	700		<5.0	<5.0	<5.0
Methylene chloride	5		<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane			<5.0	<5.0	<5.0
Tetrachloroethene	5		<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

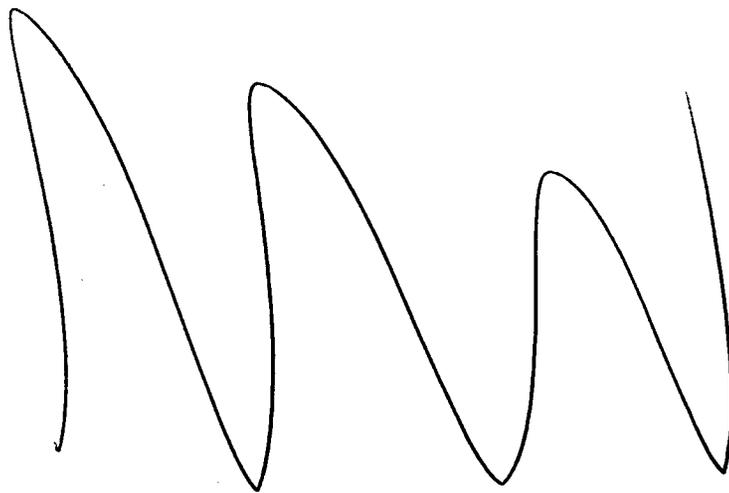
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Date: 07/16/98

CONSTITUENT (Units in ug/l)	SITE SAMPLE ID	E3	RWB16	RWB22
RESULT TYPE	US-PMCL	06/12/98 Primary	06/12/98 Primary	06/12/98 Primary
Toluene	1000	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	200	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	5	< 5.0	< 5.0	< 5.0
Trichloroethene	5	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane		< 10	< 10	< 10
Vinyl Chloride	2	< 10	< 10	< 10
Acetone		< 100	< 100	< 100
2-Butanone (MEK)		< 100	< 100	< 100
Styrene	100	< 5.0	< 5.0	< 5.0
Xylene (Total)	10000	< 10	< 10	< 10
Vinyl Acetate		< 50	< 50	< 50
2-Hexanone		< 50	< 50	< 50
4-Methyl-2-pentanone		< 50	< 50	< 50
Carbon disulfide		< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene	600	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	600	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene	75	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

VOC RECOVERY WELLS



Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/16/98

CONSTITUENT (Units in ug/l)	SITE SAMPLE ID DATE RESULT TYPE	US-PMCL	EW-1	EW-2	EW-3
			06/16/98 Primary	06/16/98 Primary	06/16/98 Primary
Acrolein			<100	<100	<100
Acrylonitrile			<100	<100	<100
Benzene		5	<5.0	<5.0	<5.0
Bromoform		100	<5.0	<5.0	<5.0
Bromomethane			<10	<10	<10
Carbon tetrachloride		5	<5.0	<5.0	<5.0
Chlorobenzene		100	<5.0	<5.0	<5.0
Chlorodibromomethane		100	<5.0	<5.0	<5.0
Chloroethane			<10	<10	<10
2-Chloroethyl Vinyl Ether			<10	<10	<10
Chloroform		100	<5.0	<5.0	51
Chloromethane			<10	<10	<10
Dichlorobromomethane		100	<5.0	<5.0	<5.0
Dichlorodifluoromethane			<10	<10	<10
1,1-Dichloroethane			20	41	<5.0
1,2-Dichloroethane		5	<5.0	<5.0	<5.0
1,1-Dichloroethene		7	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	57	8.6	93
cis-1,2-Dichloroethene		70	[200]	[150]	[74]
1,2-Dichloropropane		5	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene			<5.0	<5.0	<5.0
trans-1,3-Dichloropropene			<5.0	<5.0	<5.0
Ethyl benzene		700	<5.0	<5.0	<5.0
Methylene chloride		5	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane			<5.0	<5.0	<5.0
Tetrachloroethane		5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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 Date: 07/16/98

CONSTITUENT (Units in ug/l)	SITE		EW-1	EW-2	EW-3
	SAMPLE ID	DATE	06/16/98	06/16/98	06/16/98
	RESULT TYPE	US-PMCL	Primary	Primary	Primary
Toluene		1000	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane		200	< 5.0	39	< 5.0
1,1,2-Trichloroethane		5	< 5.0	< 5.0	< 5.0
Trichloroethene		5	[150]	[59]	[28] J
Trichlorofluoromethane			< 10	< 10	< 10
Vinyl Chloride		2	[15]	< 10	< 10
Acetone			< 100	< 100	< 100
2-Butanone (MEK)			< 100	< 100	< 100
Styrene		100	< 5.0	< 5.0	< 5.0
Xylene (Total)		10000	< 10	< 10	< 10
Vinyl Acetate			< 50	< 50	< 50
2-Hexanone			< 50	< 50	< 50
4-Methyl-2-pentanone			< 50	< 50	< 50
Carbon disulfide			< 5.0	< 5.0	< 5.0
1,2-Dichlorobenzene		600	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene		600	< 5.0	< 5.0	< 5.0
1,4-Dichlorobenzene		75	< 5.0	< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

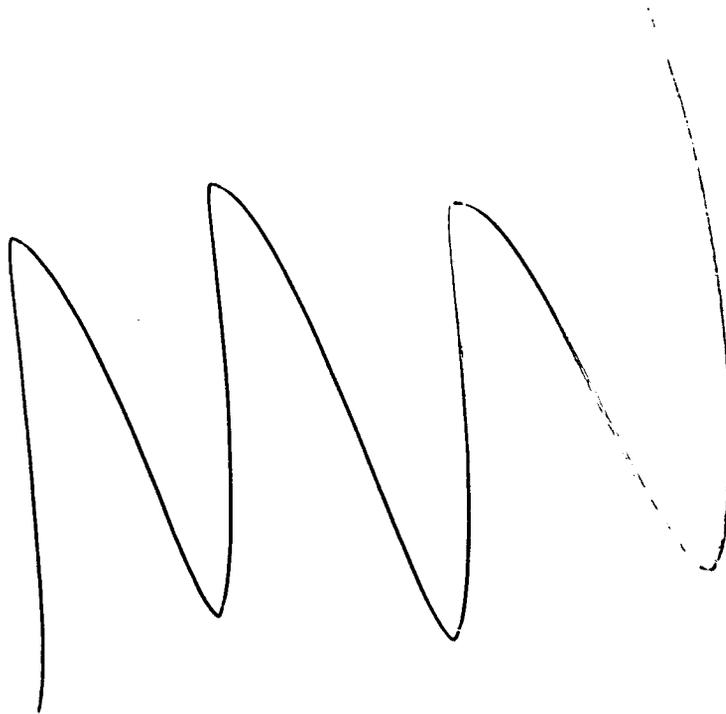
[] = Greater than Action Level

For RCL VOC

CURRENT AND HISTORICAL DATA TABLES

- **SHALLOW MONITORING WELLS**
- **INTERMEDIATE MONITORING WELLS**
- **DEEP MONITORING WELLS**
- **NAPHTHA RECOVERY WELLS**
- **VOC RECOVERY WELLS**

SHALLOW MONITORING WELLS



Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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CONSTITUENT	(Units in ug/l)	SITE	7-25	7-25	7-25	7-25	7-25
RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary	Primary	Primary
Benzene	5	<5	<5	<5	<5.0	<5.0	
Chloroethene	2	<10	<2	<2	<10	<10	
Chloroform	100	<5	<5	<5	<5.0	<5.0	
1,1-Dichloroethane		<5	<5	<5	<5.0	<5.0	
1,2-Dichloroethane	5	<5	<5	<5	<5.0	<5.0	
1,1-Dichloroethene	7	<5	<5	<5	<5.0	<5.0	
trans-1,2-Dichloroethene	100	<5	<5	<5	<5.0	<5.0	
cis-1,2-Dichloroethene	70	<5	<5	<5	<5.0	<5.0	
Methylene chloride	5	<5	<5	<5	<5.0	<5.0	
Tetrachloroethene	5	<5	<5	<5	<5.0	<5.0	
Toluene	1000	<5	<5	<5	<5.0	<5.0	
1,1,1-Trichloroethane	200	<5	<5	<5	<5.0	<5.0	
Trichloroethene	5	<5	<5	<5	<5.0	<5.0	
Vinyl Chloride	2	<10	<2	<2	<10	<10	
Acetone		<100	<100	<100	<100	<100	
Xylene (Total)	10000	<10	<5	<5	<10	<10	
Carbon disulfide		<5	<5	<5	<5.0	<5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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CONSTITUENT (Units in ug/l)	SITE	7-25
	DATE	06/09/98
	RESULT TYPE	US-PMCL
		Primary
Benzene	5	< 5.0
Chloroethene	2	< 10
Chloroform	100	< 5.0
1,1-Dichloroethane		< 5.0
1,2-Dichloroethane	5	< 5.0
1,1-Dichloroethene	7	< 5.0
trans-1,2-Dichloroethene	100	< 5.0
cis-1,2-Dichloroethene	70	< 5.0
Methylene chloride	5	< 5.0
Tetrachloroethene	5	< 5.0
Toluene	1000	< 5.0
1,1,1-Trichloroethane	200	< 5.0
Trichloroethene	5	< 5.0
Vinyl Chloride	2	< 10
Acetone		< 100
Xylene (Total)	10000	< 10
Carbon disulfide		< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	7-25	7-25	7-25	
	DATE	03/18/97	09/25/97	06/09/98	
	RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols		< 10	< 10	< 10	
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
For RCL PHENOLS					

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	7-25	7-25	7-25
	DATE	03/18/97	09/25/97	06/09/98
	RESULT TYPE	Primary	Primary	Primary
	US-PMCL			
Chromium, Dissolved		---	---	<5
Lead, Dissolved		---	---	<2.0
Nickel, Dissolved		---	---	<20
Chromium, Total	100	7	---	---
Lead, Total	15	[27]	---	---
Nickel, Total	100	<20	---	---
Cyanide	200	<5	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

SOURCE: 7-25

NOTES

DATE SAMPLED	SAMPLE NO.	LAB	MCL	
			METHOD	
11/07/86	31	AQUA		
06/05/87	2	AQUA		
09/08/87	2	AQUA		
01/13/88	2	AQUA		
02/08/88	2	AQUA		
05/18/88	2	AQUA		
09/22/88	2	AQUA		
12/09/88	13	AQUA		
03/31/92	22	AQUA	0240	
09/02/92	43	AQUA	0240	

No VOC Detected
 No VOC Detected
 No VOC Detected
 No VOC Detected
 No VOC Detected
 No VOC Detected
 No VOC Detected
 No VOC Detected
 No VOC Detected
 No VOC Detected
 No VOC Detected

NOTES:
 OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
 ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.
 NPL - NO U.S. EPA PUBLISHED LEVEL
 P - PROPOSED
 VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Data Sampled

SHALLOW MONITOR WELLS
 GROUNDWATER QUALITY ANALYSIS
 ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
 GROUNDWATER INVESTIGATIONS
 SOUTH BEND, INDIANA

td gleason
 associates
 Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	86-10	86-10	86-10	86-10	86-10
		DATE	03/18/97	06/06/97	09/26/97	12/09/97	06/11/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary	Primary
Benzene	5		<5	<5	<5.0 E	<5.0	<5.0
Chloroethene	2		<10	<2	<10 E	<10	<10
Chloroform	100		<5	<5	<5.0 E	<5.0	<5.0
1,1-Dichloroethane			<5	<5	<5.0 E	<5.0	<5.0
1,2-Dichloroethane	5		<5	<5	<5.0 E	<5.0	<5.0
1,1-Dichloroethene	7		<5	<5	<5.0 E	<5.0	<5.0
trans-1,2-Dichloroethene	100		9.6	12	12 J	12	9.1
cis-1,2-Dichloroethene	70		[76]	[95]	[92] J	[98]	[71]
Methylene chloride	5		<5	<5	<5.0 E	<5.0	<5.0
Tetrachloroethene	5		<5	<5	<5.0 E	<5.0	<5.0
Toluene	1000		<5	<5	<5.0 E	<5.0	<5.0
1,1,1-Trichloroethane	200		<5	<5	<5.0 E	<5.0	<5.0
Trichloroethene	5		[88]	[100]	[120] J	[120]	[63]
Vinyl Chloride	2		<10	<2	<10 E	<10	<10
Acetone			<100	<100	<100 E	<100	<100
Xylene (Total)	10000		<10	<5	<10 E	<10	<10
Carbon disulfide			<5	<5	<5.0 E	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A
 Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	86-10	86-10	86-10
			03/18/97	09/25/97	06/11/98
			Primary	Primary	Primary
Total Phenols			<10	<10	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed
 For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE		86-10	86-10	86-10
	DATE		03/18/97	09/26/97	06/11/98
RESULT TYPE	US-PMCL		Primary	Primary	Primary
Chromium, Dissolved			---	---	13
Lead, Dissolved			---	---	<2.0
Nickel, Dissolved			---	---	<20
Chromium, Total	100		<5	---	---
Lead, Total	15		2.4	---	---
Nickel, Total	100		<20	---	---
Cyanide	200		<5	6	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 86-10 DATE COLLECTED			
			12 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	10 DEC 96 AMOUNT Q
A.VOA	- BENZENE	UG/L	5.0 U			
	- CHLOROETHANE	UG/L	10 U	5.0 U	5.0 U	5.0 U
	- CHLOROFORM	UG/L	5.0 U	10 U	10 U	10 U
	- 1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	- 1,2-DICHLOROETHANE	UG/L	5.0 U	2.5 J	4.9 J	5.0 U
	- 1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	- TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	- CIS-1,2-DICHLOROETHENE	UG/L	16	9.2	7.5	12
	- METHYLENE CHLORIDE	UG/L	77	75	78	88
	- TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	- TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	- 1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	- TRICHLOROETHENE	UG/L	10	6.4	22	7.2
	- VINYL CHLORIDE	UG/L	120	94	120	100
	- ACETONE	UG/L	10 U	10 U	10 U	10 U
	- XYLENE (TOTAL)	UG/L	100 U	100 U	100 U	100 U
	- CARBON DISULFIDE	UG/L	10 U	10 U	10 U	10 U
			UG/L	5.0 U	5.0 U	5.0 U
TOTAL VOCS:		UG/L	223	187.1	232.4	272.2
E.METALS	CHROMIUM	UG/L	5 U	-	13	-
	LEAD	UG/L	2.8	-	2.7	-
	NICKEL	UG/L	11 J	-	5.4 J	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 86-10		DATE COLLECTED		08 DEC 94		15 MAR 95		08 JUN 95		19 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5	U					5.0	U	5.0	U	5.0	U		
	CHLOROETHANE	UG/L	10	U					10	U	10	U	10	U		
	1,1-DICHLOROETHANE	UG/L	5	U					5.0	U	3.3	J	2.1	J		
	1,2-DICHLOROETHANE	UG/L	5	U					5.0	U	5.0	U	5.0	U		
	1,1-DICHLOROETHENE	UG/L	5	U					5.0	U	5.0	U	5.0	U		
	TRANS-1,2-DICHLOROETHENE	UG/L	18				16		15		15	J	11			16
	CIS-1,2-DICHLOROETHENE	UG/L	90				78		95		95		75			81
	METHYLENE CHLORIDE	UG/L	5	U					5.0	U	5.0	U	5.0	U		
	TETRACHLOROETHENE	UG/L	-						5.0	U	5.0	U	5.0	U		
	TOLUENE	UG/L	5	U					5.0	U	5.0	U	5.0	U		
	1,1,1-TRICHLOROETHANE	UG/L	5	U					5.0	U	5.0	U	5.0	U		
	TRICHLOROETHENE	UG/L	141				35		95		3.6	J	4.0	J		
	VINYL CHLORIDE	UG/L	10	U			10	U	2.2	J	2.2	J	100			53
	ACETONE	UG/L	100	U			100	U	100	U	100	U	100	U		
	XYLENE (TOTAL)	UG/L	10	U			10	U	10	U	10	U	10	U		
TOTAL VOCS:	UG/L	249				129		216.2		216.2		192.1			150	
E.METALS	LEAD	UG/L	-			-		-		-		1.4	J			
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-			2.0	U	-		-		-				
	NICKEL (DISSOLVED)	UG/L	-			20	U	-		-		-				
H.MISC	CYANIDE, TOTAL	UG/L	-			5	U	-		-		5	U			
	PHENOLS	UG/L	-			10	U	-		-		10	U			

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: 06-10				1, 1-DI- CHLORO- ETHANE	1,1,2- DICHLORO- ETHANE	TRANS-1,2 DICHLORO- ETHANE	1, 1, 1-TRI CHLORO- ETHANE	TRI- CHLORO- ETHENE	VINYL CHLORIDE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	10L UG/L	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	2 UG/L	UG/L	
08/02/88	7	AQJA		ND	ND	85.4	ND	308	ND	393	
10/10/88	18	AQJA		9.7	ND	130	99.7	440	ND	675	
02/24/89	22	AQJA		ND	100	41	ND	340	19.8	501	
06/08/89	10	AQJA	824	ND	67.3	35.3	ND	300	ND	403	
09/07/89	3	AQJA	8240	ND	75.7	35.1	15.5	230	16.3	373	
12/12/89	15	AQJA	8240	ND	92.4	48.6	ND	440	15.5	597	
02/28/90	7	AQJA	8240	ND	150	81.8	ND	270	22.1	504	
06/01/90	3	AQJA	8240	ND	81.7	48.5	ND	360	ND	490	
09/23/90	12	AQJA	8240	ND	55.2	30.8	ND	350	ND	436	
10/29/90	24	AQJA	8240	ND	87.4	39.7	10.4	327	ND	465	
03/01/91	14	AQJA	8240	21.2	68.9	48.2	6.0	310	ND	472	
05/31/91	6	AQJA	8240	ND	85.2	78.6	16.9	342.5	ND	523	
08/30/91	18	AQJA	8240	ND	42.4	21.5	32.6	282	ND	379	
11/13/91	10	AQJA	8240	ND	57.3	20.1	15.4	270	ND	371	
01/23/92	7	AQJA	8240	5.8	53.7	24.0	14.5	243	ND	341	
01/23/92	8	AQJA	8240	6.1	53.9	24.7	13.5	240	ND	346	
04/01/92	26	AQJA	8240	ND	47.7	10.0	15.1	240	ND	327	
08/21/92	5	AQJA	8240	ND	64.1	20.1	45.7	272	ND	402	
11/02/92	36	AQJA	8240	8.3	61.9	18.5	61.0	191	ND	342	
02/05/93	23	AQJA	8240	ND	90.2	21.8	17.9	224	ND	354	
05/12/93	21	AQJA	8240	ND	91.8	24.0	12.0	225	ND	353	
09/01/93	21	AQJA	8240	ND	76.4	15.8	ND	143	ND	235	
12/02/93	15	AQJA	8240	5.7	115	32.6	29.1	255	ND	437	
02/18/94	16	AQJA	8240	ND	39.7	23.7	ND	102	ND	165	
05/06/94	23	AQJA	8240	ND	78.8	12.5	27.1	158	ND	277	
08/15/94	18	AQJA	8240	8.7	80.1	10.8	82.7	171	ND	313	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Data Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

Ho Gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	86-15	86-15	86-15	86-15	86-15
				03/18/97	06/05/97	06/05/97	09/25/97	12/09/97
				Primary	Primary	Duplicate	Primary	Primary
Benzene			5	<5	<5	<5	<5.0	<5.0
Chloroethane			2	<10	<2	<2	<10	<10
Chloroform			100	<5	<5	<5	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5	<5.0	<5.0
trans-1,2-Dichloroethene			100	60	58	53	48	50
cis-1,2-Dichloroethene			70	35	38	33	32	33
Methylene chloride			5	<5	<5	<5	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5	<5.0	<5.0
Toluene			1000	<5	<5	<5	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5	<5.0	<5.0
Trichloroethene			5	[330]	[330]	[290]	[260]	[290]
Vinyl Chloride			2	<10	<2	<2	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<5	<10	<10
Carbon disulfide				<5	<5	<5	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	86-15
					06/11/98
					Primary
Benzene			5		<5.0
Chloroethene			2		<10
Chloroform			100		<5.0
1,1-Dichloroethane					<5.0
1,2-Dichloroethane			5		<5.0
1,1-Dichloroethane			7		<5.0
trans-1,2-Dichloroethene			100		86
cis-1,2-Dichloroethene			70		57
Methylene chloride			5		<5.0
Tetrachloroethene			5		<5.0
Toluene			1000		<5.0
1,1,1-Trichloroethane			200		<5.0
Trichloroethene			5		[350]
Vinyl Chloride			2		<10
Acetone					<100
Xylene (Total)			10000		<10
Carbon disulfide					<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols in Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	86-15	86-15	86-15
	DATE	03/18/97	09/25/97	06/11/98
	RESULT TYPE	US-PMCL	Primary	Primary
Total Phenols		< 10	< 10	< 10

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- =Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	86-15	86-15	86-15
	DATE	03/18/97	09/25/97	06/11/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary
Chromium, Dissolved		---	---	18
Lead, Dissolved		---	---	<2.0
Nickel, Dissolved		---	---	<20
Chromium, Total	100	<5	---	---
Lead, Total	15	6.4	---	---
Nickel, Total	100	<20	---	---
Cyanide	200	<5	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 86-15		DATE COLLECTED		15 MAR 95		08 JUN 95		19 SEP 95		05 DEC 95	
			08 DEC 94	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L	25 U				13 U		25 U			25 U		25 U
	CHLOROETHANE	UG/L	50 U				25 U		3.2	J		50 U		50 U
	1,1-DICHLOROETHANE	UG/L	25 U				13 U			25 U		25 U		25 U
	1,2-DICHLOROETHANE	UG/L	25 U				13 U			25 U		25 U		25 U
	1,1-DICHLOROETHENE	UG/L	25 U				13 U		3.4	J		25 U		25 U
	TRANS-1,2-DICHLOROETHENE	UG/L	47		35				18	J		45		38
	CIS-1,2-DICHLOROETHENE	UG/L	61		230				99		59		37	
	METHYLENE CHLORIDE	UG/L	25 U				13 U		4.0	J		25 U		25 U
	TETRACHLOROETHENE	UG/L	-				13 U			25 U		25 U		25 U
	TOLUENE	UG/L	25 U				13 U			25 U		25 U		25 U
	1,1,1-TRICHLOROETHANE	UG/L	43				13 U		7.2	J		6.5	J	25 U
	TRICHLOROETHENE	UG/L	625		470				290		440		310	
	VINYL CHLORIDE	UG/L	138		60				44	J		50 U		50 U
	ACETONE	UG/L	500 U				250 U			500 U		500 U		500 U
	XYLENE (TOTAL)	UG/L	50 U				25 U			50 U		50 U		50 U
	TOTAL VOCS:	UG/L	914		795				468.8		550.5		385	
	E.METALS	LEAD	UG/L	-			-		-		3.8		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.3			-		-		-		
	NICKEL (DISSOLVED)	UG/L	-		22			-		-		-		
H.MISC	CYANIDE, TOTAL	UG/L	-			5 U		-			5 U		-	
	PHENOLS	UG/L	-			10 U		-			10 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: 86-15				1,1-DI- CHLORO- ETHANE	CIS-1,2- DICHLORO- ETHENE	TRANS-1,2 DICHLORO- ETHENE	1,1,1-TRI- CHLORO- ETHANE	TRI- CHLORO- ETHENE	VINYL CHLORIDE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	IPL UG/L	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	2 UG/L	UG/L	
08/02/86	4	AQUA		ND	ND	48.1	64.9	1620	ND	1733	
10/10/86	13	AQUA		ND	ND	33.7	38.0	1280	ND	1252	
02/24/89	24	AQUA		ND	ND	9.2	9.1	400	ND	410	
06/08/89	9	AQUA	824	ND	18.2	33.5	7.6	600	ND	659	
09/07/89	2	AQUA	8240	ND	20.8	36.0	ND	470	ND	527	
12/12/89	14	AQUA	8240	ND	12.2	20.5	10.6	440	ND	403	
02/28/90	6	AQUA	8240	ND	16.5	32.7	11.8	520	ND	581	
06/01/90	2	AQUA	8240	ND	6.7	11.8	10.8	390	ND	419	
08/23/90	11	AQUA	8240	ND	ND	6.1	7.6	370	ND	304	
10/29/90	23	AQUA	8240	ND	8.8	10.8	11.2	404	ND	435	
03/01/91	13	AQUA	8240	6.1	7.9	13.9	18.1	322	ND	300	
05/31/91	5	AQUA	8240	ND	ND	39.1	4.3	449.6	ND	490	
08/30/91	15	AQUA	8240	ND	8.4	13.8	8.8	323	ND	354	
11/13/91	8	AQUA	8240	ND	12.5	14.2	7.4	301	ND	415	
11/13/91	9	AQUA	8240	ND	10.4	15.2	7.1	345	ND	370	
01/23/92	6	AQUA	8240	5.6	12.1	21.3	11.5	350	ND	401	
04/01/92	25	AQUA	8240	ND	11.9	21.1	7.5	404	ND	445	
08/21/92	4	AQUA	8240	ND	20.9	18.2	8.8	546	11.1	605	
11/02/92	34	AQUA	8240	ND	20.6	34.1	7.6	408	ND	470	
11/02/92	35	AQUA	8240	ND	28.7	33.4	8.3	376	ND	446	
02/05/93	22	AQUA	8240	ND	33.1	36.2	7.0	440	ND	516	
05/12/93	19	AQUA	8240	ND	28.7	34.1	6.8	364	ND	434	
05/12/93	20	AQUA	8240	ND	33.9	40.9	7.8	303	ND	466	
09/01/93	20	AQUA	8240	7.3	47.4	41.6	8.1	373	ND	477	
12/02/93	14	AQUA	8240	ND	78.1	53.9	ND	891	ND	1021	
02/10/94	13	AQUA	8240	ND	39.7	31.1	ND	374	ND	445	
05/06/94	21	AQUA	8240	ND	31.8	37.8	ND	370	ND	440	
05/06/94	22	AQUA	8240	ND	37.2	36.3	ND	344	ND	410	
09/15/94	17	AQUA	8240	ND	54.5	62.0	ND	575	109	801	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

MPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITORING WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSONAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedson
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	9-33	9-33	9-33	9-33	9-33
			DATE	DATE	DATE	DATE	DATE
			03/19/97	06/04/97	09/26/97	09/26/97	06/10/98
RESULT TYPE	Primary	Primary	Primary	Duplicate	Primary		
Benzene		5	<5	<5	<5.0	<5.0	<5.0
Chloroethene		2	<10	<2	<10	<10	<10
Chloroform		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane		5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene		100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene		70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0
Toluene		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride		2	<10	<2	<10	<10	<10
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<5	<10	<10	<10
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- =Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	US-PMCL	9-33 03/19/97 Primary	9-33 09/26/97 Primary	9-33 09/26/97 Duplicate	9-33 06/10/98 Primary
Chromium, Dissolved			---	---	---	<5
Lead, Dissolved			---	---	---	<2.0
Nickel, Dissolved			---	---	---	<20
Chromium, Total		100	<5	---	---	---
Lead, Total		15	<2	---	---	---
Nickel, Total		100	<20	---	---	---
Cyanide		200	<5	<5	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 9-33 DATE COLLECTED			
			13 MAR 96 AMOUNT q	04 JUN 96 AMOUNT q	05 SEP 96 AMOUNT q	10 DEC 96 AMOUNT q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
TOTAL VOCs:		UG/L	0	0	0	0
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	1.0 J	-	1.3 J	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 9-33 DATE COLLECTED					
			07 DEC 94 AMOUNT Q	13 MAR 95 AMOUNT Q	06 JUN 95 AMOUNT Q	20 SEP 95 AMOUNT Q	06 DEC 95 AMOUNT Q	
A.VOA	BENZENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	METHYLENE CHLORIDE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	12	10 U	10 U	10 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
	TOTAL VOCS:	UG/L	0	0	12	0	0	0
E.METALS	LEAD	UG/L	-	-	-	4.2	-	-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-	2.0 U	-	-	-	-
	NICKEL (DISSOLVED)	UG/L	-	20 U	-	-	-	-
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	-	5 U	-
	PHENOLS	UG/L	-	10 U	-	-	10 U	-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERN QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: 9-33				NOTES
DATE SAMPLED	SAMPLE NO.	LAB	HCL METHOD	
01/08/87	11	AQUA		No VOC Detected
06/05/87	3	AQUA		No VOC Detected
09/03/87	3	AQUA		No VOC Detected
01/13/88	3	AQUA		No VOC Detected
02/10/88	31	AQUA		No VOC Detected
05/10/88	3	AQUA		No VOC Detected
09/22/88	3	AQUA		No VOC Detected
12/09/88	15	AQUA		No VOC Detected
02/22/89	4	AQUA		No VOC Detected
06/10/89	35	AQUA	024	No VOC Detected
09/07/89	4	AQUA	0240	No VOC Detected
12/17/89	32	AQUA	0240	No VOC Detected
02/28/90	5	AQUA	0240	No VOC Detected
06/04/90	33	AQUA	0240	No VOC Detected
06/04/90	34	AQUA	0240	No VOC Detected
08/22/90	2	AQUA	0240	No VOC Detected
10/27/90	3	AQUA	0240	No VOC Detected
02/28/91	11	AQUA	0240	No VOC Detected
06/01/91	24	AQUA	0240	No VOC Detected
08/29/91	11	AQUA	0240	No VOC Detected
11/12/91	5	AQUA	0240	No VOC Detected
01/23/92	12	AQUA	0240	No VOC Detected
04/01/92	32	AQUA	0240	No VOC Detected
08/22/92	11	AQUA	0240	No VOC Detected
02/04/93	8	AQUA	0240	No VOC Detected
02/10/93	1	AQUA	0240	No VOC Detected
05/11/93	12	AQUA	0240	No VOC Detected
09/11/93	13	AQUA	0240	No VOC Detected
09/31/93	2	AQUA	0240	No VOC Detected
12/02/93	19	AQUA	0240	No VOC Detected
02/17/94	7	AQUA	0240	No VOC Detected
05/05/94	12	AQUA	0240	No VOC Detected
09/09/94	13	AQUA	0240	No VOC Detected
09/14/94	9	AQUA	0240	No VOC Detected

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

NO RESULT FOR 10/92 SAMPLING EPISODE DUE TO LAB ERROR.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIED SIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

allied signal
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-1	MW-1	MW-1	MW-1
				03/18/97	06/05/97	09/26/97	12/10/97
				Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10
Acetone				<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	MW-1	MW-1
DATE	US-PMCL	03/18/97	09/26/97
RESULT TYPE		Primary	Primary
Total Phenols		< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	MW-1		
		DATE	DATE	
		03/18/97	09/26/97	
RESULT TYPE	US-PMCL	Primary	Primary	
Chromium, Dissolved			---	---
Lead, Dissolved			---	---
Nickel, Dissolved			---	---
Chromium, Total		100	30 J	---
Lead, Total		15	[19] J	---
Nickel, Total		100	[140]	---
Cyanide		200	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE RESULT TYPE	US-PMCL	MW-2	MW-2	MW-2	MW-2	MW-2
			03/18/97	06/05/97	09/26/97	12/09/97	06/12/98
			Primary	Primary	Primary	Primary	Primary
Benzene		5	<130	<5	<25	<10	<20
Chloroethene		2	<250	<2	[70]	[83]	[93]
Chloroform		100	<130	<5	<25	<10	<20
1,1-Dichloroethane			<130	260	190	110	220
1,2-Dichloroethane		5	<130	<5	[49]	<10	<20
1,1-Dichloroethene		7	<130	<5	<25	<10	<20
trans-1,2-Dichloroethene		100	<130	<5	<25	14	27
cis-1,2-Dichloroethene		70	[2400]	[3500]	[2600]	[950]	[2100]
Methylene chloride		5	<130	<5	<25	<10	<20
Tetrachloroethene		5	<130	<5	<25	<10	<20
Toluene		1000	<130	<5	<25	<10	<20
1,1,1-Trichloroethane		200	[880]	[960]	[500]	[240]	[490]
Trichloroethene		5	[170]	<5	[36]	[19]	[51]
Vinyl Chloride		2	<250	<2	[70]	[83]	[93]
Acetone			<2500	<100	<500	<200	<400
Xylene (Total)		10000	<250	<5	<50	<20	<40
Carbon disulfide			<130	<5	<25	<10	<20

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed
 [] = Greater than Action Level
 For RCL ANSUM

Analytical Summary - Phenols In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE		MW-2	MW-2	MW-2
		DATE		03/18/97	09/26/97	06/12/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols				< 10	10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT	(Units in ug/l)	SITE		MW-2		
		DATE	US-PMCL	03/18/97	09/26/97	06/12/98
RESULT TYPE		Primary	Primary	Primary	Primary	
Chromium, Dissolved		---		---	7.8	
Lead, Dissolved		---		---	<2.0	
Nickel, Dissolved		---		---	<20	
Chromium, Total	100	<5		---	---	
Lead, Total	15	12		---	---	
Nickel, Total	100	<20		---	---	
Cyanide	200	<5		<5	<5	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-3	MW-3	MW-3	MW-3	MW-3
				03/18/97	03/18/97	06/05/97	09/26/97	12/10/97
				Primary	Duplicate	Primary	Primary	Primary
Benzene			5	<5	<5	<5	<5.0	<5.0
Chloroethene			2	<10	<10	<2	<10	<10
Chloroform			100	<5	<5	<5	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5	5.0	5.1
1,2-Dichloroethane			5	<5	<5	<5	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5	<5.0	<5.0
cis-1,2-Dichloroethene			70	38	39	50	57	60
Methylene chloride			5	<5	<5	<5	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5	<5.0	<5.0
Toluene			1000	<5	<5	<5	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	7.6	8.6	6.9
Trichloroethene			5	[6.2]	[6]	[6.0]	[8.4]	[5.7]
Vinyl Chloride			2	<10	<10	<2	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<10	<5	<10	<10
Carbon disulfide				<5	<5	<5	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1B

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-3 12/10/97 Duplicate
Benzene			5	<5.0
Chloroethane			2	<10
Chloroform			100	<5.0
1,1-Dichloroethane				5.2
1,2-Dichloroethane			5	<5.0
1,1-Dichloroethene			7	<5.0
trans-1,2-Dichloroethene			100	<5.0
cis-1,2-Dichloroethene			70	62
Methylene chloride			5	<5.0
Tetrachloroethene			5	<5.0
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	7.1
Trichloroethene			5	[5.8]
Vinyl Chloride			2	<10
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	MW-3	MW-3	MW-3	
		SAMPLE ID	MW-3	MW-3		
		DATE	03/18/97	03/18/97	09/26/97	
		RESULT TYPE	US-PMCL	Primary	Duplicate	Primary
Total Phenols			<10	<10	<10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
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 AlliedSignal Industrial Complex
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CONSTITUENT (Units in ug/l)	SITE		MW-3	MW-3	MW-3
	SAMPLE ID		MW-3	MW-3	
	DATE		03/18/97	03/18/97	09/26/97
	RESULT TYPE	US-PMCL	Primary	Duplicate	Primary
Chromium, Dissolved			---	---	---
Lead, Dissolved			---	---	---
Nickel, Dissolved			---	---	---
Chromium, Total		100	9.8	20	---
Lead, Total		15	3.6	[19]	---
Nickel, Total		100	<20	<20	---
Cyanide		200	<5	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed
 [] = Greater than Action Level
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Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	US-PMCL	MW-4	MW-4	MW-4	MW-4	MW-4
			03/18/97	06/04/97	09/26/97	12/10/97	06/12/98
			Primary	Primary	Primary	Primary	Primary
Benzene		5	<5	<5	<5.0	<5.0	<5.0
Chloroethene		2	<10	<2	<10	<10	<10
Chloroform		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			<5	<5	5.6	6.5	7.8
1,2-Dichloroethane		5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethane		100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethane		70	11	5.4	10	5.2	6.9
Methylene chloride		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		5	<5	<5	<5.0	<5.0	<5.0
Toluene		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		5	[13]	[17]	[20]	[21]	[7.0]
Vinyl Chloride		2	<10	<2	<10	<10	<10
Acetone			<100	<100	<100	<100	<100
Xylene (Total)		10000	<10	<5	<10	<10	<10
Carbon disulfide			<5	<5	<5.0	<5.0	<5.0

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 Shallow Monitoring Wells
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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-4 06/12/98 Duplicate
Benzene			5	<5.0
Chloroethene			2	<10
Chloroform			100	<5.0
1,1-Dichloroethane				6.1
1,2-Dichloroethane			5	<5.0
1,1-Dichloroethene			7	<5.0
trans-1,2-Dichloroethene			100	<5.0
cis-1,2-Dichloroethene			70	6.4
Methylene chloride			5	<5.0
Tetrachloroethene			5	<5.0
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	<5.0
Trichloroethene			5	[7.4]
Vinyl Chloride			2	<10
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed [] = Greater than Action Level For RCL ANSUM				

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	MW-4	MW-4	MW-4	MW-4
	SAMPLE ID	MW-4	MW-4	MW-4	MW-4
	DATE	03/18/97	09/26/97	06/12/98	06/12/98
	RESULT TYPE	US-PMCL Primary	Primary	Primary	Duplicate
Total Phenols		<10	<10	<10	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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Analytical Summary - Inorganics In Groundwater
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CONSTITUENT (Units in ug/l)	SITE		MW-4	MW-4	MW-4	MW-4	
	SAMPLE ID	DATE	MW-4	03/18/97	09/26/97	06/12/98	06/12/98
	RESULT TYPE	US-PMCL	Primary	Primary	Primary	Duplicate	
Chromium, Dissolved			---	---	7.5	7.7	
Lead, Dissolved			---	---	<2.0	<2.0	
Nickel, Dissolved			---	---	<20	<20	
Chromium, Total		100	[2770]	---	---	---	
Lead, Total		15	[707]	---	---	---	
Nickel, Total		100	[620]	---	---	---	
Cyanide		200	<5	<5	<5	<5	

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CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	MW-5	MW-5	MW-5	MW-5	MW-5
				03/18/97	06/05/97	09/28/97	12/10/97	06/12/98
		DATE		Primary	Primary	Primary	Primary	Primary
		RESULT TYPE						
Benzene	5		5	<5	<5	<5.0	<5.0	<5.0
Chloroethene	2		2	[13]	[12]	[13]	<10	<10
Chloroform	100		100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane	5		5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane	7		7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene	100		100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	70		70	9.8	11	11	11	7.4
Methylene chloride	5		5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene	5		5	[5.8]	[8.4]	[13]	[8.8]	[6.8]
Toluene	1000		1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	200		200	9	11	16	33	8.9
Trichloroethene	5		5	[24]	[28]	[42]	[18]	[24]
Vinyl Chloride	2		2	[13]	[12]	[13]	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)	10000		10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

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CONSTITUENT (Units in ug/l)	SITE	MW-5	MW-5	MW-5
	SAMPLE ID	MW-5	MW-5	MW-5
	DATE	03/18/97	09/26/97	06/12/98
	RESULT TYPE	Primary	Primary	Primary
	US-PMCL			
Total Phenols		< 10	< 10	< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

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CONSTITUENT (Units in ug/l)	SITE		MW-5	MW-5	MW-5
	SAMPLE ID		MW-5		
	DATE		03/18/97	09/26/97	06/12/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	
Chromium, Dissolved			---	---	<5
Lead, Dissolved			---	---	<2.0
Nickel, Dissolved			---	---	<20
Chromium, Total	100		[290]	---	---
Lead, Total	15		[152]	---	---
Nickel, Total	100		92	---	---
Cyanide	200		<5	<5	<5

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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-7	MW-7	MW-7	MW-7	MW-7
				03/18/97	06/05/97	09/25/97	12/09/97	06/12/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	[63]	[120]	[81]	[95]	[110]
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				15	28	19	16	21
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	[230]	[350]	[290]	[270]	[300]
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	[63]	[120]	[81]	[95]	[110]
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

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 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	MW-7	MW-7	MW-7
	SAMPLE ID	MW-7		
	DATE	03/18/97	09/25/97	06/12/98
	RESULT TYPE	US-PMCL	Primary	Primary
Total Phenols		<10	<10	<10

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

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Analytical Summary - Inorganics In Groundwater
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CONSTITUENT (Units in ug/l)	SITE	MW-7	MW-7	MW-7
	SAMPLE ID	MW-7	MW-7	MW-7
	DATE	03/18/97	09/25/97	06/12/98
	RESULT TYPE	Primary	Primary	Primary
	US-PMCL			
Chromium, Dissolved		---	---	5.9
Lead, Dissolved		---	---	<2.0
Nickel, Dissolved		---	---	<20
Chromium, Total	100	75	---	---
Lead, Total	15	[85]	---	---
Nickel, Total	100	[110]	---	---
Cyanide	200	<5	<5	<5

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 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-8	MW-8
				03/18/97	06/05/97
				Primary	Primary
Benzene			5	< 5	< 5
Chloroethene			2	[14]	< 2
Chloroform			100	< 5	< 5
1,1-Dichloroethane				330	440
1,2-Dichloroethane			5	< 5	< 5
1,1-Dichloroethane			7	5.3	< 5
trans-1,2-Dichloroethene			100	9	< 5
cis-1,2-Dichloroethene			70	[1000]	[1400]
Methylene chloride			5	< 5	< 5
Tetrachloroethene			5	[19]	< 5
Toluene			1000	< 5	< 5
1,1,1-Trichloroethane			200	7.6	< 5
Trichloroethene			5	[78]	[140]
Vinyl Chloride			2	[14]	< 2
Acetone				< 100	< 100
Xylene (Total)			10000	< 10	< 5
Carbon disulfide				< 5	< 5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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Analytical Summary - Phenols In Groundwater
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CONSTITUENT (Units in ug/l)	SITE	US-PMCL	MW-8
	SAMPLE ID		MW-8
	DATE		03/18/97
	RESULT TYPE	US-PMCL	Primary

Total Phenols			3100
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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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Analytical Summary - Inorganics In Groundwater
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CONSTITUENT (Units in ug/l)	SITE	MW-8
	SAMPLE ID	MW-8
	DATE	03/18/97
RESULT TYPE	US-PMCL	Primary
Chromium, Dissolved		---
Lead, Dissolved		---
Nickel, Dissolved		---
Chromium, Total	100	< 5
Lead, Total	15	12
Nickel, Total	100	[150]
Cyanide	200	6

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-9	MW-9	MW-9	MW-9	MW-9
				03/18/97	06/03/97	09/26/97	12/08/97	06/11/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	[6.2]
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed [] = Greater than Action Level For RCL ANSUM								

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
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 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	MW-9	MW-9	MW-9
	SAMPLE ID	MW-9	MW-9	MW-9
	DATE	03/18/97	09/25/97	06/11/98
	RESULT TYPE	US-PMCL	Primary	Primary
		US-PMCL	Primary	Primary
Total Phenols		80	20	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

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CONSTITUENT	(Units in ug/l)	SITE		MW-9	MW-9	MW-9
		SAMPLE ID		MW-9		
		DATE		03/18/97	09/25/97	06/11/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Chromium, Dissolved				---	---	7.2
Lead, Dissolved				---	---	<2.0
Nickel, Dissolved				---	---	20
Chromium, Total			100	82	---	---
Lead, Total			15	[48]	---	---
Nickel, Total			100	[100]	---	---
Cyanide			200	9	30	<5

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

[] = Greater than Action Level

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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-10 06/11/98 Primary
Benzene			5	< 5.0
Chloroethene			2	< 10
Chloroform			100	< 5.0
1,1-Dichloroethane				12
1,2-Dichloroethane			5	< 5.0
1,1-Dichloroethene			7	< 5.0
trans-1,2-Dichloroethene			100	< 5.0
cis-1,2-Dichloroethene			70	[91]
Methylene chloride			5	< 5.0
Tetrachloroathene			5	< 5.0
Toluene			1000	< 5.0
1,1,1-Trichloroethane			200	43
Trichloroethene			5	[130]
Vinyl Chloride			2	< 10
Acetone				< 100
Xylene (Total)			10000	< 10
Carbon disulfide				< 5.0

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CONSTITUENT	(Units In ug/l)	SITE	MW-10
RESULT TYPE	US-PMCL	SAMPLE ID	DATE
RESULT TYPE	US-PMCL	DATE	06/11/98
RESULT TYPE	US-PMCL	DATE	Primary
Chromium, Dissolved			<5
Lead, Dissolved			<2.0
Nickel, Dissolved			<20
Chromium, Total	100		---
Lead, Total	15		---
Nickel, Total	100		---
Cyanide	200		<5

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CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-11 DATE 06/11/98	Primary
Benzene			5	<5.0	
Chloroethane			2	<10	
Chloroform			100	<5.0	
1,1-Dichloroethane				36	
1,2-Dichloroethane			5	<5.0	
1,1-Dichloroethane			7	<5.0	
trans-1,2-Dichloroethene			100	<5.0	
cis-1,2-Dichloroethene			70	[90]	
Methylene chloride			5	<5.0	
Tetrachloroethene			5	<5.0	
Toluene			1000	<5.0	
1,1,1-Trichloroethane			200	18	
Trichloroethene			5	[8.7]	
Vinyl Chloride			2	<10	
Acetone				<100	
Xylene (Total)			10000	<10	
Carbon disulfide				<5.0	

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CONSTITUENT	(Units in ug/l)	SITE	MW-11
SAMPLE ID		DATE	06/11/98
RESULT TYPE	US-PMCL	Primary	
Total Phenols			10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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CONSTITUENT (Units in ug/l)	SITE	MW-11
	SAMPLE ID	
	DATE	06/11/98
RESULT TYPE	US-PMCL	Primary
Chromium, Dissolved		<5
Lead, Dissolved		<2.0
Nickel, Dissolved		<20
Chromium, Total	100	---
Lead, Total	15	---
Nickel, Total	100	---
Cyanide	200	<5

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CONSTITUENT (Units in ug/l)	SITE		MW-12	MW-12
	DATE	RESULT TYPE	06/12/98	06/12/98
		US-PMCL	Primary	Duplicate
Benzene		5	< 5.0	< 5.0
Chloroethene		2	< 10	< 10
Chloroform		100	< 5.0	< 5.0
1,1-Dichloroethane			14	11
1,2-Dichloroethane		5	< 5.0	< 5.0
1,1-Dichloroethene		7	< 5.0	< 5.0
trans-1,2-Dichloroethene		100	16	15
cis-1,2-Dichloroethene		70	[690]	[660]
Methylene chloride		5	< 5.0	< 5.0
Tetrachloroethene		5	< 5.0	< 5.0
Toluene		1000	< 5.0	< 5.0
1,1,1-Trichloroethane		200	16	14
Trichloroethene		5	[180]	[180]
Vinyl Chloride		2	< 10	< 10
Acetone			< 100	< 100
Xylene (Total)		10000	< 10	< 10
Carbon disulfide			< 5.0	< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed
 [] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Inorganics In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE		MW-12	MW-12
	SAMPLE ID			
	DATE		06/12/98	06/12/98
	RESULT TYPE	US-PMCL	Primary	Duplicate
Chromium, Dissolved			< 5	< 5
Lead, Dissolved			< 2.0	< 2.0
Nickel, Dissolved			< 20	< 20
Chromium, Total		100	---	---
Lead, Total		15	---	---
Nickel, Total		100	---	---
Cyanide		200	< 5	< 5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	MW-13 06/10/98 Primary
Benzene			5	<5.0
Chloroethene			2	<10
Chloroform			100	<5.0
1,1-Dichloroethane				<5.0
1,2-Dichloroethane			5	<5.0
1,1-Dichloroethene			7	<5.0
trans-1,2-Dichloroethene			100	<5.0
cis-1,2-Dichloroethene			70	<5.0
Methylene chloride			5	<5.0
Tetrachloroethene			5	<5.0
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	<5.0
Trichloroethene			5	<5.0
Vinyl Chloride			2	<10
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0

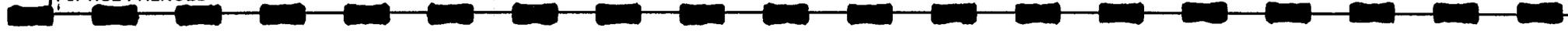
Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- =Not analyzed

Analytical Summary - Phenols In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	SAMPLE ID	DATE	RESULT TYPE	US-PMCL	MW-13
Total Phenols							< 10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS



Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	MW-13
	SAMPLE ID	
	DATE	06/10/98
RESULT TYPE	US-PMCL	Primary
Chromium, Dissolved		< 5
Lead, Dissolved		< 2.0
Nickel, Dissolved		< 20
Chromium, Total	100	---
Lead, Total	15	---
Nickel, Total	100	---
Cyanide	200	< 5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

S30CMV
25-Oct-88

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS										OTHER ORGANIC COMPOUNDS		
1,1-DI- [CHLORO- ETHANE]	1,2-DI- [CHLORO- ETHANE]	1,1-DI- [CHLORO- ETHYLENE]	TRANS-1,2 DI- [CHLORO- ETHYLENE]	1,1,1- TRI- [CHLORO- ETHANE]	1,1,2 TRI- [CHLORO- ETHYLENE]	1,2 DI- [CHLORO- PROPANE]	VINYL [CHLORO- CHLORIDE]	FORM	TOLUENE	CIS-1,2- DICHLORO- ETHENE	BIS [2-ETHYLHEXYL] PHTHALATE	
UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	

NOTES:
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.

WELL NO.	DATE	SAMPLE #	LAB												
S-3	11/05/86	9	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6
	06/05/87	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	09/03/87	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	01/14/88	26	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/08/88	3	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	05/18/88	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	09/23/88	4	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

TABLE 5

GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS
PAGE 21 OF 43
MONITOR WELLS

GROUNDWATER INVESTIGATIONS
ALLIED CORPORATION
SOUTH BEND, INDIANA
PROJECT # ALCHPX SBIN 012

T A GLEASON ASSOCIATES
Environmental and Geotechnical Services

S3MCPHV
07-Oct-88

WELL NO.	SAMPLE #	DATE	LAB	SPECIFIC	CONDUC-	pH	TEMP	ANTIMONY	ARSENIC	BERYLLIUM	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM	ZINC	CYANIDE	PHENOLS	NOTES:
				UMHOS/CM	SU			C	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
S-3	9	11/05/86	AQUA					<15	<4	<1	<1	18	52	86	<0.3	<10	<300	<4	<6	415	<0.010	<0.010	OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS. < = LESS THAN METAL SAMPLES COLLECTED SINCE 6/05/87 WERE FILTERED IN THE FIELD THROUGH .45 MICRON FILTER BLANK SPACE INDICATES ANALYSIS NOT PERFORMED
	18	12/12/87	AQUA	1600			12					16		110						380			
	4	06/05/87	AQUA	1600	7.52		14					<5		<3						30	0.04	0.01	
	4	09/03/87	AQUA	1500	7.43		14					<10		<3						12	<0.005	<0.010	
	26	01/15/88	AQUA	2100	6.86		9					<20		<30						10	<0.02	0.04	
	3	02/08/88	AQUA	2400	7.29		12					<20		<3						10	<0.01	0.913	
	4	5/18/88	AQUA	2300	7.33		14					<30		<5						24	<0.01	0.04	
	4	09/23/88	AQUA	1395	7.05		14.5					<30		<6						<20	<0.01	0.07	
TABLE 3																							
GROUNDWATER QUALITY ANALYSIS																							
METALS, CYANIDE AND PHENOLS																							
PAGE 13 OF 28																							
MONITOR WELLS																							
GROUNDWATER INVESTIGATIONS																							
ALLIED CORPORATION																							
SOUTH BEND, INDIANA																							
PROJECT ALMPX SBIN 013																							
T A GLEASON ASSOCIATES																							
Environmental and Geotechnical Services																							

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S4A	S4A	S4A	S4A	S4A
				03/21/97	06/03/97	09/23/97	12/09/97	06/10/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				14	31	24	23	33
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	5.2
cis-1,2-Dichloroethene			70	[210]	[300]	[220]	[210]	[280]
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	[6.6]	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT	(Units in ug/l)	SITE	S4A	S4A	S4A	
		DATE	03/21/97	09/23/97	06/10/98	
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols			10	10	< 10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed
 For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	S4A	S4A	S4A
	DATE	03/21/97	09/23/97	06/10/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary
Chromium, Dissolved		---	---	< 5
Lead, Dissolved		---	---	< 2.0
Nickel, Dissolved		---	---	< 20
Chromium, Total	100	16	---	---
Lead, Total	15	[26]	---	---
Nickel, Total	100	< 20	---	---
Cyanide	200	< 5	< 5	< 5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed
 [] = Greater than Action Level
 For RCL INORG

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-4A		DATE COLLECTED		12 MAR 96		04 JUN 96		04 SEP 96		10 DEC 96		
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q			
A.VOA	BENZENE	UG/L	25	U					5.0	U					
	CHLOROETHANE	UG/L							10	U			5.0	U	
	CHLOROFORM	UG/L										10	U		
	1,1-DICHLOROETHANE	UG/L	23	J			25		5.0	U		5.0	U	5.0	U
	1,2-DICHLOROETHANE	UG/L									16			5.0	U
	1,1-DICHLOROETHENE	UG/L							5.0	U				5.0	U
	TRANS-1,2-DICHLOROETHENE	UG/L						5.2						5.0	U
	CIS-1,2-DICHLOROETHENE	UG/L	14	J				5.2						5.0	U
	METHYLENE CHLORIDE	UG/L	310				250				150		6.2		
	TETRACHLOROETHENE	UG/L							5.0	U			230		
	TOLUENE	UG/L							5.0	U				5.0	U
	1,1,1-TRICHLOROETHANE	UG/L							5.0	U				5.0	U
	TRICHLOROETHENE	UG/L	10	J					5.0	U				5.0	U
	VINYL CHLORIDE	UG/L						7.9						5.0	U
	ACETONE	UG/L							10	U			5.6		
	XYLENE (TOTAL)	UG/L							100	U				100	U
	CARBON DISULFIDE	UG/L							10	U				10	U
	TOTAL VOCS:	UG/L	357				293.3				166		249.3		
E.METALS	CHROMIUM	UG/L									43				
	LEAD	UG/L										53			
	NICKEL	UG/L									81				
H.MISC	CYANIDE, TOTAL	UG/L										5	U		
	PHENOLS	UG/L										10	U		

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-4A DATE COLLECTED		07 JUN 95		19 SEP 95		05 DEC 95	
			07 DEC 94	14 MAR 95	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		5 U		5.0 U	2.2			
	CHLOROETHANE	UG/L		10 U		10 U	J		10 U	25 U
	1,1-DICHLOROETHANE	UG/L	62		43		10 U		20 U	50 U
	1,2-DICHLOROETHANE	UG/L		5 U		5.0 U		34		15
	1,1-DICHLOROETHENE	UG/L	9.1		12		5.0 U		10 U	25 U
	TRANS-1,2-DICHLOROETHENE	UG/L	40		21		5.0 U		7.5	25 U
	CIS-1,2-DICHLOROETHENE	UG/L	200		200		J		10	25 U
	METHYLENE CHLORIDE	UG/L		5 U		5.0 U		320		160
	TETRACHLOROETHENE	UG/L		-		5.0 U			10 U	25 U
	TOLUENE	UG/L		5 U		5.0 U			10 U	25 U
	1,1,1-TRICHLOROETHANE	UG/L		5 U		5.0 U	3.0		10 U	25 U
	TRICHLOROETHENE	UG/L	6.5		7		5.0 U		10 U	25 U
	VINYL CHLORIDE	UG/L		10 U		10 U			11	25 U
	ACETONE	UG/L		100 U		100 U			20 U	50 U
	XYLENE (TOTAL)	UG/L		10 U		10 U			200 U	500 U
TOTAL VOCs:	UG/L	317.6		283		96.6		382.5		175
E.METALS	LEAD	UG/L		-		-		13		-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-		2.0 U		-		-
	NICKEL (DISSOLVED)	UG/L		-		20 U		-		-
H.MISC	CYANIDE, TOTAL	UG/L		-		25 U		-		-
	PHENOLS	UG/L		-		10 U		40	5 U	-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-4A

DATE SAMPLED	SAMPLE NO.	LAB	MCL	1, 1-DI-CHLORO-ETHANE	1, 2-DI-CHLORO-ETHANE	1, 1-DI-CHLORO-ETHENE	CIS-1, 2-DI-CHLORO-ETHENE	TRANS-1, 2-DI-CHLORO-ETHENE	1, 1, 1-TRI-CHLORO-ETHANE	TRI-CHLORO-ETHENE	VINYL CHLORIDE	SUM	NOTES
			METHOD	MPL UG/L	5 UG/L	7 UG/L	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	2 UG/L	UG/L	
06/05/87	22	AQUA		1100	ND	200	820	110	200	120	ND	2550	A
09/04/87	27	AQUA		1100	ND	80.0	2000	170	ND	17.0	700	4157	
01/14/88	25	AQUA		1600	ND	180	1800	112	ND	ND	700	4192	
02/08/88	2	AQUA		1500	ND	165	1770	160	ND	ND	900	4495	
05/18/88	7	AQUA		1700	ND	165	2800	ND	ND	ND	437	5102	
05/18/88	8	AQUA		1640	ND	200	2750	ND	ND	ND	373	4963	
09/22/88	7	AQUA		1810	7.0	292	940	154	11.0	40.0	1570	4824	
09/22/88	8	AQUA		1820	7.3	281	920	155	10.0	39.0	1620	4852	
12/18/88	26	AQUA		970	ND	114	1600	135	ND	23.7	671	3476	
02/27/89	43	AQUA		700	ND	110	1400	150	8.7	17.2	278	2656	
06/18/89	37	AQUA	624	660	ND	120	1000	190	ND	ND	ND	2050	
06/18/89	38	AQUA	624	620	ND	110	1040	190	ND	ND	ND	1960	
09/09/89	25	AQUA	8240	900	ND	120	840	190	34	19.7	69.5	1853	
12/13/89	27	AQUA	8240	880	ND	151	760	100	34.1	32.5	41	2079	
01/02/90	37	AQUA	8240	670	ND	92.1	1000	210	27	19	27.4	2046	
06/03/90	23	AQUA	8240	430	ND	64.0	640	100	20.0	19.1	20.9	1795	
08/24/90	22	AQUA	8240	231	ND	9.0	500	60.2	9.5	16.6	ND	826	
10/28/90	14	AQUA	8240	408	ND	85.2	677	170	16.8	25.0	ND	1392	
03/02/91	25	AQUA	8240	176	5.7	39.7	311	50.0	6.2	16.0	12.7	625	
06/02/91	20	AQUA	8240	220	ND	47.2	ND	ND	9.5	26.6	ND	311	
08/31/91	30	AQUA	8240	140	ND	53.8	182	46.6	11.3	34.1	10.3	470	
11/13/91	21	AQUA	8240	156	ND	45.2	179	47.2	8.6	36.0	ND	473	
11/13/91	22	AQUA	8240	131	ND	41.5	173	40.6	8.6	37.8	ND	432	
01/25/92	27	AQUA	8240	342	ND	51.8	197	46.3	ND	39.8	ND	677	
01/25/92	28	AQUA	8240	322	ND	48.9	180	45.7	ND	34.8	ND	631	
04/01/92	36	AQUA	8240	127	ND	40.5	169	41.0	6.7	25.1	ND	409	
08/22/92	24	AQUA	8240	171	ND	46.4	238	72.4	ND	26.0	ND	554	
10/31/92	18	AQUA	8240	103	ND	37.2	171	46.6	ND	16.7	ND	375	
10/31/92	19	AQUA	8240	94.1	ND	32.2	149	37.1	ND	15.3	ND	328	
02/04/93	18	AQUA	8240	108	ND	37.8	216	46.7	ND	21.8	ND	430	
05/11/93	16	AQUA	8240	90.5	ND	27.0	161	32.8	ND	13.7	ND	325	
08/31/93	16	AQUA	8240	68.4	ND	17.7	125	20.6	ND	20.6	ND	252	
12/03/93	28	AQUA	8240	89.7	ND	55.2	234	26.4	ND	29.4	ND	435	
12/03/93	29	AQUA	8240	83.2	ND	55.6	223	27.7	ND	29.7	ND	419	
02/18/94	18	AQUA	8240	66.8	ND	17.5	201	22.7	ND	16.8	ND	325	
05/05/94	18	AQUA	8240	77.7	ND	17.9	174	31.0	ND	9.9	ND	311	
09/15/94	31	AQUA	8240	96.7	ND	19.9	230	57.7	ND	10.8	ND	415	

NOTES:
 OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.
 ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.
 MPL - ND U.S. EPA PUBLISHED LEVEL
 P - PROPOSED
 VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.
 A - AS OF 06/25/87 WELL S-4 WAS REPLACED BY WELL S-4A.

PARAMETER
 * - Date Sampled

SHALLOW MONITOR WELLS
 GROUNDWATER QUALITY ANALYSIS
 ORGANIC COMPOUNDS

ALLIEDSIGNAL, INC.
 GROUNDWATER INVESTIGATIONS
 SOUTH BEND, INDIANA

a gleason
 associates
 Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S9	S9	S9	S9	S9
				03/19/97	06/04/97	09/25/97	12/11/97	06/11/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethane			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	[220]	[250]	[190]	[240]	[170]
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	5.8	<5	5.8	<5.0	7.3
cis-1,2-Dichloroethene			70	45	64	54	62	61
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Inorganics In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE			S9	S9	S9
		DATE	US-PMCL	03/19/97	09/25/97	06/11/98
				Primary	Primary	Primary
Chromium, Dissolved				---	---	8.9
Lead, Dissolved				---	---	<2.0
Nickel, Dissolved				---	---	<20
Chromium, Total		100	<5	---	---	
Lead, Total		15	3	---	---	
Nickel, Total		100	<20	---	---	
Cyanide		200	9	10		<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID		DATE COLLECTED		12 MAR 96		04 JUN 96		04 SEP 96		10 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L	10	U										
	CHLOROETHANE	UG/L	20	U					5.0	U				5.0
	CHLOROFORM	UG/L	10	U					10	U				10
	1,1-DICHLOROETHANE	UG/L	10	U					5.0	U				5.0
	1,2-DICHLOROETHANE	UG/L	10	U					5.0	U				5.0
	1,1-DICHLOROETHENE	UG/L	250						5.0	U				5.0
	TRANS-1,2-DICHLOROETHENE	UG/L	10	U					5.0	U			270	
	CIS-1,2-DICHLOROETHENE	UG/L	4.8	J					3.4	J				5.0
	METHYLENE CHLORIDE	UG/L	26						26					3.1
	TETRACHLOROETHENE	UG/L	10	U									42	J
	TOLUENE	UG/L	10	U					5.0	U				5.0
	1,1,1-TRICHLOROETHANE	UG/L	10	U					5.0	U				5.0
	TRICHLOROETHENE	UG/L	10	U					5.0	U				5.0
	VINYL CHLORIDE	UG/L	10	U					5.0	U				5.0
	ACETONE	UG/L	20	U					10	U				10
	XYLENE (TOTAL)	UG/L	200	U					100	U				100
	CARBON DISULFIDE	UG/L	20	U					10	U				10
			10	U					5.0	U				5.0
	TOTAL VOCS:	UG/L	280.8						259.4					264
														319.9
E.METALS	CHROMIUM	UG/L	5	U					-					-
	LEAD	UG/L	2.0	U					-					-
	NICKEL	UG/L	20	U					-					-
									6.9	J				-
H.MISC	CYANIDE, TOTAL	UG/L	5	U					-					-
	PHENOLS	UG/L	10	U					-					-
														5
														10

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-9 DATE COLLECTED				
			07 DEC 94 AMOUNT Q	14 MAR 95 AMOUNT Q	06 JUN 95 AMOUNT Q	19 SEP 95 AMOUNT Q	05 DEC 95 AMOUNT Q
A.VOA	BENZENE	UG/L	10 U	10 U	5.0 U	10 U	10 U
	CHLOROETHANE	UG/L	20 U	20 U	10 U	20 U	20 U
	1,1-DICHLOROETHANE	UG/L	10 U	10 U	5.0 U	10 U	10 U
	1,2-DICHLOROETHANE	UG/L	363	330	170	210	250
	1,1-DICHLOROETHENE	UG/L	10 U	10 U	5.0 U	10 U	10 U
	TRANS-1,2-DICHLOROETHENE	UG/L	10 U	10 U	2.2 J	10 U	10 U
	CIS-1,2-DICHLOROETHENE	UG/L	21	26	14	22	23
	METHYLENE CHLORIDE	UG/L	10 U	10 U	5.0 U	10 U	10 U
	TETRACHLOROETHENE	UG/L	-	10 U	5.0 U	10 U	10 U
	TOLUENE	UG/L	10 U	10 U	5.0 U	10 U	10 U
	1,1,1-TRICHLOROETHANE	UG/L	10 U	10 U	5.0 U	10 U	10 U
	TRICHLOROETHENE	UG/L	10 U	10 U	5.0 U	10 U	10 U
	VINYL CHLORIDE	UG/L	20 U	20 U	10 U	9.1 J	20 U
	ACETONE	UG/L	200 U	200 U	100 U	200 U	200 U
	XYLENE (TOTAL)	UG/L	20 U	20 U	10 U	20 U	20 U
	TOTAL VOCS:	UG/L	384	356	186.2	241.1	273
E.METALS	LEAD	UG/L	-	-	-	2.0 U	-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-	2.0 U	-	-	-
	NICKEL (DISSOLVED)	UG/L	-	20 U	-	-	-
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	5 U	-
	PHENOLS	UG/L	-	10 U	-	10 U	-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-9				1,2-DI- CHLORO- ETHANE	CIS-1,2- DICHLORO- ETHENE	TRANS-1,2 DICHLORO- ETHENE	SUM	NOTES	
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	5 UG/L	P-70 UG/L	P-100 UG/L	UG/L		
10/01/88	12	AQJA		81.3	ND	2.2	84		
11/05/88	4	AQJA		28	ND	2.3	31		
12/18/88	20	AQJA		210	15	ND	225		
12/18/88	30	AQJA		43.3	ND	ND	43		
02/12/87	12	AQJA		313	ND	23	336		
06/05/87	7	AQJA		480	17	ND	477		
09/03/87	8	AQJA		170	13	ND	183		
01/13/88	8	AQJA		810	43	ND	853		
02/08/88	9	AQJA		440	ND	ND	440		
05/18/88	9	AQJA		440	47.8	ND	488		
09/23/88	9	AQJA		240	ND	ND	240		
12/08/88	4	AQJA		12.3	ND	ND	12		
02/23/89	13	AQJA		9.2	ND	ND	9		
06/10/89	33	AQJA	624	6.7	ND	ND	7		
09/08/89	15	AQJA	0240	No VOC Detected					
12/13/89	28	AQJA	0240	40.3	ND	ND	40		
02/27/90	4	AQJA	0240	40.0	ND	ND	40		
06/01/90	6	AQJA	0240	34.2	ND	ND	34		
08/22/90	4	AQJA	0240	No VOC Detected					
10/23/90	9	AQJA	0240	No VOC Detected					
02/28/91	3	AQJA	0240	7.8	ND	ND	8		
05/31/91	9	AQJA	0240	16.3	ND	ND	16		
08/29/91	14	AQJA	0240	11.7	ND	ND	12		
11/14/91	33	AQJA	0240	15.0	ND	ND	15		
01/22/92	5	AQJA	0240	42.0	ND	ND	43		
03/30/92	12	AQJA	0240	68.0	ND	ND	66		
08/22/92	20	AQJA	0240	127	5.4	ND	132		
10/31/92	27	AQJA	0240	155	7.9	ND	163		
02/03/93	9	AQJA	0240	221	13.0	ND	235		
05/12/93	29	AQJA	0240	223	11.0	ND	235		
09/02/93	34	AQJA	0240	220	16.0	ND	237		
12/02/93	17	AQJA	0240	324	25.7	5.1	355		
02/17/94	9	AQJA	0240	239	10.9	ND	270		
05/05/94	17	AQJA	0240	215	15.0	ND	231		
09/15/94	24	AQJA	0240	240	19.9	ND	259		

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

ta gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S15	S15	S15	S15	S15
				03/21/97	06/05/97	09/24/97	09/24/97	12/08/97
				Primary	Primary	Primary	Duplicate	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	[18]	[30]	[31]	[32]	[25]
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	14	14	14	14
1,2-Dichloroethane			5	[24]	[41]	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	6.3	5.4	5.8	<5.0
cis-1,2-Dichloroethene			70	18	35	22	23	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	[18]	[30]	[31]	[32]	[25]
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1B

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S15 06/11/98 Primary
Benzene			5	<5.0
Chloroethene			2	[15]
Chloroform			100	<5.0
1,1-Dichloroethane				8.6
1,2-Dichloroethane			5	[12]
1,1-Dichloroethene			7	<5.0
trans-1,2-Dichloroethene			100	<5.0
cis-1,2-Dichloroethene			70	16
Methylene chloride			5	<5.0
Tetrachloroethene			5	<5.0
Toluene			1000	<5.0
1,1,1-Trichloroethane			200	<5.0
Trichloroethene			5	<5.0
Vinyl Chloride			2	[15]
Acetone				<100
Xylene (Total)			10000	<10
Carbon disulfide				<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit -- =Not analyzed
 [] = Greater than Action Level
 For RCL ANSUM

Analytical Summary - Phenols In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

Page: 1A
Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	S15		S15		S15	
		DATE	03/21/97	09/24/97	09/24/97	06/11/98	
RESULT TYPE	US-PMCL	Primary	Primary	Duplicate	Primary		
Total Phenols		<10	<10	<10	<10		

Values represent total concentrations unless noted. < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	S15	S15	S15	S15
					03/21/97	09/24/97	09/24/97	06/11/98
					Primary	Primary	Duplicate	Primary
Chromium, Dissolved					---	---	---	7.2
Lead, Dissolved					---	---	---	<2.0
Nickel, Dissolved					---	---	---	<20
Chromium, Total				100	44	---	---	---
Lead, Total				15	2.7	---	---	---
Nickel, Total				100	<20	---	---	---
Cyanide				200	<5	<5	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-15 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	10 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U			
	CHLOROETHANE	UG/L	10 U	5.0 U	5.0 U	5.0 U
	CHLOROFORM	UG/L	5.0 U	10 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	19	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L		13	13	15
	1,1-DICHLOROETHENE	UG/L	5.0 U	6.6	32	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	3.6 J	2.9 J	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	8.2	8.2	4.9 J	4.2 J
	METHYLENE CHLORIDE	UG/L			30	8.1
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	23	17	5.0 U	5.0 U
	ACETONE	UG/L			20	25
	XYLENE (TOTAL)	UG/L	100 U	100 U	100 U	100 U
	CARBON DISULFIDE	UG/L	10 U	10 U	10 U	10 U
		UG/L	5.0 U	5.0 U	5.0 U	5.0 U
TOTAL VOCS:		UG/L	53.8	47.7	99.9	52.3
E.METALS	CHROMIUM	UG/L	5 U	-		
	LEAD	UG/L	2.0 U	-	5.0 U	-
	NICKEL	UG/L	20 U	-	2.0 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-		
	PHENOLS	UG/L	10 U	-	5 U	-
				10 U	-	

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID		DATE COLLECTED		08 DEC 94		15 MAR 95		06 JUN 95		20 SEP 95		06 DEC 95	
			S-15		AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		5 U												
	CHLOROETHANE	UG/L		10 U												
	1,1-DICHLOROETHANE	UG/L	11		10											
	1,2-DICHLOROETHANE	UG/L		5 U												
	1,1-DICHLOROETHENE	UG/L		5 U												
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U												
	CIS-1,2-DICHLOROETHENE	UG/L	19													
	METHYLENE CHLORIDE	UG/L		5 U												
	TETRACHLOROETHENE	UG/L		-												
	TOLUENE	UG/L		5 U												
	1,1,1-TRICHLOROETHANE	UG/L		5 U												
	TRICHLOROETHENE	UG/L		5 U												
	VINYL CHLORIDE	UG/L	23		16											
	ACETONE	UG/L		100 U												
	XYLENE (TOTAL)	UG/L		10 U												
	TOTAL VOCS:	UG/L	53		26											
E.METALS	LEAD	UG/L		-												
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-												
	NICKEL (DISSOLVED)	UG/L		-												
H.MISC	CYANIDE, TOTAL	UG/L		-												
	PHENOLS	UG/L		-												

QUALIFIER CODES (Q):

U: THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	1,1-DI-CHLORO-ETHANE	1,2-DI-CHLORO-ETHANE	CIS-1,2-DICHLORO-ETHENE	TRANS-1,2-DICHLORO-ETHENE	VINYL CHLORIDE	OTHER VOC	SUM	NOTES
				UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
11/05/86	27	AQUA		ND	1.2	ND	1.5	ND	ND	3	
12/18/86	22	AQUA		No VOC Detected							
06/05/87	6	AQUA		No VOC Detected							
09/03/87	5	AQUA		ND	ND	ND	ND	76	ND	76	
09/03/87	5	AQUA		No VOC Detected							
01/14/88	24	AQUA		22.0	ND	ND	ND	ND	ND	22	
02/06/88	4	AQUA		19.0	ND	ND	ND	ND	ND	19	
05/18/88	6	AQUA		No VOC Detected							
09/23/88	6	AQUA		5.2	ND	ND	ND	ND	ND	6	
12/18/88	24	AQUA		ND	ND	ND	ND	10.9	121	132	
02/23/89	15	AQUA		No VOC Detected							
06/10/89	31	AQUA	024	No VOC Detected							
09/09/89	22	AQUA	0240	ND	ND	ND	ND	10.5	140	151	
12/12/89	22	AQUA	0240	ND	100	240	26.6	10.5	200	665	
03/03/90	40	AQUA	0240	69.3	ND	ND	ND	31.3	42.6	143	
03/03/90	41	AQUA	0240	71.0	ND	ND	ND	32.0	46.1	150	
06/03/90	25	AQUA	0240	37.0	ND	ND	ND	22.4	ND	60	
08/24/90	20	AQUA	0240	12.0	ND	ND	ND	ND	ND	13	
10/28/90	13	AQUA	0240	27.2	ND	ND	170	ND	ND	205	
03/01/91	12	AQUA	0240	26.0	28.8	27.4	ND	40.9	ND	124	
06/01/91	25	AQUA	0240	22.5	24.5	28.8	10.7	25.2	ND	112	
08/31/91	26	AQUA	0240	23.0	17.3	ND	ND	44.4	ND	86	
11/12/91	6	AQUA	0240	ND	5.7	6.1	ND	36.0	ND	49	
01/25/92	34	AQUA	0240	ND	ND	7.5	ND	ND	ND	0	
04/01/92	33	AQUA	0240	21.5	ND	6.0	ND	22.0	ND	50	
08/22/92	21	AQUA	0240	40.0	12.4	5.0	ND	36.0	ND	05	
10/31/92	16	AQUA	0240	17.0	ND	6.0	ND	17.0	ND	43	
02/04/93	19	AQUA	0240	26.2	03.0	50.7	6.7	40.0	ND	200	
05/11/93	18	AQUA	0240	15.1	03.4	43.1	6.0	30.0	ND	179	
08/31/93	15	AQUA	0240	15.4	40.4	36.0	7.0	25.2	ND	131	
12/03/93	25	AQUA	0240	15.0	17.0	30.0	7.0	29.0	ND	110	
02/17/94	14	AQUA	0240	12.3	ND	17.3	ND	30.0	ND	60	
05/05/94	20	AQUA	0240	11.2	ND	8.0	ND	22.5	ND	42	
09/15/94	28	AQUA	0240	10.0	7.6	21.0	ND	23.0	ND	63	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL.

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIED SIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

ta gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S16	S16	S16	S16	S16
				03/20/97	06/03/97	09/24/97	12/08/97	06/11/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			7	[28]	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	11	<5	18	19	5.5
cis-1,2-Dichloroethene			70	[150]	[120]	[91]	[73]	[79]
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	25	37	27	20	20
Trichloroethene			5	[380]	[650]	[560]	[470]	[460]
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Phenols In Groundwater
Shallow Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

Page: 1A
Date: 07/17/98

CONSTITUENT	(Units in ug/l)	SITE		S16	S16	S16
		DATE		03/20/97	09/24/97	06/11/98
		RESULT TYPE	US-PMCL	Primary	Primary	Primary
Total Phenols				<10	<10	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	S16	S16	S16
	DATE	03/20/97	09/24/97	06/11/98
	RESULT TYPE	Primary	Primary	Primary
	US-PMCL			
Chromium, Dissolved		---	---	20
Lead, Dissolved		---	---	<2.0
Nickel, Dissolved		---	---	<20
Chromium, Total	100	<5	---	---
Lead, Total	15	<2	---	---
Nickel, Total	100	<20	---	---
Cyanide	200	<5	<5	<5

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

For RCL INORG

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-16		DATE COLLECTED		12 MAR 96		04 JUN 96		04 SEP 96		10 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L	25	U	25	U					5.0	U		5.0
	CHLOROETHANE	UG/L	50	U	50	U					10	U		10
	CHLOROFORM	UG/L	25	U	25	U					5.0	U	3.8	J
	1,1-DICHLOROETHANE	UG/L	25	U	25	U					5.0	U		5.0
	1,2-DICHLOROETHANE	UG/L	25	U	25	U					5.0	U		5.0
	1,1-DICHLOROETHENE	UG/L	44		43						5.0	U		5.0
	TRANS-1,2-DICHLOROETHENE	UG/L	29		13	J				15			26	
	CIS-1,2-DICHLOROETHENE	UG/L	440		420					17			16	
	METHYLENE CHLORIDE	UG/L	25	U						180			170	
	TETRACHLOROETHENE	UG/L	25	U			25	U			5.0	U		5.0
	TOLUENE	UG/L	25	U			25	U			5.0	U		5.0
	1,1,1-TRICHLOROETHANE	UG/L	25	U			25	U			5.0	U		5.0
	TRICHLOROETHENE	UG/L	36		32					27			35	
	VINYL CHLORIDE	UG/L	400		370					360			400	
	ACETONE	UG/L	210		50						10	U		10
	XYLENE (TOTAL)	UG/L	500	U			500	U			100	U		100
	CARBON DISULFIDE	UG/L	50	U			50	U			10	U		10
		UG/L	25	U			25	U			5.0	U		5.0
	TOTAL VOCS:	UG/L	1159		928					599			650.8	
E.METALS	CHROMIUM	UG/L	5	U							5.0	U		
	LEAD	UG/L	0.92	J										
	NICKEL	UG/L	8	J							1.5	J		
		UG/L									6.9	J		
H.MISC	CYANIDE, TOTAL	UG/L	5	U							5	U		
	PHENOLS	UG/L	10	U							10	U		

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-16		DATE COLLECTED		14 MAR 95		07 JUN 95		19 SEP 95		06 DEC 95	
			07 DEC 94	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q		
A.VOA	BENZENE	UG/L		10 U				25 U		25 U		25 U		25 U
	CHLOROETHANE	UG/L		20 U				50 U		50 U		50 U		50 U
	1,1-DICHLOROETHANE	UG/L		10 U				25 U	3.1	J	5.4	J		25 U
	1,2-DICHLOROETHANE	UG/L		10 U				25 U		25 U		25 U		25 U
	1,1-DICHLOROETHENE	UG/L		10 U				25 U	5.2	J	7.4	J		25 U
	TRANS-1,2-DICHLOROETHENE	UG/L	12					25 U	29		15	J	13	
	CIS-1,2-DICHLOROETHENE	UG/L	59		49			25 U	67		230		16	
	METHYLENE CHLORIDE	UG/L		10 U				25 U		25 U		25 U		25 U
	TETRACHLOROETHENE	UG/L		-				25 U		25 U		25 U		25 U
	TOLUENE	UG/L		10 U				25 U		25 U		25 U		25 U
	1,1,1-TRICHLOROETHANE	UG/L	25					25 U	18	J	19	J	23	
	TRICHLOROETHENE	UG/L	261		240			25 U	250		250		250	
	VINYL CHLORIDE	UG/L	56		620			25 U	360		430		160	
	ACETONE	UG/L		200 U				500 U		500 U		500 U		500 U
	XYLENE (TOTAL)	UG/L		20 U				50 U		50 U		50 U		50 U
TOTAL VOCS:	UG/L		413		909			732.3		956.8		782		
E.METALS	LEAD	UG/L		-			-		-	0.7	J		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-		2.0 U		-		-			-	
	NICKEL (DISSOLVED)	UG/L		-		20 U		-		-			-	
H.MISC	CYANIDE, TOTAL	UG/L		-		5 U		-		-	5 U		-	
	PHENOLS	UG/L		-		10 U		-		-	10 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-16				CIS-1,2- DICHLORO- ETHENE	TRANS-1,2 DICHLORO- ETHENE	1,1,1-TRI CHLORO- ETHANE	TRI- CHLORO- ETHENE	SUM	NOTES	
DATE SAMPLED	SAMPLE NO.	LAB	MCL	P-70	P-100	200	5	UG/L		
			METHOD	UG/L	UG/L	UG/L	UG/L			
11/16/86	11	AQJA		No VOC Detected						
12/18/86	19	AQJA		ND	ND	22.9	70.1	93		
12/18/86	29	AQJA		ND	ND	21.5	63.0	85		
02/12/87	11	AQJA		ND	4.4	23.3	95.0	123		
05/05/87	12	AQJA		8.8	8.6	18.0	67.0	86		
09/04/87	28	AQJA		ND	ND	ND	65.0	65		
01/15/88	27	AQJA		ND	ND	15.0	58.0	73		
02/09/88	12	AQJA		ND	ND	13.5	53.0	67		
05/19/88	23	AQJA		8.8	ND	10.9	52.0	70		
09/23/88	14	AQJA		ND	ND	20.0	76.0	96		
12/18/88	29	AQJA		6.2	ND	18.7	62.1	87		
02/24/89	20	AQJA		6.1	ND	15.7	60.4	82		
06/08/89	12	AQJA	824	8.2	8.4	18.4	66.7	104		
09/10/89	34	AQJA	8240	8.1	8.7	20.2	58.2	86		
12/13/89	31	AQJA	8240	10.8	9.0	22.5	91.6	137		
03/03/90	44	AQJA	8240	19.8	ND	17.9	73.4	111		
06/03/90	19	AQJA	8240	19.4	8.6	19.4	83.6	131		
08/23/90	16	AQJA	8240	No VOC Detected						
10/29/90	30	AQJA	8240	11.3	ND	20.9	82.0	114		
03/04/91	36	AQJA	8240	ND	ND	ND	35.8	36		
06/02/91	29	AQJA	8240	ND	ND	10.3	46.7	57		
08/31/91	33	AQJA	8240	8.1	ND	ND	64.5	70		
11/13/91	32	AQJA	8240	8.1	ND	15.5	67.1	91		
01/26/92	37	AQJA	8240	16.4	ND	19.4	85.5	131		
04/02/92	45	AQJA	8240	28.1	ND	19.9	98.7	147		
08/22/92	18	AQJA	8240	37.3	8.8	22.1	141	206		
10/31/92	20	AQJA	8240	42.6	ND	19.1	91.4	153		
02/05/93	24	AQJA	8240	48.3	ND	20.1	155	223		
05/12/93	23	AQJA	8240	42.1	ND	16.8	109	168		
09/01/93	27	AQJA	8240	28.8	ND	19.8	136	183		
12/03/93	32	AQJA	8240	ND	38.1	21.4	188	248		
02/18/94	25	AQJA	8240	17.8	ND	8.9	81.0	108		
05/06/94	27	AQJA	8240	32.3	8.7	21.8	143	206		
09/15/94	23	AQJA	8240	48.8	8.2	18.1	148	222		

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIED SIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

allied signal
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S17	S17	S17	S17	S17
				03/20/97	06/03/97	09/24/97	12/11/97	06/10/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	34	40	51	37	26
Trichloroethene			5	[16]	[25]	[28]	[25]	[19]
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-17 DATE COLLECTED			
			12 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	4.1 J	4.8 J	3.2 J	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	8.4	4.6	4.2	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	97	72	74	5.0 U
	TRICHLOROETHENE	UG/L	21	21	22	46
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	21
	ACETONE	UG/L	100 U	100 U	100 U	10 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	100 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	10 U
	TOTAL VOCS:	UG/L	130.5	102.4	103.4	67
E.METALS	CHROMIUM	UG/L	5 U	-	4.1 J	-
	LEAD	UG/L	2.0 U	-	0.6 J	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-17 DATE COLLECTED 08 DEC 94		15 MAR 95		07 JUN 95		19 SEP 95		06 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	CHLOROETHANE	UG/L		50 U		50 U		50 U		50 U		10 U
	1,1-DICHLOROETHANE	UG/L	88		110		39		21	J	12	
	1,2-DICHLOROETHANE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	1,1-DICHLOROETHENE	UG/L	65		56		24	J	14	J	22	
	TRANS-1,2-DICHLOROETHENE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	METHYLENE CHLORIDE	UG/L		25 U		25 U	3.2	J		25 U		5.0 U
	TETRACHLOROETHENE	UG/L		-		25 U		25 U		25 U		5.0 U
	TOLUENE	UG/L		25 U		25 U		25 U		25 U		5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	1000		700		300		220		140	
	TRICHLOROETHENE	UG/L	51		27		20	J	27		30	
	VINYL CHLORIDE	UG/L		50 U		50 U		50 U		50 U		10 U
	ACETONE	UG/L		500 U		500 U		500 U		500 U		100 U
	XYLENE (TOTAL)	UG/L		50 U		50 U		50 U		50 U		10 U
	TOTAL VOCS:	UG/L		1204		893		386.2		282		204
E.METALS	LEAD	UG/L		-		-			2.0 U		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L		-		2.0 U			-		-	
	NICKEL (DISSOLVED)	UG/L		-		20 U			-		-	
H.MISC	CYANIDE, TOTAL	UG/L		-		5 U			5 U		-	
	PHENOLS	UG/L		-		10 U			10 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-17				1, 1-DI- CHLORO- ETHANE	1, 2-DI- CHLORO- ETHANE	1, 1-DI- CHLORO- ETHENE	CIS-1, 2- DICHLORO- ETHENE	TRANS-1, 2 DICHLORO- ETHENE	1, 1, 1-TRI CHLORO- ETHANE	THI- CHLORO- ETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	NPL UG/L	5 UG/L	7 UG/L	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	UG/L	
11/16/86	16	AQJA		4.3	1.6	ND	ND	ND	ND	12.0	18	
01/07/87	4	AQJA		ND	ND	ND	ND	ND	ND	94.8	93	
02/12/87	3	AQJA		ND	ND	ND	ND	7.9	ND	116	124	
06/03/87	15	AQJA		ND	ND	ND	0.6	ND	ND	80.0	86	
09/03/87	20	AQJA		ND	ND	ND	ND	ND	ND	86.0	86	
01/14/88	22	AQJA		ND	ND	ND	0.8	ND	ND	68.0	77	
02/10/88	33	AQJA		ND	ND	ND	0.8	ND	ND	75.0	81	
05/19/88	26	AQJA		ND	ND	ND	ND	ND	ND	60.7	61	
09/23/88	12	AQJA		ND	ND	ND	ND	ND	ND	78.0	78	
02/23/89	17	AQJA		ND	ND	ND	ND	ND	ND	75.0	78	
06/09/89	27	AQJA	824	ND	ND	ND	ND	ND	ND	65.7	60	
09/08/89	13	AQJA	8240	ND	ND	ND	ND	ND	ND	53.8	54	
12/12/89	25	AQJA	8240	ND	ND	ND	5.1	ND	ND	62.4	68	
03/02/90	26	AQJA	8240	ND	ND	ND	6.9	ND	ND	42.4	49	
06/04/90	35	AQJA	8240	ND	ND	ND	6.2	ND	ND	42.8	49	
08/24/90	34	AQJA	8240	ND	ND	ND	6.9	ND	ND	35.0	42	
08/24/90	35	AQJA	8240	ND	ND	ND	6.5	ND	ND	33.6	40	
10/28/90	22	AQJA	8240	ND	ND	ND	ND	9.6	ND	40.4	50	
03/02/91	24	AQJA	8240	ND	ND	ND	8.2	ND	ND	20.6	38	
06/02/91	30	AQJA	8240	ND	ND	ND	ND	ND	ND	27.2	27	
08/31/91	31	AQJA	8240	ND	ND	ND	ND	ND	ND	32.6	33	
08/31/91	32	AQJA	8240	ND	ND	ND	ND	ND	ND	33.0	33	
11/13/91	23	AQJA	8240	ND	ND	ND	5.5	ND	ND	37.6	33	
01/26/92	39	AQJA	8240	ND	ND	ND	ND	ND	ND	24.5	25	
04/02/92	42	AQJA	8240	ND	ND	ND	7.6	ND	ND	31.2	39	
04/02/92	43	AQJA	8240	ND	ND	ND	10.3	ND	ND	38.9	48	
08/23/92	27	AQJA	8240	ND	ND	ND	5.7	ND	ND	27.0	33	
10/31/92	24	AQJA	8240	ND	ND	ND	ND	ND	ND	17.3	17	
02/06/93	34	AQJA	8240	ND	ND	ND	10.3	ND	ND	28.9	48	
02/06/93	35	AQJA	8240	ND	ND	ND	20.5	ND	ND	36.6	57	
05/11/93	15	AQJA	8240	ND	ND	ND	ND	ND	ND	16.9	17	
06/31/93	13	AQJA	8240	ND	ND	ND	ND	ND	ND	23.7	24	
06/31/93	14	AQJA	8240	ND	ND	ND	ND	ND	ND	22.5	23	
12/02/93	20	AQJA	8240	ND	ND	ND	5.2	ND	ND	34.0	39	
12/02/93	21	AQJA	8240	ND	ND	ND	5.2	ND	ND	35.3	41	
02/19/94	40	AQJA	8240	ND	ND	ND	ND	ND	ND	21.8	24	
05/03/94	19	AQJA	8240	12.8	ND	ND	ND	ND	37.7	16.1	67	
09/15/94	25	AQJA	8240	136	ND	44.5	ND	ND	637	43.2	761	

NOTES:
OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL, INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

Langston
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S20	S20	S20	S20	S20
				03/20/97	06/04/97	09/23/97	12/09/97	06/09/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-20 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOTAL VOCS:	UG/L	0	0	0	0
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	2.0 U	-	2.0 U	-
	NICKEL	UG/L	20 U	-	5.4 J	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID		DATE COLLECTED		06 JUN 95		20 SEP 95		05 DEC 95	
			S-20		06 DEC 94		AMOUNT Q		AMOUNT Q		AMOUNT Q	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	CHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U	
	1,1-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,2-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,1-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	CIS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	METHYLENE CHLORIDE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TETRACHLOROETHENE	UG/L	-		5.0 U		5.0 U		5.0 U		5.0 U	
	TOLUENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,1,1-TRICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TRICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	VINYL CHLORIDE	UG/L	10 U		10 U		10 U		10 U		10 U	
	ACETONE	UG/L	100 U		100 U		100 U		100 U		100 U	
	XYLENE (TOTAL)	UG/L	10 U		10 U		10 U		10 U		10 U	
	TOTAL VOCS:	UG/L	0		0		0		0		0	
E.METALS	LEAD	UG/L	-		-		-		2.0 U		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.0 U		-		-		-	
	NICKEL (DISSOLVED)	UG/L	-		20 U		-		-		-	
H.MISC	CYANIDE, TOTAL	UG/L	-		19		-		5 U		-	
	PHENOLS	UG/L	-		10 U		-		10 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-20				MCL METHOD	NOTES
DATE SAMPLED	SAMPLE NO.	LAB			
11/07/86	30	AQUA			No VOC Detected
02/12/87	9	AQUA			No VOC Detected
06/08/87	10	AQUA			No VOC Detected
09/03/87	10	AQUA			No VOC Detected
01/13/88	7	AQUA			No VOC Detected
02/09/88	19	AQUA			No VOC Detected
05/19/88	19	AQUA			No VOC Detected
09/23/88	23	AQUA			No VOC Detected
09/23/88	24	AQUA			No VOC Detected
12/08/88	5	AQUA			No VOC Detected
02/23/89	9	AQUA			No VOC Detected
06/09/89	22	AQUA	824		No VOC Detected
09/09/89	20	AQUA	8240		No VOC Detected
12/11/89	3	AQUA	8240		No VOC Detected
12/11/89	4	AQUA	8240		No VOC Detected
03/02/90	36	AQUA	8240		No VOC Detected
06/01/90	7	AQUA	8240		No VOC Detected
08/22/90	6	AQUA	8240		No VOC Detected
10/27/90	4	AQUA	8240		No VOC Detected
02/20/91	5	AQUA	8240		No VOC Detected
06/01/91	13	AQUA	8240		No VOC Detected
08/20/91	8	AQUA	8240		No VOC Detected
11/12/91	7	AQUA	8240		No VOC Detected
01/25/92	31	AQUA	8240		No VOC Detected
03/31/92	17	AQUA	8240		No VOC Detected
08/23/92	12	AQUA	8240		No VOC Detected
10/30/92	5	AQUA	8240		No VOC Detected
02/04/93	9	AQUA	8240		No VOC Detected
03/11/93	8	AQUA	8240		No VOC Detected
06/31/93	4	AQUA	8240		No VOC Detected
12/01/93	2	AQUA	8240		No VOC Detected
02/17/94	4	AQUA	8240		No VOC Detected
05/05/94	8	AQUA	8240		No VOC Detected
09/14/94	11	AQUA	8240		No VOC Detected

NOTES:

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ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLTESTONAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

allteston
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S21 03/20/97 Primary	S21 06/04/97 Primary	S21 09/26/97 Primary	S21 12/10/97 Primary	S21 06/10/98 Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	16	29	20	18	24
cis-1,2-Dichloroethene			70	22	36	25	23	33
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	[28]	[31]	[42]	[46]	[38]
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-21 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	18	18	17	9.3
	CIS-1,2-DICHLOROETHENE	UG/L	25	25	25	15
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	20	21	21	19
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOTAL VOCS:	UG/L	63	64	63	86.3
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	23	-	0.7	-
	NICKEL	UG/L	10	J	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-21 DATE COLLECTED					
			06 DEC 94 AMOUNT q	13 MAR 95 AMOUNT q	06 JUN 95 AMOUNT q	20 SEP 95 AMOUNT q	05 DEC 95 AMOUNT q	
A.VOA	BENZENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	7.9	18	33	15	15	15
	CIS-1,2-DICHLOROETHENE	UG/L	14	25	38	21	21	21
	METHYLENE CHLORIDE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	16	21	11	15	16	16
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
TOTAL VOCS:	UG/L	37.9	64	82	51	52		
E.METALS	LEAD	UG/L	-	-	-	2.0 U	-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-	2.0 U	-	-	-	
	NICKEL (DISSOLVED)	UG/L	-	20 U	-	-	-	
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	5 U	-	
	PHENOLS	UG/L	-	10 U	-	10 U	-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-21				CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	TRI-CHLOROETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-70 UG/L	P-100 UG/L	S UG/L	UG/L	
11/06/86	17	AQUA		ND	118	10	118	
12/17/86	13	AQUA		ND	89.3	10	69	
02/11/87	5	AQUA		ND	88.8	10	89	
06/05/87	17	AQUA		8.0	30.0	10	35	
06/05/87	18	AQUA		8.8	34.0	10	40	
09/03/87	14	AQUA		50.0	13.0	10	63	
01/14/88	11	AQUA		53.2	20.4	10	74	
02/09/88	22	AQUA		60.0	33.0	10	93	
05/18/88	13	AQUA		137	11.1	10	148	
09/23/88	13	AQUA		58.0	49.0	10	107	
12/08/88	18	AQUA		68.0	32.0	10	99	
02/23/89	10	AQUA		84.1	32.7	10	97	
06/08/89	24	AQUA	824	48.3	24.0	10	72	
09/10/89	41	AQUA	8240	72.5	41.6	10	114	
12/11/89	9	AQUA	8240	9.3	10	10	9	
03/02/90	32	AQUA	8240	98.6	45.0	6.0	151	
06/02/90	15	AQUA	8240	87.3	82.5	10	140	
08/23/90	10	AQUA	8240	48.4	28.0	6.7	82	
10/28/90	18	AQUA	8240	116	68.7	10	169	
10/28/90	28	AQUA	8240	107	65.1	10	163	
03/03/91	28	AQUA	8240	69.3	36.2	10	105	
06/01/91	18	AQUA	8240	31.1	121	10	162	
08/28/91	3	AQUA	8240	33.9	21.0	6.1	61	
11/12/91	3	AQUA	8240	33.7	19.7	6.7	60	
01/21/92	2	AQUA	8240	28.2	14.0	10	43	
03/28/92	8	AQUA	8240	28.8	14.8	7.9	51	
08/28/92	3	AQUA	8240	28.1	14.3	6.4	51	
10/30/92	13	AQUA	8240	47.8	28.0	6.6	84	
02/03/93	3	AQUA	8240	78.1	61.7	5.8	135	
05/11/93	3	AQUA	8240	70.3	65.0	10	125	
08/31/93	12	AQUA	8240	41.4	33.8	5.1	80	
12/01/93	7	AQUA	8240	79.5	67.8	5.3	153	
02/16/94	3	AQUA	8240	38.8	27.5	5.9	70	
05/04/94	3	AQUA	8240	28.1	18.7	6.4	50	
09/12/94	2	AQUA	8240	11.3	8.3	8.8	28	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

La Gleason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	S22	S22	S22	S22	S22
				03/22/97	06/04/97	09/23/97	12/10/97	06/09/98
		DATE		Primary	Primary	Primary	Primary	Primary
		RESULT TYPE						
Benzene	5			<5	<5	<5.0	<5.0	<5.0
Chloroethene	2			<10	<2	<10	<10	<10
Chloroform	100			<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane	5			<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene	7			<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene	100			69	91	97	92	71
cis-1,2-Dichloroethene	70			46	66	64	63	53
Methylene chloride	5			<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene	5			<5	<5	<5.0	<5.0	<5.0
Toluene	1000			<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	200			<5	<5	<5.0	<5.0	<5.0
Trichloroethene	5			<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride	2			<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)	10000			<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-22 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U		
	CHLOROETHANE	UG/L	10 U	10 U	5.0 U	5.0 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	92	73	77	70
	METHYLENE CHLORIDE	UG/L	66	55	57	55
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	5.0 U	5.0 U
	ACETONE	UG/L	100 U	100 U	10 U	10 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	100 U	100 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	10 U	10 U
	TOTAL VOCS:	UG/L	158	128	134	125
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	2.0 U	-	1.6	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-22 DATE COLLECTED						
			08 DEC 94 AMOUNT q	13 MAR 95 AMOUNT q	06 JUN 95 AMOUNT q	20 SEP 95 AMOUNT q	05 DEC 95 AMOUNT q		
A.VOA	BENZENE	UG/L	5 U						
	CHLOROETHANE	UG/L	10 U		5.0 U		5.0 U	5.0 U	
	1,1-DICHLOROETHANE	UG/L	5 U		10 U		10 U	10 U	
	1,2-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U	5.0 U	
	1,1-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U	5.0 U	
	TRANS-1,2-DICHLOROETHENE	UG/L	66		78		79	66	77
	CIS-1,2-DICHLOROETHENE	UG/L	54		57			47	53
	METHYLENE CHLORIDE	UG/L	5 U				5.0 U		
	TETRACHLOROETHENE	UG/L	-		5.0 U		5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5 U		5.0 U		5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U		10 U		10 U	10 U	10 U
	ACETONE	UG/L	100 U		100 U		100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U		10 U		10 U	10 U	10 U
	TOTAL VOCS:	UG/L	120		135		79	113	130
	E.METALS	LEAD	UG/L	-	-	-	-	2.0 U	-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-	2.0 U	-	-	-	-	
	NICKEL (DISSOLVED)	UG/L	-	20 U	-	-	-	-	
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	-	5 U	-	
	PHENOLS	UG/L	-	10 U	-	-	10 U	-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-22				CIS-1, 2-DICHLOROETHENE	TRANS-1, 2-DICHLOROETHENE	SLM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-70 UO/L	P-100 UO/L	UO/L	
11/08/85	18	ADJA		ND	184	164	
01/07/87	8	ADJA		50	75.8	128	
01/07/87	7	ADJA		50	73.8	124	
02/12/87	8	ADJA		ND	132	132	
02/12/87	7	ADJA		ND	109	109	
06/05/87	20	ADJA		41	69	110	
09/03/87	12	ADJA		57	41	98	
01/13/88	8	ADJA		41.5	ND	42	
02/09/88	23	ADJA		48	61	109	
03/18/88	15	ADJA		77.5	27.7	105	
03/18/88	18	ADJA		82	25.2	107	
09/25/88	22	ADJA		21	45	66	
02/22/89	8	ADJA		43.1	38.8	82	
02/22/89	7	ADJA		35.7	37.5	73	
06/09/89	19	ADJA	824	33	40.7	74	
06/09/89	20	ADJA	824	37.9	42.1	80	
09/08/89	28	ADJA	8240	38.4	45.0	84	
12/11/89	6	ADJA	8240	37.7	66.8	95	
03/01/90	21	ADJA	8240	59.0	74.4	134	
06/01/90	11	ADJA	8240	45.1	71.9	117	
08/22/90	7	ADJA	8240	39.8	60.1	100	
08/22/90	8	ADJA	8240	40.7	61.4	102	
10/27/90	5	ADJA	8240	59.3	82.8	142	
02/28/91	7	ADJA	8240	35.9	48.4	84	
06/01/91	16	ADJA	8240	52.8	168.0	221	
08/28/91	5	ADJA	8240	34.1	61.5	96	
11/13/91	12	ADJA	8240	45.8	78.5	122	
01/25/92	33	ADJA	8240	50.6	86.8	137	
03/31/92	14	ADJA	8240	41.3	64.5	106	
08/22/92	15	ADJA	8240	61.7	100.0	162	
08/22/92	18	ADJA	8240	53.9	91.3	145	
02/04/93	11	ADJA	8240	56.7	91.5	148	
02/04/93	12	ADJA	8240	63.7	98.0	160	
02/10/93	2	ADJA	8240	54.7	80.8	135	
05/11/93	9	ADJA	8240	57.0	90.0	147	
08/31/93	7	ADJA	8240	45.8	78.6	124	A
12/01/93	6	ADJA	8240	65.1	113.0	178	
02/18/94	23	ADJA	8240	48.8	79.1	126	
05/04/94	8	ADJA	8240	38.3	62.1	1100	
09/14/94	7	ADJA	8240	54.8	89.9	144	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

NO RESULTS FOR 10/92 SAMPLING EPISODE DUE TO LAB ERROR.

A - METHYLENE CHLORIDE 18.3 UO/L

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates

Environmental and Geotechnical Services

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	S23			
		03/22/97		09/23/97	
		DATE	03/22/97	09/23/97	06/10/98
RESULT TYPE	US-PMCL	Primary	Primary	Primary	
Chromium, Dissolved			---	---	<5
Lead, Dissolved			---	---	<2.0
Nickel, Dissolved			---	---	<20
Chromium, Total	100		<5	---	---
Lead, Total	15		<2	---	---
Nickel, Total	100		<20	---	---
Cyanide	200		<5	<5	11

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

SHALLOW MONITOR WELLS
 SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-23 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	
	CHLOROETHANE	UG/L	10 U	10 U	10 U	5.0 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	10 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOTAL VOCS:		UG/L	0	0	0
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	2.0 U	-	2.0 U	-
	NICKEL	UG/L	7 J	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-23		DATE COLLECTED		08 DEC 94		15 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	CHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U		10 U		10 U	
	1,1-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,2-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,1-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	CIS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	METHYLENE CHLORIDE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TETRACHLOROETHENE	UG/L	-		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TOLUENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,1,1-TRICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	TRICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	
	VINYL CHLORIDE	UG/L	10 U		10 U		10 U		10 U		10 U		10 U		10 U	
	ACETONE	UG/L	100 U		100 U		100 U		100 U		100 U		100 U		100 U	
	XYLENE (TOTAL)	UG/L	10 U		10 U		10 U		10 U		10 U		10 U		10 U	
	TOTAL VOCS:	UG/L	0		0		0		0		0		0		0	
E.METALS	LEAD	UG/L	-		-		-		-		-		2.0 U		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.0 U		-		-		-		-		-	
	NICKEL (DISSOLVED)	UG/L	-		20 U		-		-		-		-		-	
H.MISC	CYANIDE, TOTAL	UG/L	-		5 U		-		-		-		5 U		-	
	PHENOLS	UG/L	-		10 U		-		-		-		10 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-23				CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-78 UG/L	P-100 UG/L	UG/L	
11/06/86	18	AQUA		ND	4.6	6	A
01/07/87	8	AQUA		No VOC Detected			
02/11/87	8	AQUA		No VOC Detected			
06/03/87	21	AQUA		No VOC Detected			
09/03/87	13	AQUA		No VOC Detected			
01/13/88	8	AQUA		No VOC Detected			
02/09/88	24	AQUA		No VOC Detected			
05/18/88	17	AQUA		6.4	ND	6	
09/24/88	17	AQUA		No VOC Detected			
12/08/88	7	AQUA		No VOC Detected			
02/22/89	8	AQUA		No VOC Detected			
06/08/89	17	AQUA	0240	No VOC Detected			
09/08/89	27	AQUA	0240	No VOC Detected			
12/11/89	7	AQUA	0240	No VOC Detected			
03/02/90	23	AQUA	0240	No VOC Detected			
06/01/90	10	AQUA	0240	No VOC Detected			
08/22/90	9	AQUA	0240	No VOC Detected			
10/27/90	7	AQUA	0240	No VOC Detected			
02/20/91	8	AQUA	0240	No VOC Detected			
06/01/91	17	AQUA	0240	No VOC Detected			
08/28/91	4	AQUA	0240	No VOC Detected			
11/13/91	19	AQUA	0240	No VOC Detected			
03/31/92	15	AQUA	0240	No VOC Detected			
08/22/92	17	AQUA	0240	No VOC Detected			
02/04/93	13	AQUA	0240	No VOC Detected			
02/16/93	3	AQUA	0240	No VOC Detected			
05/11/93	8	AQUA	0240	No VOC Detected			
08/31/93	8	AQUA	0240	No VOC Detected			
12/01/93	8	AQUA	0240	No VOC Detected			
03/29/94	47	AQUA	0240	No VOC Detected			
05/04/94	8	AQUA	0240	No VOC Detected			
09/14/94	8	AQUA	0240	No VOC Detected			

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - B19 (2-ETHYLHEXYL) PHTHALATE REPORTED 3.4 UG/L

WELL NOT SAMPLED 01/92.

NO RESULTS FOR 10/92 SAMPLING EPISODE DUE TO LAB ERROR.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIED SIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

talgeason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S25	S25	S25	S25	S25
				03/20/97	06/04/97	09/23/97	12/10/97	06/09/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethane			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethane			70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Analytical Summary - Inorganics In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

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Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	S25			
		US-PMCL	03/20/97	09/23/97	06/09/98
		RESULT TYPE	Primary	Primary	Primary
Chromium, Dissolved			---	---	<5
Lead, Dissolved			---	---	<2.0
Nickel, Dissolved			---	---	<20
Chromium, Total		100	7.3	---	---
Lead, Total		15	[30]	---	---
Nickel, Total		100	<20	---	---
Cyanide		200	<5	<5	<5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL INORG

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-25 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	3.1 J	3.0 J	2.3 J	3.2 J
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOTAL VOCS:	UG/L	3.1	3	2.3	3.2
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	6.5	-	0.9 J	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10	-	10	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.
U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.
NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-25		DATE COLLECTED		08 DEC 94		13 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	CHLOROETHANE	UG/L	10 U		10 U					10 U				10 U		10 U
	1,1-DICHLOROETHANE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	1,2-DICHLOROETHANE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	1,1-DICHLOROETHENE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	METHYLENE CHLORIDE	UG/L	5 U		5.0 U				3.8	J		2.6	J		3.9	J
	TETRACHLOROETHENE	UG/L	-		5.0 U					5.0 U			5.0 U		5.0 U	
	TOLUENE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	TRICHLOROETHENE	UG/L	5 U		5.0 U					5.0 U				5.0 U		5.0 U
	VINYL CHLORIDE	UG/L	10 U		10 U					10 U				10 U		10 U
	ACETONE	UG/L	100 U		100 U					100 U				100 U		100 U
	XYLENE (TOTAL)	UG/L	10 U		10 U					10 U				10 U		10 U
	TOTAL VOCS:	UG/L	0		0				3.8			2.6		3.9		
E.METALS	LEAD	UG/L	-		-					-		5.3		-		-
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.0 U					-		-		-		-
	NICKEL (DISSOLVED)	UG/L	-		20 U					-		-		-		-
H.MISC	CYANIDE, TOTAL	UG/L	-		5 U					-		5 U		-		-
	PHENOLS	UG/L	-		10 U					-		10 U		-		-

QUALIFIER CODES (Q):

U: THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-25				1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	CIS-1,2- DICHLORO- ETHENE	TRANS-1,2 DICHLORO- ETHENE	1,1,1-TRI- CHLORO- ETHANE	TRI- CHLORO- ETHENE	SUM	NOTES	
DATE	SAMPLE	LAB	MCL	NPL	S	P-70	P-100	P-100	S			
SAMPLED	ID.		METHOD	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L		
07/10/87	1	AQUA		No VOC Detected								
09/03/87	11	AQUA		No VOC Detected								
01/15/88	32	AQUA		No VOC Detected								
02/09/88	20	AQUA		No VOC Detected								
05/18/88	18	AQUA		ND	ND	7.3	ND	ND	ND	7		
09/25/88	25	AQUA		No VOC Detected								
12/08/88	8	AQUA	8240	25.2	38.0	79.0	5.9	6.5	9.6	164		
02/22/89	8	AQUA		No VOC Detected								
02/25/89	32	AQUA		No VOC Detected								
08/09/89	21	AQUA	624	No VOC Detected								
09/09/89	28	AQUA	8240	No VOC Detected								
12/11/89	5	AQUA	8240	No VOC Detected								
03/03/90	39	AQUA	8240	No VOC Detected								
06/01/90	9	AQUA	8240	No VOC Detected								
08/22/90	6	AQUA	8240	No VOC Detected								
12/27/90	5	AQUA	8240	No VOC Detected								
02/28/91	6	AQUA	8240	No VOC Detected								
06/01/91	15	AQUA	8240	No VOC Detected								
08/29/91	7	AQUA	8240	No VOC Detected								
11/13/91	13	AQUA	8240	No VOC Detected								
01/25/92	32	AQUA	8240	No VOC Detected								
03/31/92	16	AQUA	8240	No VOC Detected								
08/22/92	14	AQUA	8240	No VOC Detected								
10/30/92	4	AQUA	8240	No VOC Detected								
02/04/93	10	AQUA	8240	No VOC Detected								
05/11/93	7	AQUA	8240	ND	ND	5.3	ND	ND	ND	5		
08/31/93	5	AQUA	8240	ND	ND	6.0	ND	ND	ND	6		
12/01/93	4	AQUA	8240	ND	ND	10.7	ND	ND	ND	11		
02/17/94	9	AQUA	8240	ND	ND	7.3	ND	ND	ND	7		
05/04/94	7	AQUA	8240	ND	ND	5.5	ND	ND	ND	6		
09/14/94	12	AQUA	8240	No VOC Detected								

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GC/MS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLTEOSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

allteosignal
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Shallow Monitoring Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	S27	S27	S27	S27	S27
				03/20/97	06/05/97	09/23/97	12/09/97	06/10/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	17	26	44
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	11	15	18	16	14
cis-1,2-Dichloroethene			70	21	26	31	30	29
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	[23]	[25]	[36]	[36]	[32]
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-27 DATE COLLECTED			
			13 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U
	CHLOROFORM	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	21	15	14	15
	CIS-1,2-DICHLOROETHENE	UG/L	27	23	21	25
	METHYLENE CHLORIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	39	32	27	27
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
TOTAL VOCS:	UG/L	87	70	62	78	
E.METALS	CHROMIUM	UG/L	5 U	-	5.0 U	-
	LEAD	UG/L	3.8	-	5.4	-
	NICKEL	UG/L	20 U	-	6.0	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SHALLOW MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID S-27 DATE COLLECTED					
			08 DEC 94 AMOUNT Q	14 MAR 95 AMOUNT Q	06 JUN 95 AMOUNT Q	20 SEP 95 AMOUNT Q	05 DEC 95 AMOUNT Q	
A.VOA	BENZENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	CHLOROETHANE	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,2-DICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	15	17	21	16	20	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	22	25	24	22	24	5.0 U
	METHYLENE CHLORIDE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TETRACHLOROETHENE	UG/L	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TOLUENE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,1-TRICHLOROETHANE	UG/L	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	52	52	41	41	37	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
	ACETONE	UG/L	100 U	100 U	100 U	100 U	100 U	100 U
	XYLENE (TOTAL)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
	TOTAL VOCS:	UG/L	89	94	86	79	81	
E.METALS	LEAD	UG/L	-	-	-	9.8	-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-	2.0 U	-	-	-	
	NICKEL (DISSOLVED)	UG/L	-	20 U	-	-	-	
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-	5 U	-	
	PHENOLS	UG/L	-	10 U	-	10 U	-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: S-27				CIS-1, 2-DICHLORO-ETHENE	TRANS-1, 2-DICHLORO-ETHENE	TRI-CHLORO-ETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-70 UG/L	P-100 UG/L	S UG/L	UG/L	
07/10/87	8	AQUA		9.4	10	00	109	
09/04/87	28	AQUA		7.5	8	100	116	
01/15/88	33	AQUA		9.8	10	96	125	
02/10/88	32	AQUA		12	16	81	109	
05/19/88	27	AQUA		24.5	18.4	74.6	116	
09/25/88	27	AQUA		11	26	65	122	
12/08/88	2	AQUA		13.3	21	60	114	
02/23/89	12	AQUA		11.1	17	87.1	125	
06/09/89	25	AQUA	824	10.6	12.3	86	109	
09/08/89	18	AQUA	8240	14.8	19.5	78.9	113	
12/11/89	11	AQUA	8240	14.8	20.4	100	125	
02/20/90	11	AQUA	8240	20.4	22.3	83.1	126	
02/28/90	12	AQUA	8240	20	20.8	84.6	126	
06/02/90	17	AQUA	8240	17.4	21.6	84.6	124	
08/24/90	23	AQUA	8240	17.5	17.9	78.0	113	
10/28/90	17	AQUA	8240	20.8	20.8	91.4	132	
02/28/91	9	AQUA	8240	18.1	12.4	76.4	107	
06/01/91	22	AQUA	8240	22.6	60.0	60.7	151	
08/29/91	8	AQUA	8240	14.8	21.8	66.0	93	
11/13/91	18	AQUA	8240	20.8	23.1	84.1	97	
01/25/92	30	AQUA	8240	17.1	18.8	55.2	91	
03/31/92	18	AQUA	8240	16.0	17.8	57.0	91	
06/23/92	25	AQUA	8240	16.5	16.8	58.9	92	
02/04/93	16	AQUA	8240	23.5	19.8	75.3	119	
02/10/93	5	AQUA	8240	28.4	24.2	90.2	143	
05/11/93	5	AQUA	8240	21.4	21.8	58.2	101	
08/31/93	8	AQUA	8240	21.1	21.7	46.6	89	
12/01/93	8	AQUA	8240	59.2	40.3	69.2	159	
02/17/94	6	AQUA	8240	27.3	23.8	ND	81	
05/05/94	10	AQUA	8240	21.1	18.0	34.8	75	
09/14/94	13	AQUA	8240	29.7	18.7	41.0	81	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

NO RESULTS FOR 10/92 SAMPLING EPISODE DUE TO LAB ERROR.

PARAMETER

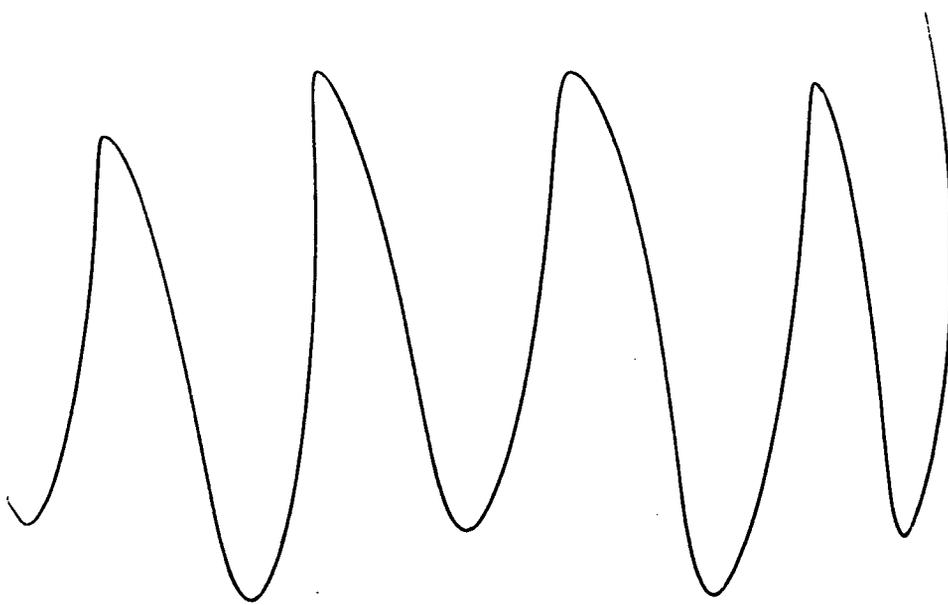
o - Date Sampled

SHALLOW MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

t.c. cleason
associates
Environmental and Geotechnical Services

INTERMEDIATE MONITORING WELLS



Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	7-50	7-50
	DATE	07/18/97	06/09/98
	RESULT TYPE	Primary	Primary
	US-PMCL		
Benzene	5	<5	<5.0
Chloroethene	2	<2	<10
Chloroform	100	<5	<5.0
1,1-Dichloroethane		<5	<5.0
1,2-Dichloroethane	5	<5	<5.0
1,1-Dichloroethene	7	<5	<5.0
trans-1,2-Dichloroethene	100	<5	<5.0
cis-1,2-Dichloroethene	70	<5	<5.0
Methylene chloride	5	<5	<5.0
Tetrachloroethene	5	<5	<5.0
Toluene	1000	<5	<5.0
1,1,1-Trichloroethane	200	<5	<5.0
Trichloroethene	5	<5	<5.0
Vinyl Chloride	2	<2	<10
Acetone		<100	<100
Xylene (Total)	10000	<5	<10
Carbon disulfide		<5	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

Analytical Summary - VOCs In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT	(Units in ug/l)	SITE		8D	8D	8D	8D	8D
		DATE	RESULT TYPE	03/21/97	06/03/97	09/24/97	12/08/97	06/11/98
				US-PMCL	Primary	Primary	Primary	Primary
Benzene	5			<5	<5	<5.0	<5.0	<5.0
Chloroethene	2			<10	<2	<10	<10	<10
Chloroform	100			<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane	5			<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane	7			<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethane	100			27	35	23	21	29
cis-1,2-Dichloroethane	70			[230]	[310]	[240]	[220]	[260]
Methylene chloride	5			<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene	5			<5	<5	<5.0	<5.0	<5.0
Toluene	1000			<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	200			<5	<5	<5.0	<5.0	<5.0
Trichloroethene	5			<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride	2			<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)	10000			<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

[] =Greater than Action Level

For RCL ANSUM

Analytical Summary - Inorganics In Groundwater
Intermediate Monitoring Wells
Quarterly Monitoring Program - 06/98
AlliedSignal Industrial Complex
South Bend, Indiana

Page: 1A
Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	8D	8D	8D
	DATE	03/21/97	09/24/97	06/11/98
	RESULT TYPE	Primary	Primary	Primary
	US-PMCL			
Chromium, Dissolved		---	---	13
Lead, Dissolved		---	---	<2.0
Nickel, Dissolved		---	---	<20
Chromium, Total	100	11	---	---
Lead, Total	15	<2	---	---
Nickel, Total	100	<20	---	---
Cyanide	200	161	90	110

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Intermediate Monitoring Well

SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 8-D DATE COLLECTED			
			12 MAR 96 AMOUNT Q	05 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	12 DEC 96 AMOUNT Q
A.VOA	1,2-DICHLOROETHANE	UG/L	10 U			
	1,1-DICHLOROETHENE	UG/L	10 U	25 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	6.9 J	25 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	97	30	23	21
	TOLUENE	UG/L		270	240	200
	TRICHLOROETHENE	UG/L	10 U	25 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	20 U	50 U	10 U	10 U
	CARBON DISULFIDE	UG/L	10 U	25 U	5.0 U	5.0 U
TOTAL VOCS:	UG/L	103.9	300	263	221	
E.METALS	LEAD	UG/L	2.0 U	-	1.6 J	-
	NICKEL	UG/L	20 U	-	5.8 J	-
H.MISC	CYANIDE, TOTAL	UG/L	220	-	180	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.
 U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
 - : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.
 NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SOURCE: 8-D				1, 1-DI- CHLORO- ETHENE	CIS-1, 2- DICHLORO- ETHENE	TRANS-1, 2 DICHLORO- ETHENE	1, 1, 1-TRI CHLORO- ETHANE	VINYL CHLORIDE	SUM	NOTES		
DATE SAMPLED	SAMPLE NO.	LAB	MCL	7	P-70	P-100	200	2				
			METHOD	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L			
07/10/87	5	AQUA		ND	720	27	ND	ND	747			
09/04/87	30	AQUA		ND	900	ND	ND	ND	900			
01/15/88	28	AQUA		ND	840	ND	ND	ND	840			
01/15/88	29	AQUA		ND	855	ND	ND	ND	855			
02/09/88	13	AQUA		ND	770	ND	ND	ND	770			
02/09/88	14	AQUA		ND	630	ND	ND	ND	630			
05/19/88	23	AQUA		ND	1600	24	ND	67.9	1692			
09/24/88	19	AQUA		ND	420	32	20	ND	472			
12/10/88	32	AQUA		No VOC Detected								
02/23/89	35	AQUA		ND	570	33.1	ND	24.5	628			
06/08/89	11	AQUA	624	ND	600	37.2	ND	18.3	656			
09/10/89	35	AQUA	8240	5.4	560	35.6	ND	17.7	619			
12/13/89	33	AQUA	8240	ND	440	27.9	ND	ND	460			
12/13/89	34	AQUA	8240	ND	440	27.8	ND	ND	460			
03/02/90	15	AQUA	8240	ND	780	41.5	ND	11.6	833			
06/03/90	22	AQUA	8240	ND	430	35.6	ND	ND	466			
08/23/90	15	AQUA	8240	No VOC Detected								
10/29/90	31	AQUA	8240	5.4	449	42.3	ND	16.6	513			
03/01/91	21	AQUA	8240	ND	336	31.2	ND	12.2	379			
06/01/91	11	AQUA	8240	ND	355	62.0	ND	ND	417			
06/01/91	12	AQUA	8240	ND	332	67.8	ND	ND	400			
08/31/91	34	AQUA	8240	5.6	309	33.8	ND	ND	340			
11/14/91	35	AQUA	8240	ND	323	30.8	ND	ND	354			
01/26/92	36	AQUA	8240	ND	324	39.6	ND	ND	364			
04/02/92	41	AQUA	8240	ND	403	59.6	ND	ND	463			
08/21/92	9	AQUA	8240	ND	430	45.7	ND	ND	476			
10/31/92	23	AQUA	8240	ND	318	31.3	ND	ND	349			
02/05/93	33	AQUA	8240	ND	340	29.9	ND	ND	370			
05/12/93	24	AQUA	8240	ND	375	47.7	ND	ND	423			
09/02/93	31	AQUA	8240	ND	282	40.5	ND	ND	323			
09/02/93	32	AQUA	8240	ND	288	42.0	ND	ND	330			
12/02/93	23	AQUA	8240	6.8	344	50.5	ND	ND	409			
02/18/94	21	AQUA	8240	ND	247	27.6	ND	ND	275			
02/18/94	22	AQUA	8240	ND	324	35.1	ND	ND	359			
05/06/94	29	AQUA	8240	ND	240	29.2	ND	ND	269			
09/15/94	22	AQUA	8240	ND	260	32.2	ND	ND	292			

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

PARAMETER

o - Date Sampled

Intermediate Monitoring Well
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SMITH DEN, INDIANA

at a gleason
associates
Environmental and Geotechnical Services

Intermediate Monitoring Well

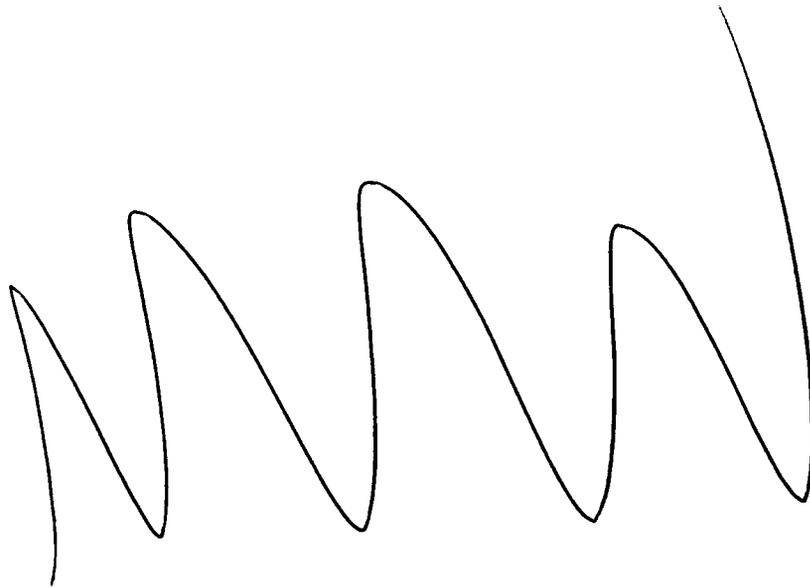
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 8-D DATE COLLECTED		14 MAR 95		07 JUN 95		19 SEP 95		06 DEC 95	
			07 DEC 94	q	AMOUNT	q	AMOUNT	q	AMOUNT	q	AMOUNT	q
A.VOA	1,2-DICHLOROETHANE	UG/L		5 U		5.0 U		10 U		10 U		10 U
	1,1-DICHLOROETHENE	UG/L		5 U		5.0 U		J		10 U		10 U
	TRANS-1,2-DICHLOROETHENE	UG/L	33		18		34		9.6	J	19	
	CIS-1,2-DICHLOROETHENE	UG/L	244		200		270		89		180	
	TRICHLOROETHENE	UG/L		5 U		5.0 U		10 U		10 U		10 U
	VINYL CHLORIDE	UG/L		10 U		10 U		6.9	J	20 U		20 U
	TOTAL VOCS:	UG/L	277		218		313.5		98.6		199	
E.METALS	LEAD	UG/L		-		-		-	1.8	J		-
H.MISC	CYANIDE, TOTAL	UG/L		-	1100		-		250			-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
 NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

DEEP MONITORING WELLS



Analytical Summary - VOCs in Groundwater
 Deep Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	2D	2D	2D	2D	2D
				03/22/97	06/03/97	09/23/97	12/08/97	06/11/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	[12]	[16]	[14]	[10]	[7.9]
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	10	17	16	15	15
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0
Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed								
[] = Greater than Action Level								
For RCL ANSUM								

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 2-D DATE COLLECTED			
			14 MAR 95 AMOUNT Q	07 JUN 95 AMOUNT Q	19 SEP 95 AMOUNT Q	06 DEC 95 AMOUNT Q
A.VOA	1,2-DICHLOROETHANE	UG/L	18	16		
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	16
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	17	14	11	14
	TRICHLOROETHENE	UG/L	24	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	10 U	10 U
TOTAL VOCS:	UG/L	59	30	11	30	
E.METALS	LEAD	UG/L	-	-	2.0 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 2-D DATE COLLECTED			
			12 MAR 96 AMOUNT q	04 JUN 96 AMOUNT q	05 SEP 96 AMOUNT q	12 DEC 96 AMOUNT q
A.VOA	1,2-DICHLOROETHANE	UG/L	16			
	1,1-DICHLOROETHENE	UG/L		15		15
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U		5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5.0 U		5.0 U	5.0 U
	TOLUENE	UG/L	17	15	11	13
	TRICHLOROETHENE	UG/L	5.0 U		5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	5.0 U		5.0 U	5.0 U
	CARBON DISULFIDE	UG/L	10 U		10 U	10 U
		UG/L	5.0 U		5.0 U	5.0 U
	TOTAL VOCS:	UG/L	33	30	25	28
E.METALS	LEAD	UG/L	9.4			
	NICKEL	UG/L			2.0 U	
H.MISC					20 U	
	CYANIDE, TOTAL	UG/L	5 U		5 U	
	PHENOLS	UG/L	10		10 U	

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.
U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.
NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

SOURCE: 2-D				1,2-DI- CHLORO- ETHANE	CIS-1,2- DICHLORO- ETHENE	TRI- CHLORO- ETHENE	SUM	NOTES	NOTES: OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS. ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT. NPL - NO U.S. EPA PUBLISHED LEVEL P - PROPOSED VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	5 UG/L	P-70 UG/L	5 UG/L	UG/L		
12/18/88	2	AQUA		20.4	ND	ND	20		
06/05/87	11	AQUA		25	ND	ND	25		
09/03/87	18	AQUA		24	ND	ND	24		
01/15/88	34	AQUA		34	ND	ND	34		
02/09/88	11	AQUA		25	ND	ND	25		
05/18/88	24	AQUA		34.2	ND	ND	34		
09/24/88	20	AQUA		28	ND	ND	28		
12/16/88	27	AQUA		22	ND	ND	22		
12/16/88	28	AQUA		21.4	ND	ND	21		
02/24/89	19	AQUA		24.8	13.4	ND	38		
06/08/89	18	AQUA	824	26.8	22.4	ND	49		
09/09/89	31	AQUA	8240	22.8	24.6	ND	47		
12/13/89	30	AQUA	8240	21	14.6	ND	36		
03/01/90	20	AQUA	8240	23.8	31.8	ND	56		
06/03/90	20	AQUA	8240	20.8	26.3	ND	47		
08/23/90	19	AQUA	8240	16.8	17.7	ND	34		
10/29/90	27	AQUA	8240	20.8	26.8	ND	47		
10/28/90	28	AQUA	8240	18.4	25.1	ND	45		
03/02/91	26	AQUA	8240	14.7	13.7	ND	28		
05/30/91	4	AQUA	8240	14.7	5.1	ND	20		
08/31/91	35	AQUA	8240	15.8	14.6	ND	30		
11/14/91	41	AQUA	8240	16.8	12.7	ND	29		
01/24/92	25	AQUA	8240	18.2	9.3	ND	28		
04/02/92	46	AQUA	8240	17.4	12.2	ND	30		
08/21/92	7	AQUA	8240	23.6	13.1	ND	37		
10/31/92	33	AQUA	8240	ND	9.4	16.0	25		
02/05/93	31	AQUA	8240	22.8	21.3	ND	44		
05/12/93	37	AQUA	8240	17.8	11.1	ND	29		
09/02/93	28	AQUA	8240	20.8	11.1	ND	31		
12/03/93	31	AQUA	8240	21.2	15.7	ND	37		
02/18/94	28	AQUA	8240	19.1	12.8	ND	32		
05/06/94	30	AQUA	8240	13.9	10.8	ND	25		
09/13/94	8	AQUA	8240	19.8	11.3	ND	28		

PARAMETER

o - Date
Sampled

DEEP MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLTECHNICAL, INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alltech
associates
Environmental and Geotechnical Services

4DOCHW
25-Oct-88

PRIORITY POLLUTANTS VOLATILE ORGANIC COMPOUNDS (VOC)

OTHER ORGANIC COMPOUNDS

WELL NO.	DATE	SAMPLE #	LAB	PRIORITY POLLUTANTS VOLATILE ORGANIC COMPOUNDS (VOC)							OTHER ORGANIC COMPOUNDS			
				1,1-DI- CHLORO- ETHANE	1,2-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHYLENE	TRANS-1,2 DI- CHLORO- ETHYLENE	1,1,1- TRI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHYLENE	1,2-DI- CHLORO- PROPANE	VINYL CHLORIDE	CHLORO- FORM	TOLUENE	CIS-1,2- DICHLORO- ETHENE
				UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
4-D	10/14/86	31	AQUA	ND	ND	ND	11.4	ND	ND	ND	ND	ND	ND	
	01/07/87	5	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	02/11/87	2	AQUA	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	
	06/05/87	14	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.8	
	09/04/87	21	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	01/14/88	21	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.8	
	02/09/88	17	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	11.3**	8.0	
	03/14/88	1	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	18.0	
	05/18/88	12	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	33.4	
	09/24/88	16	AQUA	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.2	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND = NOT DETECTED. SEE LAB REPORT FOR DETECTION LIMITS.

**NOTE: TOLUENE WAS NOT DETECTED IN 6 PREVIOUS SAMPLINGS. A RESAMPLING ON 3/14/88 DETECTED NO TOLUENE. BASED ON PREVIOUS DATA & THE RETEST, WE CONCLUDE THAT THE 2/9/88 SAMPLING DATA IS AN ANOMOLY.

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

TABLE 5

GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS
PAGE 4 OF 43
MONITOR WELLS

GROUNDWATER INVESTIGATIONS
ALLIED CORPORATION
SOUTH BEND, INDIANA
PROJECT # ALCPX SBIN 013

T A GLEASON ASSOCIATES

Environmental and Geotechnical Services

Analytical Summary - VOCs in Groundwater
 Deep Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	5D	5D	5D	5D	5D
				03/20/97	06/04/97	09/24/97	12/10/97	06/10/98
				Primary	Primary	Primary	Primary	Primary
Benzene			5	<5	<5	<5.0 E	<5.0	<5.0
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethane			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethane			70	<5	<5	<5.0	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

Analytical Summary - VOCs in Groundwater
 Deep Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	5D 06/10/98 Duplicate
Benzene			5	< 5.0
Chloroethene			2	< 10
Chloroform			100	< 5.0
1,1-Dichloroethane				< 5.0
1,2-Dichloroethane			5	< 5.0
1,1-Dichloroethane			7	< 5.0
trans-1,2-Dichloroethene			100	< 5.0
cis-1,2-Dichloroethene			70	< 5.0
Methylene chloride			5	< 5.0
Tetrachloroethene			5	< 5.0
Toluene			1000	< 5.0
1,1,1-Trichloroethane			200	< 5.0
Trichloroethene			5	< 5.0
Vinyl Chloride			2	< 10
Acetone				< 100
Xylene (Total)			10000	< 10
Carbon disulfide				< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

DEEP MONITOR WELLS
 SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 5-D DATE COLLECTED			
			13 MAR 96 AMOUNT Q	04 JUN 96 AMOUNT Q	05 SEP 96 AMOUNT Q	11 DEC 96 AMOUNT Q
A.VOA	1,2-DICHLOROETHANE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	1,1-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	3.3 J	3.2 J	5.0 U	5.0 U
	TOLUENE	UG/L	5.0 U	5.0 U	3.0 J	3.0 J
	TRICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U	5.0 U
	VINYL CHLORIDE	UG/L	10 U	10 U	5.0 U	5.0 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	10 U	10 U
TOTAL VOCS:	UG/L	3.3	3.2	3.0	3.0	
E.METALS	LEAD	UG/L	2.0 U	-	0.8 J	-
	NICKEL	UG/L	20 U	-	20 U	-
H.MISC	CYANIDE, TOTAL	UG/L	5 U	-	5 U	-
	PHENOLS	UG/L	10 U	-	10 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

DEEP MONITOR WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID 5-D DATE COLLECTED		13 MAR 95		06 JUN 95		20 SEP 95		05 DEC 95	
			07 DEC 94 AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	1,2-DICHLOROETHANE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	
	1,1-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	5 U		5.0 U		5.0 U		5.0 U		5.0 U	5.0 U
	TRICHLOROETHENE	UG/L	5 U		5.0 U		3.4	J	2.8	J	3.0	J
	VINYL CHLORIDE	UG/L	10 U		10 U		5.0 U		5.0 U		5.0 U	5.0 U
	TOTAL VOCs:	UG/L	0		16		3.4		2.8		3.0	
E.METALS	LEAD	UG/L	-		-		-		2.0 U		-	
H.MISC	CYANIDE, TOTAL	UG/L	-		5 U		-		5 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: 5-D				CIS-1, 2-DICHLOROETHENE	TOLUENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-70 UG/L	P-2000 UG/L	UG/L	
12/18/86	4	AQJA		10	ND	10	
12/19/86	5	AQJA		10	ND	10	
02/11/87	4	AQJA		No VOC Detected			
06/05/87	19	AQJA		No VOC Detected			
09/03/87	19	AQJA		No VOC Detected			
01/14/88	12	AQJA		No VOC Detected			
02/09/88	21	AQJA		ND	0.7	7	A
03/14/88	2	AQJA		0.1	ND	0	
05/18/88	14	AQJA		10.4	ND	10	
09/23/88	15	AQJA		No VOC Detected			
12/08/88	9	AQJA		No VOC Detected			
02/25/89	31	AQJA		5.4	ND	5	
06/09/89	23	AQJA	024	No VOC Detected			
09/10/89	16	AQJA	0240	5.6	ND	5	
12/11/89	8	AQJA	0240	7.5	ND	8	
02/28/90	9	AQJA	0240	6.2	ND	6	
06/02/90	14	AQJA	0240	6.4	ND	6	
08/24/90	20	AQJA	0240	No VOC Detected			
10/28/90	21	AQJA	0240	5.7	ND	0	
03/03/91	27	AQJA	0240	No VOC Detected			
05/30/91	2	AQJA	0240	No VOC Detected			
08/28/91	2	AQJA	0240	No VOC Detected			
11/12/91	2	AQJA	0240	No VOC Detected			
01/21/92	1	AQJA	0240	No VOC Detected			
03/30/92	7	AQJA	0240	No VOC Detected			
05/20/92	2	AQJA	0240	No VOC Detected			
10/30/92	12	AQJA	0240	No VOC Detected			
02/03/93	2	AQJA	0240	No VOC Detected			
05/11/93	1	AQJA	0240	No VOC Detected			
08/31/93	11	AQJA	0240	No VOC Detected			
12/01/93	1	AQJA	0240	No VOC Detected			
02/16/94	2	AQJA	0240	No VOC Detected			
05/04/94	2	AQJA	0240	No VOC Detected			
09/12/94		AQJA	0240	No VOC Detected			

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - TOLUENE WAS NOT DETECTED IN 6 PREVIOUS SAMPLING EPISODES. A RESAMPLING ON 03/14/88 DETECTED NO TOLUENE. BASED ON PREVIOUS DATA & THE RETEST, WE CONCLUDED THAT THE 02/09/88 SAMPLING DATA ARE AIRBORNE.

PARAMETER

o - Date Sampled

DEEP MONITOR WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

tiagleason
associates

Environmental and Geotechnical Services

Analytical Summary - VOCs in Groundwater
 Deep Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	D5 06/11/98 Primary
Benzene			5	< 5.0
Chloroethene			2	< 10
Chloroform			100	< 5.0
1,1-Dichloroethane				< 5.0
1,2-Dichloroethane			5	< 5.0
1,1-Dichloroethene			7	< 5.0
trans-1,2-Dichloroethene			100	< 5.0
cis-1,2-Dichloroethene			70	< 5.0
Methylene chloride			5	< 5.0
Tetrachloroethene			5	< 5.0
Toluene			1000	< 5.0
1,1,1-Trichloroethane			200	< 5.0
Trichloroethene			5	< 5.0
Vinyl Chloride			2	< 10
Acetone				< 100
Xylene (Total)			10000	< 10
Carbon disulfide				< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

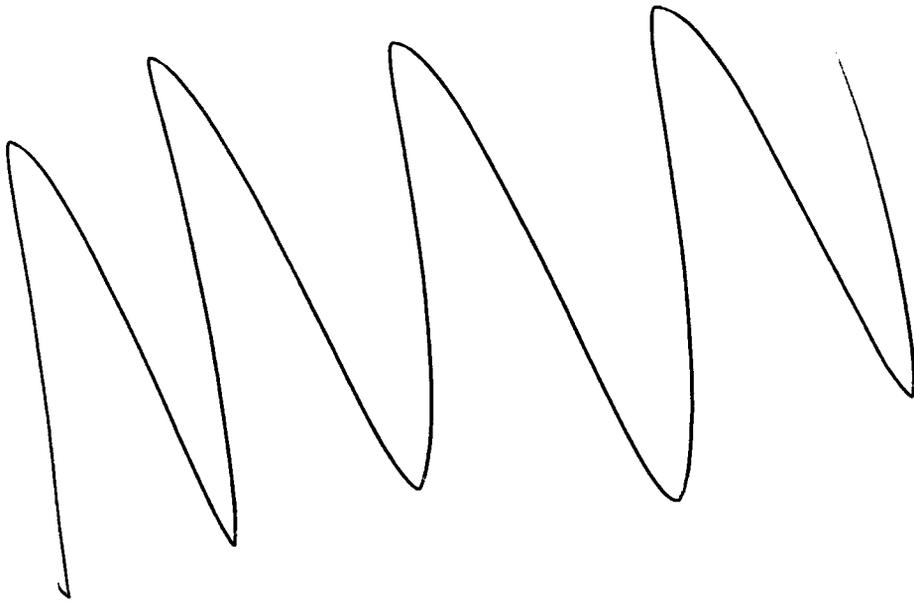
Analytical Summary - Inorganics in Groundwater
 Deep Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	DATE	RESULT TYPE	US-PMCL	D5
					06/11/98
					Primary
Chromium, Dissolved					< 5
Lead, Dissolved					< 2.0
Nickel, Dissolved					< 20
Chromium, Total				100	---
Lead, Total				15	---
Nickel, Total				100	---
Cyanide				200	< 5

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

NAPHTHA RECOVERY WELLS



Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	E3	E3	E3	E3	E3
				03/18/97	03/18/97	06/04/97	09/26/97	09/26/97
				Primary	Duplicate	Primary	Primary	Duplicate
Benzene			5	<5	<5	<5	[5.0] J	<5.0 UJ
Chloroethane			2	[17]	[18]	[24]	[32]	[20]
Chloroform			100	<5	<5	<5	<5.0	<5.0
1,1-Dichloroethane				<5	<5	10	8.4	6.8
1,2-Dichloroethane			5	<5	<5	<5	<5.0	<5.0
1,1-Dichloroethane			7	<5	<5	<5	<5.0	<5.0
trans-1,2-Dichloroethane			100	<5	<5	<5	<5.0	<5.0
cis-1,2-Dichloroethane			70	14	15	24	15	14
Methylene chloride			5	<5	<5	<5	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5	<5.0	<5.0
Toluene			1000	<5	<5	<5	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5	<5.0	<5.0
Trichloroethene			5	<5	<5	<5	<5.0	<5.0
Vinyl Chloride			2	[17]	[18]	[24]	[32]	[20]
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<10	<5	<10	<10
Carbon disulfide				<5	<5	<5	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1B

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	E3	E3	E3
				12/10/97	03/17/98	06/12/98
				Primary	Primary	Primary
Benzene			5	<5.0	<5.0	<5.0
Chloroethene			2	[27]	[17]	<10
Chloroform			100	<5.0	<5.0	<5.0
1,1-Dichloroethane				17	6.1	6.1
1,2-Dichloroethane			5	<5.0	<5.0	<5.0
1,1-Dichloroethane			7	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5.0	13	18
Methylene chloride			5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0	<5.0
Toluene			1000	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5.0	<5.0	<5.0
Trichloroethene			5	<5.0	<5.0	<5.0
Vinyl Chloride			2	[27]	[17]	<10
Acetone				<100	<100	<100
Xylene (Total)			10000	<10	<10	<10
Carbon disulfide				<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Inorganics In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT	(Units in ug/l)	SITE	US-PMCL	E3				
				DATE	DATE	DATE	DATE	DATE
				RESULT TYPE	Primary	Duplicate	Primary	Duplicate
Chromium, Dissolved				---	---	---	---	---
Lead, Dissolved				---	---	---	---	---
Nickel, Dissolved				---	---	---	---	---
Chromium, Total	100			<5	<5	---	---	18
Lead, Total	15			<2	<2	---	---	4.8
Nickel, Total	100			<20	<20	---	---	<20
Cyanide	200			<5	<5	<5	<5	<5

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

NAPHTHA RECOVERY WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID E-3 DATE COLLECTED		
			04 JUN 96 AMOUNT Q	04 SEP 96 AMOUNT Q	10 DEC 96 AMOUNT Q
A.VOA	BENZENE	UG/L	4.3 J	4.4 J	4.0 J
	CHLOROETHANE	UG/L	7.0 J	10 U	10 U
	1,1-DICHLOROETHANE	UG/L	5.0 U	8.7	9.6
	1,1-DICHLOROETHENE	UG/L	10	5.0 U	5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	5.0 U	5.0 U	5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	19	12	16
	VINYL CHLORIDE	UG/L	20	13	20
	ACETONE	UG/L	100 U	100 U	100 U
	2-BUTANONE	UG/L	100 U	100 U	100 U
	CARBON DISULFIDE	UG/L	5.0 U	5.0 U	22
TOTAL VOCS:	UG/L	60.3	38.1	71.6	
E.METALS	LEAD	UG/L	-	0.6 J	-
H.MISC	CYANIDE, TOTAL	UG/L	-	5 U	-

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

NAPHTHA RECOVERY WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID E-3 DATE COLLECTED 09 DEC 94		15 MAR 95		07 JUN 95		19 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		5 U		5.0 U	4.8	J	4.9	J	5.1	
	CHLOROETHANE	UG/L		10 U		10 U	8.2	J	10		12	
	1,1-DICHLOROETHANE	UG/L	8.9		9		7.0		7.2		9.2	
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U		5.0 U		5.0 U		5.0 U		5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	38		24		17		18		18	
	VINYL CHLORIDE	UG/L	20		21		14		23		26	
	ACETONE	UG/L		100 U		100 U		100 U		100 U		100 U
2-BUTANONE	UG/L	215			100 U		100 U		100 U		100 U	
TOTAL VOCS:		UG/L	281.9		54		51		63.1		70.3	
E.METALS	LEAD	UG/L	-		-		-		2.0 U		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.0 U		-		-		-	
H.MISC	CYANIDE, TOTAL	UG/L	-		14		-		5 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: E-3				BENZENE	1,1-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHENE	ETHYL BENZENE	TOLUENE	CIS-1,2- DICHLORO- ETHENE	TRANS-1,2 DICHLORO- ETHENE	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	METHOD	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
03/25/87	7	AQJA		72	66	ND	10	10	63	ND	201	
01/14/88	19	AQJA		60	25	ND	9.4	9.2	48	ND	152	
02/10/88	29	AQJA		60	26	ND	11	6.5	81	70	237	
05/19/88	34		8240	43	26.8	ND	7.8	ND	86	ND	163	
09/23/88	32	AQJA		81	28	ND	5.6	ND	28	11	124	
12/09/88	21	AQJA		30.4	21.8	ND	ND	ND	64.2	ND	116	
02/24/89	28	AQJA		42.7	26.8	ND	ND	ND	74	7.2	151	
06/07/89	9	AQJA	624	82.1	16.7	ND	ND	ND	45.8	6.9	164	
09/07/89	8	AQJA	8240	46.3	18.1	ND	ND	9.7	52.4	7.8	134	
12/12/89	20	AQJA	8240	77.6	24.4	ND	7.4	24.1	32.5	8	172	
03/01/90	18	AQJA	8240	72.3	20.1	ND	7.4	25.1	59.2	7	191	
06/04/90	31	AQJA	8240	66.7	23.3	ND	ND	ND	50.6	8	139	
08/24/90	28	AQJA	8240	30.8	13.8	ND	ND	ND	32.0	5.2	82	
08/24/90	27	AQJA	8240	30.8	13.7	ND	ND	ND	31.0	5.1	82	
10/30/90	36	AQJA	8240	31.8	20.2	ND	ND	ND	51.4	6.8	109	
03/04/91	34	AQJA	8240	15.8	13.5	ND	ND	ND	35.9	5.3	71	
06/03/91	35	AQJA	8240	15.8	12.2	ND	ND	ND	8.7	ND	38	A
08/30/91	20	AQJA	8240	11.7	8.7	ND	ND	ND	20.0	ND	40	
11/14/91	37	AQJA	8240	11.8	13.8	ND	ND	ND	30.5	ND	56	
01/24/92	17	AQJA	8240	13.3	ND	ND	ND	ND	27.2	ND	41	
03/30/92	8	AQJA	8240	14.5	8.7	ND	ND	ND	22.1	ND	46	
08/24/92	34	AQJA	8240	14.3	ND	ND	ND	ND	17.7	8.7	41	
11/02/92	44	AQJA	8240	18.7	ND	ND	ND	ND	8.1	ND	18	
02/09/93	41	AQJA	8240	8.7	ND	ND	ND	ND	ND	ND	9	
06/18/93	1	AQJA	8240	8.4	ND	8.1	ND	ND	21.4	8.1	44	
12/11/93	40	AQJA	8240	ND	ND	ND	ND	ND	ND	ND	ND	
05/08/94	43	AQJA	8240	ND	7.8	ND	ND	ND	12.4	ND	20	
09/16/94	42	AQJA	8240	ND	8.8	ND	ND	ND	21.4	ND	20	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL.

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - METHYLENE CHLORIDE 8.5 UG/L

WELL NOT SAMPLED AUGUST, 1993 DUE TO INOPERATIVE PUMP.

PARAMETER

o - Data Sampled

NAPHTHA RECOVERY WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDBIONAL, INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

at a gleason
associates
Environmental and Geotechnical Services

SOURCE: E-3 (CONT'D)				CARBON TETRA- CHLORIDE	TRI- CHLORO- ETHENE	VINYL CHLORIDE	TOTAL XYLENES	OTHER VOC	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	METHOD	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	
03/25/87	7	AQJA		ND	ND	ND	23	ND	23	
01/14/88	18	AQJA		ND	ND	ND	ND	ND	0	
02/10/88	29			ND	ND	ND	ND	ND	0	
05/19/88	34		0240	29.6	22.8	18.3	15	ND	86	
09/23/88	32	AQJA		ND	ND	ND	9.2	ND	9	
12/09/88	21	AQJA		41.7	ND	26.7	ND	489	557	
02/24/89	28	AQJA		49.5	ND	26.3	ND	520	598	
06/07/89	8	AQJA	024	100	ND	19.2	7.1	ND	126	
09/07/89	8	AQJA	0240	ND	ND	29.2	7.6	400	437	
12/12/89	20	AQJA	0240	ND	ND	ND	13.8	670	684	
03/01/90	18	AQJA	0240	74.4	ND	16.8	10.8	520	722	
06/04/90	31	AQJA	0240	81.2	ND	22.7	6.3	550	610	
08/24/90	26	AQJA	0240	34.7	ND	14.4	ND	ND	49	
08/24/90	27	AQJA	0240	33.3	ND	14.0	ND	ND	47	
10/30/90	36	AQJA	0240	66.8	ND	29.9	ND	ND	102	
03/04/91	34	AQJA	0240	ND	ND	ND	ND	ND	0	
06/03/91	35	AQJA	0240	ND	ND	13.1	ND	ND	13	A
08/30/91	20	AQJA	0240	ND	ND	13.5	ND	ND	14	
11/14/91	37	AQJA	0240	ND	ND	ND	ND	ND	0	
01/24/92	17	AQJA	0240	ND	ND	ND	ND	ND	0	
03/30/92	5	AQJA	0240	ND	ND	ND	ND	ND	0	
08/24/92	34	AQJA	0240	12.0	ND	12.2	ND	ND	24	
11/02/92	44	AQJA	0240	14.7	ND	ND	ND	ND	15	
02/09/93	41	AQJA	0240	ND	ND	ND	ND	ND	0	
06/18/93	1	AQJA	0240	ND	ND	17.2	ND	ND	17	
12/11/93	40	AQJA	0240	ND	ND	ND	ND	ND	ND	
05/09/94	43	AQJA	0240	17.2	ND	10.9	ND	ND	28	
09/16/94	42	AQJA	0240	ND	ND	14.1	ND	ND	14	

NOTES:

OUR INTERPRETATIONS OF THESE DATA ARE LIMITED TO OUR WRITTEN REPORTS.

ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - METHYLENE CHLORIDE 6.5 UG/L

WELL NOT SAMPLED AUGUST, 1993 DUE TO INOPERATIVE PUMP.

PARAMETER

• - Date Sampled

NAPHTHA RECOVERY WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	RWB16	RWB16	RWB16	RWB16	RWB16
				03/18/97	06/04/97	09/26/97	12/10/97	12/10/97
				Primary	Primary	Primary	Primary	Duplicate
Benzene			5	[20]	[27]	[45]	[64]	[71]
Chloroethene			2	<10	<2	<10	<10	<10
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene			70	<5	<5	5.8	<5.0	<5.0
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	<5	<5	<5.0	<5.0	<5.0
Vinyl Chloride			2	<10	<2	<10	<10	<10
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<10	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1B

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE	DATE	RWB16	
			03/17/98	06/12/98
RESULT TYPE	US-PMCL	Primary	Primary	
Benzene	5	[63]	[55]	
Chloroethene	2	<10	<10	
Chloroform	100	<5.0	<5.0	
1,1-Dichloroethane		<5.0	<5.0	
1,2-Dichloroethane	5	<5.0	<5.0	
1,1-Dichloroethene	7	<5.0	<5.0	
trans-1,2-Dichloroethene	100	<5.0	<5.0	
cis-1,2-Dichloroethene	70	<5.0	<5.0	
Methylene chloride	5	<5.0	<5.0	
Tetrachloroethene	5	<5.0	<5.0	
Toluene	1000	<5.0	<5.0	
1,1,1-Trichloroethane	200	<5.0	<5.0	
Trichloroethene	5	<5.0	<5.0	
Vinyl Chloride	2	<10	<10	
Acetone		<100	<100	
Xylene (Total)	10000	<10	<10	
Carbon disulfide		<5.0	<5.0	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Inorganics In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT	(Units in ug/l)	SITE		RWB16		RWB16	
		DATE	RESULT TYPE	03/18/97	09/26/97	03/17/98	03/17/98
			US-PMCL	Primary	Primary	Primary	Primary
Chromium, Dissolved				---	---	---	---
Lead, Dissolved				---	---	---	---
Nickel, Dissolved				---	---	---	---
Chromium, Total	100			<5	---	24	---
Lead, Total	15			<2	---	<2.0	---
Nickel, Total	100			<20	---	<20	---
Cyanide	200			<5	<5	<5	---

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

NAPHTHA RECOVERY WELLS
 SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID RWB-16 DATE COLLECTED		04 JUN 96		04 SEP 96		10 DEC 96	
			12 MAR 96 AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	25		33		18		22	
	CHLOROETHANE	UG/L		10 U	5.0	J		10 U	7.1	J
	1,1-DICHLOROETHANE	UG/L		5.0 U		5.0 U	3.2	J		5.0 U
	1,1-DICHLOROETHENE	UG/L		5.0 U		5.0 U		5.0 U		5.0 U
	TRANS-1,2-DICHLOROETHENE	UG/L	3.0	J	6.0					
	CIS-1,2-DICHLOROETHENE	UG/L	2.2	J	12		4.5	J	3.7	J
	VINYL CHLORIDE	UG/L		10 U	6.5	J	4.1	J	3.0	J
	ACETONE	UG/L		100 U		100 U		10 U		10 U
	2-BUTANONE	UG/L		100 U		100 U		100 U		100 U
	CARBON DISULFIDE	UG/L		5.0 U		5.0 U		100 U		100 U
								5.0 U		5.0 U
TOTAL VOCS:	UG/L	30.2		62.5		29.8		35.8		
E.METALS	LEAD	UG/L	18		-		1.7	J	-	
H.MISC	CYANIDE, TOTAL	UG/L		5 U	-			5 U	-	

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.

- : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.

NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

NAPHTHA RECOVERY WELLS
SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
ALLIEDSIGNAL, INC.
SOUTH BEND, INDIANA
REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID RWB-16 DATE COLLECTED 09 DEC 94		15 MAR 95		07 JUN 95		19 SEP 95		05 DEC 95		
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	
A.VOA	BENZENE	UG/L	45		44		37		24		16		
	CHLOROETHANE	UG/L		10 U		10 U		6.9	J	5.4	J	6.3	J
	1,1-DICHLOROETHANE	UG/L		5 U		5.0 U				6.7		3.0	J
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U		5.0 U			5.0 U	3.5	J	3.4	J
	CIS-1,2-DICHLOROETHENE	UG/L		5 U	5		4.1	J		3.7	J	3.6	J
	VINYL CHLORIDE	UG/L		10 U		10 U			10 U	5.4	J	2.6	J
	ACETONE	UG/L		100 U		100 U			100 U				
	2-BUTANONE	UG/L		100 U		100 U			100 U				100 U
	TOTAL VOCS:	UG/L	45		49		48		48.7		34.9		
E.METALS	LEAD	UG/L	-		-		-		13		-		
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.1		-		-		-		
H.MISC	CYANIDE, TOTAL	UG/L	-		5 U		-		5 U		-		

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: RWB-16				BENZENE		CARBON TETRA-CHLORIDE	1,1-DI-CHLORO-ETHANE	1,2-DI-CHLORO-ETHANE	CIS-1,2-DICHLORO-ETHENE	TRANS-1,2-DICHLORO-ETHENE	TRI-CHLORO-ETHENE	OTHER VOC	SLM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL	S	MPL	IPL	S	P-70	P-100	S				
			NET/MOD	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L		
03/26/87	8	AQJA		22	ND		16	ND	16	ND	ND	ND	54	
09/04/87	35	AQJA		No VOC Detected										
01/14/88	20	AQJA		ND	220	ND	ND	ND	ND	8.5	ND	ND	229	
02/10/88	30	AQJA		ND	ND	ND	ND	ND	ND	8.2	ND	ND	8	
05/19/88	35	AQJA		ND	149	ND	ND	ND	ND	ND	22.9	ND	172	
09/25/88	33	AQJA		152	ND	ND	ND	ND	ND	8	ND	ND	158	
12/09/88	22	AQJA		ND	140	ND	ND	ND	ND	5.4	ND	15	160	
02/24/89	29	AQJA		100	178	ND	ND	ND	ND	ND	ND	140	410	
06/07/89	8	AQJA	824	83	178	ND	ND	ND	ND	13	ND	ND	236	
09/07/89	9	AQJA	8240	82.1	270	ND	ND	ND	ND	8.2	ND	41.2	372	
09/07/89	10	AQJA	8240	83.2	250	ND	ND	ND	ND	7.4	ND	82.4	373	
12/12/89	21	AQJA	8240	150	140	8.3	ND	ND	ND	9	ND	50	357	
03/01/90	19	AQJA	8240	129	320	10.3	ND	ND	ND	6.3	ND	83.9	541	
06/04/90	32	AQJA	8240	110	300	7.6	ND	ND	ND	10.4	ND	240	768	
08/24/90	28	AQJA	8240	ND	114	ND	7.5	ND	ND	5.3	ND	ND	127	
10/30/90	37	AQJA	8240	150	110	ND	ND	7.2	ND	ND	ND	ND	263	
03/04/91	35	AQJA	8240	65.4	106	ND	ND	ND	ND	ND	ND	ND	171	
06/03/91	36	AQJA	8240	100	93.6	ND	ND	ND	ND	ND	ND	74.0	268	A
06/03/91	37	AQJA	8240	102	110	ND	ND	ND	ND	ND	ND	83.0	295	
08/30/91	21	AQJA	8240	ND	46.8	ND	ND	ND	ND	ND	ND	ND	47	
11/14/91	38	AQJA	8240	6.1	93.1	ND	ND	ND	ND	ND	ND	ND	99	
11/14/91	39	AQJA	8240	ND	89.2	ND	ND	ND	ND	ND	ND	ND	89	
01/24/92	18	AQJA	8240	ND	60.0	ND	ND	ND	ND	ND	ND	ND	50	
01/24/92	19	AQJA	8240	ND	49.8	ND	ND	ND	ND	ND	ND	ND	50	
03/30/92	8	AQJA	8240	82.8	ND	ND	ND	ND	ND	ND	ND	ND	82	
08/24/92	35	AQJA	8240	84.8	49.7	ND	ND	ND	ND	ND	ND	ND	104	
11/02/92	43	AQJA	8240	74.8	29.3	ND	ND	ND	ND	ND	ND	ND	104	
02/05/93	30	AQJA	8240	ND	19.2	ND	ND	ND	ND	ND	ND	ND	19	
05/12/93	34	AQJA	8240	72.4	ND	ND	ND	ND	ND	ND	ND	ND	72	
09/01/93	24	AQJA	8240	No VOC Detected										
09/01/93	25	AQJA	8240	No VOC Detected										
12/04/93	35	AQJA	8240	ND	18.2	ND	ND	ND	ND	ND	ND	ND	18	
02/19/94	37	AQJA	8240	43.2	12.7	ND	ND	ND	ND	ND	ND	ND	56	
02/19/94	38	AQJA	8240	45.7	13.4	ND	ND	ND	ND	ND	ND	ND	50	
05/07/94	41	AQJA	8240	38.5	ND	ND	ND	ND	ND	ND	ND	ND	38	
08/19/94	43	AQJA	8240	No VOC Detected										

NOTES:

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ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

A - METHYLENE CHLORIDE 9.0 ND/L

PARAMETER

o - Date Sampled

NAPHTHA RECOVERY WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIENSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH DEPT, INDIANA

Hardeason
associates
Environmental and Geotechnical Services

Analytical Summary - VOCs In Groundwater
 Naphtha Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT	(Units in ug/l)	SITE	RWB22					
			DATE	US-PMCL	03/18/97	06/04/97	06/04/97	12/10/97
		RESULT TYPE		Primary	Primary	Duplicate	Primary	Primary
Benzene	5		<5	<5	<5	<5.0	<5.0	
Chloroethene	2		<10	<2	<2	<10	<10	
Chloroform	100		<5	<5	<5	<5.0	<5.0	
1,1-Dichloroethane			<5	5.6	6.4	7.0	9.9	
1,2-Dichloroethane	5		<5	<5	<5	<5.0	<5.0	
1,1-Dichloroethene	7		<5	<5	<5	<5.0	<5.0	
trans-1,2-Dichloroethene	100		<5	<5	<5	<5.0	<5.0	
cis-1,2-Dichloroethene	70		15	18	20	19	24	
Methylene chloride	5		<5	<5	<5	<5.0	<5.0	
Tetrachloroethene	5		<5	<5	<5	<5.0	<5.0	
Toluene	1000		<5	<5	<5	<5.0	<5.0	
1,1,1-Trichloroethane	200		<5	<5	<5	<5.0	<5.0	
Trichloroethene	5		<5	<5	<5	<5.0	<5.0	
Vinyl Chloride	2		<10	<2	<2	<10	<10	
Acetone			<100	<100	<100	<100	<100	
Xylene (Total)	10000		<10	<5	<5	<10	<10	
Carbon disulfide			<5	<5	<5	<5.0	<5.0	

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

NAPHTHA RECOVERY WELLS
 SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/28/97

GROUP	PARAMETER NAME	UNITS	SAMPLE ID RWB-22 DATE COLLECTED 12 MAR 96		04 JUN 96		04 SEP 96		10 DEC 96	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L	2.4	J	3.3	J				
	CHLOROETHANE	UG/L		10 U		10 U	5.0 U		3.7	J
	1,1-DICHLOROETHANE	UG/L	5.9		8.0		10 U			10 U
	1,1-DICHLOROETHENE	UG/L		5.0 U		5.0 U	8.8		8.1	
	TRANS-1,2-DICHLOROETHENE	UG/L	5.4		4.8	J	5.0 U			5.0 U
	CIS-1,2-DICHLOROETHENE	UG/L	25		26		5.3		4.9	J
	VINYL CHLORIDE	UG/L		10 U		10 U	27		24	
	ACETONE	UG/L		100 U		100 U		10 U		10 U
	2-BUTANONE	UG/L		100 U		100 U		100 U		100 U
	CARBON DISULFIDE	UG/L		5.0 U		5.0 U		100 U		100 U
	TOTAL VOCS:	UG/L	38.7		42.1		5.0 U		15	J
E.METALS	LEAD	UG/L		2.0 U				41.1		55.7
H.MISC	CYANIDE, TOTAL	UG/L						2.0 U		
								5 U		

QUALIFIER CODES (Q):

J : THIS RESULT SHOULD BE CONSIDERED A QUANTITATIVE ESTIMATE.
 U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
 - : INDICATES THAT SAMPLE WAS NOT ANALYZED FOR COMPOUND/ANALYTE.
 NOTE: THESE SAMPLES HAVE NOT UNDERGONE ERM'S COMPREHENSIVE QUALITY ASSURANCE DATA VALIDATION. ALL RESULTS PRESENTED ARE AS RECEIVED FROM THE LABORATORY.

NAPHTHA RECOVERY WELLS
 SUMMARY OF ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
 ALLIEDSIGNAL, INC.
 SOUTH BEND, INDIANA
 REPORT DATE 01/29/96

GROUP	PARAMETER NAME	UNITS	SAMPLE ID RWB-22 DATE COLLECTED 09 DEC 94		15 MAR 95		07 JUN 95		19 SEP 95		05 DEC 95	
			AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q	AMOUNT	Q
A.VOA	BENZENE	UG/L		5 U		5.0 U	3.5	J	3.2	J	2.1	J
	CHLOROETHANE	UG/L		10 U		10 U		10 U		10 U		10 U
	1,1-DICHLOROETHANE	UG/L	8.0		8		8.6		6.4		5.4	
	TRANS-1,2-DICHLOROETHENE	UG/L		5 U	6			5.0 U		J	4.1	J
	CIS-1,2-DICHLOROETHENE	UG/L	27		30		32		4.4		23	
	VINYL CHLORIDE	UG/L		10 U		10 U		10 U		10 U		10 U
	ACETONE	UG/L	129			100 U		100 U		100 U		100 U
	2-BUTANONE	UG/L	385			100 U		100 U		100 U		100 U
	TOTAL VOCS:	UG/L	549		44		44.1		39		34.6	
E.METALS	LEAD	UG/L	-		-		-		2.0 U		-	
E.METALS (DIS.)	LEAD (DISSOLVED)	UG/L	-		2.0 U		-		-		-	
H.MISC	CYANIDE, TOTAL	UG/L	-		8		-		5 U		-	

QUALIFIER CODES (Q):

U : THIS ANALYTE WAS NOT DETECTED. THE NUMERIC VALUE REPRESENTS THE SAMPLE QUANTITATION/DETECTION LIMIT FOR THIS ANALYTE.
 NOTE: THIS DATA DID NOT UNDERGO AN ERM QUALITY ASSURANCE COMPREHENSIVE REVIEW.

SOURCE: RWB-22				BENZENE	CARBON TETRA-CHLORIDE	1,1-DI-CHLORO-ETHANE	ETHYL BENZENE	TOLUENE	TOTAL XYLENES	SUM	NOTES
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	5 UG/L	1PL UG/L	1PL UG/L	P-700 UG/L	P-2000 UG/L	P-10000 UG/L	UG/L	
03/26/87	9	AQJA		184	ND	124	94	ND	199	601	
09/04/87	34	AQJA		ND	420	ND	81	ND	160	661	
01/14/88	17	AQJA		117	70	48	47	22	85	309	
01/14/88	18	AQJA		122	90	53	51	24	91	431	
02/10/88	27	AQJA		170	110	69	73	61	140	613	
02/10/88	28	AQJA		151	ND	51	70	140	140	552	
05/19/88	32	AQJA		110	33.8	48.2	103	79.5	133	518	
05/19/88	33	AQJA		110	35.7	47.9	58.8	34.7	113	408	
09/23/88	36	AQJA		ND	ND	0.3	ND	ND	ND	0	
12/09/88	29	AQJA		65.8	ND	20.7	41	18.4	80	243	
02/24/89	27	AQJA		110	62.8	28.8	62.9	34.4	100	300	
06/07/89	4	AQJA	824	150	64.8	23.4	51.9	42.1	97.1	429	
09/07/89	7	AQJA	8240	100	ND	19.3	47.1	13.1	84.7	264	
12/12/89	10	AQJA	8240	ND	ND	24.2	27	ND	36.8	ND	
03/01/90	17	AQJA	8240	82.9	ND	17.4	37.3	5.2	44.1	187	
06/04/90	28	AQJA	8240	76.7	ND	19.4	35.4	12.3	44.2	188	
06/04/90	30	AQJA	8240	76.3	ND	19.3	35.2	12.2	44	187	
08/24/90	26	AQJA	8240	46.7	10.1	16.7	32.8	8.1	64.7	167	
10/30/90	35	AQJA	8240	63.8	28.8	21.8	30.6	7.4	48.2	189	
03/04/91	32	AQJA	8240	21.2	ND	25.1	15.7	ND	24.4	86	
03/04/91	33	AQJA	8240	26.2	ND	13.0	20.0	ND	34.8	84	
06/03/91	38	AQJA	8240	6.8	ND	14.2	ND	ND	ND	20	
11/14/91	36	AQJA	8240	10.8	ND	ND	ND	ND	ND	11	
01/24/92	16	AQJA	8240	14.4	ND	ND	0.9	ND	11.9	32	
03/30/92	4	AQJA	8240	6.9	ND	18.7	ND	ND	ND	17	
08/24/92	33	AQJA	8240	6.1	ND	16.7	ND	ND	ND	22	
11/02/92	42	AQJA	8240	8.8	ND	9.1	ND	ND	ND	15	
02/05/93	29	AQJA	8240	ND	ND	17.4	ND	ND	ND	17	
05/12/93	33	AQJA	8240	ND	ND	12.9	ND	ND	ND	13	
09/01/93	23	AQJA	8240	ND	ND	12.6	ND	ND	ND	13	
12/04/93	33	AQJA	8240	ND	ND	23.3	ND	ND	ND	23	
12/04/93	34	AQJA	8240	ND	ND	21.1	ND	ND	ND	21	
02/19/94	36	AQJA	8240	ND	ND	7.9	ND	ND	ND	8	
05/07/94	39	AQJA	8240	ND	ND	6.8	ND	ND	ND	7	
05/07/94	40	AQJA	8240	ND	ND	6.8	ND	ND	ND	7	
09/18/94	39	AQJA	8240	ND	ND	6.7	ND	ND	ND	6	
09/16/94	40	AQJA	8240	ND	ND	6.0	ND	ND	ND	6	

NOTES:

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ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

P - PROPOSED

VOC RESULTS ARE A SUMMARY OF A GCMS SCAN FOR PRIORITY POLLUTANT VOLATILE ORGANIC COMPOUNDS FOR EACH LOCATION AND SAMPLING DATE. SEE LAB REPORT.

WELL NOT SAMPLED AUGUST, 1991 DUE TO INOPERATIVE PUMP.

PARAMETER

o - Data Sampled

NAPHTHA RECOVERY WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates
Environmental and Geotechnical Services

SOURCE: RWB-22 (CONT'D)				CIS-1, 2- DICHLORO- ETHENE	TRANS-1, 2 DICHLORO- ETHENE	1, 1, 1-TRI CHLORO- ETHANE	TRI- CHLORO- ETHENE	OTHER VOC	SUM	NOTES	
DATE SAMPLED	SAMPLE NO.	LAB	MCL METHOD	P-70 UG/L	P-100 UG/L	200 UG/L	5 UG/L	UG/L	UG/L		
03/26/87	9	AQJA		ND	ND	ND	ND	ND	0		
09/04/87	34	AQJA		ND	ND	ND	ND	ND	0		
01/14/88	17	AQJA		ND	ND	ND	ND	ND	0		
01/14/88	18	AQJA		ND	ND	ND	ND	ND	0		
02/10/88	27	AQJA		ND	ND	ND	ND	ND	0		
02/10/88	28	AQJA		ND	ND	ND	ND	ND	0		
05/19/88	32	AQJA		ND	ND	ND	ND	ND	0		
05/19/88	33	AQJA		ND	ND	ND	ND	ND	0		
09/23/88	30	AQJA		ND	ND	ND	ND	ND	0		
12/09/88	29	AQJA		ND	ND	ND	ND	ND	0		
02/24/89	27	AQJA		ND	ND	ND	ND	ND	0		
06/07/89	4	AQJA	824	ND	ND	ND	ND	ND	0		
09/07/89	7	AQJA	8240	ND	ND	ND	ND	ND	0		
12/12/89	19	AQJA	8240	ND	ND	ND	ND	ND	0		
03/01/90	17	AQJA	8240	ND	ND	ND	ND	ND	0		
06/04/90	29	AQJA	8240	ND	ND	ND	ND	ND	0		
06/04/90	30	AQJA	8240	ND	ND	ND	ND	ND	0		
08/24/90	25	AQJA	8240	ND	ND	ND	ND	ND	0		
10/30/90	35	AQJA	8240	ND	ND	ND	ND	ND	0		
03/04/91	32	AQJA	8240	ND	ND	ND	ND	ND	0		
03/04/91	33	AQJA	8240	ND	ND	ND	ND	ND	0		
06/03/91	38	AQJA	8240	ND	ND	ND	ND	ND	0		
11/14/91	38	AQJA	8240	ND	ND	ND	ND	ND	0		
01/24/92	16	AQJA	8240	ND	ND	ND	ND	ND	0		
03/30/92	4	AQJA	8240	ND	ND	ND	ND	ND	0		
08/24/92	33	AQJA	8240	ND	ND	ND	ND	ND	0		
11/02/92	42	AQJA	8240	ND	ND	ND	ND	ND	0		
02/05/93	29	AQJA	8240	ND	ND	ND	ND	ND	0		
05/12/93	33	AQJA	8240	ND	ND	ND	ND	ND	0		
09/01/93	23	AQJA	8240	ND	ND	ND	ND	ND	0		
12/04/93	33	AQJA	8240	ND	ND	ND	ND	ND	0		
12/04/93	34	AQJA	8240	ND	ND	ND	ND	ND	0		
02/10/94	36	AQJA	8240	ND	ND	ND	ND	ND	0		
05/07/94	39	AQJA	8240	ND	ND	ND	ND	ND	0		
05/07/94	40	AQJA	8240	ND	ND	ND	ND	ND	0		
09/16/94	39	AQJA	8240	32.4	ND	ND	ND	ND	32		
09/16/94	40	AQJA	8240	32.4	ND	ND	ND	ND	32		

NOTES:

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ND - NOT DETECTED AT DETECTION LIMIT SPECIFIED BY LABORATORY. SEE LAB REPORT.

NPL - NO U.S. EPA PUBLISHED LEVEL

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WELL NOT SAMPLED AUGUST, 1991 DUE TO IMPERATIVE PUMP.

PARAMETER

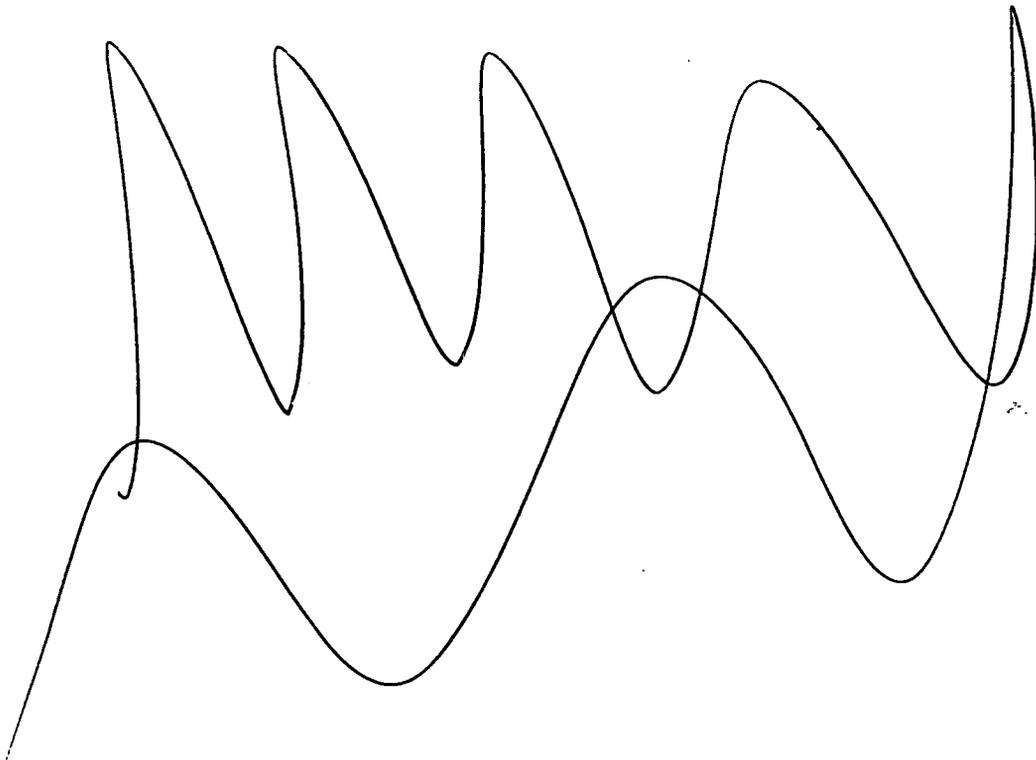
o - Data Sampled

NAPHTHA RECOVERY WELLS
GROUNDWATER QUALITY ANALYSIS
ORGANIC COMPOUNDS

ALLIEDSIGNAL INC.
GROUNDWATER INVESTIGATIONS
SOUTH BEND, INDIANA

alliedsignal
associates
Environmental and Geotechnical Services

VOC RECOVERY WELLS



Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	EW-1	EW-1	EW-1	EW-1	EW-1
				06/03/97	06/03/97	09/24/97	12/11/97	12/11/97
				Primary	Duplicate	Primary	Primary	Duplicate
Benzene			5	<5	<5	<5.0	<5.0	<5.0
Chloroethene			2	<2	<2	[15]	<10 UJ	[20]
Chloroform			100	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethane				27	27	23	<5.0	<5.0
1,2-Dichloroethane			5	<5	<5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5	<5	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	86	90	61	56	60
cis-1,2-Dichloroethene			70	[260]	[260]	[200]	[210]	[230]
Methylene chloride			5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5	<5	<5.0	<5.0	<5.0
Toluene			1000	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5	<5	<5.0	<5.0	<5.0
Trichloroethene			5	[19]	[71]	[61]	[84]	[87]
Vinyl Chloride			2	<2	<2	[15]	<10 UJ	[20]
Acetone				<100	<100	<100	<100	<100
Xylene (Total)			10000	<5	<5	<10	<10	<10
Carbon disulfide				<5	<5	<5.0	<5.0	<5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1B

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	EW-1	EW-1	EW-1
				03/17/98	03/17/98	06/16/98
				Primary	Duplicate	Primary
Benzene			5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<10	[15]
Chloroform			100	<5.0	<5.0	<5.0
1,1-Dichloroethane				<5.0	19	20
1,2-Dichloroethane			5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	52	58	57
cis-1,2-Dichloroethene			70	[210]	[200]	[200]
Methylene chloride			5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0	<5.0
Toluene			1000	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5.0	<5.0	<5.0
Trichloroethene			5	[170]	[150]	[150]
Vinyl Chloride			2	<10	<10	[15]
Acetone				<100	<100	<100
Xylene (Total)			10000	<10	<10	<10
Carbon disulfide				<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	EW-2 06/16/98 Primary
Benzene			5	< 5.0
Chloroethene			2	< 10
Chloroform			100	< 5.0
1,1-Dichloroethane				41
1,2-Dichloroethane			5	< 5.0
1,1-Dichloroethene			7	< 5.0
trans-1,2-Dichloroethene			100	8.6
cis-1,2-Dichloroethene			70	[150]
Methylene chloride			5	< 5.0
Tetrachloroethene			5	< 5.0
Toluene			1000	< 5.0
1,1,1-Trichloroethane			200	39
Trichloroethene			5	[59]
Vinyl Chloride			2	< 10
Acetone				< 100
Xylene (Total)			10000	< 10
Carbon disulfide				< 5.0

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed
 [] = Greater than Action Level
 For RCL ANSUM

Analytical Summary - VOCs In Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 07/17/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	EW-3	EW-3	EW-3
				09/24/97	03/17/98	06/16/98
				Primary	Primary	Primary
Benzene			5	<5.0	<5.0	<5.0
Chloroethene			2	<10	<10	<10
Chloroform			100	<5.0	6.7	51
1,1-Dichloroethane				<5.0	<5.0	<5.0
1,2-Dichloroethane			5	<5.0	<5.0	<5.0
1,1-Dichloroethene			7	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene			100	[110]	75	93
cis-1,2-Dichloroethene			70	65	36	[74]
Methylene chloride			5	<5.0	<5.0	<5.0
Tetrachloroethene			5	<5.0	<5.0	<5.0
Toluene			1000	<5.0	<5.0	<5.0
1,1,1-Trichloroethane			200	<5.0	<5.0	<5.0
Trichloroethene			5	[39]	[29]	[28] J
Vinyl Chloride			2	<10	<10	<10
Acetone				<100	<100	<100
Xylene (Total)			10000	<10	<10	<10
Carbon disulfide				<5.0	<5.0	<5.0

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

[] = Greater than Action Level

For RCL ANSUM

Analytical Summary - Inorganics in Groundwater
 VOC Recovery Wells
 Quarterly Monitoring Program - 06/98
 AlliedSignal Industrial Complex
 South Bend, Indiana

Page: 1A

Date: 08/06/98

CONSTITUENT (Units in ug/l)	SITE DATE	RESULT TYPE	US-PMCL	EW-3	EW-3
				09/24/97	03/17/98
				Primary	Primary
Arsenic, Total				---	ND
Barium, Total				---	ND
Cadmium, Total				---	ND
Chromium, Total			100	---	15
Copper, Total				---	ND
Lead, Total			15	---	5.1
Mercury, Total				---	ND
Nickel, Total			100	---	<20
Selenium, Total				---	ND
Silver, Total				---	ND
Zinc, Total				---	ND
Cyanide, total			200	<5	<10

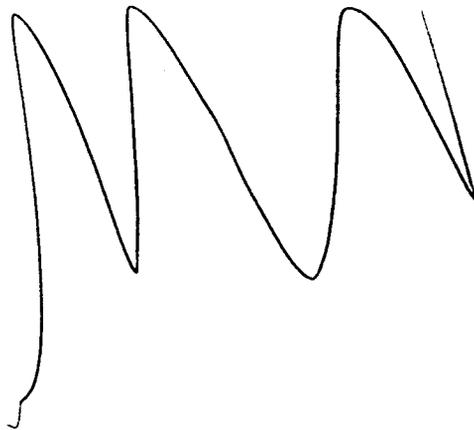
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

For RCL INORGTOT

TRENDLINE PLOTS

- SHALLOW MONITORING WELLS
- DEEP MONITORING WELLS



**SHALLOW MONITORING WELLS
NEAR ORIGIN OF GROUNDWATER PLUME**

86-10

86-15

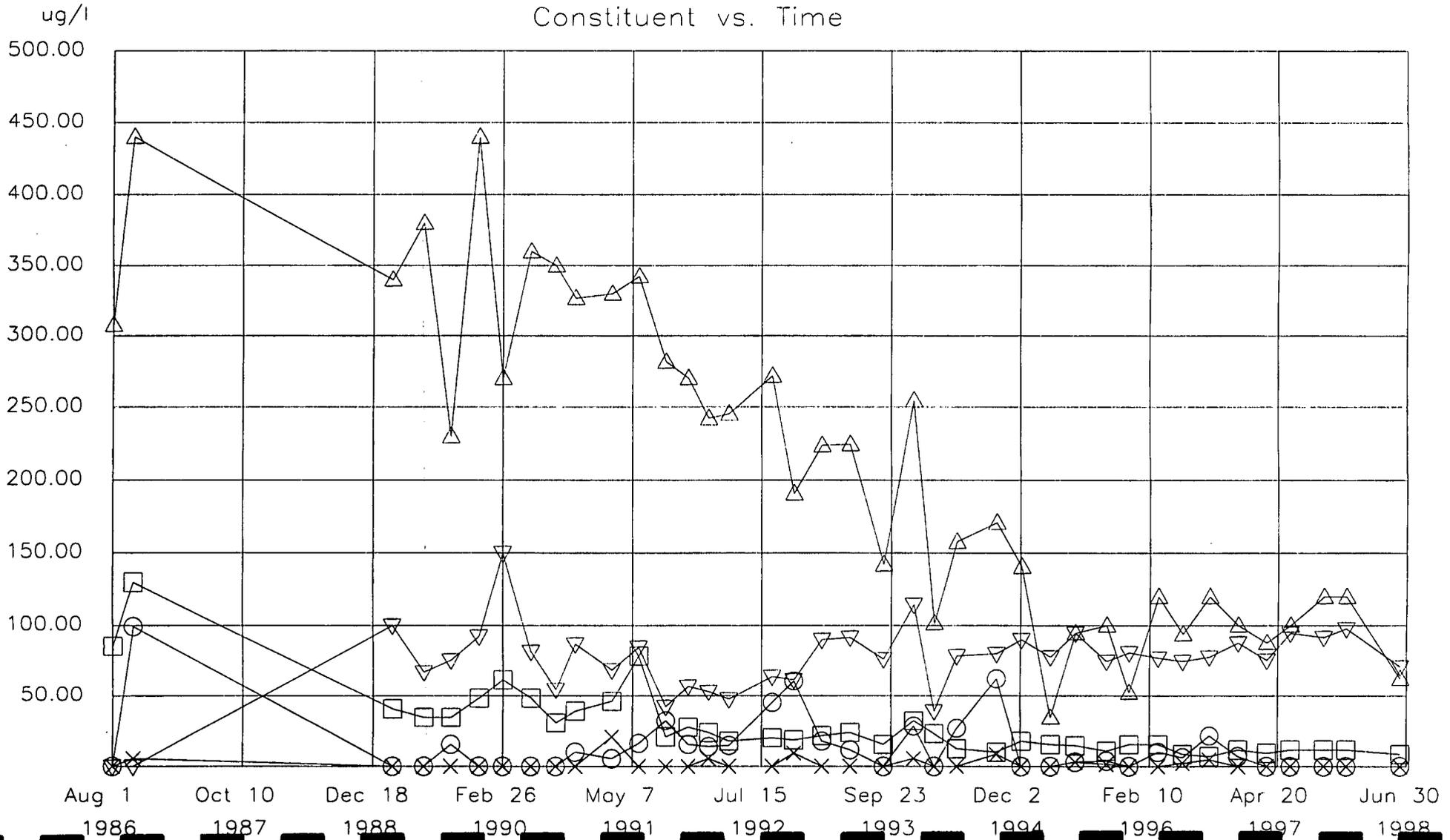
S-4A

TCL: VOC

PF Code: T

Site: 86-10

- △ = Trichloroethene
- ▽ = cis-1,2-Dichloroethene
- = trans-1,2-Dichloroethene
- = 1,1,1-Trichloroethane
- × = 1,1-Dichloroethane

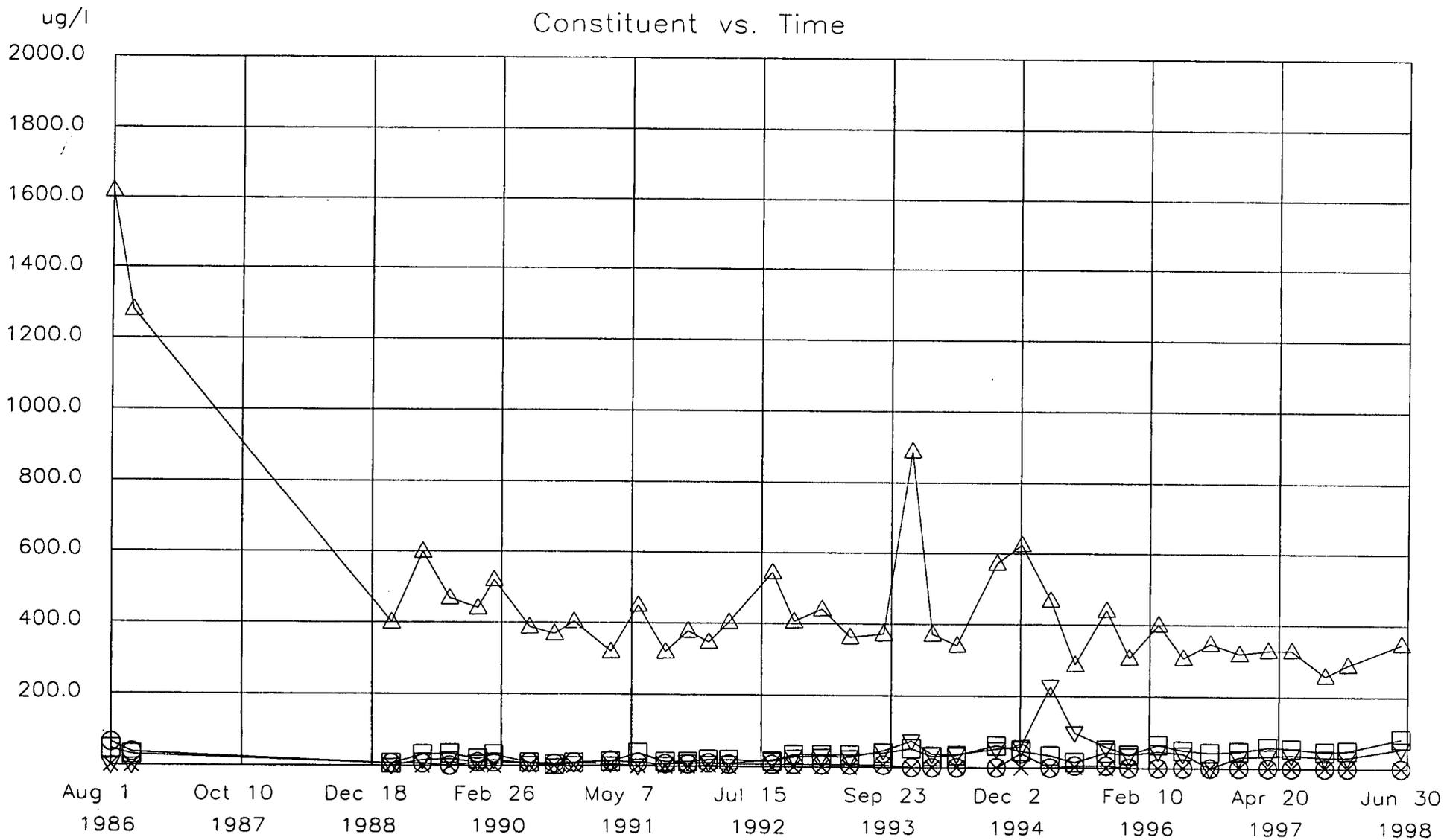


TCL: VOC

PF Code: T

Site: 86-15

- △ = Trichloroethene
- ▽ = cis-1,2-Dichloroethene
- = trans-1,2-Dichloroethene
- = 1,1,1-Trichloroethane
- × = 1,1-Dichloroethane



TCL: VOC

PF Code: T

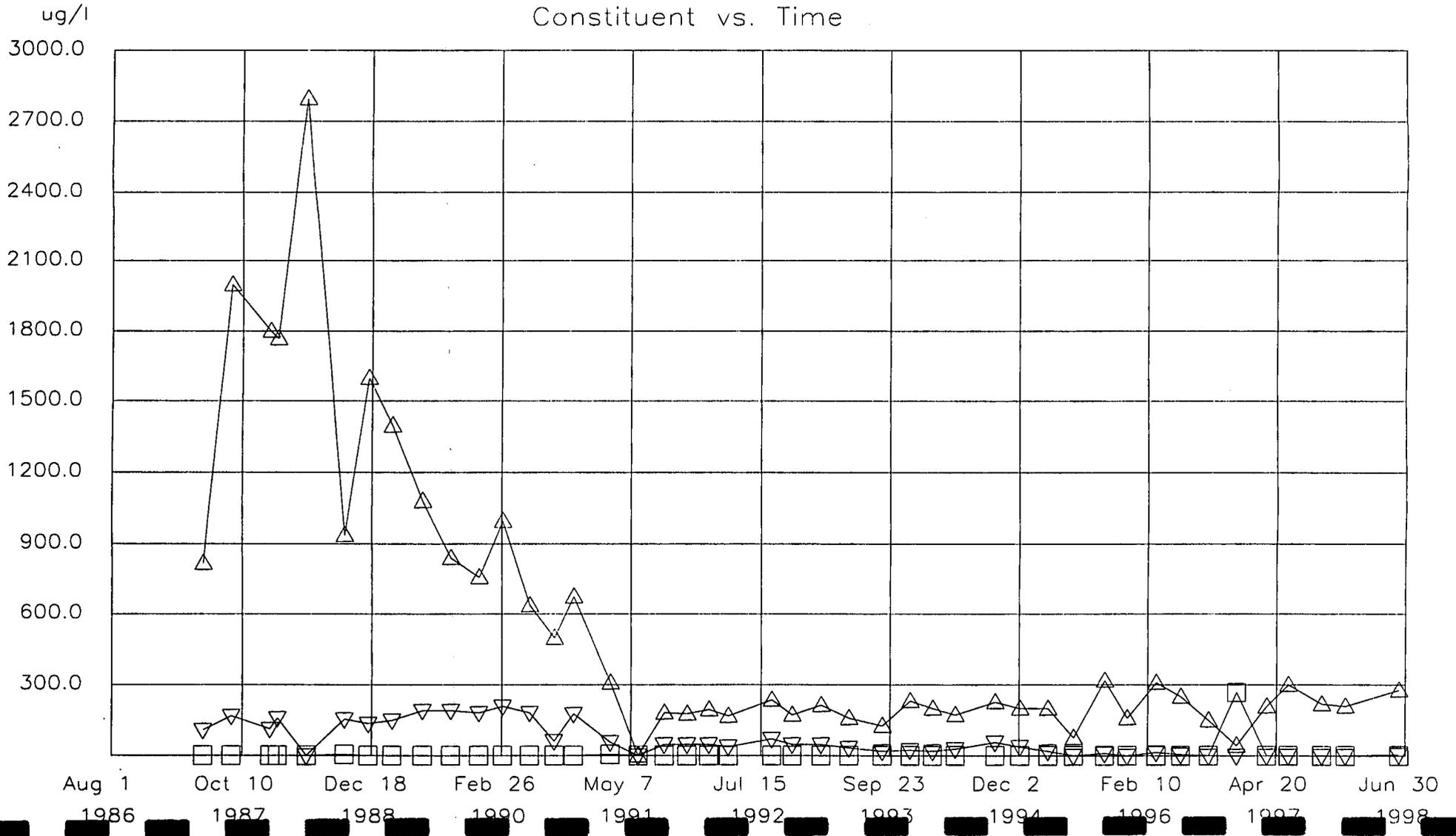
Site: S4A

△ = cis-1,2-Dichloroethene

▽ = trans-1,2-Dichloroethene

□ = 1,2-Dichloroethane

Constituent vs. Time



**SHALLOW MONITORING WELLS
IN CENTRAL PORTION OF GROUNDWATER PLUME**

**S-9
S-24
S-27**

TCL: VOC

PF Code: T

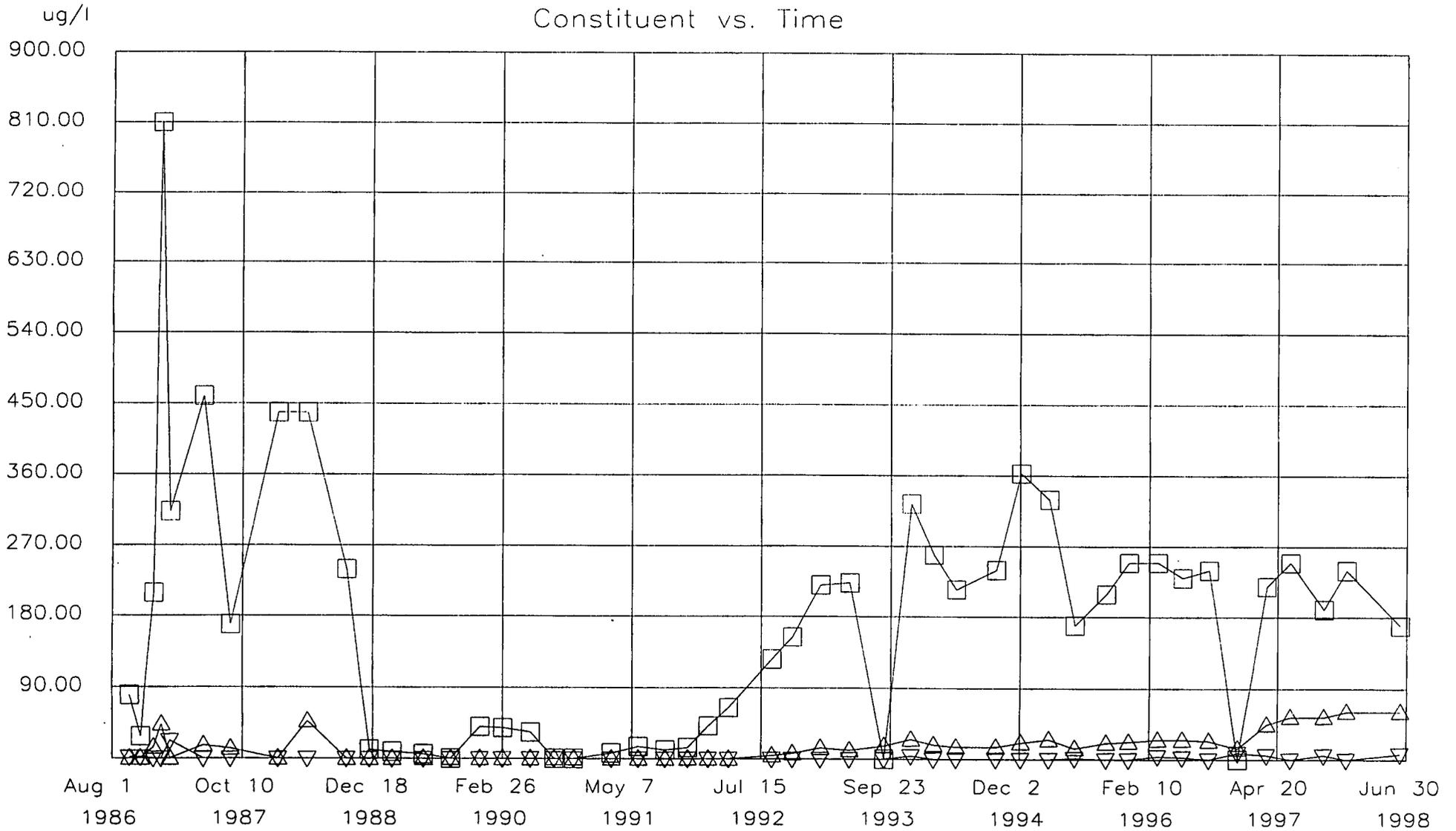
Site: S9

△ = cis-1,2-Dichloroethene

▽ = trans-1,2-Dichloroethene

□ = 1,2-Dichloroethane

Constituent vs. Time



TCL: VOC

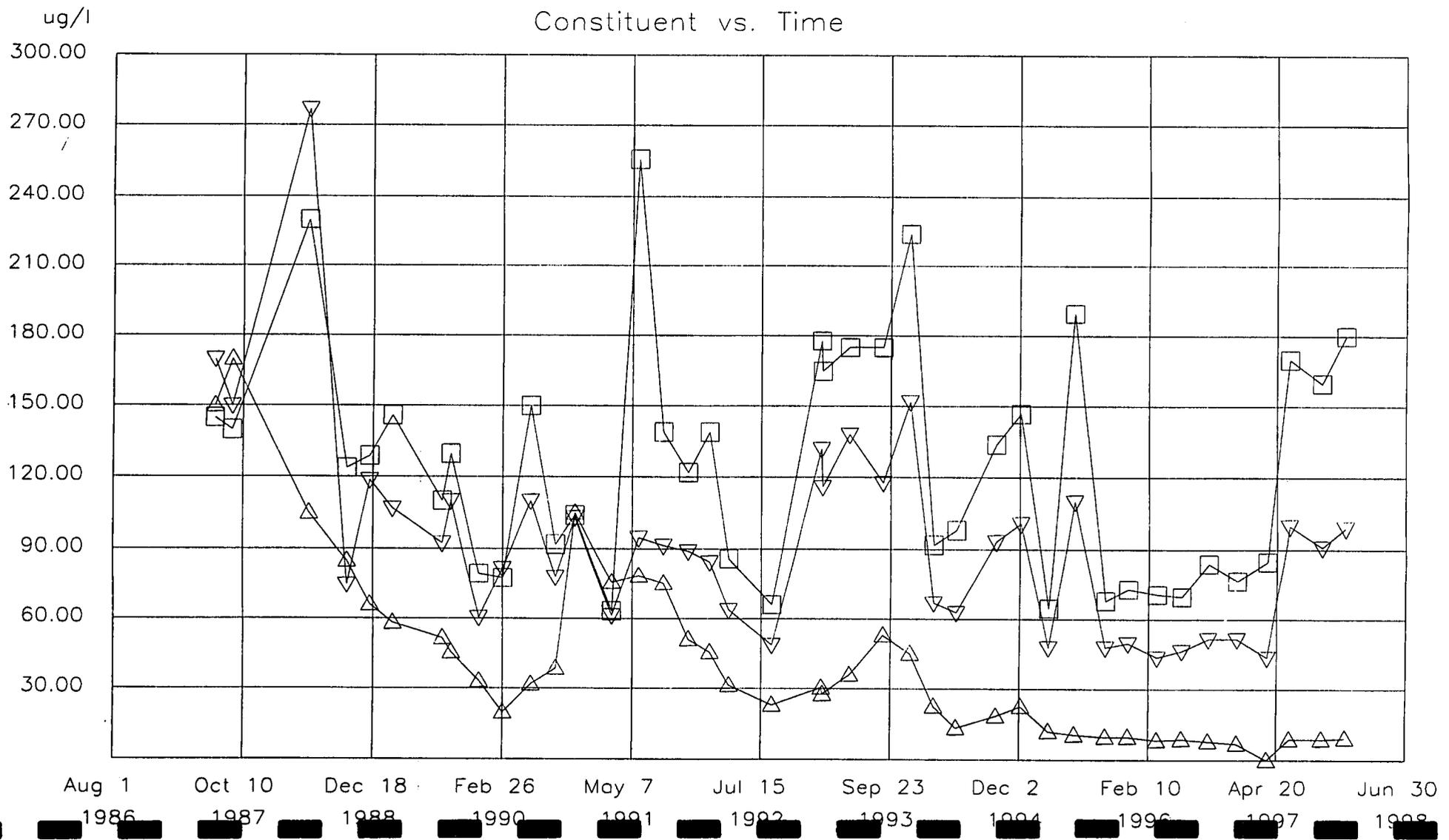
PF Code: T

Site: S24

△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene



TCL: VOC

PF Code: T

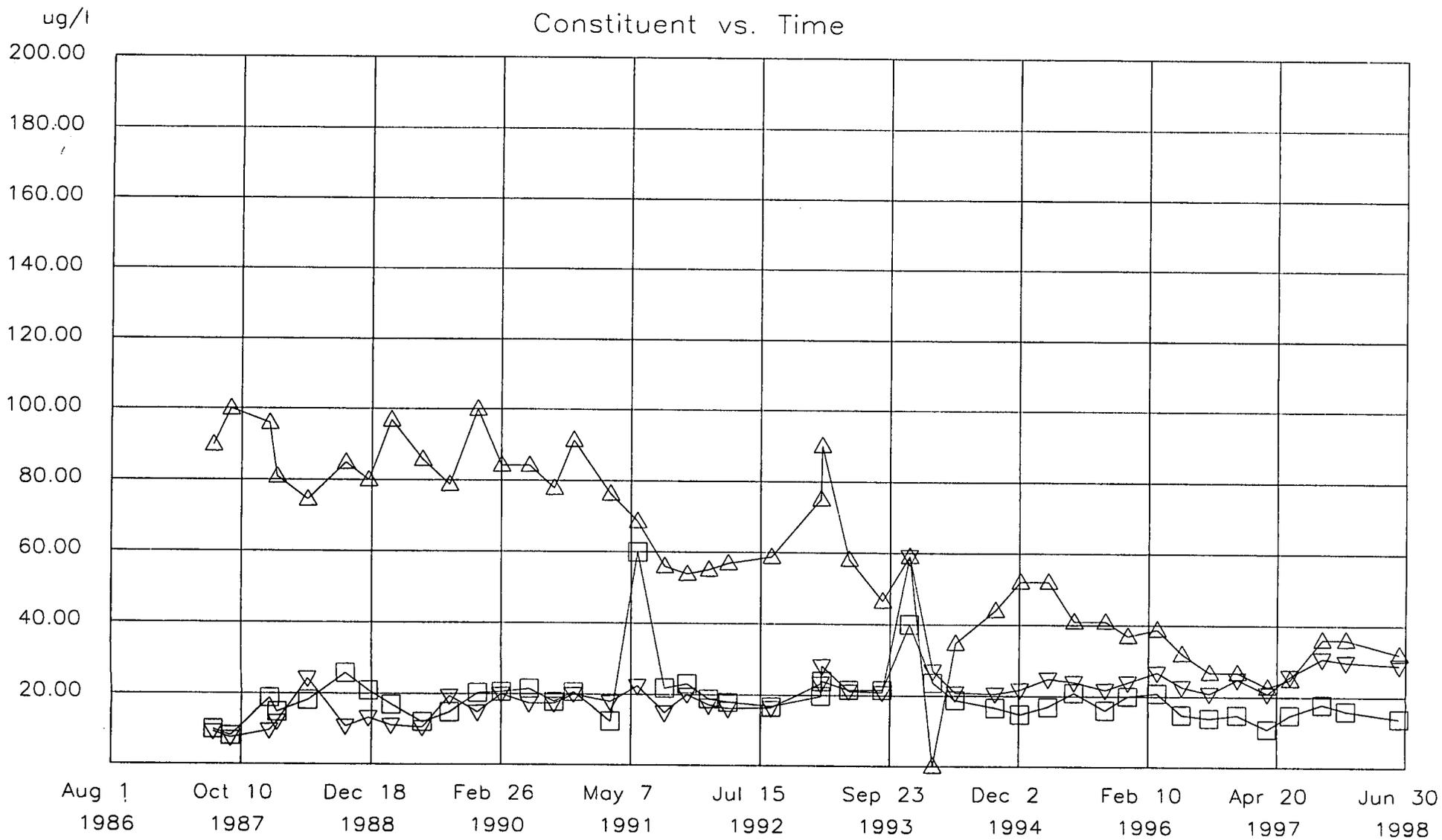
Site: S27

△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene

Constituent vs. Time



**SHALLOW MONITORING WELLS
DOWNGRAIDENT BOUNDARY OF GROUNDWATER PLUME**

S-21

S-22

S-25

TCL: VOC

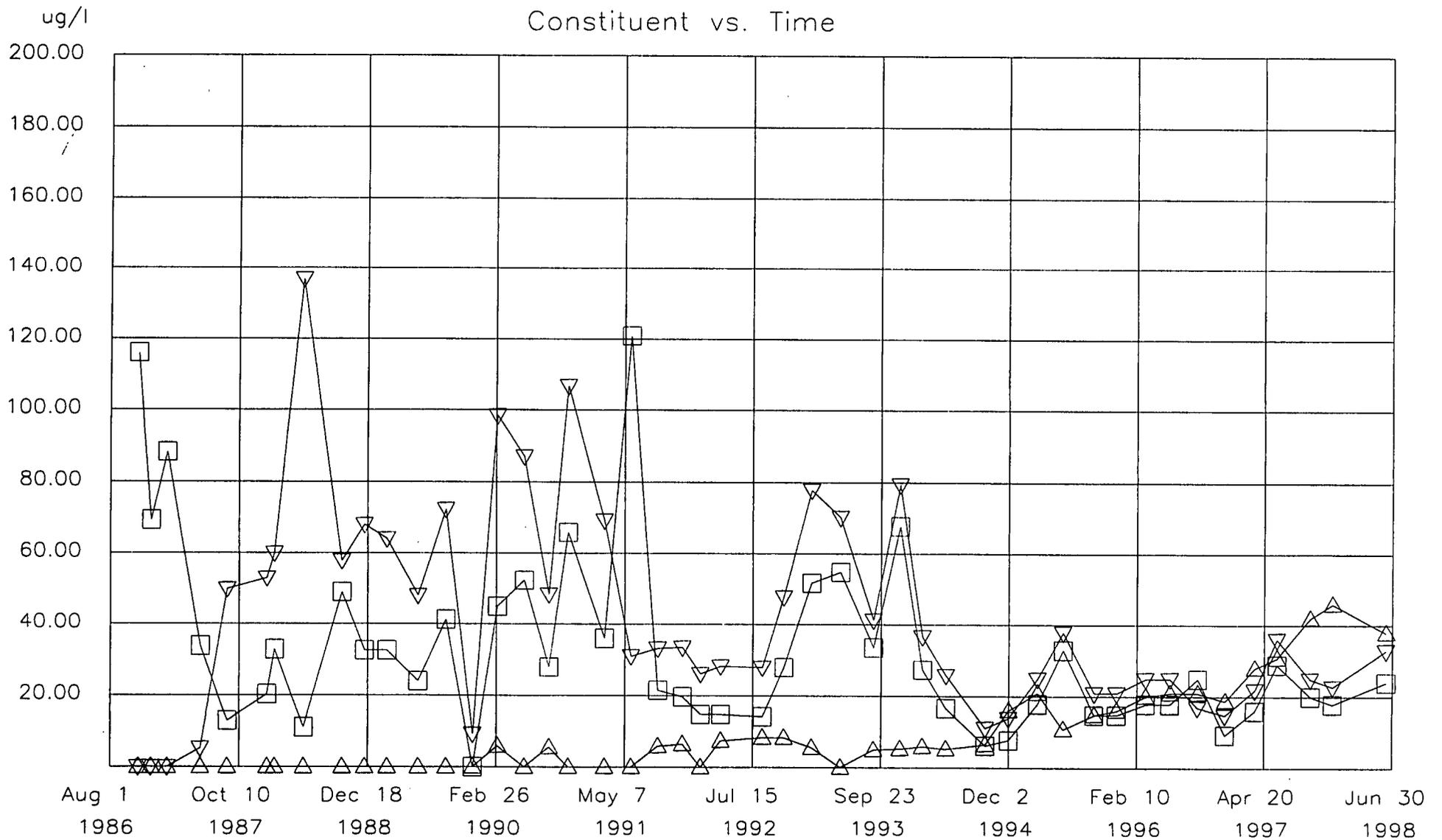
PF Code: T

Site: S21

△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene



TCL: VOC

PF Code: T

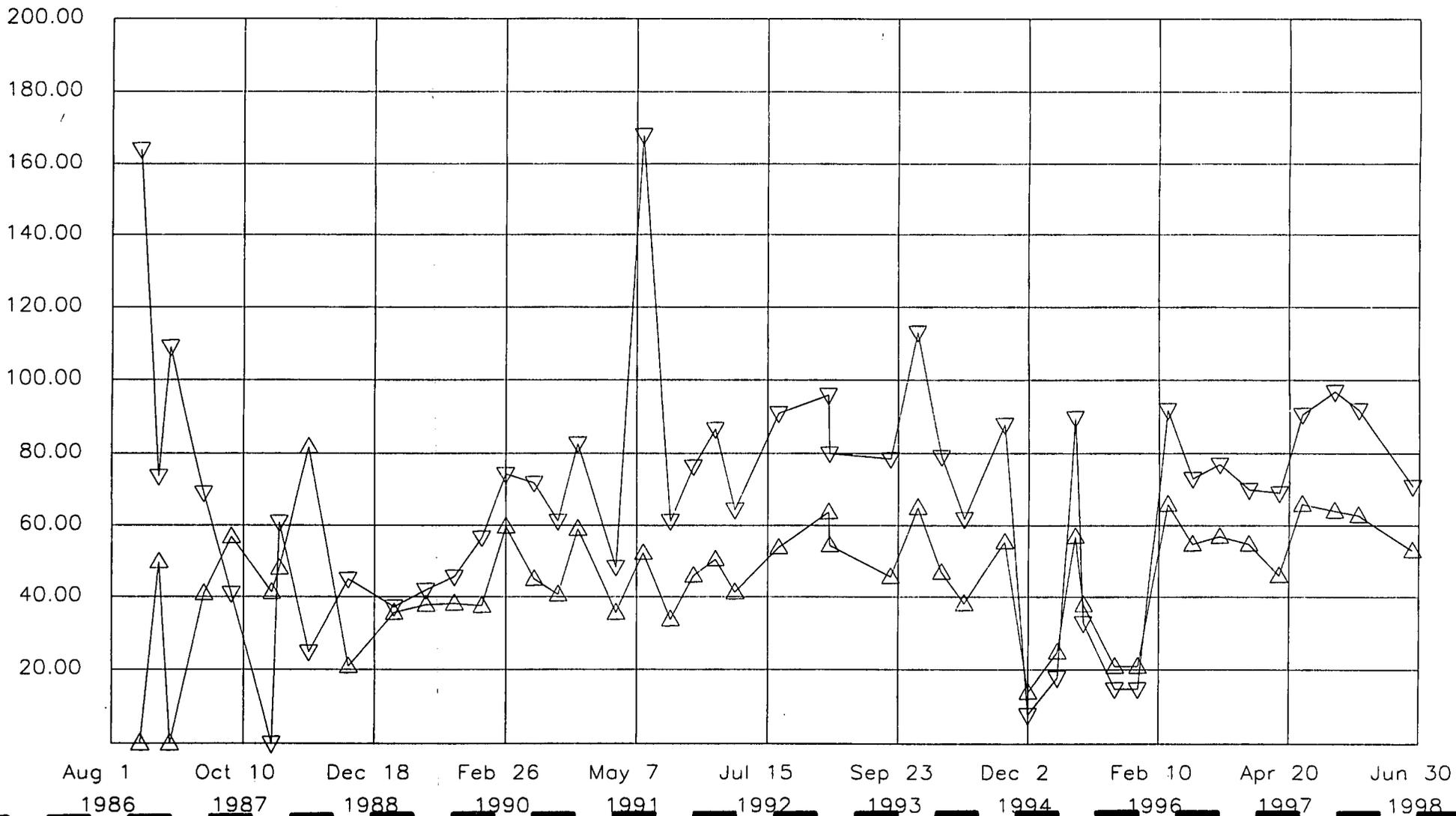
Site: S22

△ = cis-1,2-Dichloroethene

▽ = trans-1,2-Dichloroethene

ug/l

Constituent vs. Time



TCL: VOC

PF Code: T

Site: S25

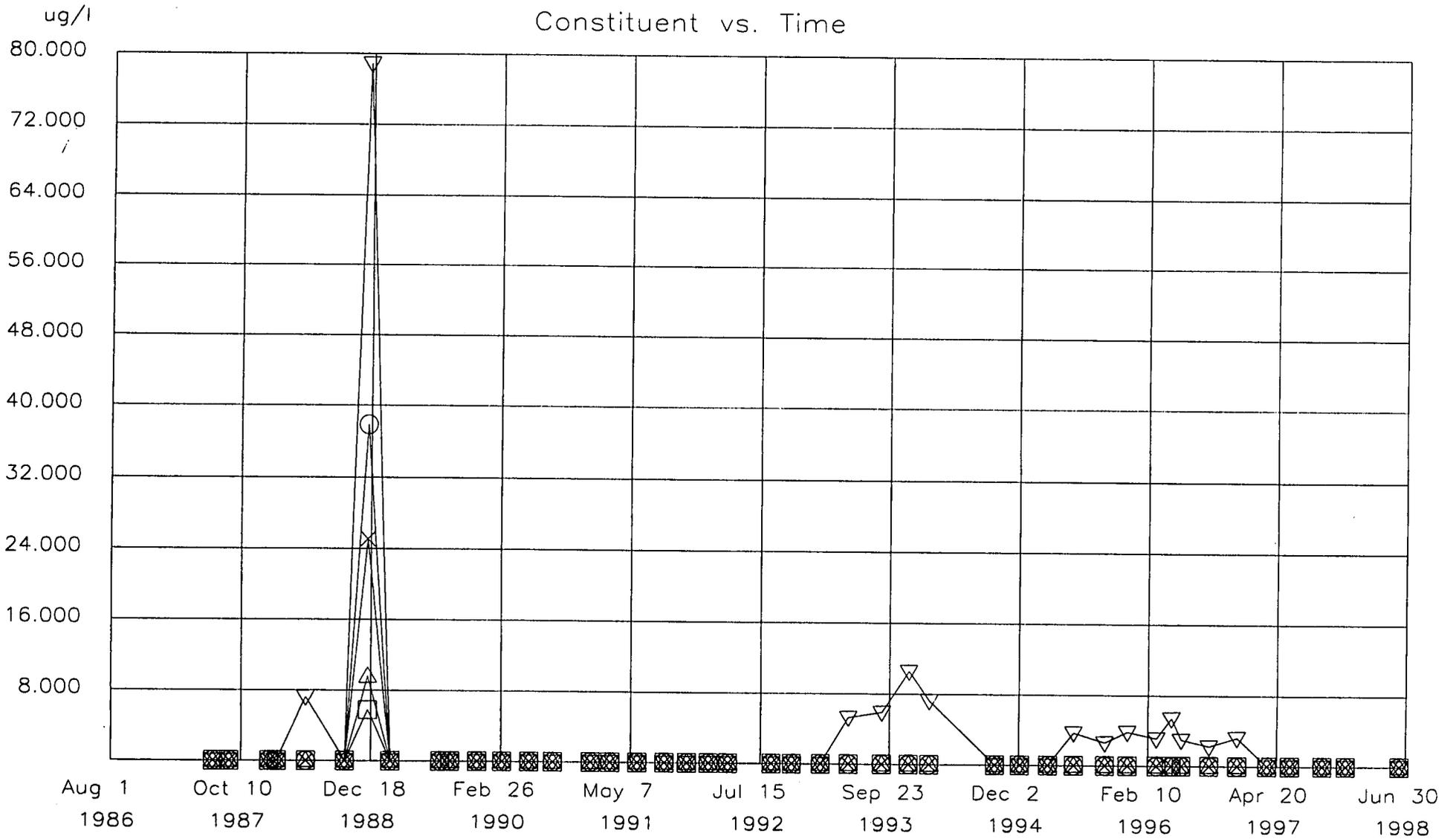
△ = Trichloroethene

▽ = cis-1,2-Dichloroethene

□ = trans-1,2-Dichloroethene

○ = 1,2-Dichloroethane

× = 1,1-Dichloroethane



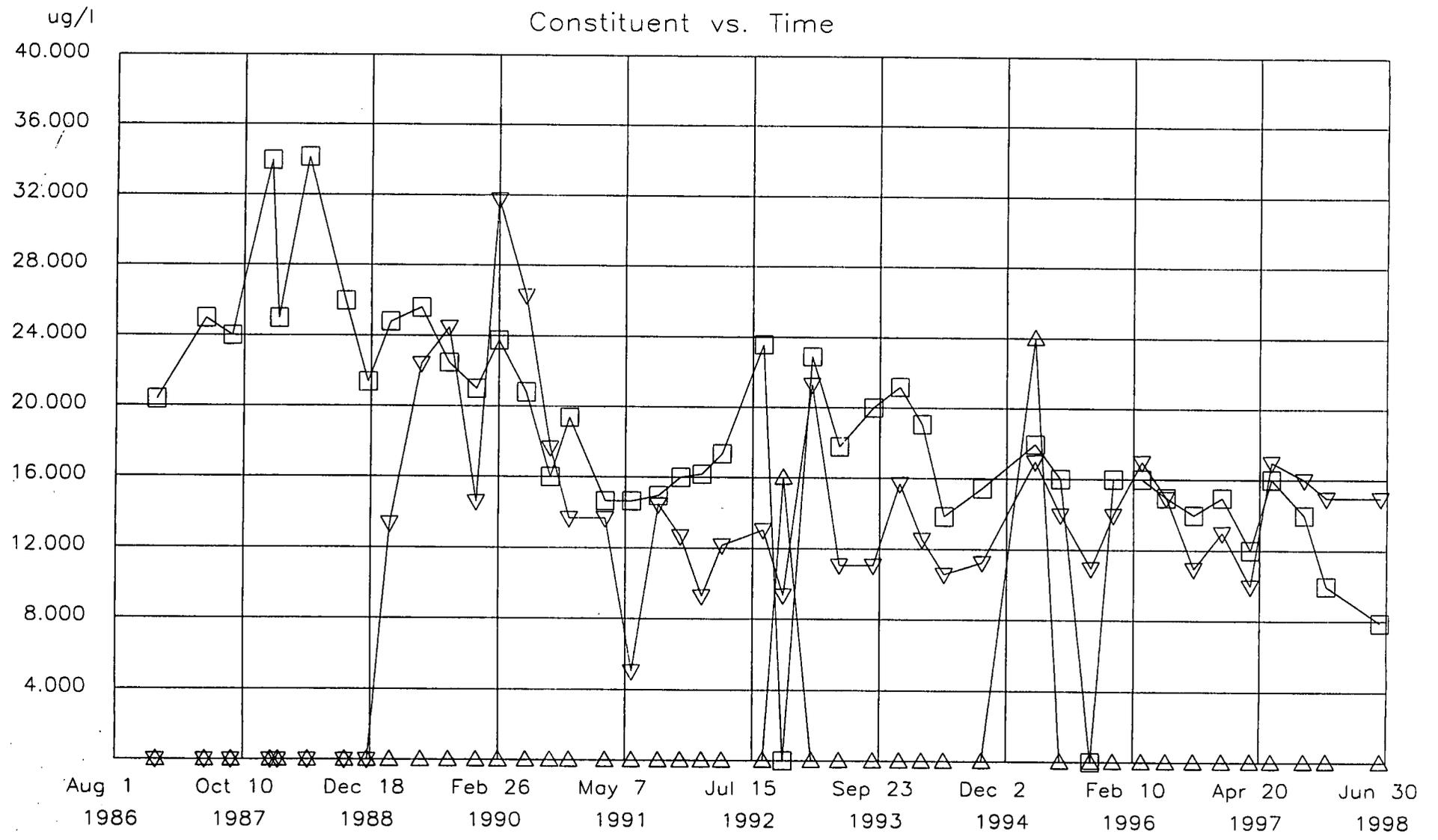
DEEP MONITORING WELLS

2D
5D

TCL: VOC
PF Code: T
Site: 2D

△ = Trichloroethene
▽ = cis-1,2-Dichloroethene
□ = 1,2-Dichloroethane

Constituent vs. Time



TCL: VOC
PF Code: T
Site: 5D

△ = Trichloroethene
▽ = cis-1,2-Dichloroethene
□ = Toluene

