DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: **Electronic Parts Specialty Company (EPSCO)**
Facility Address: **41 Coles Avenue, Lumberton Township, New Jersey, 08048**
Facility EPA ID#: **NJD002361665**

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no unacceptable human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all contamination subject to RCRA corrective action at or from the identified facility [i.e., site-wide]).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objectives of the RCRA Corrective Action program the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, (GPRA). The "Current Human Exposures Under Control" EI is for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and does not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action programs overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determination status codes should remain in the RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Facility Information

The Electronic Parts Specialty Company (EPSCO) is located on a 4.83 acre site at the eastern terminus of Coles Avenue in Lumberton Township, New Jersey. From the early 1900s to the mid-1940s, the site was reported to be part of the Lumberton Dairy and was used primarily for agriculture and dairy farming. EPSCO has been an active metal preparation and electroplating/coating facility since the mid 1940s. The

property is currently zoned as planned industrial (I2) and contains two permanent buildings (plating building and office building), an unfinished building foundation, an unlined, partially backfilled and abandoned lagoon and overflow area, and several greenhouses (Attachment 1). The property is primarily surrounded by residential property, including the residential community known as the Bobby's Run/Woodlands at Lumberton Development to the northeast and southeast. A small tributary to the South Branch of Rancocas Creek, known as Bobby's Run, is located approximately 700 feet south of the site.

EPSCO's primary operations consist of electroplating steel and aluminum parts for electronic and computer components. EPSCO utilizes three processes to obtain the final required coating, including electroplating, anodizing, and bondarizing. Material used in these processes include sodium cyanide, zinc oxide, zinc cyanide, sodium hydroxide, nitric acid, sulfuric acid, zinc phosphate, trichloroethane, perchloroethylene, muriatic aid, chromate, fluoroboric acid, and nickel acetate. Historically, some parts were also painted in a paint booth that was located in the plating building, which has since been removed. The plating and painting processes have generated various types of hazardous waste including F007 (zinc electroplating waste), F008 (plating bath sludge), and F003 (paint and solvent waste). According to the New Jersey Department of Environmental Protection (NJDEP) Case Manager, the facility has significantly reduced their electroplating operations and now generates minimal quantities of electroplating waste. The waste is stored in 55-gallon drums on an asphalt pad between the current plating building and the office building, for less than 90 days. EPSCO also operates a greenhouse/plant nursery at the site.

EPSCO was issued a Directive on April 6, 1990, per the Spill Compensation and Control Act (N.J.S.A. 58:10-23 et seq.). NJDEP transferred this site into the Division of Publicly Funded Site Remediation (DPFSR) on August 6, 1990. Per the Directive, NJDEP initiated an in-house Remedial Investigation (RI) in 1991. Investigation activities have indicated that soil and groundwater have been adversely impacted by volatile and inorganic contamination as a result of activities at the EPSCO site. Volatile and inorganic contamination has also impacted nearby Bobby's Run. NJDEP has evaluated and selected remedial alternatives for the site, which are outlined in the Final Decision Document, dated October, 1998. Implementation of the soil remedial alternatives have started with partial demolition of the plating building in July, 1999, and the excavation and off-site disposal of hot spot soil contamination in April, 2000. The remedial action selected for groundwater is an on-site extraction and treatment system. According to the NJDEP Case Manager, the extraction and treatment system is being designed and is expected to begin operating in late 2002 or early 2003 (Ref. 9).

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   X If yes - check here and continue with #2 below.

   ____ If no - re-evaluate existing data, or

   ____ If data are not available skip to #6 and enter IN (more information needed) status code

Summary of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs): Previous investigations indicate that activities within the plating building and disposal in the lagoon were the primary sources of environmental contamination at the EPSCO site. However, a review of the building layout, facility operations (past and present), and disposal methods has identified other areas which may have contributed contaminants to the environment. A paragraph providing a historical waste management overview for the facility is outlined first, followed by brief discussion of each SWMU/AOC. A facility map is provided in Attachment 1.

General Waste Management Overview

EPSCO utilized 55-gallon drums or other holding receptacles in the plating building to maintain electroplating chemicals and rinse water. EPSCO immersed parts into the drums or containers, which at times caused an overflow that was collected in a below floor grade level catch basin/holding tank (SWMU 1). The catch basin/tank was located inside of the plating building and was covered by a metal grate walkway. The catch basin was connected to a central concrete drain which was emptied by two discharge lines (SWMU 2). From 1945 to 1985, spent plating waste was discharged directly into the shallow percolation lagoon (SWMU 2) via the discharge lines. During periods of high precipitation, the lagoon would overflow into the adjacent wooded area ("overflow area") east of the lagoon. From 1985 to approximately 1995, waste collected in the catch basin was diverted to an on-site mobile tanker (SWMU 3) for less than a 90 days, at which time the wastes were transferred off site by a licensed hauler. After removal of the mobile tanker in 1995, wastes were pumped into 55-gallon drums and held in the drum storage area (SWMU 3) inside the plating building prior to being transported to a permitted facility. Inspections conducted by NJDEP indicated that waste materials from the plating building may have also been conveyed to a septic tank and leach field area (SWMU 4), and the local sanitary sewer system (SWMU 5). Results of the RI indicated that wastes managed in the plating building were also released to building sub-slab areas (AOC A) due to spills and overflow (Ref. 1).

SWMU 1, Catch Basin/Holding Tank: This unit was located in the eastern portion of the plating building and held various types of metal and solvent waste from electroplating operations. RI sampling results indicated that prior electroplating activities resulted in metals and volatile organic compound (VOC) contamination in soil and groundwater (Ref. 1). According to the NJDEP Case Manager, this unit was taken out of service when the eastern portion of the plating building was demolished in July, 1999 (Ref. 9). Approximately 1,200 tons of contaminated surface soil (hazardous for cadmium and lead) was removed in the area of the former plating building in April, 2000, and shipped off site for disposal (Refs. 8, 10).

SWMU 2, Lagoon/Overflow Area/Associated Piping: From 1945 to 1983, approximately 40,000 gallons/day of metal and solvent waste were discharged from the plating building via concrete underground piping to the lagoon/overflow area. In 1983, EPSCO reduced the waste stream to approximately 330 gallons/day. In 1985, EPSCO was forced to discontinue use of the unpermitted lagoon. RI results indicated that prior disposal activities at this unit resulted in metal and VOC contamination in soil and groundwater (Ref. 1). Data colleted during the RI also indicated that residual sludges in the impoundment contained hazardous constituents at concentrations that may act as a secondary source of contamination. In April, 2000, approximately 800 tons of contaminated surface soil (hazardous for cadmium and lead) was removed from the piping and lagoon area and shipped off site for disposal (Refs. 8, 10). The impoundment has been partially covered, but contaminated surface soil is still exposed in some areas. The lagoon and a portion of the piping area is surrounded by a chain link fence to limit potential exposure. In addition, NJDEP is currently in the final remedial design phase and evaluating two possible remedial alternatives: installation of a site-wide cap, or excavation of all soil contamination above the NJ Impact to Ground Water Soil Cleanup Criteria (NJ IGWSCC). Implementation of either of these alternatives will limit further potential migration to groundwater (Ref. 6).

SWMU 3, Waste Storage Areas:

SWMU 3A, Mobile Tanker: From 1985 to 1995, a mobile tanker was used to hold metal plating and solvent wastes collected in the catch basin/tank (SWMU 1) (Ref. 1). No information was available relative to the location or size of this unit. According to NJDEP representatives, however, the unit is no longer present at the facility (Ref. 9). Available documentation does not attribute any of the site contamination to releases from this unit.

SWMU 3B, Drum Storage Area: After removal of the mobile tanker (SWMU 3A), metal plating and solvent wastes collected in the catch basin/tank (SWMU 1) were placed in 55-gallon drums and stored in a drum storage area in the northeast portion of plating building for periods up to 90 days. Because the waste was stored for less than 90 days and then transferred off site to a permitted facility, no permit was required. This area was located in a portion of the plating building that has been demolished. Soil and groundwater contamination has not been attributed to this particular unit because the drum storage area was located in the same part of the facility as the catch basin (SWMU 1) which has been attributed to the widespread soil and groundwater contamination in the vicinity of this unit (Refs. 1, 7).

SWMU 3C, Current Waste Storage Area: According to the NJDEP Case Manager, electroplating operations at EPSCO have been significantly reduced. Limited amounts of waste are currently generated and stored in 55-gallon drums on an asphalt pad between the plating building and the office building. Wastes are stored at this location for less than 90 days. No releases or violations have been documented with respect to this waste storage area (Ref. 9).

SWMU 4, Septic Tank and Leach Field Area: During an NJDEP inspection on February 24, 1981, an unregulated septic system was discovered. This unit was located just southwest of the plating building. Subsurface drainage lines connected the catch basin/holding tank (SWMU 1) to

the septic system and directed metal plating and solvent waste to the septic tank. Subsurface drainage lines also connected the facility restrooms in the plating building to the leach field located just south of the septic system. RI soil samples collected in this area detected elevated levels of target analyte list (TAL) metals above the NJDEP soil cleanup criteria, suggesting that plating wastes were indeed discharged from the catch basin/holding tank (SWMU 1) to the septic system tank (Ref. 1). Approximately 1,200 tons of contaminated soil (hazardous for cadmium and lead) was removed in the area of the former plating building, which encompassed this unit, in April, 2000, and shipped off site for disposal (Refs. 8, 10).

SWMU 5, Municipal Sanitary Sewer System: On December 5, 1986 the NJ Bureau of Hazardous Waste Engineering (BHWE) inspected the catch basin/tank (SWMU 1) area and discovered that it was also connected to the municipal sewer system. No further information was provided on the location of the former sewer connection. The catch basin/tank (SWMU 1) has been removed and thus is no longer discharging to the municipal sanitary sewer system. NJDEP representatives indicated that the sewer connection was evaluated for releases along with other potential sources in the RI. The results of this investigation have not been documented at this time. The source (SWMU 1) has been removed and thus there is no further potential for wastes to be discharged to the municipal sanitary sewer system via this unit and its associated connections.

SWMU 6A, 6B, 6C, Underground Storage Tanks: In the past, three underground storage tanks (UST) of undocumented capacity were located at the EPSCO facility. According to the RI Report, one tank was located west of the plating building and contained fuel oil (SWMU 6A), another tank was located on the north side of the office building and its contents were not documented (SWMU 6B), and the third tank holds fuel oil and was in operation at the time of the RI (SWMU 6C). Total petroleum hydrocarbon (TPH) contamination was not detected above NJ soil standards in the area of the three USTs (Ref. 1).

AOC A, Building Sub-Slab Areas: During electroplating operations in the plating building, waste materials would at times spill out of holding drums and containers onto the building floor. According to available documentation, wastes may have been released to soil beneath the plating building via cracks in the slab floor. RI characterization efforts detected metals and VOC contamination in soil beneath the plating building. However, this contamination has also been attributed to releases from the catch basin/holding tank (SWMU 1) and discharge piping (SWMU 2) (Ref. 7). Approximately 1,200 tons of contaminated surface soil (hazardous for cadmium and lead) was removed in the area of the former plating building in April, 2000, and shipped off site for disposal (Refs. 8, 10).

In summary, all SWMUs/AOCs are inactive or have been removed with the exception of the current waste storage area (SWMU 3C) and the UST north of the office building (SWMU 6C). Contamination has been attributed to SWMU 1, SWMU 2, SWMU 4, and AOC A. However, due to the extent of contamination it is possible that other units at the facility contributed to the soil and groundwater contamination associated with the EPSCO facility. Groundwater and soil contamination has been fully delineated but is still undergoing remediation and/or remedial action (Ref. 7). Remedial actions for soil include hot spot excavation and removal, which was completed in April, 2000, fencing, and capping. NJDEP is currently evaluating two alternatives for the final remedial action for soil to determine which is more feasible. The alternatives include installation of a site-wide cap or excavation of all soil above the NJ IGWSCC (Ref. 9). The remedial action selected for groundwater is an on-site extraction and

treatment system. According to the NJDEP Case Manager, the extraction and treatment system is being designed and is expected to begin operating in late 2002 or early 2003 (Ref. 9).

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.
2. Remedial Alternatives Analysis Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated April, 1998.
3. Division of Publicly Funded Site Remediation Public Meeting to Discuss the Proposed Decision Document for the Electronic Parts Specialty Co. Site. Prepared by L.B.S., Inc. Dated June 9, 1998.
4. Letter from Robert Merenich, Reisenburger & Kizner, P.C., to Heather Swartz, NJDEP Bureau of Community Relations, re: Comments on Proposed Decision Document regarding Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Dated June 24, 1998.
5. Responsiveness Summary, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated August 31, 1998.
6. Final Decision Document, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated October 2, 1998.
7. Draft Additional Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated August, 2000.
8. Letter from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: Recent Activities at the Electronic Parts Specialty Co. Site. Dated January 29, 2001.
9. Telephone conversations between Craig Wallace, NJDEP, and Elizabeth Butler, USEPA, re: Status of EPSCO Remedial Activities. December 2000 through February 2001.
10. Fax from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: “Hot Spot” removal sketch for the Electronic Parts Specialty Co. Project. Dated February 13, 2001.

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be "**contaminated**"[1] above appropriately protective risk-based levels (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	**Yes**	**No**	**?**	**Rationale/Key Contaminants**
Groundwater	X			metals, VOCs
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)	X			metals, VOCs
Surface Water	X			tetrachloroethene (PCE)
Sediment	X			chromium
Subsurface Soil (e.g., >2 ft)	X			metals, VOCs
Air (Outdoor)		X		

____ If no (for all media) - skip to #6, and enter YE, status code after providing or citing appropriate levels, and referencing sufficient supporting documentation demonstrating that these levels are not exceeded.

__X__ If yes (for any media) - continue after identifying key contaminants in each contaminated medium, citing appropriate levels (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter IN status code.

Rationale:

Groundwater

The subsurface hydrogeologic system at the site consists of the Upper Wenonah (20-30 feet below ground surface [bgs]) confining/semi-confining unit, the Middle/Lower Wenonah (30 - 70 feet bgs)

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

aquifer, the Marshalltown confining unit (70-100 feet bgs), and the Englishtown aquifer (>100 feet bgs). Hydrogeologic studies have indicated that the water table beneath the site is generally encountered at the interface of the Upper Wenonah and the Middle Wenonah aquifer. The Middle Wenonah is the principal aquifer of interest due to the results of site investigations which have indicated this aquifer has been impacted by previous site industrial activities. The Englishtown aquifer is a documented common source of potable water in the areas surrounding the site that are not served by public utilities. According to previous studies, however, the Englishtown aquifer has not been impacted by contaminant releases associated with the EPSCO facility.

Table 1 below identifies the constituents detected in the Middle Wenonah aquifer above the New Jersey Ground Water Quality Criteria (NJ GWQC) for Class II (potable) groundwater during RI sampling conducted between November, 1995 and August, 1996 (Ref. 1).

Table 1 - Monitoring Wells with Concentrations Exceeding the NJ GWQC during the RI (µg/L)

Constituent	Well Locations with Concentrations Exceeding NJ GWQC	Max. Conc.	NJ GWQC
VOCs			
1,1-Dichloroethene	MW-3D	42	2
1,2-Dichloroethene (total)	MW-3D, MW-3DL, MW-6	190	110
Methylene Chloride	MW-3, MW-3DL, MW-5, MW-7, MW-11, MW-13, MW-15, MW-16, MW-17, MW-20	30	2
PCE	MW-2, MW-3, MW-3D, MW-3DL, MW-4, MW-5, MW-5D, MW-6, MW-6DL, MW-7, MW-7DL, MW-8, MW-9, MW-9D, MW-13, MW-13DL, MW-14, MW-16, MW-17, MW-18, MW-19, MW-19D, MW-19DL, MW-20, MW-10DL, MW-22	1,800	1
Trichloroethene (TCE)	MW-2, MW-3, MW-3D, MW-3DL, MW-4, MW-5, MW-5D, MW-6, MW-6DL, MW-7, MW-7DL, MW-8, MW-9, MW-9D, MW-12, MW-13, MW-13DL, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-19D, MW-19DL, MW-20, MW-20DL, MW-22	270	1
Inorganics			
Arsenic	MW-5, MW-7, MW-8, MW-9, MW-9D, MW-11, MW-12, MW-17, MW-18, MW-20	40.5	8
Cadmium	MW-2, MW-3, MW-3D, MW-5, MW-7, MW-7-1, MW-7-2, MW-19, MW-19D, MW-20, MW-22	428	4
Chromium	MW-2, MW-3, MW-5, MW-5D, MW-7, MW-7-1, MW-7-2	499	100
Lead	MW-5, MW-7, MW-7-1, MW-8, MW-9, MW-12, MW-17, MW-20	47.9	10
Nickel	MW-9, MW-12, MW-14, MW-20	137	100
Cyanide	MW-3, MW-3D	251	200

D - Duplicate, DL - Dilution

Based upon the RI results presented above in Table 1, groundwater has been impacted above NJ GWQC in both on- and off-site locations. In general, the highest levels of VOC contamination were in on-site wells MW-3, MW-5, and MW-7 and off-site wells MW-13 and MW-16. Detected concentrations of metals in groundwater were highest in the area of the plating building and lagoon/overflow area. Monitoring well locations and the approximate extent of the plumes are depicted in Attachment 2.

Air (Indoors)

Groundwater contamination at the site consists of VOCs and inorganic constituents. Due to the presence of elevated levels of VOCs in groundwater, migration of volatile contaminants to indoor air is a concern.

The maximum concentrations of VOCs detected in either on- or off-site wells were compared to the State of Connecticut (CT) Groundwater Standards for Protection of Indoor Air under the residential scenario (RES VC) to identify constituents that may be a concern due to potential migration into indoor air. Table 2 identifies the monitoring well locations where constituent concentrations were detected above the CT RES VC during the November, 1995 through August, 1996 groundwater sampling events (Ref. 1). CT RES VC have not been established for 1,2-DCE and methylene chloride because these constituents are non-carcinogenic and are not considered to pose a high risk for volatilization into indoor air.

Table 2 - Groundwater Exceedences of the Connecticut Groundwater Standards for the Protection of Indoor Air - Residential Scenario (μg/L)

Constituent	CT RES VC	MW	Sampling Date and Concentration		
			11/95	1/96	8/96
1,1-Dichloroethene (1,1-DCE)	1	MW-3D	42	ND	ND
1,2-Dichloroethene (1,2-DCE)	Not established	NA			
Methylene Chloride	Not established	NA			
PCE	1,500	MW-5	1,800	BS	BS
TCE	210	MW-3DL	BS	BS	550
		MW-5	270	BS	BS
		MW-7	270	300	440E
		MW-7DL	220	BS	370

ND - Not Detected, NA - Not Applicable, BS - Below Standard, D - Duplicate, DL - Dilution,
E - Exceeded Calibration Range

Based upon the results presented in Table 2, 1,1-DCE, PCE, and TCE concentrations are above the CT RES VC at several locations. However, based upon sampling results, 1,1-DCE was not detected in the most recent sampling rounds. PCE was detected, but at levels below the CT RES VC. Thus, 1,1-DCE and PCE are not considered to be a concern for migration to indoor air given that contaminants were not found above CT RES VC in the most recent sampling event. The risk associated with the recently detected concentration (550 μg/L) of TCE was evaluated using the Johnson-Ettinger (JE) Model. The JE Model calculates incremental risk and hazard values associated with the potential migration of volatile contaminants into indoor air. It should be noted that the locations where elevated levels of TCE were found (MW-3 and MW-7) are located within EPSCO property boundaries and not below occupied industrial buildings. However, the groundwater concentrations were evaluated under a residential exposure scenario (i.e., exposure duration and exposure frequency) due to the direction of groundwater flow towards the adjacent residential community. The use of this maximum detected value provides a conservative calculated risk estimate. Site-specific input parameters used in the model include: the depth below grade to bottom of enclosed space floor, depth below grade to water table, soil type, and soil/groundwater temperature. Conservative default values were used for the remaining parameters for which site-specific values were not readily available.

The calculated incremental risk value for TCE is 2.8E-7, which is below the USEPA acceptable risk range of 1.0E-4 to 1.0E-6. Based upon the current information available and considering the results of the JE Model, volatilization of groundwater contaminants into indoor air at the EPSCO facility and adjacent residential properties does not appear to pose an unacceptable risk at this time. See Attachment 3 for JE Model results for TCE.

Surface/Subsurface Soil

Table 3 below identifies the constituents detected in soil above the New Jersey Residential Direct Contact Soil Cleanup Criteria (NJ RDCSCC) and New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (NJ NRDCSCC) during the RI soil sampling event conducted between September, 1995 and July, 1996 (Ref. 1). Sample locations are identified as interior borings (IB) or exterior borings (SB), and in some cases the interval depth of the sample is identified by the digit that follows the sample number (e.g., SB-16-1 indicates the sample was collected from 0-2 feet bgs, SB-16-2 indicates the sample was collected at 2-4 feet bgs, etc.). Table 3 also identifies, in italics, the sampling locations which were excavated as part of the hot spot removal activity in April, 2000.

Table 3 - Contaminants Detected Above NJ Soil Cleanup Criteria During the RI (mg/kg)

Constituent	Sample Location with Constituents above NJ RDCSCC and/or NJ NRDCSCC*	Max. Conc.	NJ RDCSCC	NJ NRDCSCC
VOCs				
PCE	***IB-2, IB-3, IB-3DL, IB-4, IB-4DL, IB-4A, IB-4ADL,* IB-11-15DL, IB-11-15A, IB-12-15DL, IB-13-3, IB-13-15**	200	4	6
Inorganics				
Antimony	*IB-2*	24.9	14	340
Barium	*IB-2*, *TP-5-1*, *TP-5-2*, *TP-5-2D*	1,800	700	47,000
Cadmium	SB-1, SB-2, SB-3, SB-4, SB-7, SB-11, SB-16-3, SB-16-4, SB-16-5, **SB-16-6**, SB-16-7, SB-16-8, SB-16-9, SB-16-10, ***IB-2, IB-3, IB-4, IB-4A***, *IB-5*, *IB-6*, *IB-7*, *IB-8*, *IB-9*, *IB-11-1*, IB-12-5, IB-12-15, IB-13-13, IB-13-15, **IB-14-4**, IB-14-18, IB-14-20, IB-15-17, IB-15-19, *TP-1-1*, ***TP-1-2***, TP-2, ***TP-4, TP-5-1, TP-5-2, TP-5-2D***	8,710	1	100
Chromium	***IB-2, IB-3, IB-4, IB-4A***, ***TP-1-2, TP-4, TP-5-1, TP-5-2, TP-5-2D***	11,900	500	500
Copper	***IB-2, TP-4, TP-5-1, TP-5-2, TP-5-2D***	964	600	600
Cyanide	*TP-5-1*, *TP-5-2*, *TP-5-2D*	2,840	1,100	21,000
Lead	SB-2, ***IB-2***, *IB-3*, ***IB-4***, ***IB-4A***, ***TP-1-1***, ***TP-1-2***, TP-2, ***TP-4***, ***TP-5-1***, ***TP-5-2***, ***TP-5-2D***	28,700	100	600
Nickel	*IB-2*, *IB-3*, *IB-4*, *IB-4A*	582	250	2,400
Zinc	***IB-2***, ***IB-3***, ***IB-4***, ***IB-4A***, ***TP-1-2***, ***TP-4***, ***TP-5-1***, ***TP-5-2***, ***TP-5-2D***	54,400	1,500	1,500

*Bold locations exceed both the NJ RDCSCC and NRDCSCC
Italics indicates those sample locations excavated in April, 2000.
D - Duplicate, DL - Dilution

Remedial Investigation Results

RI sample results indicated that the entire soil column in the lagoon/overflow area, from the surface to the groundwater table (~21 feet bgs), was contaminated. Contaminants detected were primarily TAL metals with cadmium being the most prevalent. Other metals above cleanup criteria included antimony, barium, chromium, lead, nickel, zinc, and cyanide. PCE was also detected above cleanup criteria in shallow (~4

feet bgs) lagoon sludge.

Similar TAL metal contamination was detected beneath and around the plating building down to groundwater (Ref. 1). The highest levels were detected in dark-stained contaminated soil in the shallow (0-4 foot bgs) plating building interior samples, along the drainage lines from the building to the lagoon, and in the lagoon itself. For remediation purposes these areas were identified as hot spots and defined as soil areas that appeared visually darkened or significantly different in color than surrounding areas during field observations. Lower levels of TAL metal contamination were also found up to 40 feet bgs under the plating building and up to 20 feet bgs in exterior borings. The most widespread contamination was cadmium. PCE contamination was detected inside the plating building primarily at depths of 0-2 feet and 28-34 feet (saturated zone) (Ref. 1).

No VOC or TAL metals contamination was detected above the NJ RDCSCC in soil samples collected in off-site residential properties along Whitby Court, Harrogate Drive, and the Coles Avenue during the RI (Ref. 1).

Total petroleum hydrocarbons were not detected above relevant criteria in any soil samples. It should be noted that arsenic (max. 34.2 mg/kg) and beryllium (max. 1.8 mg/kg) were detected above NJ NRDCSCC (20 mg/kg and 1 mg/kg, respectively) in soil samples collected along the banks of Bobby's Run. However, because arsenic and beryllium were not detected above NJ soil standards on the EPSCO property, this contamination is not likely associated with activities at the EPSCO facility (Ref. 1).

Post-Excavation Information and Additional Remedial Investigation Results

Based upon information provided in the Additional Remedial Investigation Report (ARIR), and subsequent information provided directly from the NJDEP Case Manager, it appears that all surface soil (0-5 feet bgs) contaminated above NJ NRDCSCC was excavated and disposed off site in April, 2000 (Refs. 8, 10). Attachment 4 depicts the areas where soil excavation occurred, which includes contaminated surface soil beneath the former plating building, surface soil in the vicinity of the drainage lines to the lagoon, and surface soil in the lagoon/overflow area. According to a NJDEP April, 2000 Project Status Report, 1,822.56 tons of material, hazardous for cadmium (D006) and lead (D008) was excavated and shipped off site. Thus, contamination identified during the RI at the following sampling locations is no longer present: IB-2, IB-3, IB-4, IB-4A, IB-5, IB-6, IB-7, IB-8, IB-9, IB-11-1, TP-1-1, TP-1-2, TP-4, TP-5-1, TP-5-2. Confirmatory sample results were not collected during the hot spot excavation activity because this action is part of a larger remedial effort (i.e., capping, fencing) (Ref. 8).

Additional soil samples were collected after the hot spots were excavated and results were presented in the ARIR. PCE, cadmium, and zinc were detected in subsurface soil above the NJ NRDCSCC beneath the former plating building. Contamination above NJ standards was not detected in the samples collected near the former discharge lines to the lagoon. These samples were not collected as confirmatory samples results, but rather to further delineate soil contamination and potentially locate a subsurface source of PCE contamination in the area of the former plating building. Based upon the results, no additional source of contamination was found and no further delineation of VOC or metals contamination in soil was recommended.

Based upon all information reviewed, it appears that PCE, cadmium, and zinc contamination remains in surface and subsurface soil at the EPSCO facility. All contaminated soil above the NJ NRDCSCC between 0-5 feet bgs has been excavated, but soil contaminated above the NJ NRDCSCC remains at

depths greater than five feet bgs. Contamination above the NJ RDCSCC remains in both surface and subsurface soil.

Surface Water

A small tributary to the South Branch of Rancocas Creek, known as Bobby's Run, is located approximately 700 feet south of the site. The RI Report indicates that Bobby's Run is classified as a FW2-NT stream, not capable of maintaining a healthy trout population. Visual observations during the RI indicated that the stream had been impacted by iron. Surface water sample results collected in Bobby's Run were presented in the RI Report and indicated that PCE was the only constituent detected above relevant screening criteria. PCE was detected in sample locations SW-1 and SW-2 at a concentration of 2J μg/L (J = estimated concentration), which is above the NJDEP Surface Water Quality Criteria (NJ SWQC) of 0.388 μg/L for FW2 waters. Both of these sample locations are downgradient of the EPSCO site, indicating that contamination in groundwater from the EPSCO site is reaching Bobby's Run.

Contaminant migration due to surface runoff is not expected to be of concern. Hot spot excavation during April, 2000 removed all contaminated surface soil above the NJ NRDCSCC. Some small areas of surface soil contamination above NJ RDCSCC exist within the fenced former plating building area and lagoon area. Due to the minimal extent and reduced concentrations of residual contamination in surface soil, migration of contaminants to off-site locations at significant levels is unlikely. In addition, overland surface drainage is south to east at the EPSCO site and the southern property boundary is bordered by a wooded/landscaped area, which would significantly reduce surface overflow to off-site locations.

Sediment

Several inorganic constituents have been detected in sediment at Bobby's Run above the Oak Ridge National Laboratory - Lowest Effect Level (ORNL-LEL) criteria. The ORNL-LEL criteria are ecological benchmarks that were used to screen contaminants for the baseline ecological evaluation that was performed as part of the RI. Results presented in the RI Report are outlined in Table 4 below.

Table 4 - Contaminants Detected Above ORNL Levels in Sediment at Bobby's Run (mg/kg)

Constituent	Sample locations	Max. Conc.	ORNL-LEL
Arsenic	SD-1, SD-2, SD-3, SD-5	10	6
Cadmium	SD-4	8.9	0.6
Chromium	SD-1	39.1	26
Iron	SD-1, SD-2, SD-3, SD-4	34,100	20,000
Nickel	SD-4	38.2	16

Cadmium and nickel were both found at higher concentrations in upstream (SD–4) samples and are thus not likely to have migrated from the EPSCO site. Arsenic and iron were detected above sediment guidelines but were both found in upstream (SD-5, SD-4) and downstream (SD-1, SD-2) samples, so their possible sources are somewhat uncertain. Chromium was the only constituent found above guidelines solely in one downstream sample, and thus possibly related to the EPSCO site.

Air (Outdoors)

Based upon previous investigation results and the hot spot excavation that took place in April, 2000, all surface soil (0-5 feet bgs) impacted above NJ NRDCSCC has been excavated and disposed off site. Although a majority of the surface contamination above NJ RDCSCC has also been excavated, some inorganic contamination above NJ RDCSCC remains at the surface. However, a majority of the remaining surface soil contamination is covered by asphalt, concrete, or vegetation. Thus, based upon the limited extent of exposed surface contamination and the depth to groundwater at the site, volatile emissions and/or the migration of particulates entrained on dust are not expected to be significant exposure pathways of concern at the EPSCO facility.

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.
2. Remedial Alternatives Analysis Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated April, 1998.
3. Division of Publicly Funded Site Remediation Public Meeting to Discuss the Proposed Decision Document for the Electronic Parts Specialty Co. Site. Prepared by L.B.S., Inc. Dated June 9, 1998.
4. Letter from Robert Merenich, Reisenburger & Kizner, P.C., to Heather Swartz, NJDEP Bureau of Community Relations, re: Comments on Proposed Decision Document regarding Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Dated June 24, 1998.
5. Responsiveness Summary, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated August 31, 1998.
6. Final Decision Document, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated October 2, 1998.
7. Draft Additional Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated August, 2000.
8. Letter from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: Recent Activities at the Electronic Parts Specialty Co. Site. Dated January 29, 2001.
9. Telephone conversations between Craig Wallace, NJDEP, and Elizabeth Butler, USEPA, re: Status of EPSCO Remedial Activities. December 2000 through February 2001.
10. Fax from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: “Hot Spot” removal sketch for the Electronic Parts Specialty Co. Project. Dated February 13, 2001.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table
*Potential **Human Receptors** (Under Current Conditions)*

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespasser	Recreation	Food[3]
Groundwater	No	No	No	No	--	–	No
Air (indoor)							
Surface Soil (e.g. < 2 ft)	No	No	No	No	No	No	No
Surface Water	Yes	No	--	--	Yes	Yes	No
Sediment	Yes	No	--	--	Yes	Yes	No
Subsurface Soil (e.g., > 2 ft)	--	--	--	Yes	--	--	No
Air (outdoors)							

Instruction for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. Enter "yes" or "no" for potential "completeness" under each "Contaminated"Media — Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces. These spaces instead have dashes ("--"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

__X__ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Rationale:

Groundwater

Previous site industrial activities have adversely impacted the Middle Wenonah aquifer above NJ GWQC. However, this aquifer is not used for potable purposes. The Englishtown aquifer, which lies below the Middle Wenonah, separated by the Marshalltown confining unit, is the common source of potable water in the vicinity of the site for areas not served by public utilities. Previous investigations have provided no indication that contamination releases at the EPSCO facility have impacted the Englishtown aquifer. In addition, groundwater beneath the site migrates in a south-southeast direction, beneath the adjacent residences along Whitby Court, and towards Bobby's Run, which is believed to be a discharge area for groundwater that flows under the EPSCO site. Bobby's Run is considered a migratory barrier for contaminated groundwater associated with the EPSCO facility. Potable water for the adjacent Whitby court is supplied by public utilities. Thus, no additional downgradient properties would be at risk for potential exposure to contaminated groundwater. Therefore, direct contact via ingestion of contamination groundwater associated with the EPSCO facility is not expected to occur and not considered a complete exposure pathway.

Depth to groundwater varies from 27.3 feet (MW-6) at the southern property boundary to 12.6 feet (MW-9) southeast of the Whitby Court community, in the vicinity of Bobby's Run. Based upon the depth to groundwater at the site and in the adjacent residential community, direct contact to contaminated groundwater during on- or off-site intrusive activities is unlikely and not considered a complete exposure pathway.

It should be noted that available documentation did not discuss a local well survey. However, because Bobby's Run serves as a groundwater migration barrier, all properties between the site and Bobby's Run are served by municipal sources, the plume is confined, and because there are no wells located in the plume area, the lack of a well survey is not a concern.

Surface/Subsurface Soil

Previous investigations determined that surface soil contamination was only present on site and had not extended to off-site locations. Hot spot excavation removal in April, 2000 removed all on-site surface soil (0-5 feet bgs) that was impacted by PCE and metals above NJ NRDCSCC. Given the current industrial use of the property, exposure to contamination in surface soil is not of concern because all remaining surface soil contamination is below the NJ NRDCSCC.

Contamination in subsurface soil (5 feet bgs and greater) is currently present in both on- and off-site locations (Attachment 4). Subsurface soils beneath the plating building contains elevated levels of PCE, cadmium, and zinc. However, this area has been completely enclosed by a safety fence to mitigate any potential exposure in this area (Attachment 5) (Ref. 7). Subsurface soils in the lagoon/overflow area and in the vicinity of the discharge piping lines contain elevated levels of cadmium and lead. However, the entire lagoon area and part of the discharge line area is also surrounded by a fence to mitigate any exposure to subsurface soil. The remaining portion of the discharge line that is not fenced, between the former plating building and the lagoon area, is covered by asphalt or concrete, thus eliminating potential for exposure. However, subsurface contamination in this area actually extends beyond the property boundary and outside the fence line at SB-16, which is located adjacent to Whitby Court in a landscaped

area. The cadmium contamination in SB-16 extends from 4 to 20 feet bgs, and is above both NJ RDCSCC and NJ NRDCSCC. Thus, a potential exists for off-site utility workers to become exposed to elevated cadmium levels in subsurface soil. Cadmium contamination has also been detected above NJ RDCSCC in SB-11 at a concentration of 2.6 mg/kg (NJ RDCSCC = 1 mg/kg) between 2-4 feet bgs. Given that this contamination is within the industrial property fence line and is below the NJ NRDCSCC, exposure is not expected to be of concern (Ref. 1).

Surface Water

PCE contamination has been detected in one surface water sample from Bobby's Run above the NJ SWQC. Thus a potential exists for a local resident, recreationist, or trespasser to potentially contact PCE contamination in surface water above the NJ SWQC.

Sediment

Previous investigations have determined that chromium is the only contaminant detected in sediment that can be associated with the EPSCO facility. Other contaminants (arsenic, cadmium, iron, nickel) were detected either only in upstream samples or detected in both upstream and downstream samples, making the source of the contamination uncertain. Chromium was detected slightly above the ORNL-LEL criteria for sediment. Thus, there is a potential for local resident, recreationist, or trespasser to potentially come in contact with contaminated sediment above standards. However, it should be noted that these standards are ecologically based and are conservatively being extrapolated to human exposure.

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.
2. Remedial Alternatives Analysis Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated April, 1998.
3. Final Decision Document, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated October 2, 1998.
4. Draft Additional Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated August, 2000.
5. Letter from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: Recent Activities at the Electronic Parts Specialty Co. Site. Dated January 29, 2001.
6. Telephone conversations between Craig Wallace, NJDEP, and Elizabeth Butler, USEPA, re: Status of EPSCO Remedial Activities. December 2000 through February 2001.
7. Fax from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: "Hot Spot" removal sketch for the Electronic Parts Specialty Co. Project. Dated February 13, 2001.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **significant**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks?

__X__ If no (exposures cannot be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale:

Subsurface Soil

Exposure to contaminated subsurface soil could potentially occur in the area of SB-16, where cadmium contamination was detected just outside the southeastern fence line. Contamination extends from 4 feet bgs (17.0 mg/kg) to 20 feet bgs (50.2 mg/kg), with the highest concentration detected in the 10-12 foot range (101 mg/kg) at levels just above the NJ NRDCSCC (100 mg/kg) (Ref. 1). Based upon the depth of the contamination and its location (i.e., not within a residential lot boundary), it is unlikely that residential receptors would be exposed to the contamination (Attachment 4). Utility workers could potentially be exposed to the cadmium contamination in the area of SB-16. Given that contamination in soil is barely above the NJ NRDCSCC in the 10-12 feet range, however, it is unlikely that exposure to an off-site utility worker would be significant.

Surface Water

A baseline ecological evaluation was performed as part of the RI to determine if adverse impacts to ecological receptors could be expected as a result of contamination associated with the EPSCO facility. PCE was the only constituent detected in surface water at levels slightly above the NJ SWQC. The RI Report indicated that impacts from PCE to Bobby's Run can likely be eliminated due to its high volatility and low levels present in the stream, although levels were detected above the NJ SWQC. Based upon this analysis, it is unlikely that exposure for a local resident, recreationist, or trespasser to PCE in surface

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

water would be expected to be significant. The baseline ecological evaluation indicates that PCE concentrations would likely volatilize prior to exposure, thus indicating that exposure to elevated PCE concentrations may not be possible. In addition, the NJ Case Manager has indicated that Bobby's Run is not an attractive area for recreation and/or trespassing in the community. The stream is very small and surrounded by wetland areas, making access difficult (Ref. 6). Thus exposure to PCE contamination in surface water at Bobby's Run is not expected to be significant for any potential receptor.

Sediment

Exposure to contaminants in sediment was also evaluated as part of the baseline ecological evaluation performed in the RI. Based upon the low levels of chromium detected and the lack of chromium detected in wetlands soil, the RI concluded that exposure for ecological receptors to contaminants in sediment that could be associated to the EPSCO facility was likely to be insignificant. Based upon this determination for ecological receptors, and given that the NJDEP Case Manager has indicated that Bobby's Run is not an attractive or easily accessible area for recreationists and/or trespassers in the community, it is unlikely that exposure to elevated chromium contamination in sediment would be significant for any receptor population.

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.
2. Remedial Alternatives Analysis Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated April, 1998.
3. Final Decision Document, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated October 2, 1998.
4. Draft Additional Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated August, 2000.
5. Letter from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: Recent Activities at the Electronic Parts Specialty Co. Site. Dated January 29, 2001.
6. Telephone conversations between Craig Wallace, NJDEP, and Elizabeth Butler, USEPA, re: Status of EPSCO Remedial Activities. December 2000 through February 2001.
7. Fax from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: "Hot Spot" removal sketch for the Electronic Parts Specialty Co. Project. Dated February 13, 2001.

5. Can the "significant" **exposures** (identified in #4) be shown to be within acceptable limits?

____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale:

This question is not applicable. See response to question #4.

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Electronic Parts Specialty Company Facility, EPA ID# NJD002361665, located at 41 Coles Avenue, in Lumberton Township, New Jersey, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

___ NO - "Current Human Exposures" are NOT "Under Control."

___ IN - More information is needed to make a determination.

Completed by: _____ Date:_____

Kristin McKenney
Risk Assessor
Booz·Allen & Hamilton

Reviewed by: _____ Date:_____

Kathy Rogovin
Sr. Risk Assessor
Booz·Allen & Hamilton

Also Reviewed by: _____ Date:_____

Elizabeth Butler, RPM
RCRA Programs Branch
EPA Region 2

_____ Date:_____

Barry Tornick, Section Chief
RCRA Programs Branch
EPA Region 2

Approved by: Original signed by:_____ Date: April 27, 2001

Raymond Basso, Chief
RCRA Programs Branch
EPA Region 2

Locations where references may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at the USEPA Region 2, RCRA Records Center, located at 290 Broadway, 15th Floor, New York, New York, and the New Jersey Department of Environmental Protection Office located at 401 East State Street, Records Center, 6th Floor, Trenton, New Jersey.

Contact telephone and e-mail numbers: Elizabeth Butler, EPA RPM
(212) 637-4163
butler.elizabeth@epa.gov

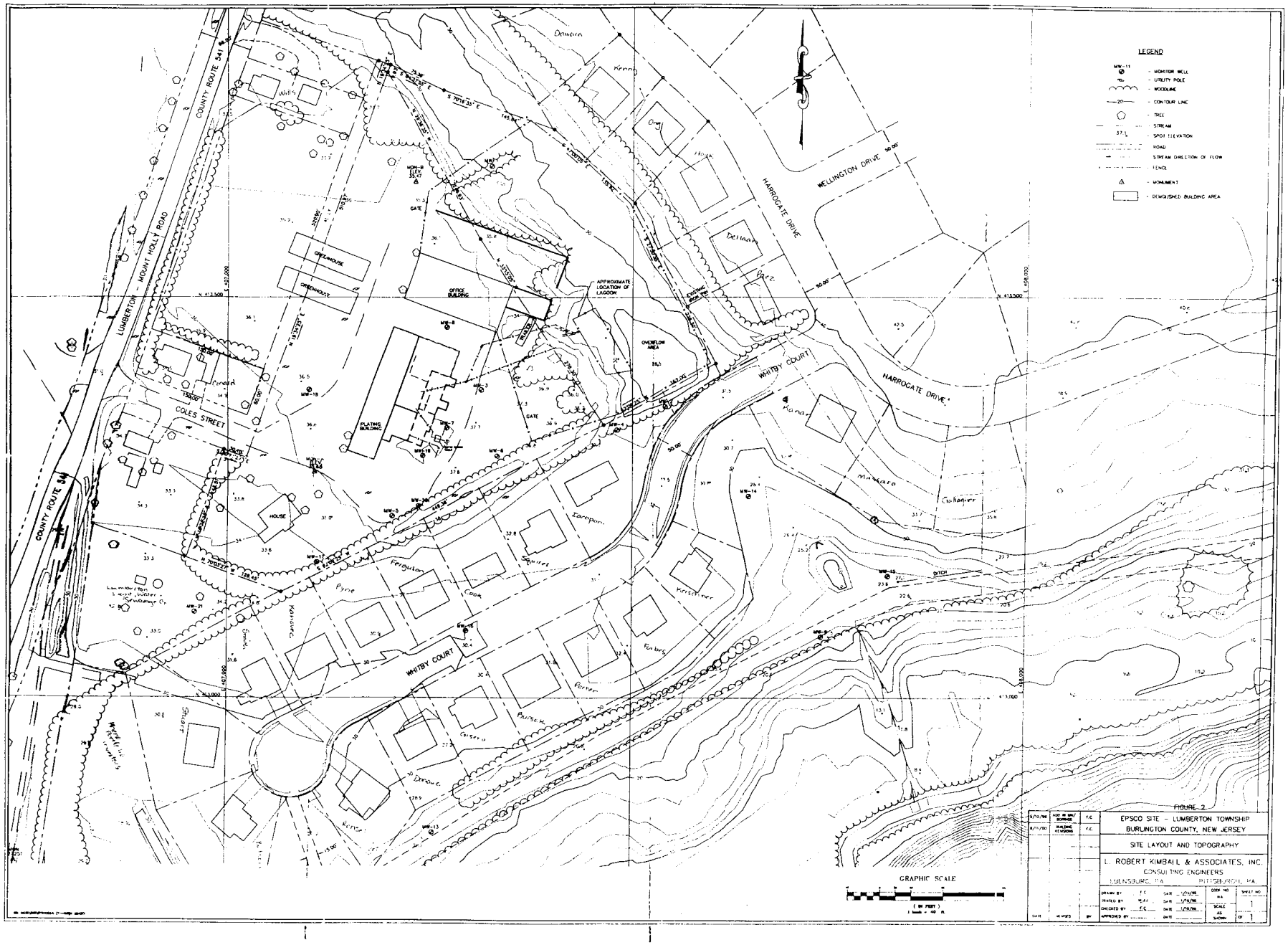
FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Attachments

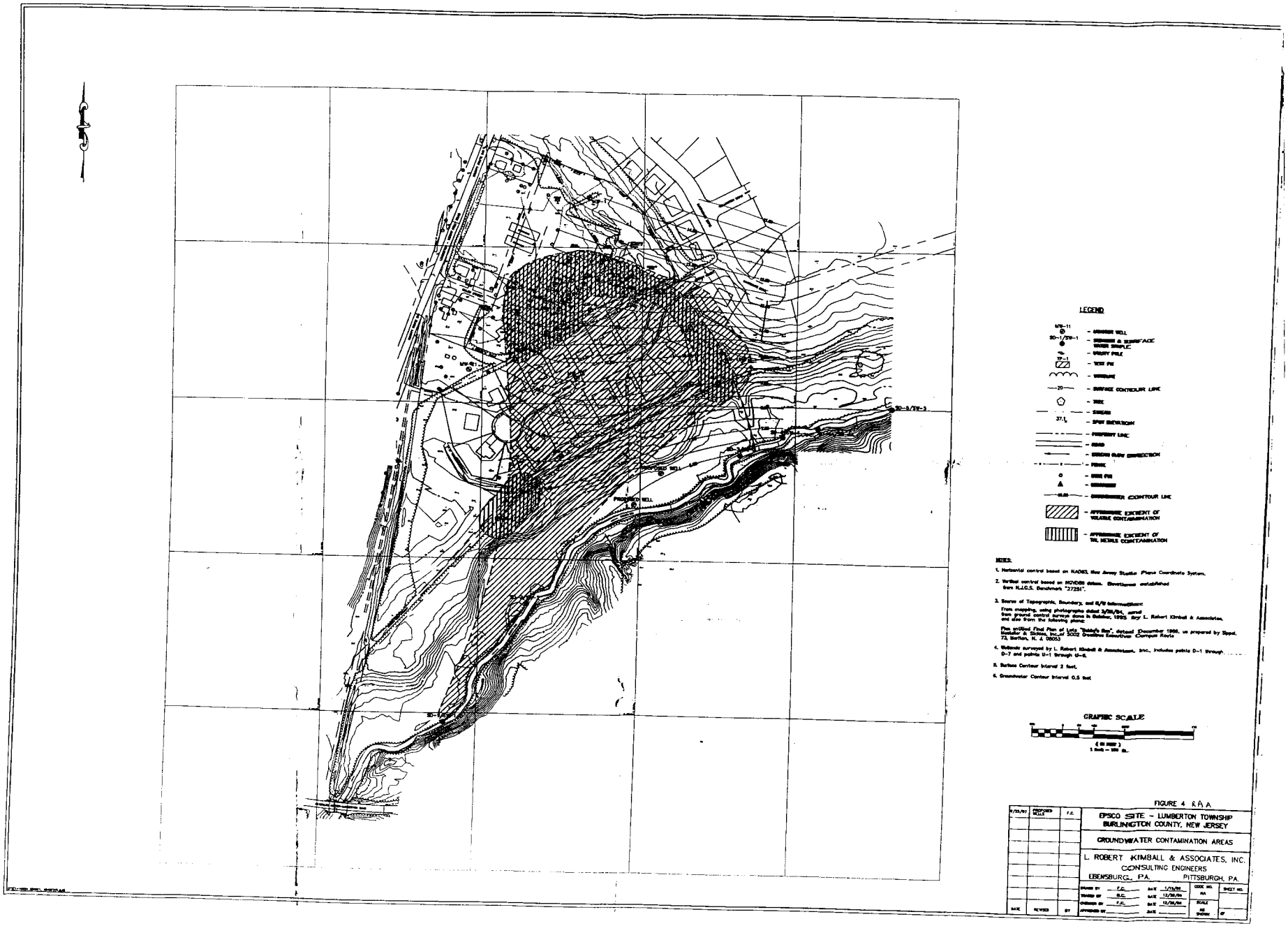
The following attachments have been provided to support this EI determination.

- Attachment 1 - Facility Map
- Attachment 2 - Groundwater Contamination Areas
- Attachment 3 - Johnson-Ettinger Model Results
- Attachment 4 - Soil Contamination Areas
- Attachment 5 - Soil Excavation Areas
- Attachment 6 - Summary of Media Impacts Table

Attachment 1 - Facility Map
Source: Additional Remedial Investigation Report for EPSCO, August 2000



Attachment 2 - Groundwater Contamination Areas
Source: Remedial alternatives Analysis Report for EPSCO, April 1998



Attachment 3 - Johnson-Ettinger Model Results

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES	

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES	X

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_w (µg/L)	Chemical
79016	550	Trichloroethylene

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)
15	600	SC	11

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability k_v (cm^2)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone oil water-filled porosity, θ_w^v (cm^3/cm^3)
SC			1.5	0.43	0.3

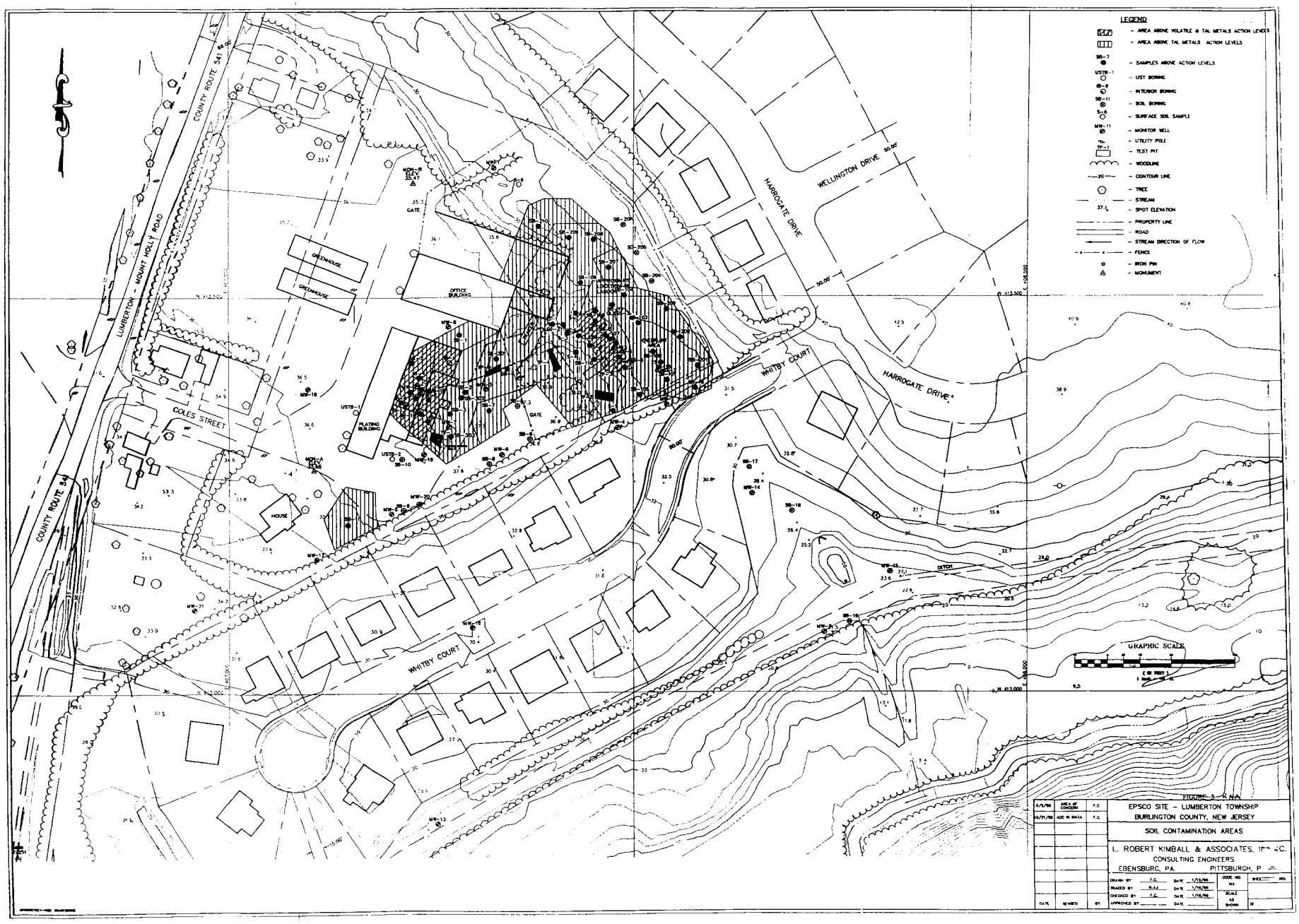
ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_c (yrs)	ENTER Averaging time for noncarcinogens, AT_{nc} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	30	30	350

Used to calculate risk-based groundwater concentration.

INCREMENTAL RISK CALCULATIONS:

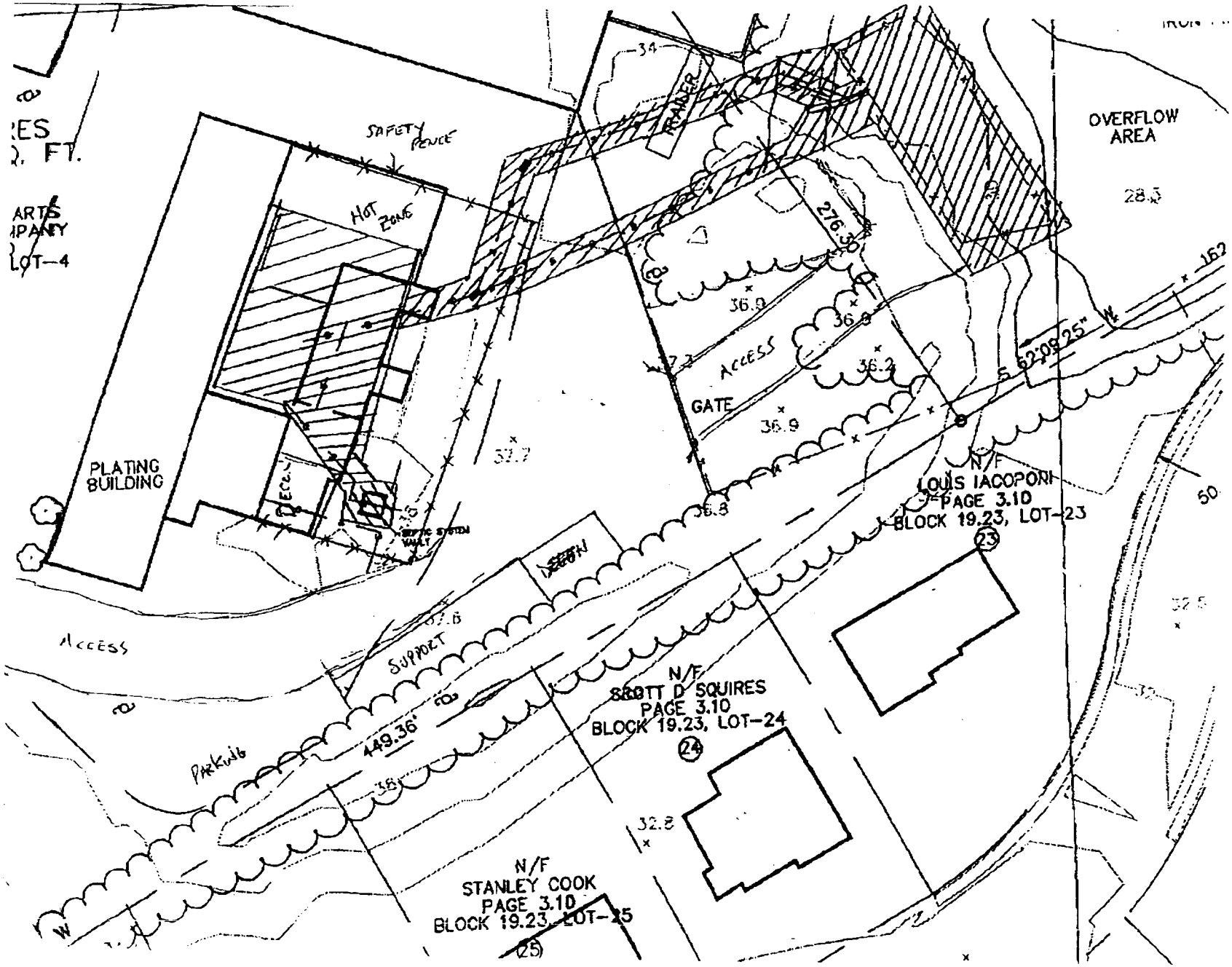
Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
2.8E-07	NA

Attachment 4 - Soil Contamination Areas
Source: Remedial alternatives Analysis Report for EPSCO, April 1998



Attachment 5 - Soil Excavation Areas

Source: Fax from Craig Wallace, NJDEP Case Manager, to Elizabeth Butler, USEPA, February 13, 2001



Attachment 6 - Summary of Media Impacts Table

Electronic Parts Specialty Company (EPSCO)

	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
SWMU 1. Catch Basin/Tank/Piping	Yes	No	No	Yes	Yes	Yes	No	▸ Building/unit demolition ▸ Hot Spot Excavation with Off-Site Disposal ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs
SWMU 2. Lagoon/Overflow Area	Yes	No	Yes	Yes	Yes	Yes	No	▸ Solid Waste Cap ▸ Fencing ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs
SWMU 3A, 3B, 3C. Waste Storage Areas	Yes	No	No	No	No	Yes	No	▸ Building/unit demolition ▸ Hot Spot Excavation with Off-Site Disposal ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs
SWMU 4. Septic Tank and Leach Field	Yes	No	No	Yes	Yes	Yes	No	▸ Hot Spot Excavation with Off-Site Disposal ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs

	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
SWMU 5. Sanitary Sewer System	No	No	No	No	No	No	No	NA	NA
SWMU 6A, 6B, 6C. Underground Storage Tanks	No	No	No	No	No	No	No	None	NA
AOC A. Building Sub-slab areas	Yes	No	No	Yes	Yes	Yes	No	▸ Building demolition ▸ Hot Spot Excavation with Off-Site Disposal ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs