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Additional Investigation Report

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Niagara Transformer Corporation Site
Town of Cheektowaga
Erie County, New York

NYSDEC Site Number: 9-15-146

Revised
August 2000

Prepared for:

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1 Project Background

Ecology and Environment, P.C., (E & E) was retained by the New York State Department of Environmental Conservation (NYSDEC) under the Standby Contract Work Assignment No. D003493-4 to provide additional site investigation at the Niagara Transformer Corporation (NTC) Site (Site No. 9-15-146) in the Town of Cheektowaga, Erie County, New York. This additional investigation was a result of a 1998 investigation conducted by NYSDEC to identify point sources of continued releases of polychlorinated biphenyls (PCBs) at the site.

1.1 Site Location and Description

The 3.6-acre site owned by NTC is located at 1747 Dale Road, between Harlem Road and Interstate 90, in the Town of Cheektowaga, Erie County, New York (latitude 42° 54' 15"N, longitude 78° 46' 00"). On-site structures include an active electrical transformer manufacturing/office facility (main NTC building) and a storage warehouse south of the plant.

A cemetery is west of the site, and an undeveloped parcel, which was purchased by NTC in 1983, is east of the site. The properties north of the site along Dale Road are occupied primarily by light industries. A few homes are located northwest of the site on Dale Road; however, the nearest residential area is located approximately 1,000 feet southwest of the site. A rail yard is south of the site.

The topography of the site is characterized by a gentle slope to the south. A drainage ditch along the east perimeter of the site, the North/South (N/S) ditch, directs runoff south from the parking lot into another ditch, the East/West ditch (E/W). The E/W ditch is located between the site's southern perimeter and the rail yard and flows west, eventually discharging into a retention pond.

No record exists of industrial activity on the site prior to NTC purchase and construction of the manufacturing facility in 1958. Until 1980, oils containing PCBs were stored or used on site as

insulating fluids in the manufacture of liquid-filled transformers. Currently, it has been reported by NTC that they do not accept transformers with PCB concentrations greater than 1 mg/kg for reconditioning.

1.2 Site Investigation History

On April 10, 1990, Town of Cheektowaga Highway Department employees reported to NYSDEC that oil was seeping into the East/West ditch (E/W) between the rail yard and the NTC property. A sample of this oily leachate was analyzed and found to contain approximately 57,000 mg/kg PCBs. In New York State, waste material containing more than 50 mg/kg PCBs is regulated as a listed hazardous waste. Sediments collected in the E/W ditch from near the seep area west to a receiving culvert beneath the railroad contained PCBs at concentrations ranging from 44 mg/kg to 3,700 mg/kg. The receiving culvert beneath the rail yard discharges into an open ditch ("the lower ditch"), approximately 2,150 feet south of the site, near an industrial warehouse. In the lower ditch sediments contained PCBs at concentrations ranging from less than 1 to 32 mg/kg.

Under a Consent Order with NYSDEC, NTC conducted an RI/FS that was finalized in September 1993 (Woodward-Clyde 1993). Findings of the RI that are of primary significance to this study with respect to site characteristics and fate and transport of contaminants include the following:

- The site's overburden stratigraphy, in descending order from ground surface, was characterized as follows:
  - 0-3.5 feet of fill material, which varied from asphaltic and associate sub-base material in the parking lot to silty/clay fill in the grass area south of the parking lot.
  - 30-35 feet of silty/clay till
  - 9-17 feet of massive lacustrine clay (mottled, cohesive red/brown clay)
  - 2-3 feet of sand/gravel overlying the bedrock

- Two water bearing units were identified and investigated at the site; a seasonal perched zone above the naturally occurring clay, and the upper few feet of bedrock underlying the clay. The RI suggested that there was no significant impact to the bedrock groundwater. PCBs were found in MW-8D, a bedrock well that was installed near the junction of the N/S and E/W ditches. However, it was stated in the RI that the water was visibly turbid, suggesting that the well contained soil particles that were possibly dragged down to the bedrock interface during drilling by the augers. The RI thus focused on the

perched groundwater zone. Groundwater flow in this zone is reported in the RI to flow from the north to the south across the site. The E/W ditch reportedly intercepted some of this flow during the wet periods. On-site shallow well testing estimated the hydraulic conductivity of the shallow perched zone at $9x10^{-3}$ and $9x10^{-2}$ ft/day. Because of the seasonal nature of this perched zone, its small saturated thickness, and the low hydraulic conductivity of the soil, the RI determined that this perched zone does not represent a significant groundwater resource.

- PCB contamination in groundwater (aqueous phase) was exclusively reported as Aroclor 1260. PCB concentrations detected in the groundwater were reported between 1 and 10 µg/L except at two locations. PCB concentrations in the samples collected from the well located in the parking lot south of the loading bay area (adjacent to where the former railroad tracks entered the main NTC building), and the well located on railroad property south of the site and adjacent to south bank of E/W ditch, were reported at 15,400 and 22,000 µg/L, respectively. The high concentrations in these two samples were attributed to entrainment and observation of light and dense non-aqueous phase liquid (NAPL) in the samples.

A Record of Decision (ROD) was signed on December 30, 1993. Based on the results of the RI/FS for the site and the criteria identified in the RI/FS for the evaluation of alternatives, NYSDEC selected a remedy (see the ROD, NYSDEC 1993) to excavate on-site and off-site PCB-contaminated soils and sediments, to dispose of the PCB-contaminated soils and sediments in an appropriate off-site landfill, and to conduct long-term monitoring of groundwater. The remedial action objectives (RAO) established by NYSDEC for both on-site and off-site soil remediation work were as follows (Woodward-Clyde FS 1993):

- On-site Soil/Sediment (top 12 inches): 1 mg/kg
- On-site Soil/Sediment (below 12 inches): 10 mg/kg
- Off-site Soil/Sediment: 1 mg/kg

Remediation work at the NTC site started in 1996 and was completed in September 1997. On-site soil remediation involved excavation and disposal of primarily the top 4-foot layer of soil, and backfill with clean sandy silt/clay material. Under the paved parking lot south of the main NTC building, approximately 18-20 inches of stone sub-base material was placed above a 2-foot layer

of clean soil backfill. Along the N/S and E/W ditches, excavation of contaminated soil extended up to 12 feet. A liner was installed in sections of the N/S and E/W underlying the stone. Soils in the N/S and E/W areas that were found to be contaminated above cleanup goals were removed with the exception of two areas; excavation of contaminated soils was ceased at a depth of approximately 12 feet in the area near catch basin A, and excavation was limited to approximately 2.5 feet in the E/W ditch behind the adjacent St. Adalbert's Cemetery. At this latter location, unmarked graves were encountered at approximately 2.5 feet below the original E/W ditch invert. Based on an agreement between NYSDEC, NYSDOH, and St. Adalbert's Cemetery, remedial work was suspended in this area, and the contaminated unmarked graves were capped with geotextile, sorbent, pea gravel, HDPE liner, and soil. The ditch was realigned and shifted to the south. Both hazardous and nonhazardous waste remain at depths greater than 2.5 feet BGS in the E/W ditch in this area. Excavation was not conducted beneath the NTC building.

Remediation of the retention pond sediments consisted of excavating to a depth of 18 inches below original grade at the east end of the pond, and the balance of the pond to be remediated was excavated to a depth of 12 inches below original grade. All piped discharges to the pond were flushed, cleaned, and inspected. Remedial activities also included remediation of the storm sewer immediately south of Broadway by excavating and disposing of pavement and soils above and adjacent to the sewer pipe, cleaning and disposing of the existing storm pipe, and installing a new storm sewer pipe.

A system of storm sewer pipes (see Figure 1-1) was also installed under NTC's rear parking lot and the driveway, to replace the previous one, that directs storm water from the site to one discharge point at the N/S ditch. The storm sewers were installed approximately at 3.5 to 4 feet below grade.

Recontamination of the N/S ditch containing sediments was reported in late April 1997, after an oily emulsion containing 300 mg/kg PCBs was found in the concrete tank just upstream of the head of the N/S ditch. In June 1997, an emergency water treatment system (EWTS) was installed at the head of the N/S ditch to treat a portion of the stormwater from the site and reduce the potential for recontamination of the previously remediated downstream areas. The EWTS was installed because recontamination of the ditches was occurring. In 1998, roof drains from the main NTC building were cleaned and re-routed to connect to the storm collection system at the site (see Figure 1-1).

No remediation was done in the rail yard south of the site or of groundwater. The culvert underneath the railroad was sealed off where it formerly connected to the E/W ditch.

During 1998, NYSDEC conducted additional sampling to identify point sources of PCBs in the site storm water runoff. Potential PCB sources identified by NYSDEC as a result of this study include NTC's manufacturing operations, residual contamination in the soil and groundwater on site, and/or contamination beneath the facility. Based on the 1998 NYSDEC investigation results and recommendations, E & E was tasked to conduct an additional site investigation to identify the source of continued PCB release.

1.3 Report Organization

This investigation report is divided into the following sections:

- Section 2 describes the tasks conducted under this investigation;
- Section 3 presents the analytical results and the extent of contamination at the site;
- Section 4 evaluates potential sources of contamination and transport within the study area; and
- Section 5 presents a brief summary of recommendations.

Insert Figure 1-1

2 Study Area Investigation

This section describes the tasks completed under this investigation as proposed in the Work Plan approved by NYSDEC on July 7, 1999 (E & E 1999). The results of the investigation are presented in Section 3.

2.1 Sediment Sampling

A total of 19 sediment samples (excluding duplicates) were collected from on- and off-site locations on August 2, 3, and 10, 1999, and analyzed for PCBs to determine the extent of recontamination at the site. The E/W ditch is lined with 3- to 4-inch-diameter stone and an underlying HDPE liner. The N/S ditch has approximately 12 inches of stone installed 3 feet on each side of the ditch centerline and an underlying HDPE liner. In the N/S ditch, sediments were observed to collect in some sections of the ditch. Vegetation is also established in some portions of the N/S ditch. Because of the small amount of visible sediments in the E/W ditch, samples were collected by hand digging down to the liner. Sample locations are shown in Figures 2-1 and 2-2. During the sampling event on August 10, 1999, two samples were collected at the same locations where previous samples were collected on August 2, 1999. These duplicate samples may be used to confirm previous results. Previously used sample identifications were also used for two sediment samples collected on August 10, 1999. This is further discussed in the data validation reports in Appendix F.

2.2 Subsurface Soil Sampling

Four shallow soil probes, split spooned to a maximum depth of 4.7 feet, were completed on August 4, 1999, to evaluate the potential presence of light non-aqueous phase liquid (LNAPL) under the main NTC building and/or the storage warehouse. Two of the probes were completed beneath the main NTC building loading dock bay, and two beneath the storage warehouse south of the parking lot. Two split-spoon samples were collected from each location (a total of eight split-spoon samples). All samples were analyzed for PCBs except the top 2-foot samples collected from

SB-3 and SB-4 (in the storage warehouse); these two samples were archived until February 4, 2000, and then disposed of by the laboratory. PCB concentrations in the bottom 2 foot samples from these soil borings were less than 10 mg/kg.

2.3 Surface Water Sampling

Surface water samples were collected on August 5 and November 3, 1999, and analyzed for PCBs to further evaluate the extent of recontamination at the site. Samples initially collected on August 5, 1999 (SW-1, SW-2, SW-2D, and SW-3), were all analyzed according to Method 8082 standards with the standard detection limit of 0.5 µg/L. Upon NYSDEC's later request to use a lower detection limit, groundwater and surface water samples collected on November 3, 1999, were all analyzed using a detection limit of 0.065 µg/L. A stainless-steel bailer was used to collect all the surface water samples. Samples were collected at the following locations:

- Outlet to pond from E/W ditch (see Figure 2-1);
- Outlet of pipe weir at west end of retention pond (see Figure 2-1);
- Where pipe daylights south of Broadway (see Figure 2-1); and
- Two samples along the E/W ditch (see Figure 2-2, collected on November 13, 1999).

2.4 Monitoring Well/Piezometer Installation and Groundwater Sampling

A total of 11 monitoring wells/piezometers were installed on August 3 and 5, 1999, in the parking lot and along the N/S and E/W ditches to evaluate hydraulic communication between the perched groundwater and surface waters in the ditches and monitor the accumulation of suspected perched groundwater above the existing naturally occurring clay layer. Due to dry seasonal conditions at the time of installation, no free water was observed within the monitored zone. Despite unsaturated conditions, the wells were installed as specified in the Work Plan with the expectation that water would accumulate seasonally. Because no water was present at installation, no well development was completed. The piezometers in the parking lot, except for piezometer P-3, were installed near the drainlines to depths not exceeding 4 feet. These wells were placed in clean clay backfill that was placed during remedial work in 1997.

An attempt was made to install P-3 in the granular bedding material around the 12-inch corrugated metal pipe between catch basins A and B. This was done to evaluate whether the bedding surrounding the pipe could be providing a preferential pathway of PCB migration from the building area. During advancement of the auger, the 12-inch pipe was struck. At the time, the field team had no indication that the pipe had been struck, and installation of P-3 continued to a depth of 4.6 feet below ground surface. The storm sewer telespection later revealed that the storm sewer pipe was damaged, but appears to continue to transmit water (further discussed in Section 3.7). All wells located in the parking lot were flush mount, constructed of 2-inch stainless steel screen, with a No. 1 sand pack, and an overlying bentonite seal. Concrete was placed at the surface to form a seal with the pavement.

Monitoring wells MW-6 through MW-11 were installed to a depth of 2 to 3 feet below the invert of the N/S and E/W ditches. These wells were constructed of 2-inch schedule 40 PVC screen, with a No. 1 sand pack and an overlying bentonite seal. Standard locked protective casings were installed in all non-traffic area wells. Well construction details and boring logs are presented in Appendix A.

All newly installed wells were surveyed both vertically and horizontally (see Appendix A). N/S and E/W ditch inverts across from the installed monitoring wells were also surveyed (see Appendix A). Figure 2-2 shows the location of all completed piezometers and monitoring wells. Table 2-1 summarizes the well elevations and installation depths.

2.4.1 Groundwater Monitoring and Sampling

Following the well installation in August 1999 under dry conditions, the monitoring wells and piezometers were periodically checked for groundwater accumulation in order to collect the groundwater and congener-specific samples. On September 10, 1999, following the storm sewer inspection, all monitoring wells/piezometers were checked for groundwater accumulation but were found to be dry except for P-2. Piezometers P-2, P-3, P-4, and P-5 were then checked on October 9, 1999, during routine maintenance of EWTS. Less than 1 foot (<0.163 gallon) of water column depth was recorded at P-2 and P-4, and 2.6 feet at P-5 (0.42 gallon). P-3 was dry. On October 19 and 26, 1999, hydraulic head measurements were also collected from all the wells as part of the groundwater monitoring program. As Table E-1 shows, no significant groundwater accumulation was observed in the wells (maximum of 0.95 gallon in MW-11).

Table 2-1 Summary of Well Installation and Elevation

Well ID/Location	Drilled Depth BGS (ft)	Screened Interval BGS (ft)	Ground Surface Elevation (ft)	Top of Inside Casing Elevation[a] (ft)	Bottom Well Elevation[a] (ft)	Ditch Invert Elevation[a] (ft)
P-1	4.6	1.6-4.6	650.90	650.62	646.41	—
P-2	2.7	1.6-2.7	650.94	650.61	648.38	—
P-3	4.6	1.6-4.6	651.56	651.16	647.04	—
P-4	3.7	1.7-3.7	652.43	652.06	648.52	—
P-5	4.6	1.6-4.6	651.41	651.41	647.21	—
MW-6	8.5	3.5-8.5	650.91	653.60	642.47	645.40[c]
MW-7	7.5	3.5-7.5	649.47	652.17	641.83	644.29[d]
MW-8	6.5	3.5-6.5	647.35	650.17	641.19	643.92[e]
MW-9	5.5	2.5-5.5	646.21	648.87	640.97	643.40[f]
MW-10	5.5	2.5-5.5	646.00	647.69	639.95	643.07[g]
MW-11	5.0	2-5	641.09	644.17	636.20	640.37[h]
MW-IN[b]	10.8	5.8–10.8	655.22	654.48	643.71	—
MW-OUT[b]	7.5	2.5-7.5	651.47	651.02	643.59	—
Invert of N/S ditch outfall	—	—	—	—	—	645.92
Invert of ditch at confluence of N/S and E/W ditch	—	—	—	—	—	643.81
CB-A/north pipe invert (towards CB-C)	NA	NA	NA	NA	NA	647.35
CB-A/south pipe invert (towards existing concrete tank)	NA	NA	NA	NA	NA	646.45
CB-A/west pipe invert (from CB-B)	NA	NA	NA	NA	NA	646.65
CB-C/north pipe invert (towards concrete plug)	NA	NA	NA	NA	NA	649.10
CB-C/south pipe invert (towards CB-A)	NA	NA	NA	NA	NA	648.76
CB-B/north pipe invert (from NTC Building)	NA	NA	NA	NA	NA	647.84
CB-B/east pipe invert (towards CB-A)	NA	NA	NA	NA	NA	647.44

[a] Elevations relative to concrete floor at center of doorway in storage warehouse (elevation of 650.70 feet).
[b] Previously installed wells.
[c] 73 feet from outfall to N/S ditch.
[d] 154 feet from outfall to N/S ditch.
[e] 248.5 feet from outfall to N/S ditch.
[f] 69 feet from confluence of N/S and E/W ditches.
[g] 146 feet from confluence of N/S and E/W ditches.
[h] 328 feet from confluence of N/S and E/W ditches.

Key:

CB = Catch basin.
Inv. = Invert.
NA = Not available.

A total of nine groundwater samples were collected from MW-6, MW-7, MW-9, MW-10, MW-11, MW-IN and OUT, P-4, and P-5, on November 2 and 3, 1999, and analyzed for PCBs by EPA SW-846 Method 8082. Sample locations are shown in Figure 2-2.

No groundwater samples could be collected from piezometer P-3 or MW-8 because they were consistently dry when inspected. It should be noted that, in order to conserve water for sample volume, monitoring wells/piezometers were not purged prior to sampling. The decision not to purge the wells was based on the slow recharge and extended period of dry conditions observed in these wells since installation. In addition, it was desired to collect all congener-specific samples within the same time period. As of the November 2, 1999, sample round, sample collection had already been delayed several months due to persistent dry conditions. Purging the wells may have further delayed sampling for another several months. Through sampling, each of the wells was purged dry.

Sufficient volume for the total PCB analysis could not be collected from P-1. E & E returned to the site on November 3, 1999, to see if sufficient water had accumulated such that new samples could be collected following the previous day's "purging." E & E noted that well P-1 was still dry. E & E then decided to proceed with the analysis of the samples collected on November 2, 1999.

Although E & E was unable to purge the monitoring wells/ piezometers prior to sampling, it is believed that the results reported are indicative of conditions within the perched water as it occurs seasonally. The following reasons explain E & E's rationale:

- No water was observed in the wells as of seven weeks prior to sampling, indicating that the water sampled from the wells accumulated over this time as the perched water level rose.

- PCBs are typically considered a relatively persistent substance and not prone to volatilization or degradation within the timeframe of this study.

It should also be noted that, although water withdrawn from the wells during sampling was initially visibly clear, the water quickly became laden with sediments as water was removed.

A stainless-steel type bailer was used to collect all the groundwater samples. Proper decontamination of the bailer was performed after each sample.

Groundwater samples from MW-IN and MW-OUT were collected for both congener-specific and total PCB analyses. The congener-specific sample jars were filled first (two 1-liter [L] jars). Congener specific testing is further discussed in Section 2.6.

Weekly hydraulic head measurements from the wells were also obtained for a four-week period in accordance with the work plan (E & E 1999). The hydraulic head measurements were used in developing potentiometric surface contour maps to evaluate the direction of groundwater flow at the site and hydraulic communication with the N/S and E/W ditches.

2.5 Roof Water Sampling

On November 2, 1999, at approximately 11:15 a.m., five water samples were collected from the roof of the main NTC building at the start of a rain event and analyzed for PCBs by EPA SW-846 Method 8082. The intent of the sampling was to collect water samples that would represent the "first flush" resulting from a rain event. When E & E's field team arrived on site at 11 a.m., they observed that the roof was already wet, indicating an earlier rain event. Precipitation records for November 2, 1999, indicate that a total of 0.25 inch of rain fell between 7 and 10 a.m. (of which 0.12 inch was recorded at 7 a.m.). This amount of precipitation may have already flushed out the roof.

Roof water samples were collected by directly filling the sample jars with standing water on the roof. Figure 2-1 shows the roof sampling locations.

2.6 PCB Congener Specific Sampling

Congener-specific analysis was performed in order to distinguish whether fresh PCB contamination or perhaps older weathered and/or degraded PCB contamination was acting as a source for re-contamination of the site as has been observed since remediation work in 1997.

Five water samples were collected and analyzed for PCB congeners at selected locations identified as potential sources of contamination at the site. These samples were collected during a rain event that started during the roof sampling at approximately 11:20 am. Sample locations were selected in conjunction with NYSDEC and are shown in Figure 2-1. No sample was collected from piezometer P-3 because it was dry during the sampling event; instead, a sample was collected from piezometer P-1 pursuant to NYSDEC request. One congener-specific sample was collected at the outfall to the N/S ditch to provide a sample representative of the nature of previously existing contamination. The outfall sample was col-

lected from water flowing from the culvert at its discharge point to the N/S ditch. The samples were analyzed using the protocols presented and approved by NYSDEC in the work plan (E & E 1999).

2.7 Continuous Water Level Measurements

Groundwater levels measured by NYSDEC in 1998 indicated rapid fluctuations in the water level (rising 2 feet in 24 hours) in MW-IN as compared to MW-OUT. These observations suggest the existence of a potential source of water under the main NTC building, which may act as a transport mechanism for potential contamination under the building to seep out to the parking lot and into the site drainage system. Note that these fluctuations did not appear to coincide with rain events. Figure 2-1 shows the locations of MW-IN and MW-OUT, which were installed during the remedial work in 1997.

To gain a better understanding of the nature of groundwater level fluctuations beneath the main NTC building, continuous water level measurements were recorded over a nine-week period starting October 19, 1999, using data loggers installed in MW-IN and MW-OUT. The data loggers were configured to measure water levels in the wells every 15 minutes. Precipitation data for the same nine weeks were also obtained from the National Weather Center website for the Buffalo/Niagara Falls Airport weather station, which is located 5 miles northeast of the site.

2.8 Parking Lot Storm Sewer Video Inspection

E & E sub-contracted Roy's Plumbing, Inc., to perform storm sewer inspection of approximately 500 feet of parking lot storm sewer pipes. The purpose of the inspection was to look for potential groundwater infiltration and evaluate the structural integrity of the pipes. The telespection was completed on September 9, 1999. Dave Locey from the NYSDEC Buffalo office was present during the telespection. A copy of the telespection video and chronology was submitted to the NYSDEC under a separate cover (E & E, October 1, 1999).

2.9 Summary of Sampling and Monitoring Program

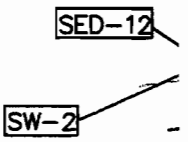
Table 2-2 summarizes the sampling and analysis performed for each medium of concern (see Sections 2.1 through 2.6). Figure 2-1 shows sample locations collected under this investigation.

Table 2-2 Sampling Summary of Additional Investigation (Task 13)

Sample Type	Number of Samples/Units	Analysis
Sediment	19	PCBs
Subsurface Soil	4 probes/8 soil samples	PCBs (6 analyzed/2 disposed)
Surface Water	5	PCBs
Groundwater	9	PCBs
Roof Water	5	PCBs
PCB Congener Specific Water Samples	5	Congener-Specific

LEGEND

- SURFACE WATER SAMPLE LOCATIONS
- SEDIMENT SAMPLE LOCATIONS



NOTES

2. SAMPLE LOCATIONS ARE APPROXIMATE

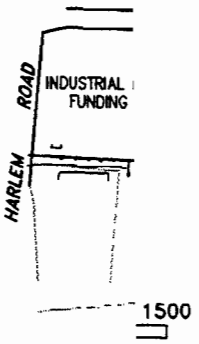


FIGURE 2-1: OFF SITE SAMPLE LOCATION PLAN

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1" = 500'	7/00	NTFIG2B	FIG 2-1	

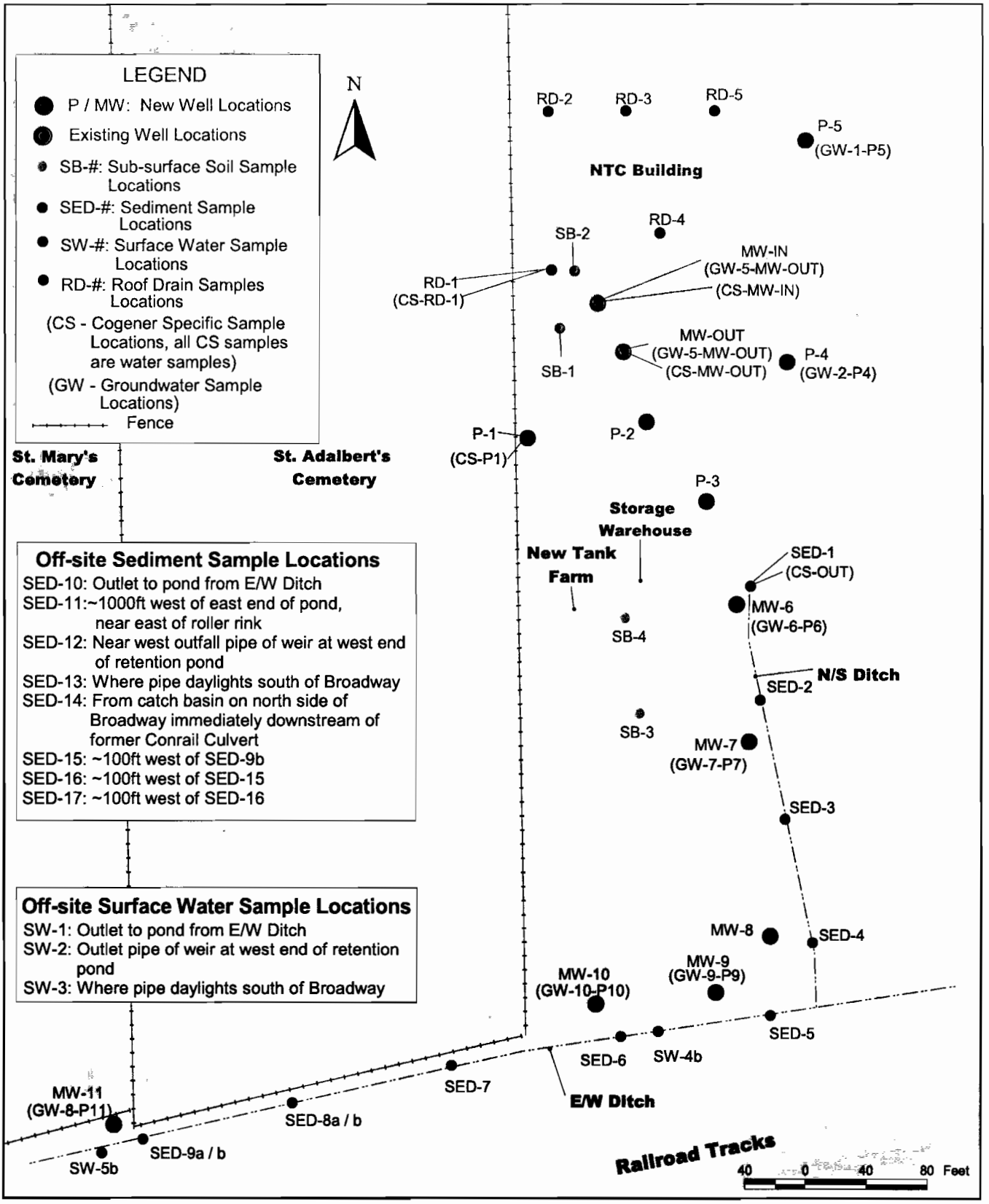

Figure 2-2: Monitoring Wells and Sample Location Plan

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3 Results of Additional Investigation

3.1 Sediment Contamination

Figure 3-1 presents the results of the sediment sampling completed during the 1999 investigation. The results show that all PCBs detected were identified as Aroclor 1260. The highest PCB concentration at 39 mg/kg (SED-1) was detected in the sediment at the outfall discharge point in the N/S ditch. Except for sample SED-17 (PCB concentration of 14.90 mg/kg), PCB concentrations decreased downstream from the discharge point and along the E/W ditch, but were generally above the remedial cleanup goal of 1 mg/kg. These areas were previously remediated in 1997 by removing up to 12 feet of contaminated soil and replacing it with clean backfill. Sediment samples collected from the retention pond (SED-10, -11, and -12), the catch basin downstream of the former railroad culvert (SED-14), and south of Broadway (SED-13) were below 1 mg/kg. Table B-1 in Appendix B summarizes the sediment results.

3.2 Subsurface Soil Contamination

In addition to the sediment sampling, subsurface soil samples were collected from four shallow soil probes inside the main NTC building and the storage warehouse; these soil samples were also analyzed for PCBs. As in the sediment samples, Aroclor 1260 was identified in subsurface soils. The highest PCB concentrations were detected at the SB-1 location inside the main NTC building (loading bay floor); PCB concentrations of 983 mg/kg and 906 mg/kg were detected in the top and bottom 2-foot samples, respectively. At SB-2 (located inside the main NTC Building, upper loading bay area), PCB concentrations were relatively lower; 489 and 12.8 mg/kg PCBs were detected in the top and bottom 2-foot samples, respectively. Boring log records of sample collection also indicate that an oil coating was observed on the split spoon at boring SB-1 and that the gravels and soils in this 4.7-foot boring were moist to wet. Black oily water was observed within the top 2.7 feet of boring SB-2. OVA readings for SB-2 were approximately 2

ppm for the 0- to 2.7-foot split spoon and 1 ppm for the 2.7- to 4.7-foot split spoon.

SB-1 was installed through the loading bay floor. The surface elevation of MW-IN is approximately 4 feet higher than SB-1. SB-2 was installed through the upper loading bay area floor at roughly the same surface elevation as MW-IN. The oily water observed in SB-2 was located approximately 6 feet above the moist-to-wet conditions observed in SB-1 (1 to 2 feet above the parking lot surface elevation). This may be indicative of a shallow perched zone within the gravel beneath the floor slab. The presence of free water beneath the building located at an elevation above the outside ground surface could only be the result of a continuing elevated source such as a damaged pipe or floor drain.

Contamination levels in the bottom 2-foot samples from SB-3 and SB-4 (inside the storage warehouse building) were below the 10 mg/kg guidance limit. The top 2-foot samples were not analyzed. Table B-1 in Appendix B summarizes the soil data.

3.3 Surface Water Contamination

The surface water samples collected from the retention pond and where the pipe daylights south of Broadway were non-detect at a detection limit of 0.5 µg/L. Aroclor 1260 was detected at 0.194 and 0.184 µg/L from the two surface water samples collected along the E/W ditch (see Figure 3-2). Table B-2 in Appendix B summarizes the surface water sampling results.

3.4 Groundwater Contamination

Nine groundwater samples were collected and analyzed for PCBs. Sample results are presented in Figure 3-2. One groundwater sample was also collected each from MW-IN and MW-OUT. Groundwater sample results are summarized in Table B-3 in Appendix B.

The groundwater sample results were all above the 0.09 µg/L New York State guidance limit reference. Again, Aroclor 1260 was the only type of PCB detected in groundwater samples. This result was consistent with the results of the groundwater sampling performed during the Remedial Investigation (Woodward-Clyde 1993). The highest concentration of Aroclor 1260 (322 µg/L) was detected in the sample from MW-OUT. This concentration was consistent with the total PCB concentration reported from the congener-specific sample of 283 µg/L. An oil sheen was observed during the collection of samples from wells MW-OUT and MW-IN. However, the reported concentration of Aroclor 1260 in MW-IN was 3.25 µg/L, an order of magnitude lower than in MW-OUT.

Although this result was unexpected considering the high PCB concentrations detected in the subsurface soil samples collected under the main NTC building, it is consistent with the 1998 sampling results conducted by NYSDEC. The results of the 1998 sampling event showed PCB concentrations in groundwater from MW-IN to be 2 to 4 orders of magnitude lower than MW-OUT. The sum of the individual congener concentrations reported—which could be used to estimate total PCBs—in the congener-specific sample at MW-IN indicates a total PCB concentration of 293 µg/L. This concentration is probably more representative of the level of contamination under the main NTC building. Such varied testing results are not uncommon when a separate phase (NAPL) exists. The sum of the individual congener concentrations for P-1 congener-specific samples showed a total PCB concentration of 123.5 µg/L.

3.5 Roof Water Contamination

Figure 3-2 shows the locations of the five roof water samples collected. The results indicate that PCBs were only detected in the sample collected at the northwest corner of the building (roof sample RD-2). Aroclors 1254 and 1260 were measured at 0.567 and 0.572 µg/L, respectively, in RD-2. Sample location RD-2 is the only location at which Aroclor 1254 was detected in any site sediment/soil or water sample. The roof water results are summarized in Table B-4 in Appendix B.

3.6 Congener-Specific Analysis

The reported concentrations of congeners detected in each sample were translated to histograms to compare and identify commonalities among the congeners present in each sample. The congener histograms are presented in Appendix C. As described in Section 2.6, congener-specific samples were collected in areas suspected of being potential sources of contamination, and one congener specific sample was collected at the outfall to the N/S ditch to provide a sample representative of the nature of existing contamination. The congener histograms for each sample were compared with the congener patterns of the outfall sample and with the histograms for the pure Aroclor 1254 and 1260 standards used by the analytical laboratory.

Upon review of these histograms, E & E and the subcontract laboratory—AXYS Analytical Services—concluded that there was no difference in relative age or source of the PCBs detected in various sampling locations based on the congener-specific analytical results.

The contamination found on the main NTC building roof is relatively new - the roof was replaced in 1998. However, the source of the contamination is likely aged transformers which previously were filled with high concentrations of PCB oils that are/were reconditioned at NTC. The source of the groundwater contamination is assumed to be historical spills of PCB-containing oils used in transformers. The finding of no significant difference in relative age or source of PCBs is supported by the presumed sources of PCB contamination.

A comparison between the congener histograms observed in each sample and the pure Aroclor 1254 and 1260 standards clearly indicates that Aroclor 1260 is the pre-dominant type of PCB contaminant found at the site. Low levels of Aroclor 1254 were however observed in the roof drain congener-specific sample. This result is consistent with the Method 8082 results of the roof drain water sample. Furthermore, the congener-specific analysis of select groundwater samples confirms the presence of Aroclor 1260 in the groundwater at relatively the same concentrations as the PCB analysis of Method 8082.

3.7 Parking Lot Storm Sewer Video Inspection

Approximately 500 feet of the parking lot sewer lines were inspected for structural integrity, sediment accumulation, and potential groundwater infiltration. In general, the telespection did not provide any indication of significant groundwater infiltration or reveal any major structural integrity problems in the sewers or the pipe joints. Note that it was difficult to identify any potential inflow through the pipe joints because the inspection was performed on a dry day. Furthermore, hydraulic head readings from the parking lot piezometers and the monitoring wells along the N/S and E/W ditch (see Appendix E) on the same day showed no water except for MW-11, indicating that the underlying perched zone was not yet fully developed. Significant observations during the telespection follow:

- The concrete plug at the end of the 6-inch line north of catch basin C (CB-C) was in good condition. Only some debris was observed south of the concrete plug. This may indicate groundwater leakage from around the plug and into the 6-inch pipe. During NYSDEC's 1998 sampling program, water was observed discharging to catch basin C even though the only roof drain connected to this pipe was dry. Furthermore, NYSDEC water sample results from catch basin C indicated the presence of PCB Aroclor 1260 and trace levels of Aroclor 1254. However, as indicated in Table B-3 in Appendix B, no PCBs were detected in the groundwater sample collected from

P-5 installed near catch basin C. Given that the area north of the NTC Building was historically clean (no PCBs were detected in the RI) and that the roof drain was observed to be dry during NYSDEC's 1998 sampling program, the source of contamination reported in NYSDEC's 1998 memorandum remains unknown and needs to be further investigated.

- A puncture in the 12-inch sewer and a large amount of debris, gravel, and rock was observed approximately 35 feet west of catch basin A (CB-A). The pipe was punctured while attempting to install piezometer 3 (P3) in the pipe gravel bedding. Water flow through the pipe was observed although further debris accumulation could potentially restrict water flow through the sewer line.

- A tie-in connection between a 4-inch pipe east of the NTC property and the 12-inch pipe connecting catch basins A and C was observed approximately 25 feet north of catch basin A. The mortar seal at the connection point was in good condition but could potentially cause infiltration into the pipe.

- Upon the request of the on-site NYSDEC representative, the 6-inch sewer pipe from the southwest corner of the main building (by the loading bay) was inspected through the roof drain clean out. The 6-inch pipe was in good condition, and no observed breaks or debris were observed.

3.8 Groundwater Level Measurements

The weekly hydraulic head measurements (water levels) collected from all the wells for a period of four weeks were used to develop potentiometric surface contour maps and evaluate hydraulic communication between the groundwater and N/S and E/W ditches. The potentiometric surface contour maps are presented in Appendix E. Based on these maps, the perched groundwater flow direction at the site is generally from the north to the south, towards the E/W ditch. This result is consistent with the groundwater flow direction reported in the site's RI for the overburden monitoring wells (Woodward-Clyde 1993). Observed hydraulic gradients were highest during the October 19, 1999, measurement round. Gradients varied between 0.05 ft/ft beneath the parking area to 0.01 ft/ft within the rear portion of the property. During other measurement rounds, hydraulic gradients beneath the parking area were typically on the order of 0.03 ft/ft and 0.008 ft/ft within the new portion of the property.

A comparison between the N/S and E/W ditch invert elevations (presented in Table 2-1) and groundwater elevations (see Appendix

E) generally indicates that no significant groundwater discharge occurred into the N/S and E/W ditches until December 2, 1999, when the last weekly water level data were collected. These results indicate that, as the perched groundwater zone develops, discharge into the N/S and E/W ditches can be expected. This is consistent with observations made during the RI, where a seasonal discharge into the E/W ditch was observed during wet periods. The impact of the N/S ditch on the groundwater flow direct can be seen in contour plots as a depression limited to the area surrounding the confluence of the N/S ditch and the E/W ditch during the October 19, 1999, measurement. During later rounds, as the perched water began to develop, the depression gradually moved northward along the N/S ditch.

MW-8 was consistently found to be dry during the fall 1999 monitoring period, indicating that along the nearby portion of the monitoring well ditch no groundwater discharge into the ditch was occurring.

In addition to the hydraulic head measurements, continuous water level measurements for MW-IN and MW-OUT were collected for a nine-week period. Precipitation data for the same period was also obtained from the National Weather Center website for the Buffalo/Niagara Falls Airport weather station, which is located approximately 5 miles northeast of the site. Figures D-1 through D-14 in Appendix D present the results of the water level variations in the two wells and the precipitation data recorded during the same period. Note that the intensity of the precipitation events recorded during the period of this study was generally an order of magnitude lower (maximum of <0.12 inches/day) than recorded during the 1998 NYSDEC's study (maximum of 1.3 inches/day). Some significant observations about the results follow:

- The groundwater level in MW-IN is consistently higher than in MW-OUT. This indicates that the hydraulic gradient is from under the building to the parking lot.

- The peak in the groundwater level in MW-IN does not correspond with the peak in rain events, as one would expect. On most occasions, a rise in MW-IN is observed prior to the beginning of a rain event, and the peak in the groundwater level typically precedes the rain event. It is possible that this delayed response exhibited by MW-IN is actually a response to an earlier rain event. A review of the precipitation records indicates a lag period ranging between 36 to 72 hours. It is also possible that the precipitation conditions at the site are different from the Buffalo/Niagara Falls Airport weather station located

approximately 5 miles northeast of the site, which could explain the delayed response of MW-IN. However, a closer look at the data also reveals that rises in the water level in MW-IN are observed on a number of occasions when no precipitation is recorded (i.e., November 24, December 17, and December 25). These rises seem to have occurred at relatively consistent intervals of every two to three days. This pattern could suggest that a source of water other than precipitation, such as a possible floor drain, sump, or process discharge line, may be feeding the building's sub-soil layer. After several inspections of the facility, NYSDEC staff indicated that this possibility is unlikely. However, this matter needs to be further investigated and reviewed with NTC.

- The sharp drop in the water levels observed during week 3, even though it rained that week, was due to the collection of groundwater and congener-specific samples on that day from both wells. Note that the 0.5 feet or greater fluctuations over a 6 to 10 hr interval in water levels, especially in MW-OUT, continued to be observed through week 4. The elevation data for these two weeks are considered suspect in comparison to the remaining data.

- The groundwater level in MW-OUT consistently exhibited a delayed response to rain events throughout the recording period. Furthermore, the groundwater level in MW-OUT appears to consistently lag MW-IN during the precipitation events recorded.

3.9 Quality Assurance/Quality Control

Data usability summary reports (DUSR) for the sampling events performed under this investigation are presented in Appendix F. Field duplicate samples were collected to assess the aggregate analytical and sampling protocol precisions. A total of 3 sediment, 1 sub-surface soil, 1 surface water, and 1 groundwater field duplicate samples were collected during this investigation. The results of the duplicate sample analyses were reproducible in most cases, which indicates that satisfactory analytical and sampling protocol precision were implemented during this investigation.

The only major concern identified in the DUSRs was a difference in the reporting of Aroclor 1254 and 1260 in the sediment samples collected during two different sampling events. Further review of the data indicated that Aroclor 1254 may not be present in the samples, and therefore the Aroclor 1254 results were qualified 'U' as non-detect and reported with an elevated reporting limit. This is further discussed in the DUSR in Appendix F.

3.10 Summary

PCB contamination at the site was observed in the sediment, subsurface soils, surface water, and groundwater samples. Contamination was limited to NTC-owned property and along the E/W ditch. No contamination was reported south of the railroad and Broadway or downstream of the retention pond. With the exception of one water roof sample in which Aroclor 1254 was reported, Aroclor 1260 is the predominant PCB detected at the site.

Roof water samples were non-detect at 0.065 µg/L, except at the northwest corner of the building. Surface water contamination was detected above guidance limit values along the E/W ditch.

The PCB concentration in groundwater was highest (at 322 µg/L) in well MW-OUT near the main NTC building. With the exception of the groundwater sample from MW-11 (132 µg/L), PCB concentrations in groundwater dropped significantly with increasing distance from the main NTC building along the N/S and E/W ditches, although concentrations were higher than the groundwater standards (see Appendix B). As stated earlier, MW-11 was installed beneath the liner that delineates the native material from the backfilled material in the E/W ditch during remediation.

PCB concentrations in sediments at the site were highest (at 39 mg/kg) at the outfall discharge point into the N/S ditch (SED-1). Concentrations in sediments generally decrease with increasing distance from the N/S ditch along the E/W ditch. No sediment contamination was detected in the retention pond west of the site or south of the railroad. Subsurface soil contamination was highest beneath the main NTC building.

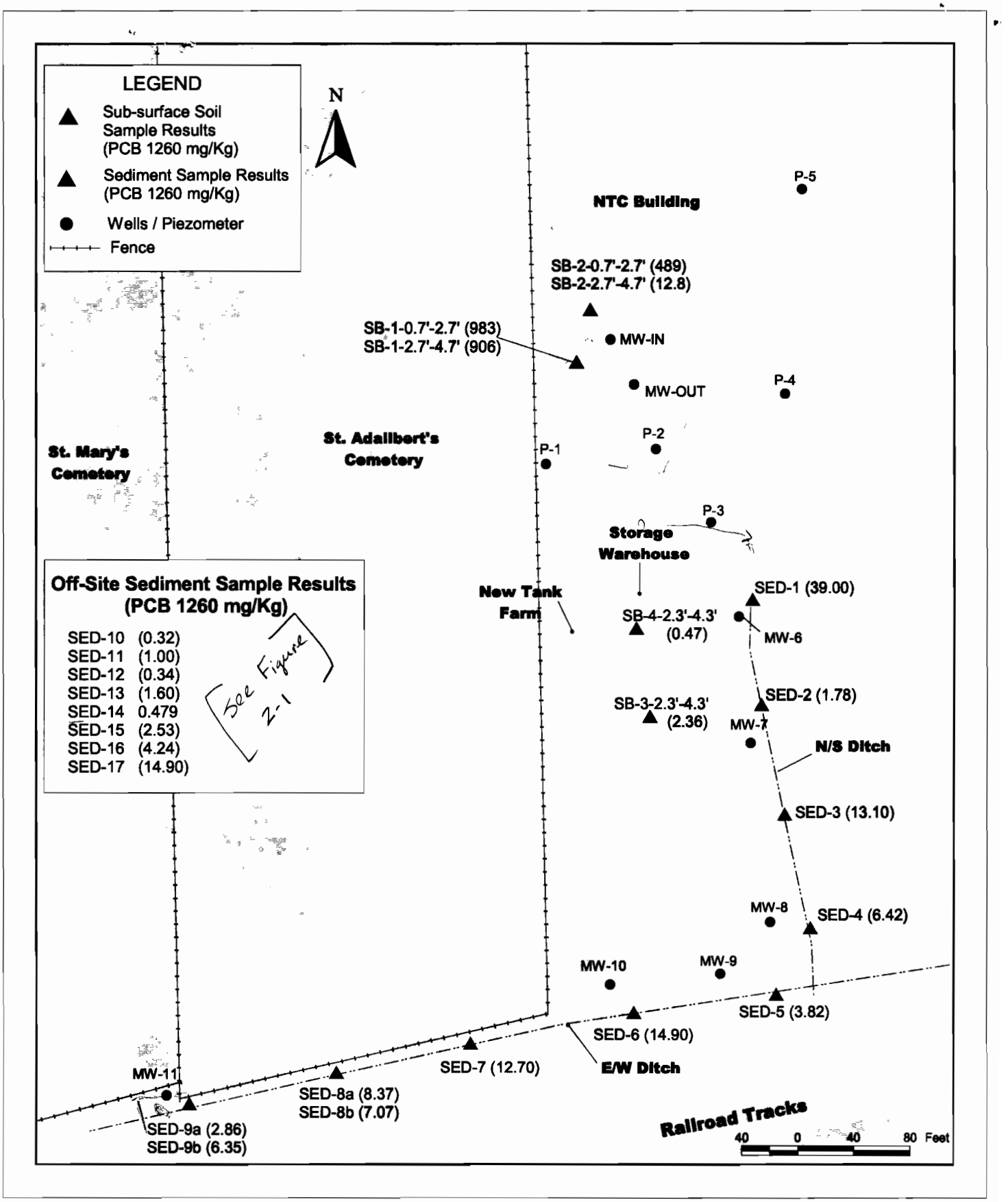


Figure 3-1: PCB Sediment and Soil Sample Results

:000699_QT05_00_13
g:\ntc\sampling_efforts_2.apr GIS

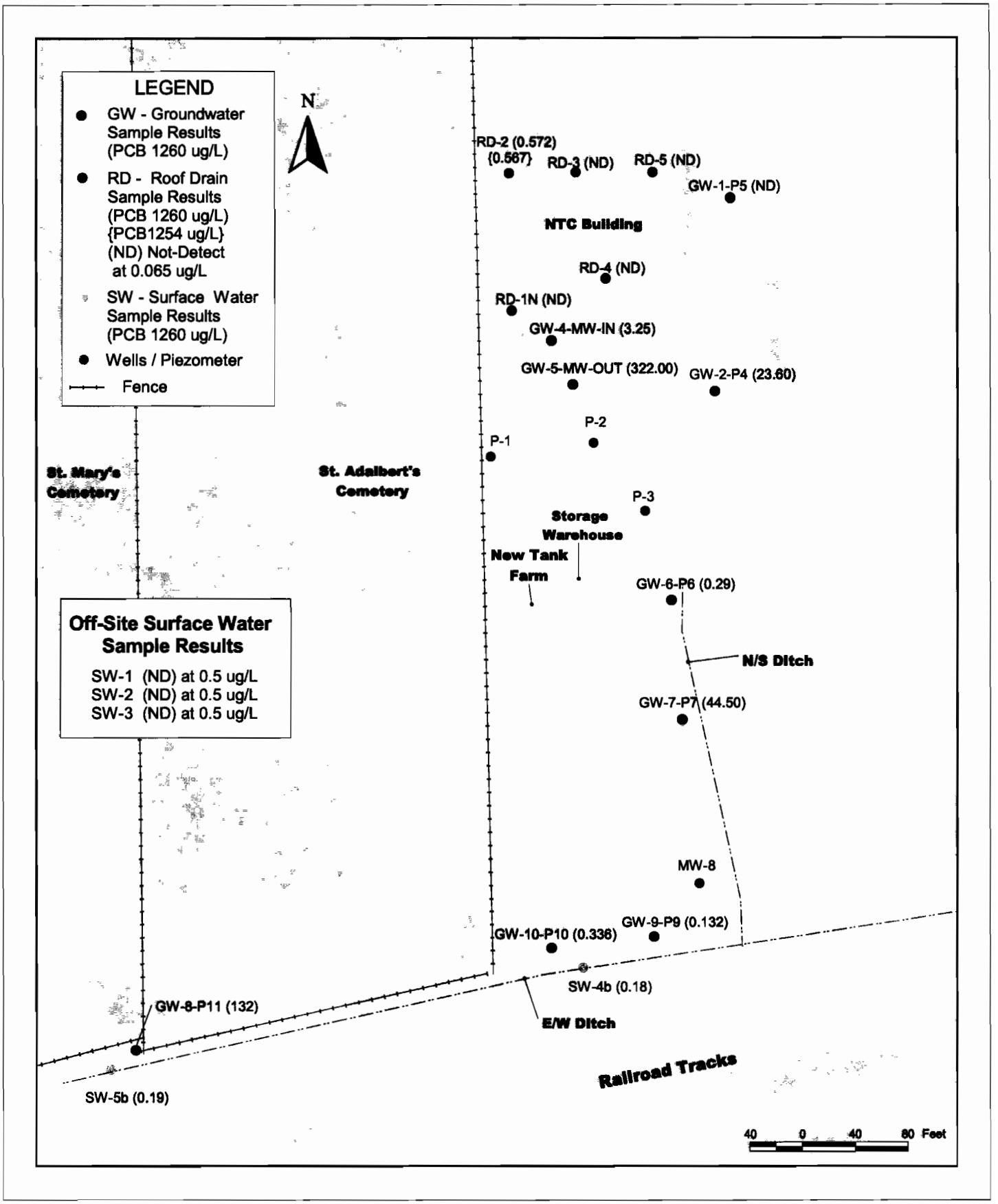


Figure 3-2: PCB Water Sample Results

2:000699_QT05_00_13
...\ntc\sampling_efforts_2.apr GIS

4 Contaminant Fate and Transport

4.1 Potential Sources of Contamination and Transport Mechanisms

Based on the results of this investigation and the site's history and characteristics, E & E has identified the following potential sources of contamination that may be contributing to re-contamination at the site.

- Internal processes (roof vents, drains);
- New spills/releases; and
- Groundwater (aqueous and non-aqueous phase liquid).

Each of these potential sources and associated transport mechanisms are discussed below.

4.1.1 Manufacturing Processes

Processes involved in the manufacturing and reconditioning of transformers inside the main NTC building could potentially contribute to continued PCB releases at the site through the existing roof vents and drain system. The roof drain system at NTC directs water collected on the roof to the existing storm pipes and eventually to the N/S ditch.

All water samples collected from the roof were non-detect for PCBs (at 0.065 µg/L) except the sample collected at the northwest corner of the building. The reported PCB concentrations at this location were 0.567 and 0.572 µg/L (Aroclors 1254 and 1260, respectively). Although these samples may not have been indicative of a "first flush," the signature of this contamination includes both 1254 and 1260 in approximately equal proportions. This signature is consistent with NYSDEC results from testing water from Catch Basin C in September 1998. The sediment contamination in the N/S and E/W ditches was reported as Aroclor 1260 exclusively.

According to Bob Fishlock (plant manager), NTC also no longer accepts transformers for reconditioning that have PCB concentrations higher than 1 mg/kg (newer transformers are manufactured with non-PCB mineral oils). These levels of PCBs typically are verified through testing by NTC before acceptance. Based on this information, the relatively low PCB concentrations in one roof water sample (compared to the N/S ditch sediment concentrations), and the observed mix of PCB Aroclors of this contamination, current processes at NTC do not appear to be significantly contributing to downstream re-contamination. However, further review of potential causes for the fluctuations in perched groundwater levels in MW-IN is warranted.

4.1.2 New Spills/ Releases

Direct or indirect spills since remediation work was completed in 1997 potentially could have caused recontamination at the site. E & E did not observe visual evidence of spills during this investigation. However, three spills have been reported during and since remediation was completed in September 1997. These include the blowdown from the oil dryer unit on April 7, 1997; an overfilled transformer on May 23, 1997; and a leaking valve on an oil delivery truck on March 20, 1998. Only the April 7, 1997, spill involved PCBs. Impacted soils from this spill were removed and disposed of off site.

There is a concern that potential releases of non-PCB oils may have mobilized PCBs from previously contaminated soils and surfaces and could contribute to recontamination of the ditches. Insufficient information is available to evaluate the likelihood of this happening.

4.1.3 Groundwater

As stated in Section 1.2, the main focus of the 1993 RI with respect to groundwater transport and contamination at the site was the perched groundwater zone above the natural occurring clay layer. Based on the results of this investigation and E & E's review of the RI findings, groundwater at the NTC site exists in three zones at:

1. The perched zone exists in the approximate 4 feet of clean backfill material (placed during remedial work in 1997) underlying the paved parking lot and the grass area south of the parking lot. The existence of water in this zone is seasonal, as observed during this investigation where the parking lot piezometers and the wells along the N/S and E/W ditches were dry until late September. The potentiometric surface contour maps (see Appendix E) show that groundwater flow direction in the perched zone is from north to south across the site, towards the

E/W ditch. In addition, the perched groundwater zone appears to discharge into the N/S and E/W ditches by December 2, 1999. The continuous water-level data from MW-IN and MW-OUT also indicate that the hydraulic gradient is from under the main NTC building to the parking lot.

Saturated conditions were observed beneath the building at elevations above the exterior ground surface, indicating the presence of an elevated source of water beneath the building. Water levels within this perched zone beneath the building have found to fluctuate in the absence of precipitation. These fluctuations could be explained by the presence of another source.

2. Groundwater in the naturally occurring silt/clay layer. E & E's review of the RI boring log records indicates that a saturated zone is present in the silty/clay layer 8 to 10 feet below ground surface. It is likely that this groundwater is contaminated at select locations where contaminated soil (depths greater than 4 feet) was left in place during remedial work in 1997. However, due to the low permeability nature of the soils in this layer ($9x10^{-2}$ ft/day, Woodward-Clyde 1993), it is unlikely that this groundwater zone is significantly contributing to re-contamination of the ditches.

3. Bedrock groundwater underlying the lacustrine clay layer. As stated in Section 1.2, the RI did not report PCB contamination in this zone.

Aqueous-Phase Groundwater Contamination

Hydraulic head measurements collected during this investigation indicate that groundwater at the site discharged into the N/S and E/W ditches (see Section 3.8) by early December 1999. Historically, groundwater at the site was found to be contaminated in the area south of the NTC Building and storage warehouse at PCB concentrations ranging between 1 and 10 µg/L (Woodward-Clyde 1993). Only two of the monitoring wells installed in the RI phase showed relatively higher PCB concentrations and are further discussed in the following section. Based on the above information, contaminated groundwater at the site could be contributing to re-contamination of the ditches. However, sampling results from this investigation show groundwater contamination ranging from 24 to 322 µg/L, and sediment contamination up to 39 mg/kg. Although PCBs have a strong tendency to sorb to organic matter in soils (Log K_{ow} for PCB-1260 is approximately 6.0, Woodward-Clyde 1993), it is unlikely that partitioning from the aqueous to the par-

ticulate phase is causing the observed several orders of magnitude higher levels of contamination in the sediments.

Non-Aqueous Phase Liquid Contamination

During this investigation, lighter than water nonaqueous phase liquids (LNAPL) was observed at several locations. An oil sheen was observed during groundwater sampling of wells MW-IN and MW-OUT. An oily sheen and a few milliliters of DNAPL were also observed at MW-OUT during NYSDEC's October 1998 site sampling event. Evidence of an oil sheen was also observed during removal of the data loggers from MW-IN and MW-OUT. In addition, boring records for the two shallow soil probes inside the main NTC building report wet, black, oily soils and oil-coated split-spoons. NAPL was not observed in any of the parking lot borings or the N/S and E/W ditch borings during installation of the monitoring wells. However, black-stained soils were observed under NTC's warehouse in SB-3 (approximately 2 to 3.3 feet below the top of the concrete floor) and in SB-4 (approximately 0.8 to 1.7 feet below the top of the concrete floor). The drilling log for P-9 (shown as MW-9 on the figures) notes soils stained with black asphalt at 1.2 to 1.4 feet BGS. The drilling log for P-6 (shown as MW-6) notes some soil staining at 4.3 to 4.8 feet BGS. The drilling log for P-4 (shown as P-4) notes a little black staining of soils/gravels from 1.3 to 3.7 feet BGS. Drilling logs are presented in Appendix A.

During the site RI, LNAPL and DNAPL were observed at two monitoring wells. One of the two monitoring wells was located in the parking lot south of the loading dock bay area (adjacent to where the former railroad tracks entered the main NTC building), and the other was located on railroad property south of the site and adjacent to the south bank of the E/W ditch. The high concentrations detected in the groundwater samples at these two locations were attributed to the presence of entrained NAPL (Woodward Clyde 1993).

Based on the above, it is likely that an LNAPL source exists in the vicinity of the loading bay area and under the main NTC building. The development of the perched groundwater zone during the wet seasons reaching into the subbase layer and above the storm sewer pipe inverts (see Appendix E) could be acting as a transport mechanism for contamination under the main NTC building to seep to the parking lot. In addition, the elevated perched water found beneath the floor slab at SB-2 indicates a continuing water source in this area, recharging the area of LNAPL. This source could explain the water level fluctuations observed at MW-IN and the flow entering Catch Basin C while the adjacent roof drain was

dry. The high permeability of the gravel/stone layer underlying the parking lot and storm pipe bedding material, which is sloped to drain to the storm sewer catch basins, are likely providing a preferential pathway for LNAPL contamination in the suspected source areas to reach the N/S ditch. It is unlikely that the NAPL source is providing a continuous source of PCB release, but rather a high concentration of particulates or short-term slugs of contamination.

Contamination of the E/W ditch could have occurred during high-flow conditions when LNAPL was present in the N/S ditch that could have been washed downstream. Contamination found in the E/W ditch west of the NTC property could also be caused, in part, from transport of PCB-contaminated material and DNAPL left in-place along the south end of St. Adalbert's Cemetery (see Section 1.2, page 1-4). It is unlikely that LNAPL is migrating with groundwater flow in the perched zone from probable source areas under the main NTC building and loading bay area to the E/W ditch.

Another potential source of E/W ditch sediment contamination is an off-site NAPL source in the railroad property. LNAPL detected in a well installed on the Conrail property on the south bank of the E/W ditch (south of the NTC property) during the RI could have added to recontamination in the E/W ditch. The groundwater PCB concentration reported in the RI for this well was 22,000 µg/L. A review of hydraulic head data collected during the RI (September, October, and November 1992) for the wells south of the E/W ditch, indicates seasonal groundwater discharge to the E/W ditch is likely.

5

Recommendations

Based on the results of this investigation and the evaluation of potential contaminated sources and transport mechanisms, the following recommendations are presented:

1. Continue to monitor groundwater levels at the site. The majority of this study was conducted during a relatively dry season. This investigation showed that the perched water zone is seasonal in nature, which is consistent with the RI findings and observations. Monitoring of the site's groundwater during both wet and dry seasons will provide further understanding of the site's seasonal hydrogeology.

2. The continuous water-level monitoring of MW-IN and MW-OUT showed significant fluctuations in the water level of MW-IN when no precipitation was recorded. In addition, the presence of saturated conditions beneath the building above the exterior ground surface would indicate an unknown source recharging the water beneath the building. Investigation of this other source is warranted.

3. The bedding material surrounding the storm sewer pipes beneath the rear parking lot is thought to provide a preferential pathway for contamination beneath the NTC Building and in the area immediately south of the loading dock to reach the N/S ditch. It is recommended that low-permeability dams be installed in sections of the storm sewer pipe bedding material to minimize potential transport of PCBs from suspected source areas.

4. Collect samples from the NTC roof vents to further evaluate the extent of contamination on the NTC roof and potential contribution to recontamination of the ditches. During this study, wet samples were collected from the roof in an attempt to obtain a representative sample of the first "flush" off the roof. During extended dry periods, it is possible that significant PCB accumulation could occur on the roof. It is

recommended that dry wipe samples be collected from the roof vent to evaluate the extent of contamination on the roof.

5. Evaluate the feasibility and effectiveness of separating runoff from roof drain water to minimize the amount of water requiring treatment.

6. Evaluate means to reduce the potential for exposure to contaminated sediment located in the E/W and N/S ditches.

7. E/W ditch at south edge of site (LNAPL?) (see bottom of p. 4-5)

A

Boring Logs, Well Construction Details, Sampling Logs Survey

Weather: Sunny, 70°-80°
Light Breeze.

8-2-99 QTO5

0800 Kathleen DeMarco, Bob Meyers & Matt Wawrowski (all E&E) Meet @ HQ to Mob.
0930 Matt.W on site to change Carbon drums.
1000 B. Meyers & K. DeMarco Arrive on site, held Safety Brief.
1015 Go to Visit w/ Plant Manager (Bob Fishlock). Bob F is in a meeting.

Agenda:

- Mark all Drilling locations (w/ Matt W)
- Collect SW & SD Samples for PCBs

1102 Fin finished marking & staking P-1 → P-10
P-11 unable to mark & stake due to overhead powerlines, ditch & cemetary fence.
1105 Prep to collect sediment samples after checking out other SW sample locations
* All SW sample locations in the Ditch are Dry
1145 Go to Lunch/Buy Clear Tape.
1400 Begin Collecting Sediment Sample Sed-1 through Sed-9. *Sed-1 has dup. included
* Sed-7 has dup and MS/MSD.
1454 Comp. Collecting Sed 1- Sed 9, pack up & Go to ASC.
1520 Drop off Samples @ ASC Go to HQ to put Equip On charge etc.
1555 Depart HQ

8-2-99

Weather: Sunny
70-80°
Breezy

8-3-99 QT05
745 Bob Meyers & DeMarco meet at HQ to mob
800 On Site, begin setting up
815 Meet Bob Fishbeck (NYSE), Jim Moras (NYSDEC), Matt Wasilowski Set up OVA, O2 Explosimeter
825 SJB Drillers arrive, check out drilling locations w/in the buildings
850 Drillers setting up decon pad next to warehouse
*Note: We will begin by doing borings SB-3 and SB-4 and will Collect Samples SB-3-0'-2' (Archive) and SB-3-2'-4' (For Analysis) SB-4-0'-2' (Archive) and SB-4-2'-4' (For Analysis). All for PCB's (8082).
921 Begin Decon (Steam cleaning) of Augers, Splitspoons etc.
1007 Unable to raise Derick (even with top ½ removed) inside the warehouse. Prep. to drill P-10.
1019 Jim Moras (NYSDEC) states that he wants the Piezometer along the E/W & N/S ditches installed to ≈ 2 to 3' beneath the bottom (Invert) of the Adjacent ditch, So we will-
James A. Moras
1025 Set up on P-10 (Depth to be 5.5' BGS) begin drilling
1050 Begin Setting P-10, Screen (.010") From 5.5' to 2.5' as Shown on well Const. diagram.
1100 Begin Drilling P-9 to 5.5' BGS
1134 Begin Setting P-9, Screen (0.010") From 5.5' to 2.5' as shown on well construction diagram
1232 Begin Decon (Steam cleaning) of Augers, Splitspoons etc.
1240 Decon (Steaming) finished. Set up @ P-8
1305 Begin setting P-8. screen (0.010") From 6.5' = TD See well construction diagram for details
1340 Begin Drilling P-7
1507 Setting P-7 screen (0.010") From 7.5' = TD
1425 see wcr construction for details
begin Decon (Steaming) of Augers, Split Spoons, etc
1500 Begin Setting P-3
1505 1st Attempt @ P-3 Missed the Gravel Area next to drain pipe, move 1' ± South & try again

8-3-99 QTOS

1510 2nd Attempt @ P-3

1535 After the 2nd Attempt, we did Drill and Sample into the #1 Gravel Surrounding Drain Pipe. when Matt Wawrowski looked into the Drain Pipe from the adjacent Catch basis he can see a small pile of what appears to be crushed gravel. we had no indication during drilling that we may have nicked the drain pipe. the gravel in the pipe may be from a loose joint, we can't tell, SO! we will install the well to 4.6' BGS, if our sandpack flows into the pipe, then we nicked it.

≃1600 Comp. setting P-3, Apparently didn't drill into Drain pipe

≃1700 Done for the day

8-4-99 QTOS Wed.

0800 on-site, Prep. to drill SB-2 then SB-1 inside main Plant (Note SB-2 is North of SB-1)

0825 Bill Powers takes SJB (Dale & Matt) & B. Meyers on Safety walk Through Plant.

0840 setup OVA, BG≅ 1.5ppm, set up O2/Exp.

0842 setup on SB-2

0940 Completed drilling and Sampling SB-1 & 2
Collected a duplicate From SB-2 2.7' to 4.7'
Collected an ms/msD from SB-1 2.7' to 4.7'

Note: the 2.7' to 4.7' Splitspoons were covered with oil & black liquid, also had higher OVA readings (see logs next Page), these are the Samples to be Archived. Jim Moras (NYSDEC) may just have these analyzed now, or have them analyzed for the Congeger specific PCB's, he will discuss this with Matt.W

Borehole Logs

0850 **SB-2**

		Blows	Comments
SS#1	0' to 0.7' Concrete Floor	3,4,8,12	black water/oil
	0.7' to 2.7' med. Brown uniform Clay, Non plastic, Mod. Cohesive.		Filled SS#1 hole oil odor
SS#2	2.7' to 4.7' Uniform Clay as above	20,15,20,29	less odor

0900 Collect Sample SB-2-0'-2' for Archiving (PCB Analysis)
0905 Collect Sample SB-2-2.7'-4.1' (Actually 2.7' to 4.7') for PCB Analysis
Note 0.7' to 2.7' ≃ 2ppm OVA
2.7' to 4.7' ≃ 1ppm OVA
Also collected a duplicate of SB-2-2.7'-4.7'D

0919 Begin Drilling **SB-1**

		Blows	OVA (ppm)	Comments
SS#1	0.0' to 0.7' Concrete Floor	4,3,3,6		Spoon coated w/oil
Attempt #1	0.7' to 2.7' Crush stone & clay (0% Rec)		55ppm	moist to wet
Attempt #2	(10' Rec.) Silty brown clay and crushed stone		55 ppm	WIK 6/21/00
SS#2	2.7' to 4.7' (1.9' Rec) uniform slightly plastic red/brown silty clay, trace gravel		1.4 ppm	Scraped outside of SS sample to remove black coating from above

0925-0940 Collect SB-1-0.7'-2.7' for Archive (PCBs)
0936 Collect SB-1-2.7'-4.7' w/extra Vol. for MS/MSD.
Custody seal, & ICE all samples
Begins to Rain.
1000 Setting up on SB-3 & SB-4, will Cut holes in the floor w/Diamond bit hole saw and drive splitspoons with a weighted device (like a small Rig hammer)
1026 Begin coring floor @ SB-3

QTOS

8-4-99 Bore hole logs

SB-3 (South End of Warehouse)

	OVA	Comments
~~SS#1~~ 0'-0.3', Concrete Floor		
SS#1, 0.3' to 2.3', (1.5' Rec)	Oppm	moist
0.3' to 1.2' VF brown Sand & Silt.		
1.2' to 2.3', Silty brown CLAY with Some blackish Mottling		
SS#2, 2.3' to 4.3' (1.4' Rec)	44ppm	moist
2.3' to 3.3' Very Silty Clay with heavy black staining		
3.3' to 4.3' brown slightly Silty Clay, slightly Plastic, No staining.		

Begin 1129

SB-4 (Inside Warehouse Doors)

	OVA (ppm)	Comments
0'-0.3' concrete		
SS#1, 0.3' to 2.3' (1.8' Rec) 0.3' to 0.8' light brown VF Sand & Silt with Some rounded Gravel. 0.8' to 1.7' black stained Very Silty Clay (crumbly)	92ppm	moist
Slightly Plastic → 1.7' to 2.3' slightly Silty Brown clay, No staining		
SS#2, 2.3' to 4.3' (1.6' Rec) Silty Brown Clay, Trace rounded Gravel, No staining	10ppm	

1050 Collect Sample SB-3 ~~0~~.3'-~~2~~.3' for PCBs (ARCHIVE)
1115 Collect Sample SB-3 -2.3'-4.3' for PCB Analysis.
1150 Collect Sample SB-4-0.3'-2.3' for PCBs (Archive)
1200 " " SB-4-2.3'-4.3' for PCBs
1135 Collect Drill Water Sample (From Rig tank & hose) for PCBs
Sample ID = DW-1
1300 Collect ~~Rinsate~~ Rinsate Blank (Rinsate-1) from Deconed Splitspoon after Drilling/Sampling SB-4, and before Drilling P-1.
*Lunch 12-12:30
Decon. ≈ 12:30 - 12:50 Con't in next Log book

8-4-99 QTOS Wednesday

1305 Begin Drilling P-1 (TD to Be 4.6' BGS)
1320 Collected SS#1 @ P-1, stop drilling due to thunder.
1345 Collect SS#2 @ P-1, " " " " "
1445 Attempt to Auger down, chased back inside by rain & thunder.
1458 Cont Augering
1501 Complete Augering to 4.6 = TD @ P-1, Begin Setting P-1 as shown on well Const. Diagram.
1517 Complete setting P-1.
1528 Begin Drilling P-5
1552 Complete Drilling & Setting P-5, See Construction diagram.
1602 Begin Decon.
1612 Decon. Complete, B. Meyers goes to ASL w/samples

Weather: Partly cloudy
65°-75° **Draft**
no wind

QT05

8-5-99 Thursday

0740 Bob Meyers & Kathleen DeMarco met @ HQ
0805 onsite, begin setting up EVA. Drillers, Jim Morse (NYSDEC), Mat Wawrowski, B. Meyers & K. DeMarco on site
0825 Start drilling P-6 Kill switch & rig cables ckd prior to drilling
0859 setting P-6, screen 0.010" From 8.5' as shown on well construction diagram
0932 Setting up P-2 parking lot
0948 Begin setting P-2 stainless steel
1004 Decon Begins
1014 ~~Mr. Fishin~~ finish Decon
1016 Drillers painting wells blue
1030 Painting finished
1034 Starting P-4 parking lot
to 1039 B. Meyers took photo 1 & 2, Facing East of Drilling Rig @ P-4 location
to 1047 B. Meyers took Photos 3 & 4, Facing north of SS#1 & #2 @ P-4 location, (Note: SS#1 is bottom of both Photos).
1042 Begin setting P-4 as shown on well Construction diagram.
1100 Complete setting P-4, Begin Sample Packaging of the following Samples Collected by M. Wawrowski & Jim Morse (DEC)

me	Sample ID	Location
:930	Sed-10	Outlet to Pond From E/W Ditch
.940	Sed-11	~1000ft west of east end of Pond, near east end of Roller Rink.
7950	Sed-12	Near west outfall pipe of weir at west end of retention Pond (South face of ponded Area)
.000	Sed-13	Where Pipe Day lights South of Broadway
1015	Sed-14	from catch basin on North side of Broadway, immediately downstream of former Conrail Culvert.
0930	SW-1	Outlet to Pond From E/W ditch ★ MS/MSD extra Volume
0950	SW-2	Outlet pipe of (west outfall of weir) weir at west end of retention pond (Flow ≈ 10 gpm.) ★ Dup. also collected.
1000	SW-3	Where Pipe daylights South of Broadway

1230 Samples preped & brought to ASC by Kam & BM
1200-1300 Parking lot wells cut down/cut
1330 cement fill of parking lot well surrounding

DRILLING LOG FOR P-1

Project Name Nia. Transformer

Site Location Cheektowaga
New York.

Date Started/Finished 8-4-99

Drilling Company SJB

Driller's Name Dale Mathis

Geologist's Name Robert Meyers

Geologist's Signature Robert A Meyers

Rig Type (s) CME 45C

Drilling Method (s) HSA & Splitspoons

Bit Size (s) _____ Auger Size (s) 4¼" ID

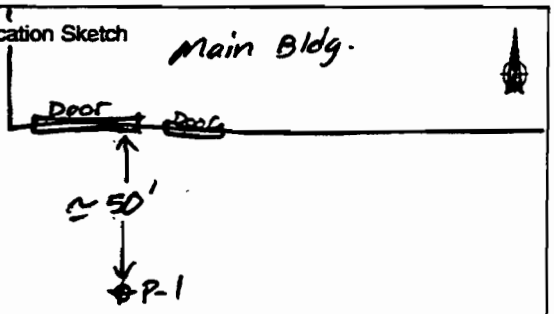
Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 4.6' BGS

Total Depth of Corehole Is NA

Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch



Depth(Feet)	Sample Number	Blows on Sampler		Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
1	SS#1	NA	2/2				1.2'			0ppm	No staining No odor.
2		6	8								
3	SS#2	6	7				1.7'			0ppm	Rain delay/lightning
4		7	10								
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

SCREENED WELL

Stick-up 0 ft

Top of Grout 0 ft

Top of Seal at 0.8 ft

Top of Sand Pack 1.3 ft

Top of Screen at 1.6 ft

Bottom of Screen at 4.6' ft

Bottom of Hole at 4.6 ft

Bottom of Sandpack at 4.6'

Lock Number _____

Inner Casing Material st. steel

Inner Casing Inside Diameter 2 inches

GROUND SURFACE

Quantity of Material Used:
Bentonite Pellets _____
Cement _____
Borehole 8 inches Diameter
Cement/ Bentonite _____
Grout _____
Screen Slot Size .010"
Screen Type _____
☐ PVC _____
☒ Stainless Steel _____
Pack Type/Size: #1
☒ Sand _____
☐ Gravel _____
☐ Natural _____

OPEN-HOLE WELL

Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
	SS#1 0' to 0.8', Asphalt (Parking lot) and crushed stone Sub-base.	⊗	○	○
1	0.8' to 2' brown ~~silty~~ Rdm clay with little Angular Gravel, slightly Plastic	○	⊗	○
2	SS#2, 2' to 4', brown silty clay, cohesive, slightly Plastic, with	○	⊗	○
3	trace angular gravel, No staining (0'-4')	○	⊗	○
4	Auger to 4.6' = B.O.H	○	○	○
5		○	○	○
6		○	○	○
7		○	○	○
8		○	○	○
9		○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13		○	○	○
14		○	○	○
15		○	○	○

DRILLING LOG FOR P-2

Project Name N.a. Transformer

Site Location Chattanooga

Date Started/Finished 8-5-99 / 8-5-99

Drilling Company STB

Driller's Name Dale & Matt

Geologist's Name Bob meyers / KdM

Geologist's Signature KdeMarco

Rig Type (s) CME-45C

Drilling Method (s) HSA & SS

Bit Size (s) 8" Auger Size (s) 4 1/4" ID

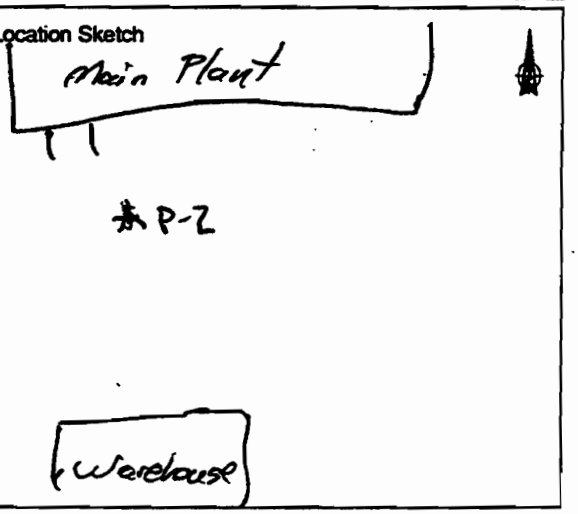
Auger/Split Spoon Refusal

Total Depth of Borehole Is 2.7'

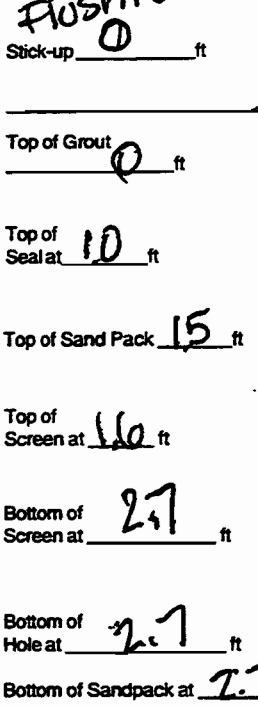
Total Depth of Corehole Is

Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch



Depth(Feet)	Sample Number	Blows on Sampler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	MNU/OVA (ppm)	Comments
1	SS#1 0.5-2.5'	12 5		0938		0.85			1.2	
2		5 5								Auger to 2.7'
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										



SCREENED WELL

Flushmount
Stick-up 0 ft

Top of Grout 0 ft

Top of Seal at 1.0 ft

Top of Sand Pack 1.5 ft

Top of Screen at 1.6 ft

Bottom of Screen at 2.7 ft

Bottom of Hole at 2.7 ft

Bottom of Sandpack at 2.7

Lock Number _____

Inner Casing Material st. st.

Inner Casing Inside Diameter ____ inches

GROUND SURFACE

Quantity of Material Used:
Bentonite Pellets _____

Cement _____

Borehole 6.0 inches Diameter

Cement/ Bentonite _____

Grout _____

Screen Slot Size 0.90"

Screen Type _____
☐ PVC _____
☐ Stainless Steel ____

Pack Type/Size:
☒ Sand #1.0
☐ Gravel _____
☐ Natural _____

OPEN-HOLE WELL

Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	SS#1 crushed stone backfill	✓	○	○
2	Bot. @ 2.7'	○	○	○
3		○	○	○
4		○	○	○
5		○	○	○
6		○	○	○
7		○	○	○
8		○	○	○
9		○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13		○	○	○
14		○	○	○
15		○	○	○

DRILLING LOG FOR P-3

Project Name Nia Transformer

Site Location Cheektowaga NY

Date Started/Finished 8-3-99 / 8-3-99

Drilling Company SJB

Driller's Name Dale + Mat

Geologist's Name Bob Meyers / Kamara

Geologist's Signature KDamaro

Rig Type (s) CME + SS

Drilling Method (s) HSA + SS

Bit Size (s) _____ Auger Size (s) 4¼" ID

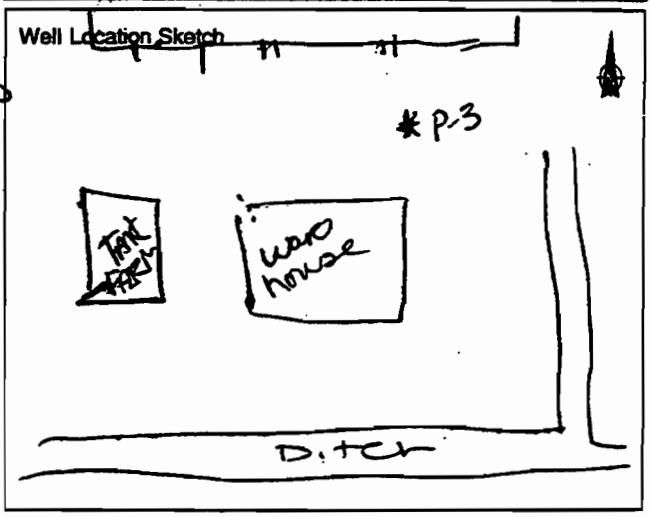
Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 4.6'

Total Depth of Corehole Is _____

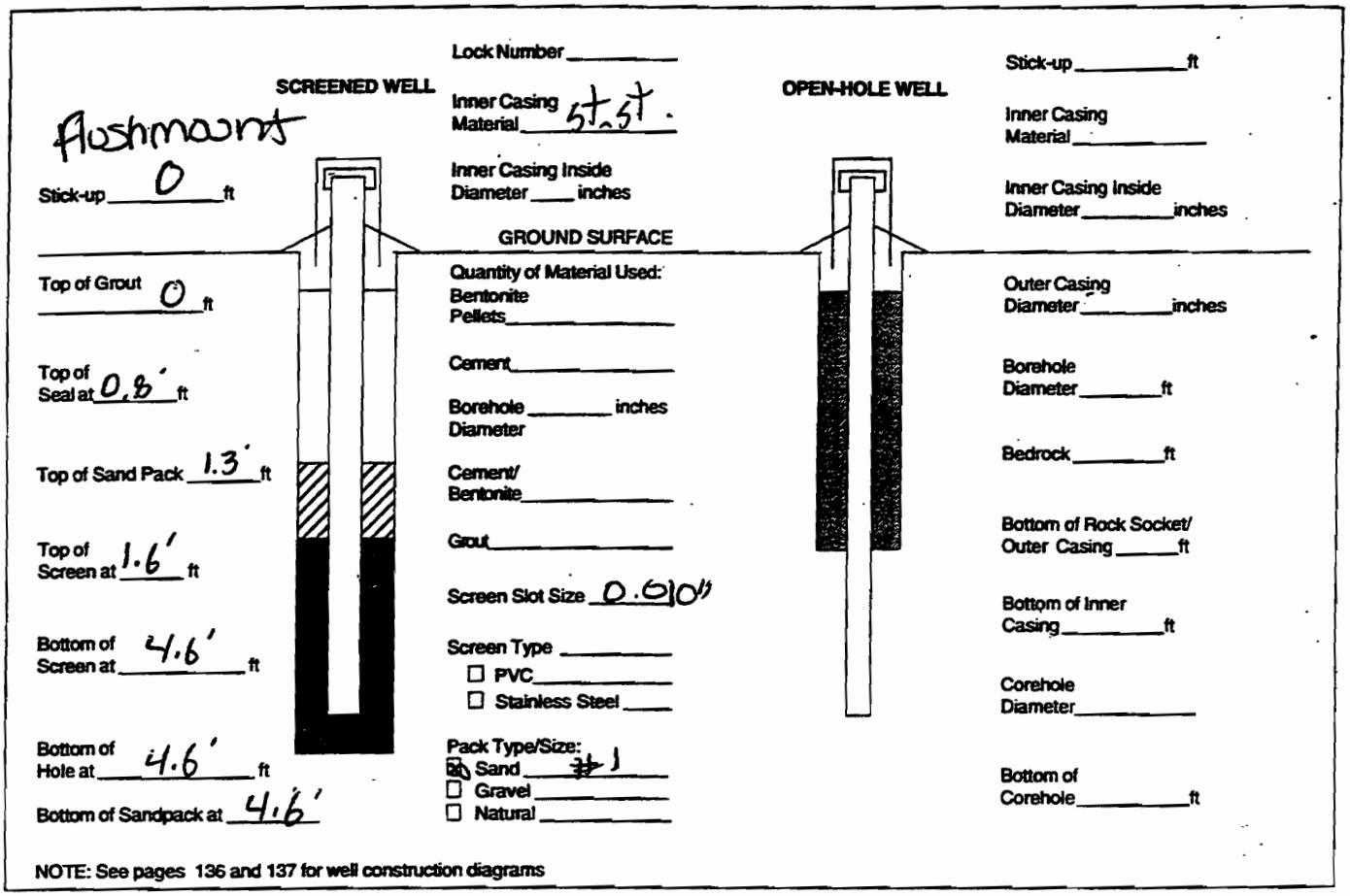
Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch



Depth(Feet)	Sample Number	Blows on Sampler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNU/OVA (ppm)	Comments
1		8/12 10		1305					0	0-0.8' Augered S#1 0.8'-2'
2		20 5								
3		4 5								
4		6								
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										

VOID
move 2' & redrill, missed the pipe gravel Area



NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	SS#1 0-0.8' Asphalt crushed stone & stone dust, parking lot subbase	⊗	○	○
2		○	○	○
3		○	○	○
4		○	○	○
5		○	○	○
6	1st Attempt VOID see next Page for second try	○	○	○
7		○	○	○
8		○	○	○
9		○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13				
14		○	○	○
15		○	○	○

Depth (feet)	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
	SS#1, 0.8' to 2'			
0	0'-0.8' Asphalt, 0.8' to 2' crushed Stone Subbase	⊘	○	○
1		○	○	○
2	SS#2 2'-2.8' Stone Subbase	⊘	○	○
3	2.8-4.0' #1 crushed Stone	○	○	○
4	Auger to 4.6'	○	○	○
5	B.O.H @ 4.6'	○	○	○
21		○	○	○
22		○	○	○
23		○	○	○
24		○	○	○
25		○	○	○
26		○	○	○
27		○	○	○
28		○	○	○
29		○	○	○
30		○	○	○
31		○	○	○
32		○	○	○
33		○	○	○
34		○	○	○
35		○	○	○
36		○	○	○
37		○	○	○
38		○	○	○
39		○	○	○
40		○	○	○
41		○	○	○
42		○	○	○
43		○	○	○
44		○	○	○
45		○	○	○

Depth(feet)	Sample Number	Blows on Sampler	Soil Components CL SL S GR	Rock Profile	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	Hnu/OVA (ppm)	Comments
0											
1		19 / 11 / 10			15"		1.0'			0	0.8' Asphalt Augered
2											
3		14 / 14 / 9 / 10		1	15"		1.8'			0	
4.6' 4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
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41											
42											
43											
44											
45											

DRILLING LOG FOR P-4

Project Name Nia. Transformer

Site Location Cheektowaga
New York

Date Started/Finished 8-5-99 | 8-5-99

Drilling Company SJB

Driller's Name Dale & Matt

Geologist's Name L. Meyers. K. Hickman

Geologist's Signature K Hickman

Rig Type (s) CME-45C

Drilling Method (s) HSA & SS

Bit Size (s) _____ Auger Size (s) 4 1/4" ID

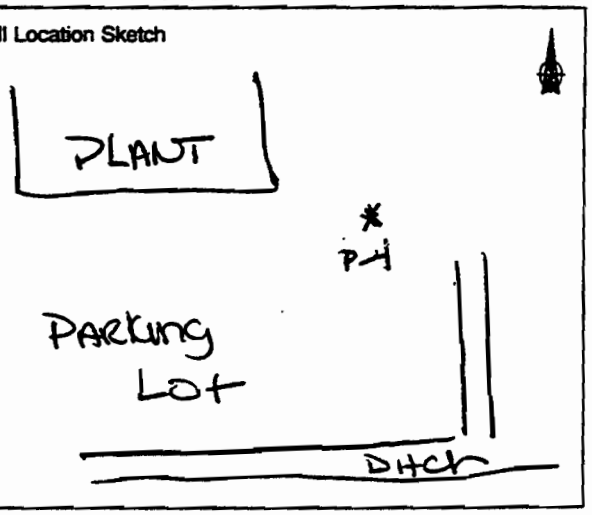
Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 3.7'

Total Depth of Corehole Is _____

Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch



Depth(Feet)	Sample Number	Blows on Sampler		Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
1	SS#1 0.5'-2.5'	NA	9		0941		~~0.9'~~ 1.15'			0	0.0'-0.5'
2		12	6								
3	SS#2, 2.5'-3.5'	3	6		0943		0.7'			0	
4		4									
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

SCREENED WELL

Lock Number 3232 Rev 8599

Inner Casing Material st. steel

Inner Casing Inside Diameter ____ inches

Plush mount

Stick-up 0 ft

GROUND SURFACE

Top of Grout 0 ft

Top of Seal at 1.0 ft

Top of Sand Pack 1.5 ft

Top of Screen at 1.7 ft

Bottom of Screen at 3.7 ft

Bottom of Hole at 3.7 ft

Bottom of Sandpack at 3.7

Quantity of Material Used:

Bentonite Pellets _____

Cement _____

Borehole _____ inches Diameter

Cement/ Bentonite _____

Grout _____

Screen Slot Size 0.010"

Screen Type _____

☐ PVC _____

☒ Stainless Steel ____

Pack Type/Size:

☑ Sand #1

☐ Gravel _____

☐ Natural _____

OPEN-HOLE WELL

Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	0-0.5' asphalt	⊗	○	○
2	SS#1 (0.5'-2.5') 0.5' to 1.3' crushed stone, bkfill, 1.3' to 2.5'	○	⊗	○
3	brown clay w/ little blk staining, trace gravel	○	○	○
4	SS#2 brown clay w/ few blk staining & trace gravel	○	⊗	○
5		○	○	○
6	B.O.H @ 3.7'	○	○	○
7		○	○	○
8		○	○	○
9		○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13		○	○	○
14		○	○	○
15		○	○	○

DRILLING LOG FOR P-5

Project Name Niagara Transformer

Site Location Cheektowaga N.Y.

Date Started/Finished

Drilling Company SSB

Driller's Name Dale Mathis

Geologist's Name Robert Meyers

Geologist's Signature Robert A Meyers

Rig Type (s) CME 45C

Drilling Method (s) HSA

Bit Size (s) _____ Auger Size (s) 4¼" ID

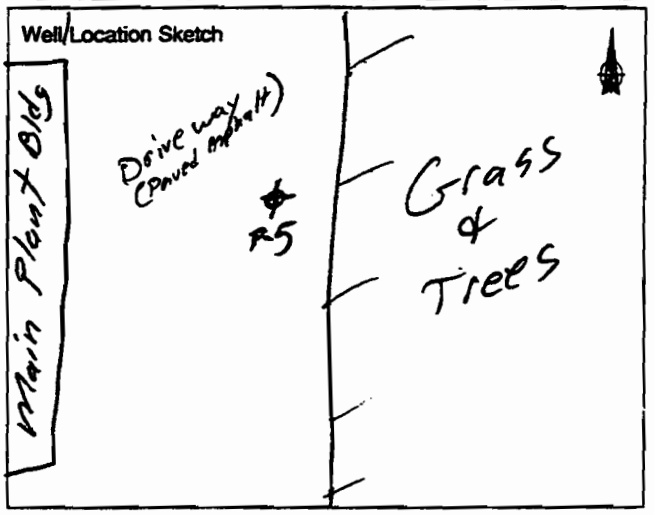
Auger/Split Spoon Refusal

Total Depth of Borehole Is

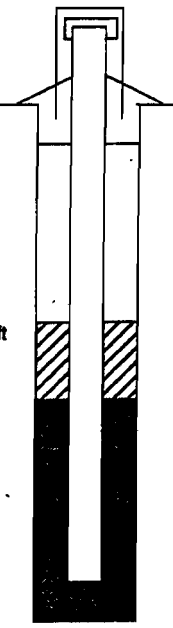
Total Depth of Corehole Is

Water Level (TOIC)		
Date	Time	Level(Feet)

Well/Location Sketch



Depth(Feet)	Sample Number	Blows on Sampler		Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNd/OVA (ppm)	Comments
1	SS #1	NA	12/12				0.7'			0 ppm	
2		10	5								
3	SS #2	9	7				1.5'			0 ppm	
4		5	7								
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											



SCREENED WELL

Stick-up 0 ft

Top of Grout 0 ft

Top of Seal at 0.8' ft

Top of Sand Pack 1.3' ft

Top of Screen at 1.6' ft

Bottom of Screen at 4.6' ft

Bottom of Hole at 4.6' ft

Bottom of Sandpack at 4.6'

Lock Number _____

Inner Casing Material st. steel

Inner Casing Inside Diameter 2 inches

GROUND SURFACE

Quantity of Material Used:
Bentonite Pellets _____

Cement _____

Borehole 8 inches Diameter

Cement/ Bentonite _____

Grout _____

Screen Slot Size .010"

Screen Type _____
☐ PVC _____
☒ Stainless Steel

Pack Type/Size: #1
☒ Sand _____
☐ Gravel _____
☐ Natural _____

OPEN-HOLE WELL

Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
Auger	0'-0.8' Asphalt + Crushed stone Sub-base	⊗	○	○
1 SS#1	0.8' to 1.0' Tan Silt, uniform, Non-Cohesive	○	⊗	○
2	1.0 to 1.5' Brown Silty Clay w/ fr. gravel	○	⊗	○
3 SS#2	2' to 4', Uniform Tan, Clayey Silt, Moderately Cohesive	○	⊗	○
4	Auger to B.O.H = 4.6' BGS	○	○	○
5		○	○	○
6		○	○	○
7		○	○	○
8		○	○	○
9		○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13		○	○	○
14		○	○	○
15		○	○	○

DRILLING LOG FOR P-6

Project Name Va Transformer

Site Location Cheekowaga

NY

Date Started/Finished 8-5-95 / 8-5-95

Drilling Company SJB

Driller's Name Dale Smart

Geologist's Name Bob Meyers / K Demaree

Geologist's Signature K Demaree

Rig Type (s) CME - 45C

Drilling Method (s) HSA @ 2' SS

Bit Size (s) _____ Auger Size (s) 4 1/4" ID

Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 8.5'

Total Depth of Corehole Is _____

Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch

See P-8 diagram

Depth(Feet)	Sample Number	Blows on Sampler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	~~Hnu~~/OVA (ppm)	Comments
1		8 10		0830		1.6'			0	
2		14 16								
3		9 14		0835		1.0'			0	
4		17 16								
5		5 4		0843		1.9'			0	
6		4 7								
7		9 10		0851		2.0'			0	
8		14 15								Auger to 8.5'
8.5' 9										
10										
11										
12										
13										
14										
15										

Lock Number 3232

SCREENED WELL

Stick-up 3.1 ft

Top of Grout 0 ft

Top of Seal at 1.5 ft

Top of Sand Pack 2.5 ft

Top of Screen at 3.5 ft

Bottom of Screen at 8.5 ft

Bottom of Hole at 8.5 ft

Bottom of Sandpack at 8.5

Inner Casing Material _____

Inner Casing Inside Diameter ____ inches

GROUND SURFACE

Quantity of Material Used:
Bentonite Pellets _____
Cement _____
Borehole _____ inches Diameter
Cement/ Bentonite _____
Grout _____

Screen Slot Size 0.010"

Screen Type
☒ PVC Sch 40
☐ Stainless Steel ____

Pack Type/Size:
☐ Sand #1
☐ Gravel _____
☐ Natural _____

OPEN-HOLE WELL

Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	SS#1 Brown sand, Brown sandy clay w/ few Angular gravel, trace brick frag, trace Asphalt f.	○	⊘	○
2		○	○	○
3	SS#2 Brown SAND w/ few angular gravel trace asphalt & little brown silt	○	⊘	○
4		○	○	○
5	SS#3 4-4.3 brown silty clay 4.3-4.85 Clay as above stained blk 4.85- brown clay no stain	○	⊘	○
6		○	○	○
7	SS#4 brown clay silt, iron staining, trace angular gravel	○	⊘	○
8		○	○	○
9	~~SS#5~~ KAM 8-5-99 B.O.H. @ 8.5'	○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13		○	○	○
14		○	○	○
15		○	○	○

DRILLING LOG FOR P-7

Project Name Va. Transformer

Site Location Cheektowaga N.Y

Date Started/Finished 8-3-95 / 8-3-95

Drilling Company SJB

Driller's Name Dale & Mat

Geologist's Name Bob Meyers / KDM

Geologist's Signature KDMeyers

Rig Type (s) CME-45C

Drilling Method (s) HSA & 2'SS

Bit Size (s) _____ Auger Size (s) 4 1/4" ID

Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 7.5'

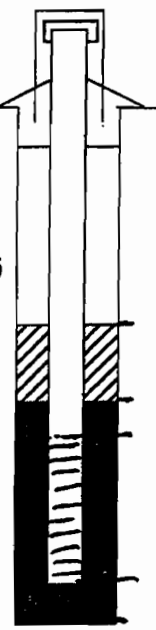
Total Depth of Corehole Is _____

Water Level (TOIC)		
Date	Time	Level (Feet)

Well Location Sketch

See P-8 Diagram

Depth (Feet)	Sample Number	Blows on Sampler		Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	~~HNU~~/OVA (ppm)	Comments
1		5	14		1343		1.7'			0	
		15	11								
2											
3		12	18		1347		1.0'			0	
		7	10								
4											
5		5	4		1350		1.9'			0	
		5	6								
6											
7		8	12		1354		1.4'			6	
7.5'		15									
8											
9											
10											
11											
12											
13											
14											
15											



Lock Number 3232

SCREENED WELL

Stick-up 3.1 ft

Inner Casing Material _____

Inner Casing Inside Diameter ____ inches

GROUND SURFACE

Top of Grout 0 ft

Top of Seal at 1.5 ft

Top of Sand Pack 3.5 ft

Top of Screen at 3.5 ft

Bottom of Screen at 7.5' ft

Bottom of Hole at 7.5' ft

Bottom of Sandpack at 7.5'

Quantity of Material Used:
Bentonite Pellets _____
Cement _____
Borehole _____ inches Diameter
Cement/ Bentonite _____
Grout _____

Screen Slot Size 0.010"

Screen Type _____
☑ PVC Sch 40
☐ Stainless Steel ____

Pack Type/Size:
☒ Sand #1
☐ Gravel _____
☐ Natural _____

OPEN-HOLE WELL

Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	SS#1 Brown VFSand w/little gravel some silt	●	○	○
2	(All) Fill material) trace asphalt	○	○	○
3	SS#2 Brown VFSand trace gravel & glass frags	⊗	⊗	○
4	(All fill material)	○	○	○
5	SS#3 4-6' Brown clay trace sand, rounded	○	⊗	○
6	gravel blk. modeling moderately plastic	○	○	○
7	SS#4 6'-7.5' Brown clay little fine sand	○	⊗	○
8	gravel plastic	○	○	○
9	B.O.H. @ 7.5'	○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13				
14		○	○	○
15		○	○	○

DRILLING LOG FOR P-8

Project Name Nia Transformer

Site Location Cheektowaga NY

Date Started/Finished 8-3-99 | 8-3-99

Drilling Company SJB

Driller's Name Dale & Mat

Geologist's Name Bob Meyers | KAM

Geologist's Signature KAMeyers

Drill Rig Type (s) ~~Drill rig~~ HSA & 2"SS

Drilling Method (s) ~~8/3/99 Rig type~~ CME-45C

Bit Size (s) _____ Auger Size (s) 4 1/4"

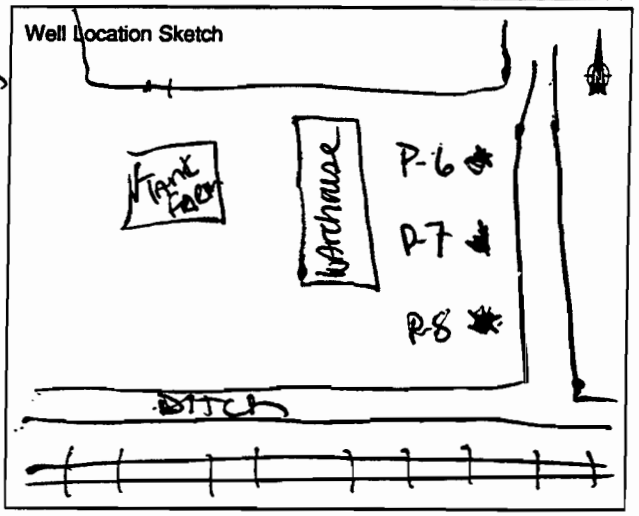
Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 6.5'

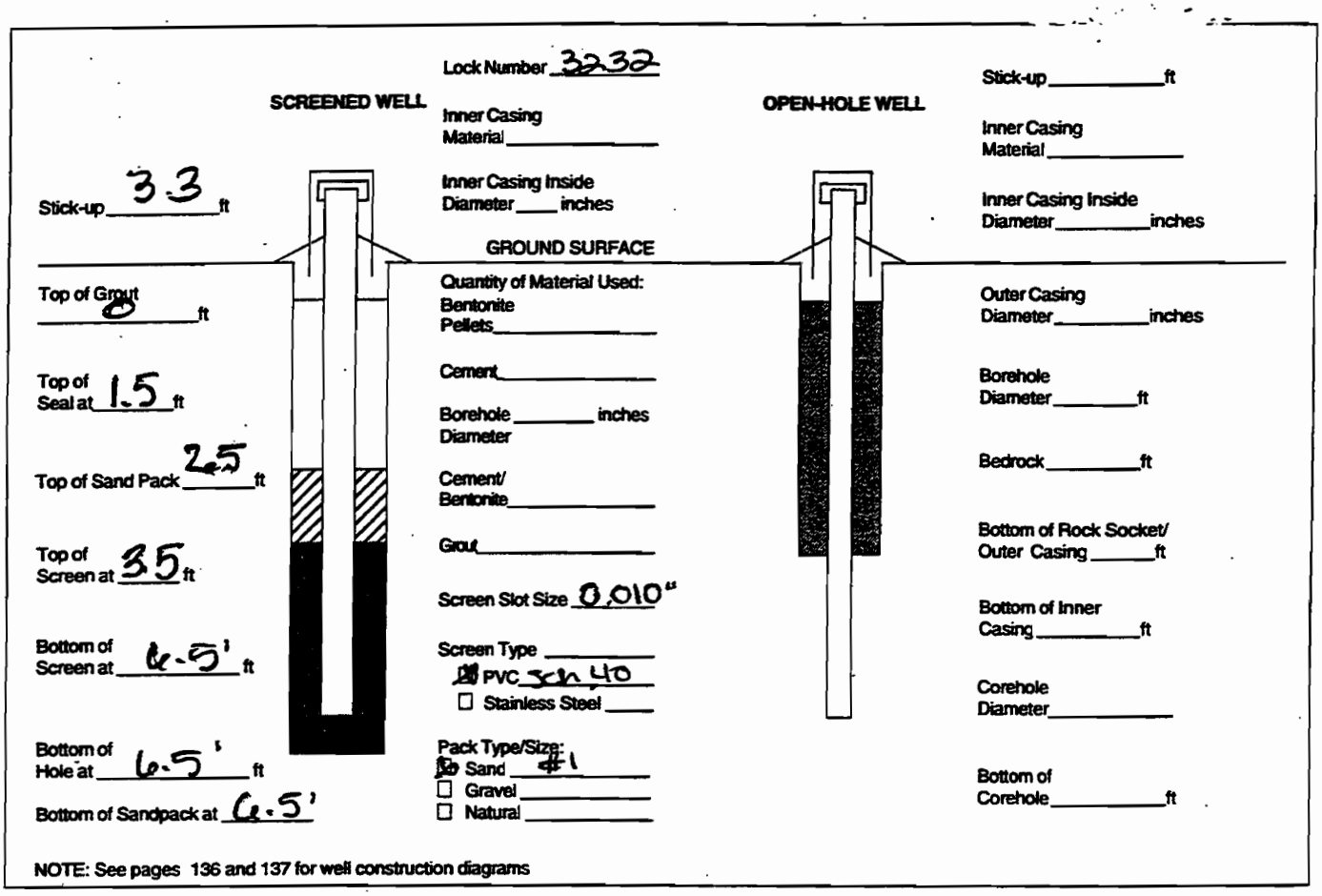
Total Depth of Corehole Is _____

Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch



Depth(Feet)	Sample Number	Blows on Sampler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	~~HNU~~/OVA (ppm)	Comments
1		7 11		1246		1.6'			0	
2		14 14								
3		15 14		1249		1.6'			1.0	
4		12 12								
5		5 5		1255		0.5'			2.4	
6		6 7								
6.5' 7		9		1257		0.5'			1.0	
8										
9										
10										
11										
12										
13										
14										
15										



NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	SS#1 0-2' Brown Silt trace glass frags, asphalt, angular rocks & little very fine sand	⊗	○	○
2	SS#2 2-4' Brown sand w/some fill (clay & slag)	○	⊗	○
3	SS#3 4'-6' Brown Clay w/ little silt & VF sand trace gravel	○	⊗	○
4	SS#4 Brown & Red Modeled Clay Trace VF Sand	○	⊗	○
5	SS#5 0 Rems339 Bm plastic	○	○	○
6	B.O.H @ 6.5'	○	○	○
7		○	○	○
8		○	○	○
9		○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13		○	○	○
14		○	○	○
15		○	○	○

DRILLING LOG FOR P-9

Project Name N.I.A. Transformer

Site Location Chee [illegible]
N.Y

Date Started/Finished 8/3/89 / 8/3/89

Drilling Company SJB

Driller's Name Dan Smat

Geologist's Name Bob Meyers / Tom

Geologist's Signature [signature]

Rig Type (s) CME-45C

Drilling Method (s) HSA ? 2" SS

Bit Size (s) _____ Auger Size (s) 4 1/4" ID

Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 5.5'

Total Depth of Corehole Is _____

Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch

See P-10

Depth(Feet)	Sample Number	Blows on Sampler		Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
1		2	12		1100		1.8'			0	
2		8	10								
3		7	5		1120		1.25'			0	
4		8	6								
5		5	3		1127		1.21			0	
6		4									
7											
8											
9											
10											
11											
12											
13											
14											
15											

Lock Number 3232

SCREENED WELL

Stick-up 2.9 ft

Top of Grout 0 ft

Top of Seal at 1 ft

Top of Sand Pack 2 ft

Top of Screen at 2.5 ft

Bottom of Screen at 5.5' ft

Bottom of Hole at 5.5' ft

Bottom of Sandpack at 5.5'

Inner Casing Material _____

Inner Casing Inside Diameter ____ inches

GROUND SURFACE

Quantity of Material Used:
Bentonite Pellets _____
Cement _____
Borehole _____ inches Diameter
Cement/ Bentonite _____
Grout _____

Screen Slot Size 0.010

Screen Type _____
☒ PVC Sch. 40
☐ Stainless Steel ____

Pack Type/Size:
☒ Sand #1
☐ Gravel _____
☐ Natural _____

OPEN-HOLE WELL

Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	SS#1 0-2' brown clay (Fill) Few gravel & silt	✓	○	○
2	1.2'-1.4' blk stain w/asphalt	○	○	○
3	SS#2 2'-4', very fine brown sand w/	○	✓	○
4	trace gravel 2-3.5' - 2.7' blk stain	○	○	○
5	asphalt	○	○	○
6	SS#3 4'-5.5' brown clay trace subrounded gravel	○	✓	○
7	Slightly plastic	○	○	○
8	B.O.H @ 5.5'	○	○	○
9		○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13		○	○	○
14		○	○	○
15		○	○	○

DRILLING LOG FOR P-10

Project Name U.G. Transformer

Site Location Checkerboard

LXL

Date Started/Finished 8/3/99 / 8/3/99

Drilling Company STB

Driller's Name Dale

Geologist's Name Bob Meyers / Karr

Geologist's Signature K. DeMaio

Rig Type (s) CME-45C

Drilling Method (s) HSA & 2" SS

Bit Size (s) _____ Auger Size (s) 4 1/4" ID

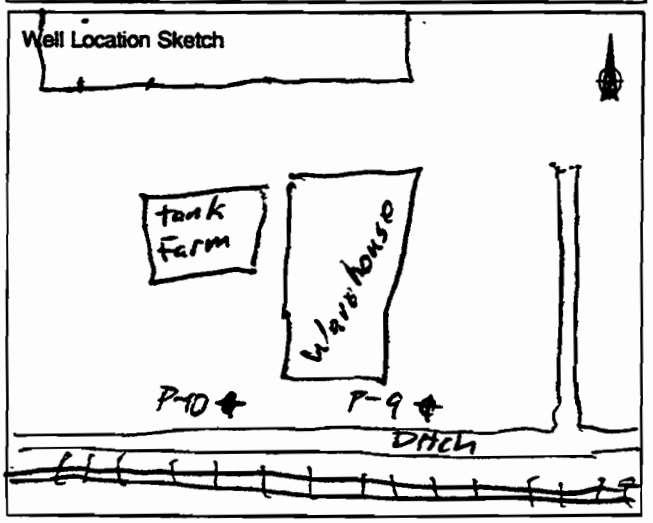
Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 5.5'

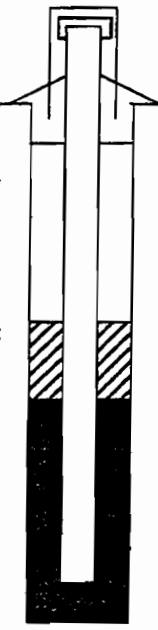
Total Depth of Corehole Is _____

Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch



Depth(Feet)	Sample Number	Blows on Sampler		Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
1	SS #1	4	10		1030		1.5'			0ppm	
2		9	9								
3	SS #2	10	7				1.4'			0ppm	
4		5	5		1041						
5	SS #3	4	3				1.2'			4ppm	
6		5			1050						
7											
8											
9											
10											
11											
12											
13											
14											
15											



SCREENED WELL

Lock Number 3232

Stick-up ≈ 2.8' ft

Inner Casing Material PVC

Inner Casing Inside Diameter 2 inches

GROUND SURFACE

Top of Grout 0 ft

Top of Seal at 1 ft

Top of Sand Pack 2' ft

Top of Screen at 2.5' ft

Bottom of Screen at 5.5' ft

Bottom of Hole at 5.5' ft

Bottom of Sandpack at 5.5'

Quantity of Material Used:
Bentonite Pellets

Cement

Borehole 8 inches Diameter

Cement/ Bentonite

Grout

Screen Slot Size .010"

Screen Type
☒ PVC Sch. 40
☐ Stainless Steel

Pack Type/Size: #1
☒ Sand
☐ Gravel
☐ Natural

OPEN-HOLE WELL

Stick-up ft

Inner Casing Material

Inner Casing Inside Diameter inches

Outer Casing Diameter inches

Borehole Diameter ft

Bedrock ft

Bottom of Rock Socket/ Outer Casing ft

Bottom of Inner Casing ft

Corehole Diameter

Bottom of Corehole ft

NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	SS#1, 0' to 2.0', Med. Brown Clay (Fill) with little	☒	○	○
2	Silt & VF Sand, Trace Angular Gravel, Brick Frag.	☒	○	○
3	SS#2, 2' to 4', Fine brown Sand w/trace Sub angular	☒	☒	○
4	Gravel	○	☒	○
5	SS#3 (1.5 total) 4' to 4.5' Sand as above,	○	☒	○
6	4.5' to 5.5', brown moderately Plastic Clay with	○	☒	○
7	trace Gravel.	○	○	○
8	B.O.H @ 5.5'	○	○	○
9		○	○	○
10		○	○	○
11		○	○	○
12		○	○	○
13				
14		○	○	○
15		○	○	○

DRILLING LOG FOR ~~S-6-9~~ P-11

Project Name Nia. transformer

Site Location Cheektowaga N.Y.

Date Started/Finished 8-5-99 to 8-6-99

Drilling Company E+E

Driller's Name Kathleen DeMarco/Bob Meyers

Geologist's Name Bob Meyers

Geologist's Signature Robert A Meyers

Rig Type (s) Hand dug

Drilling Method (s) Shovel (0'-2') Post hole digger and hand Auger to 5'

Bit Size (s) _____ Auger Size (s) NA

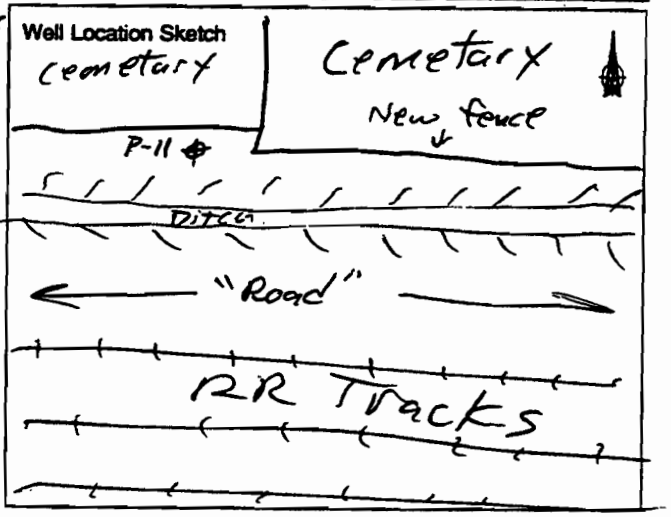
Auger/Split Spoon Refusal _____

Total Depth of Borehole Is 5' BGS

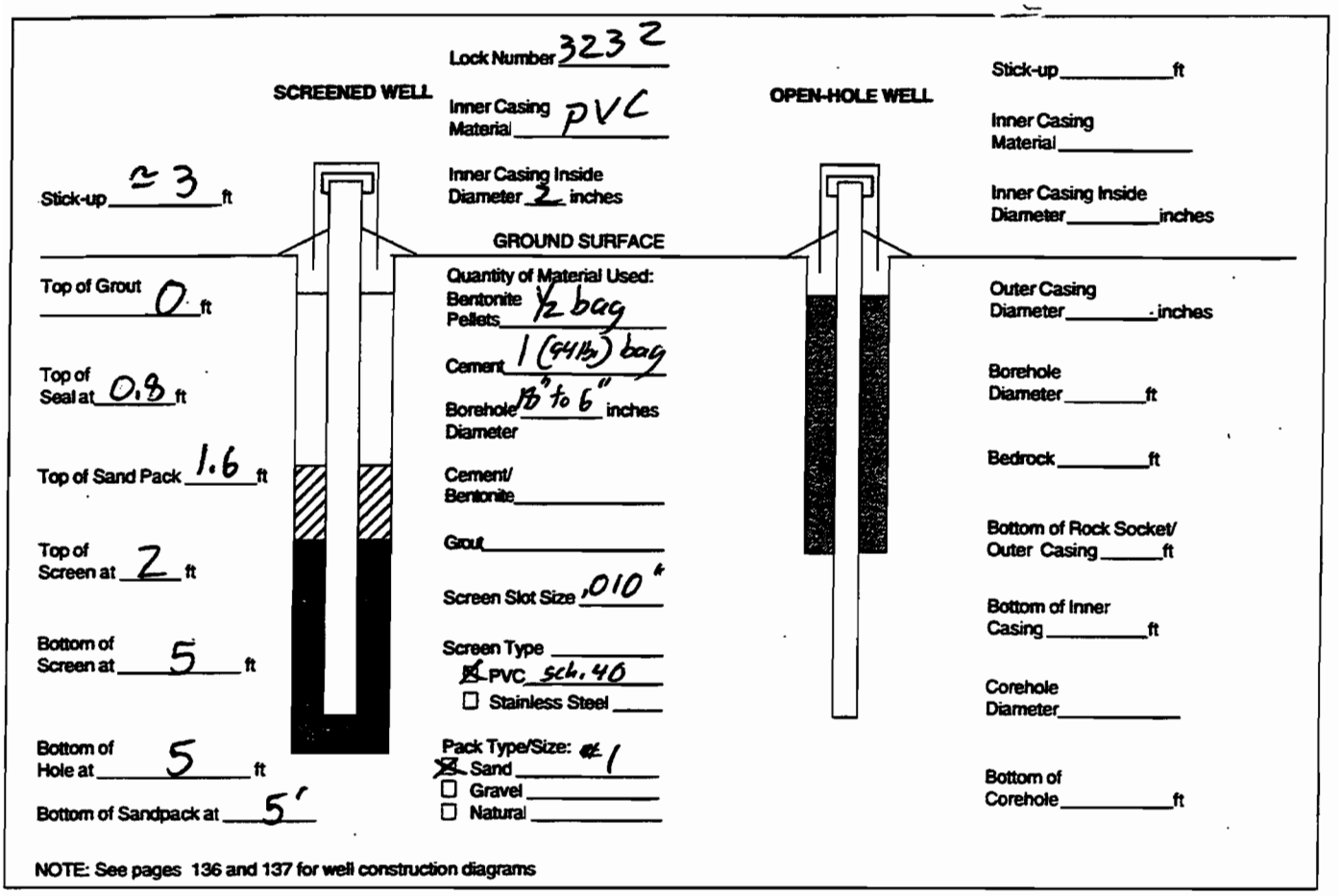
Total Depth of Corehole Is _____

Water Level (TOIC)		
Date	Time	Level (Feet)

Well Location Sketch



Depth (Feet)	Sample Number	Blows on Sampler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
1	NA				NA	NA			0ppm	hole diameter = 1.5' at top grading to ≈ 6" at bottom
2									↓	
3										Water filled the hole to a depth of 1.2' BGS
4										
5										
6										
7										Water encountered @ ≈ 2.5' BGS, beneath plastic sheeting
8										
9										
10										
11										
12										
13										
14										
15										



NOTE: See pages 136 and 137 for well construction diagrams

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1	0' to 2', shoveled hole	○	⊗	○
2	0' to 0.5' large crushed stone	○	⊗	○
3	0.5' to 2' Clay Fill	○	○	⊗
4	2' to 5' Hand Augered a 4" hole, then enlarged hole	○	○	⊗
5	with Post hole digger.	○	○	⊗
6	2' to 2.5 Fine crush stone w/clay.	○	○	○
7	@ 2.5' encountered Black plastic sheeting and	○	○	○
8	white Fibrous Fabric.	○	○	○
9	2.5' to 5' Clay with some gravel.	○	○	○
10	B.O.H @ 5.0' BGS	○	○	○
11	~~☆~~ Note: P-11 installed 3.9' beneath invert	○	○	○
12	of adjacent Drainage ditch.	○	○	○
13		○	○	○
14		○	○	○
15		○	○	○

18/9/99

Weather Windy, Cloudy. 70°F.

1330 W. Kawar arrived on site. Started Water level measurements @ MW-P-5

P-5 DTW 1.6'
DTB 4.25'

P-2 DTW 1.6'

P-3 No water

P-4 DTW 2.1'

1430 Visually inspected EWTS. Pre-Filter OK. No Algae accumulation in tank

1440 Walked around site. No water observed in E/W Ditch.

MW-IN and MW-out have locks on well caps, so I was not able to take water level measurement

1445 Left site

with K.

15/9/99

Weather. Sunny, 45°F.

855 AM Greg Jones & W. Kawar arrived on site.

Took Reading on MW-OUT
DTW ~~2.78'~~ 2.78'
DTB 7.43'

~~Installed @ Depth of 7.43 WK.~~
(Datum @ sensor)

945 Completed MW-out installation.

940 MW-IN
DTW 5.71'
DTB 10.77'

1015 Completed MW-IN Installation.

1030 Re-configured MW-OUT Installation b/c data was not properly being captured.

1050 Completed MW-out Installation

Greg took water level Measurements during Logger head Installation

P-1 TD = 4.21'
DTW = 3.64'

950 P-2 TD = 2.23'
DTW = 1.61'

957 P-3 TD = 4.12'
DRY

10:03 P-4 TD = 3.57'
DTW = 1.87'
10:07 P-5 TD = 4.20'
DTW = 1.50'
10:17 P-6 TD = 11.13'
DTW = 9.18'
10:21 P-7 TD = 10.34'
DTW = 8.23'
10:26 P-8 TD = 8.98'
~~DTW~~ = DRY
10:28 P-9 TD = 8.06'
DTW = 7.64'
10:34 P-10 TD = 7.74'
DTW = 5.03'
10:38 P-11 TD = 7.97'
DTW = 3.75'
10:50 Inspected EWTS & replaced pre-filter. Also dropped one Chlorine tablet.
11:00 Left Site

WIK

10 WK
9/19/19

Weather Cloudy 50°
13:35 Arrived site
Started Re-configuration of MW-IN.
No new water readings were taken
Used readings from morning.
Calculated Installation depth from data logger is 10.77' (Same as total depth of well where logger was placed)
Initiate reading at 14:30, and sampling at 15 minutes frequency
14:00 Completed MW-IN Re-Configuration.
14:10 Started Reconfiguration of MW-OUT
No new water readings were taken. DTW used was from morning reading
Calculated Inst. Depth = 7.619'
Initiate reading at 14:30
14:40 Left Site

WIK

10/26/99

Weather - Sunny / Cloudy, Windy 50°C.

12/15 G. Jones & W. Kamar arrived on site

Inspected MW-OUT no water observed inside well.

DTW 2.86'

W.K. Downloaded data from logger head. File name "MW-OUT1"

1435 Could not drill thru side walls of well completed MW-OUT

1440 Inspected MW-IN. No water around well casing DTW - 5.72'

Downloaded Data into file name "MW-IN1" - last Reading @ 14:15 in file.

1450 Completed downloads for MW-IN

Water level Readings

P-1 DTW = 3.56' @ 1425

P-2 DTW = 1.70' @ 1431

P-3 DTW = DRY @ 1445

P-4 DTW = 2.14' @ 1448

P-5 DTW = 2.60' @ 1452

P-6 DTW = 9.20' @ 1455

P-7 DTW = 8.00' @ 1457

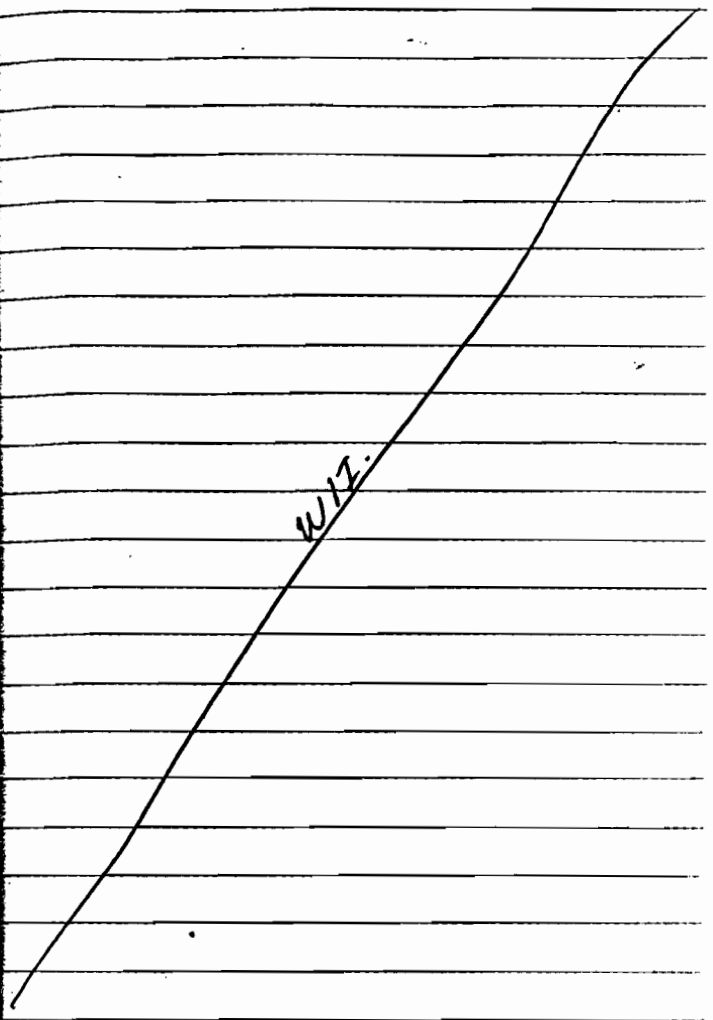
P-8 ~~DTW~~ = DRY @ 1300

P-9 DTW = 6.42' @ 1302

P-10 DTW = 4.64' @ 1305

P-11 DTW = 4.12 @ 1309.

1330 Left Site



11/2/99

Weather - cloudy, 55°F
1000 C. Jones & W. Kaiser arrived on site. No rain.
1110 Rain started
1200 Start sampling outdoor
MW-OUT DTW 2.82'
1220 MW-IN
DTW 5.44'
P-1 DTW 3.52'
Filled 1L Jar & 1/4 of 1L Jar for congener specific analysis. Not enough water for total PCBs.
Note P-3 was dry
1305 Inspected treatment system. Pump in ditch was not operating
1310 Left Site

W.I.F.

11/3/99

Weather - cloudy. Mix Hail/Snow/Rain.
1400 W. Kaiser arrived on site
1430 Grey arrived on site
Started sampling event P-5
P-5 DTW 1.58'
P-4 DTW 1.88'
P-6 DTW 9.16'
P-7 DTW 8.20'
P-8 DRY
P-9 DTW 5.92'
P-10 DTW 4.58' (TOOR Duplicate)
P-11 DTW 3.40'
1615 P-3 DRY
MW-OUT - Observed Surface water just ~~before~~ inside well. Scooped out water below well casing.
1620 Left Site.

W.I.F.

11/5/99

Weather: Sunny, Windy, 55°F.

1250 D. Aimers & W. Kawar arrived on site. Inspected EWTS tank. Pump out.

~~1350~~ 1320 Downloaded Data from MW-OUT
File name: "MWOUT-2"
Last Reading in file 1345

1330 Downloaded Data from MW-IN
File name: "MW-IN-2"

1345 Left site to purchase new Pump.

1445 Arrived on Site again (D. Aimers & W. Kawar). Installed new Pump. System was running again

1528 Left Site.

WIK

11/18/99

Weather - Cloudy, Breezy, 65°F

1445 Arrived on site. Started water reading measurements.

1450 P-5 DTW 4.6' WK

1455 P-4 DTW ~~2.54'~~ 2.54'

1468 P-3 DRY

1510 P-2 DTW 1.78'

1515 P-1 DTW 3.40'

1525 P-6 DTW 8.94'

1527 P-7 DTW 8.20'

1530 P-8 DRY

1533 P-9 DTW 5.74'

1535 P-10 DTW 4.76'

1540 P-11 DTW 3.90'

1550 Downloaded Data from MW-OUT
DTW ~~2.40'~~ 2.40'
File name "MWOUT3" (1440 Time)

1610 Started Download MW-IN
DTW 5.22'
File name "MWIN-2" (1417 Time).
Note last reading in file @ 1415

1427 W. Kawar left site

WIK.

12/2/99

Weather - Cloudy : 45°F

1410 ~~pm~~ W. Kawar arrived on site - started water level measurements.

1420 P-5 DTW 4.62'

1425 P-4 DTW 2.26'

1437 P-3 DRY

1435 P-2 DTW 1.70' +

1440 P-1 DTW 2.28'

1450 P-6 DTW 8.42'

1452 P-7 DTW 7.50'

1454 P-8 DRY

1456 P-9 DTW 4.96'

1362 P-10 DTW 3.88'

1359 P-11 DTW 3.70'

1331 Left site

WK

1/6/20

Weather: Cloudy, Cold, Windy. 30°F.

9:40 AM W. Kawar & D. Albers arrived on site

10:00 AM Started Walk through at site

11:00 AM W. Kawar started downloading data from MW OUT and pulled logger out. ~~11:15~~ D. Albers

~~11:15 AM W.K Completed~~ started taping house well locations

11:15 AM Wadie Completed MW OUT download.

11:20 AM W. Kawar started download @ MW-IN

11:40 AM Completed MW-IN. We decontaminated logger head and disposed of water in treatment system.

12:20 pM W. Kawar & D. Albers left site

WK

Well Survey Summary
Additional Investigation -Task 13
Niagara Transformer Corporation

9-Feb-00
Weather: Cloudy and windy. Temperature 30 degrees, wind 5-10 mph SW

FIRST SETUP

Station	B.S (+)	H.I.	F.S. (-)	Elevation	Comments
BM				650.70	Concrete Floor-Storage Ware.
T.P.1	6.63	657.33			East side of parking lot setup
Top 1st Bollard across Tank Farm			2.38	654.95	Top (crown) of 1st bollard along east edge of tank farm
MW-9 TOC			7.80	649.53	Top of casing
MW-9 IOC			8.36	648.97	Inside of casing
MW-9 GS			11.12	646.21	Ground surface
MW-8 TOC			6.84	650.49	Top of casing
MW 8 IOC			7.16	650.17	Inside of casing
MW 8 GS			9.98	647.35	Ground surface
MW-7 TOC			4.65	652.68	Top of casing
MW 7 IOC			5.16	652.17	Inside of casing
MW 7 GS			7.86	649.47	Ground surface
MW-6 TOC			3.28	654.05	Top of casing
MW 6 IOC			3.73	653.60	Inside of casing
MW 6 GS			6.42	650.91	Ground surface
P 4 TOC			4.90	652.43	Top of Steel Casting
P-4 IOC w/ cap			5.13	652.20	Inner casing cap frozen.
P-4 IOC w/o cap				*652.09*	Based on well cap length of 0.11 ft
P-5 TOC			5.69	651.64	Top of Steel Casting
P-5 IOC			5.92	651.41	Inside of casing
Ditch Invert			12.01	645.32	Across from MW 6- east side
Culvert Outfall			11.44	645.89	Invert of outfall
P-2 TOC			6.39	650.94	Top of casting
P-2 IOC w/cap			6.61	650.72	Inner casing cap frozen.
P-2 IOC				*650.61*	Based on well cap length of 0.11 ft
MW-OUT TOC			5.86	651.47	Top of casting
MW-OUT IOC			6.31	651.02	Inside of casing
BM (closure shot)			6.64	650.69	Concrete Floor-Storage Ware.
			Loop Closure	**650.69 - 650.70**	**0.01 ft**

SECOND SETUP

Station	B.S (+)	H.I.	F.S. (-)	Elevation	Comments
BM				**650.70**	
T.P. 1	5.81	656.51			**Moved Instrument to West side**
P-1 TOC			5.61	650.90	**Top of Steel casting**
P-1 IOC			5.89	650.62	**Inside of casing**
MW-IN TOC			1.29	655.22	**Top of Steel casting**
MW-IN IOC			2.03	654.48	**Inside of casing**
Steel Plate on Elevated Floor			1.28	655.23	**Steel plate on elevated concrete floor on SW corner of main bldg. near roll-up door**
P-3 TOC			4.95	651.56	**Top of Steel casting**
P-3 IOC			5.35	651.16	**Inside of casing**
MW-10 TOC			8.24	648.27	**Top of casing**
MW-10 IOC			8.82	647.69	**Inside of casing**
MW-10 GS			10.51	646.00	**Ground surface**
MW-11 TOC			11.86	644.65	**Top of casing**
MW-11 IOC			12.34	644.17	**Inside of casing**
MW-11 GS			15.42	641.09	**Ground surface**
Top 1st Bollard across Tank Farm			1.55	654.96	**Top (crown) of 1st bollard along east edge of tank farm**
BM Closure shot			5.81	650.70	**Concrete Floor-Storage Ware.**
			Loop Closure	**650.70 - 650.70**	**0 ft**

General Notes
1) Top of casing for parking lot piezometers is top of casting (triangle)
2) Monitoring wells along the ditches are PVC. Shots taken at north side

Well Survey Summary
Additional Investigation -Task 13
Niagara Transformer Corporation

6-Jun-00
Weather: Cloudy/Clear 65 degrees

FIRST SETUP

Station	B.S (+)	H.I.	F.S. (-)	Elevation	Comments
BM				650.70	Concrete Floor-Storage Ware.
T.P.1	6.52	657.22			East side of parking lot setup
Top 1st Bollard across Tank Farm			2.14	655.08	Top (crown) of 1st bollard along east edge of tank farm
Culvert Outfall			11.30	645.92	Inv. of N/S ditch Outfall
Sump Pump in N/S Ditch			11.86	645.36	Approx. top of pump; water level of .88 ft.
N/S Ditch Inv.			11.66	645.56	37 ft from outfall
Gravel Surface N/S Ditch - Across from MW-6			11.82	645.40	73 ft from outfall;
T.O.W. Across from MW-6 Inv. of N/S Ditch Across from MW-6			12.00 12.90	645.22 *644.32*	73 ft from outfall;across from MW-6; Based on 0.9 ft depth of water
MW-6-GS			6.23	650.99	Ground Surface Elevation
N/S Ditch Across from MW-7			12.51	644.71	Top of water 154 ft from outfall
N/S Ditch Inv. - Across from MW-7			12.93	644.29	154 ft from outfall
T.O.W. - Across from MW-8			12.89	644.33	248.5 ft from outfall
N/S Ditch Inv. - Across from MW-8			13.30	643.92	248.5 ft from outfall
Inv. of Ditch at confluence of N/S & E/W Ditches			13.41	643.81	326.5 ft from outfall
Inv. E/W Ditch Across from MW-9			13.82	643.40	69 ft from confluence
MW-9 GS			10.95	646.27	Ground Surface Elevation
CB-A North Inv. of pipe			9.87	647.35	Towards CB-C
CB-A South Inv.			10.77	646.45	To O.W.S.
CB-A West Inv.			10.57	646.65	From CB-B

				Foam (soap like) was observed @ 1 gpm coming through pipe from CB-B
CB-C North Inv.		8.12	649.10	
CB-C South Inv.		8.46	648.76	Towards CB-A
CB-B North Inv. From Bldg.		9.38	647.84	Foam (soap like) was observed from pipe coming from building
CB-B East Inv. to CB-A		9.78	647.44	
Bollard across from tank		2.14	655.08	*(top of list)
BM-conc. floor storage warehouse		6.52	650.70	

Loop Closure :50.70-650.7 = 0 ft.

SECOND SETUP

Station	B.S (+)	H.I.	F.S. (-)	Elevation	Comments
T.P. 2	6.15	656.85			
Bollard			1.77	655.08	
E/W Ditch Inv. Across from MW-10			13.78	643.07	146 ft from confluence of N/S and E/W ditches
E/W Ditch Inv. across from MW-11			16.48	640.37	328' from confluence
BM-sotorage ware-house conc. Floor			6.16	650.69	

Loop Closure :50.70-650.6 = .01 ft.

B

Summary of Sample Results

Table B-1: PCB Sediment/Soil Sample Results Additional Investigation - Task 13 Niagara Transformer Corporation - August 1999			
Field Sample Number	Laboratory Result mg/Kg (Aroclor)	Reporting Limit[a] mg/Kg (Aroclor)	Remediation Cleanup Goal mg/Kg[b]
SED-1	**39.0 (1260)**	12.1 <28 (1254)	1.0
SED-1-D	**39.6 (1260)**	13.1 <27.3 (1254)	1.0
SED-2	**1.78 (1260)**	0.519 <1.12 (1254)	1.0
SED-3	**13.1 (1260)**	3.39 <9.70 (1254)	1.0
SED-4	**6.42 (1260)**	3.03 <5.0 (1254)	1.0
SED-5	**3.82 (1260)**	2.19 <2.20 (1254)	1.0
SED-6	**14.9 (1260)**	2.24 <8.39 (1254)	1.0
SED-7	**12.7 (1260)**	2.17 <6.68 (1254)	1.0
SED-7-D	**14.5 (1260)**	2.16 <8.00 (1254)	1.0
SED-8a (collected 8/2/1999)[1] SED-8b (collected 8/10/1999)	**8.37 (1260)** **7.07 (1260)**	2.23 <4.67 (1254) 1.410	1.0
SED-9a (collected 8/2/1999)[2] SED-9b (collected 8/10/1999) SED -9b-D (collected 8/10/1999)	**2.86 (1260)** **6.35 (1260)** **9.04 (1260)**	1.2 <1.87 (1254) 1.23 1.29	1.0
SED-10	**0.32 (1260)**	0.208	1.0
SED-11	**1.0 (1260)**	0.517	1.0
SED-12[3] (collected 8/5/1999)	**0.34 (1260)**	0.208	1.0
SED-13[4] (collected 8/5/1999)	**1.60 (1260)**	0.505 <0.819 (1254)	1.0
SED-14[5] (collected 8/5/1999)	**0.479 (1260)**	0.435	1.0
SED-15[6] (collected 8/10/1999)	**2.53 (1260)**	0.511	1.0
SED-16 (collected 8/10/1999)	**4.24 (1260)**	0.506	1.0
SED-17 (collected 8/10/1999)	**14.9 (1260)**	2.24	1.0
SB-1-0.7'-2.7'	**983.0 (1260)**	448 <971 (1254)	1.0
SB-1-2.7'-4.7'	**906.0 (1260)**	222 <345 (1254)	10.0

Table B-1: PCB Sediment/Soil Sample Results Additional Investigation - Task 13 Niagara Transformer Corporation - August 1999			
Field Sample Number	Laboratory Result mg/Kg (Aroclor)	Reporting Limit[a] mg/Kg (Aroclor)	Remediation Cleanup Goal mg/Kg[b]
SB-2-0.7'-2.7'	**489.0 (1260)**	2.17 <10.2 (1254)	1.0 (surface)
SB-2-2.7'-4.7'	**12.8 J (1260)**	21.5 <27.4 (1254)	10.0 (subsurface)
SB-2-2.7'-4.7'D	**35.3 J (1260)**		10.0 (subsurface)
SB-3-0.3'-2.3'	Archived until 2/4/2000	0.507 **<2.31 (1254)**	
SB-3-2.3'-4.3'	**2.36 (1260)**		10.0 (subsurface)
SB-4-0.3'-2.3'	Archived until 2/4/2000	0.454	
SB-4-2.3'-4.3'	**0.473 (1260)**		10.0 (subsurface)

Notes:

[a] Reporting limits for Aroclors 1016, 1232, 1242, 1248 , 1254, and 1260 based on dilution analyzed. Reporting limit for Aroclor 1221 is two times the limit listed in the table. Reporting limits for Aroclor 1254 are elevated in some cases due to interference from Aroclor 1260 documented during the data usability review process.

[b] Source: Technical and Administrative Guidance Memorandum No. 4046, Determination of Soil Cleanup Objectives and Cleanup Levels, NSYDEC, January 24, 1994.

1: SED-8a (Lab ID 9908004-10A) and SED-8b (Lab ID 9908076-01A) were collected from the same location (see site plan for location).
2: SED-9a (Lab ID 9908004-11A), SED-9b (Lab ID 9908076-02A), and SED -9b-D (Lab ID 9908076-03A) were collected from the same location (see site plan for location).
3: Sample collected near west outfall pipe of weir at west end of retention pond (Lab ID 9908037-03A)
4: Sample collected where pipe daylights south of Broadway (Lab ID 9908037-04A).
5: Catch Basin on North side of Broadway immediately downstream of former Conrail culvert (Lab ID 9908037-05A).
6: SED-15 (Lab ID9908076-04A) were collected 100 feet west of SED-9b. SED-16 (Lab ID 9908076-05A) and SED-17 (Lab ID 9908076-06A) were collected 100 feet apart west of SED-15.

Key:
J: Estimated value, analyte detected below the reporting limit or quality control results not within limits
SB: Soil Boring Sample
SED: Soil Sample from N/S and E/W ditches

Table B-2: PCB Surface Water Sample Results Additional Investigation: Task 13 Niagara Transformer Corporation - August 1999			
Field Sample Number	Laboratory Result µg/L (Aroclor)	Reporting Limit[a] µg/L	NYS Standard, Criteria or Guidance Value (SCG)[b] µg/L
SW-1	ND	0.5	0.09 H (WS) 1×10^{-6} H (FC) 1.2×10^{-4} W
SW-2	ND	0.5	
SW-2D	ND	0.5	
SW-3	ND	0.5	
SW-4[c]	**0.184 (1260)**	0.065	
SW-5[c]	**0.194 (1260)**	0.065	
DW-1	ND	0.5	
Rinsate-1[d]	ND	0.5	

Notes:

[a]: Reporting limits for Aroclors 1016, 1232, 1242, 1248 , 1254, and 1260 based on dilution analyzed. Reporting limit for Aroclor 1221 is two times the limit listed in the table.

[b]: Class A surface water standard. Source: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Division of Water Technical and Operational Guidance Series (1.1.1), NYSDEC, June 1998.

[c]: Samples collected on 11/3/1999 and analyzed for the low level PCB method.

[d]: Rinsate from SB-4 decontaminated split spoon (8/4/99)

Key:

DW: Drill Water

H (FC): Human consumption of fish (fresh waters)

H (WS): Source of drinking water

ND: Not detected at the listed reporting limit.

SW: Surface Water Sample

W: Wildlife protection (fresh waters)

Table B-3: PCB Groundwater Sample Results Additional Investigation - Task 13 Niagara Transformer - November 1999			
Field Sample Number	Laboratory Result µg/L (Aroclor)	Reporting Limit[a] µg/L	NYS Standard, Criteria or Guidance Value (SCG)[b] µg/L
GW-1-P5	ND	0.065	0.09 H(WS)
GW-2-P4	**23.6 (1260)**	6.5	0.09 H(WS)
GW-4-MW- IN	**3.25 (1260)**	1.3	0.09 H(WS)
GW-5-MW-OUT	**322 (1260)**	65	0.09 H(WS)
GW-6-P6	**0.289 (1260)**	0.065	0.09 H(WS)
GW-7-P7	**44.5 (1260)**	16.2	0.09 H(WS)
GW-8-P11	**132 (1260)**	65	0.09 H(WS)
GW-9-P9	**0.132 (1260)**	0.065	0.09 H(WS)
GW-10-P10	**0.336 (1260)**	0.065	0.09 H(WS)
GW-10-D-P10	**0.478 (1260)**	0.065	0.09 H(WS)

Notes:

[a:] Reporting limits for Aroclors 1016, 1232, 1242, 1248 , 1254, and 1260 based on dilution analyzed. Reporting limit for Aroclor 1221 is two times the limit listed in the table.

[b:] Groundwater Standard for Human Health (Water Source). Source: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Division of Water Technical and Operational Guidance Series (1.1.1), NYSDEC, June 1998.

Key:
GW: Groundwater Sample
H(WS): Source of drinking water
ND: Not detected at the listed reporting limit.

Table B-4: PCB Roof Water Sample Results Additional Investigation Niagara Transformer Corporation - November 1999			
Field Sample Number	Laboratory Result (µg/L)	Reporting Limit[a] µg/L	NYS Standard, Criteria or Guidance Value (SCG)[b] µg/L
RD-1	ND	0.065	0.09 H (WS) 1×10^{-6} H (FC) 1.2×10^{-4} W
RD-2	**0.567 (1254)** **0.572 (1260)**	0.065	
RD-3	ND	0.065	
RD-4	ND	0.065	
RD-5	ND	0.065	

Notes:

[a:] Reporting limits for Aroclors 1016, 1232, 1242, 1248 , 1254, and 1260 based on dilution analyzed. Reporting limit for Aroclor 1221 is two times the limit listed in the table.

[b:] Source: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Division of Water Technical and Operational Guidance Series (1.1.1), NYSDEC, June 1998.

Key:

H (FC): Human consumption of fish (fresh waters)

H(WS): Source of drinking water

ND: Not detected at the listed reporting limit.

RD: Roof Drain

W: Wildlife protection

C

Congener Specific Results

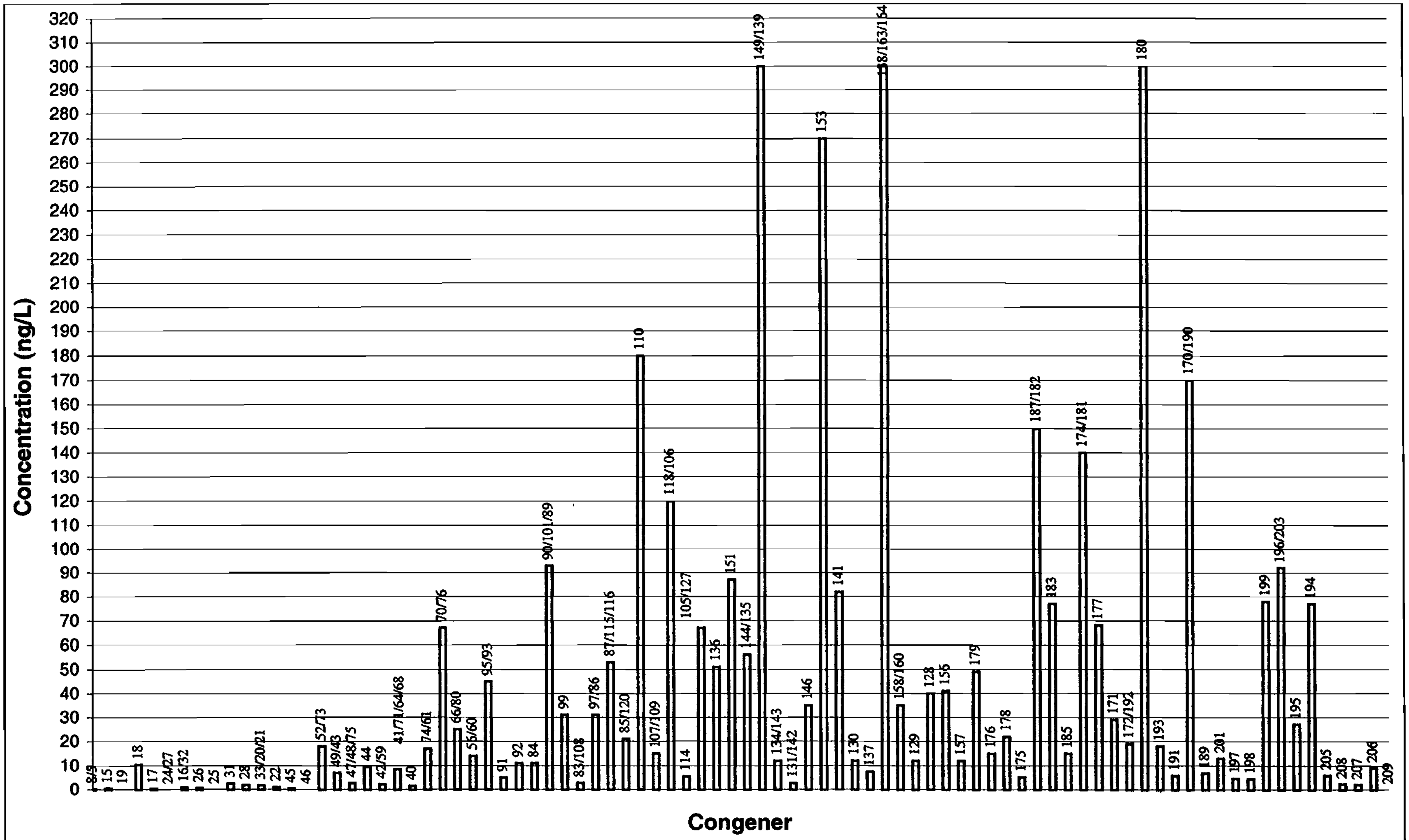


Figure C-1: Histogram of Congener Concentrations Measured in Outfall Sample (CS-OUT)

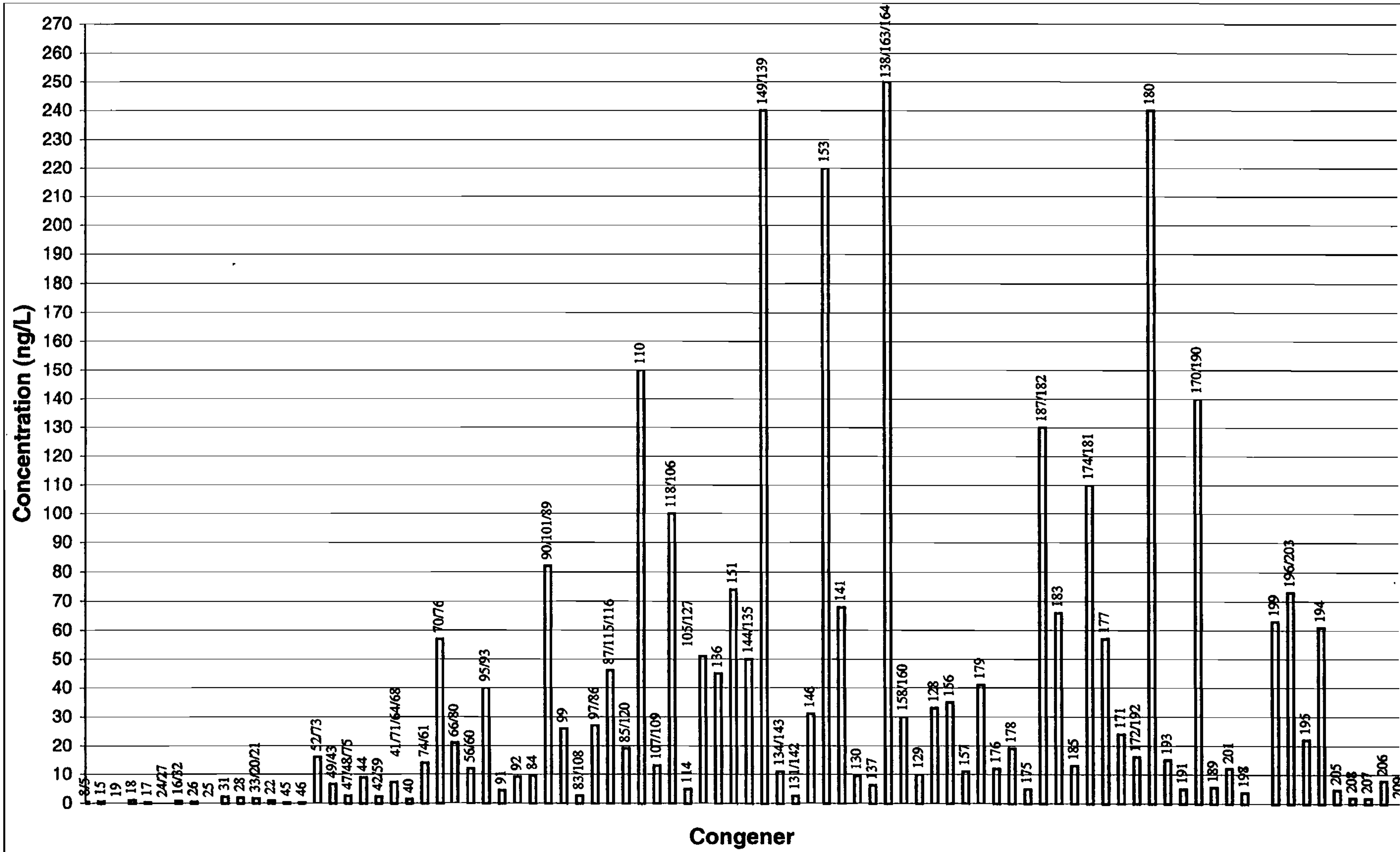


Figure C-2: Histogram of Congener Concentrations Measured in Duplicate Outfall Sample(CS-OUT-D)

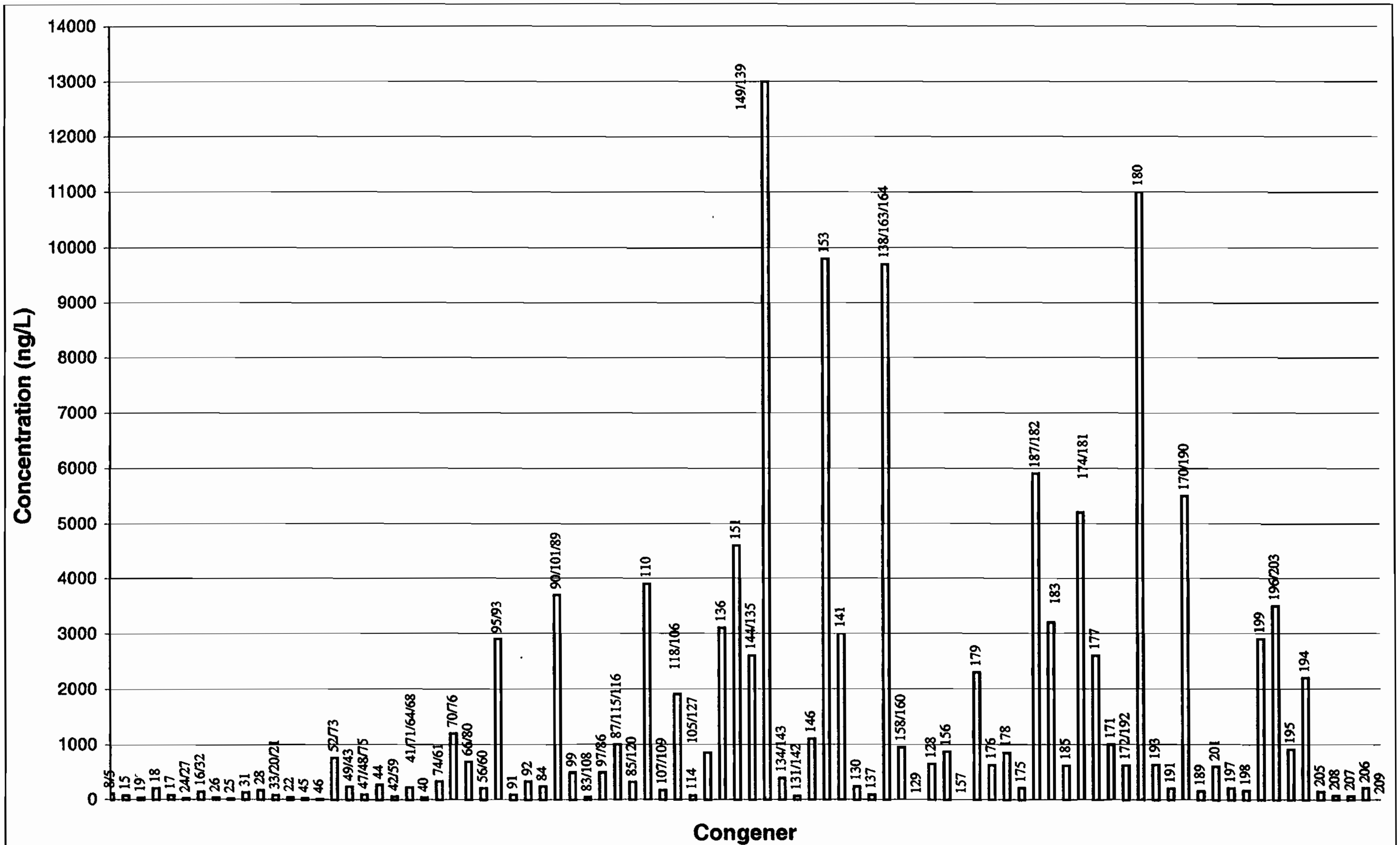


Figure C-3: Histogram of Congener Concentrations Measured in Groundwater Sample at P-1(CS-P1)

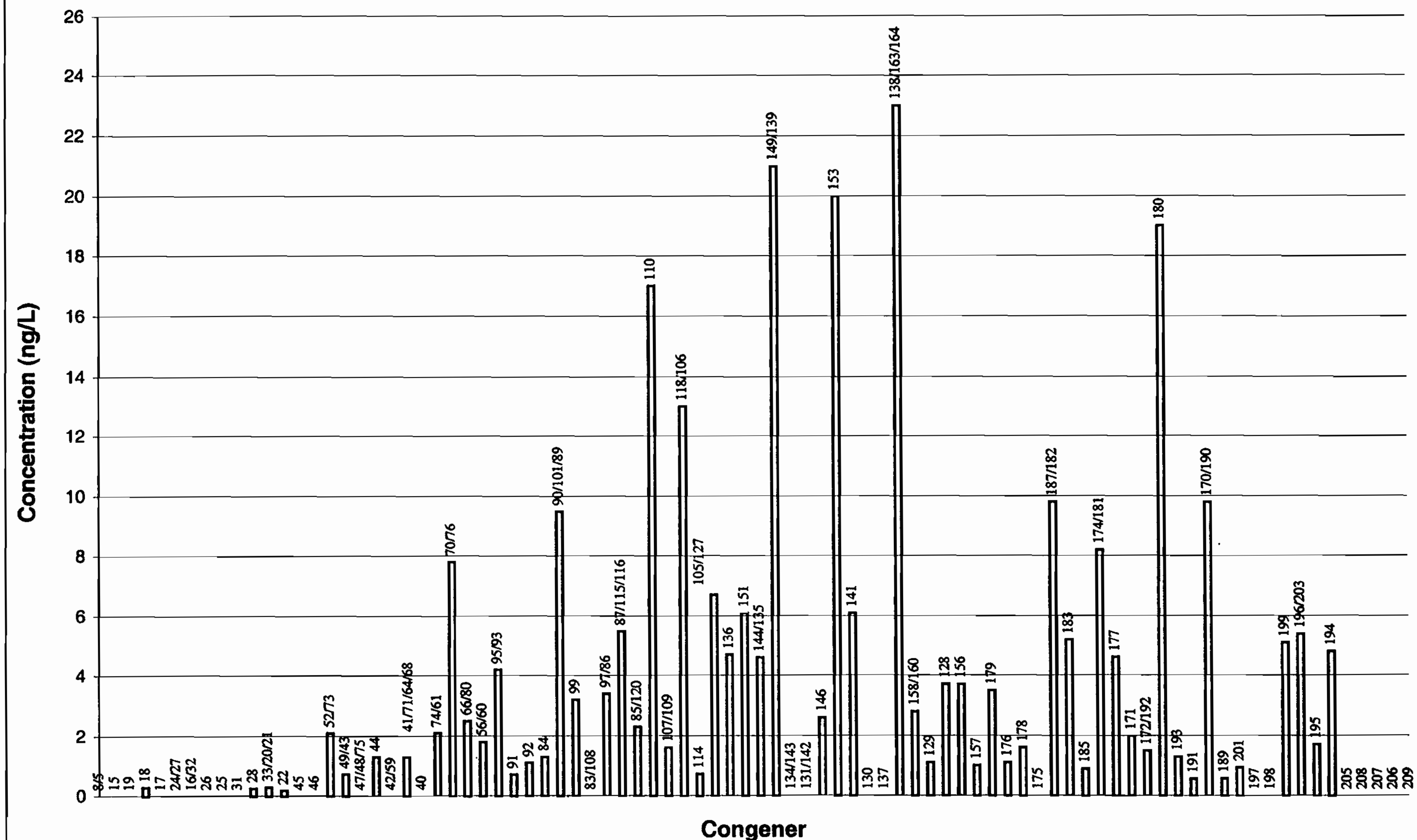


Figure C-4: Histogram of Congener Concentrations Measured in Roof Water Sample (CS-RD-1)

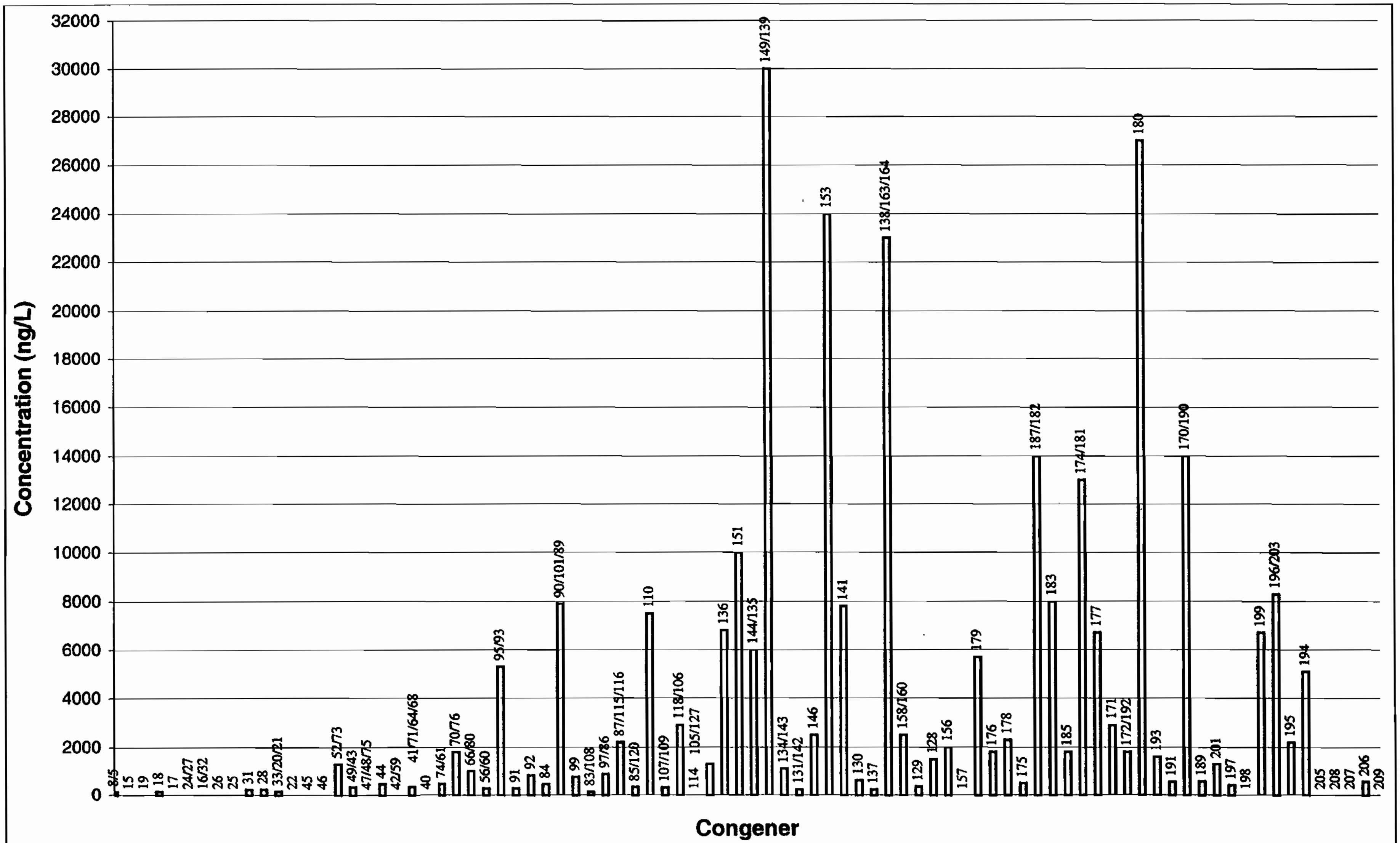


Figure C-5: Histogram of Congener Concentrations Measured in Groundwater Sample at MW-OUT(CS-MWOUT)

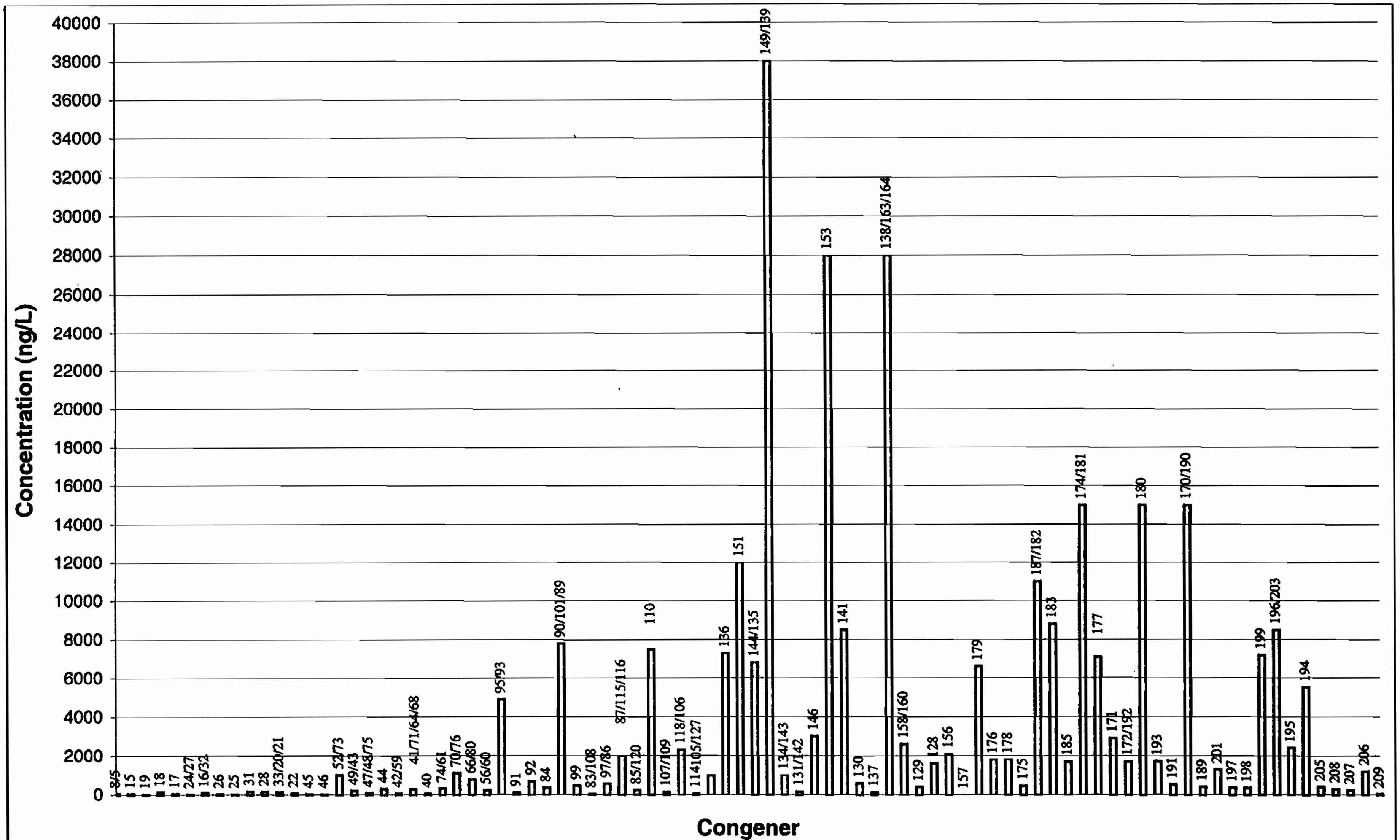


Figure C-6: Histogram of Congener Concentrations Measured in Groundwater Sample at MW-IN (CS-MWIN)

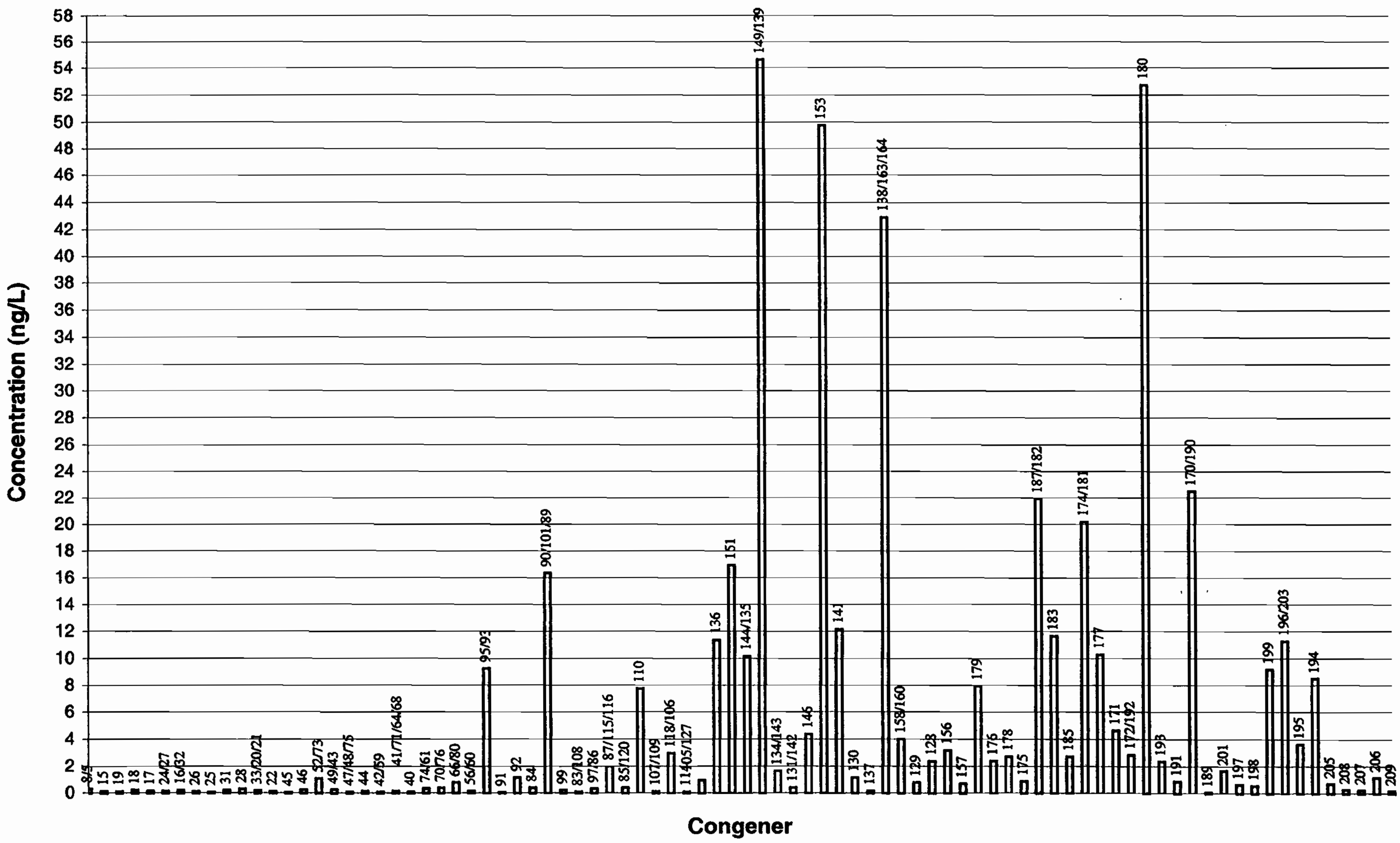


Figure C-7: Histogram of Congener Concentrations in Pure Aroclor 1260

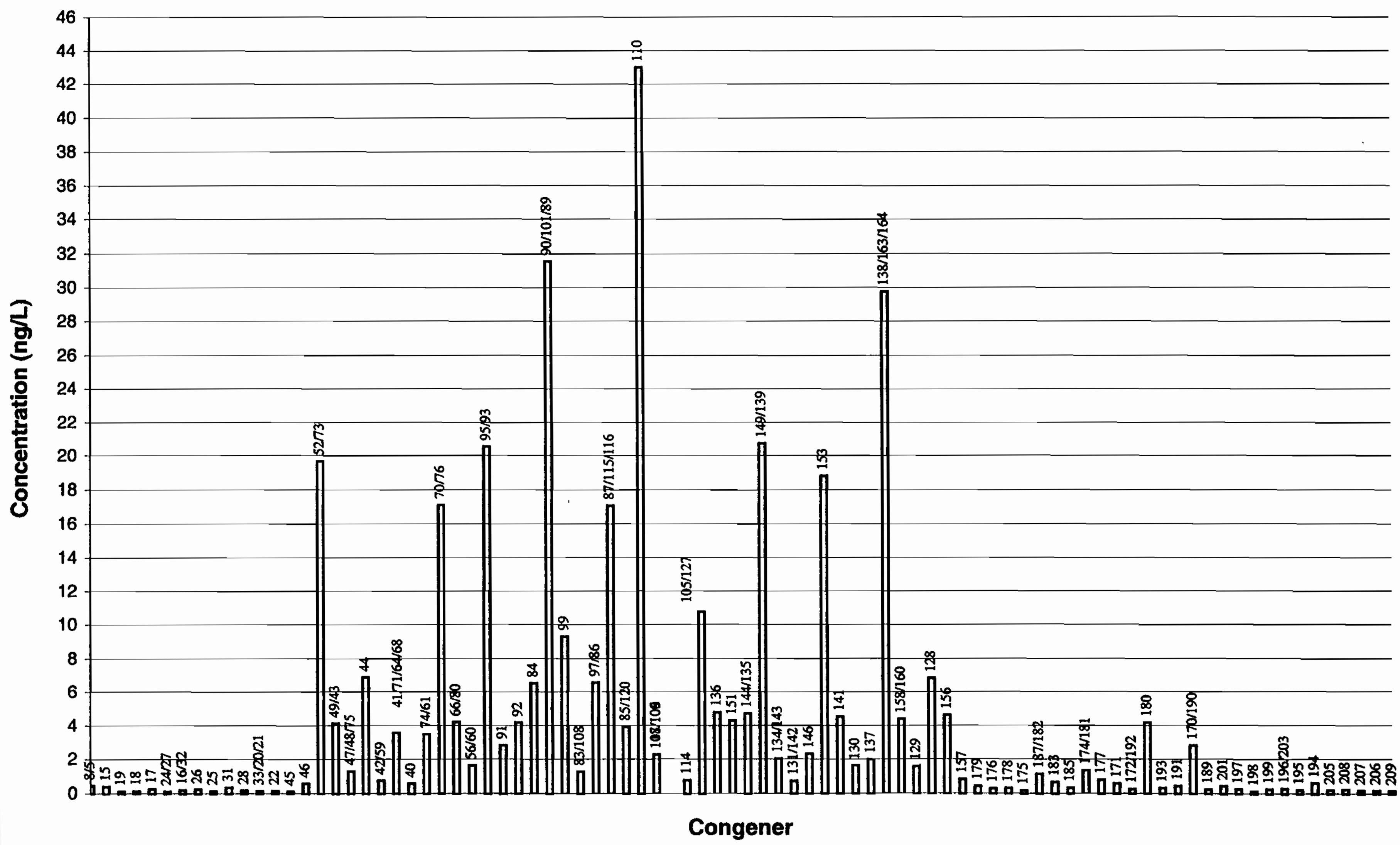


Figure C-8: Histogram of Congener Concentrations in Pure Aroclor 1254

Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091002.D Vial: 33
Acq On : 29 Feb 2000 22:34 Operator:
Sample : WG2608-101SAR,, Aroc. 1254 Inst : INST_9
Misc : 1,WG2608,1.2/160 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:27 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:27:05 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

Data for pure Aroclor 1254
~ 10% 1260
~ 1% 1242

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
48)	trans-Chlordane	31.20	373	2268	0.6176	ng	#	15
49)	cis-Chlordane*	[illegible]			0.0886	ng	#	63
50)	tr				0.1409	ng	#	1
51)	ci				0.1022	ng	#	1
52)	op				0.0333	ng	#	1
53)	pp				0.0454	ng	#	1
54)	PCI				0.2262	ng		98
55)	PCI				0.0799	ng	#	14
56)	PCI				0.2171	ng	#	19
57)	PCI				0.0446	ng		85
58)	PCB [illegible]	[illegible]	222	1760	0.0857	ng		84
59)	PCB 6	20.00	222	3216	0.1567	ng	#	82
60)	PCB 8/5*$	20.25	222	9217	0.4491	ng	#	70
61)	PCB 14	21.00	222	1229	0.0599	ng	#	1
62)	PCB 11	22.00	222	1628	0.0793	ng	#	1
63)	PCB 12/13	22.22	222	2484	0.1210	ng	#	80
64)	PCB 15*	22.45	222	5133	0.3976	ng		89
65)	PCB 19*	21.28	256	1401	0.1194	ng	#	78
66)	PCB 30	21.68	256	2371	0.2021	ng	#	45
67)	PCB 18*	22.37	256	1512m	0.1289	ng	#	85
68)	PCB 17*	22.48	256	2998	0.2555	ng	#	38
69)	PCB 24/27*	22.88	256	1253	0.1068	ng	#	1
70)	PCB 16/32*$	23.35	256	2209m	0.1883	ng	#	33
71)	PCB 34/23	23.93	256	1930	0.1396	ng	#	77
72)	PCB 29	24.12	256	2859	0.2068	ng	#	28
73)	PCB 26*	24.32	256	3193	0.2309	ng	#	2
74)	PCB 25*	24.50	256	1758	0.1271	ng	#	56
75)	PCB 31*	24.78	256	4782m	0.3459	ng		83
76)	PCB 28*	24.85	256	2233	0.1799	ng	#	80
77)	AROCLOR 1242	25.17	256	13734m	3.6171	ng		100
78)	PCB 33/20/21*	25.37	256	1723m	0.1246	ng	#	75
79)	PCB 22*	25.82	256	1956m	0.1415	ng		27
80)	PCB 36	26.13	256	3342	0.2417	ng	#	79
81)	PCB 39	26.63	256	3641	0.2633	ng	#	2
82)	PCB 38	27.27	256	2908	0.2103	ng	#	60
83)	PCB 35	27.73	256	922	0.0667	ng	#	6
84)	PCB 37	28.07	256	2185	0.1580	ng		85
85)	PCB 54	24.12	290	2375	0.2836	ng	#	48
86)	PCB 50	24.85	290	1913	0.2285	ng	#	18
87)	PCB 53	25.42	290	5491	0.6558	ng		92
88)	PCB 51	25.83	290	2859	0.3414	ng	#	60
89)	PCB 45*	26.08	290	886	0.1058	ng	#	1

(#) = qualifier out of range (m) = manual integration

Post-it™ Fax Note 7671E | Date | # of pages ▸ 12
To Marcia Galloway | From Gita Nayeri
Co./Dept. E&E | Co. AXYS
Phone # | Phone #
Fax # 1-716-685-0852 | Fax #

Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091002.D Vial: 33
Acq On : 29 Feb 2000 22:34 Operator:
Sample : WG2608-101SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/160 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:27 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:27:05 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
90)	PCB 46*	26.52	290	4776	0.5704 ng	#	36
91)	PCB 69	26.63	290	1871m	0.2234 ng	#	90
92)	PCB 52/73*	26.75	290	164670	19.6660 ng		90
93)	PCB 49/43*	27.02	290	31258	4.1346 ng		94
94)	PCB 47/48/75*	27.17	290	10964	1.3094 ng		81
95)	PCB 65/62	27.42	290	2405	0.2872 ng	#	35
96)	PCB 44*	27.90	290	55297	6.8820 ng		99
97)	PCB 42/59*	28.10	290	6035	0.7511 ng	#	42
98)	PCB 72	28.42	290	703	0.0875 ng	#	1
99)	PCB 41/71/64/68*$	28.62	290	28594m	3.5587 ng		75
100)	PCB 40*	29.07	290	3286m	0.5703 ng		99
101)	PCB 57	29.15	290	1782	0.3093 ng	#	46
102)	PCB 67	29.40	290	3035	0.5267 ng		92
103)	PCB 58	29.70	290	2729	0.4736 ng	#	1
104)	PCB 63	29.77	290	1345	0.2334 ng	#	1
105)	PCB 74/61*	29.95	290	20065	3.4822 ng		87
106)	PCB 70/76*	30.18	290	98612m	17.1139 ng		91
107)	PCB 66/80*	30.40	290	38506	4.2040 ng		87
108)	PCB 55	30.88	290	688	0.0751 ng	#	35
109)	PCB 56/60*	31.35	290	14697m	1.6046 ng		91
110)	PCB 79	32.08	290	5198m	0.5675 ng		70
111)	PCB 78	32.72	290	1672	0.1825 ng	#	27
112)	PCB 81	33.33	290	13682m	1.4938 ng	#	61
113)	PCB 77	33.92	290	20593m	2.2483 ng	#	73
114)	PCB 104	27.63	326	1793	0.1745 ng	#	74
115)	PCB 96	28.87	326	3385	0.3295 ng		92
116)	PCB 103	29.10	326	2796	0.2722 ng	#	1
117)	PCB 100	29.47	326	3065	0.2983 ng	#	57
118)	PCB 94	29.83	326	1379	0.1342 ng	#	83
119)	PCB 98/102	30.30	326	7244m	0.7051 ng		99
120)	PCB 95/93*	30.42	326	211106	20.5486 ng		100
121)	PCB 88/121	30.72	326	2199m	0.2140 ng		99
122)	PCB 91*	30.78	326	29022	2.8249 ng		99
123)	PCB 92*	31.45	326	42814	4.1674 ng		96
124)	PCB 84*	31.63	326	67173	6.5385 ng		94
125)	PCB 90/101/89*	31.78	326	324036	31.5409 ng		100
126)	PCB 113	31.92	326	5101m	0.4965 ng	#	94
127)	PCB 99*	32.08	326	95581m	9.3036 ng		94
128)	PCB 119	32.48	326	5456	0.4726 ng	#	41
129)	PCB 112	32.57	326	2081	0.1803 ng	#	62
130)	PCB 83/108*	32.72	326	14711	1.2743 ng		90
131)	PCB 97/86*$	33.03	326	75902m	6.5749 ng		93

(#) = qualifier out of range (m) = manual integration C-11

Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091002.D Vial: 33
Acq On : 29 Feb 2000 22:34 Operator:
Sample : WG2608-101SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/160 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:27 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:27:05 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
132)	PCB 125	33.15	326	1031m	0.0893 ng	#	93
133)	PCB 111/117	33.22	326	4306m	0.3730 ng	#	98
134)	PCB 87/115/116*	33.32	326	197151m	17.0778 ng		98
135)	AROCLOR 1254	33.32	326	368634m	328.5942 ng		100
136)	PCB 85/120*	33.57	326	45236m	3.9185 ng		1
137)	PCB 110*	33.90	326	496639	43.0204 ng		98
138)	PCB 82	34.55	326	41152	3.5647 ng		93
139)	PCB 124	34.95	326	23106	2.0015 ng		97
140)	PCB 107/109*	35.18	326	26181	2.2679 ng		88
141)	PCB 114*	36.10	326	8862	0.7677 ng	#	36
142)	PCB 122	36.25	326	5743	0.4975 ng	#	18
143)	PCB 126	38.98	326	2972	0.2574 ng	#	40
144)	PCB 155	31.22	360	740m	0.0856 ng		36
145)	PCB 150	32.47	360	729	0.0843 ng	#	65
146)	PCB 152	32.90	360	2570	0.2973 ng		89
147)	PCB 145	33.32	360	3288	0.3804 ng	#	2
148)	PCB 148	33.47	360	1338	0.1548 ng		87
149)	PCB 136*	33.73	360	41439m	4.7941 ng		96
150)	PCB 154	34.00	360	5760	0.6664 ng	#	46
151)	PCB 151*	34.65	360	37049m	4.2862 ng		95
152)	PCB 144/135*	34.92	360	40820	4.7225 ng		95
153)	PCB 147	35.12	360	6532m	0.7557 ng		51
154)	PCB 149/139*	35.35	360	179246	20.7372 ng		97
155)	PCB 140	35.53	360	3699m	0.4279 ng		97
156)	PCB 134/143*	35.97	360	17563	2.0319 ng		99
157)	PCB 133	36.12	360	2848	0.3295 ng	#	1
158)	PCB 131/142*	36.22	360	6206	0.7180 ng		86
159)	PCB 165	36.22	360	6206	0.5080 ng		86
160)	PCB 146*$	36.45	360	28299m	2.3166 ng		71
161)	PCB 161	36.60	360	1017m	0.0833 ng	#	71
163)	PCB 123	35.33	326	13332	0.8623 ng		93
164)	PCB 118/106*	35.45	326	434254	28.0884 ng		98
166)	PCB 105/127*	37.00	326	168740m	10.7440 ng		100
168)	PCB 153*	36.82	360	225847	18.8065 ng		98
169)	PCB 132/168	36.93	360	102256	8.5150 ng		100
170)	PCB 141*	37.55	360	41046m	4.5296 ng		85
171)	PCB 137*	37.95	360	19945	1.9938 ng		98
172)	PCB 130*	38.10	360	16223	1.6217 ng		94
173)	PCB 138/163/164*	38.43	360	297738	29.7635 ng		99
174)	PCB 158/160*	38.58	360	43965	4.3950 ng		100
175)	PCB 129*	38.88	360	15996	1.5990 ng		90
176)	PCB 166	39.28	360	3391	0.3390 ng	#	12

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091002.D Vial: 33
Acq On : 29 Feb 2000 22:34 Operator:
Sample : WG2608-101SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/160 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:27 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:27:05 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
177) PCB 159	39.43	360	1697	0.1696 ng	#	9
178) PCB 162	39.73	360	1815	0.1814 ng	#	1
179) PCB 128*	40.02	360	68383m	6.8359 ng		94
180) PCB 167	40.13	360	17693	1.7687 ng		94
181) PCB 156*	41.43	360	46239m	4.6223 ng		96
182) PCB 157*	41.77	360	8242m	0.8239 ng		66
183) PCB 169	43.47	360	2000m	0.1999 ng		51
184) PCB 188	36.47	394	566	0.0495 ng	#	13
185) PCB 184	36.80	394	1377	0.1204 ng		94
186) PCB 179*	37.63	394	4800m	0.4198 ng		98
187) PCB 176*	38.07	394	3130m	0.2737 ng		82
188) PCB 186	38.63	394	1629	0.1425 ng	#	54
189) PCB 178*	38.98	394	3527m	0.3084 ng	#	95
190) PCB 175*	39.28	394	1769	0.1547 ng	#	1
191) PCB 187/182*	39.45	394	12819m	1.1210 ng		87
192) PCB 183*	39.75	394	6868m	0.6542 ng	#	35
193) PCB 185*$	40.33	394	3467	0.3303 ng	#	73
194) PCB 174/181*	40.82	394	14220m	1.3546 ng		96
195) PCB 177*	41.13	394	8322m	0.7927 ng		96
196) PCB 171*	41.40	394	6386m	0.5738 ng		87
197) PCB 173	41.77	394	2596	0.2842 ng	#	2
198) PCB 172/192*	42.08	394	2837m	0.2549 ng		89
199) PCB 180*	42.45	394	46618m	4.1885 ng		89
200) PCB 193*	42.60	394	3639	0.3270 ng		93
201) PCB 191*	42.83	394	4871	0.4376 ng	#	28
202) PCB 170/190*	43.97	394	25711m	2.8144 ng		92
203) AROCLOR 1260	44.50	394	79197m	37.5663 ng		100
204) PCB 189*	44.87	394	2163	0.2368 ng		95
205) PCB 202	41.33	428	1130	0.1629 ng	#	58
206) PCB 201*	41.80	428	3039m	0.4382 ng	#	74
207) PCB 204	41.92	428	1077	0.1553 ng		84
208) PCB 197*	42.25	428	1732m	0.2497 ng	#	36
209) PCB 200	43.13	428	943	0.1360 ng	#	1
210) PCB 198*	44.00	428	813	0.1172 ng	#	1
211) PCB 199*$	44.33	428	1741m	0.2510 ng	#	88
212) PCB 196/203*	44.52	428	1959m	0.2825 ng	#	26
213) PCB 195*	45.55	428	1465m	0.2112 ng	#	53
214) PCB 194*	46.17	428	4284m	0.6177 ng		69
215) PCB 205*	46.30	428	1299	0.1873 ng	#	46
216) PCB 208*	45.50	462	1599	0.2306 ng		89
217) PCB 207*	45.75	462	1139m	0.1642 ng	#	65
218) PCB 206*$	47.27	462	1148	0.1655 ng		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091002.D Vial: 33
Acq On : 29 Feb 2000 22:34 Operator:
Sample : WG2608-101SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/160 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:27 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:27:05 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
220)	PCB 209*$	48.08	500	965	0.1426 ng	90

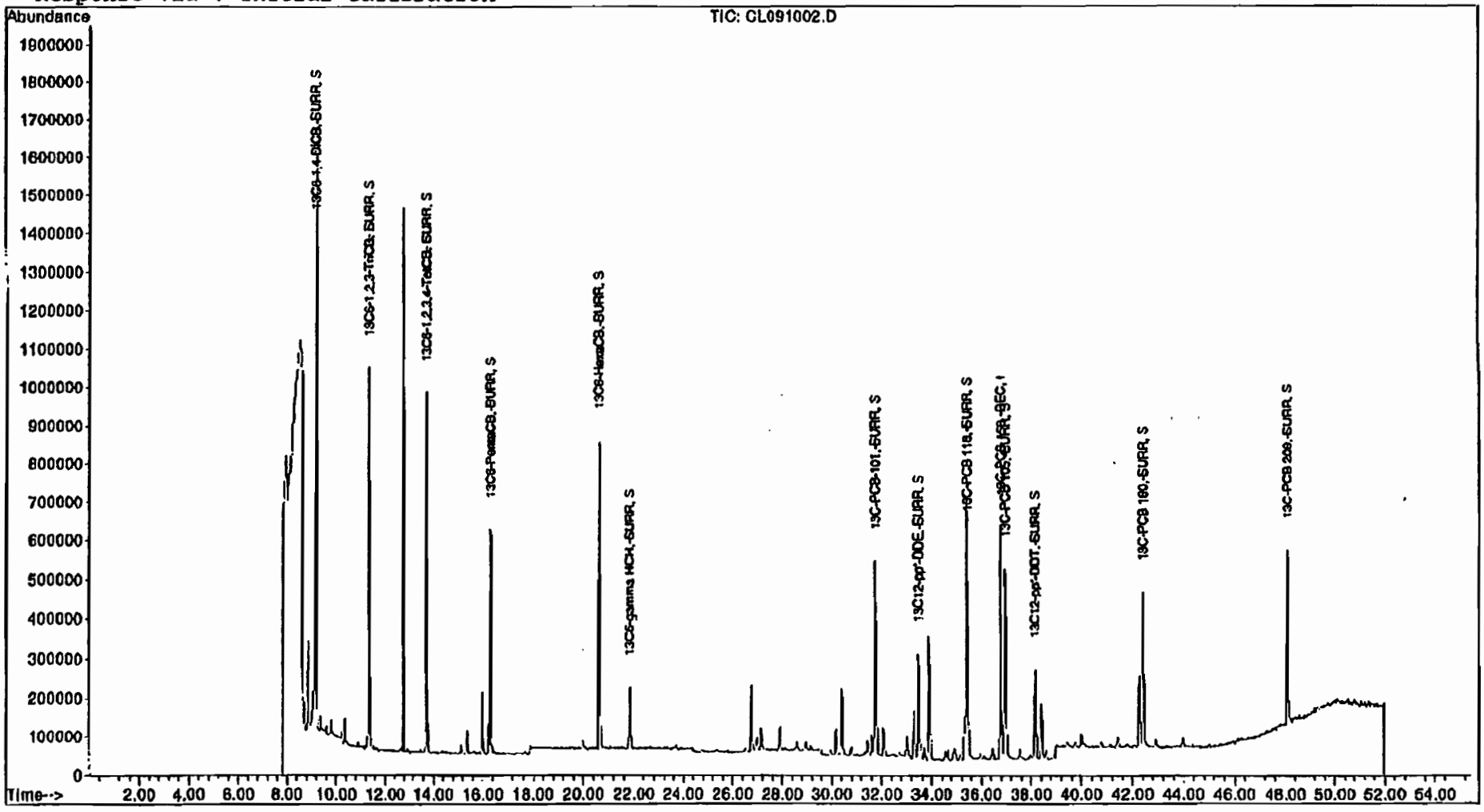
(#) = qualifier out of range (m) = manual integration

Aroclor 1254

Quantitation Report

Data File : G:\PROLAB\INST_9\000229CL\CL091002.D Vial: 33
Acq On : 29 Feb 2000 22:34 Operator:
Sample : WG2608-101SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/160 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:27 2000 Quant Results File: 14CL0-A.RES

Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:59:20 2000
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091003.D Vial: 34
Acq On : 29 Feb 2000 23:36 Operator:
Sample : WG2608-102SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/90 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:14 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:59:20 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

Data for pure Aroclor 1260 : ~6% 1254, ~1% 1242

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
48)	trans-Chlordane	31.23	373	178	0.0212	ng	#	1
49)	cis-Chlordane$	32.07	373	2260	0.2450	ng	#	40
50)	trans-Nonachlor$	32.42	409	968	0.1091	ng	#	1
51)	cis-Nonachlor	36.15	409	400	0.0326	ng	#	1
52)	op'-DDD	34.00	235	786	0.0238	ng	#	1
53)	pp'-DDD$	35.95	235	1147	0.0370	ng	#	1
54)	PCB 1	15.85	188	4757	0.1013	ng		92
55)	PCB 2$	17.32	188	2246	0.0478	ng	#	1
56)	PCB 3	17.47	188	2744	0.0584	ng		93
57)	PCB 4/10	18.35	222	7213	0.1535	ng	#	61
58)	PCB 7/9	19.45	222	1668	0.0355	ng	#	20
59)	PCB 6	19.95	222	6982	0.1486	ng	#	64
60)	PCB 8/5*$	20.25	222	14554	0.3098	ng		99
61)	PCB 14	20.95	222	832	0.0177	ng	#	1
62)	PCB 11	22.05	222	2264	0.0482	ng	#	1
63)	PCB 12/13	22.22	222	1329	0.0283	ng		88
64)	PCB 15*	22.48	222	3792	0.1283	ng	#	45
65)	PCB 19*	21.22	256	3020	0.1125	ng	#	15
66)	PCB 30	21.72	256	1351	0.0503	ng	#	2
67)	PCB 18*	22.37	256	5757m	0.2144	ng		75
68)	PCB 17*	22.47	256	3796m	0.1414	ng		79
69)	PCB 24/27*	22.90	256	3810	0.1419	ng	#	23
70)	PCB 16/32*$	23.35	256	5654	0.2105	ng		82
71)	PCB 34/23	23.95	256	1203	0.0380	ng	#	19
72)	PCB 29	24.07	256	2361	0.0746	ng	#	1
73)	PCB 26*	24.33	256	3297m	0.1042	ng	#	24
74)	PCB 25*	24.48	256	2352	0.0743	ng	#	2
75)	PCB 31*	24.75	256	6514m	0.2058	ng		57
76)	PCB 28*	24.83	256	8360m	0.2943	ng		75
77)	AROCLOR 1242	25.13	256	30081m	3.4615	ng		100
78)	PCB 33/20/21*	25.35	256	5731m	0.1811	ng	#	100
79)	PCB 22*	25.77	256	3558	0.1124	ng		90
80)	PCB 36	26.13	256	1894	0.0599	ng	#	76
81)	PCB 39	26.58	256	689	0.0218	ng	#	14
82)	PCB 38	27.15	256	2157	0.0682	ng	#	52
83)	PCB 35	27.67	256	2173	0.0687	ng	#	43
84)	PCB 37	28.12	256	3086	0.0975	ng	#	58
85)	PCB 54	24.12	290	2189	0.1142	ng	#	65
86)	PCB 50	24.83	290	538	0.0281	ng	#	1
87)	PCB 53	25.40	290	1068	0.0557	ng	#	1
88)	PCB 51	25.77	290	1614	0.0842	ng	#	77
89)	PCB 45*	26.08	290	1161	0.0606	ng		87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091003.D Vial: 34
Acq On : 29 Feb 2000 23:36 Operator:
Sample : WG2608-102SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/90 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:14 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:59:20 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
90)	PCB 46*	26.43	290	4685	0.2445	ng	#	26
91)	PCB 69	26.62	290	1941m	0.1013	ng	#	91
92)	PCB 52/73*	26.73	290	21014m	1.0965	ng		91
93)	PCB 49/43*	27.00	290	4275m	0.2471	ng		46
94)	PCB 47/48/75*	27.27	290	1631	0.0851	ng		82
95)	PCB 65/62	27.47	290	2061	0.1075	ng	#	1
96)	PCB 44*	27.90	290	2595m	0.1411	ng	#	95
97)	PCB 42/59*	28.12	290	1310	0.0712	ng	#	66
98)	PCB 72	28.33	290	1851	0.1007	ng	#	7
99)	PCB 41/71/64/68*$	28.58	290	2612	0.1420	ng	#	1
100)	PCB 40*	29.05	290	1061	0.0805	ng	#	1
101)	PCB 57	29.15	290	554	0.0420	ng	#	26
102)	PCB 67	29.43	290	912	0.0692	ng	#	1
103)	PCB 58	29.70	290	1808	0.1371	ng	#	63
104)	PCB 63	29.70	290	1808	0.1371	ng	#	63
105)	PCB 74/61*	29.92	290	4325	0.3280	ng	#	76
106)	PCB 70/76*	30.15	290	4912	0.3725	ng	#	63
107)	PCB 66/80*	30.40	290	16094m	0.7677	ng		81
108)	PCB 55	30.90	290	1215	0.0580	ng	#	40
109)	PCB 56/60*	31.32	290	3198	0.1526	ng		91
110)	PCB 79	32.07	290	1279	0.0610	ng	#	1
111)	PCB 78	32.73	290	803	0.0383	ng	#	63
112)	PCB 81	33.32	290	13153	0.6274	ng	#	24
113)	PCB 77	33.88	290	14114	0.6733	ng		81
114)	PCB 104	27.63	326	294	0.0125	ng	#	1
115)	PCB 96	28.85	326	633	0.0269	ng	#	18
116)	PCB 103	29.03	326	907	0.0386	ng	#	1
117)	PCB 100	29.38	326	1226	0.0521	ng	#	1
118)	PCB 94	29.90	326	1943	0.0826	ng	#	61
119)	PCB 98/102	30.30	326	2179m	0.0927	ng		98
120)	PCB 95/93*	30.40	326	217778	9.2618	ng		97
121)	PCB 88/121	30.75	326	713	0.0303	ng	#	1
122)	PCB 91*	30.75	326	713	0.0303	ng	#	1
123)	PCB 92*	31.43	326	27195	1.1566	ng		99
124)	PCB 84*	31.62	326	9180m	0.3904	ng	#	98
125)	PCB 90/101/89*	31.77	326	384448	16.3501	ng		97
126)	PCB 113	32.07	326	4590	0.1952	ng	#	69
127)	PCB 99*	32.07	326	4590	0.1952	ng	#	69
128)	PCB 119	32.42	326	1406	0.0532	ng		96
129)	PCB 112	32.57	326	540	0.0204	ng	#	20
130)	PCB 83/108*	32.73	326	2111	0.0799	ng	#	14
131)	PCB 97/86*$	33.02	326	8512m	0.3222	ng		61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091003.D Vial: 34
Acq On : 29 Feb 2000 23:36 Operator:
Sample : WG2608-102SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/90 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:14 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:59:20 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
132) PCB 125	33.02	326	8512m	0.3222 ng		61
133) PCB 111/117	33.30	326	52808	1.9986 ng		97
134) PCB 87/115/116*	33.30	326	52808	1.9986 ng		97
135) AROCLOR 1254	33.30	326	65910m	25.6696 ng		100
136) PCB 85/120*	33.48	326	10122m	0.3831 ng		1
137) PCB 110*	33.88	326	205212	7.7668 ng		98
138) PCB 82	34.50	326	2548	0.0964 ng	#	83
139) PCB 124	34.90	326	21328	0.8072 ng		89
140) PCB 107/109*	35.13	326	3028	0.1146 ng		97
141) PCB 114*	36.07	326	1935	0.0732 ng	#	1
142) PCB 122	36.20	326	2520	0.0954 ng		89
143) PCB 126	38.95	326	39537	1.4964 ng	#	68
144) PCB 155	31.17	360	622	0.0314 ng	#	24
145) PCB 150	32.45	360	779	0.0394 ng	#	22
146) PCB 152	32.93	360	2444	0.1235 ng	#	9
147) PCB 145	33.33	360	1929	0.0975 ng	#	1
148) PCB 148	33.53	360	3545m	0.1792 ng		97
149) PCB 136*	33.70	360	224589	11.3525 ng		98
150) PCB 154	33.98	360	2418	0.1222 ng		87
151) PCB 151*	34.63	360	334746	16.9207 ng		100
152) PCB 144/135*	34.88	360	200765	10.1482 ng		94
153) PCB 147	35.12	360	1865m	0.0943 ng	#	0
154) PCB 149/139*	35.33	360	1081063	54.6454 ng		99
155) PCB 140	35.43	360	8992m	0.4545 ng		99
156) PCB 134/143*	35.95	360	32182	1.6267 ng		84
157) PCB 133	36.07	360	10307	0.5210 ng	#	78
158) PCB 131/142*	36.20	360	7565	0.3824 ng		85
159) PCB 165	36.20	360	7565	0.2706 ng		85
160) PCB 146*$	36.45	360	122129	4.3682 ng		97
161) PCB 161	36.45	360	122129	4.3682 ng		97
163) PCB 123	35.33	326	74782	2.1537 ng		87
164) PCB 118/106*	35.43	326	102411	2.9494 ng		94
166) PCB 105/127*	36.92	326	33582	0.9470 ng		97
168) PCB 153*	36.80	360	1503727	49.7527 ng		99
169) PCB 132/168	36.92	360	289722	9.5858 ng		99
170) PCB 141*	37.53	360	276711	12.1331 ng		98
171) PCB 137*	37.95	360	3555	0.1412 ng	#	68
172) PCB 130*	38.08	360	28911	1.1483 ng		87
173) PCB 138/163/164*	38.40	360	1080347	42.9108 ng		100
174) PCB 158/160*	38.57	360	100457	3.9901 ng		99
175) PCB 129*	38.90	360	19685	0.7819 ng	#	50
176) PCB 166	39.28	360	6800	0.2701 ng	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : G:\PROLAB\INST_9\000229CL\CL091003.D Vial: 34
Acq On : 29 Feb 2000 23:36 Operator:
Sample : WG2608-102SAR,, Inst : INST_9
Misc. : 1,WG2608,1.2/90 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:14 2000 Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:59:20 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
177) PCB 159	39.45	360	57148	2.2699 ng		86
178) PCB 162	39.72	360	26256	1.0429 ng		100
179) PCB 128*	40.00	360	59765m	2.3738 ng		94
180) PCB 167	40.10	360	33197m	1.3186 ng		99
181) PCB 156*	41.43	360	80131m	3.1828 ng		93
182) PCB 157*	41.78	360	17309m	0.6875 ng	#	66
183) PCB 169	43.47	360	2105	0.0836 ng	#	68
184) PCB 188	36.48	394	502	0.0174 ng	#	1
185) PCB 184	36.77	394	2261	0.0786 ng	#	19
186) PCB 179*	37.63	394	228447	7.9379 ng		99
187) PCB 176*	38.05	394	68370	2.3757 ng		97
188) PCB 186	38.60	394	430	0.0149 ng	#	1
189) PCB 178*	38.93	394	78275	2.7198 ng		97
190) PCB 175*	39.27	394	24775	0.8609 ng		87
191) PCB 187/182*	39.43	394	631147	21.9306 ng		99
192) PCB 183*	39.73	394	307747	11.6480 ng		99
193) PCB 185*$	40.33	394	71917	2.7220 ng		91
194) PCB 174/181*	40.78	394	533242	20.1828 ng		100
195) PCB 177*	41.10	394	271612	10.2803 ng		98
196) PCB 171*	41.37	394	129985	4.6404 ng		98
197) PCB 173	41.72	394	16113	0.7008 ng	#	60
198) PCB 172/192*	42.07	394	79840	2.8502 ng		91
199) PCB 180*	42.43	394	1476688	52.7166 ng		99
200) PCB 193*	42.60	394	66047m	2.3578 ng		84
201) PCB 191*	42.83	394	24298m	0.8674 ng		49
202) PCB 170/190*	43.95	394	516917	22.4822 ng		98
203) AROCLOR 1260	44.52	394	2301352m	433.7370 ng		100
204) PCB 189*	44.92	394	1370	0.0596 ng	#	52
205) PCB 202	41.32	428	32981m	1.8895 ng		88
206) PCB 201*	41.78	428	28898m	1.6556 ng		94
207) PCB 204	41.95	428	2546	0.1459 ng	#	31
208) PCB 197*	42.22	428	10983m	0.6292 ng		47
209) PCB 200	43.13	428	30544m	1.7498 ng		96
210) PCB 198*	44.20	428	9594m	0.5496 ng		69
211) PCB 199*$	44.32	428	160407	9.1896 ng		98
212) PCB 196/203*	44.52	428	196852	11.2775 ng		99
213) PCB 195*	45.50	428	63132m	3.6168 ng		86
214) PCB 194*	46.12	428	148303m	8.4962 ng		97
215) PCB 205*	46.28	428	12400m	0.7104 ng		90
216) PCB 208*	45.47	462	4680m	0.2681 ng		100
217) PCB 207*	45.72	462	3858m	0.2210 ng		46
218) PCB 206*$	47.23	462	20204m	1.1575 ng		88

(#) = qualifier out of range (m) = manual integration C-19

Quantitation Report (QT Reviewed)

```
Data File : G:\PROLAB\INST_9\000229CL\CL091003.D          Vial: 34
Acq On    : 29 Feb 2000  23:36                           Operator:
Sample    : WG2608-102SAR,,                              Inst    : INST_9
Misc      : 1,WG2608,1.2/90 UL                           Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar  1  9:14 2000          Quant Results File: 14CL0-A.RES

Quant Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title        : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update  : Wed Mar 01 08:59:20 2000
Response via : Initial Calibration
DataAcq Meth : METHOD.M
```

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
220)	PCB 209*$	48.08	500	2726m	0.1732 ng	# 18

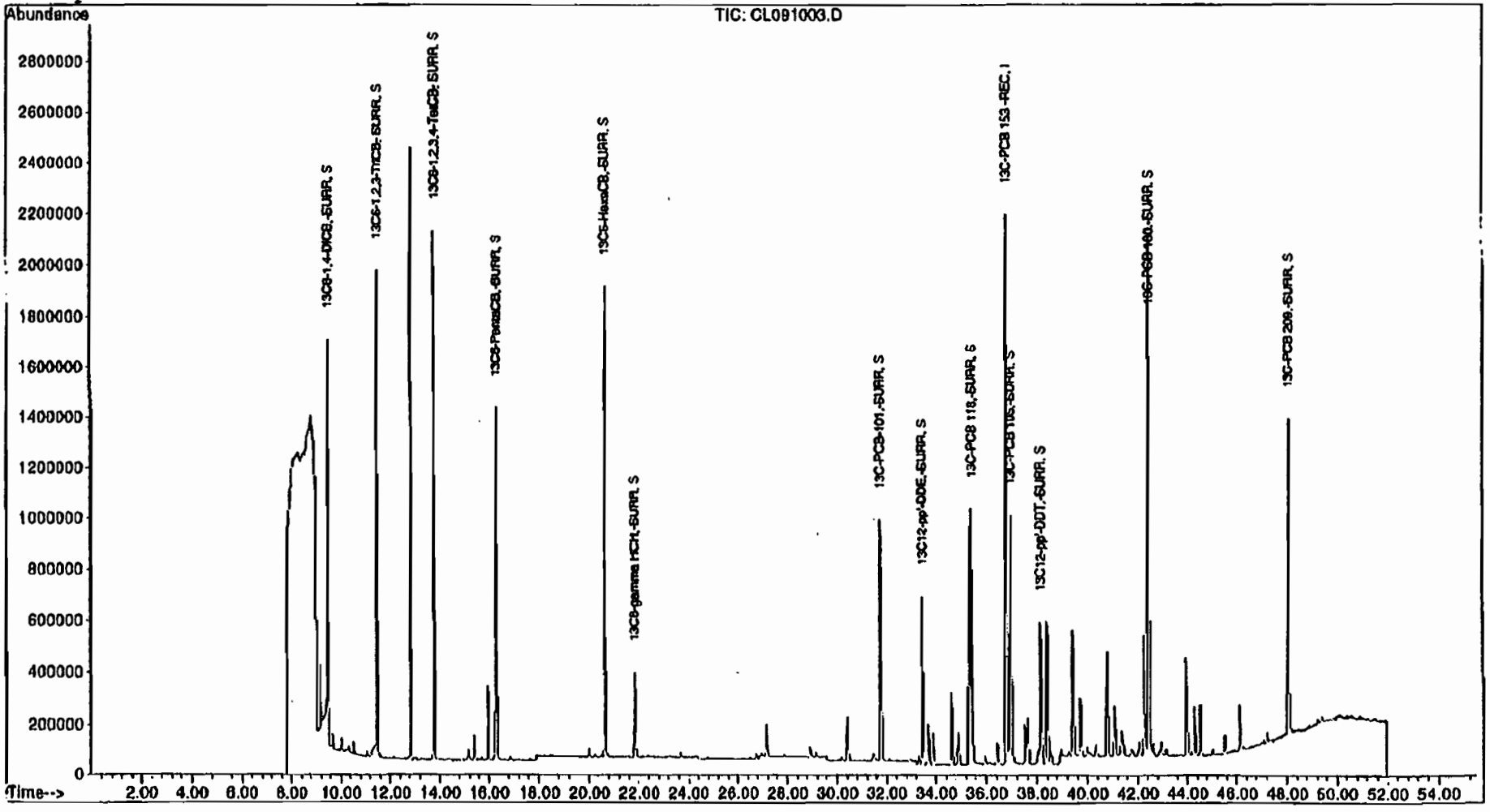
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Aroclor 1260

Data File : G:\PROLAB\INST_9\000229CL\CL091003.D Vial: 34
Acq On : 29 Feb 2000 23:36 Operator:
Sample : WG2608-102SAR,, Inst : INST_9
Misc : 1,WG2608,1.2/90 UL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 1 9:14 2000 Quant Results File: 14CL0-A.RES

Method : G:\PROLAB\INST_9\000229CL\14CL0-A.M (RTE Integrator)
Title : ACP-209Cong-Bracketing-(C34F/S31A/R13A) 23-JUL-99
Last Update : Wed Mar 01 08:59:20 2000
Response via : Initial Calibration



D

Continuous Water Level Measurement Analysis

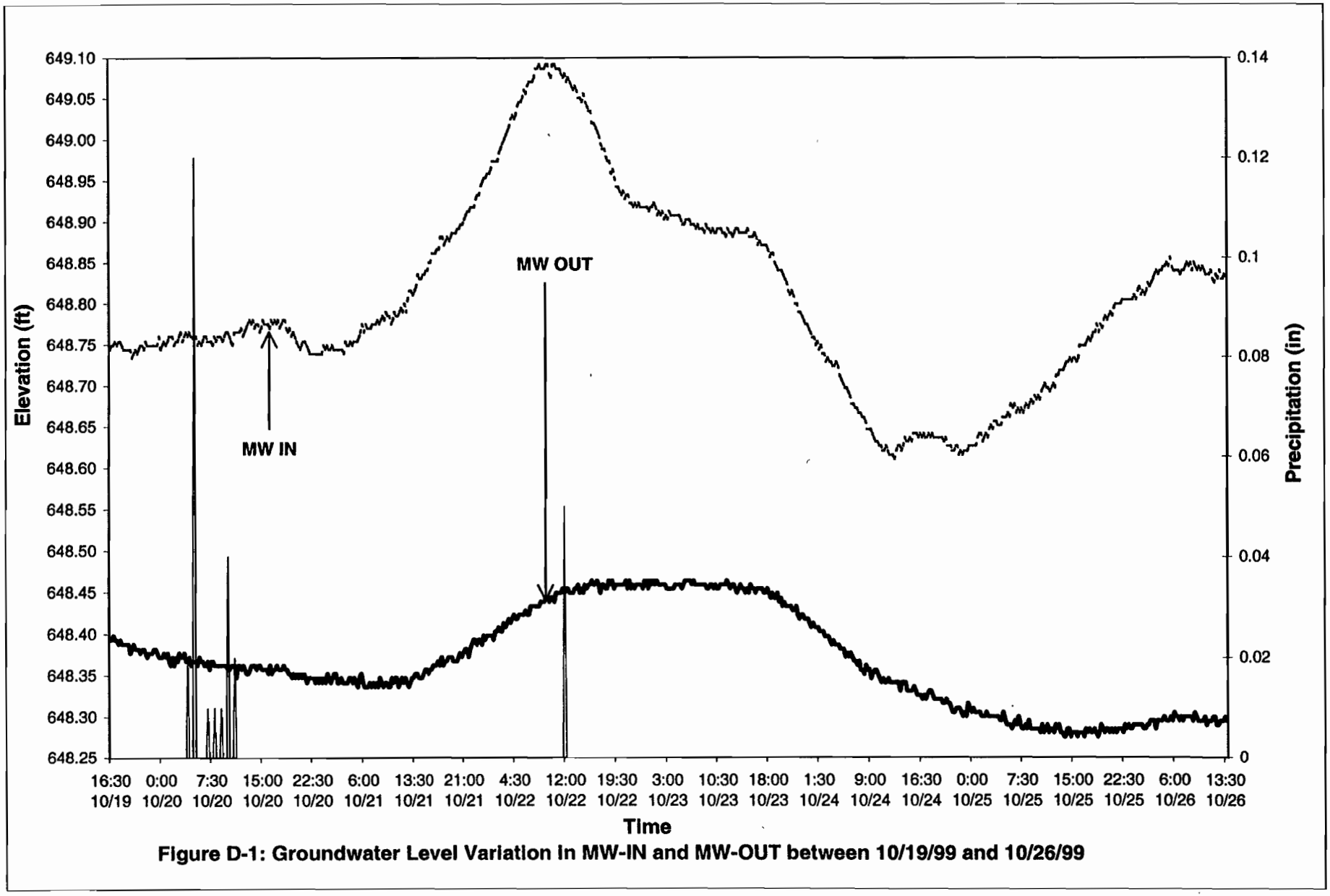


Figure D-1: Groundwater Level Variation in MW-IN and MW-OUT between 10/19/99 and 10/26/99

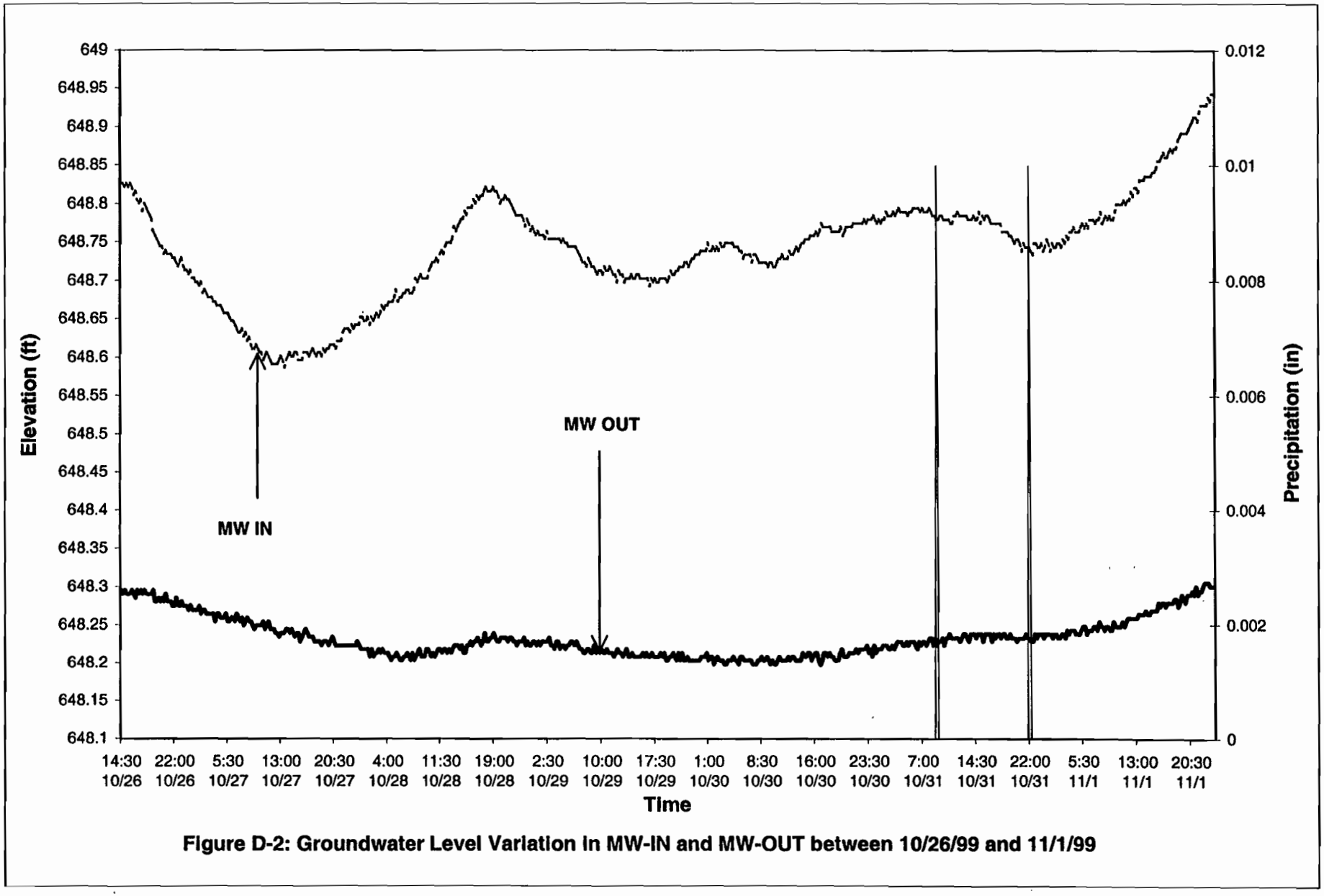


Figure D-2: Groundwater Level Variation in MW-IN and MW-OUT between 10/26/99 and 11/1/99

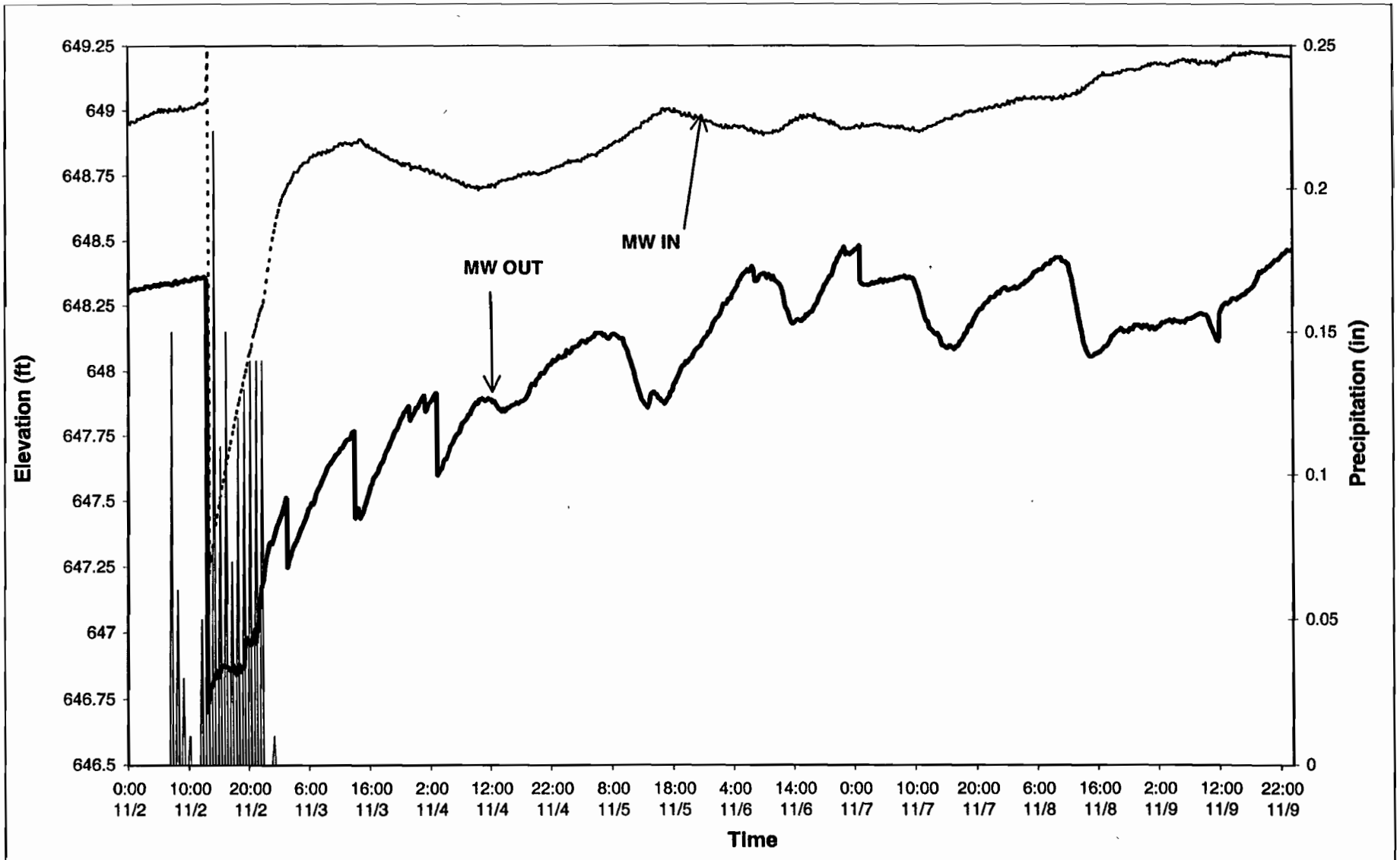


Figure D-3: Groundwater Level Variation in MW-IN and MW-OUT between 11/2/99 and 11/9/99

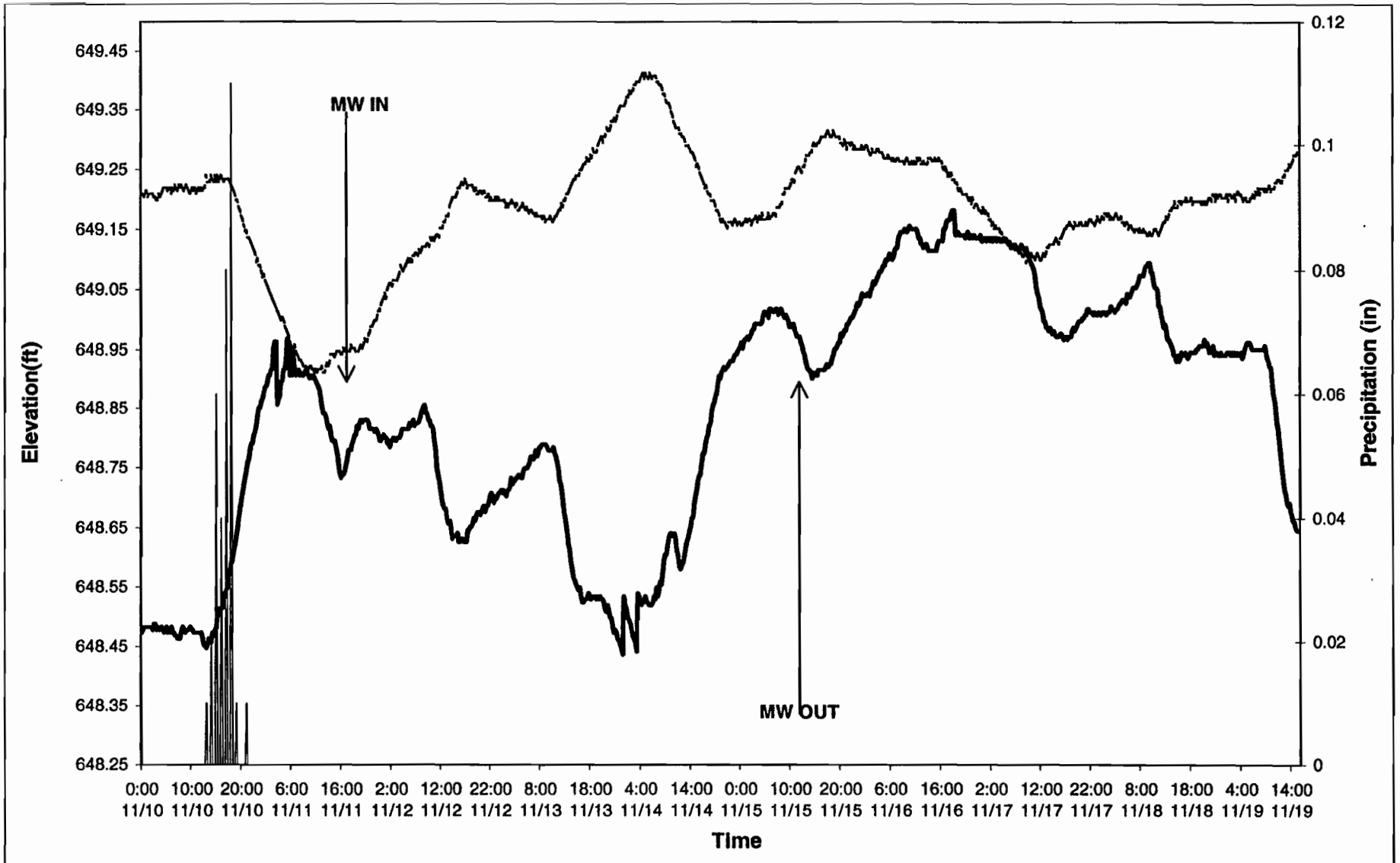


Figure D-4: Groundwater Level Variation in MW-IN and MW-OUT between 11/10/99 and 11/19/99

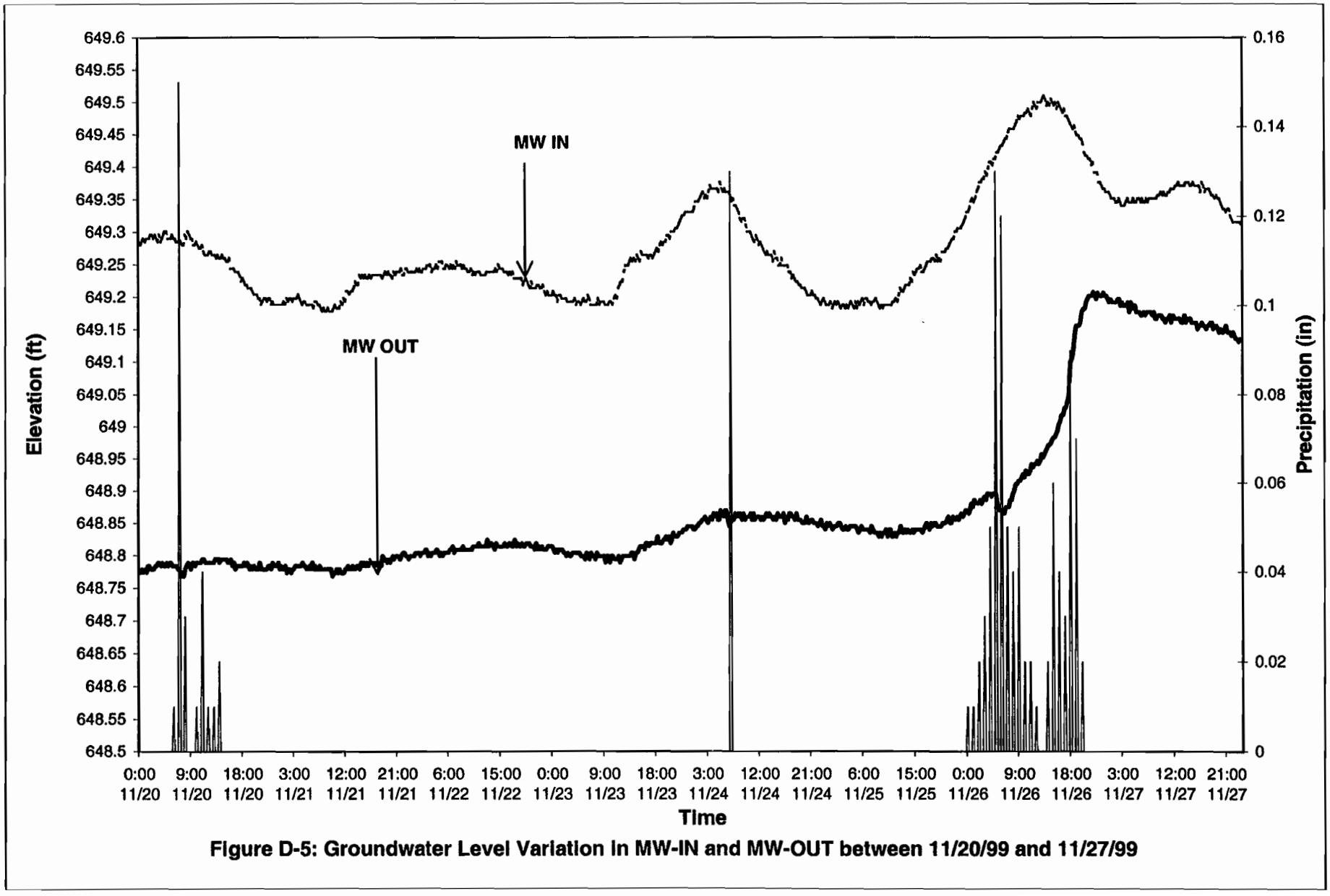


Figure D-5: Groundwater Level Variation in MW-IN and MW-OUT between 11/20/99 and 11/27/99

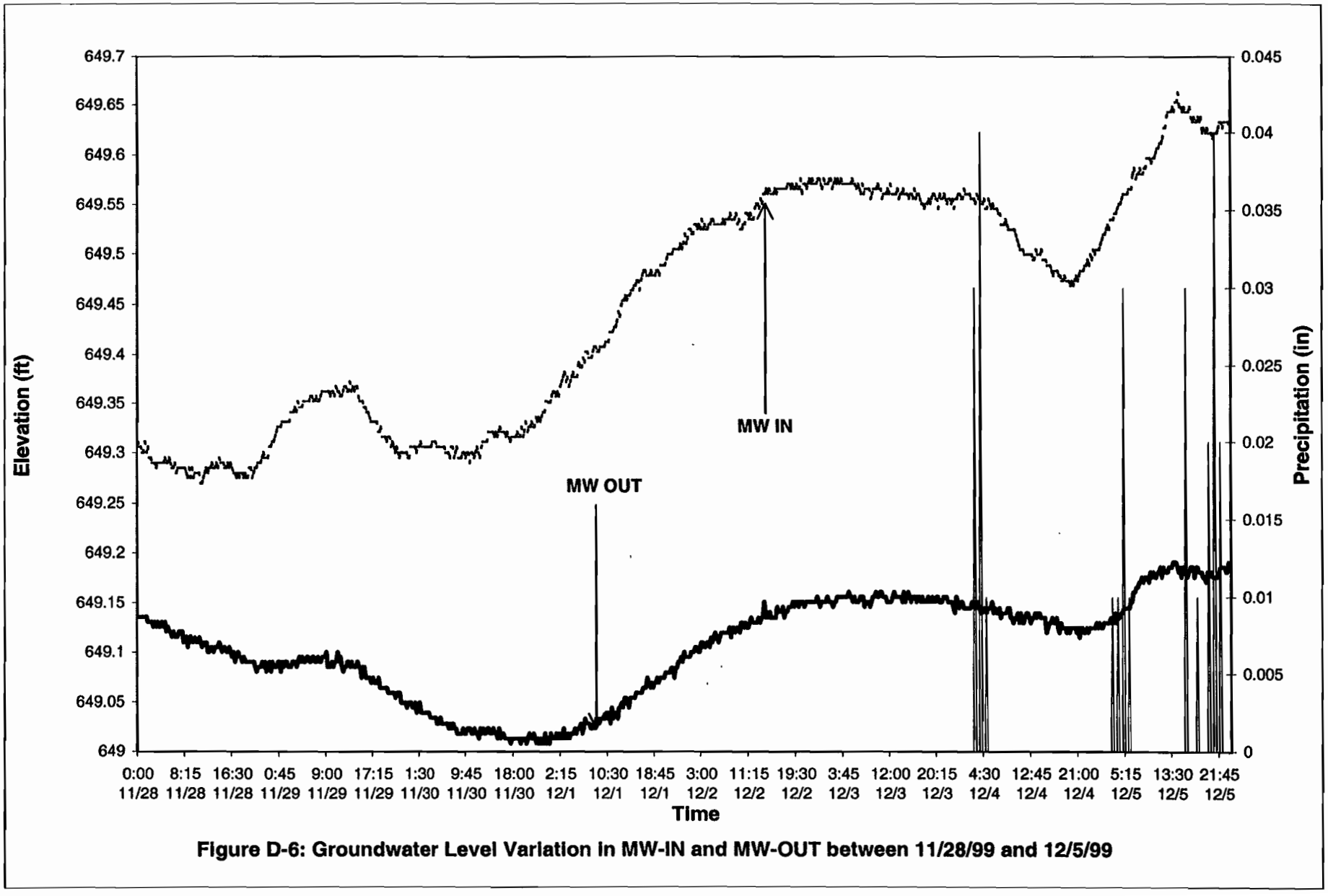


Figure D-6: Groundwater Level Variation in MW-IN and MW-OUT between 11/28/99 and 12/5/99

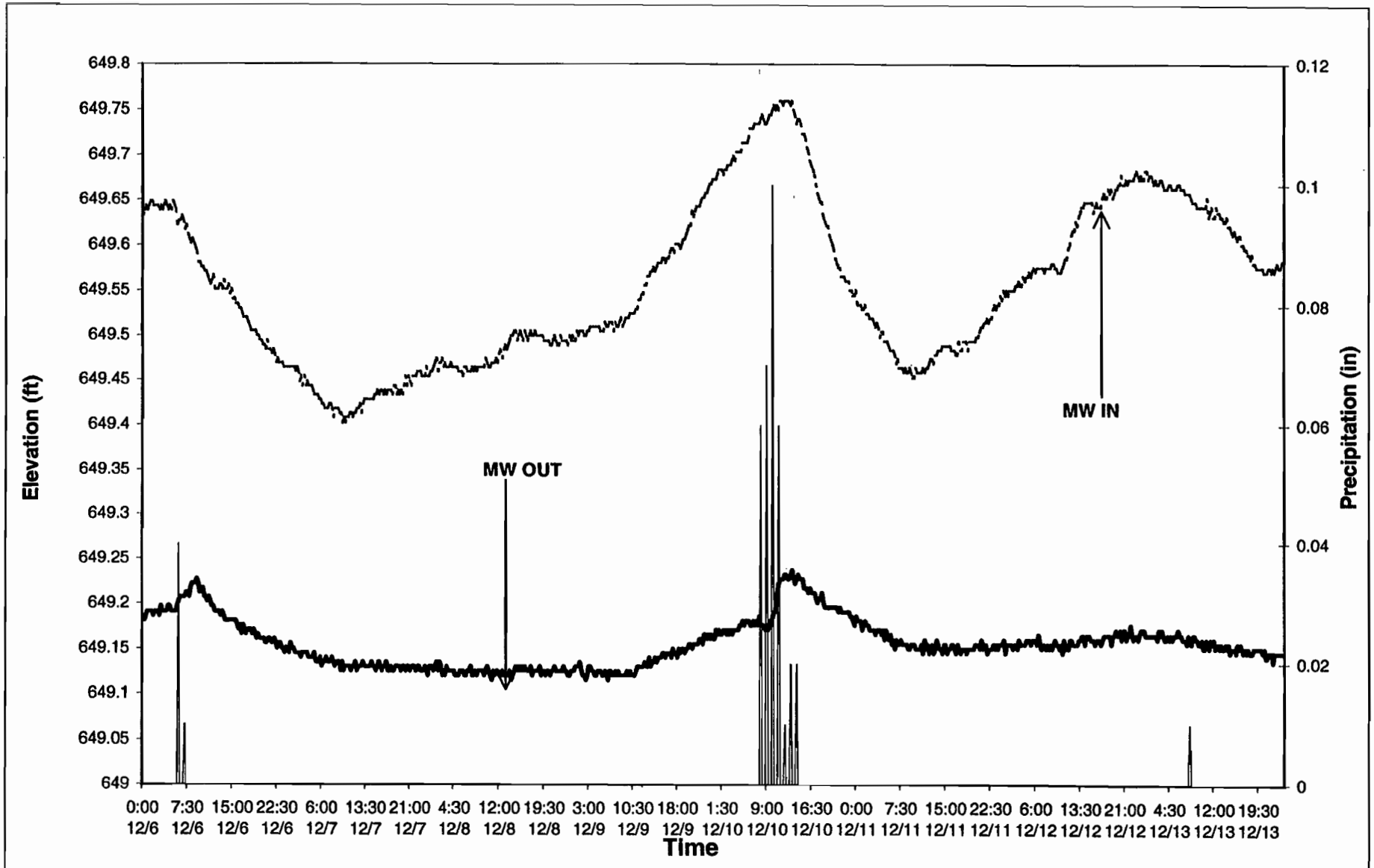


Figure D-7: Groundwater Level Variation in MW-IN and MW-OUT between 12/6/99 and 12/13/99

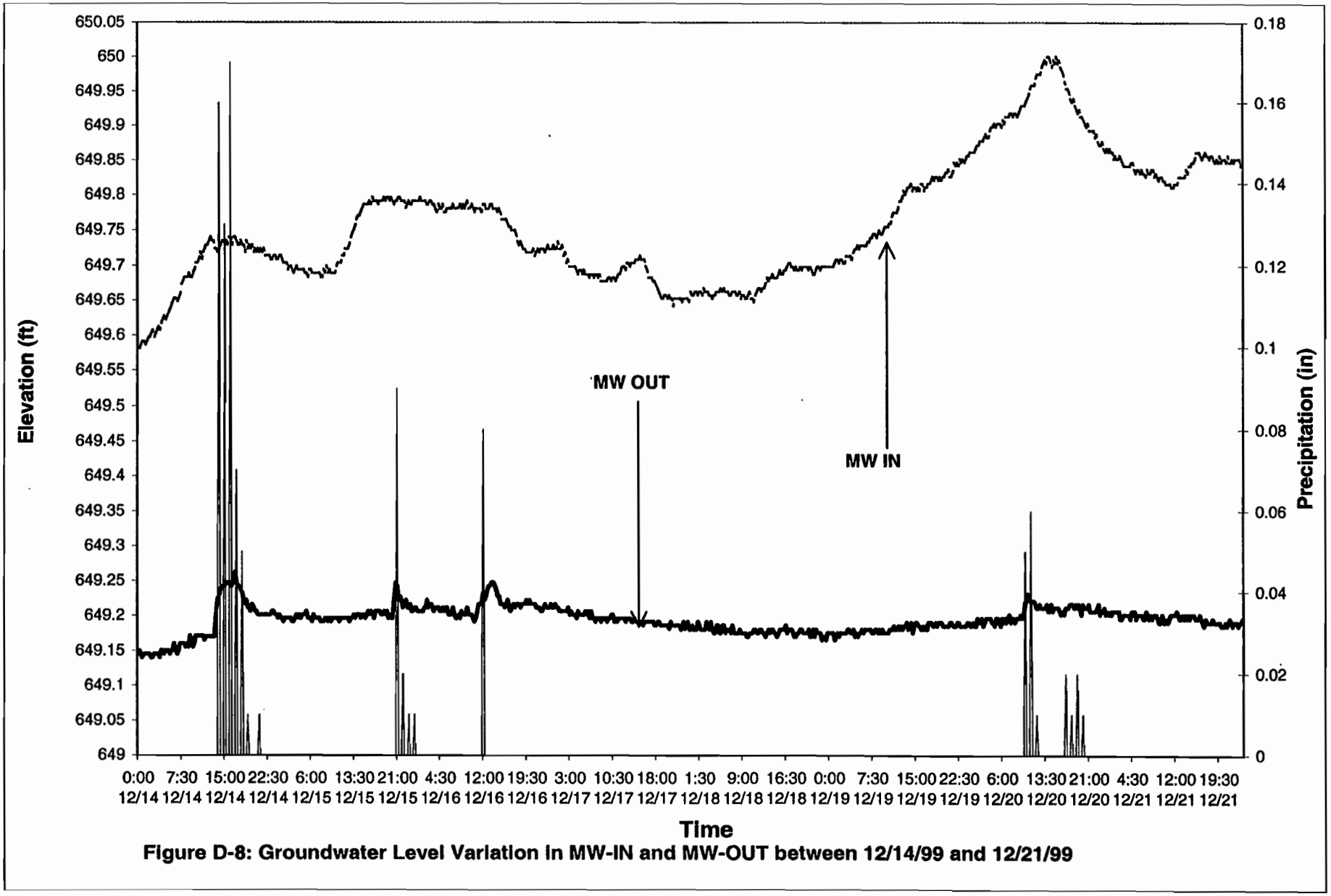


Figure D-8: Groundwater Level Variation in MW-IN and MW-OUT between 12/14/99 and 12/21/99

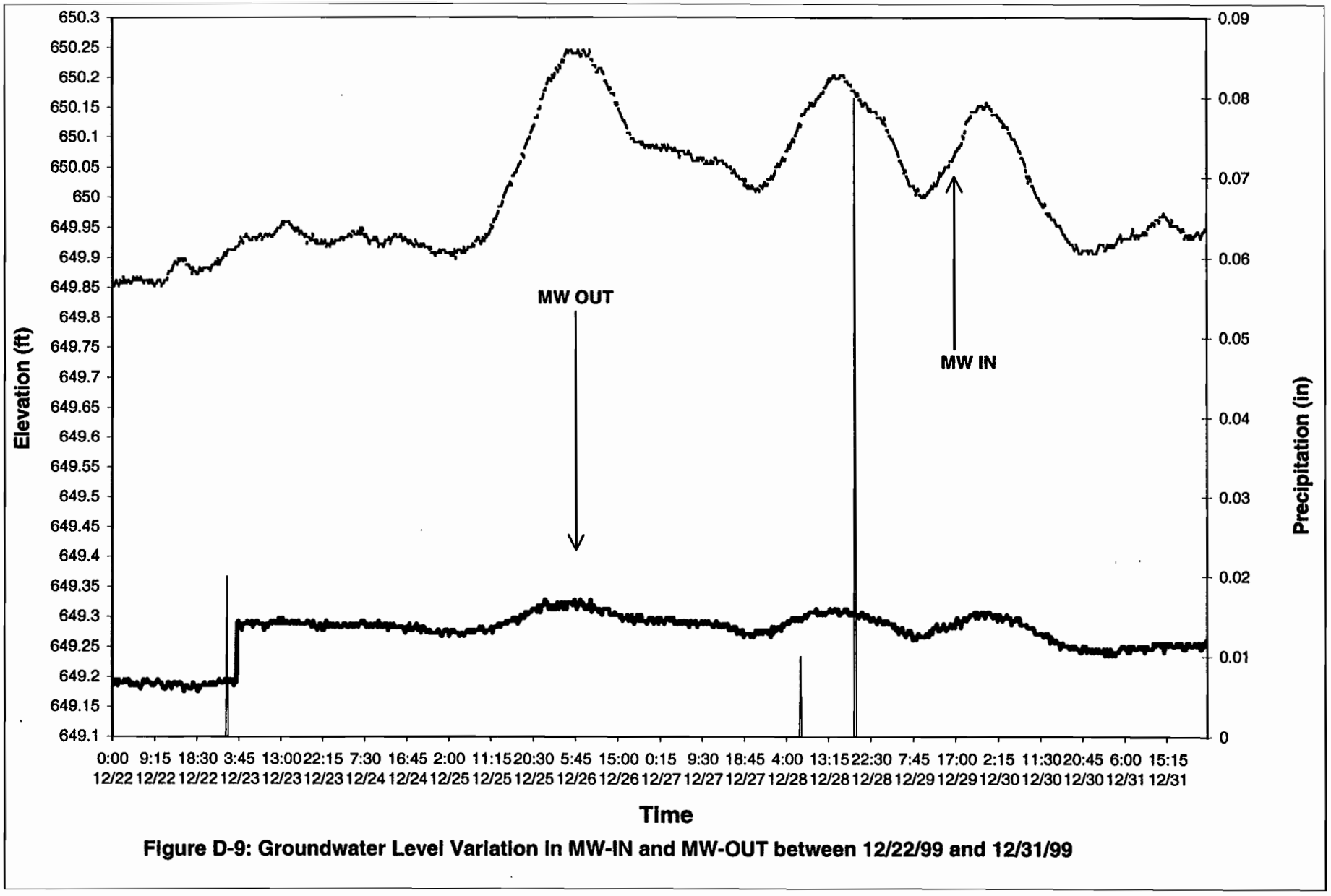


Figure D-9: Groundwater Level Variation in MW-IN and MW-OUT between 12/22/99 and 12/31/99

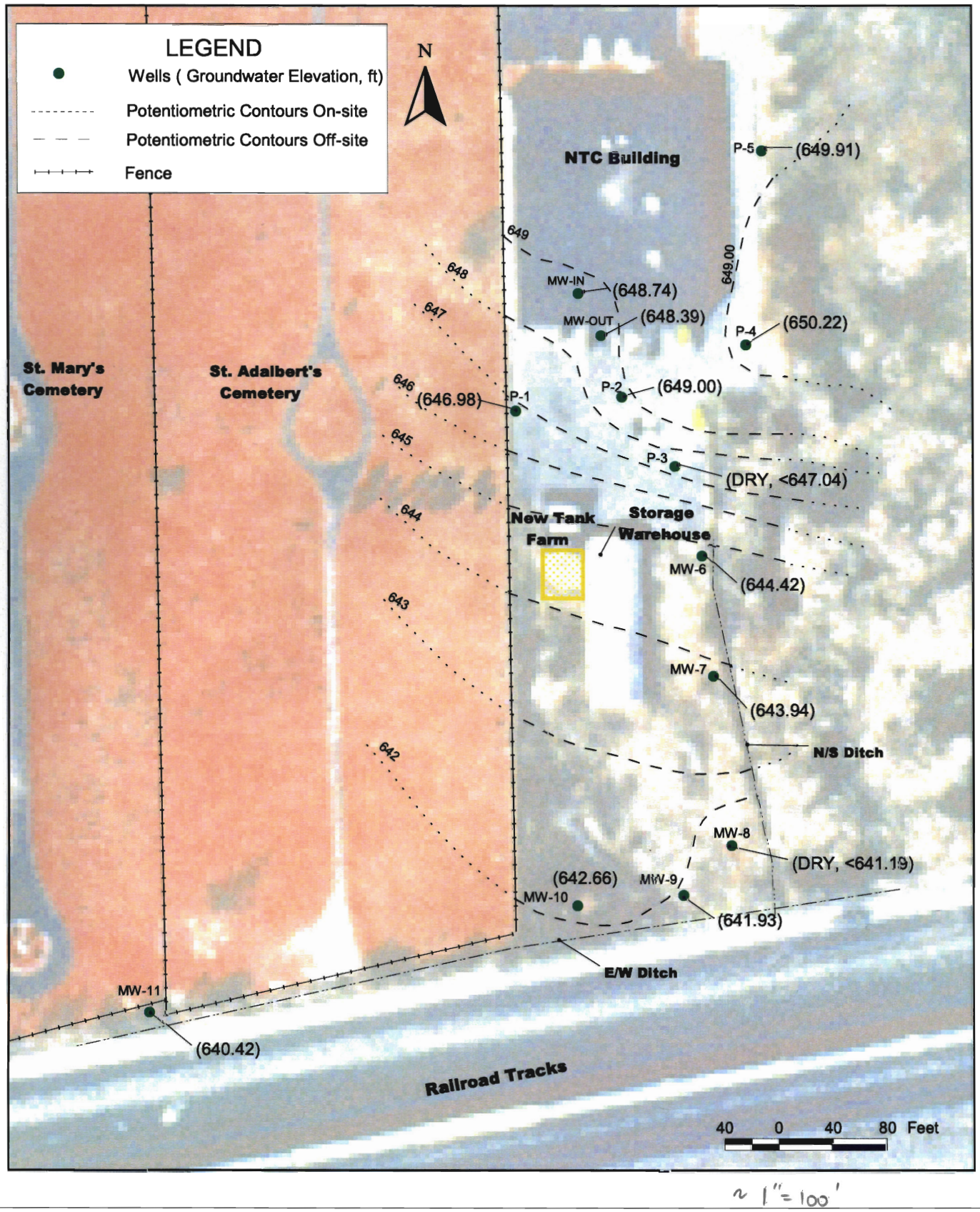


FIgure E-1: Potentiometric Surface Contour Map for 10/19/1999

12:000699_QT05_00_13
g:\ntc\sampling_efforts_2.apr GIS

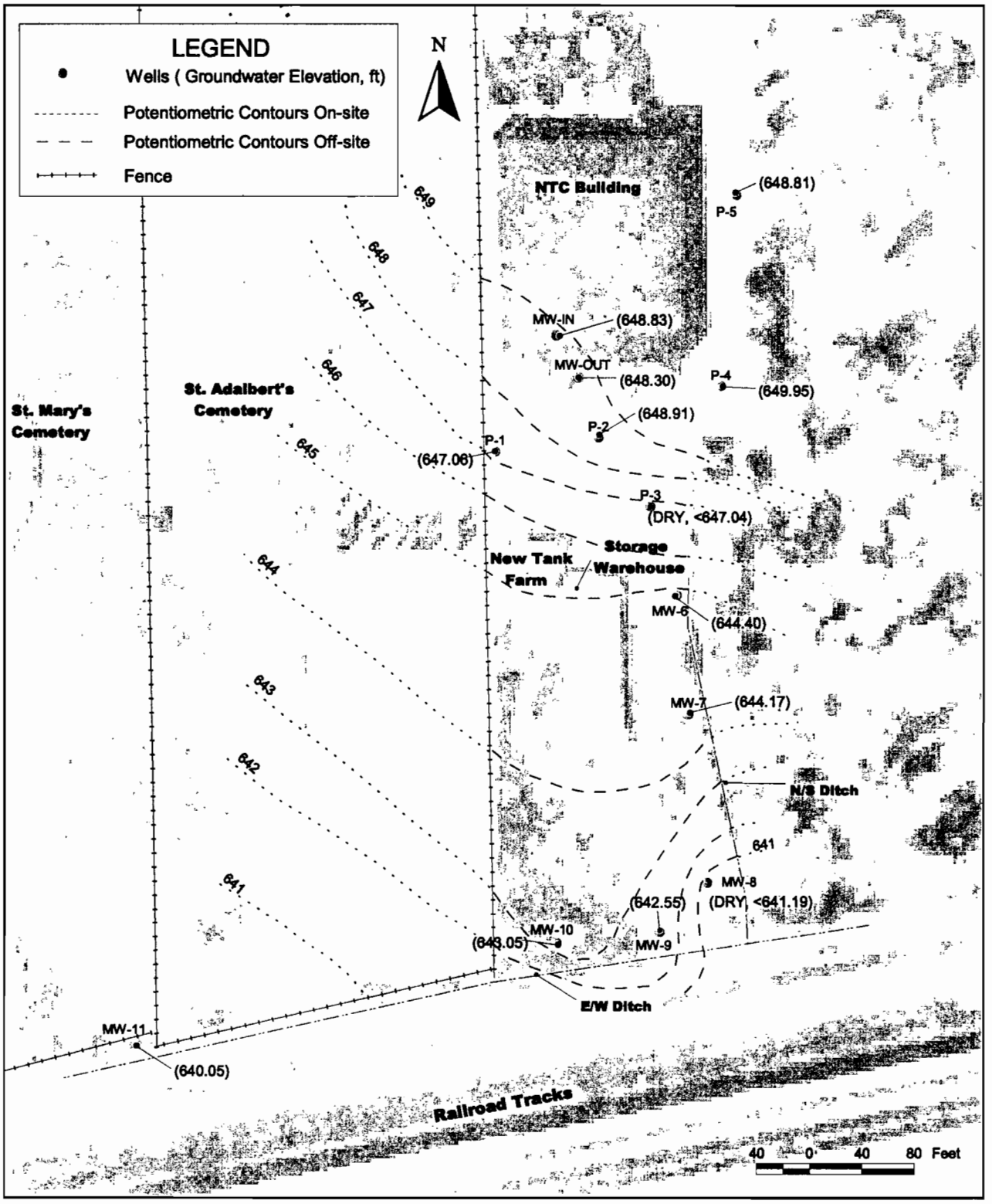


Figure E-2: Potentiometric Surface Contour Map for 10/26/1999

02:000699_QT05_00_13
g:\ntc\sampling_efforts_2.apr GIS

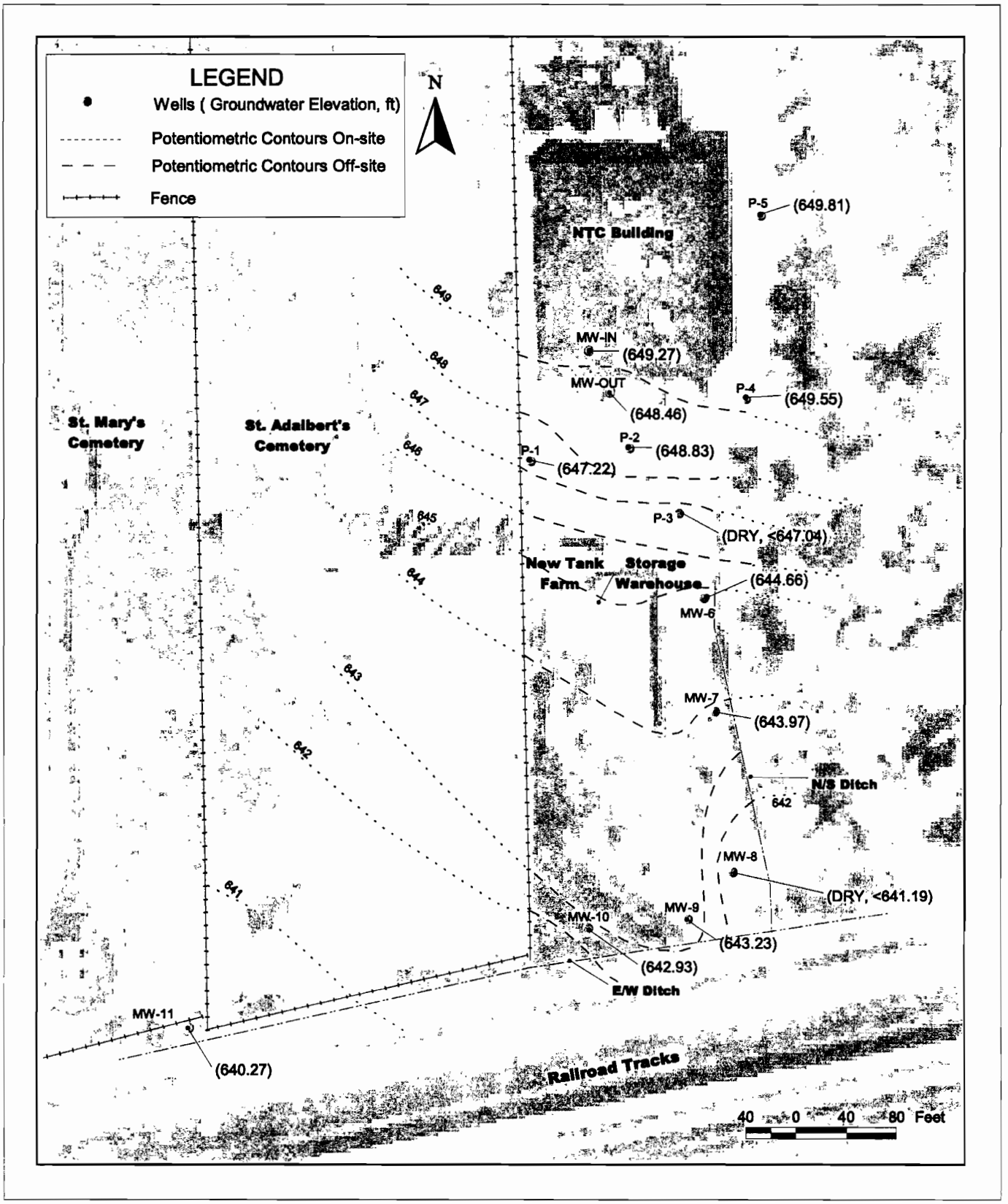


Figure E-3: Potentiometric Surface Contour Map for 11/19/1999

02:000699_QT05_00_13
g:\ntc\sampling_efforts_2.apr GIS

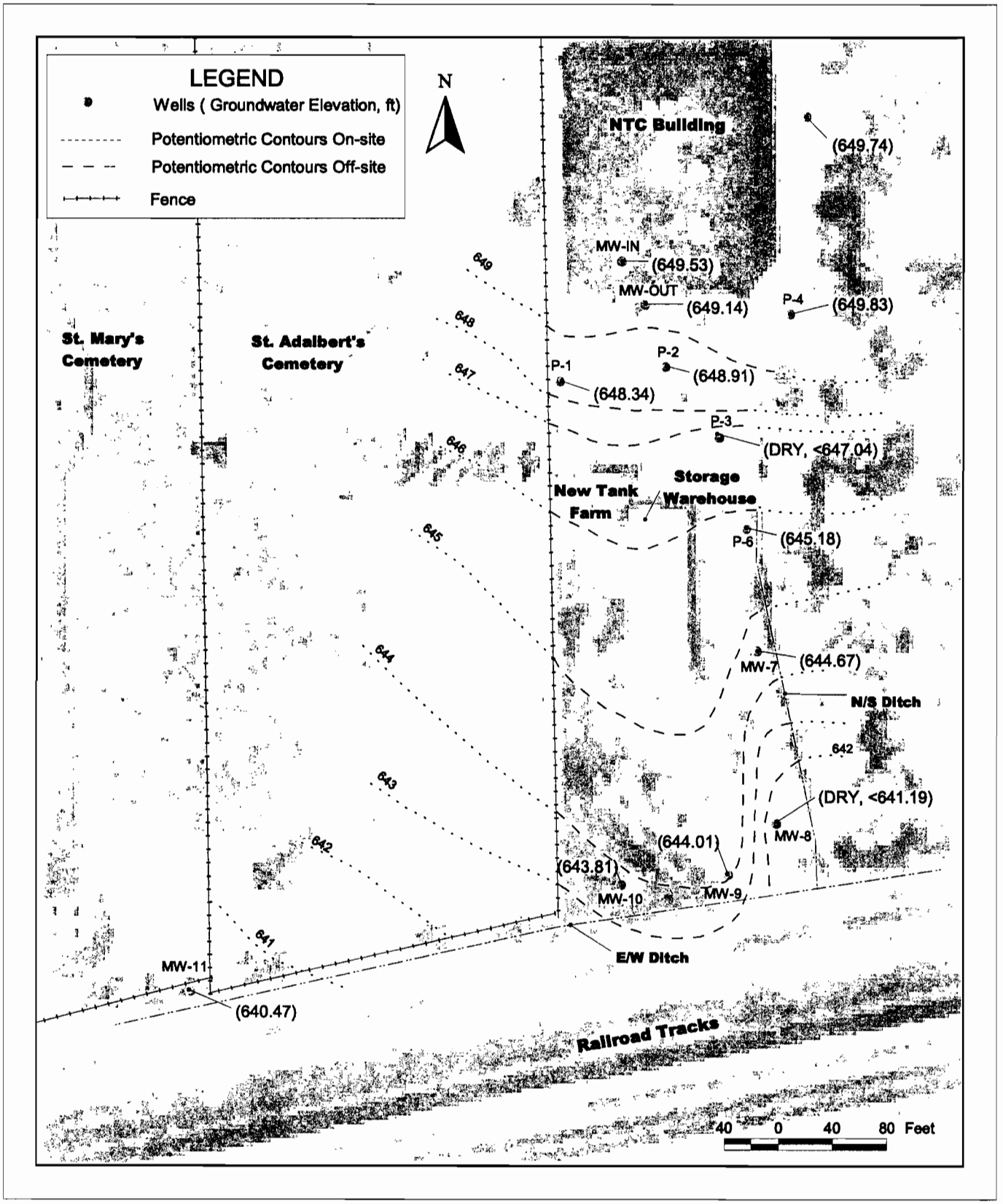


Figure E-4: Potentiometric Surface Contour Map for 12/02/1999

02:000899_QT05_00_13
g:\ntc\sampling_efforts_2.apr GIS

E

Hydraulic Head Measurements Potentiometric Surface Contour Maps

APPENDIX E
SUMMARY OF MONTHLY HYDRAULIC HEAD MEASUREMENTS
NIAGARA TRANSFORMER CORPORATION
ADDITIONAL INVESTIGATION

					Date of Measurement									
					9/10/199		10/19/99		10/26/99		11/19/199		12/2/99	
Monitoring Well/ Piezometer	Elevation forTop of Inside Casing (ft)	Depth to Bottom (ft)	Bottom Well Elevation (ft)	Ground Surface Elevation (ft)	Static Water Level (ft)	Groundwater Elevation (ft)	Static Water Level (ft)	Groundwater Elevation	Static Water Level (ft)	Groundwater Elevation (ft)	Static Water Level (ft)	Groundwater Elevation (ft)	Static Water Level (ft)	Groundwater Elevation
P-1	650.62	4.21	646.41	650.90	DRY	-	3.64	646.98	3.56	647.06	3.40	647.22	2.28	648.34
P-2	650.61	2.23	648.38	650.94	1.50	649.11	1.61	649.00	1.70	648.91	1.78	648.83	1.7	648.91
P-3	651.16	4.12	647.04	651.56	DRY	-	DRY	-	DRY	-	DRY	-	DRY	-
P-4	652.09	3.57	648.52	652.43	DRY	-	1.87	650.22	2.14	649.95	2.54	649.55	2.26	649.83
P-5	651.41	4.20	647.21	651.64	DRY	-	1.50	649.91	2.60	648.81	1.60	649.81	1.62	649.79
MW-6	653.60	11.13	642.47	650.91	DRY	-	9.18	644.42	9.20	644.40	8.94	644.66	8.42	645.18
MW-7	652.17	10.34	641.83	649.47	DRY	-	8.23	643.94	8.00	644.17	8.20	643.97	7.5	644.67
MW-8	650.17	8.98	641.19	647.35	DRY	-	DRY	-	DRY	-	DRY	-	DRY	-
MW-9	648.97	8.00	640.97	646.21	DRY	-	7.04	641.93	6.42	642.55	5.74	643.23	4.96	644.01
MW-10	647.69	7.74	639.95	646.00	DRY	-	5.03	642.66	4.64	643.05	4.76	642.93	3.88	643.81
MW-11	644.17	7.97	636.20	641.09	3.60	-	3.75	640.42	4.12	640.05	3.90	640.27	3.7	640.47
MW-OUT	651.02	7.43	643.59	651.47	-	-	2.63	648.39	2.73	648.30	2.36	648.66	1.88	649.14
MW-IN	654.48	10.77	643.71	655.22	-	-	5.74	648.74	5.65	648.83	5.22	649.27	4.96	649.53

Note:
1. Static water levels for MW-IN and MW-OUT were obtained from continuous water level loggers at 2:30 pm.
2. September 10, 1999 measurements were collected after storm sewer inpection was completed.

F

Data Usability Summary Report (DUSR)

Ecology and Environment, Inc., (E & E) Data Usability Summary Report (DUSR)	
Prepared by: Marcia Meredith Galloway **Project Name/E & E #:** QT05 Niagara Transformer Additional Investigation Task 13	**Date Prepared:** February 21, 2000 **Lab Name:** E & E Analytical Services Center
Lab Report No.(s): 9908004, 9908076, 9908023, 9908037 **Report Date (s):** August 30, September 1 and 3, 1999 **Date Sample(s) Taken:** August 2, 4, 5, and 10, 1999	**Sample Matrices:** 23 Soils/Sed 4 Water **Field QC Samples:** Field Dups – 4 (see Sample Summary) and Rinsate 1

Project Sample ID: = See Sample Summary

Specific analyses conducted on each sample are documented on the COC forms and include the following: Target Compound List (TCL) Polychlorinated Biphenyls (PCBS) and Percent Solids. All methods follow Contract Laboratory Procedures (CLP) found in New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) 10/95.

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness per NYSDEC Division of Environmental Remediation Guidance for the Development of DUSRs. Specific criteria for QC limits were obtained from the NYSDEC ASP 10/95. Qualifiers were assigned based on guidance in EPA's National Functional Guidelines for Organic and Inorganic Data Review. Compliance with the project QA program is indicated on the attached checklist and any major or minor concerns are listed below. The checklist also indicates whether data qualification is required and/or the type of qualifier assigned. Qualifiers for specific samples were marked on copies of laboratory summary reports and the Analytical PCB Results table.

Sample Summary

SED-1	SED-10	SB-2-2.7'-4.7'
SED-1-D (Field QC)	SED-11	SB-2-2.7'-4.7'D (Field QC)
SED-2	SED-12[3] (collected 8/5/1999)	SB-3-2.3'-4.3'
SED-3	SED-13[4] (collected 8/5/1999)	SB-4-2.3'-4.3'
SED-4	SED-14[5] (collected 8/5/1999)	SW-1
SED-5	SED-15[6] (collected 8/10/1999)	SW-2
SED-6	SED-16 (collected 8/10/1999)	SW-2D (Field QC)
SED-7	SED-17 (collected 8/10/1999)	SW-3
SED-7-D (Field QC)	SB-1-0.7'-2.7'	DW-1 (Drill Water)
SED-8a (collected 8/2/1999)[1] SED-8b (collected 8/10/1999)	SB-1-2.7'-4.7'	Rinsate 1 (Equipment Blank)
SED-9a (collected 8/2/1999)[2] SED-9b (collected 8/10/1999) SED –9b-D (collected 8/10/1999) (Field QC)	SB-2-0.7'-2.7'	

Ecology and Environment, Inc., (E & E) Data Usability Summary Report (DUSR)	
Prepared by: Marcia Meredith Galloway	**Date Prepared:** February 21, 2000
Project Name/E & E #: QT05 Niagara Transformer Additional Investigation Task 13	**Lab Name:** E & E Analytical Services Center

Major Concerns:

The review of the laboratory data indicated difference a systematic trend in the reporting of Aroclor 1254 and 1260. The samples analyzed and reported during the first phase of sampling showed the presence of Aroclor 1254 at a concentration relatively consistent to the concentration reported for Aroclor 1260. Samples from the second sampling event at same locations showed no Aroclor 1254. The laboratory reviewed results and indicated the presence of Aroclor 1254 could not be adequately discerned from the PCB pattern due to the high concentration of Aroclor 1260. Since the two Aroclor mixtures co-elute significantly, the interpretation of the presence of Aroclor 1254 is a judgement call of the analyst. The laboratory's PCB expert reviewed a portion of the data and indicated that the Aroclor 1254 may not be present. Based on the comparison of the two set samples from different rounds and the systematic nature of the reported Aroclor 1254 concentration compared to Arocl0r 1260, the Aroclor 1254 results were qualified "U" as non-detect and reported with an elevated reporting limit.

Minor Concerns:

1. Due to the high level of PCBs in the sample, matrix spike and surrogate recoveries were generally diluted outside the calibration range. Since the results were all high level positive values there is no impact on data usability.
2. Field duplicate results for samples SB-2-2.7'-4.7' and SB-2-2.7'-4.7'D had relative percent difference (RPD) values greater than 70% indicating poor precision. The variability appears to be from the laboratory running the samples at two different dilutions. The results are qualified "J" as estimated.
3. Samples collected on August 10, 1999 were transported to the laboratory without cooling. The travel time was less than 20 minutes and the samples were immediately cooled on receipt. Since PCBs are the contaminant of concern and these compounds are non-volatile or degradable there is no impact on data usability.
4. Samples collected on August 10, 1999 were given Sample Identifications (IDs) on the chain-of-custody (COC) that corresponded to previously collected samples. The following sample IDs were reassigned to match the actual locations collected. The laboratory reports reflect the original IDs on the chain-of-custody. The specific location information is provided as a footnote to the Analytical Results Summary.

Original ID	Lab ID	New ID
SED-8	9908004-10A	SED-8a
SED-12	9908076-01A	SED-8b
SED-9	9908004-11A	SED-9a
SED-13	9908076-02A	SED-9b
SED-13D	9908076-03A	SED -9b-D
SED-14	9908037-04A	SED-15
SED-15	9908037-05A	SED-16
SED-16	9908076-06A	SED-17

DUSR CHECKLIST FOR LABORATORY REPORT #: 9908004 LABORATORY:		CIRCLE ONE	QUALI-FIERS
1)	Statements made in the Analytical Data Case Narrative supported by the analytical data or indicated severe concerns?	Yes No NA	
2)	Coolers received properly with no discrepancies?	(Yes) No NA	
3)	Chain of custody records present and completed correctly?	(Yes) No NA	
4)	Samples correctly preserved and documented at lab?	(Yes) No NA	
5)	Analysis run as per the method in the work plan?	(Yes) No NA	
6)	Holding times met for all matrices and analytical parameters?	(Yes) No NA	
7)	Instrument performance checks within acceptance criteria?	Yes No (NA)	
8)	Initial calibrations run correctly and within acceptance criteria?	(Yes) No NA	
9)	Daily calibrations run correctly and within acceptance criteria?	(Yes) No NA	
10)	Method blanks ≤ reporting limit and at rate of 1/20 samples?	(Yes) No NA	
11)	Field blanks ≤ reporting limit and run per work plan?	Yes No (NA)	
12)	Compounds found in blanks common lab and field contaminants?	Yes (No) NA	
13)	Surrogates within the acceptance limits? all diluted out -	Yes (No) NA	NR
14)	MS/MSD or MS/D analyzed at rate of 1/20 samples?	(Yes) No NA	
15)	MS/MSD or MS/D meet the %R and RPD acceptance criteria? Sample conc much greater than spike amount. RPD value good	Yes (No) NA	NR
16)	LCS or LSCD analyzed at rate of 1/20 samples?	(Yes) No NA	
17)	LCS/LCSD's meet the %R and RPD acceptance criteria?	(Yes) No NA	
18)	Internal standards meet the acceptance criteria for GC/MS?	Yes No (NA)	
19)	Field duplicate results ≤ 40 RPD waters and ≤ 70 RPD soils? good precision	(Yes) No NA	
20)	Dilutions made as required and were reporting levels elevated?	Yes No NA	
21)	Discrepancies noted when review of raw data (instrument printouts and chromatograms) was performed?	Yes (No) NA	
22)	Did discrepancies noted above significantly impact the usability of the data based on data needs and objectives of the project?	Yes No (NA)	

Comments: MS/MSD shows good precision even if spike recoveries diluted out. Field dups (2 sets) show good precision.

Completed by: Maria Galloway Date: 2/9/2000

NR = Not required

Ecology and Environment, Inc.
Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

CLIENT: E and E Buffalo Office
Project: Niagara Tranformer
Lab Order: 9908004

CASE NARRATIVE

PCB - SOIL

The column used for analysis was the RTX-5, 30 meters long and 0.53 mm in diameter, with a 1.0 um film thickness.

Secondary dilutions were performed on all samples based on the level of PCB 1254 and PCB 1260 present in the native sample. As a result of the secondary dilutions performed, surrogate recoveries were diluted out of all samples.

Surrogate recoveries as well as recovery of PCB 1016 were diluted out in the matrix spike/matrix spike duplicate analysis of sample SED-7D. Recovery of PCB 1260 was skewed because the level of PCB 1260 present in the native sample was greater than 4 times the spiking level. Surrogate and spike recoveries were all within acceptable limits in the laboratory control sample. No further action is required.

As per Method 8082, a multipoint calibration for Aroclors 1016 and 1260 was performed demonstrating linearity. Since Aroclors 1260 and 1254 were known to be of concern based on previous analyses form this site, calibration for each of the seven Aroclors was not required.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Barbara Krajewski
Project Manager
August 30, 1999

002

CHAIN OF CUSTODY RECORD

ASC analytical services center

Ecology and Environment, Inc., Analytical Services Center
4493 Walden Avenue, Lancaster, New York, 14086, Tel: 716/685-8080, Fax 716/685-0852
Where Scientific Excellence and Efficiency Meet

Cooler No: 1
Lab: ASC

PROJECT No: 000619 9 TUE 2013
SITE NAME: Nia Transformer
LOCATION: (Include State) Cherrytowisso NY
CLIENT: NYS DEC.
PROJECT MANAGER: Mat Wawrowski
OFFICE No: HQ
FIELD TEAM LEADER: Bob Meyers
PHONE No: HQ
SAMPLERS: (PRINT) Bob Meyers, Kathleen DeMarco

CONTAINER TYPE AND PRESERVATIVE: 8-oz Jar
REQUESTED ANALYSIS: PCB's (8082)

TURNAROUND TIME: 24-HOUR ☐ RUSH; 48-HOUR ☐; 1-WEEK ☐; STANDARD ☒; RUSH _____ days; OTHER _____

(FOR LAB USE ONLY): Lab Job No: ; Report type: ; Batch QC: Yes No

DATE	TIME	SAMPLE ID	SAMPLE MATRIX	CHECK FOR MS/MSD	SAMPLE TYPE	No. OF CONTAINERS	PCB's (8082)	OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
8-1-99	1402	Sed-1	SD		O	1	X				
	1402	Sed-1D	SD		D	1	X				
	1405	Sed-2	SD		O	1	X				
	1415	Sed-3	SD		O	1	X				
	1422	Sed-4	SD		O	1	X				
	1430	Sed-5	SD		O	1	X				
	1435	Sed-6	SD		O	1	X				
	1450	Sed-7	SD		O	1	X				
	1450	Sed-7D	SD	X	D/M	1	X				MS/MSD
	1440	Sed-8	SD		O	1	X				

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Ship Via:	Date:
Robert Meyers	8-2-99/1520				
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number:	
			8.2.99 3.21		

Temperature Blank Info. Enclosed: (Yes) No

(FOR LAB USE ONLY) Date: _____ Time: _____ Temperature: _____ °C

Distribution: White - Lab original Yellow - Field team leader

CHAIN OF CUSTODY RECORD

ASC analytical services center

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Cooler No: 1
Lab: ASC
Page: 2 of 2

PROJECT No:	SITE NAME:	LOCATION: (Include State)
000049 9TESC015	NIA. TITUS/BOWNE K.	Cheektowaga NY

CLIENT: NYSDEC

PROJECT MANAGER: MAT WAWROWSKI — OFFICE No: #6

FIELD TEAM LEADER: Bob Meyers — PHONE No: #0

SAMPLERS: (PRINT) Bob Meyers, KATHLEEN DEMARCO

CONTAINER TYPE AND PRESERVATIVE: 8oz. Jar

REQUESTED ANALYSIS: PCB's (8082)

TURNAROUND TIME: 24-HOUR ☐ RUSH; 48-HOUR ☐; 1-WEEK ☐; STANDARD ☒; RUSH _____ days; OTHER _____

(FOR LAB USE ONLY)
Lab Job No:
Report type:
Batch QC: Yes No

DATE	TIME	SAMPLE ID	SAMPLE MATRIX	CHECK FOR MS/MSD	SAMPLE TYPE	No. OF CONTAINERS	OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
08/02/99	1450	Sed - 9	SD		O	1				

RAM

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Ship Via:	Date:
[signature]	8-2-99/1520				
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number:	
		[signature]	8.2.99 3:21		

Temperature Blank Info. Enclosed: (Yes) No

(FOR LAB USE ONLY) Date: _____ Time: _____ Temperature: _____ °C

Distribution: White - Lab original Yellow - Field team leader

To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
SED-1	9908004-01				8082		
SED-1A	02						
SED-2	03						
SED-3	04						
SED-4	05						
SED-5	06						
SED-6	07						
SED-7	08						
SED-7D	09						
SED-8	10						
SED-9	11						

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
9908004-01	SOIL	8/2/99	8/2/99	8/5/99	8/9/99
02					
03					
04					8/10/99
05					
06					
07					
08					
09					
10					
11					

Ecology and Environment, Inc.
Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

Lab Order: 9908004
Client: E and E Buffalo Office
Project: Niagara Tranformer

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
9908004-01A	SED-1	08/02/1999 2:02:00 PM	Soil	PCBs by Method 8082		08/05/1999	08/09/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-02A	SED-1D			PCBs by Method 8082		08/05/1999	08/09/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-03A	SED-2	08/02/1999 2:05:00 PM		PCBs by Method 8082		08/05/1999	08/09/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-04A	SED-3	08/02/1999 2:15:00 PM		PCBs by Method 8082		08/05/1999	08/10/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-05A	SED-4	08/02/1999 2:22:00 PM		PCBs by Method 8082		08/05/1999	08/10/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-06A	SED-5	08/02/1999 2:30:00 PM		PCBs by Method 8082		08/05/1999	08/10/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-07A	SED-6	08/02/1999 2:35:00 PM		PCBs by Method 8082		08/05/1999	08/10/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-08A	SED-7	08/02/1999 2:50:00 PM		PCBs by Method 8082		08/05/1999	08/10/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-09A	SED-7D			PCBs by Method 8082		08/05/1999	08/10/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-10A	SED-8	08/02/1999 2:40:00 PM		PCBs by Method 8082		08/05/1999	08/10/1999
				Percent Moisture		08/04/1999	08/04/1999
9908004-11A	SED-9	08/02/1999 2:50:00 PM		PCBs by Method 8082		08/05/1999	08/10/1999
				Percent Moisture		08/04/1999	08/04/1999

DUSR CHECKLIST FOR LABORATORY REPORT #: 9908023 LABORATORY:		CIRCLE ONE	QUALI-FIERS
1)	Statements made in the Analytical Data Case Narrative supported by the analytical data or indicated severe concerns?	Yes No NA	
2)	Coolers received properly with no discrepancies?	(Yes) No NA	
3)	Chain of custody records present and completed correctly?	(Yes) No NA	
4)	Samples correctly preserved and documented at lab?	(Yes) No NA	
5)	Analysis run as per the method in the work plan?	(Yes) No NA	
6)	Holding times met for all matrices and analytical parameters?	(Yes) No NA	
7)	Instrument performance checks within acceptance criteria?	(Yes) No NA	
8)	Initial calibrations run correctly and within acceptance criteria?	(Yes) No NA	
9)	Daily calibrations run correctly and within acceptance criteria?	(Yes) No NA	
10)	Method blanks ≤ reporting limit and at rate of 1/20 samples?	(Yes) No NA	
11)	Field blanks ≤ reporting limit and run per work plan?	(Yes) No NA	
12)	Compounds found in blanks common lab and field contaminants?	Yes (No) NA	
13)	Surrogates within the acceptance limits? all diluted out soils	Yes (No) NA	None
14)	MS/MSD or MS/D analyzed at rate of 1/20 samples?	(Yes) No NA	
15)	MS/MSD or MS/D meet the %R and RPD acceptance criteria? Spike diluted out >4x	Yes (No) NA	None
16)	LCS or LSCD analyzed at rate of 1/20 samples?	(Yes) No NA	
17)	LCS/LCSD's meet the %R and RPD acceptance criteria?	(Yes) No NA	
18)	Internal standards meet the acceptance criteria for GC/MS?	Yes No (NA)	
19)	Field duplicate results ≤ 40 RPD waters and ≤ 70 RPD soils?	Yes (No) NA	"J"
20)	Dilutions made as required and were reporting levels elevated? Two different dilution factors 100 v. 1000	(Yes) No NA	
21)	Discrepancies noted when review of raw data (instrument printouts and chromatograms) was performed?	Yes (No) NA	
22)	Did discrepancies noted above significantly impact the usability of the data based on data needs and objectives of the project?	Yes No (NA)	

Comments: Field duplicates show poor precision - run @ different dilution factors.

Completed by: Marcia Calley Date: 2/9/2000

Ecology and Environment, Inc.
Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

CLIENT: E and E Buffalo Office
Project: Niagara Tranformer
Lab Order: 9908023

CASE NARRATIVE

PCB - SOIL

The column used for analysis was an RTX-5, 30 meters long and 0.53 mm in diameter, with a 1.0 um film thickness.

Secondary dilutions were performed on all samples based on the level of PCB 1254 and PCB 1260 present in the native sample. As a result of the secondary dilutions performed, surrogate recoveries were diluted out of all samples.

Surrogate recoveries as well as recovery of PCB 1016 were diluted out in the matrix spike/matrix spike duplicate analysis of sample SB-1-2.7'-4.7'. Recovery of PCB 1260 was skewed because the level of PCB1260 present in the native sample was greater than 4 times the spiking level. Surrogate and spike recoveries were all within acceptable limits in the laboratory control sample. No further action is required.

PCB - WATER

The column used for analysis was an RTX-5, 30 meters long and 0.53 mm in diameter, with a 1.0 um film thickness.

No discrepancies were encountered during this analysis.

As per Method 8082, a multipoint calibration for Aroclors 1016 and 1260 was performed demonstrating linearity. Since Aroclors 1260 and 1254 were known to be of concern based on previous analyses form this site, calibration for each of the seven Aroclors was not required.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Barbara Krajewski

Barbara Krajewski
Project Manager
September 1, 1999

CHAIN OF CUSTODY RECORD

ASC analytical services center

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Cooler No: 1 RAM
Lab: ASC

PROJECT No: 000699 QT050015
SITE NAME: Niagara Transformer
LOCATION: (Include State) Cheektowaga NY
CLIENT: NYSDEC
PROJECT MANAGER: Matt Wawrowski
OFFICE No: HQ
FIELD TEAM LEADER: Bob Meyers
PHONE No: HQ
SAMPLERS: (PRINT) Bob Meyers

CONTAINER TYPE AND PRESERVATIVE: 8oz Jar (None); 8D oz Amber (None)
REQUESTED ANALYSIS: PCBs (8082); PCBs

TURNAROUND TIME: 24-HOUR; 48-HOUR; 1-WEEK; STANDARD [X]; RUSH ____ days; OTHER ____

(FOR LAB USE ONLY): Lab Job No: ; Report type: ; Batch QC: Yes No

DATE	TIME	SAMPLE ID	SAMPLE MATRIX	CHECK FOR MS/MSD	SAMPLE TYPE	No. OF CONTAINERS	PCBs (8082)	PCBs	OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
8-4-99	0900	SB-2-0.7'-2.7'	SB		O	1	X		2	0.7'	2.7'	Archive ANALYZE
	0905	SB-2-2.7'-4.7'	SB		O	1	X		1	2.7'	4.7'	
	0905	SB-2-2.7'-4.7'D	SB		D	1	X		1	2.7'	4.7'	Dup.
	0925	SB-1-0.7-2.7	SB		O	1	X		55	0.7'	2.7'	Archive ANALYZE
	0936	SB-1-2.7'-4.7'	SB	✓	MS	2	X		1.4	2.7'	4.7'	MS/MSD
	1050	SB-3-0.3'-2.3'	SB		O	1	X		0	0.3	2.3	Archive
	1115	SB-3-2.3'-4.3'	SB		O	1	X		44	2.3	4.3	
	1150	SB-4-0.3'-2.3'	SB		O	1	X		92	0.3	2.3	Archive
	1200	SB-4-2.3'-4.3'	SB		O	1	X		10	2.3	4.3	
✓	1135	DW-1	O		O			X	—	—	—	Drill Water

F-13

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Ship Via:	Date:
Robert A Meyer	8-4-99/1635			Hand Delivery	8-4-99
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number:	
		Mark E Lucas	8/4/99 16:35	NA	

Temperature Blank Info. Enclosed: (Yes) No

(FOR LAB USE ONLY) Date: ____ Time: ____ Temperature: 4 °C

Distribution: White - Lab original Yellow - Field team leader

Draft

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ASC analytical services center

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Cooler No: 1
Lab: ASC

PROJECT No: 000699 QT050015
SITE NAME: Niagara Transformer
LOCATION: (Include State) Cheektowaga NY
CLIENT: NYSDEC
PROJECT MANAGER: Matt Wawrowski
OFFICE No: HQ
FIELD TEAM LEADER: Bob Meyers
PHONE No: HQ
SAMPLERS: (PRINT) Bob Meyers

CONTAINER TYPE AND PRESERVATIVE: 8oz Jar (Non-Pres); 80 oz Amber (None)
REQUESTED ANALYSIS: PCB's (8082); PCB's

TURNAROUND TIME: 24-HOUR ☐ RUSH; 48-HOUR ☐ RUSH; 1-WEEK ☐ RUSH; STANDARD ☒; RUSH _____ days; OTHER _____

(FOR LAB USE ONLY)
Lab Job No:
Report type:
Batch QC: Yes No

DATE	TIME	SAMPLE ID	SAMPLE MATRIX	CHECK FOR MS/MSD	SAMPLE TYPE	No. OF CONTAINERS	PCB's (8082)	PCB's	OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
8-4-99	1300	Rinsate-1	O		R	1		X	—	—	—	Rinsate Blank

F-14

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Ship Via:	Date:
Robert A Meyers	8-4-99/1635			Hand Delivery	8-4-99
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number:	
		Mark E Lewis	8/4/99 16:35	NA	

Temperature Blank Info.
Enclosed: (Yes) No

(FOR LAB USE ONLY)
Date: 4 Time: _____
Temperature: _____ °C

Distribution: White - Lab original Yellow - Field team leader

To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
SB-2-0.7-2.7	9908023-01				8082		
SB-2-2.7-4.7	9908023-02						
SB-2-2.7-4.7D	9908023-03						
SB-1-0.7-2.7	9908023-04						
SB-1-2.7-4.7	9908023-05						
SB-3-2.3-4.3	9908023-07						
SB-4-2.3-4.3	9908023-09						
DW-1	9908023-10						
RINSATE-1	9908023-11						

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
9908023-01	SOIL	8/4/99	8/4/99	8/5/99	8/10/99
02	"	"	"	"	"
03	"	"	"	"	"
04	"	"	"	"	"
05	"	"	"	"	"
07	"	"	"	"	"
09	"	"	"	"	"
10	WATER	"	"	8/5/99	8/6/99
11	WATER	"	"	8/5/99	8/6/99

DUSR CHECKLIST FOR LABORATORY REPORT #: 9908037 LABORATORY:		CIRCLE ONE	QUALI-FIERS
1)	Statements made in the Analytical Data Case Narrative supported by the analytical data or indicated severe concerns?	(Yes) No NA	
2)	Coolers received properly with no discrepancies?	(Yes) No NA	
3)	Chain of custody records present and completed correctly?	(Yes) No NA	
4)	Samples correctly preserved and documented at lab?	(Yes) No NA	
5)	Analysis run as per the method in the work plan?	(Yes) No NA	
6)	Holding times met for all matrices and analytical parameters?	(Yes) No NA	
7)	Instrument performance checks within acceptance criteria? See narrative note on shifts in 1254	Yes (No) NA	
8)	Initial calibrations run correctly and within acceptance criteria?	(Yes) No NA	
9)	Daily calibrations run correctly and within acceptance criteria?	(Yes) No NA	
10)	Method blanks ≤ reporting limit and at rate of 1/20 samples?	(Yes) No NA	
11)	Field blanks ≤ reporting limit and run per work plan? Not required	Yes No (NA)	
12)	Compounds found in blanks common lab and field contaminants?	(Yes) No NA	
13)	Surrogates within the acceptance limits? high limits due to interference in sediments	Yes (No) NA	None
14)	MS/MSD or MS/D analyzed at rate of 1/20 samples?	(Yes) No NA	
15)	MS/MSD or MS/D meet the %R and RPD acceptance criteria? for sed see 9908035	(Yes) No NA	
16)	LCS or LSCD analyzed at rate of 1/20 samples?	(Yes) No NA	
17)	LCS/LCSD's meet the %R and RPD acceptance criteria?	(Yes) No NA	
18)	Internal standards meet the acceptance criteria for GC/MS?	Yes No (NA)	
19)	Field duplicate results ≤ 40 RPD waters and ≤ 70 RPD soils?	Yes No NA	
20)	Dilutions made as required and were reporting levels elevated?	(Yes) No NA	
21)	Discrepancies noted when review of raw data (instrument printouts and chromatograms) was performed?	Yes (No) NA	
22)	Did discrepancies noted above significantly impact the usability of the data based on data needs and objectives of the project?	Yes No (NA)	

Comments: _____

Completed by: M Cunningham Date: 2/9/00

Ecology and Environment, Inc.
Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

CLIENT: E and E Buffalo Office
Project: Niagara Tranformer
Lab Order: 9908037

CASE NARRATIVE

PCB

The column used for analysis was an RTX-35, 30 meters long and 0.53 mm in diameter, with a 1.0 um film thickness.

An unaccounted for retention time shift occurred during the analysis of continuing calibration standard AR1254M1 0812. Continuing calibration standard AR1254M2 0812 was used to aid in the identification of AR1254 in samples SED-10, SED-11, SED-12, SED-13, and SED-14.

Recovery of the surrogate decachlorobiphenyl exceeded QC limits in samples SED-11, SED-12, and SED-13 as a result of matrix interferences. Recovery of the surrogate TCMX was within acceptable limits. No further action is required.

As per Method 8082, a multipoint calibration for Aroclors 1016 and 1260 was performed demonstrating linearity. Since Aroclors 1260 and 1254 were known to be of concern based on previous analyses form this site, calibration for each of the seven Aroclors was not required.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Barbara Krajewski
Project Manager
September 1, 1999

CHAIN OF CUSTODY RECORD

ASC analytical services center

Ecology and Environment, Inc., Analytical Services Center
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Cooler No: 1
Lab: ASC

PROJECT No: ~~000 9785 Fu~~ 000 6099 9785 0015
SITE NAME: Nia. Transformers
LOCATION: (Include State) Cheektowaga N.Y.
CLIENT: ~~USEPA~~ NYSDEC
PROJECT MANAGER: Matt Wawrowski
OFFICE No: HQ
FIELD TEAM LEADER: Bob Meyers
PHONE No: HQ
SAMPLERS: (PRINT) Matt Wawrowski, Kathleen Demarco

CONTAINER TYPE AND PRESERVATIVE: 8 oz Amber (None) | 8 oz Jar (None)
REQUESTED ANALYSIS: PCB[5] | PCB[5]

TURNAROUND TIME: 24-HOUR ☐ R; 48-HOUR ☐ U; 1-WEEK ☐ S; STANDARD ☒ H; RUSH _____ days; OTHER _____

(FOR LAB USE ONLY): Lab Job No: ; Report type: ; Batch QC: Yes No

DATE	TIME	SAMPLE ID	SAMPLE MATRIX	CHECK FOR MS/MSD	SAMPLE TYPE	No. OF CONTAINERS	PCB[5]	PCB[5]	OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
8-5-99	0930	Sed-10	SD		O	1		X				
	0940	Sed-11	SD		O	1		X				
	0950	Sed-12	SD		O	1		X				
	1000	Sed-13	SD		O	1		X				
	1015	Sed-14	SD		O	1		X				
	0930	SW-1	SW	X	M	2	X					MS/MSD, Extra Volume
	0950	SW-2	SW		O	1	X					
	0950	SW-2D	SW		D	1	X					
	1000	SW-3	SW		O	1	X					

F-19

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Ship Via:	Date:
				Hand Delivery	8-5-99
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number:	
Kde Mayer	8/5/99 12:15	[signature]	8/5/99 12:15	NA	

Temperature Blank Info. Enclosed: (Yes) No

(FOR LAB USE ONLY) Date: _____ Time: _____ Temperature: _____ °C

Distribution: White - Lab original Yellow - Field team leader

To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
SED-10	9908037-01				8082		
SED-11	02						
SED-12	03						
SED-13	04						
SED-14	05						
SW-1	06						
SW-2	07						
SW-2D	08						
SW-3	09						

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
9908037-01	Soil	8/5/99	8/5/99	8/9/99	8/12/99
02	"	"	"	"	"
03	"	"	"	"	"
04	"	"	"	"	"
05	"	"	"	"	"
06	WATER	"	"	"	8/13/99
07	"	"	"	"	"
08	"	"	"	"	"
09	"	"	"	"	"

DUSR CHECKLIST FOR LABORATORY REPORT #: 9908096 LABORATORY:		CIRCLE ONE	QUALI-FIERS
1)	Statements made in the Analytical Data Case Narrative supported by the analytical data or indicated severe concerns?	(Yes) No NA	
2)	Coolers received properly with no discrepancies? 20% on receipt - Went immediately to 4°C	Yes (No) NA	None
3)	Chain of custody records present and completed correctly? Sample ID's not correct	(Yes) No NA	
4)	Samples correctly preserved and documented at lab?	(Yes) No NA	
5)	Analysis run as per the method in the work plan?	(Yes) No NA	
6)	Holding times met for all matrices and analytical parameters?	(Yes) No NA	
7)	Instrument performance checks within acceptance criteria?	(Yes) No NA	
8)	Initial calibrations run correctly and within acceptance criteria?	(Yes) No NA	
9)	Daily calibrations run correctly and within acceptance criteria?	(Yes) No NA	
10)	Method blanks ≤ reporting limit and at rate of 1/20 samples?	(Yes) No NA	
11)	Field blanks ≤ reporting limit and run per work plan?	Yes (No) NA	
12)	Compounds found in blanks common lab and field contaminants?	Yes (No) NA	
13)	Surrogates within the acceptance limits? diluted out	Yes (No) NA	None
14)	MS/MSD or MS/D analyzed at rate of 1/20 samples?	(Yes) No NA	
15)	MS/MSD or MS/D meet the %R and RPD acceptance criteria? Spike >4x spike amount diluted out	Yes (No) NA	None
16)	LCS or LSCD analyzed at rate of 1/20 samples?	(Yes) No NA	
17)	LCS/LCSD's meet the %R and RPD acceptance criteria?	(Yes) No NA	
18)	Internal standards meet the acceptance criteria for GC/MS?	Yes No (NA)	
19)	Field duplicate results ≤ 40 RPD waters and ≤ 70 RPD soils?	(Yes) No NA	
20)	Dilutions made as required and were reporting levels elevated?	(Yes) No NA	
21)	Discrepancies noted when review of raw data (instrument printouts and chromatograms) was performed?	Yes (No) NA	
22)	Did discrepancies noted above significantly impact the usability of the data based on data needs and objectives of the project?	Yes (No) NA	

Comments: Local site delivery of coolers, none around, place marked on tag @ 4°C -

Completed by: Marin Gilley Date: 2/27/00

Sample number problem?

Ecology and Environment, Inc.
Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

CLIENT: E and E Buffalo Office
Project: Niagara Tranformer
Lab Order: 9908076

CASE NARRATIVE

Samples were sent directly from the local site to the laboratory. The last sample was collected at 13:57 and the samples were received at 13:58. The cooler temperature was 20°C at the time of receipt. Samples were immediately placed in storage at 4°C.

PCB

The column used for analysis was an RTX-35, 30 meters long and 0.53 mm in diameter, with a 1.0 um film thickness.

Secondary dilutions were performed on all samples based on the level of Aroclor 1260 present in the native sample. As a result of these secondary dilutions, surrogate recoveries as well as Aroclor 1016 (matrix spike/matrix spike duplicate) were diluted out.

Recovery of Aroclor 1260 is skewed in the matrix spike/matrix spike duplicate analysis of sample SED-12 due to the level of Aroclor 1260 present in the native sample.

As per Method 8082, a multipoint calibration for Aroclors 1016 and 1260 was performed demonstrating linearity. Since Aroclors 1260 and 1254 were known to be of concern based on previous analyses form this site, calibration for each of the seven Aroclors was not required.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Barbara Krajewski
Project Manager
September 3, 1999

CHAIN OF CUSTODY RECORD

ASC analytical services center

Ecology and Environment, Inc., Analytical Services Center
4493 Walden Avenue, Lancaster, New York, 14086, Tel: 716/685-8080, Fax 716/685-0852
Where Scientific Excellence and Efficiency Meet

Cooler No: _____
Lab: _____

PROJECT No: 000619 QT05 0015

SITE NAME: Niagara Transformer

LOCATION: (Include State) Hicksville NY

CLIENT: Niagara Transformer

PROJECT MANAGER: Mat Wawrowski

OFFICE No: HQ

FIELD TEAM LEADER: PHONE No:
& Kathleen DeMarco HQ

SAMPLERS: (PRINT)
Kathleen DeMarco, Gregory Jones

CONTAINER TYPE AND PRESERVATIVE: 8oz Jar

REQUESTED ANALYSIS: PCBs

TURNAROUND TIME
- 24-HOUR ☐
- 48-HOUR ☐
- 1-WEEK ☐
- STANDARD ☒
- RUSH _____ days
- OTHER _____

(FOR LAB USE ONLY)
Lab Job No:
Report type:
Batch QC:
Yes No

DATE	TIME	SAMPLE ID	SAMPLE MATRIX	CHECK FOR MS/MSD	SAMPLE TYPE	No. OF CONTAINERS	PCBs	OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
08/10/99	12:40	Sed-12	SO		O	1	X				
	12:47	13			D		X				
	12:55	13-D			D		X				
	13:05	14			O		X				
	13:11	15					X				
	13:17	16					X				
		1									

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Ship Via:	Date:
Kathleen DeMarco	8/10/99 13:58		8/10/99 1358		
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number:	

Temperature Blank Info.
Enclosed: Yes No

(FOR LAB USE ONLY)
Date: _____ Time: _____
Temperature: _____ °C

Distribution: White - Lab original, Yellow - Field team leader

F-24

03

To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
SED-12	9908076-01				8082		
SED-13	02						
SED-13D	03						
SED-14	04						
SED-15	05						
SED-16	06						

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
9908076-01	SOIL	8/10/99	8/10/99	8/12/99	8/19/99
02					8/19/99
03					8/20/99
04					
05					
06					

Ecology and Environment, Inc., (E & E) Data Usability Summary Report (DUSR)	
Prepared by: Marcia Meredith Galloway	**Date Prepared:** February 21, 2000
Project Name/E & E #: QT05 Niagara Transformer Additional Investigation Task 13	**Lab Name:** E & E Analytical Services Center
Lab Report No.(s): 9911013, 9911033 **Report Date (s):** December 1, 1999 **Date Sample(s) Taken:** November 2 and 3, 1999	**Sample Matrices:** 16 Water **Field QC Samples:** Field Dups – 1 (see Sample Summary)

Project Sample ID: = See Sample Summary

Specific analyses conducted on each sample are documented on the COC forms and include the following: Target Compound List (TCL) Polychlorinated Biphenyls (PCBS). All methods follow Contract Laboratory Procedures (CLP) found in New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) 10/95.

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness per NYSDEC Division of Environmental Remediation Guidance for the Development of DUSRs. Specific criteria for QC limits were obtained from the NYSDEC ASP 10/95. Qualifiers were assigned based on guidance in EPA's National Functional Guidelines for Organic and Inorganic Data Review. Compliance with the project QA program is indicated on the attached checklist and any major or minor concerns are listed below. The checklist also indicates whether data qualification is required and/or the type of qualifier assigned. Qualifiers for specific samples were marked on copies of laboratory summary reports and the Analytical PCB Results table.

Sample Summary

SW-4	GW-6-P6	RD-1
SW-5	GW-7-P7	RD-2
GW-1-P5	GW-8-P11	RD-3
GW-2-P4	GW-9-P9	RD-4
GW-4-MW- IN	GW-10-P10	RD-5
GW-5-MW-OUT	GW-10-D-P10 (Field QC)	

Major Concerns: None

Ecology and Environment, Inc., (E & E) Data Usability Summary Report (DUSR)	
Prepared by: Marcia Meredith Galloway	**Date Prepared:** February 21, 2000
Project Name/E & E #: QT05 Niagara Transformer Additional Investigation Task 13	**Lab Name:** E & E Analytical Services Center

Minor Concerns:

1. Samples were transported to the laboratory without cooling. The travel time was less than 20 minutes and the samples were immediately cooled on receipt. Since PCBs are the contaminant of concern and these compounds are non-volatile or degradable there is no impact on data usability.
2. In order to achieve a detection limit of 0.065 ppb, the laboratory concentrated the final extract from 10 mLs to 1 mL. The resulting step had a significant impact on spike and surrogate recoveries of the QC samples, biasing most of the results to the high end. The laboratory has no established QC limits for the low level analysis, and therefore no action was taken and sample results are not qualified due to the QC sample results.
3. The chromatograms of all samples were reviewed. The concentration step described in item 2 does not appear to have had an impact on sample results except for a few samples with high surrogate recoveries. The sample results for SW-5, GW-9-P9, and GW-10-D-P10 had high recoveries of both surrogates and positive results. The positive results are flagged "J" as estimated.
4. Samples collected on November 2, 1999 were extracted one day beyond the NYSDEC holding time of five days from sample receipt. Since the samples were received the same day as sampled and the method holding time of seven days from collection was not exceeded, no data qualification is required.
5. The ending calibration standard for Aroclor 1254 was high. The only impacted positive results for Aroclor 1254 were for the matrix spike samples, and therefore no data qualification of sample results is required.

DUSR CHECKLIST FOR LABORATORY REPORT #: 9911013 LABORATORY: STL-ASC	CIRCLE ONE	QUALIFIERS
1) Statements made in the Analytical Data Case Narrative supported by the analytical data or indicated severe concerns?	(Yes) No NA	
2) Coolers received properly with no discrepancies? *not on ice, iced immediately*	Yes (No) NA	
3) Chain of custody records present and completed correctly? *did not indicate analysis, verbal to Lab DM*	Yes (No) NA	*None*
4) Samples correctly preserved and documented at lab?	(Yes) No NA	
5) Analysis run as per the method in the work plan?	(Yes) No NA	
6) Holding times met for all matrices and analytical parameters? *One day beyond NYSDEC w/in 7 days 8082*	Yes (No) NA	*None*
7) Instrument performance checks within acceptance criteria?	(Yes) No NA	
8) Initial calibrations run correctly and within acceptance criteria?	(Yes) No NA	
9) Daily calibrations run correctly and within acceptance criteria? *last 1254 STD out, 1260 in - Only impact MS/MSD increasing concentration*	Yes (No) NA	
10) Method blanks ≤ reporting limit and at rate of 1/20 samples?	(Yes) No NA	
11) Field blanks ≤ reporting limit and run per work plan?	Yes (No) NA	
12) Compounds found in blanks common lab and field contaminants?	Yes (No) NA	
13) Surrogates within the acceptance limits? *High recoveries due to 1mL concentration. Also diluted out*	Yes (No) NA	*None*
14) MS/MSD or MS/D analyzed at rate of 1/20 samples?	(Yes) No NA	
15) MS/MSD or MS/D meet the %R and RPD acceptance criteria? *High RPD one high spike - most likely concentration step*	Yes (No) NA	*None*
16) LCS or LSCD analyzed at rate of 1/20 samples?	(Yes) No NA	
17) LCS/LCSD's meet the %R and RPD acceptance criteria? *See MSD comment*	Yes (No) NA	*None*
18) Internal standards meet the acceptance criteria for GC/MS?	Yes No (NA)	
19) Field duplicate results ≤ 40 RPD waters and ≤ 70 RPD soils?	Yes No (NA)	
20) Dilutions made as required and were reporting levels elevated?	(Yes) No NA	
21) Discrepancies noted when review of raw data (instrument printouts and chromatograms) was performed?	Yes (No) NA	
22) Did discrepancies noted above significantly impact the usability of the data based on data needs and objectives of the project?	Yes (No) NA	

Comments: *1mL concentration for lower DL had significant impact on QC - Samples appear to be fine. No qualification*

Completed by: *[signature]* Date: *2/18/2000*

Ecology and Environment, Inc.
Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

CLIENT: E and E Buffalo Office
Project: Niagara Transformer
Lab Order: 9911013

CASE NARRATIVE

Samples were delivered by hand directly from the field and were not packaged in ice. Samples were maintained at 2° to 6° C at the laboratory.

Samples were extracted on 11/8/99, one day after the NYDEC ASP hold time of 5 days from sample receipt but within the Method 8082 hold time of 7 days from collection. Data quality is not impacted.

Although not designated on the chain of custody record, W. Kawar notified the laboratory that a detection limit of 0.065 ug/L was required. Sample extracts were concentrated to 1.0 mL in order to achieve the low detection limit.

The column used for analysis was an RTX-35, 30 meters long and 0.53 mm in diameter, with a 1.0 um film thickness.

Secondary dilutions were performed on samples GW-5-MW-OUT and GW-4-MW-IN based on the level of target compounds present in the native extract. As a result of the secondary dilution performed on sample GW-5-MW-OUT, surrogate recoveries were diluted out.

Surrogate recoveries fell outside QC limits in sample GW-4- MW-IN and the matrix spike duplicate of sample RD-1, as well as the laboratory control sample (LCS). QC limits used were those of the standard 8082 analysis. No limits have been established for the low-level analysis performed on the samples included in this report.

Recovery of Aroclor 1016/1260 fell outside QC limits in the laboratory control sample (LCS) as well as the matrix spike duplicate analysis of sample RD-1. QC limits used were those of the standard 8082 analysis. No limits have been established for the low-level analysis performed on the samples included in this report.

Continuing calibration (%D) criteria was not met for Aroclor 1254 in continuing calibration standard AR1254 M03 1115 due to an increase in sensitivity. Continuing calibration criteria was within acceptable limits in the concluding calibration standard.

As per Method 8082, a multipoint calibration for Aroclors 1016 and 1260 was performed demonstrating linearity. Since Aroclors 1260 and 1254 were known to be of concern based on previous analysis from this site, calibration for each of the seven Aroclors was not required.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Barbara Krajewski

Barbara Krajewski
Project Manager
December 1, 1999

CHAIN OF CUSTODY RECORD

ASC analytical services center

Ecology and Environment, Inc., Analytical Services Center
4493 Walden Avenue, Lancaster, New York, 14086, Tel: 716/685-8080, Fax 716/685-0852
Where Scientific Excellence and Efficiency Meet

Cooler No: _____
Lab: _____

Page: ____ of ____

PROJECT No:	SITE NAME:	LOCATION: (Include State)
699.0705 00.15	NIAGARA TRANSFORMER	

CLIENT: NYSDEC

PROJECT MANAGER: DiAbates

OFFICE No: Buffalo HQ

FIELD TEAM LEADER: W. Kawiak

PHONE No:

SAMPLERS: (PRINT) Gregory Jones

CONTAINER TYPE AND PRESERVATIVE: 8oz Amb

REQUESTED ANALYSIS: PCB's

DATE	TIME	SAMPLE ID	SAMPLE MATRIX	CHECK FOR MS/MSD	SAMPLE TYPE	No. OF CONTAINERS	OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
11/2/99		RD-1				1				
		RD-2				1				
		RD-3				1				
		RD-4				1				
		RD-5				1				
		GW-5-NW-OUT				1				
		GW4-NW-IN				1				

TURNAROUND TIME
- 24-HOUR ☐ RUSH
- 48-HOUR ☐
- 1-WEEK ☐
- STANDARD ☐
- RUSH _____ days
- OTHER _____

(FOR LAB USE ONLY)
Lab Job No:
Report type:
Batch QC: Yes No

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Ship Via:	Date:
	11/2/99				
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number:	
			11/2/99 13:34		

Temperature Blank Info.
Enclosed: Yes (No)

(FOR LAB USE ONLY)
Date: _____ Time: _____
Temperature: _____ °C

Distribution: White - Lab original Yellow - Field team leader

0881297

F-31

To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
GW-4MW-IN	9911013-07				8082		
GW-5MW-OUT	9911013-06						
RD-1	9911013-01						
RD-2	9911013-02						
RD-3	9911013-03						
RD-4	9911013-04						
RD-5	9911013-05						

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
9911013-01	WATER	11/2/99	11/2/99	11/8/99	11/16/99
02	"	"	"	"	"
03	"	"	"	"	"
04	"	"	"	"	"
05	"	"	"	"	"
06	"	"	"	"	"
07	"	"	"	"	"

DUSR CHECKLIST FOR LABORATORY REPORT #: *9911033* LABORATORY: *ETE A&C*	CIRCLE ONE	QUALIFIERS
1) Statements made in the Analytical Data Case Narrative supported by the analytical data or indicated severe concerns?	(Yes) No NA	
2) Coolers received properly with no discrepancies?	(Yes) No NA	*None*
None, local delivery - cooled immediately 3) Chain of custody records present and completed correctly?	(Yes) (No) NA	
Missing sample, No low level analysis 4) Samples correctly preserved and documented at lab?	(Yes) No NA	
5) Analysis run as per the method in the work plan?	(Yes) No NA	
6) Holding times met for all matrices and analytical parameters?	Yes No NA	
7) Instrument performance checks within acceptance criteria?	Yes No NA	
8) Initial calibrations run correctly and within acceptance criteria?	(Yes) No NA	
9) Daily calibrations run correctly and within acceptance criteria?	(Yes) No NA	
1254 out @ end but not found in samples. 10) Method blanks ≤ reporting limit and at rate of 1/20 samples?	(Yes) No NA	
11) Field blanks ≤ reporting limit and run per work plan?	Yes (No) NA	
12) Compounds found in blanks common lab and field contaminants? *+ SW-5*	Yes (No) NA	
13) Surrogates within the acceptance limits? *High recoveries + diluted out* — *Dup GW-10 and High Matrix Interference*	Yes (No) NA	*None*
14) MS/MSD or MS/D analyzed at rate of 1/20 samples? *(14–17: See 9911013)*	(Yes) No NA	
15) MS/MSD or MS/D meet the %R and RPD acceptance criteria?	Yes (No) NA	*None*
16) LCS or LSCD analyzed at rate of 1/20 samples?	(Yes) No NA	
17) LCS/LCSD's meet the %R and RPD acceptance criteria?	Yes (No) NA	*None*
18) Internal standards meet the acceptance criteria for GC/MS?	Yes No NA	
19) Field duplicate results ≤ 40 RPD waters and ≤ 70 RPD soils?	(Yes) No NA	
20) Dilutions made as required and were reporting levels elevated?	(Yes) No NA	
21) Discrepancies noted when review of raw data (instrument printouts and chromatograms) was performed?	Yes (No) NA	
22) Did discrepancies noted above significantly impact the usability of the data based on data needs and objectives of the project?	Yes (No) NA	

Comments: *1 mL concentration for lower DL had significant impact on QC*

Completed by: *[signature]* Date: *2/18/2000*

Ecology and Environment, Inc.
Analytical Services Center
Lancaster, New York 14086
Phone: (716) 685-8080

Laboratory Results

NYS ELAP ID#: 10486

CLIENT: E and E Buffalo Office
Project: Niagara Transformer
Lab Order: 9911033

CASE NARRATIVE

Samples were delivered by hand directly from the field and were not packaged in ice. Samples were maintained at 2° to 6° C at the laboratory.

Although not designated on the chain of custody record, W. Kawar notified the laboratory that a detection limit of 0.065 ug/L was required. Sample extracts were concentrated to 1.0 mL in order to achieve the low detection limit.

A sample designated as GW-6-P6 was received but was not listed on the chain of custody record. The laboratory proceeded with analysis of this sample as per W. Kawar.

The column used for analysis was an RTX-35, 30 meters long and 0.53 mm in diameter, with a 1.0 um film thickness.

Secondary dilutions were performed on samples GW-2-P4, GW-7-P7 and GW-8-P11 based on the level of target compounds present in the native extract. As a result of the secondary dilution, surrogate compounds were diluted out.

Surrogate recovery was high for samples GW-10-D-P10, GW-9-P9, GW6-P6, SW-4, SW-5 and the laboratory control sample. QC limits used were those of the standard 8082 analysis. No limits have been established for the low-level analysis performed on the samples included in this report.

Recovery of Aroclor 1016/1260 fell outside QC limits in the laboratory control sample (LCS) as well as the matrix spike duplicate analysis of sample RD-1. QC limits used were those of the standard 8082 analysis. No limits have been established for the low-level analysis performed on the samples included in this report.

As per Method 8082, a multipoint calibration for Aroclors 1016 and 1260 was performed demonstrating linearity. Since Aroclors 1260 was known to be of concern based on previous analysis from this site, calibration for each of the seven Aroclors was not required.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Barbara Krajewski

Barbara Krajewski
Project Manager
December 1, 1999

CHAIN OF CUSTODY RECORD

ASH analytical services center
Ecology and Environment, Inc., Analytical Services Center
4493 Walden Avenue, Lancaster, New York, 14086, Tel: 716/685-8080, Fax 716/685-0852
Where Scientific Excellence and Efficiency Meet

Cooler No: _____
Lab: _____

Page: ____ of ____

PROJECT No:	SITE NAME:	LOCATION: (Include State)
199 QTO5100.05	NIAGARA TRANSFORMER	

CLIENT: NYSDEC

PROJECT MANAGER: DAVE ALBERS

OFFICE No:

FIELD TEAM LEADER: WADI

PHONE No:

SAMPLERS: (PRINT) GREGORY JONES

CONTAINER TYPE AND PRESERVATIVE: 80 z Amber

REQUESTED ANALYSIS: PCB's

TURNAROUND TIME
- 24-HOUR
- 48-HOUR
- 1-WEEK
- STANDARD
- RUSH _____ days
- OTHER _____

(FOR LAB USE ONLY)
Lab Job No:
Report type:
Batch QC: Yes No

DATE	TIME	SAMPLE ID	SAMPLE MATRIX	CHECK FOR MS/MSD	SAMPLE TYPE	No. OF CONTAINERS	PCB's	OVA/HNU READINGS (PPM)	BEGINNING DEPTH (FEET BGS)	ENDING DEPTH (FEET BGS)	REMARKS
11/3/99		GW-1-P5				1	X				
		GW-8-P4				1	X				
		GW-7-P7				1	X				
		GW-10-P10				1	X				
		GW-10-D-P10				1	X				
		GW-9-P9				1	X				
		SW-5				1	X				
		SW-4				1	X				
		GW-11-P11				1	X				
		Blank									

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	Ship Via:	Date:
	11/3/99		11/3/99 16:43		
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Date/Time:	BL/Airbill Number:	

Temperature Blank Info.
Enclosed: Yes No

(FOR LAB USE ONLY)
Date: _____ Time: _____
Temperature: _____ °C

Distribution: White - Lab original Yellow - Field team leader

To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other
GW-1-P5	9911033-01				8082		
GW-2-P4	02						
GW-7-P7	03						
GW-10-P10	04						
GW-10-D-P10	05						
GW-9-P9	06						
SW-5	07						
SW-4	08						
GW-8-P11	09						
GW-6-P6	10						

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
9911033-01	WATER	11/3/99	11/3/99	11/8/99	11/14/99
02	"	"	"	"	"
03	"	"	"	"	"
04	"	"	"	"	"
05	"	"	"	"	"
06	"	"	"	"	"
07	"	"	"	"	"
08	"	"	"	"	"
09	"	"	"	"	"
10	"	"	"	"	"

Ecology and Environment, Inc., (E & E) Data Usability Summary Report (DUSR)	
Prepared by: Marcia Meredith Galloway	**Date Prepared:** February 21, 2000
Project Name/E & E #: QT05 Niagara Transformer Additional Investigation Task 13	**Lab Name:** Axys Analytical Services
Lab Report No.(s): 9966 **Report Date (s):** December 1999 **Date Sample(s) Taken:** November 2, 1999	**Sample Matrices:** 5 Water **Field QC Samples:**

Project Sample ID: = See Sample Summary

Specific analyses conducted on each sample are documented on the COC forms and include the following: Polychlorinated Biphenyls (PCBs) congeners per the laboratories New York State Department of Environmental Conservation (NYSDEC) approved method using high resolution gas chromatography mass spectrometry (HRGCMS).

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness per NYSDEC Division of Environmental Remediation Guidance for the Development of DUSRs. Specific criteria for QC limits were obtained from the laboratory based on the approval of their method by NYSDEC. Their method is based on *Method 1668: Toxic Polychlorinated Byphenyls by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry*. March, 1997. EPA 821/R-97-001. U.S. Environmental Protection Agency, Office of Water. Qualifiers were assigned based on guidance in EPA's National Functional Guidelines for Organic Data Review. Compliance with the project QA program is indicated on the attached checklist and any major or minor concerns are listed below. The checklist also indicates whether data qualification is required and/or the type of qualifier assigned. Definitions of data qualifiers used are provided below.

Sample Summary

CS-P1	CS-OUT	CS-OUT (Lab Duplicate)
CS-MWIN	CS-MWOUT	CS-RD

Major Concerns: The work plan indicates all QC and holding times will be consistent with NYSDEC Analytical Services Protocol (ASP) 10/95. However, the laboratory went by the holding time reference listed in Method 1668 that allows up to a year for analysis if the samples are stored correctly. The samples were originally extracted on November 12, 1999 within fourteen days of sample collection. However, the sample MWIN was re-extracted on January 2, 2000 at a lower sample volume because the original results were to high for routine low level analysis.

Overall, the data are used to evaluate the source of Aroclors in the water samples and therefore the relative concentrations of congeners are more significant than the total PCB concentration. The total concentrations of the PCB are only used qualititative to compare to the standard PCB 8082 analysis. The holding times are not as important in using relative concentrations and no data qualification is required.

Ecology and Environment, Inc., (E & E) Data Usability Summary Report (DUSR)	
Prepared by: Marcia Meredith Galloway	**Date Prepared:** February 21, 2000
Project Name/E & E #: QT05 Niagara Transformer Additional Investigation Task 13	**Lab Name:** Axys Analytical Services

Minor Concerns:

1. Samples were originally sent in two containers. The laboratory combined in each container to create one laboratory sample. For the duplicates it appears that the laboratory combined three containers and created a laboratory duplicate. Precision was good on that sample, but the results are not indicative of field precision.
2. Only a reference matrix spike was used for QC. The laboratory did not used a sample to spike, but given the high concentration of PCBs in the samples, the spike results would have been diluted out anyway. The standard QC was acceptable by NYSDEC as part of the method.
3. The laboratory did not used standard ASP report forms, but all data was present for review.

DUSR CHECKLIST FOR LABORATORY REPORT #: 9966 LABORATORY: ADVS Analytical Services LTD.	CIRCLE ONE	QUALI-FIERS
1) Statements made in the Analytical Data Case Narrative supported by the analytical data or indicated severe concerns?	(Yes) No NA	
2) Coolers received properly with no discrepancies?	(Yes) No NA	
3) Chain of custody records present and completed correctly?	Yes (No) NA	
4) Samples correctly preserved and documented at lab? COC indicated 11 samples, actually 5 samples and dup dup composited.	(Yes) No NA	
5) Analysis run as per the method in the work plan?	(Yes) No NA	
6) Holding times met for all matrices and analytical parameters?	Yes (No) NA	
7) Instrument performance checks within acceptance criteria? Holding time was for the method, not NYSDEC ASP	(Yes) No NA	
8) Initial calibrations run correctly and within acceptance criteria?	(Yes) No NA	
9) Daily calibrations run correctly and within acceptance criteria?	Yes No NA	
10) Method blanks ≤ reporting limit and at rate of 1/20 samples?	(Yes) No NA	
11) Field blanks ≤ reporting limit and run per work plan?	Yes No (NA)	
12) Compounds found in blanks common lab and field contaminants?	Yes (No) NA	
13) Surrogates within the acceptance limits?	(Yes) No NA	
14) MS/MSD or MS/D analyzed at rate of 1/20 samples? Same as LCS	(Yes) No NA	
15) MS/MSD or MS/D meet the %R and RPD acceptance criteria?	(Yes) No NA	
16) LCS or LSCD analyzed at rate of 1/20 samples?	(Yes) No NA	
17) LCS/LCSD's meet the %R and RPD acceptance criteria?	(Yes) No NA	
18) Internal standards meet the acceptance criteria for GC/MS?	(Yes) No NA	
19) Field duplicate results ≤ 40 RPD waters and ≤ 70 RPD soils?	Yes No (NA)	
20) Dilutions made as required and were reporting levels elevated?	(Yes) No NA	
21) Discrepancies noted when review of raw data (instrument printouts and chromatograms) was performed? One sample required re-analysis with smaller sample size	Yes (No) NA	
22) Did discrepancies noted above significantly impact the usability of the data based on data needs and objectives of the project?	Yes (No) NA	

Comments: Method approved by NYSDEC (see email), no direct approval of HT but used on other projects

Completed by: Marcia Galloway **Date:** 2/26/2010

Ecology and Environment Inc.

Axys Method CL-W-04/Ver. 2
PCBs in Hexane Extracts
Axys Contract No. 9966
DECEMBER 9, 1999

Case Nos. HRD98 **SDG No.** 11151

Narrative:

Scope

This narrative describes the analysis of five water samples for polychlorinated biphenyl congeners (PCBs).

Sample Receipt and Storage

Samples were received in sealed 1 L bottles in good condition on November 3, 1999. They were transferred to secure sample storage and maintained at 4 °C, in the dark.

Sample Preparation

Analysis was performed using the entire contents of each sample bottle; the bottles were solvent rinsed and the rinsate was added to the sample for analysis.

Analysis

Samples were analyzed in two batches named CLWG2178, and CLWG2245; the composition of the analysis batches are shown on the Sample Batch Summary forms included with the data package.

Analysis procedures were in accordance with Axys Method CL-W-04/Ver.2, a copy of the summary method has been included in the data package.

QA/QC and Analytical Discussion

Samples were analyzed in sample batches carried intact through the entire analytical process. The sample data was reviewed and evaluated in relation to the batch QC samples. For results to be judged acceptable data had to meet the quality acceptance specifications documented in the

analytical method and on the data reporting forms. All results fell within the quality acceptance specifications of the method and the contract. In some cases analyte responses for the original analysis exceeded the calibration range; the results were flagged as OLR on the original reports and reported separately from dilution re-injection analysis.

Sample L2147-5 required a dilution by a factor of 10 to bring some analytes into the linear calibrated range. Samples L2147-1 and -4 were re-extracted with the backup 1 L sample and a smaller portion of the samples, 1/10th and 1/200th respectively, were worked up for analysis. Both samples required further dilutions to bring analytes within the linear calibrated range.

Sample L2147-3 is not included in the data package due to complications with the analysis of the sample. Due to high PCB concentrations, the sample was re-analyzed using a smaller sample size, but further work is required to complete the analysis. The results will be provided later in an Addendum to this data package.

Reporting Conventions

The Axys contract number assigned for internal tracking was 9966. Samples were assigned a unique laboratory identifier of the form LXXXX-XX, where X are numerals, all data reports reference this unique Axys ID plus the client sample identifier.

Any extra work required and performed after the initial instrumental analysis of the extract is designated by a suffix to the sample identification, as follows:

- L = an extra clean-up chromatographic columning of the extract to reduce interferences
- i = instrumental re-injection of the extract for reason stated on extraction log or batch summary
- W = dilution/re-injection for the reason stated on the extraction log or batch summary
- N = dilution into a new micro-vial/re-injection for the reason stated on the extraction log or batch summary

Where observed peaks failed the ion abundance ratio the presence of the compound cannot be confirmed. The peak area was converted to concentration following the standard procedure and the concentration was flagged as "NDR" (not detected, ratio failure) on the report. These concentrations may have some value in comparison to other data, but should be interpreted with caution due to their failure to meet ratio specifications.

Data Package

Included in the data package are the raw, intermediate, and final data including laboratory worksheets, laboratory Batch Summary Sheets, sample and calibration chromatograms, instrument calibration summary data, instrumental run logs, analyte chromatograms, final data reports, chain of custody documents, hard copies of the GC temperature program used, mass resolution verifications, and a cross reference of Axys versus client identification numbers.

Ecology and Environment Inc.

Axys Method CL-W-04/Ver. 2
PCBs in Hexane Extracts
Axys Contract No. 9966
January 27, 2000

Case Nos. HRD98 **SDG No.** 11151

Addendum:

Scope
This addendum describes the analysis of one water sample for polychlorinated biphenyl congeners (PCBs); this sample was re-analyzed using a smaller sample size since for the original analysis the target concentrations exceeded the quantification range of the method.

Sample Receipt and Storage
Refer to initial data package.

Sample Preparation
Refer to initial data package.

Analysis
The sample was analyzed in a batch named CLWG2340; the composition of the analysis batch is shown on the Sample Batch Summary forms included with the data package.

Analysis procedures were in accordance with Axys Method CL-W-04/Ver.2, a copy of the summary method has been included in the data package.

QA/QC and Analytical Discussion
The sample was analyzed in a sample batch carried intact through the entire analytical process. The sample data was reviewed and evaluated in relation to the batch QC samples. For results to be judged acceptable data had to meet the quality acceptance specifications documented in the analytical method and on the data reporting forms. All results fell within the quality acceptance specifications of the method and the contract. In some cases analyte responses for the original analysis exceeded the calibration range; the results were flagged as OLR on the original reports and reported separately from dilution re-injection analysis.

Reporting Conventions
Refer to initial data package.

Data Package
Refer to initial data package.