J. Harrington

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Circuitron Corporation, East Farmingdale, Suffolk County, New York

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Circuitron Corporation site, located in East Farmingdale, New York, chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA), and, to the extent practicable, the National Contingency Plan (NCP). This decision document explains the factual and legal basis for selecting the remedy for the site. The attached index (Appendix C) identifies the items that comprise the administrative record upon which the selection of the remedial action is based.

The State of New York concurs with the selected remedy. (See Appendix D).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the remedial action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

This operable unit represents the first of two planned actions for the site. The remedy presented in this document addresses the treatment of the contaminated soils at the Circuitron Corporation site.

The second operable unit will address area-wide groundwater contamination.

This remedial action complements a removal action initiated by the Environmental Protection Agency (EPA) in 1989. The removal action included the removal of 20 waste drums from inside the building, the emptying of two underground tanks containing various volatile organic and inorganic compounds, the cleaning and removal of three above-ground tanks from the rear of the building, and the general clean-up of the suspected contaminated debris from inside the building.

The major components of the selected remedy include:

- In-situ vacuum extraction of the contaminated soil in the southwest corner of the property in the area of high volatile organic compound (VOC) contamination.

- Excavation of contaminated sediments from leaching pits, cesspools, and storm drains outside and inside the building.

- Off-site treatment and disposal of contaminated sediments.

- Building decontamination via vacuuming of dust containing elevated concentrations of inorganic elements and replacement of the concrete floor in the building.

- Paving of the entire site.

The remediation of site soils and sediments, which are considered the principle threat to the site, will eliminate crossmedia impacts of these contaminants on the site groundwater, while the building decontamination will allow the building to be restored to its intended use.

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

The need for conducting a five-year review will be evaluated at the time of the second operable unit.

Constantine Sidamon-Eristoff
Regional Administrator

3/29/91
Date

DECISION SUMMARY

CIRCUITRON CORPORATION SITE

EAST FARMINGDALE, NEW YORK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

NEW YORK

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SITE NAME, LOCATION AND DESCRIPTION

The Circuitron Corporation site is located at 82 Milbar Boulevard, East Farmingdale, Suffolk County, New York. The site is situated near the Nassau County-Suffolk County border in central Long Island. The site encompasses approximately 1 acre in an industrial/commercial area just east of Route 110 and the State University of New York, Agricultural and Technical College campus in Farmingdale (Figure 1). The site is generally flat and has a slight slope up to the southeast of less than 1 percent. The site elevation is approximately 85 to 90 feet above mean sea level.

The Circuitron Corporation site consists of an abandoned 23,500 square foot building that was used between 1961 and 1986 for the manufacture of electronic circuit boards. Aside from the building, the site is primarily asphalt paved, with the exception of a small area in the rear of the building. The paved area in front of the building was used in the past as a parking lot for the employees of Circuitron Corporation and is presently used for parking by employees of nearby companies. Approximately 95% of the site is paved or covered by the building. Figure 2 shows the site plan and the location of above and below ground structures.

At least two unauthorized leaching pools (LP-5 and LP-6) exist below the concrete floor in the plating room inside the building. A circular depression in the concrete floor towards the front of this room indicates the presence of other unauthorized leaching pools. These are identified on Figure 2 as LP-3 and LP-4. A series of leaching pools lies beneath the parking lot in the front of the building. These leaching pools include an authorized wastewater discharge pool (authorized via a New York State Pollutant Discharge Elimination System (SPDES) permit) below a manhole located on the north side of the property in front of the laboratory, and two old abandoned leaching pools located in the northeast corner of the site. These structures are identified as LP-1, which is the SPDES pool, LP-2 and LP-7.

At least two sanitary cesspools, CP-1 and CP-2, have been documented to exist below the parking lot in front of the northwest corner of the building. The sanitary cesspools were authorized to accept sanitary wastes only. However, Suffolk County Department of Health Services (SCDHS) analyses indicated that the cesspools were used for disposal of hazardous materials. A line of interconnected storm drains SD-1 through SD-3 exists on the western portion of the site. The storm drains range from 10 feet to approximately 13 feet in depth. The three catch basins (identified as CB in Figure 2) did not show any evidence of sediments and liquids and were not analyzed. They will be tested, however, during the remedial design phase to determine the extent, if any, of contamination.

Circuitron Corporation is located in an industrial area surrounded by similar small manufacturers and is several miles away from any residential area. There are no schools or any recreational facilities in the immediate vicinity.

Approximately 15 municipal wells serving over 215,000 people are within 3 miles of the site, the nearest being approximately 1500 feet to the southeast of the site in the direction of groundwater flow. One shallow well in this field has been closed since 1978 due to organic chemical contamination from an unknown source.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Circuitron Corporation was incorporated in New York State in 1961 and operated a manufacturing facility at the site between 1961 and 1986. Circuitron Corporation ceased operations and vacated the site some time between May and June 1986. During this time period, Circuitron Corporation removed all equipment of value and left the facility in its present condition. The current owner of the site is 82 Milbar Blvd., Inc., a New York corporation incorporated in 1968. Circuitron Corporation filed for bankruptcy in 1986. 82 Milbar Blvd., Inc. filed for bankruptcy in 1987. Both of these bankruptcy proceedings were dismissed or closed in 1988.

At the request of the New York State Department of Environmental Conservation (NYSDEC), an emergency response action was performed by the EPA at the site in mid-1989, prior to the RI/FS investigation. This action included removal of 20 waste drums from inside the building, the emptying of 2 underground tanks containing various volatile organic and inorganic compounds, cleaning and removing of 3 aboveground tanks from the rear of the building and general clean-up of the suspected contaminated debris from inside the building.

The facility had an approved SPDES permit, No. NY-007 5655, to discharge industrial wastewater to a leaching pool located below the parking lot in front of the building. This SPDES permit expired on September 12, 1986, based on a July 1, 1986 inspection by NYSDEC, indicating that the discharge had ceased.

Circuitron Corporation had received numerous warnings from boththe SCDHS and NYSDEC concerning SPDES permit violations and unauthorized discharges. An Order of Consent and the Stipulated Agreement, issued by the SCDHS in 1984 and 1985, respectively, required that all leaching pools and storm drains be remediated; all toxic and hazardous materials be removed from the site including drums, tanks, and piping; and a groundwater quality study be performed. Circuitron Corporation installed 5 monitoring wells at the site; however, there are no engineering or well installation reports available concerning the construction of these wells. In addition, the analytical results from the Circuitron Corporation and the SCDHS groundwater sampling of these wells are in conflict with each other. To date, only the unauthorized leaching pool in the southern part of the plating room has been cleaned out and backfilled. This work was performed by Circuitron Corporation. There are no records available regarding the amount of waste removed from the unauthorized leaching pool or the existence and the extent of contaminated soil in and around the leaching pool.

In 1984, a former owner of Circuitron Corporation, Mario Lombardo, was charged for discharging organic solvents to unauthorized "hidden" leaching pools between March 1, 1982 and March 22, 1984. He was indicted on 6 felony counts of unlawful dumping of hazardous wastes, under New York State (NYS) Environmental Conservation Law (ECL) Section 27, Subsection 09-14; 19 felony counts of offering a false instrument for filing, under Suffolk County Penal Law Section 175, Subsection 135; and 20 misdemeanor counts of violating NYS ECL Section 17, Subsection 03-01 and 05-01. On May 9, 1985, Mario Lombardo pleaded guilty to unlawful dumping of hazardous wastes, NYS ECL Section 27, Subsection 09-14. He was fined $50,000 and sentenced to 700 hours of community service.

When Circuitron Corporation informed SCDHS that it would be vacating the facility, SCDHS informed Circuitron Corporation that a cleanup of toxic and hazardous materials and a groundwater study would be required. SCDHS also required further off-site groundwater monitoring. Circuitron Corporation refused to comply with the off-site groundwater monitoring requirement.

EPA sent a general notice letter and a request for information to the identified potentially responsible parties (PRPs) on July 24, 1987. EPA sent another general notice letter to the PRPs on August 15, 1988 inviting them to conduct a Remedial Investigation and Feasibility Study (RI/FS). The site was proposed for the National Priorities List (NPL) in June, 1988 and finalized in March, 1989. The RI/FS was initiated in September, 1988 and the field work started in May, 1989.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The RI/FS report and Proposed Plan for the Circuitron Corporation site were released to the public on January 31, 1991. These two documents are made available to the public in both the administrative record, maintained by EPA, and an information repository maintained at the Farmingdale Public Library, located at Main and Conklin Streets in Farmingdale, New York. A second information repository is maintained at the Town of Babylon, Department of Environmental Control, Town of Babylon Annex, 281 Phelps Lane, North Babylon, New York. A press release was issued on February 4, 1991. The notice of availability for these two documents was published in the Suffolk County edition of Newsday on February 11, 1991, and in the Farmingdale edition of Suffolk Live, a weekly newspaper, on February 13, 1991. A public comment period was held from January 31, 1991 to March 2, 1991. In addition a public meeting was held on February 19, 1991 to discuss the RI/FS and Proposed Plan and to respond to questions and concerns raised by the community. Responses to the comments received during the comment period is included in the Responsiveness Summary (see Appendix E).

This decision document presents the selected remedial action for the Circuitron Corporation in East Farmingdale, New York, chosen in accordance with CERCLA and, to the extent practicable, the National Contingency Plan. The decision for the site is based on the administrative record.

SCOPE AND ROLE OF OPERABLE UNITS WITHIN SITE STRATEGY

EPA has divided the remedial work being conducted at the Circuitron Corporation site into two operable units. This first operable unit addresses the contamination within the soils and sediments from the leaching pools, cesspools, and storm drains. Based upon data generated during the RI, it has been determined that groundwater contamination should be addressed as part of a larger area-wide study to be conducted under a separate operable unit. The reason for addressing the groundwater contamination under a separate operable unit is due to the nature of the contamination, which appears upgradient at approximately the same order of magnitude as on the site, and would be treated more effectively in a regional rather than site specific fashion.

A removal action was initiated by EPA in mid-1989. This action included the removal of 20 waste drums from inside the building, the emptying of two underground tanks containing various volatile organic and inorganic compounds, the cleaning and removal of three aboveground tanks from the rear of the building, and the general clean-up of the suspected contaminated debris from inside the building.

The overall objective of this operable unit is to address the principal threats associated with the site by reducing the concentrations of contaminants in the soils and sediments to levels which are protective of human health and the environment and to prevent further deterioration of the area groundwater.

SUMMARY OF SITE CHARACTERISTICS

The results of the remedial investigation are discussed in detail in the RI/FS documents. Those describe the nature and extent of contaminants in on-site surface soils, subsurface soils, in on-site and off-site groundwater, sediments in the underground structures, and also within the abandoned building.

Previous investigations and the RI (Ebasco, 1990) have shown that there were discharges of untreated process wastewater to the identified underground liquid handling structures at the site. These include the known leaching pools both inside and outside the building, the sanitary cesspools in the front of the building and the storm drains along the western edge of the property (Figure 2). The construction of these structures was such that the untreated process wastewater and other liquids were allowed to percolate into the surrounding soil.

The media sampled during the RI were the groundwater, subsurface/surface soil, and sediments present in various leaching pools, storm drains, and sanitary cesspools.

Groundwater

Monitoring wells were installed and screened in both deep and shallow portions of the upper glacial aquifer, at upgradient, on-site and downgradient locations. The deep wells were screened at 90-100 feet, whereas the shallow wells were screened at depths of 34 to 38 feet. The locations of these monitoring wells are shown on Figure 3. Seven volatile organic compounds were identified, from both a concentration and a frequency of occurrence basis. These include: 1,1-dichloro-ethene, 1,1-dichloroethane, trans-1,2-dichloroethene, chloroform, 1,1,1-trichloroethane, trichloroethene, and tetrachloroethene. 1,1,1-trichloroethane (1,1,1-TCA) was present at the greatest concentrations in the groundwater, both upgradient and on-site (4.8 parts per million (ppm)), relative to the other volatile organics analyzed. Inorganics such as copper, chromium, nickel and lead were also detected, but to a much lesser extent (i.e., highest concentration on-site = 538 ppb for copper). Phthalates were present at fairly high levels, upgradient and downgradient as well as on site. Tables 1 and 2 show contaminant concentrations found in the on-site shallow and deep wells respectively. Tables 3 and 4 present contaminant concentrations in off-site shallow and deep wells respectively, and Table 5 shows contaminant concentrations in wells installed by the Circuitron Corporation prior to EPA's RI.

Surface/Subsurface Soils

Many of the contaminants found in the surface/subsurface soil contaminants were the same as those found in the groundwater, the prevalent volatile organic compound being TCA at a maximum level of 100 parts per million (ppm). Copper was found at a maximum level of 1,950 ppm at a location inside the building which might have been the location of an unauthorized leaching pool. Phthalates were present at fairly high levels in all three media and were found upgradient and downgradient as well as on site. The surface/subsurface contaminants are shown in Table 6. Sampling locations are shown in Figure 3 and are identified as SS and SB for subsurface and surface locations, respectively.

Sediments

Sediments exhibited high amounts of inorganics, mostly copper at a maximum level of 23,000 ppm. Some VOCs were also present of which 1,1,1-TCA was the most prevalent at a maximum level of 19 ppm. Phthalates were present at fairly high levels in all three media and were found upgradient and downgradient as well as on site. These contaminants are presented in Table 7. Figure 4 shows the location of the sediments to be excavated.

Building Dust

As part of the EPA removal action, it was established that dust within the on-site building contained metal contamination, including aluminum, copper, lead and zinc.

SUMMARY OF SITE RISKS

A baseline risk assessment was conducted as part of the remedial investigation for the site. The baseline risk assessment evaluates potential impacts on human health and the environment if existing site conditions are not remediated. The assessment also anticipates potential future risks associated with the site. Both carcinogenic and non-carcinogenic risks were evaluated.

Based on the evaluations performed for the risk assessment, contaminants of concern were identified for the soil, groundwater and sediment. Several volatile organic compounds, including 1,1 dichloroethene and tetrachloroethene and 1,1,1-TCA were identified as contaminants of concern. A detailed description of the procedures and methodologies employed in the risk assessment for the Circuitron Corporation Site is presented in Section 8.0 of the RI report.

Current conditions indicate that there is no complete exposure pathway. The facility is not in operation. The site is located in an industrial/commercial area and the Upper Glacial Aquifer is not used for potable water supplies. EPA's risk assessment, however, did identify the following two potential exposure pathways by which the public may be potentially exposed to contaminant releases from the Site under future land-use conditions:

- the groundwater exposure from the Upper Glacial Aquifer

- sediment exposure during remediation activities.

The potentially exposed populations assessed included:

- on- and off-site adult and child residents

- on-site industrial workers

- on-site remediation workers.

Ingestion and dermal contact with contaminated soil by residents was not evaluated because of the limited possibility of this scenario occurring due to the fact that approximately 95% of the site is paved. The potential contamination of groundwater by the migration of chemicals of concern in the soil was considered.

Under current EPA guidelines, the likelihood of carcinogenic (cancer-causing) and non-carcinogenic effects due to exposure to site chemicals are considered separately. It was assumed that the toxic effects of the Site-related chemicals would be additive. Thus, carcinogenic and non-carcinogenic risks associated with exposures to individual compounds were summed to indicate the potential risks associated with mixtures of potential carcinogens and non-carcinogens, respectively. The reasonable maximum exposure case was assessed for potential carcinogens and non-carcinogens. The average exposure case was also assessed for certain pathways.

Potential carcinogenic risks were evaluated using the slope factors developed by the EPA for the chemicals of concern. Slope factors (SFs) have been developed by EPA's Carcinogenic Risk Assessment Verification Endeavor for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. SFs, which are expressed in units of $(mg/kg\text{-}day)^{-1}$, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to generate an upper-bound estimate of the excess lifetime cancer risk associated with exposure to the compound at the intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the SF. Use of this approach makes the underestimation of the risk highly unlikely. A summary of the cancer risks associated with the site is found on Table 8.

For known or suspected carcinogens, EPA considers excess upper bound individual lifetime cancer risks of between 10^{-4} to 10^{-6} to be acceptable. This level indicates that an individual has not greater than a one-in-ten-thousand to one-in-one-million chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year period under specific exposure conditions at the Site. Overall, the potential carcinogenic risks associated with the groundwater spanned two orders of magnitude (10^{-4} to 10^{-6}). Two volatile compounds, 1,1-dichloroethene and tetracholoroethene, were responsible for approximately 85-95% of the cancer risk in the groundwater ingestion pathway. Hence, the risks for carcinogens at the Site are in the acceptable EPA risk range of 10^{-4} to 10^{-6}.

Non-carcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intakes and safe levels of intake (reference doses). Reference doses (RfDs) have been developed by EPA for indicating the potential for adverse health effects. RfDs, which are expressed in units of milligram per kilogram per day (mg/kg-day), are estimates of daily exposure levels for humans which are thought to be safe over a lifetime (including sensitive individuals). Estimated intakes of chemicals from environmental media (e.g., the amount of a chemical ingested from contaminated soil) are compared with the RfD to derive the hazard quotient for the contaminant in the particular media. The HI is obtained by adding the hazard quotients for all compounds across all media.

A HI greater than 1.0 indicates that the potential exists for non-carcinogenic health effects to occur as a result of site-related exposures. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media. A summary of the non-carcinogenic risks associated with the site is found in Table 9.

It can be seen from Table 9 that the HI for non-carcinogenic effects from the ingestion of water is greater that 1 and, therefore, non-carcinogenic effects may occur from the exposure routes evaluated in the risk assessment. Organic compounds (1,1,1-TCA) contributed to the potential non-cancer risk.

The risk assessment contains the conclusion that direct exposure to the site soils and sediments does not represent a significant risk to human health and the environment. However, the soils and sediments do pose a significant indirect risk as a continuing source of groundwater contamination. Contaminants in excess of federal and state standards were detected in the site groundwater plume. EPA policies and regulations allow remedial actions to be taken whenever crossmedia impacts result in exceeding one or more Maximum Contaminant Levels (MCLs) which are enforceable, health-based standards under the Safe Drinking Water Act (SDWA). Consequently, soil and sediment remediation is warranted to remove this continuous source of contamination into the groundwater and expedite compliance with federal and state groundwater standards.

Based on the risk assessment, the only major potential exposure for concern is the development of the Upper Glacial Aquifer as a public water supply in the future. The New York State classification for the groundwater is "GA" which means that the aquifer is a source of potable drinking water supply. Although the Upper Glacial Aquifer is not presently used for drinking water supply in this region of Long Island, the risks posed by the site are due to the possibility of the use of this aquifer as a potable water source and the concentrations of inorganic elements and volatile organic compounds detected in the groundwater of this aquifer.

The risk assessment suggests that potential human health risks are associated with the use of upgradient groundwater. Both shallow and deep well results show the possibility that use of groundwater in the area of the upgradient monitoring well group could result in unacceptable risks. Although the on-site risk levels are slightly higher, there is definitely evidence that upgradient sources, in addition to the contaminated soils and sediments at the Circuitron Corporation facility, are also responsible for contaminating the on-site groundwater.

The contaminated building dust, which is above Occupational Safety and Health Act (OSHA) workplace standards, will also be removed to allow for a future use of the abandoned building.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled. Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the chemicals of concern, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the chemicals of concern at the point of exposure. Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper bound estimates of the risks to populations near the Site, and is highly unlikely to underestimate actual risks related to the Site.

Actual or threatened releases of hazardous substances from this site, if not addressed by the preferred alternative or one of the other alternatives considered, may present a potential threat to public health, welfare or the environment.

DESCRIPTION OF ALTERNATIVES

The remedial alternatives address the contamination within the building, soil, leaching pools, storm drains, and cesspools. As stated previously, the contamination in the groundwater will be addressed under a separate area-wide investigation.
The alternatives were screened based on implementability, effectiveness and cost. The screening resulted in remedial alterna-

tives upon which a detailed analysis was performed. Those alternatives considered in detail are discussed below. "Time to implement" is defined as the period of time needed for the alternative to be implemented and, with the exception of the no-action and limited-action alternatives, includes the time required for remedial design activities which is assumed to take approximately 2 years.

Alternative 1: No Action

Capital Cost: $0
Operation & Maintenance (O & M) Cost: $22,920 per year
Present Worth cost: $380,160
Time to implement: 6 months

The Superfund Program requires that the "no action" alternative be considered at every site. The no action remedial alternative consists of a long-term groundwater monitoring program in order to provide data for the assessment of the impact on the underlying groundwater of leaving contaminated materials on-site. The groundwater monitoring program would utilize wells installed during the remedial investigation at this site. Groundwater samples would be taken on a semi-annual basis from upgradient, on-site and downgradient shallow monitoring wells.

The no action response also includes the development and maintenance of a public awareness and education program for the residents and workers in the area surrounding the Circuitron Corporation Site. This program would include the preparation and distribution of informational press releases and circulars and the convening of public meetings. These activities will serve to enhance the public's knowledge of the conditions existing at the site.

Because this alternative does not include contaminant removal, the site would have to be reviewed at least every five years pursuant to CERCLA Section 121(c). These reviews would include the reassessment of human health and environmental risks due to the contaminated material left on-site, using data obtained from the groundwater sampling program. If justified by the review, remedial actions might be implemented to remove or treat wastes.

Alternative 2: Limited Action

Capital Cost: $32,000
O & M Cost: $22,920 per year
Present Worth Cost: $412,150
Time to Implement: 6 months

The Limited Action alternative combines a program of groundwater monitoring and public awareness outlined in Alternative 1 with site access and use restrictions.

The site access restriction portion of this alternative consists of surrounding the entire site with approximately 820 feet of conventional chainlink fencing. At appropriate intervals along the fence, various warning signs would caution the public as to the Superfund status of the site. In addition to access restrictions, institutional controls would have to be implemented by state or local governments to restrict the use of the land and building because of the threat of contamination.

Also, as stated previously in Alternative 1, a review of the site status would have to be conducted at least every five years. The five year reviews would include evaluation of sampling analytical data, reassessment of human health and environmental risks. If justified by the review, remedial actions might be implemented to remove or treat wastes.

Alternative 3: Containment and Building Decontamination

Capital Cost: $221,120
O & M Cost: $26,525 per year
Present Worth Cost: $656,695
Time to Implement: 3 years

This alternative includes repaving the site and decontaminating the building. The purpose of this alternative would be to prevent further infiltration of precipitation/run-off through the contaminated site soil, thereby reducing further site-related groundwater contamination. This would be accomplished by eliminating the current pathways for infiltration; namely, the storm drains and any gaps/cracks in the existing asphalt pavement. The building would also be decontaminated to allow for its future reuse by removing the metals-contaminated dust and pouring a new concrete floor, over the current damaged floor, in the plating room.

Under this alternative the storm drains would be filled with clean fill material. The entire site area, outside the building, would be repaved with asphalt using conventional construction methods. The filled storm drains would also be paved. Approximately 1740 square yards of asphalt would be required.

Precipitation run-off from the building would be diverted into the street for collection in existing municipal storm drains. The site area would also be repaved in such a way so as to direct surface run-off to the street/municipal storm drains.

The metals-contaminated dust inside the building would be removed by vacuuming the walls and floors using conventional industrial equipment adapted for use at a hazardous waste site. The contaminated dust would be removed to that extent necessary to comply with OSHA requirements. Approximately 5 cubic yards of dust would be collected and transported to an off-site Resource Conservation Recovery Act (RCRA) facility for treatment and disposal. The plating room floor in the building, which shows evidence of deterioration, would be covered with a new poured concrete floor. The new floor would be approximately 4200 square feet in area and 2-inches thick.

This alternative also includes a long-term groundwater monitoring and five-year review program. One purpose of this program would be to evaluate the effectiveness of the containment remedy at eliminating the current source of site-related groundwater contamination; that is, infiltration of precipitation through contaminated site soils. The new pavement would also require regular inspection and maintenance to prevent and/or repair cracks/gaps in the pavement.

Alternative 4: In-Situ Vacuum Extraction. Excavation of Sediments. On-Site Stabilization and Disposal. Building Decontamination.

Capital Cost: $514,760
O & M Cost: $3,850
Present Worth Cost: $573,945
Time to Implement: 4 years

This alternative consists of the use of in-situ vacuum extraction (SVE) in the southwest corner area of SD-3, the excavation and removal of the contaminated sediments within all of the underground structures inside and outside the building, treatment of the excavated sediments via stabilization and disposal on-site, and building decontamination.

The SVE system will be used to reduce the soil levels of VOCs, including 1,1,1-TCA, in the southwest corner of the site. The concentration of this contaminant was found to be of the order of 100 ppm. The SVE system would be applied to an area of approximately 400 square feet. During the remedial action samples will be taken to delineate more accurately the area to be treated. It is expected that the SVE system would be able to reduce volatile organic compounds, including 1,1,1-TCA and tetrachloroethene which are the most prevalent VOC contaminants on-site, to acceptable clean-up levels. A technical evaluation of contaminant-leaching indicates that reduction of soil contaminant levels of 1,1,1-TCA and tetrachloroethene to 1.0 ppm and 1.5 ppm, respectively, would insure protection of groundwater from cross media impacts. Other VOCs will also be reduced to by the operation of the SVE but such reduction is not required by the remedy. The exact configuration of the SVE system will be determined during the remedial design phase of the project.

The excavation of the sediments from within the underground structures, inside and outside the building, is intended to remove organic and inorganic contaminants. There are several buried perforated drums, tanks and other structures beneath the plating room floor inside the building that were used for leaching liquid wastes into the ground. In order to locate these underground structures and then access the sediment, the concrete floor in the plating room would be demolished during the implementation of the remedial action.

The remedial investigation shows that the contaminated sediments are not expected to extend below 2 feet from the surface. As a result, the sediments will initially be excavated to the approximate two-foot depth. However, if, during excavation work, contaminated sediments are shown to extend below the two-foot level, then further excavation will take place until no visible signs of contamination are found in the underlying soils. An on-site geologist will evaluate the undisturbed, clean, sandy, native soils to confirm that the sediments have been removed. Confirmatory soil samples will be taken at the excavated depth to ensure that the contaminated sediments and soils have been removed and that VOC contamination in the remaining soils meets the soil cleanup levels of 1.0 ppm for 1,1,1-TCA and 1.5 ppm for tetrachloroethene. If not, additional soil will be excavated until such levels are achieved. It is anticipated that reducing the more mobile VOC contaminants in the sediments and soils to those cleanup levels will also result in the removal of the less mobile inorganic contaminants. The same procedure would be applied to all underground structures outside the building.

The contaminated sediments that have been removed would be subjected to treatment via stabilization to reduce the leachability of the contaminants. This stabilization process would take place at the site due to the relatively small quantity of material involved (approximately 53 cubic yards). Once stabilized, the sediments would be tested via the Toxicity Characteristic Leaching Procedure (TCLP), to determine if they may be suitable for use as fill and buried on-site within the now hollow underground structures.

Building dust would also be stabilized and disposed of on-site.

If sediments and building dust do not pass TCLP, then these materials would be disposed of at an off-site facility according to RCRA regulations, including land disposal restrictions.

Spent carbon from the in-situ vacuum extraction system will either be regenerated by the vendor or stabilized and disposed on-site.

All non-hazardous debris, e.g., broken concrete, asphalt, etc., resulting from the remedial action, will be removed from the site and disposed in a sanitary landfill.

All site areas would be repaved and the replacement of the plating room concrete floor would also be performed.

Alternative 5: In-Situ Vacuum Extraction. Excavation of Contaminated Sediments. Off-site Treatment and Disposal. Building Decontamination.

Capital Cost: $643,690
O & M Cost: $3,850
Present Worth Cost: $685,675
Time to Implement: 4 years

Under this alternative, the application of in-situ vacuum extraction for soil in the area of SD-3, building decontamination, and sediment excavation from the various leaching pits and storm drains would be performed as in Alternative 4. This alternative differs from Alternative 4 in that the approximately 53 cubic yards of excavated contaminated sediments, building dust and concrete would be transported to an approved RCRA treatment and disposal facility. For the purpose of developing a conservative cost estimate, incineration has been selected as the method of treatment. The excavated material would be packed into appropriate containers and transported off-site for treatment in accordance with applicable regulations for handling and transport of hazardous materials. The treatment facility would be responsible for all the necessary pretreatment and post-treatment of the contaminated material, including ash stabilization, if necessary, to insure that land disposal restrictions are satisfied.

Spent carbon or any other treatment residual from the in-situ vacuum extraction unit will be disposed off-site under with applicable RCRA regulations, including land disposal restrictions.

Non-hazardous debris resulting from the remedial action will be removed and disposed of as in Alternative 4. The repaving of the site and the replacement of the plating room concrete floor will also be performed as in Alternative 4.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

EPA has developed nine criteria (set forth in OSWER Directive 9355.3-01; and the NCP §300.430(e) and (f)) to evaluate potential alternatives to ensure all important considerations are factored into remedy selection decisions. The major objective of this section is to evaluate the relative performance of the alternatives with respect to the criteria so that the advantages and disadvantages associated with each clean-up option are clearly understood.

The evaluation criteria are noted and explained below.

Overall Protection of Human Health and the Environment

Address whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway, based on a reasonable maximum exposure scenario, are eliminated, reduced or controlled through treatment, engineering controls, or institutional controls.

Compliance with applicable or relevant and appropriate requirements (ARARs)

Addresses whether or not a remedy would meet all of the ARARs of other Federal and State environmental statutes and requirements or provide grounds for invoking a waiver.

Short-term Effectiveness

Addresses the period of time needed to achieve protection from any adverse impacts on human health and the environment that may be posed during the construction and implementation period of this alternative.

Long-term Effectiveness and Permanence

Refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

Reduction of Toxicity, Mobility, or Volume

Refers to the anticipated performance of the treatment technologies, with respect to these parameters, a remedy may employ.

Implementability

Addresses the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the chosen solution.

Cost

Includes estimated capital and operation and maintenance costs, and net worth costs.

Community Acceptance

Refers to the public's general response to the alternatives described in the Proposed Plan and the RI/FS reports.

State Acceptance

Indicates whether, based on its review of the RI/FS report and Proposed Plan, the State concurs with, opposes, or has no comment on the selected alternative.

Comparison Among Alternatives

Overall Protection of Human Health and the Environment

Alternatives 1 and 2 do not respond to the remedial objectives developed for the site. Alternatives 3, 4 and 5 provide source control measures that would prevent further migration of contaminants from soil/sediment into groundwater. Alternative 3 would not provide a permanent solution, since the contaminated source (soil and sediment) would remain on-site and cracking of the pavement would allow infiltration of precipitation and subsequent migration of contaminants into the groundwater. Both of the excavation and treatment alternatives (Alternatives 4 and 5) would result in permanent and effective solutions to the contamination problem at the site in that they both involve reduction of contaminants and thus the source for on-site groundwater contamination from the site. Alternatives 3, 4 and 5 provide for building decontamination to allow for its future reuse.

Compliance with ARARs

Alternatives 4 and 5 would reduce the contaminants load to the aquifer and expedite any future groundwater cleanup. The ARARs for groundwater will be addressed under a separate operable unit involving the remediation of the contaminated aquifer. There are no chemical-specific ARARs for soils or sediments. Alternatives 4 and 5 would meet action-specific ARARs. All sediments which are to be removed from leaching pits and storm drains (Alternatives 4 and 5) are either to be treated on-site or transported to a RCRA treatment and disposal site. Wastes sent off-site under Alternative 5 would be treated using specific technologies or treated to specific treatment levels, as appropriate, to comply with land disposal restrictions. Federal and state regulations dealing with the handling and transport of hazardous materials would be followed. The off-site treatment facility would be a fully EPA-approved facility.

Long-Term Effectiveness and Permanence

Alternatives 4 and 5 would provide for permanent removal of the contaminated sediment from the site and for treatment to either destroy or immobilize the VOCs and inorganic contaminants in the soils. This would effectively eliminate the on-site contribution to the groundwater contamination. The No Action and Limited Action alternatives do not provide for a long term solution to the groundwater, soil/sediment or building contamination problems. Alternative 3 may mitigate the leaching of contaminants from on-site soil/sediment into groundwater but would require long-term maintenance and monitoring to ensure its effectiveness since the contaminated soil/sediment is left on-site and the asphalt paving may not be a permanent barrier to precipitation infiltration. Also, fluctuations in the water table elevation may cause some additional leaching of contaminants from soil directly above the average water table level.

Reduction of Toxicity, Mobility or Volume

The No Action and Limited Action alternatives do not include any additional measures other than natural long-term flushing of the soil to reduce the level of contamination in the soil. In the No Action and Limited Action Alternatives, groundwater concentrations could actually increase due to migration of contaminants from soil and sediment into the groundwater. Alternative 3 would reduce the mobility of soil contaminants by providing a barrier to precipitation infiltration which is the primary cause of contaminant leaching from soil/sediment into groundwater. Alternatives 4 and 5 would reduce the toxicity and mobility of the contaminants in the soil and sediment by the application of in-situ vacuum extraction for VOCs removal, the excavation of on-site contaminated material, and the treatment and subsequent disposal of the waste materials either on-site or in a RCRA-permitted facility.

Short-Term Effectiveness

Alternatives 1 and 2 would require no major construction activities to be performed at the Circuitron Corporation site and, therefore, would not present any risks to the community or workers resulting from work at the site. Alternative 3 involves standard on-site construction (asphalt paving), which would present minimal risk to workers and the public. The excavation and treatment alternatives (Alternatives 4 and 5) would require handling of contaminated sediments. Risks to the public and on-site workers from volatile emissions during sediment excavation would be minimal due to the low levels of VOCs in these sediments. Furthermore, proper dust control techniques would be implemented to further minimize this risk. Potential vapor leaks from the in-situ vacuum extraction system would be reduced by proper design and operation. Alternatives 3, 4 and 5 also involve the removal of contaminated building dust and its treatment and disposal. Proper procedures and construction techniques would be utilized both at the Circuitron Corporation site and at the off-site treatment and disposal facilities to minimize the short-term risks to the nearby public and workers from fugitive dust and any treatment process emissions.

Implementability

Alternatives 1 and 2 involve minimal on-site activities. Fence installation and groundwater monitoring in Alternative 2 would be easily implemented. Alternative 3 includes more on-site activity in order to repave the site and decontaminate the building but this involves standard construction methods which are easily implementable. Alternatives 4 and 5 involve on-site excavation and removal activities which are readily implementable. Alternative 5 also involves off-site transportation, treatment and disposal at commercially available treatment storage and disposal facilities. In Alternative 4, a TCLP analysis would be conducted on the treated and stabilized material to insure immobilization of the contaminants.

The TCLP analysis is easily implementable.

The technologies proposed for use in all alternatives are proven and reliable in achieving the specified clean-up goals. The SVE for Alternatives 4 and 5 is a very effective way for soil remediation and suited ideally for the sandy soil present at the Circuitron Corporation site.

Cost

Cost estimates were calculated for each of the five alternatives. Present worth estimated costs for each of the alternatives, based on an interest rate of 5%, and 30 year time interval, are as follows:

Alternative	Capital Cost ($)	O&M Cost ($)	Present Worth ($)
1	0	22,920	380,160
2	38,745	22,920	412,150
3	221,120	26,525	656,695
4	514,760	3,850	573,945
5	643,690	3,850	685,675

Community Acceptance

The community supports the preferred alternative (Alternative 5) Community comments can be reviewed in the public meeting transcript which is included in the administrative record. A Responsiveness Summary which summarizes all comments received during the public comment period is attached as Appendix E to this document.

State Acceptance

The State of New York concurs with the selected remedy.

THE SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, EPA and NYSDEC have determined that Alternative 5 is the appropriate remedy for the remediation of contaminated soils and sediments at the site. This alternative consists of in-situ vacuum extraction (SVE) in the southwest corner area of the site, near SD-3 (Figure 2, Appendix A); excavation of the sediments from leaching pools and storm drains inside and outside the building, followed by the off-site treatment and disposal of soils, sediments and residues; building decontamination; and, off-site disposal of non-hazardous debris.

The decontamination of the building will allow for its unrestricted use in the future.

In-situ vacuum extraction (see Figure 5) will reduce the soil levels of 1,1,1-TCA and tetrachloroethene in the southwest corner of the site, which were the most prevalent contaminants. The in-situ vacuum extraction would be applied to an area of approximately 400 square feet. A technical evaluation of contaminant-leaching indicates that reduction of soil contaminant levels of 1,1,1-TCA and tetrachloroethene to 1.0 ppm and 1.5 ppm, respectively, would insure protection of groundwater from cross media impacts. These are not risk-determined values but relate directly to the effect of the source contribution to the potential groundwater contamination resulting from leaching VOC-contaminated soils.

The sediments, containing organic and inorganic compounds, from within the underground structures, inside and outside the building, will be removed.

Metals-contaminated dust from within the building will also be removed to the extent necessary to comply with OSHA requirements. It is estimated that the excavated sediments and the building dust amount to approximately 53 cubic yards.

The excavated contaminated materials, e.g., soils, sediments, etc., would be packed into appropriate containers and transported by truck to an off-site treatment and disposal facility, in accordance with applicable regulations for handling and transport of hazardous materials. The off-site facility would be responsible for all the necessary treatment of the contaminated materials, to insure that all requirements, including RCRA land disposal restrictions are satisfied. Similarly, spent-carbon or any other treatment residual from the in-situ vacuum extraction unit will also be disposed off-site, in accordance with applicable RCRA regulations, including land disposal restrictions.

Spent carbon or any other treatment residual from the in-situ vacuum extraction unit will be disposed off-site under with applicable RCRA regulations, including land disposal restrictions.

All non-hazardous debris, e.g., broken concrete, asphalt, etc., resulting from the remedial action, will be removed from the site and disposed in a sanitary landfill. The repaving of the site and the replacement of the plating room concrete floor will also be performed.

The treatment and off-site disposal of the VOC-contaminated soil in the southwest corner of the site and the removal and off-site treatment and disposal of all contaminated sediments will eliminate the principal threat at the site by reducing a major source of groundwater degradation in the area. Groundwater contamination will be addressed in a subsequent ROD.

The selected alternative is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility or volume as a principal element.

STATUTORY DETERMINATIONS

Overall Protection of Human Health and the Environment

The selected alternative is considered fully protective of human health and the environment. The treatment of on-site contaminated soil in the southwest corner of the site via soil in-situ soil vacuum extraction and the removal of on-site contaminated sediments will eliminate the source of groundwater contamination. The contaminated building dust which is currently considered to be above OSHA standards will also be removed to allow for future use of the building. Any short-term risks associated with the remedy would be mitigated by proper engineering controls and health and safety procedures. This alternative involves treatment which would significantly reduce the toxicity, mobility and volume of hazardous contaminants.

Compliance with ARARs

At the completion of the response action, the selected remedy will have complied with the following ARARs:

Action-specific ARARs:

The selected remedy calls for the transport of contaminated sediments and treatment residuals to a RCRA facility for disposal and will comply with the following ARARs:

> RCRA 40 CFR Part 263 - Standard applicable to the transport of hazardous wastes.
>
> RCRA 40 CFR Part 264 - Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.

RCRA 40 CFR Part 268 - Contaminated sediments and building dust, spent carbon from the in-situ vacuum extraction treatment system as well as any other treatment residuals will be treated and disposed of off-site, consistent with applicable land disposal restrictions.

6 NYCRR Part 372 - Hazardous Waste Manifest System & Related Standards for Generators, Transporters and Facilities.

6 NYCRR Subpart 373-2 Final State Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities.

During the implementation of the in-situ vacuum extraction, all resulting air emissions will be in compliance with 6 NYCRR Parts 200, 201, 212 and 231.

29 CFR Part 1910.1000 - OSHA standards for building dust.

Chemical-specific ARARs:

None applicable.

Location-specific ARARs:

None applicable.

Cost Effectiveness

The selected remedy is cost effective in that it provides overall effectiveness proportional to its cost. The total capital and present worth costs are estimated to be $643,690 and $685,675, respectively. Although Alternative 5 is slightly more expensive than Alternative 4, the difference is not significant, especially in light of the fact that remedial design costs for Alternative 4 are expected to be higher than those for Alternative 5.

A detailed cost estimate of the selected remedy is shown on Table 10 in Appendix B.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The selected remedy utilizes permanent solutions and treatment technologies to the maximum extent practicable. The selected remedy represents the best balance of trade-offs among the alternatives with respect to the evaluation criteria, especially in regards to short and long term effectiveness, permanence and implementability. The state and the community also support the selected remedy.

The selected remedy employs permanent treatment of the VOC contaminated soil in the southwest corner of the site via SVE and excavation and off-site treatment of all contaminated sediments from the underground structures. The potential for future releases of contaminants to the environment will be eliminated. The indirect and direct risks posed by the soils and sediments as a continued source of groundwater contamination will be removed.

No short-term adverse impacts and treats to human health and the environment are foreseen as the result of implementing the selected remedy. However, to minimize and/or prevent worker exposure to contaminants, personal protection equipment will be used.

The selected remedy will require construction of on-site soil treatment facilities. No technological problems should arise as the treatment technology is well established, readily available and has a proven track record.

Preference for Treatment as the Principal Element

The selected remedy fully satisfies this criterion for the treatment of the soil and sediment contamination which are considered the principal threats at the site. Therefore, the statutory preference for remedies that employ treatment as a principal element is satisfied.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the Circuitron Corporation Site was released to the public on January 31, 1991. The Proposed Plan identifies Alternative 5 as the preferred alternative.

EPA has reviewed all written and verbal comments submitted during the public comment period. Upon review of these comments, EPA determined that no significant changes to the selected remedy, as originally identified in the Proposed Plan, were necessary.

APPENDIX A

FIGURES

FIGURE 1

CIRCUITRON CORPORATION
SITE LOCATION MAP

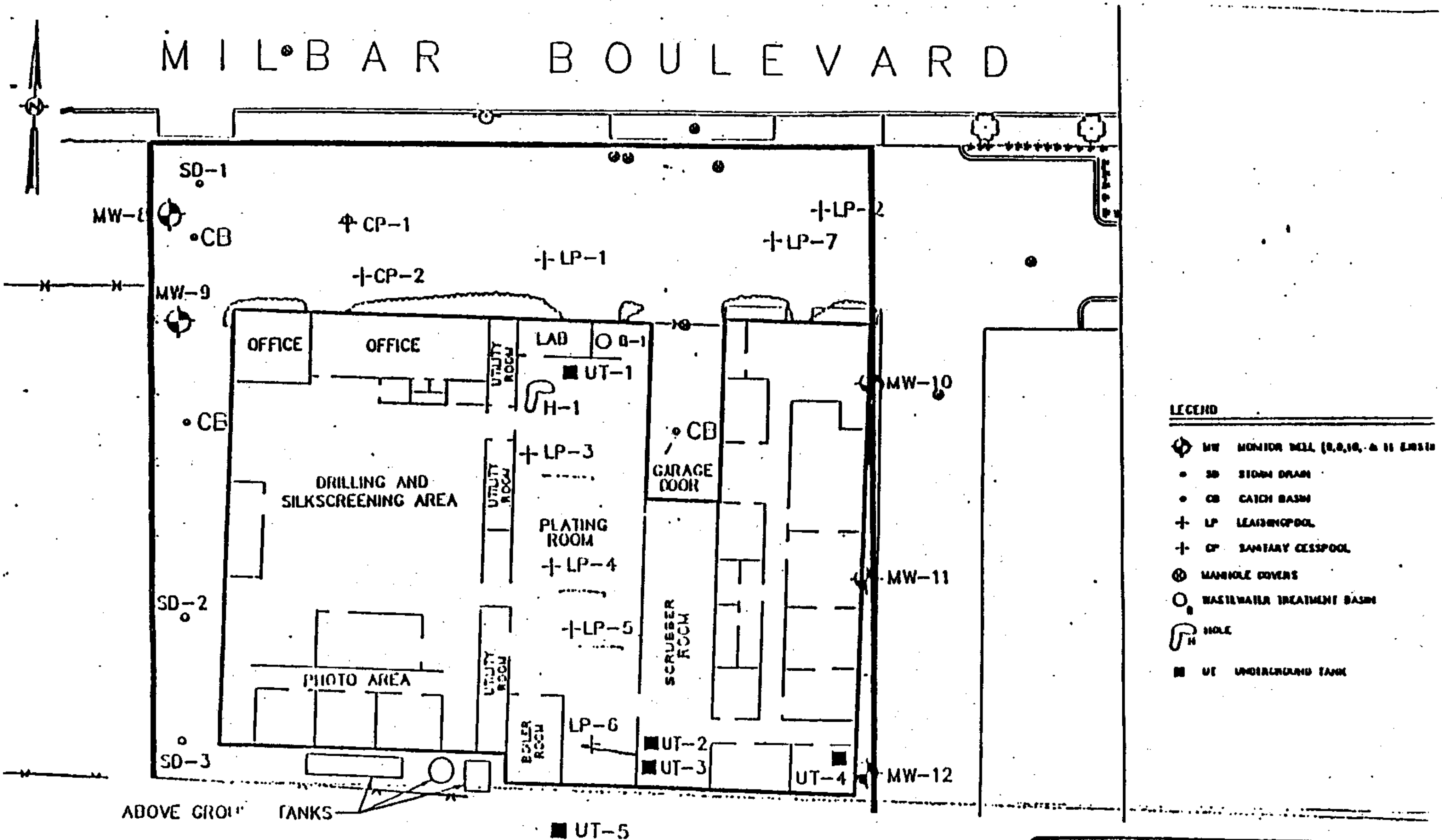


FIGURE 2

CIRCUITRON CORPORATION
SITE PLAN

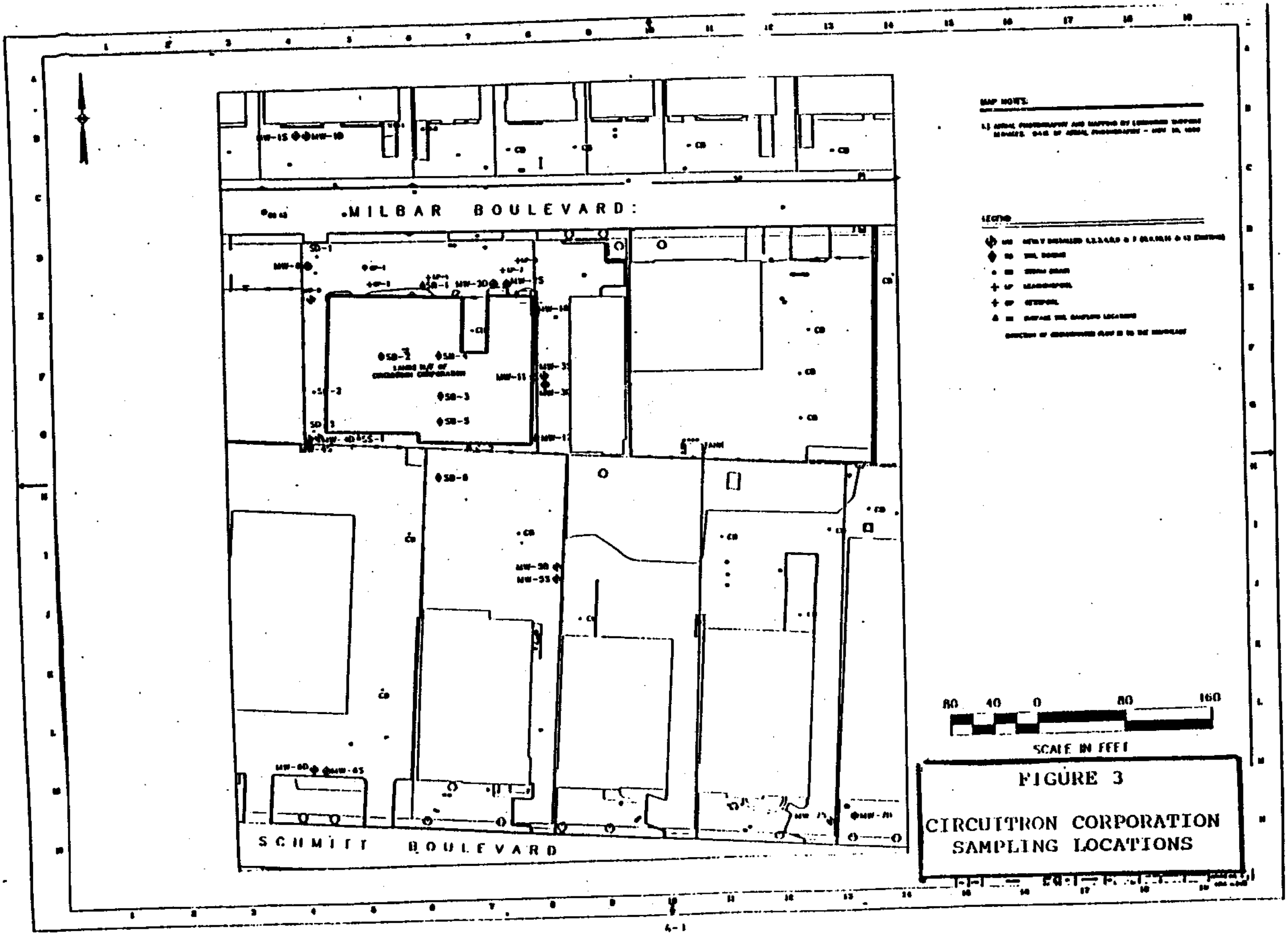


FIGURE 3
CIRCUITRON CORPORATION
SAMPLING LOCATIONS

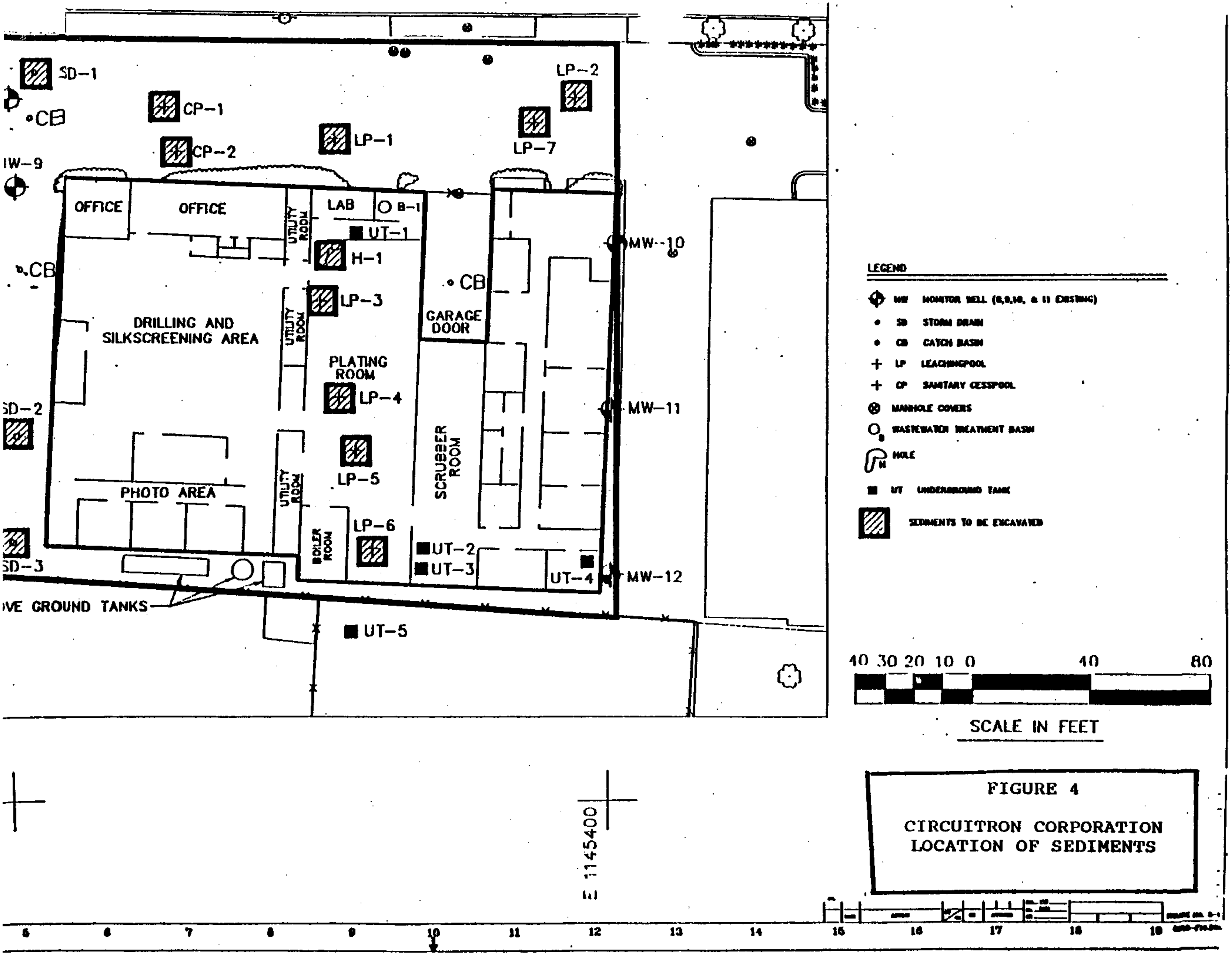
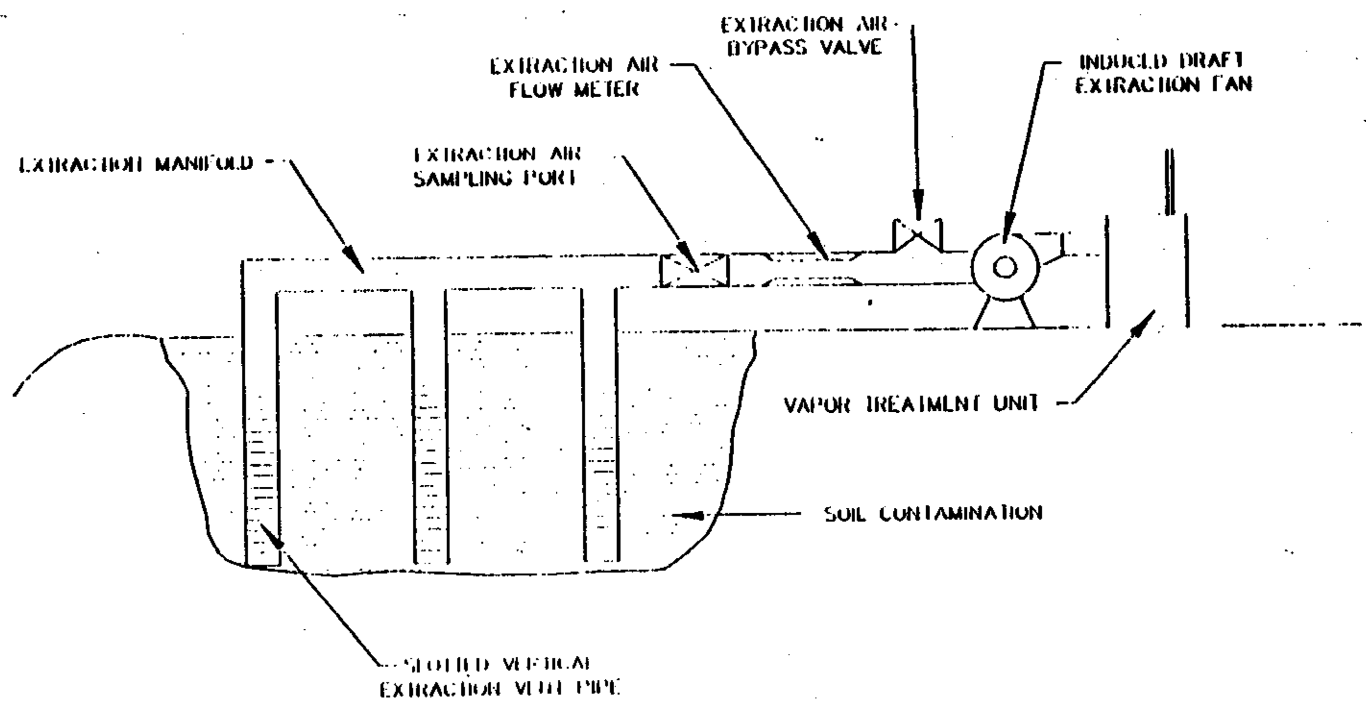


FIGURE 4

CIRCUITRON CORPORATION
LOCATION OF SEDIMENTS

FIGURE 5

CIRCUITRON CORPORATION
IN-SITU VACUUM EXTRACTION



APPENDIX B

TABLES

TABLE 1

CONTAMINANT CONCENTRATIONS IN ON-SITE SHALLOW WELLS

MEASUREMENTS IN UG/L

SAMPLE LOCATION	CC-MW2S		CC-MW3S		CC-MW4S	
DEPTH INTERVAL (FT)	25.0 - 35.0		28.0 - 38.0		24.0 - 34.0	
	ROUND 1	ROUND 2	ROUND 1	ROUND 2	ROUND 1	ROUND 2
VOLATILE PARAMETERS:						
1,1-Dichloroethene	1.000R	—	—	—	12.000J	—
1,1-Dichloroethane	0.400J	—	—	0.600J	17.000J	—
1,1,1-Trichloroethane	2.000J	5.400	8.000J	78.000	4,600.000B	—
1,2-Dichloroethane	2.000J	—	—	—	—	25.000
Trichloroethene	1.000R	—	—	—	14.000J	7.400
Tetrachloroethene	1.000R	—	—	0.800J	110.000	87.000
Acetone	—	1.000R	—	1.000R	—	1.000R
Trans-1,2-Dichloroethene	1.000R	—	—	—	—	—
Chloroform	1.000R	—	—	—	—	—
2-Butanone	1.000J	—	—	—	—	—
Benzene	1.000R	—	3.000J	—	—	—
INORGANIC PARAMETERS						
Aluminum	321.000	100.000B	—	105.000B	140.000B	95.200B
Antimony	60.000R	—	—	—	—	—
Arsenic	5.300B	4.9000B	2.500B	—	—	—
Barium	29.0000B	26.200B	16.000B	14.600B	34.000BJ	49.300B
Beryllium	3.600B	—	3.000B	—	3.000B	—
Calcium	25,100.600	22,700.000	22,300.000	22,400.000	17,400.000	24,300.000
Chromium	6.000B	—	8.000BJ	3.900B	16.000J	10.200
Cobalt	—	—	—	3.600B	—	—
Copper	124.000	64.100	36.000	33.800	29.000	25.300
Iron	12,400.000	10,700.000	12,000.000	14,900.000	760.000	922.000
Lead	—	—	—	—	—	3.400J
Magnesium	2,900.000B	2,570.000BJ	3,020.000B	2,500.000BJ	2,160.000B	2,940.000BJ
Manganese	460.000	361.000	474.000	400.000	60.000	46.100
Mercury	—	0.200R	—	0.200R	—	0.200R
Nickel	18.000B	—	22.000B	—	22.000B	17.200B
Potassium	2,760.000B	2,470.000B	2,470.000B	2,440.000B	2,780.000B	6,030.000
Silver	10.000R	—	10.000R	—	10.000R	—
Sodium	7,360.000	6,730.000	10,700.000	7,400.000	6,810.000	11,700.000
Vanadium	—	—	7.000B	—	—	—
Zinc	18.000B	53.000	—	10.200B	18.000B	99.600
Hexavalent Chromium	—	20.000R	—	20.000R	—	20.000R

EXAMINATION CODES:

DETECTED AT CONCENTRATION INDICATED

J ESTIMATED VALUE

B COMPOUND FOUND IN BLANK

— UNDETECTED AT GIVEN INSTRUMENT DETECTION LIMIT (IF REQUIRED)

X,R REJECTED VALUE

4219K

TABLE 2

CONTAMINANT CONCENTRATIONS IN ON-SITE DEEP WELLS

MEASUREMENTS IN UG/L

SAMPLE I DEPTH INTERVAL (FT)	CC-MW2D 90.0 - 100.0		CC-MW3D 90.0 - 100.0		CC-MW4D 90.0 - 100.0	
	ROUND 1	ROUND 2	ROUND 1	ROUND 2	ROUND 1	ROUND 2
VOLATILE PARAMETERS:						
1,1-Dichloroethene	5.000	7.500	6.000J	11.000	0.900J	4.200
1,1-Dichloroethane	2.000	1.800	1.000R	0.900J	1.000	2.000
1,1,1-Trichloroethene	33.000	35.000	30.000J	61.000	8.000	19.000
Trichloroethene	10.000	8.700	3.000J	2.800	12.000	27.000
Tetrachloroethene	25.000	24.000	7.000J	9.300	11.000	28.000
Acetone	—	1.000R	—	1.000R	—	1.000R
Trans-1,2-Dichloroethene	4.000	—	1.000R	—	6.000	—
Chloroform	—	—	1.000R	—	5.000	—
2-Butanone	—	—	1.000R	—	—	—
Benzene	—	—	1.000R	—	—	—
BASE/NEUTRAL PARAMETERS:						
Di-N-Butylphthalate	2.000J	—	—	—	—	—
INORGANIC PARAMETERS:						
Aluminum	200.000R	246.000J	425.000	146.000B	—	126.000BJ
Arsenic	2.700B	—	—	—	—	1.400B
Barium	148.000B	146.000B	116.000B	118.000B	88.400B	92.400B
Calcium	11,000.000	10,200.000	21,100.000	20,600.000	12,700.000	13,400.000
Chromium	—	21.300J	14.000J	11.300	—	5.900B
Cobalt	—	—	—	8.200B	—	—
Copper	10.700B	8.600B	9.300B	5.600B	9.300B	7.000B
Iron	246.000J	583.000J	815.000	326.000	317.000	318.000
Lead	6.800	12.700	5.200	14.400J	5.000R	10.600
Magnesium	2,060.000	2,010.000B	4,400.000B	4,140.000BJ	3,800.000B	3,840.000B
Manganese	408.000	385.000	1,640.000	1,510.000	32.600	32.900
Mercury	—	0.200R	—	0.200R	—	0.200R
Potassium	3,230.000B	4,320.000BJ	2,620.000B	3,440.000B	3,250.000B	6,810.000J
Selenium	3.800B	—	—	—	—	—
Sodium	15,900.000J	16,600.000	24,200.000	24,700.000	18,600.000	18,900.000
Vanadium	—	—	—	—	—	2.500B
Zinc	43.200J	20.000R	61.500	76.100	110.000	20.000R
Cyanide	10.000	—	17.500	—	—	—
Hexavalent Chromium	—	20.000R	—	20.000R	—	20.000R

EXPLANATION OF CODES:

- DETECTED AT CONCENTRATION INDICATED
- J ESTIMATED VALUE
- B COMPOUND FOUND IN BLANK
- — UNDETECTED AT GIVEN INSTRUMENT DETECTION LIMIT (IF REPORTED)
- X.R REJECTED VALUE

TABLE 3

CONTAMINANT CONCENTRATIONS IN OFF-SITE SHALLOW WELLS
MEASUREMENTS IN UG/L

SAMPLE LOCATION	CC-MW1S		CC-MW5S		CC-MW6S		CC-MW7S	
DEPTH INTERVAL (FT)	25.0 - 35.0		24.0 - 34.0		24.0 - 34.0		27.0 - 37.0	
	ROUND 1	ROUND 2	ROUND 1	ROUND 2	ROUND 1	ROUND 2	ROUND 1	ROUND 2
VOLATILE PARAMETERS:								
Dichlorodifluoromethane	—	20.000	—	—	—	—	—	—
1,1-Dichloroethane	—	8.100	0.600J	0.800J	1.000R	1.200	—	—
1,1-Dichloroethene	—	6.600	6.000	4.200	1.000R	1.000J	—	—
1,1,1-Trichloroethane	760.000	1,181.000J	91.000J	115.000J	95.000J	97.00[illegible]	—	—
1,2-Dichloroethane	—	—	1.000J	—	1.000R	—	—	—
Trichloroethene	—	—	1.000	0.900J	1.000R	—	—	—
Tetrachloroethene	—	—	11.000	8.900	1.000R	0.700J	—	—
1,2,3-Trichloropropane	—	—	—	—	—	—	—	—
Acetone	—	1.000R	—	1.000R	—	1.000R	—	1.000
Trans-1,2-Dichloroethene	—	—	—	—	1.000R	—	—	—
Chloroform	—	—	—	—	1.000R	—	—	—
2-Butanone	—	—	—	—	1.000R	—	—	—
Benzene	—	—	—	—	1.000R	—	—	—
BASE/NEUTRAL PARAMETERS:								
Di-N-Butylphthalate	—	—	—	—	—	—	1.000J	—
INORGANIC PARAMETERS								
Aluminum	864.000	34.200B	229.000	503.000	1,680.000	731.000	—	14.000
Arsenic	5.200B	5.100B	—	2.000B	2.200B	—	—	—
Barium	121.000B	117.000B	48.000BJ	43.100B	38.200B	23.100B	55.300B	55.000
Beryllium	—	—	2.000B	—	—	—	—	—
Calcium	59,700.000	59,900.000	28,900.000	29,800.000	16,700.000	14,100.000	18,500.000	18,000.000
Chromium	17.600J	—	10.000J	16.200	10.000R	14.600	—	—
Cobalt	—	—	—	3.300B	—	—	—	—
Copper	—	—	40.000	76.600	—	—	—	—
Iron	19,300.000	14,900.000	140.000	203.000	3,000.000	1,110.000	180.000	44.000B
Lead	1.200B	—	—	—	2.600B	—	—	—
Magnesium	5,050.000	4,960.000B	3,890.000B	4,290.000BJ	2,000.000B	1,610.000BJ	3,150.000B	3,100.000
Manganese	470.000	309.000	358.000J	215.000	103.000	44.200	114.000	30.800
Mercury	—	0.200R	—	0.200R	—	0.200R	—	0.200
Nickel	—	—	—	36.700B	16.400B	—	—	—
Potassium	3,330.000B	4,710.000BJ	2,890.000B	2,930.000B	1,220.000B	2,450.000B	4,160.000BJ	5,660.000
Selenium	—	—	—	—	1.300B	—	—	—
Silver	—	—	10.000R	—	—	—	—	—
Sodium	9,670.000	9,780.000	12,400.000	16,000.000	8,160.000	5,360.000	18,000.000	17,000.000
Vanadium	—	3.900B	7.000B	—	—	—	—	2.000
Zinc	78.600	9.400B	—	29.600	20.000R	31.200	19.600BJ	8.500
Cyanide	—	—	—	—	10.000	—	—	—
Hexavalent Chromium	—	20.000R	—	20.000R	—	20.000R	—	20.000

EXPLANATION OF CODES:
* DETECTED AT CONCENTRATION INDICATED
J ESTIMATED VALUE
B COMPOUND FOUND IN BLANK
— UNDETECTED AT GIVEN INSTRUMENT DETECTION LIMIT (IF REPORTED)
X,R REJECTED VALUE

TABLE 4

CONTAMINANT CONCENTRATIONS IN OFF-SITE DEEP WELLS

MEASUREMENTS IN UG/L

AMPLE LOCAT....	CC-MW1D		CC-MW5D		CC-MW6D		CC-MW7D	
EPTH INTERVAL (FT)	90.0 - 100.0		90.0 - 100.0		90.0 - 100.0		90.0 - 100.0	
	ROUND 1	ROUND 2	ROUND 1	ROUND 2	ROUND 1	ROUND 2	ROUND 1	ROUND 2
OLATILE PARAMETERS:								
,1-Dichloroethene	3.000J	3.700	-	1.600	2.000	5.800	7.000J	5.500
,1-Dichloroethane	1.000J	1.000	-	1.000	1.000	1.600	1.000J	0.900J
,1,1-Trichloroethane	28.000J	23.000	-	6.600	12.000	19.000	37.000J	19.000
richloroethene	18.000J	10.000	0.900J	9.300	18.000	27.000	17.000J	13.000
etrachloroethene	29.000J	20.000	-	13.000	31.000	38.000	31.000J	18.000
cetone	-	1.000R	-	1.000R	-	1.000R	-	1.000R
rans-1,2-Dichloroethene	5.000J	-	-	-	9.000	-	5.000J	-
hloroform	24.000J	-	31.000	-	-	-	2.000J	-
ASE/NEUTRAL PARAMETERS:								
-n-butylphthalate	-	-	-	-	-	-	2.000J	-
NORGANIC PARAMETERS:								
uminum	42.500B	173.000BJ	512.000	520.000J	148.000B	367.000	-	188.000BJ
rsenic	2.600B	-	-	-	-	1.000B	-	-
arium	98.300B	94.300B	68.500B	67.500B	91.600B	96.700B	125.000B	120.000B
alcium	12,200.000	12,500.000	10,500.000	10,100.000	13,900.000	12,100.000	16,000.000	15,600.000
hromium	-	-	-	3.100B	10.000R	6.200B	22.700J	4.200B
obalt	-	1.100B	-	-	-	6.100B	-	-
opper	15.300B	10.200B	332.000	287.000	29.800	-	-	3.900B
ron	100.000R	303.000	256.000J	215.000	100.000R	311.000	264.000	239.000
ead	5.000R	11.100	5.000R	13.000	26.600	-	3.500	14.600
agnesium	3,970.000B	3,940.000B	2,600.000B	2,560.000B	3,620.000B	3,730.000BJ	5,570.000	5,240.000
anganese	37.800	41.800	83.100	82.600	125.000	125.000	34.900	30.100
ercury	-	0.200R	-	0.200R	-	0.200R	-	0.200R
ickel	-	-	-	-	24.500B	18.700B	17.500B	-
otassium	2,320.000B	4,340.000BJ	2,500.000B	4,440.000BJ	3,930.000BJ	2,970.000B	2,670.000B	3,650.000BJ
elenium	1.300B	-	1.300B	-	1.300B	-	1.300B	-
odium	10,100.000	19,700.000	19,600.000	19,200.000	24,000.000	25,500.000	14,200.000	14,400.000
anadium	-	3.000B	-	3.100B	-	-	-	2.400B
inc	20.000R	20.00R	56.300	20.000R	20.000R	17.200BJ	27.600J	20.000R
yanide	25.000R	-	15.000	-	10.000	-	-	-
exavalent Chromium	-	20.000R	-	20.000R	-	20.000R	-	20.000R

PLANATION OF CODES
 DETECTED AT CONCENTRATION INDICATED
 ESTIMATED VALUE
 COMPOUND FOUND IN BLANK
 UNDETECTED AT GIVEN INSTRUMENT DETECTION LIMIT (IF RECEIVED)
R REJECTED VALUE

19K

TABLE 6

CONTAMINANT CONCENTRATION IN WELLS
INSTALLED BY THE CIRCUITRON CORPORATION
MEASUREMENTS IN UG/L

AMPLE LOCATION EPTH INTERVAL (FT)	CC-MW8 24.8 - 29.8	CC-MW9 24.1 - 29.1	CC-MW10 23.9 - 28.9	CC-MW11 25.1 - 30.1	CC-MW12 25.1 - 30.1	CC-PW01 575.0 - 605.0	CC-PW02 216.3 - 226.3
OLATILE PARAMETERS:							
ichlorodifluoromethane	6.000	-	-	-	-	-	1.000R
,1-Dichloroethene	6.000	-	1.000	2.000	23.000J	-	1.000
,1-Dichloroethane	11.000J	-	-	1.000	10.000	-	-
,1,1-Trichloroethane	110.000J	2.000	20.000	43.000J	380.000J	-	7.000
,2-Dichloroethane	-	-	-	-	1.000	-	-
richloroethene	-	-	-	-	4.000	0.600J	21.000
etrachloroethene	-	-	-	2.000	33.000J	-	4.000
,2,3-Trichloropropane	0.500R	0.500R	4.000J	0.500R	0.500R	-	-
cetone	-	-	-	8.000J	13.000J	1.000R	1.000R
ASE/NEUTRAL PARAMETERS:							
i-n-butylphthalate	-	-	-	-	-	95.000B	-
NORGANIC PARAMETERS:							
luminum	4,300.000	3,990.000	2,040.000	8,450.000	2,060.000	-	130.000BJ
ntimony	-	-	-	-	-	-	16.700B
rsenic	4.000B	3.400B	-	6.600B	2.700B	5.000R	-
arium	85.600B	35.000BJ	49.300B	89.200B	46.500B	25.600B	33.500B
eryllium	-	-	-	-	-	-	-
alcium	22,500.000	7,380.000	35,900.000	35,700.000J	20,300.000	2,730.000B	5,300.000
hromium	870.000	71.200	12.000J	18.100J	-	-	-
opper	107.000	84.200	538.000	25.000R	25.000R	88.400J	101.000
ron	17,300.000	13,300.000	6,800.000	13,100.000	4,250.000	293.000	87.800BJ
ead	61.400J	5.000R	5.000R	5.000R	20.500J	12.800J	2.100BJ
agnesium	4,580.000B	2,210.000B	5,540.000	7,200.000	3,600.000B	830.000B	2,290.000B
anganese	164.000J	168.000J	178.000J	576.000J	628.000J	-	70.200
ercury	-	-	0.300J	-	-	-	-
ickel	-	-	43.700	32.600B	70.200	-	-
otassium	3,000.000B	1,900.000B	2,300.000B	2,700.000B	-	-	1,320.000B
elenium	-	-	-	-	-	-	1.200BJ
ilver	-	-	-	-	-	13.400	-
odium	23,900.000J	5,000.000R	20,700.000	18,300.000	5,000.000R	2,860.000B	6,780.000
inc	20.000R	20.000R	20.000R	20.000R	20.000R	42.000	22.600J

XPLANATION OF CODES
DETECTED AT CONCENTRATION INDICATED
) ESTIMATED VALUE
) COMPOUND FOUND IN BLANK
- UNDETECTED AT GIVEN INSTRUMENT DETECTION LIMIT (IF RECEIVED)
K, R REJECTED VALUE

4219K

TABLE 6

SURFACE/SUBSURFACE CONTAMINANT LEVELS

SAMPLE LOCATION	CC-MW1D		CC-MW2D		CC-MW3D		CC-MW40		CC-SB01		CC-SB02	
DEPTH INTERVAL (ft)	0-97		0-97		0-97		0-97		0-42		0-32	
	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range
VOLATILE PARAMETERS: (1)												
Acetone	1/7	420.000J	1/8	33.000J	-	-	-	-	-	-	3/7	ND-1200.000J
Chloroform	7/7	3.000J	3/8	ND-2.000J	1/8	-12.000U	-	-	-	-	1/7	1.000J
Toluene	2/7	2.000J	6/8	ND-34.000J	1/8	-5.000J	3/8	ND-36.000	9/9	2.000-13.000	6/7	ND-6.000
Chlorobenzene	1/7	2.000J	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	4/8	ND-5.000J	-	-	-	-
1,1-Dichloroethane	-	-	-	-	-	-	3/8	ND-2.000J	-	-	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	6/8	ND-100,000.000	-	-	2/7	ND-31.000
Trichloroethene	-	-	-	-	-	-	3/8	ND-9.000	-	-	1/7	2.000J
1,1,2-Trichloroethane	-	-	-	-	-	-	2/8	ND-2.000J	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	4/8	ND-100.000	-	-	1/7	24.000
BASE/NEUTRAL PARAMETERS: (1)												
Bis(2-ethylhexyl) phthalate	2/7	ND-42.000	6/8	ND-450.000J	4/8	ND-160.000J	7/8	ND-20,000.000J	7/9	ND-690.000J	1/7	ND-700.000
Phenol	-	-	1/8	340.000R	-	-	-	-	-	-	-	-
Benzoic Acid	-	-	1/8	1600.000R	-	-	-	-	-	-	-	-
Pentachlorophenol	-	-	1/8	1600.000R	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	1/8	160.000J	-	-	-	-
Di-n-butylphthalate	-	-	-	-	-	-	2/8	ND-120.000J	-	-	-	-
Butylbenzylphthalate	-	-	-	-	-	-	1/8	5.000J	-	-	2/7	ND-25,000.000
Benzyl Alcohol	-	-	-	-	-	-	-	-	-	-	1/7	700.000J
PESTICIDES/PCBs: (1)												
4,4-DDT	-	-	1/8	40.000	-	-	-	-	-	-	-	-
INORGANIC PARAMETERS: (2)												
Aluminum	7/7	428.000-1490.000	7/7	350.000-3330.000	8/8	200.000R-1060.000	8/8	200.000R-1150.000	8/8	99.300J-1580.000J	7/7	416.000-5780.000
Antimony	-	-	-	-	-	-	1/8	13.800B	-	-	-	-
Arsenic	7/7	0.340BJ-1.200BJ	5/7	ND-2.200J	8/8	0.330B-0.770B	7/8	0.390B-0.930B	8/8	0.980B-2.400B	5/7	1.300B-6.660
Barium	7/7	200.000R	7/7	2.000B-8.400B	7/8	2.400B-6.000B	7/8	2.200B-4.800B	8/8	0.470B-5.100R	6/7	2.900B-37.400B
Beryllium	1/7	5.800R	2/7	ND-0.220B	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	1/8	1.100J	-	-	1/7	0.820B
Calcium	7/7	1540.000-5000.000	7/7	133.000B-20500.00	7/8	ND-5000.000R	8/8	88.200B-13800.000	8/8	44.500-12,200.000	6/7	140.000B-89200.000J
Chromium	5/7	ND-3.300J	7/7	1.900B-6.900	8/8	1.200B-5.200J	7/8	1.900B-4.400J	6/8	1.100BJ-5.000J	7/7	1.900B-33.600J
Cobalt	1/7	ND-1.200B	2/7	ND-1.400B	1/8	1.000B	1/8	0.910B	1/8	1.000B	3/7	4.100B-7.900B
Copper	6/7	ND-9.000	7/7	2.000B-53.900	5/8	1.500B-14.700J	7/8	20.500J-485.000J	8/8	8.300J-60.500J	6/7	7.600J-50.700
Iron	7/7	878.000-5840.000	7/7	1560.000-4440.000	8/8	1530.000-2920.000	8/8	1120.000-3310.000	8/8	1230.000-4560.000	7/7	1860.000-10800.000

TABLE 6 (Cont'd)

SURFACE/SUBSURFACE CONTAMINANT LEVELS

SAMPLE LOCATION	CC-MW1D		CC-MW2D		CC-MW3D		CC-MW4D		CC-SB01		CC-SB02	
DEPTH INTERVAL (ft)	0-97		0-97		0-97		0-97		0-42		0-32	
	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range
Lead	7/7	0.420BJ-3.400J	7/7	0.550BJ-8.800J	8/8	0.440BJ-6.000R	8/8	0.680BJ-38.300	8/8	7.000-56.300	7/7	0.660BJ-41.400
Magnesium	7/7	82.000B-6.600B	7/7	93.200B-12600.000	7/8	267.000B-5000.00R	7/8	1110.000-7070.000	7/8	13.200B-6970.000	7/7	139.000B-3710.000
Manganese	7/7	3.500B-103.000J	7/7	15.600-93.600J	8/8	5.900J-65.100	8/8	15.000R-61.700	8/8	6.200J-65.400J	7/7	11.400-170.000J
Mercury	-	-	-	-	2/8	0.100-0.190	-	-	-	-	1/7	0.160
Nickel	4/7	1.300B-4.700B	6/7	ND-3.300B	3/8	1.400B-2.500B	4/8	1.700B-3.900B	2/8	3.500B	1/7	11.500
Potassium	7/7	50.700B-121.000B	7/7	68.100B-196.000B	7/8	79.300-159.000B	8/8	64.600B-5000.000R	6/8	31.000B-133.000B	7/7	228.000BJ-5000.000R
Selenium	-	-	-	-	-	-	-	-	6/8	0.430BJ-0.690BJ	-	-
Silver	-	-	-	-	-	-	1/8	9.500	2/8	2.700-3.000	1/7	7.100J
Sodium	-	-	-	-	-	-	1/8	201.000B	8/8	16.000B-48.000B	1/7	5000.000R
Vanadium	5/7	1.300B-3.600B	6/7	ND-6.000B	6/8	1.400B-2.300B	7/8	1.500B-6.200B	5/8	1.200B-7.400B	4/7	5.000B-17.000
Zinc	7/7	20.000R	7/7	20.000R	8/8	20.000R	8/8	20.000R	8/8	1.400BJ-8.500J	4/7	4.300B-20.000R
Cyanide	-	-	-	-	-	-	-	-	1/8	2.200	-	-
Hexavalent Chromium	1/7	0.0070J	-	-	-	-	-	-	-	-	-	-

EXPLANATION OF CODES:

	Detected at Concentration Indicated
J	Estimated Value
B	Compound found in blank
-	Undetected at given Instrument Detection Limit (if reported)
ND	Not Detected
X, R	Rejection Value
(1)	Values in ug/kg
(2)	Values in mg/kg
	Frequency = # Hits/# Samples Analyzed

TABLE 6 (Cont'd)

SURFACE/SUBSURFACE CONTAMINANT LEVELS

SAMPLE LOCATION	CC-SB03		CC-SB04		CC-SB05		CCSB-06		CC-SS01		CC-SS02	
DEPTH INTERVAL (ft)	0-42		0-42		0-42		0-42		0-0.5		0-0.5	
	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range
VOLATILE PARAMETERS: (1)												
Chloroform	3/8	NU-2.000J	8/10	ND-3.000J	3/9	ND-2.000J	-	-	1/1	2.000J	1/1	1.000J
Toluene	-	-	6/10	ND-7.000	2/9	ND-2.000J	5/8	NU-13.000	-	-	1/1	57.000B
1,1,1-Trichloroethane	1/8	6.000	1/10	6.000	-	-	1/8	5.000J	1/1	3.000J	-	-
Tetrachloroethene	1/8	2.000J	-	-	1/9	7.000	2/8	ND-10.000	1/1	4.000J	1/1	1.000J
Total Xylenes	-	-	1/10	20.000J	-	-	-	-	-	-	-	-
BASE/NEUTRAL PARAMETERS: (1)												
Bis(2-ethylhexyl) phthalate	1/8	188.000J	6/10	ND-2100.000	3/9	ND-1300.000	1/8	120.000J	1/1	8000.000	1/1	1300.000
Phenol	-	-	1/10	17,000.000	-	-	-	-	-	-	-	-
Benzoic Acid	1/8	1700.000R	3/10	ND-2900.000J	-	-	-	-	-	-	-	-
Pentachlorophenol	-	-	1/10	43.000J	-	-	-	-	-	-	-	-
Di-n-butylphthalate	-	-	-	-	-	-	-	-	-	-	1/1	41.000J
Butyl Benzyl Phthalate	-	-	-	-	1/9	160.000J	-	-	1/1	83.000J	1/1	360.000J
Di-n-octylphthalate	-	-	-	-	1/9	230.000J	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-	-	-	1/1	54.000
Fluoranthene	-	-	-	-	-	-	-	-	-	-	1/1	110.000J
Pyrene	-	-	-	-	-	-	-	-	-	-	1/1	91.000J
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	1/1	160.000J
Benzo(a)pyrene	-	-	-	-	-	-	-	-	-	-	1/1	52.000J
PESTICIDES/PCBs: (1)												
4-4-DDT	-	-	1/10	24.000	-	-	-	-	-	-	-	-
Delta-BHC	-	-	1/10	29.000	-	-	-	-	-	-	-	-
Heptachlor	-	-	1/10	20.000	-	-	-	-	-	-	-	-
Aldrin	-	-	1/10	7.900J	-	-	-	-	-	-	-	-
Heptachlor Epoxide	-	-	1/10	24.000	-	-	-	-	-	-	-	-
4-4-DDE	-	-	1/10	25.000J	-	-	-	-	-	-	-	-
Endosulfan Sulfate	-	-	1/10	97.000	-	-	-	-	-	-	-	-
Aroclor 1260	-	-	1/10	170.000	-	-	-	-	1/1	280.000	-	-
INORGANIC PARAMETERS: (2)												
Aluminum	8/8	92.400-3250.000	10/10	207.000-2510.000	9/9	176.000-961.000	7/7	380.000J-1250.000J	1/1	1620.000	1/1	3280.000
Arsenic	8/8	0.350B-5.400	10/10	0.310BJ-3.300J	5/9	0.400B-0.620B	7/7	0.780B-3.000	1.1	1.900B	1/1	3.900
Barium	8/8	0.930B-200.000R	10/10	1.900B-200.000R	9/9	7.700B-200.000R	7/7	0.480B-8.500R	1/1	7.800B	1/1	20.600B
Beryllium	2/8	5.00R	-	-	-	-	-	-	-	-	-	-
Cadmium	2/8	1.000B-1.100J	-	-	1/9	0.780B	-	-	-	-	-	-

TABLE 6 (Cont'd)

SURFACE/SUBSURFACE CONTAMINANT LEVELS

PLE LOCATION	CC-SB03		CC-SB04		CC-SB05		CC-SB06		CC-SS01		CC-SS02	
TH INTERVAL (ft)	0-42		0-42		0-42		0-42		0-0.5		0-0.5	
	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range	Frequency	Range
cium	8/8	5000.000R	10/10	5000.000R-41600.000J	9/9	500.000R	7/7	25.900B-975.000B	1/1	16,000.000J	1/1	52600.000J
omium	8/8	1.300B-22.800	10/10	1.600B-10.100	9/9	1.800B-4.900	4/7	2.800J-3.500J	1/1	4.300J	1/1	31.400J
alt	2/8	1.400B-3.500B	2/10	2.300B-3.900B	1/9	0.850B	1/7	1.200B	-	-	-	-
per	8/8	14.700J-1950.000	10/10	13.500-71200.000	9/9	20.400-173.000J	7/7	2.400B-37.600J	1/1	67.700	1/1	5060.000
n	8/8	100.000R-16600.00	10/10	913.00-5410.000	9/9	1190.000-2960.000	7/7	916.000-6670.000	1/1	6260.000	1/1	10200.000
d	8/8	4.500J-278.000J	10/10	1.100J-1450.000	9/9	1.100J-10.200J	7/7	0.730R-4.600	1/1	20.000	1/1	44.100
nesium	8/8	59.900B-5000.000R	10/10	50.100B-870.000B	9/9	54.000B-270.000B	7/7	68.100B-877.000B	1/1	7730.000	1/1	30700.000
ganese	8/8	18.300J-128.000	10/10	9.600J-47.200J	9/9	4.700-48.700	7/7	8.100J-86.900J	1/1	96.500J	1/1	94.100J
cury	-	-	1/10	1.500B	3/9	0.100-0.600J	-	-	1/1	0.150	1/1	0.260
kel	3/8	1.600B-44.800	6/10	1.800B-68.200	9/9	2.800B-4.800B	1/7	2.200B	-	-	1/1	119.000J
assium	8/8	44.000B-472.000B	10/10	64.100B-5000.000R	8/9	40.200B-209.000B	6/7	32.700B-192.000B	1/1	578.000B	1/1	336.000B
lenium	-	-	-	-	-	-	3/7	0.550BJ-0.660BJ	-	-	-	-
lver	1/8	3.600	-	-	-	-	-	-	-	-	1/1	5.500J
dium	-	-	1/10	11300.000B	-	-	7/7	13.400B-24.200B	1/1	246.000B	1/1	245.000B
nadium	3/8	4.300B-26.100	6/10	1.400B-6.500B	7/9	1.400-2.600B	6/7	1.100B-5.800B	1/1	5.300B	1/1	8.800B
nc	8/8	20.000R	10/10	20.800R-181.000	9/9	2.100B-20.000R	7/7	1.900R-11.400J	1/1	41.500	1/1	111.000

PLANATION OF CODES:

Detected at Concentration Indicated
Estimated Value
Compound found in blank
Undetected at given Instrument Detection Limit (if reported)
Not Detected
R Rejection Value
) Values in ug/kg
) Values in mg/kg
Frequency = # Hits/# Samples Analyzed

TABLE 7

CONTAMINANT CONCENTRATIONS IN TH SEDIMENTS

AMPLE ID	CC-CP 1-SE01	CC-CP2-SE01	CC-LP1-SE01	CC-LP1/-SED1	CC-SD1-SE01	CC-SD2-SE01	CC-SD3-SED1
OLATILE PARAMETERS: (1)							
,1-Dichloroethane	65.000	5.000R	—	—	5.000R	6.000J	—
hloroform	—	5.000R	—	—	5.000R	—	3.000J
,1,1-Trichloroethane	1,500.000	5.000R	—	9.000	5.000R	24.000	19,000.000
enzene	—	5.000R	—	—	5.000R	—	8.000
etrachloroethane	21.000J	5.000R	—	—	5.000R	—	8.000
ASE/NEUTRA. PARAMETERS: (1)							
henol	—	330.000R	—	—	—	110.000J	—
,4-Dichlorobenzene	62.000J	330.000R	—	—	—	—	—
enzyl Alcohol	48.000J	330.000R	—	—	—	—	—
-Methylphenol	70.000J	330.000R	—	28.000J	—	—	—
enzoic Acid	300.000J	1,600.000R	250.000J	290.000J	470.000J	3,100.000	76.000J
aphthalene	—	330.000R	20.000J	—	120.000J	45.000J	—
-Chloro-3-Methyphenol	—	330.000R	—	10.000J	—	22.000J	—
2-Methylnaphthalene	—	330.000R	—	—	120.000J	31.000J	—
imethyl Phthalate	—	330.000R	38.000J	160.000J	100.000J	—	—
cenaphthylene	—	330.000R	—	—	150.000J	59.000J	—
cenaphthene	21.000J	330.000R	39.000J	20.000J	620.000J	210.000J	160.000J
ibenzofuran	11.000J	330.000R	22.000J	14.000J	390.000J	140.000J	129.000J
Fluorene	—	330.000R	—	—	—	300.000J	160.000J
entachlorophenol	—	1,600.000R	—	—	—	—	110.000J
Phenanthrene	420.000J	330.000R	730.000	540.000	7,600.000	4,500.000	3,500.000
nthracene	65.000J	330.000R	79.000J	55.000J	1,300.000	630.000	380.000
Di-n-Butylphthalate	—	330.000R	—	—	630.000B	—	180.000J
Fluoranthrene	590.000	330.000R	1,200.000	910.000	4,400.000	4,400.000	4,800.000
Pyrene	1,100.000J	330.000R	1,200.000	1,200.000	27,000.000J	11,000.000J	3,100.000
Butyl Benzyl Phthalate	2,000.000J	330.000R	660.000	940.000J	5,200.000J	3,000.000J	220.000J
Benzo[a]Anthracene	350.000J	330.000R	430.000J	200.000J	6,100.000J	1,800.000J	1,400.000
Bis[2-Ethylhexyl]Phthalate	2,700.000J	330.000R	5,500.000	5,700.000JB	39,000.000JB	17,000.000BJ	9,900.000
Chyrsene	460.000J	330.000R	310.000J	210.000J	9,500.000J	2,300.000J	2,200.000
Di-n-Octyl Phthalate	970.000J	330.000R	790.000J	1,300.000J	5,400.000J	1,100.000J	85.000J
Benzo[b]Fluoranthene	710.000J	330.000R	810.000J	350.000J	9,100.000J	3,400.000J	1,400.000
Benzo[k]Fluoranthene	480.000J	330.000R	35.000J	360.000J	6,600.000J	—	1,600.000
Benzo[a]Pyrene	420.000J	330.000R	400.000J	270.000J	6,100.000J	2,200.000J	1,300.000
Indeno[1,2,3-CD]Pyrene	—	330.000R	—	—	5,800.000J	1,600.000J	620.000J
Dibenzo[A,H]Anthracene	—	330.000R	—	—	—	—	280.000J
Benzo[G,H,I]Pyrene	—	330.000R	—	—	8,400.000J	1,300.000J	680.000J
PESTICIDE/PCB PARAMETERS: (1)							
Endosolfan I	—	8.000R	—	—	—	11.000	—
INORGANIC PARAMETERS: (2)							
Aluminum	2,640.000	3,130.000	2, 80.000	960.000	10,400.000	200.000R	1,320.000

4219K

TABLE 7 (Cont'd)

CONTAMINANT CONCENTRATIONS IN THE SEDIMENTS

LE ID	CC-CP1-SE01	CC-CP2-SE01	CC-LP1-SE01	CC-LP1-SE01	CC-SD1-SE01	CC-SD2-SE01	CC-SD3-SE01
GANIC PARAMETERS: (2) (Cont'd)							
nio	5.900	1.900B	3.700	6.300	2.800B	4.000	1.500B
um	28.200B	80.600B	28.400B	40.300B	69.800B	22.000B	7.200B
ium	—	—	—	2.800J	3.800J	—	—
ium	1,680.000	6,180.000	13,100.000	16,500.000	20,900.000	6,860.000	5,300.000J
mium	31.200J	28.700J	33.700J	86.100J	58.300J	22.200J	8.600
er	648.000	12,900.000	23,900.000J	5,300.000J	4,230.000	650.000	802.000
	11,400.000	4,190.000	12,000.000	16,200.000	9,900.000	8,170.000	7,030.000
	210.000	1,300.000	5.000R	2,660.000	1,130.000	—	21.200
esium	931.000B	997.000B	7,250.000	8,340.000	11,900.000	3,660.000	3,090.000
anese	15.800	32.100	54.000	75.400	75.700	60.600	40.400J
ury	1.400	6.600	3.500	5.300	2.700	0.330	—
el	12.500J	49.200J	72.400J	109.000J	55.000J	17.200J	9.000
ssium	5,000.000R	5,000.000R	6,000.000R	5,000.000R	5,000.000R	5,000.000R	—
er	160.000	25.200	3.500B	3.100B	—	8.600J	3.100J
um	117.000B	254.000B	140.000B	281.000B	302.000B	125.000B	218.000B
dium	11.600B	—	16.700B	11.100B	71.400	25.200	5.300B
	20.000R	20.000R	20.000R	20.000R	20.000R	20.000R	66.800
lids	69.200	24.700	54.500	63.300	48.100	69.300	90.900

ANATION OF CODES:

DETECTED AT CONCENTRATION INDICATED
ESTIMATED VALUE
COMPOUND FOUND IN BLANK
UNDETECTED AT GIVEN INSTRUMENT DETECTION LIMIT (IF REPORTED)
REJECTED VALUE
MEASUREMENTS IN UG/KG
MEASUREMENTS IN MG/KG

DK

CARCINOGENIC EFFECTS
RESIDENTIAL AND SITE WORKER

MW SAMPLES	CASE	UPGRADIENT ADULT-RES	ON-SITE ADULT-RES	ON-SITE ADULT-WORKER	DOWNGRADIENT ADULT-RES
Round I:					
Shallow wells	Ave	—	7.87 E-5	2.70 E-5	5.43 E-6
	Max	—	2.62 E-4	8.98 E-5	1.81 E-5
Deep wells	Ave	1.36 E-5	2.06 E-5	1.41 E-5	2.45 E-5
	Max	4.55 E-5	6.86 E-5	4.70 E-5	8.17 E-5
Round II:					
Shallow wells	Ave	2.01 E-5	7.06 E-5	4.84 E-5	5.98 E-6
	Max	6.69 E-5	2.35 E-4	1.61 E-4	1.99 E-5
Deep wells	Ave	1.26 E-5	3.13 E-5	2.14 E-5	2.15 E-5
	Max	4.21 E-5	1.04 E-4	7.13 E-5	7.18 E-5

INHALATION OF CONTAMINANTS WHILE SHOWERING
CARCINOGENIC EFFECTS

MW SAMPLES	CASE	UPGRADIENT ADULT	ON-SITE ADULT	DOWNGRADIENT ADULT
Round 1:				
Shallow wells	Ave	—	1.34 E-4	7.42 E-6
	Max	—	4.46 E-4	2.48 E-5
Deep wells	Ave	4.66 E-5	7.26 E-5	9.13 E-5
	Max	1.55 E-4	2.42 E-4	3.05 E-4
Round 2:				
Shallow Wells	Ave	7.13 E-5	2.05 E-4	1.09 E-5
	Max	2.38 E-4	6.84 E-4	3.62 E-5
Deep Wells	Ave	3.41 E-5	1.00 E-4	5.48 E-5
	Max	1.14 E-4	3.34 E-4	1.83 E-4

DERMAL CONTACT PATHWAY
CARCINOGENIC EFFECTS
REMEDIAL ACTIVITIES/SITE WORKERS

MATRIX	CASE	CARCINOGENIC EFFECT-
Round 1:		
Sediments	Ave	5.24E-09
	Max	1.85E-07
Water	Ave	—
	Max	—

Table 9

GROUNDWATER INGESTION PATHWAY
NON-CARCINOGENIC EFFECTS

MW SAMPLES	UPGRADIENT CHILD-RES	UPGRADIENT ADULT-RES	ON-SITE CHILD-RES	ON-SITE ADULT-RES	ON-SITE ADULT-WORKER	DOWNGRADIENT CHILD-RES	DOWNGRADIENT ADULT-RES
Round I:							
Shallow wells	0.963	0.402	28.2	14.1	4.83	1.23	0.614
Deep Wells	0.198	0.099	2.80	1.40	0.958	11.5	5.74
Round II:							
Shallow wells	0.750	0.375	25.2	0.950	0.651	0.269	0.135
Deep wells	4.50	2.25	5.88	2.94	2.01	6.38	3.19

INHALATION OF CONTAMINANTS WHILE SHOWERING
NON-CARCINOGENIC EFFECTS

MW SAMPLES	UPGRADIENT CHILD	UPGRADIENT ADULT	ON-SITE CHILD	ON-SITE ADULT	DOWNGRADIENT CHILD	DOWNGRADIENT ADULT
Round 1:						
Shallow wells	7.65 E-4	3.82 E-4	6.66 E-1	3.33 E-1	6.99 E-2	3.49 E-2
Deep wells	5.33 E-2	2.67 E-2	2.50 E-1	1.25 E-1	3.42 E-1	1.71 E-1
Round 2:						
Shallow Wells	4.03 E-1	2.01 E-1	1.38 E-1	6.91 E-2	4.69 E-2	2.34 E-2
Deep Wells	8.80 E-3	4.40 E-3	2.26 E-2	1.13 E-2	8.11 E-3	4.06 E-3

DERMAL CONTACT PATHWAY
CARCINOGENIC AND NON-CARCINOGENIC EFFECTS

REMEDIAL ACTIVITIES/SITE WORKERS

MATRIX	CASE	NON-CARCINOGENIC EFFECT
Round 1:		
Sediments	Ave	1.28E-03
	Max	6.79E-03
Water	Ave	2.92E-06
	Max	1.55E-05

TABLE 10

DETAILED COST ESTIMATE OF THE SELECTED REMEDY

FACILITY/CONSTRUCTION	ESTIMATED QUANTITIES	MATERIAL, $ UNIT PRICE	MATERIAL, $ COST	INSTALLATION $ UNIT PRICE	INSTALLATION $ COST	DIRECT COST $
I. SUPPORT FACILITIES						
1. Office Trailer (and utilities)	1	25,000	25,000	Incl.		25,000
2. Decon Trailer (and utilities)	1	100,000	100,000	Incl.		100,000
3. Equipment Mobilization	L.S.	Incl.		25,000		25,000
II. BUILDING DECONTAMINATION						
1. Vacuum Interior	80 hrs	Incl.		35.00	2,800	2,800
2. Demolish and Remove Concrete	80 cy	Incl.		190	15,200	15,200
3. Concrete Disposal	80 cy	Incl.		80.00	6,400	6,400
III. IN-SITU VACUUM EXTRACTION						
1. Perform in-situ vacuum extraction in area of SD-3/MW-4	370 cy	Incl.		21.00	7,770	7,770
IV. SEDIMENT EXCAVATION						
1. Area below plating room floor	7 cy	Incl.		80.00	560	560
*2. Area of SD-1, SD-2 and SD-3	3 cy	Incl.		80.00	240	240
*3. Area of CP-1, CP-2	10 cy	Incl.		80.00	800	800
*4. Areas of LP-1, -2, and -7	18 cy	Incl.		80.00	1,440	1,440
V. TRANSPORTATION FOR OFF-SITE INCINERATION TO SAUGET, IL	4 loads 1,000 miles	Incl.		4.00/mi/load	16,000	16,000
Estimate 1,000 miles Load = 22 tons 53 cy × 1.5 ton/cy = 79.5 tons 79.5 tons/22 tons per load = 4 loads						
VI. OFF-SITE INCINERATION	79.5 tons(1)	Incl.		1,500	141,760	119,250
1. Incineration						
2. Disposal (Incl. with Incin.)						

TABLE 10 (CONT'D)

VII.	BACKFILL						
	1. Backfill/Compaction	254 cy	15.00	3,810	10.00	2,540	6,350
VIII.	REPLACE CONCRETE FLOOR IN PLATING ROOM						
	1. Replace Concrete Floor	80 cy	125	10,000	190	15,200	25,200
IX.	SITE CONTAINMENT						
	1. Repave entire site	1740 sy	Incl.		20.00	34,800	34,800
X.	DRUM DISPOSAL	300 Drums	Incl.		300	90,000	90,000

Total Direct Cost (TDC)	476,810
Contingency @ 20% of TDC	95,360
Engineering @ 10% of TDC	47,680
Legal and Administrative @ 5% of TDC	23,840
Total Construction Cost ($)	643,690

Key

sf = square feet
cy = cubic yards
sy = square yards

Note (1) 53 cy x 1.5 ton/cy = 79.5 tons
Includes 5 cy of building dust.

APPENDIX C

ADMINISTRATIVE RECORD INDEX

Document Number: CIR-001-0001 To 0005 Date: 06/01/87

Title: Potential Hazardous Waste Site, Site Inspection Report - Executive Summary (Circuitron Corporation)

Type: REPORT
Author: Grupp, David: NUS Corporation
Recipient: none: US EPA

Document Number: CIR-001-0006 To 0072 Date: 06/18/87

Title: Potential Hazardous Waste Site, Preliminary Assessment - Circuitron Corporation

Type: PLAN
Author: Rice, Randy: NUS Corporation
Recipient: none: none

Document Number: CIR-001-0073 To 0074 Date: 09/08/88

Title: Action Memorandum: Authorization to Initiate Remedial Planning Activities at the Circuitron Corporation, Town of Babylon, Suffolk County, NY

Type: CORRESPONDENCE
Author: Luftig, Stephen D.: US EPA
Recipient: Muszynski, William J.: US EPA

Document Number: CIR-001-0075 To 0076 Date: 02/24/89

Title: (Letter submitting Final Field Operations Plan for the Circuitron Corporation site Remedial Investigation and Feasibility Study)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Sachdev, Dev R.: Ebasco Services
Recipient: Fayon, Abram Miko: US EPA
Attached: CIR-001-0077

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Document Number: CIR-001-0077 To 0274 Parent: CIR-001-0075 Date: 02/01/89

Title: Final Field Operations Plan (FOP) for Remedial Investigation/Feasibility Study, Circuitron Corporation Site

Type: PLAN
Author: Zarandona, Richard: Ebasco Services
Recipient: none: US EPA

Document Number: CIR-001-0275 To 0276 Date: 02/17/89

Title: (Letter submitting Final Work Plan for the Circuitron Corporation site Remedial Investigation and Feasibility Study)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Sachdev, Dev R.: Ebasco Services
Recipient: Fayon, Abram Miko: US EPA
Attached: CIR-001-0277

Document Number: CIR-001-0277 To 0388 Parent: CIR-001-0275 Date: 02/01/89

Title: Final Remedial Investigation/Feasibility Study Work Plan Circuitron Corporation Site. Suffolk County, New York

Type: PLAN
Author: Zarandona, Richard: Ebasco Services
Recipient: none: US EPA

Document Number: CIR-001-0389 To 0390 Date: 08/09/90

Title: (Letter submitting Final Remedial Investigation Report for the Circuitron Corporation site)

Type: CORRESPONDENCE
Author: Sachdev, Dev R.: Ebasco Services
Recipient: McGahren, John: US EPA
Attached: CIR-001-0391 CIR-001-0794

Document Number: CIR-001-0391 To 0793 Parent: CIR-001-0389 Date: 08/01/90

Title: Final Remedial Investigation Report, Circuitron Corporation Site, Suffolk County, New York, Volume I of II

Type: REPORT
Author: Zarandona, Richard: Ebasco Services
Recipient: none: US EPA

Document Number: CIR-001-0794 To 1418 Parent: CIR-001-0389 Date: 08/01/90

Title: Final Remedial Investigation Report, Circuitron Corporation Site, Suffolk County, New York, Volume II of II

Type: REPORT
Author: Zarandona, Richard: Ebasco Services
Recipient: none: US EPA

Document Number: CIR-001-1419 To 1421 Date: 04/27/90

Title: (Letter containing New York State Department of Environmental Conservation's comments on the Draft Remedial Investigation Report for the Circuit Corporation site)

Type: CORRESPONDENCE
Author: Bologna, James J.: NY Dept of Environmental Conservation
Recipient: Fayon, Abram Miko: US EPA

Document Number: CIR-001-1422 To 1423 Date: 07/01/89

Title: Superfund Update, Circuitron Corporation Site, Village of East Farmingdale, Suffolk County, New York

Type: CORRESPONDENCE
Author: none: US EPA
Recipient: none: none

Document Number: CIR-001-1424 To 1424 Date: 06/09/89

Title: (Memo containing information on Circuitron Corporation site RI/FS - Field Operations Plan and giving consent to begin sampling activities)

Type: CORRESPONDENCE
Author: Scalise, Laura: US EPA
Recipient: Fayon, Abram Miko: US EPA

Document Number: CIR-001-1425 To 1425 Date: 10/25/88

Title: (Letter submitting a site visit trip report)

Type: CORRESPONDENCE
Author: Zarandona, Richard: Ebasco Services
Recipient: Fayon, Abram Miko: US EPA
Attached: CIR-001-1426

Document Number: CIR-001-1426 To 1427 Parent: CIR-001-1425 Date: 10/14/88

Title: ARCS II Contract Circuitron Corporation site visit 10/14/88 - Trip Report

Type: REPORT
Author: none: Ebasco Services
Recipient: none: US EPA

Document Number: CIR-001-1428 To 1428 Date: 10/14/88

Title: Site Inspection Report, Circuitron Corporation

Type: REPORT
Author: none: US EPA
Recipient: none: none

Document Number: CIR-001-1429 To 1429 Date: 03/01/88

Title: Procedure for Acidification of Aqueous Volatile Organic Samples

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: CIR-001-1430 To 1430 Date: 03/01/88

Title: Blank Water QA/QC: Field Quality Control Samples

Type: PLAN
Condition: MARGINALIA
Author: none: US EPA
Recipient: none: none

Document Number: CIR-001-1431 To 1431 Date: 03/01/88

Title: Procedure for Filtration of Aqueous Metals Samples

Type: PLAN
Condition: MARGINALIA
Author: none: US EPA
Recipient: none: none

Document Number: CIR-001-1432 To 1439 Date: 09/01/87

Title: OBSWDC Aquifer Test for Evaluating Hydraulic Control of Leachate Impacted Ground Water. Old Bethpage, Long Island, New York

Type: REPORT
Condition: MARGINALIA
Author: Barber, Andrew J.: Geraghty & Miller
Recipient: none: none

Document Number: CIR-001-1440 To 1441 Date: 01/16/91

Title: (Letter submitting a Final Feasibility Study Report for the Circuitron Corporation site)

Type: CORRESPONDENCE
Author: Verdibello, Mario S.: Ebasco Services
Recipient: Fayon, Abram Miko: US EPA
Attached: CIR-001-1442

Document Number: CIR-001-1442 To 1609 Parent: CIR-001-1440 Date: 01/01/91

Title: Final Feasibility Study Report Circuitron Corporation Site, Suffolk County, New York

Type: REPORT
Author: Zarandona, Richard: Ebasco Services
Recipient: none: US EPA

Document Number: CIR-001-1610 To 1619 Date: 01/01/91

Title: Superfund Proposed Plan - Circuitron Corporation Site, Town of East Farmingdale, Suffolk County, New York

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: CIR-001-1620 To 1622 Date: 06/29/90

Title: (Memo containing the New York State Department of Environmental Conservation's comments on the Draft Feasibility Study Report for the Circuitron Corporation site)

Type: CORRESPONDENCE
Author: Bologna, James J.: NY Dept of Environmental Conservation
Recipient: Fayon, Abram Miko: US EPA

Document Number: CIR-001-1623 To 1625 Date: 08/15/88

Title: (Letter notifying New York State Clearinghouse of Circuitron Corporation as a proposed Superfund project, which is subject to the State Intergovernmental Review process)

Type: CORRESPONDENCE
Author: Luftig, Stephen D.: US EPA
Recipient: Cowan, James: NY State Clearinghouse

Document Number: CIR-001-1626 To 1629 Date: 08/15/88

Title: 107(a) Notice Letter

Type: LEGAL DOCUMENT
Condition: MARGINALIA
Author: Luftig, Stephen D.: US EPA
Recipient: various: various PRPs

Document Number: CIR-001-1630 To 1637 Date: 08/10/87

Title: Responses to EPA Request for Information

Type: CORRESPONDENCE
Author: D'Amato, Julius J.: Circuitron Corporation
Recipient: none: US EPA

Document Number: CIR-001-1638 To 1641 Date: 07/24/87

Title: (107(a) Notice Letter)

Type: CORRESPONDENCE
Author: Luftig, Stephen D.: US EPA
Recipient: various: various PRPs

Document Number: CIR-001-1642 To 1654 Date: 01/28/91

Title: Preliminary Health Assessment, Circuitron Corporation, Farmingdale, Suffolk County, New York

Type: PLAN
Author: none: Agency for Toxic Substances & Disease Registry (ATSDR)
Recipient: none: none

Document Number: CIR-001-1655 To 1656 Date: 06/22/89

Title: (Letter submitting the Final Community Relations Plan for the Circuitron Corporation site)

Type: CORRESPONDENCE
Author: Sachdev, Dev R.: Ebasco Services
Recipient: Alvi, M. Shaheer: US EPA
Attached: CIR-001-1657

Document Number: CIR-001-1657 To 1681 Parent: CIR-001-1655 Date: 06/01/89

Title: Final Community Relations Plan, Circuitron Corporation Site, Village of East Farmingdale, Town of Babylon, New York

Type: PLAN
Author: Lotstein, Enid L.: Ebasco Services
Recipient: none: US EPA

Document Number: CIR-001-1682 To 1762 Date: 02/19/91

Title: The United States Environmental Protection Agency, Superfund Proposed Plan, Town of East Farmingdale, Suffolk County, New York - Public Meeting - Circuitron Corporation Superfund Site

Type: LEGAL DOCUMENT
Author: Adams, Catherine: Elite Reporting Service
Recipient: various: US EPA

Document Number: CIR-001-1763 To 1765 Date: 02/04/91

Title: News - EPA Announces Proposed Plan to Clean Up Contamination at Superfund Site in East Farmingdale, New York

Type: CORRESPONDENCE
Author: Rychlenski, Ann: US EPA
Recipient: none: none

Document Number: CIR-001-1804 To 1804 Date: 10/28/88

Title: (Letter forwarding ARCS Community Relations - on site interviews)

Type: CORRESPONDENCE
Author: Lotstein, Enid L.: Ebasco Services
Recipient: Johnson, Lillian: US EPA

==

Document Number: CIR-001-1809 To 1917 Date: 02/02/90

Title: On-Scene Coordinator's Report: Removal Action - Circuitron, East Farmingdale, New York, Suffolk County

Type: REPORT
Author: Magriples, Nick: US EPA
Recipient: none: none

Document Number: CIR-001-1918 To 1990 Date: 03/29/91

Title: (Record of Decision for the Circuitron Corporation site)

Type: LEGAL DOCUMENT
Author: Sidamon-Eristoff, C.: US EPA
Recipient: none: none

APPENDIX D

NYSDEC LETTER OF CONCURRENCE

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233 -7010

Thomas C. Jorling
Commissioner

Ms. Kathleen C. Callahan
Director
Emergency & Remedial Response Division
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, NY 10278

Dear Ms. Callahan:

Re: Circuitron Corp., Site ID No. 152082 - Draft Record of Decision

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the draft Record of Decision (ROD) for the Circuitron Corp. site. The NYSDEC concurs with the document pending resolution of the following concerns. These comments have already been conveyed to the U.S. Environmental Protection Agency (USEPA) via a telephone conversation between Dr. Abram Miko Fayon, of your staff, and Mr. James Bologna, of my staff, on March 1, 1991.

1. Page 10: It is stated that in-situ vacuum extraction will be applied to an area of approximately 400 square feet. As discussed in Mr. Chen's letter of January 10, 1991 dealing with the Proposed Remedial Action Plan, it is unclear how the area and volume of soil requiring treatment was determined. If the intention is to establish the limits of remediation through additional sampling during the in-situ treatment process, this should be clearly stated in the ROD.

2. Page 11: Please elaborate upon the method of building decontamination.

3. Page 12, second full paragraph: The discussion related to asphalt, concrete and leach pool structure decontamination, removal and disposal is confusing. Please clarify how it will be determined if this material will require decontamination, and if necessary, how it is to be performed. Also, will the underground structures (i.e., leach pools) be excavated and removed or left in place?

4. The acceptable soil clean-up level for 1,1,1-trichloroethane at the Circuitron site, as proposed by NYSDEC, is 1.0 ppm.

5. Table 1-5: The concentrations of inorganic parameters should read μg/l.

If you have any questions, please contact Mr. James Bologna at (518) 457-3976.

Sincerely,

Edward O. Sullivan

Edward O. Sullivan
Deputy Commissioner

cc: D. Garbarini, USEPA, Region II
A. Fayon, USEPA, Region II

APPENDIX E

RESPONSIVENESS SUMMARY

SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA RESPONSES TO COMMENTS

Comments raised during the public comment period for the Circuitron Corporation site are summarized below and are organized into the following categories:

A. Nature and Extent of Contamination
B. Technical Concerns
C. Project Time Frame
D. Other Concerns

A. NATURE AND EXTENT OF CONTAMINATION

1. **COMMENT:** A resident expressed concern regarding potential contamination of drinking water resulting from site-related contaminants.

   EPA RESPONSE: Throughout our investigations, EPA has not detected any contamination in the deeper aquifer which is where the drinking water is taken from. In addition, the water is monitored on a quarterly basis by local health authorities to ensure that the water quality meets all established federal and state standards for drinking water. Since our investigation revealed the presence of drums on the property, EPA conducted a removal action to eliminate any immediate threat to the community. By removing the source of contaminants, we are trying to prevent contamination from the site from progressing any further than has already occurred. EPA will conduct an additional investigation to develop a better understanding of what contaminants may be present in the groundwater. Upon completion of that investigation, EPA will then develop a preferred remedy for cleanup of the groundwater if the investigations indicate that one is needed.

2. **COMMENT:** A resident expressed concern that contamination from the site along with contaminants that may exist from other similar industrial uses in the area could eventually reach drinking water wells.

   EPA RESPONSE: EPA shares this concern, however, based on our investigations coupled with the data on deep groundwater flow in the area, it is very doubtful that contaminants from the Circuitron site will reach the deeper portions of the Magothy aquifer. Since all municipal wells are screened to a depth of at least 300 feet, it is unlikely that contaminants will reach that depth.

3. **COMMENT:** A resident asked about the concentration of trichloroethane detected on the site and the acceptable amount allowable.

   EPA RESPONSE: On-site samples were taken immediately adjacent to a storm drain where solvents are known to have been dumped that indicated a level of 4,600 parts per billion (ppb) of trichloroethane. The maximum state-established standard for this compound is 5 ppb. EPA is concentrating on the on-site soils to eliminate the sources of contamination to prevent these compounds from migrating off the site any further than may have already occurred.

4. **COMMENT:** A resident expressed concern regarding the potential level of mercury in the groundwater.

   EPA RESPONSE: Results of the remedial investigation indicate that mercury was not detected at levels exceeding standards established by the State of New York.

5. **COMMENT:** A resident asked how to get their drinking water tested.

   EPA RESPONSE: The testing of drinking water is typically done by local water suppliers and county health officials.

   SCDHS RESPONSE: The County Department of Health regularly tests all public water supply wells, at least on a quarterly basis. The results of the testing are a matter of public record and can be obtained by contacting the department. If a resident is connected to the municipal water supply, the supplier of that water is responsible for testing. If the resident has a private water supply well, the SCDHS would sample the water for a fee of $50. However, if the sampling of the well is done in connection with a cleanup action such as the one here at Circuitron, the fee would most likely be waived.

B. **TECHNICAL CONCERNS**

1. **COMMENT:** A resident asked when the groundwater was last tested in the site vicinity.

EPA RESPONSE: EPA finished RI field work in late 1989 and tested the groundwater at that time.

2. **COMMENT:** A resident expressed concern that emissions from the proposed vacuum extraction system may add to contaminants being released into the atmosphere.

   EPA RESPONSE: The vacuum extraction system that EPA is proposing to implement at the site primarily addresses volatile organic compound (VOC) contamination in the soils. This system will contain a system of filters through which contaminants will be drawn and filtered out of the air prior to release to the atmosphere. All emissions will comply with applicable or relevant and appropriate state and federal regulatory requirements. These requirements will ensure that human health and the environment will be protected.

3. **COMMENT:** A resident expressed concern regarding the potential threat to workers on the site.

   EPA RESPONSE: EPA is concerned about the health and safety of those working on the site as well as that of the surrounding community. Therefore, precautionary measures will be taken (e.g., use of protective clothing, site security, use of suppressants to minimize the generation of dust, etc.) to minimize any potential impacts. These measures will ensure that the short term impacts to human health and the environment are not significant.

C. **PROJECT TIME FRAME**

1. **COMMENT:** Several residents expressed concern that cleanup of the site appears to encompass an extreme amount of time.

   EPA RESPONSE: EPA understands this concern, however, the remediation of any site can be extremely lengthy. In general, the average time for site remediation approximately eight years. Significant cleanup action has already taken place at the site. There was a removal action at the site in 1989 to remove contaminants that may have posed an immediate threat. In general, EPA is trying to speed up remedial actions by implementing interim actions and splitting some cleanups into separate units but these efforts do, in fact, take time to implement.

2. **COMMENT:** A resident expressed concern that as additional investigations are initiated, new developments could potentially delay remedial activities that may have already been implemented.

EPA RESPONSE: As mentioned earlier, the investigation is being split into separate units at the site. This methodology allows EPA to begin cleanup of, in this case, sources of contamination while at the same time conducting additional investigations to determine the extent to which contaminants may have migrated off the site in the groundwater. The area-wide ground water investigation will enable EPA to implement a more effective remedy for treating the area ground water, if necessary. However, the schedule for completing the remediation of the sources of contamination at the site should not be impacted by the ground water investigation.

D. OTHER CONCERNS

1. **COMMENT:** A resident asked if EPA had completed the design of the vacuum extraction system proposed for the site.

EPA RESPONSE: Design specifications will be developed during the next stage of the investigation. This cannot be started until we have final acceptance of our preferred remedy. Your input is a major factor in selecting the ultimate remedy and that is why EPA is here tonight.

2. **COMMENT:** Several residents inquired as to who is financially responsible for cleanup of the site.

EPA RESPONSE: At this point the cleanup is being funded through the Superfund Program. The Circuitron Corporation has filed for bankruptcy and our investigations indicate that they had little or no assets. If, in the future a PRP assumes financial responsibility for site-cleanup, all work would be supervised by EPA to ensure that the remediation is conducted as called for in the Record of Decision and design documents.

3. **COMMENT:** A resident requested that a copy of EPA's Proposed Plan be made available for area residents.

EPA RESPONSE: All site-related documents, including EPA's Proposed Plan are available in the information repositories established for the site.

4. **COMMENT:** A resident asked if EPA is attempting to make on-site structures safe for future use and if it would not be easier to just remove the building.

   EPA RESPONSE: Since we are conducting a remedial action that encompasses the entire site area, cleaning up the on-site structures is an integral part of the process. The Superfund Program encourages the selection of remedial actions which assure the protection of human health and the environment.

5. **COMMENT:** A resident and a local official asked if EPA coordinated its activities with local government agencies, emergency service providers, and water suppliers.

   EPA RESPONSE: EPA establishes a mailing list for each remedial action undertaken and, as part of that mailing list, most local government agencies are included. In addition, EPA publishes press releases in local newspapers at various points in the cleanup. EPA is also in contact with local emergency service providers, local health departments, NYSDEC, civic groups, and town boards concerning EPA activities in their community.

6. **COMMENT:** A resident asked how the locations of the information repositories are chosen.

   EPA RESPONSE: EPA chooses locations that are as close to the site as possible and provide relatively easy access to residents who ask for documents. Typically, EPA tries to use local or state municipal facilities and public libraries as repositories, however, they accept the documents as a courtesy to EPA. They are not required to accept the information and some facilities choose not to.

7. **COMMENT:** A local official asked if the site building remained under private ownership.

   EPA RESPONSE: The building, as well as the real estate, remains privately owned. EPA has filed a notice of lien on the property to recover its past and future costs.

8. **COMMENT:** A resident asked if ADI Electronics is still the owner of the site.

EPA RESPONSE: ADI Electronics was never an owner of the site, only an operator at the site. ADI has been in and out of bankruptcy but still remains an active company but operating in another location. 82 Milbar Blvd., Inc. is the current owner of the Site, which has been abandoned since 1986.

9. **COMMENT:** A resident inquired as to the amount of money EPA has spent at the site in conducting the RI/FS.

EPA RESPONSE: To date, EPA has spent approximately $750,000 to conduct the RI/FS.

10. **COMMENT:** A resident asked what agency is responsible for monitoring sites such as Circuitron in an effort to prevent contamination.

SCDHS RESPONSE: The County Department of Health Services routinely inspects firms such as Circuitron to ensure compliance with local sanitary codes. However, in this case, the dumping of contaminants was done covertly and was not discovered until it was reported to the department.

EPA RESPONSE: Additionally, depending upon the quantity of waste generated, beginning in 1978, the federal Resource Conservation and Recovery Act (RCRA) provides for the tracking of wastes from similar facilities from the point of generation to the point of disposal. The RCRA provisions are overseen by EPA and state environmental agencies.

11. **COMMENT:** A resident asked who was responsible for selecting a final remedy for the site cleanup.

EPA RESPONSE: EPA's Regional Administrator has the ultimate responsibility of selecting EPA's remedy for cleaning up the site. The preferred remedial alternative is described in greater detail in EPA's Proposed Plan, which is in the administrative record. The Regional Administrator relies on his staff, and input from the community to provide him with information regarding the best remedy for cleaning up the site.

12. **COMMENT:** A resident expressed concern that EPA could potentially modify its selection of a remedy for the site.

EPA RESPONSE: Once a final remedy is selected, any significant change in that remedy would have to be presented to the public once again and EPA would have to provide definitive documentation to justify that change.

13. **COMMENT:** A resident asked if EPA had conducted a phased cleanup action similar to Circuitron.

EPA RESPONSE: By splitting the cleanup into separate phases, EPA can take action quicker than if the cleanup is to encompass the site as a whole. This procedure is being implemented successfully at a number of sites.

14. **COMMENT:** A resident expressed concern that the preferred remedy could be downgraded or delayed based on a cost analysis.

EPA RESPONSE: Funding is not currently anticipated to be a problem. Cost analysis is included throughout evaluation of remedial alternatives. A significant change to the site remedy would require public notification and input. If a PRP does not assume financial responsibility for the work, delay in funding the remedy could potentially result. EPA must also consider the potential risks posed by this site in comparison to other Superfund sites. If, for example, a site in the same or other state poses a much greater risk to public health and the environment than Circuitron, that site would likely receive a higher priority for funding than Circuitron. This prioritization might be a more significant concern at a site which requires a costly cleanup. The amount of funds required at Circuitron is relatively small and would likely be easier to obtain.