57087

RECORD OF DECISION

Facet Enterprises, Inc.

Village of Elmira Heights, Chemung County, New York

United States Environmental Protection Agency
Region II
New York, New York
June 1992

FAC 003 1160

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Facet Enterprises, Inc.
Village of Elmira Heights
Chemung County, New York

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Facet Enterprises, Inc. Site, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document explains the factual and legal basis for selecting the remedy for this Site.

The New York State Department of Environmental Conservation (NYSDEC) concurs with the selected remedy, per the letter attached as Appendix IV. The information supporting this remedial action decision is contained in the administrative record for this site, the index of which is attached as Appendix III.

ASSESSMENT OF THE SITE

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

DESCRIPTION OF THE SELECTED REMEDY

The major components of the selected remedy for the treatment of soils, sediments, and ground water at the Facet Enterprises, Inc. Site include the following:

- Excavation of contaminated soils and sediments from the Disposal Areas as identified in the Risk Assessment and in those areas where soils and sediment pose a risk to ground water quality,

- Disposal of TSCA waste (PCBs > 50 ppm) in a secure TSCA double lined landfill facility (estimated at approximately 1,275 cubic yards),

- Stabilization of RCRA waste to prevent leaching of metals and subsequent disposal in a secure RCRA lined facility (approximate volume 2,124 cubic yards),

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- Disposal of non-RCRA wastes in an industrial waste landfill (approximate volume 120 cubic yards),

- Strategic placement of pumping wells to extract the contaminated ground water from the aquifer,

- Storage of extracted ground water in a central collection tank for subsequent treatment in an above-ground system,

- Treatment of the contaminated ground water to meet Federal and State Standards for surface water discharge. Treated ground water would then be either discharged as effluent to the facility non-contact cooling system, or to a surface water discharge,

- Recommendation that local institutional controls, in the form of local zoning ordinances, be implemented in an attempt to control any future site use that could create an exposure pathway to subsurface soils,

- Recommendation that institutional controls be provided/maintained to restrict access to those portions of the aquifer which remain contaminated above cleanup levels, and

- Implementation of a long-term monitoring program to track the migration and concentrations of the contaminants of concern.

DECLARATION OF 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 (or resource recovery) technologies to the maximum extent practicable, and it satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as their principal element.

Because this remedy will result in hazardous substances remaining on site above health-based levels, a review will be conducted within five years after commencement of remedial action, and every five years thereafter, to ensure that the remedy continues to provide adequate protection of human health and the environment.

Constantine Sidamon-Eristoff
Regional Administrator

September 9, 1992
Date

ROD FACT SHEET

SITE

Site name: Facet Enterprises, Inc.

Site location: Village of Elmira Heights, Chemung County, New York

HRS score: 46.67

ROD

Selected remedy: Soil and Sediment - Off-site Shipment for Treatment and Disposal
Ground Water - Pump, filtration/precipitation, air stripping

Capital cost: $3,545,060

O & M cost: $1,305,596

Present-worth cost: $4,850,656

LEAD

United States Environmental Protection Agency

Primary Contact: J. Jeffrey Josephson (212) 264-4183

Secondary Contact: Kevin Lynch (212) 264-6194

Main PRPs: Purolator Products Company
Allied-Signal Corporation

WASTE

Waste type: VOCs, PAHs, PCBs, Metals

Waste origin: Industrial Disposal

Estimated waste quantity: At least 3,519 cubic yards sediment and soil and 4.7×10^{8} gallons contaminated ground water

Contaminated mediums: Soil, sediment, and Ground water

RECORD OF DECISION
DECISION SUMMARY

Facet Enterprises, Inc.

Village of Elmira Heights, Chemung County, New York

United States Environmental Protection Agency
Region II
New York, New York

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ATTACHMENTS

SITE NAME, LOCATION AND DESCRIPTION

The Facet Enterprises, Inc. site includes a 31-acre parcel of land in the Village of Elmira Heights, Chemung County, New York. The Facet Enterprises facility property is bounded to the north by a municipal golf course, to the east by State Route 14, to the south by residential property along West 17th and West 18th Streets, and to the west by residential property and Robinwood Avenue. The Village of Elmira Heights is a mixture of residential, commercial, industrial, and wooded land, but the section in which the site is located is zoned primarily for residential and commercial use. The closest residences are within 60 feet of the present manufacturing facility to the south and west. (See Figure 1.)

Approximately one half of the facility property is currently developed. Between one third and one quarter of the facility property is comprised of one manufacturing plant and the foundation and cement slab of a former manufacturing plant, while the remainder of the developed property is comprised of parking areas or other small production buildings including a starter drive laboratory, a maintenance shop, a fuel pump test laboratory, a boiler room, and several other small buildings. (See Figure 2.)

The facility is not located on or adjacent to a New York State regulated wetland. Any existing Federally regulated wetlands at the Site will be delineated prior to conducting any remediation activities. No Federal or State endangered species have been identified at the site, and no critical habitats are present.

The Facet facility was constructed in 1895 and was used by the Eclipse Bicycle Company (Eclipse) for the manufacture of bicycles. In the early 1900s, Eclipse began manufacturing motorcycles and engine parts and changed its name to Eclipse Machine Company. During World Wars I and II, Eclipse manufactured military support parts, ammunition, airplane parts, and fuel pumps. In 1929, Bendix Aviation Corporation, later to become Bendix Corporation (Bendix), acquired control of Eclipse. Although the Eclipse name remained, Bendix controlled the company. From 1960 until 1975, Eclipse, as a division of Bendix, manufactured electric clutches and brakes.

Facet Enterprises, Inc. was organized as a result of an antitrust action between Bendix and the U.S. Federal Trade Commission in 1974. Purolator Products Company (Purolator) became the corporate successor to Facet in 1989 and maintains the Purolator name to date.

The following areas at the facility are known to have been used for disposal purposes based on the site history.

Area 1 - Plating wastes, oil sludges, and grinding wastes were disposed of in this area between 1960 and 1971. Liquid wastes may have also been disposed in this area; lime was dumped here in an attempt to neutralize the waste prior to covering it with soil.

Area 2 - Plating waste was thought to have been disposed of at Area 2 between 1960 and 1971. Attempts were apparently made to neutralize the waste prior to covering it with soil.

Area 3 - Plating waste, oil sludge, grinding waste and non-characterized liquids may have been disposed of at Area 3 between 1940 and 1965. After 1965, miscellaneous wastes (cinder blocks, metal grindings) were disposed of at Area 3 until 1980. During use, the area was periodically covered and graded. Leachate outbreaks have been noted at the base of this disposal area.

Area 4 - Oils and unknown liquid wastes were disposed of in this currently inactive lagoon between 1920 and 1971. Liquid from this area previously was discharged to the North Drainage Way via a swale which is now filled. In 1981 a soil sample collected from Area 4 contained polychlorinated biphenyls (PCBs) at 320 parts per million (ppm).

Area 5 - Area 5 was previously used as a sludge disposal area containing wastewater treatment units and sand filter beds; metal hydroxide sludge was disposed of in Area 5 until 1965. After 1965, sludge was spread over the surface. The area has been filled and seeded. Sampling conducted by NYSDEC in 1981 detected the presence of cadmium and chromium in excess of 100,000 ppm and copper in excess of 10,000 ppm.

Area 6 - This area, constructed in the early 1970s, is a small pond originally designed to collect seepage and runoff from Areas 1 and 2. Chromic acid may have been treated near this area.

Area 7 - Ash from the production facilities was stored at Area 7 from the early 1940s to the mid 1950s.

Area 8 - Sediments and oily soil have drained over time from a drain pipe from Area 4 into this area.

Area 9 - Ash from the production facilities was stored at Area 9 from the early 1940s to the mid 1950s.

Area 10 - Heat treatment water, non-contact cooling water, and possibly oils were disposed of in this lagoon. The lagoon is no longer active but a surface water impoundment remains in this area. This area is thought to have once been a filter bed.

Plant 2 Yard - Grinding chips, machinery oil, and drummed waste were stored in this area from as early as 1940. The area has been graded and seeded.

Oil/Water Separator - This area was used to segregate oil and particulates from runoff or treatment water at the facility. The oil/water separator is located at the southern boundary of the property.

Dry Wells - Up to five dry wells used for the disposal of liquid wastes and/or water from the facility are present at the facility. The dry wells are being closed pursuant to a consent order with the New York State Department of Envrionmental Conservation (NYSDEC).

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Surface Water - In addition to the Area 10 lagoon and the Area 6 pond, Mays Creek, an unnamed drainage way south of the Facet facility, and a drainage way which drains surface water from the northern portion of the facility have all received industrial waste from production activities by way of surface run-off and point source discharge.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Several investigations of the facility have been conducted by EPA or NYSDEC since 1979. In 1979, an initial Facility inspection conducted by NYSDEC resulted in the implementation of remedial measures which included excavation of surface water diversions, covering of past disposal areas with soil, and construction of a leachate collection system. A facility inspection and sampling was conducted by USEPA in 1980, and additional sampling and investigation was conducted by NYSDEC during March and June 1981. These investigations indicated that volatile organics, inorganics, pesticides, and PCB compounds were present in surface soils, in soils and sediments in the disposal areas, and in surface water drainage streams at the facility.

The Site was first proposed for the National Priorities List on October 1, 1981 and was placed on the NPL on September 1, 1983. In 1983 a preliminary hydrogeologic investigation was conducted at the facility by Facet Enterprises, Inc. under an EPA Administrative Order pursuant to Section 3013 of the Resource Conservation and Recovery Act (RCRA). The investigation concluded that trichloroethylene (TCE) contamination in the ground water exceeded NYSDEC standards. In 1986, Facet Enterprises, Inc. agreed to conduct a Remedial Investigation /Feasibility Study (RI/FS) under a CERCLA Administrative Order (Allied-Signal Corporation, the corporate successor to Bendix Corporation, was also a signatory to this consent order). The 1986 draft RI concluded that TCE, perchloroethylene, 1,1,1-trichloroethane, 1,1-dichloroethane, trans -1,2-dichloroethene, 1,2-dichlorobenzene, trichlorofluoromethane, methylene chloride, acetone, PCBs, and polyaromatic hydrocarbons (PAHs) were present in Site soils. In addition, 14 volatile organic contaminants, pentachlorophenol, and 4 inorganics contaminants were detected in ground water at concentrations above NYSDEC standards.

Based upon a review of the 1986 RI, EPA concluded that additional Site characterization was required before the RI could be finalized. In 1990, Purolator began the necessary field work required to complete the RI. The findings of this field work are reported below.

<u>Enforcement</u>

Facet Enterprises, Inc. has conducted investigations under the following Administrative orders with the EPA:

1) Administrative Order RCRA II-3013-20201 -April 8, 1983 - Hydrogeological Investigation

2) Administrative Order CERCLA II-60205 - May 1986 - (Allied-Signal is also a signatory this Order). - Remedial Investigation/Feasibility Study

Facet Enterprises, Inc. has conducted investigations under the following Administrative order with the NYSDEC:

1) NYSDEC Consent Order under the Clean Water Act R8-0771-90-04 - Dry Well Investigation

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The RI report, FS report, and the Proposed Plan for the Site were released to the public for comment on May 27, 1992. These documents were made available to the public in the administrative record file at the EPA Docket Room in Region II, New York and the information repositories at Village of Elmira Heights, Village Hall, 215 Elmwood Ave, Village of Elmira Heights, New York. The notice of availability for the above-referenced documents was published in the Elmira Star-Gazette on May 27, 1992. The public comment period on these documents was held from May 27, 1992 until June 27, 1992.

On June 16, 1992, EPA, the NYSDEC, and the New York State Department of Health conducted a public meeting at the Village of Elmira Heights Village Hall, to inform local officials and interested citizens about the Superfund process, to review current and planned remedial activities at the Site, and to respond to any questions from area residents and other attenders.

Responses to the comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary (see Appendix V).

SCOPE AND ROLE OF OPERABLE UNIT

This Record of Decision outlines EPA's strategy to eliminate the threat to human health and the environment posed by contaminated ground water and contaminated soils and sediments present at the Site. Specifically, remediation of soil and sediment in disposal areas in concentrations above site specific cleanup levels will be conducted. The proposed remediation of ground water will treat contaminated ground water at the facility to meet Federal and State drinking water standards. No further operable units are currently planned for this site.

During the Spring of 1992, pursuant to the CERCLA Administrative Order, Purolator excavated and removed 469 drums buried in Disposal Areas 1,2,3, and 4. In addition, 2,250 tons of contaminated soil was excavated and 30,000 gallons of contaminated liquids were removed to be sent off-site for treatment and disposal at a permitted industrial waste landfill. The drum and soil excavation activities were conducted with oversight by EPA. Purolator and EPA collected confirmatory samples from the excavation floor in each of these disposal areas. Based on the data obtained during the Summer 1992, EPA will evaluate if further action is required.

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Once the excavation of the drums and the contaminated soil from Disposal Areas 1,2, and 3 is completed, the potential threat that these materials pose to ground water will be removed. Final remediation of Disposal Area 4 is discussed in this ROD.

Dry well closure, which includes excavation of contaminated sediment and sludges, will be addressed by Purolator Products Company under the consent agreement with the NYSDEC.

The proposed actions to be undertaken at this Site, in conjunction with dry well cleanup actions currently under way under the supervision of the NYSDEC, will address the sources of ground water contamination and the principal threats posed by contaminated soils and sediments.

SUMMARY OF SITE CHARACTERISTICS

A. Site Geology and Hydrology

The Purolator facility lies along the western side of the Newtown Creek Valley. The unconsolidated sediments which underlain the western portion of the facility consist of sands, silts, and clays. In the eastern portion of the facility the unconsolidated sediments consist of outwash sands and gravels and may contain silts and clays. The ground-water flow direction, as determined by water level measurements taken at facility monitoring wells, is south easterly. Figure 3 illustrates ground-water flow direction measured during the summer of 1990. Figure 4 presents the estimated regional ground water flow direction presented in the Kentucky Avenue Wellfield Remedial Investigation Report. Figure 5 illustrates surface water drainage at the facility.

B. Nature and Extent of Contamination

The following section summarizes the known contamination at and near the facility as determined during the Remedial Investigation: This study consisted of the following: eighty-five soil samples were collected from the surface soils or from subsurface borings in known or suspected disposal areas; twenty-five sediment samples were collected from streams; ponds or lagoons at the facility or in streams adjacent to the facility; fourteen ground water samples were collected from monitoring wells or production wells at or near the facility; and 8 surface water samples were collected from streams or lagoons at the facility or in streams adjacent to the facility. Tables 1-11 present analytical data collected during remedial investigation activities. More detailed descriptions of the work can be found in the RI report.

Area 1/Area 2 - A total of 27 samples from these areas were collected for chemical analyses from depths ranging from 1 to 12 feet below ground level. Soil collected from one boring in Area 2 had elevated levels of contaminants. The analytical results indicate the presence of cadmium (351 ppm), chromium (2410 ppm), and copper (1120 ppm). The maximum TCE concentration in soil was 110 ppb. (Table 1)

Area 3 - A total of 12 samples were collected for chemical analyses from this area at depths from 8 to 14 feet below ground surface. Elevated levels of chromium (2110 ppm), cadmium (72.3 ppm), and copper (270 ppm) were found in soil samples. (Table 2)

Area 4 - A total of 13 samples from this area were collected for chemical analyses at depths ranging from 8 to 20.5 feet below ground surface. The soil borings in this area indicate that a layer of fill approximately 8 feet thick is saturated with oil product. Numerous volatiles and semi-volatiles were detected in Area 4 including toluene (210 ppb), PCB (Arochlor 1248) (35 ppm). (Table 3)

Area 5 - Three samples out of the 21 samples collected at depths ranging from 8 to 20 feet below ground surface from Area 5 had elevated levels of chromium (13,000 ppm). TCE was detected in 14 soil samples in concentrations up to 240 ppb. (Table 4)

Area 6 - Two surface soil samples collected from pond sediments had TCE in concentrations up to 130 ppb. Elevated levels of arsenic (588 ppm), cadmium (79 ppm), and chromium (1220 ppm) were also detected. Confirmatory sampling conducted during the FS, completed in order to determine the presence of Resource Conservation and Recovery Act (RCRA) hazardous waste, revealed that a sediment sample exhibited the characteristic for cadmium waste. (Table 5)

Area 7 - Three surface soil samples were collected from this area. PCB compounds were detected at concentrations ranging from 0.32 ppm to 5.3 ppm. Semi-volatile organics were detected in the one surface sediment sample at concentrations up to 22 ppm. (Table 5)

Area 8 - Area 8 soils contained elevated concentrations of eighteen semi-volatile organic compounds at concentrations up to 69 ppm (benzo(b)fluoranthene). PCBs were detected in concentrations up to 11 ppm. (Table 5)

Area 9 - The one surface soil sample collected from Area 9 contained 1 ppm PCBs. (Table 5)

Area 10 - Two sediment samples and one duplicate sample was collected from Area 10. PCBs were detected in sediments in concentrations up to 14 ppm. Cadmium (796 ppm), chromium (10,100 ppm), and copper (1,110 ppm) were detected in these surface sediment samples. (Table 5)

Plant 2 Yard - Soil sampling (24 samples including duplicate samples in soil boring samples collected from 0-8 feet below the ground surface.) conducted during the 1986 RI field work detected TCE in concentrations ranging from 3.4 ppb to 253 ppb. In addition the analyses revealed tetrachloroethylene (150 ppb), 1,1,1-trichloroethane (48.1 ppb), and 1,1 dichloroethane (8.58 ppb). (Table 6)

Oil/Water Separator - Twenty two semi-volatile compounds (8 of which were in concentrations over 100,000 ppb) were detected in soil collected from near the oil/water separator. Soil samples contained slightly elevated levels of cadmium (41.4 ppm), copper (502 ppm), and zinc (675 ppm). (Table 7)

Dry Wells - Sampling and analysis of dry well liquids, sludges, and sediment has been conducted by Purolator as a part of a consent order with the NYSDEC. The sampling has detected liquid with PCB concentrations up to 31 ppm. TCE was present in sludge material in concentrations up to 60 ppm. Lead was present in concentrations up to 5500 ppm, and chromium was present in concentrations of 450 ppm in dry well sludge. Benzene (1390 ppb), toluene (3050 ppb), chlorobenzene (9260 ppb), ethylbenzene (3330 ppb), p-xylene (3780 ppb), o-xylene (3780 ppb), and 1,3-dichlorobenzene (4940 ppb) were also detected in dry well sludges or liquids.

Unnamed Drainage Swale South of Facility (Also known as the Heights Drainage Swale) - Twenty-one soil and sediment samples were collected from 0 - 6 feet below ground surface from this area. Soil samples and boring data collected from the drainage way south of the Facet facility contained the semi-volatiles benzo(a)anthracene (11 ppm), benzo(a)pyrene (11 ppm), benzo(b)fluoranthene (30 ppm), benzo(k) fluoranthene (30 ppm), and ideno(1,2,3-cd)pyrene (6 ppm); PCB 1254 (6.8 ppm), and the inorganics arsenic (23 ppm) and chromium (3920 ppm) in elevated concentrations. (Table 8)

North Drainage Way - Arsenic (320 ppm) was detected in the North Drainage Ditch in a surface sediment sample collected in July 1980. (Table 9)

Buried Drums - A magnetometry survey and interviews with employees indicated that buried drums were present at the facility. Based on the magnetometry survey results, Purolator Products Company, with oversight by EPA, removed 469 drums from Disposal Areas 1,2,3 and 4. In addition, at least 2,250 tons of contaminated soil have been excavated, and approximately 30,000 gallons of contaminated water have been contained for off site treatment and disposal.

Surface Water Sampling - Seven surface water samples were collected from surface water bodies at the Site. TCE was detected at the oil/water separator effluent at up to 26 ppb, and chloromethane was present at 24 ppb. TCE was detected in Mays Creek surface water at 11 ppb. Surface water samples collected from Area 10 contained elevated concentration of cadmium (77.8 ppb), chromium (2190 ppb), and zinc (894 ppb). (Table 10)

Ground water - A total of 13 monitoring wells were installed at or near the facility in the unconsolidated sediments below the Site. The wells vary in depth from 12.5 feet to 49.2 feet below ground surface. Fourteen organics: n-butylbenzene (13 ppb), 1,1-dichloroethene (160 ppb), ethylbenzene (12 ppb), isopropylbenzene (8 ppb), 4-Isopropyltoluene (12 ppb), methylene chloride (69 ppb), n-propylbenzene (22 ppb), 1,1,1-trichloroethane (13 ppb), trichloroethene (190 ppb), trichlorofluoromethane (19 ppb), 1,2,4-trimethylbenzene (18 ppb), 1,3,5-trimethylbenzene (81 ppb), vinyl chloride (33 ppb Spring 1991 sampling),

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and xylenes (14 ppb), and six inorganic contaminants: cadmium (55.8 ppb), chromium (1540 ppb), copper (1200 ppb), lead (146 ppb), mercury (5.6 ppb), zinc (1180 ppb) were detected in ground water at the facility at concentrations in excess of State and Federal standards for potable drinking water sources. (Table 11)

In addition, the concentrations of antimony (45.8 ppb), beryllium (4.2 ppb), and nickel (602 ppb) exceeded either NYSDEC guidance values or EPA proposed Maximum Contaminant Levels (MCLs), the latter of which were promulgated under the Federal Safe Drinking Water Act.

Figures 6 and 7, present respectively, the sampling results of facility groundwater monitoring wells with volatile organic contaminants or inorganic contaminants present.

The ground water contamination flows in the direction consistent with the regional ground water flow direction. The facility contamination contributes to the contamination within the Newtown Creek Aquifer which is classified by EPA a Class IIa aquifer. See Figure 8.

Floating Product - EPA detected a layer of pure product floating on top of the water table (approximately 20 feet below the ground surface) at monitoring well D-5 located on the facility property. (See Figure 2).

SUMMARY OF SITE RISKS

EPA conducted a baseline risk assessment to evaluate the potential risks to human health and the environment associated with the Facet Enterprises, Inc. Site in its current state. The Risk Assessment focused on contaminants in the soil, sediment, surface water, ground water and air which are likely to pose significant risks to human health and the environment. The summary of the contaminants of concern (COC) in sampled matrices is listed in Table 12.

The baseline risk assessment evaluated the health effects which could result from exposure to contamination as a result of ingestion of ground water, inhalation of ground water contaminants during showering, ingestion of sediments in the drainage swale south of the facility, incidental ingestion of sediments while wading in the North Drainage way, ingestion of on site soils, ingestion of sediments in Mays Creek, and incidental ingestion of sediments in areas 6 and 10 lagoons. Both current and future land use at the facility was considered to be industrial with exposure scenarios for on site workers and trespassers. For Mays Creek and the unnamed drainage way south of the facility, exposure to small children and adults was considered because these areas are generally more accessible to the public. A total of 12 exposure pathways were evaluated under possible on site current and future land-use conditions. The exposure pathways considered under current and future uses are listed in Table 13. The reasonable maximum exposure was evaluated.

Under current EPA guidelines, the likelihood of carcinogenic (cancer-causing) and noncarcinogenic effects as a result of 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 noncarcinogenic risks associated with exposures to individual compounds of concern were summed to indicate the potential risks associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Noncarcinogenic 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 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 drinking water) are compared to the RfD to derive the hazard quotient for the contaminant in the particular medium. The HI is obtained by adding the hazard quotients for all compounds across all media that impact a particular receptor population.

An HI greater than 1.0 indicates that the potential exists for noncarcinogenic 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. The reference doses for the compounds of concern at the Site are presented in Table 14. A summary of the noncarcinogenic risks associated with these chemicals across various exposure pathways is found in Table 15.

It can be seen from Table 5 that the HI for noncarcinogenic effects from ingestion of untreated ground water exceeded one (HI = 46) for reasonable maximum exposure for children, therefore, noncarcinogenic effects may occur from the exposure routes evaluated in the Risk Assessment. The noncarcinogenic risk was attributable to several compounds including vinyl chloride, cis-1,2 dichloroethylene, TCE, antimony, arsenic, cadmium, chromium, mercury, and nickel. Furthermore, it can be seen from Table 15 that the HI for noncarcinogenic effects from ingestion of sediment in the unnamed drainage swale (also known as the Heights drainage swale) exceeded one (HI = 3.5) for reasonable maximum exposure for children, therefore, noncarcinogenic effects may occur from the exposure routes evaluated in the Risk Assessment. The noncarcinogenic risk was attributable to several compounds including chromium..

Potential carcinogenic risks were evaluated using the cancer slope factors (Sfs) developed by EPA for the chemicals of potential concern. Sfs have been developed by EPA's Carcinogenic Risk Assessment Verification Endeavor (CRAVE) 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 that 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. The SF for each indicator chemical is presented in Table 16.

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 a 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. The total cancer risks at the Facet Enterprises, Inc. Site are outlined in Table 17. In addition, MCLs are currently exceeded for several hazardous substances in ground water. Although the risks posed by the soils are within EPA's acceptable risk criteria, contamination in the soils, if not addressed, will likely continue to contribute to further contamination of the ground water at the Site.

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.

There are, also, additional uncertainties unique to the Site that would serve to underestimate Site-related risks. Specifically, they are: the presence of previously undetected drums and associated contaminated soils; an on-site "reservoir" of contaminants that may potentially migrate from the facility property; designation of future land use at the facility property as industrial rather than residential; and the contribution to risk resulting from - but not quantified, as a result of limited scientific data - dermal exposure to soil-borne contaminants.

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More specific information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the Risk Assessment Report.

Current federal guidelines for acceptable exposures are a health Hazard Index equal to 1.0 and an individual lifetime excess carcinogenic risk in the range of 10^{-4} to 10^{-6}. Some of the on site soil and sediment risks fall within EPA's acceptable risk range. However, EPA has determined that remedial action is necessary in these areas due to: the uncertainties as mentioned above, the contribution of some of the chemicals to the ground water contamination, and that unless these soils and sediments are remediated, they would continue to migrate off the facility property and accumulate which would likely result in an unacceptable risk to the public.

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

REMEDIAL ACTION OBJECTIVES

Remedial action objectives are specific goals to protect human health and the environment; they specify the contaminant(s) of concern, the exposure route(s), receptor(s), and acceptable contaminant level(s) for each exposure route. These objectives are based on available information and standards such as applicable, or relevant and appropriate requirements (ARARs) and risk-based levels established in the risk assessment.

The cleanup levels have been chosen for each area where an unacceptable exposure risk was determined or from data which indicates that a disposal area contributes to the groundwater contamination. These cleanup levels are derived from the point of departure, as defined in the NCP, of 1.00×10^{-6} or a Hazard Index of 1 and using the same risk modeling assumptions used in the risk assessment, thereby yielding a cutoff value below which the ingestion of sediment at the Site is no longer a risk.

Soils and Sediments - The following remedial action objectives have been determined for clean-up of soils and sediments at the Site.

Surface Soils (0 to 2 feet below ground surface) and Sediments

	Facility Surface Soils/Sediments	Unnamed Drainage Way and Mays Creek Soils/ Sediments
Semivolatiles (ppm)		
Benzo (a) anthracene	20	3
Benzo(b)fluoranthene	20	3
Benzo (k)fluoranthene	43	7
Benzo(a)pyrene	3	1
Indeno(1,2,3-cd)pyrene	12	2

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Dibenzo(a,h)anthracene	3	1
PCBs (ppm)	10	1
Inorganics (ppm)		
Arsenic	19	7
Chromium	-	1110

Cleanup levels are lower for the Unnamed drainage way and Mays Creek soil/sediment than for facility soils and sediment because there is a greater potential for residential exposure (as opposed to industrial exposure) in areas off the facility property.

Subsurface Soils (> 2 ft below ground surface)

Facility Subsurface Soil

Semivolatiles (ppm)	
Benzo(a)anthracene	54
Benzo(b)fluoranthene	55
Benzo(k)flouranthene	118
Benzo(a)pyrene	8
Indeno(1,2,3-cd)pyrene	33
PCBs (ppm)	25
Inorganics (ppm)	
Arsenic	52

The facility subsurface soils cleanup levels are higher than facility surface soils cleanup levels because the potential for human exposure to subsurface soils is restricted to occasional exposure to utility workers.

Soils and Sediments Which May Pose a Threat to the Aquifer

Analytical data from soils and sediment collected from Disposal Areas 6, 10, and 5 indicate that these areas may be contributing to the Site ground water contamination. For these areas, soils and sediments will be analyzed using the TCLP method to determine this potential, and soils or sediments which do not pass this test will be remediated. In addition, preliminary confirmatory data from the bottom of the excavation in drum removal areas 1,2,3 indicate that a small volume of soils remaining pose a threat to ground water quality. These areas will be re-excavated, and confirmatory sampling will be re-conducted.

Ground water

Cleanup levels for ground water are established by federal and State laws and regulations. According to RI data, the aquifer beneath the Site is contaminated with a variety of chemicals. The aquifer is designated by EPA as a Class IIa aquifer and New York State designates the aquifer as a class GA aquifer, or a potential source of potable water. This designation requires that applicable or relevant and appropriate requirements (ARARs) for drinking water be met. Cleanup levels are thereby driven by MCLs established by State and federal regulations. See Table 8. For example, the maximum concentration of the organic chemical TCE in ground water is 190 ppb, while the MCL for TCE for the aquifer is the NYSDEC standard of 5 ppb. For chromium, an inorganic chemical, the maximum concentration in ground water at the facility is 1540 ppb, while the MCL for chromium is the NYSDEC standard of 50 ppb.

DESCRIPTION OF REMEDIAL ALTERNATIVES

CERCLA requires that each selected site remedy be protective of human health and the environment, be cost-effective, comply with other statutory laws, and utilize permanent solutions, alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

This Record of Decision evaluates in detail eight soil and sediment and two ground water remedial alternatives for addressing the contamination associated with the Site. The time to implement reflects only the time required to construct and/or implement the remedy and does not include the time required to design the remedy, negotiate with the responsible parties, if appropriate, or procure contracts for design and construction.
These alternatives are:

MEDIA 1 and 2: SOILS AND SEDIMENTS

Alternative 1 - No Action

Capital Cost: $ 0
Annual O&M Costs: $0
Present Worth: $ 0
Time to Implement: Could be implemented immediately.

The Superfund program requires that a "no action" alternative be evaluated at every site to establish a baseline for comparison. Under this alternative, a public awareness program concerning surface soil contamination would be implemented, including conducting public meetings and posting warning signs. The Site would be reviewed every five years to evaluate the protectiveness of the remedy.

Alternative 2 - Access Restriction

Capital Cost: $9,750
Annual O&M Costs:$0
Total Cost: $9,750
Time to Implement: Approximately 6 months

This alternative consists of deed restrictions to restrict future uses of the Facility to industrial operation, to prohibit the extraction of ground water to be used as drinking water, to provide maintenance of the fences surrounding the facility, including the unnamed drainage way south of the facility, and to continue 24-hour security. The Site would be reviewed every five years to evaluate the protectiveness of the remedy.

Common Action for Sediment and Soil Remedial Alternatives

Six of the remedial alternatives evaluated for remediation of surface, subsurface soils and sediment contain the common actions of removal and de-watering of sediment, consolidation of soil, and product recovery, as described below:

1) Excavation of sediment from May's Creek, the Unnamed Drainage way, the North drainage way, and Area 10 Lagoon. The sediment would be staged in one area and de-watered.

2) Excavation of surface soils from Areas 6,7, and 8 and subsurface soil from the oil/water separator and Area 4.

(Volume calculations of the amount of soils and sediments exceeding cleanup levels, which were performed during the FS, indicate that an estimated 3,480 cubic yards of contaminated soil and sediment must be removed to reduce risks posed by the contaminated soil to the 10^{-6} range. In addition, it is estimated that 55 cubic yards of cadmium contaminated soils must be removed from disposal Area 6 to remove the potential threat to ground water posed by these contaminated soils.)

3) Confirmation sampling to ensure remediation goals are obtained.

4) Replacement of existing sediment and soil with clean fill.

5) Implementation of a free-product investigation and remediation program. This program will investigate the source (likely to be contaminated soils) of the floating product detected at monitoring well D-5, and following this study, source control and product recovery will be performed.

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6) Access restrictions in the form of existing fences and facility security. This prevents inadvertent trespassing onto the industrial property.

7) Collection of additional soil samples from Area 5 and analysis for TCLP. Based on the TCLP data, a RCRA cover pursuant to 40 CFR Part 264 would be installed over the contaminated areas of Disposal Area 5. A fence with a gate would be placed around the disposal areas. If the volume of contaminated material is very small, EPA will consider off-site treatment and disposal of this material.

8) Collection of additional samples from Area 4 so that wastes may be segregated for proper disposal of PCB-contaminated soils.

9) Installation of a geotextile membrane under rip-rap in May's Creek. This will be installed as a protective measure for aquatic species exposure to low levels of cadmium which have been detected.

Alternative 3 - Consolidate Soil and Sediment, Install RCRA Cover

Capital Cost: $913,094
Annual O&M Costs: $14,300
Present Worth of O&M: $134,849
Total Cost: $1,047,943
Time to Implement: 1 year

The common actions described above would be completed prior to clearing vegetation and grading in a portion of the western half of the facility property selected for the disposal and capping. The consolidated and de-watered sediment would be placed in this selected area. A RCRA cover pursuant to 40 CFR Part 264 would be installed over the soil and sediment. A RCRA cover includes two feet of soil capable of supporting adequate vegetation, a six inch thick drainage layer or synthetic drainage net, a 60 mil geotextile membrane liner, non-woven geotextile, and a one-foot thick layer of intermediate cover above consolidated soil and sediment. A fence with a gate and lock would be installed around the RCRA cover area. Post closure care would include maintenance of the RCRA cover and restricting of facility operations in the area of the RCRA cover.

Alternative 4 - Consolidate Soil and Sediment, Stabilize, Install RCRA Cover

Capital Cost: $1,447,869
Annual Operation and Maintenance (O&M) Costs: $14,300
Present Worth of O&M: $134,849
Total Cost: 1,582,718
Time to Implement: 1 year

The common actions described above except de-watering would be completed prior to clearing vegetation and grading in a portion of the western half of the facility property selected for the disposal of the stabilized material. A treatability study would have to be

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conducted in order to determine the most effective stabilization agent. Stabilization agents include portland cement, lime, cement kiln dust, and commercially available materials. The RCRA cover and fencing would be identical to that described for Alternative 3.

Alternative 5 - Segregate Soil and Sediment, Use Low Temperature Thermal Treatment, Stabilize, Install RCRA Cover

Capital Cost: $2,207,215
Annual O&M Costs: $14,300
Present Worth of O&M: $134,849
Total Cost: $2,342,064
Time to Implement: 2 years

The common actions as described above would be conducted. The soil contaminated with inorganics in Area 7 would be segregated from the remainder of the excavated soil and sediment. The Area 7 soil exceeds cleanup levels for metals (arsenic) but not for PAHs and PCBs. Soil and sediment would be treated using a low temperature thermal treatment system. The excavated soil and sediment from Area 7 would then be mixed with the thermally treated material and would be stabilized following a stabilization treatability study. An area in the western portion of the facility property would be selected for placement of the consolidated soil, cleared of vegetation, and graded. The RCRA cover and fencing would be identical to that described for Alternative 3.

Alternative 6 - Consolidate Soils and Sediment, Dispose of Off-Site at Industrial Waste Landfill

Capital Costs; $2,811,931
Annual O&M Costs: $0
Total Cost: $ 2,811,931
Time to Implement: 1 year

This alternative consists of all the common actions described above. The excavated soil and de-watered sediment would be staged in a central area. After consolidation, all the soil and sediment would be transported to a RCRA approved industrial waste landfill.

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Alternative 7 - Consolidate Soil and Sediment, Build an On site RCRA-Disposal Landfill

Capital Costs: $ 1,052,252
Annual O&M Costs: $14,300
Present Worth of O&M: $134,849
Total Cost: $1,187,101
Time to Implement: 1 year

This alternative consists of all the common actions described above. An area in the western portion of the Facility property would be selected for construction of the on-site RCRA landfill (approximately 10,340 square feet are required). The on-site RCRA landfill would be constructed as follows: a multi-liner would be constructed from top to bottom consisting of: 1 foot protective cover, non-woven geotextile, 60 mil- geotextile membrane, non-woven geotextile, 1-foot drainage layer, non-woven geotextile, 60 mil- geotextile membrane, non-woven geotextile, 6" compacted sub-base. The liners would be designed and constructed to meet 40 CFR and NYS 6 NYCRR 373-2 requirements. The contaminated soil would be placed over the liner and non-impacted soil would be placed between the contaminated soil and the RCRA cover. The RCRA cover and fencing would be identical to that described for Alternative 3.

Alternative 8 - Consolidate Soil and Sediment, Ship Off-site For Treatment and Disposal

Capital Costs: $ 2,462,334
Annual O&M Costs:$0
Total Costs: $2,462,334
Time to Implement: 1 year

This alternative consists of all the common actions described above. The soil and dewatered sediment would be staged in a central area. After consolidation, all the soil and sediment would be transported to an approved treatment and/or disposal facility. Treatment would be conducted in order to meet RCRA Land Ban Regulations. This alternative includes TSCA waste (PCBs > 50 ppm) disposal in a secure TSCA double lined landfill facility (approximate volume 1,275 cubic yards). RCRA waste (e.g. PCBs < 50 ppm, Arsenic > 5 ppm, Chromium > 5ppm) would be stabilized to prevent leaching of metals and disposed of in a secured RCRA lined facility (approximately 2,124 cubic yards as determined as the reasonable likely quantity in the Feasibility Study), and non-RCRA wastes would be disposed of in an industrial waste landfill (approximate volume 120 cubic yards). Based on soil estimates of 3000 to 6000 cubic yards, approximately 150 to 300 trucks would be expected to leave the facility. The cost estimate is based on the 2,124 cubic yards and may vary depending on the final volume actually excavated.

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MEDIUM 3: Ground Water

Ground water analyses conducted during the RI indicate that 14 organics and 7 inorganics are present in concentrations above cleanup levels at the facility.

The ultimate goal of the EPA Superfund Program's approach to ground water remediation, as stated in the NCP (40 CFR Part 300), is to return usable ground waters to their beneficial uses within a time frame that is reasonable. Therefore, for this aquifer, which is classified by New York State as a potential drinking water source, the final cleanup levels will be federal and State drinking water standards. The remedial alternatives for ground water include no action and ground water treatment.

Alternative 9 - No Action

Capital Costs: $12,000
Annual O&M Costs: $14,300
Present Worth of O&M: $134,849
Total Costs: $146,849
Time to Implement: At least 30 years

As previously stated, the Superfund program requires that a "no action" alternative be evaluated at every site to establish a baseline for comparison. Under this alternative, a public awareness program concerning ground water contamination would be implemented, including conducting public meetings and posting warning signs. Institutional controls would be implemented to prevent untreated ground water use as a source of potable water at the Site. Long-term surface water and ground water monitoring would be included to track any contaminant migration. The Site would be reviewed every five years to evaluate the protectiveness of the remedy.

Alternative 10 - Ground water Treatment

Capital Cost: $1,082,726
Annual O&M Cost: $153,419
Present Worth of O&M (20 years): $1,305,596
Total Costs:$ 2,388,322
Time to Implement: Approx 20 years

This alternative involves the pumping and treatment of contaminated ground water with the goal of achieving federal and state drinking water cleanup levels. Treatment will consist of air stripping the extracted water to remove VOCs and, if necessary, metals removal by either filtration or precipitation. Air emission treatment, if necessary, will be installed to meet 6 NYCRR Parts 200, 201, and 212 regulations and New York State Air Guide 1. See Figure 9. The exact treatment specifications required will be determined during the remedial design. Treated ground water will be discharged to the non-contact cooling system at the plant, or to surface water in accordance with the State Pollutant Discharge Elimination System requirements. The costs are based on pumping and treating 30 gallons per minute. It is possible that higher pumping rates will be required to contain and/or capture contamination in ground water at the facility. The exact pumping rate will be determined during the design stage. Recent studies have indicated that pumping and treatment technologies may contain uncertainties in achieving concentrations required under Federal and State standards over a reasonable period of time. However, these studies also indicate significant decreases in contaminant concentrations early in the system implementation, followed by a leveling out. For these reasons, this alternative stipulates contingency measures, whereby the ground water extraction and treatment system's performance will be monitored on a regular basis and adjusted as warranted by the performance data collected during operation. Modifications may include any or all of the following:

a) at individual wells where cleanup goals have been attained, pumping may be discontinued;

b) alternate pumping at wells to eliminate stagnation points;

c) pulse pumping to allow aquifer equilibration and to allow adsorbed contaminants to partition into ground water; and

d) install additional extraction wells to facilitate or accelerate cleanup of the contaminant plume.

If it is determined, on the basis of the preceding criteria and the system performance data, that certain portions of the aquifer cannot be restored to their beneficial use in a reasonable time frame, all of the following measures involving long-term management may occur, for an indefinite period as a modification of the existing system:

a) engineering controls such as physical barriers including trenches, source control measures, or long-term gradient control provided by low level pumping, may be implemented as containment measures;

b) chemical-specific ARARs will be waived for the cleanup of those portions of the aquifer which cannot be restored based on the technical impracticability of achieving further contaminant reduction;

c) institutional controls will be provided/maintained to restrict access to those portions of the aquifer which remain above cleanup levels;

d) continued monitoring of specified wells; and

e) periodic reevaluation of remedial technologies for ground water restoration.

The decision to invoke any or all of these measures may be made during a periodic review of the remedial action, which will occur at intervals of no less often than every five years after the initiation of the operation.

All costs and implementation times are estimated.
Remedial design period is not included in implementation times.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

During the detailed evaluation of remedial alternatives, each alternative was assessed utilizing nine evaluation criteria as set forth in the NCP and OSWER Directive 9355.3-01. These criteria were developed to address the requirements of Section 121 of CERCLA to ensure all important considerations are factored into remedy selection decisions.

The following "threshold" criteria are the most important, and must be satisfied by any alternative in order to be eligible for selection:

1. *Overall protection of human health and the environment* addresses 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 institu tional controls.

2. *Compliance with ARARs* addresses whether or not a remedy would meet all of the applicable, or relevant and appropriate requirements of federal and state environmen tal statutes and requirements or provide grounds for invoking a waiver.

The following "primary balancing" criteria are used to make comparisons and to identify the major trade-offs between alternatives:

3. *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.

4. *Reduction of toxicity, mobility, or volume through treatment* is the anticipated perfor mance of a remedial technology, with respect to these parameters, that a remedy may employ.

5. *Short-term effectiveness* addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation periods until cleanup goals are achieved.

6. *Implementability* is the technical and administrative feasibility of a remedy, including the availability of materials and services needed.

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7. *Cost* includes estimated capital and operation and maintenance costs, and the present-worth costs.

The following "modifying" criteria are considered fully after the formal public comment period on the Proposed Plan is complete:

8. *State acceptance* indicates whether, based on its review of the RI/FS and the Proposed Plan, the State supports, opposes, and/or has identified any reservations with the preferred alternative.

9. *Community acceptance* refers to the public's general response to the alternatives described in the Proposed Plan and the RI/FS reports. Factors of community acceptance to be discussed include support, reservation, and opposition by the community.

A comparative analysis of the remedial alternatives based upon the evaluation criteria noted above follows.

Overall Protection of Human Health and the Environment

Soils and Stream Sediments: All of the alternatives, with the exception of the no action alternative and access restriction alternative (Alternatives 1 and 2), would provide adequate protection of human health and the environment by eliminating or controlling risk through containment, removal, or treatment.

Alternatives 1 and 2 are not an acceptable remedial option given that the current risk from PAHs, PCBs, and inorganics posed by the Site exceeds the acceptable risk range of 10^{-4} to 10^{-6} in certain areas of the Site. Therefore, since Alternatives 1 and 2 do not meet this threshold criterion, they will not be discussed further in this section.

Ground water: Only the treatment alternative (Alternative 10) for ground water attempts to provide adequate protection of human health and the environment by reducing contaminant levels to cleanup levels. Although there is no current exposure pathway for ground water use at the facility, the no action alternative is not protective of public water supplies because it will not prevent the migration of contaminants within the Newtown Creek Aquifer. Consequently, and in accordance with EPA ground water policy as set forth in the NCP, Site remediation is warranted to restore ground water to its beneficial use. Therefore, since Alternative 9 (no action) does not meet this threshold criterion, it will not be discussed further.

Compliance with ARARs

Soils and Stream Sediments: Alternatives 3,4,5,6,7, and 8 provide containment or treatment as a means of eliminating potential exposures.

Land Disposal Restrictions (LDRs) are chemical- and action-specific ARARs that are triggered by the placement of wastes regulated under RCRA. LDRs require that excavated hazardous wastes be treated to acceptable levels before land disposal. For non-listed wastes, on-site or off-site disposal of treated wastes is permitted provided the wastes are not, after treatment, RCRA characteristic hazardous wastes. Soils in Area 6 contain hazardous waste and must therefore be treated so that the contaminants remaining in the leachate (as determined by TCLP) are less than the Toxicity Characteristic limit so as to no longer be considered hazardous waste and therefore be eligible for disposal. Area 5 contains listed hazardous waste, and LDR restrictions would prevent any land disposal of these materials. The LDR requirements, however are not triggered if the material is contained without excavation with a RCRA cover. Alternative 8 would meet Land Disposal Restrictions for all wastes while Alternatives 3 and 6 would not.

One sample from Disposal Area 4 indicated PCBs at a concentration of 320 ppm. Therefore, the potential exists that additional soils and /or sediments will be encountered with concentrations above 50 ppm. For these sediments or soils, Alternative 8, which includes excavation, segregation and off site disposal in a TSCA regulated landfill, would meet TSCA ARARs.

Alternative 7 would not meet New York State requirements as set forth at 6 NYCRR 373-2 for all contaminated soil or sediments because ground water must be greater than 10 feet from a landfill's cell bottom and because the area proposed for the landfill is a ground water recharge zone. Perched ground water was encountered at 4-5 feet below the ground surface during drum excavation activities in Disposal Areas 1 and 2 and therefore this requirement cannot be satisfied.

Other action-specific and location-specific ARARs that are applicable or relevant and appropriate would be met under the selected alternative (Table 9). Examples include Occupational Safety and Health Administration (OSHA) Standards for Hazardous Responses and New York RCRA Hazardous Waste Facility Requirements for the handling and storage of hazardous wastes.

Ground water: According to the federal site-specific classification scheme, the ground water at the Site is Class 2A, which is potential drinking water. New York State classifies the Site ground water "GA" which indicates that the underlying aquifer is a potential drinking water aquifer. Safe Drinking Water Act (SDWA) MCLs are federal chemical-specific ARARs as are NYSDEC Class GA Ground water Quality Standards.

Alternative 10 attempts to meet these ARARs; if ARARs are demonstrated to be unattainable after implementation of a ground water extraction and treatment system, the contingency exists for a waiver of these ARARs, as outlined in the Summary of Alternatives section.

Alternative 10, ground water treatment, would also meet action-specific ARARs. Location-specific ARARs that are applicable or relevant and appropriate would also be met under the preferred alternative. Examples include OSHA Standards for Hazardous Responses and New York State Pollutant Discharge Elimination System (SPDES) Requirements for Site Runoff, Surface Water and Ground Water Discharge Limits (Table 9).

Long-term Effectiveness and Permanence

Soils and Stream Sediments: Alternative 8 would be both effective and permanent once the construction phase is complete because the potential risks posed by the contaminated soil and sediments would be removed and the contaminated soil areas would be restored to ambient conditions. Alternative 8 will result in transporting additional material to an existing off-site disposal facility as opposed to creating a new disposal facility on-site, thereby restricting future uses of that on site piece of property. Each of the remaining alternatives offer long-term effectiveness and some degree of permanence by removing the exposure pathway or treating the contaminated materials.

Ground water: Alternative 10 is effective and permanent in that the remedial goal is to achieve ARARs and the pumping and treatment would remove the ground water contamination and prevent further negative impacts to the Newtown Creek Aquifer.

Reduction of Toxicity, Mobility, or Volume

Soils and Stream Sediments: Alternative 3 provides no reduction in toxicity or volume because of the absence of treatment, but it would reduce the mobility of contaminants in the soil because they would be contained and no longer exposed for transport by wind or water erosion.

Alternatives 4 and 8 would reduce the mobility of inorganic contaminants through treatment. These alternatives may increase the total volume of waste material. No reduction in toxicity of contaminated soils or sediments would occur under Alternatives 3,4,6, 7 or 8. Only Alternative 5 meets this criterion fully.

Ground water: Alternative 10, pumping and treatment, would contain the ground water contaminants thereby reducing mobility and the ability of contaminants to migrate into the Newtown Creek Aquifer. The treatment process would reduce contaminant concentrations in the treated ground water to below surface water discharge standards and would have the goal of reducing contaminant concentrations in the aquifer to below ARARs, effectively diminishing both toxicity and volume.

Short-term Effectiveness

Soils and Stream Sediments: The short-term effectiveness of all the alternatives is high since each alternative involves relatively little construction and implementation. Although the potential for dust release is higher for Alternative 8 than for on-site alternatives, this alternative is neverthless effective in regard to this criterion. Reliable technologies would be used in the excavation, treatment, transport, and consolidation phases to ensure that any dust releases would be minimized.

Ground water: The short-term effectiveness of Alternative 10 is high since there is no exposure to contaminated ground water during implementation. Any short-term risks are derived from the potential of constructing and using a ground water well on site before institutional controls are in place, which is considered highly unlikely since the Site is provided with water from the town municipal system. Implementation of Alternative 10 would not result in any exposures through proper operational procedures. The estimated time for implementation of the construction phase for the preferred alternative is 24 months, with a minimum of 20 years of monitoring to complete the remedial action.

Implementability

Soils and Stream Sediments: Alternative 3 is technically easy to implement, although it requires maintenance to remain effective.

Alternative 8, excavation and off-site disposal after treatment, utilizes technologies that are readily implementable. The equipment and personnel required for this alternative are readily available. The removal of all surface soil and sediment will require approximately 150 to 300 trucks leaving the facility.

Treatment alternatives 4 and 5 would require treatability studies to ensure effectiveness, and Alternative 5 must be able to meet NYS air regulations prior to full scale operation.

Ground water: Alternative 10 uses standard equipment and well developed technologies that are commercially available. Treatment alternatives for the extracted ground water would require treatability testing during remedial design. The small volume of residuals from the construction of this alternative would be transported off-site for disposal. However, contingencies will be included to maximize the pump and treatment system's effectiveness in realizing this goal.

Cost

Soils and Stream Sediments: Based on the RI data and the FS evaluation, the cost of treating soils and sediments to meet LDR's, prior to off-site disposal in an Industrial Waste Landfill (Alternative 8) is not substantially higher than the cost of the on-site disposal and treatment alternatives (Alternative 4 and 5). The cost of off site treatment is higher than construction of a RCRA cell for treated wastes, but removal and treatment provides for permanent removal of the contaminants.

The estimated present worth cost of the selected Alternative #8 is $2,462,334. The present worth costs for soil and sediment remediation ranged from $9,750 for Alternative 2 to $2,811,931 for Alternative 6.

Ground water: The actual cost of Alternative 10 could be considerably less depending on whether the contingency measures are invoked after initial implementation, or if EPA decides that the treatment system should be operated for more than 20 years.

The thirty year present worth cost of the no action alternative is $146,849, while the twenty year (estimated time for remediation) present worth cost of the treatment alternative is $2,714,721. Individual cost breakdowns are included in the Summary of Remedial Alternatives section of this Proposed Plan.

State Acceptance

The State of New York concurs with the preferred alternatives presented in this Record of Decision.

Community Acceptance

The Public Comment Period on the Proposed Plan for the Site was held from May 27, 1992 through June 27, 1992. In addition, a Public Meeting was held at the Village of Elmira Heights Village Hall on June 16, 1992 to discuss, answer questions about, and accept comments on the Proposed Plan. No negative comments regarding EPA's Proposed Plan were made by the public during the Public meeting.

SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, both NYSDEC and EPA have determined that **Alternative 8: Consolidate Soil and Sediment, Ship Off site for Treatment and Disposal; and Alternative 10: Extraction/Air Stripping /Metals Precipitation and or Filtration/Surface Water Discharge** are the appropriate remedies for the Site.

The major components of the selected remedy are as follows:

- Excavation of contaminated soils and sediments from the Disposal Areas identified in the Risk Assessment and where soils and sediment pose a risk to ground water quality,

- Disposal of TSCA waste (PCBs > 50 ppm) in a secure TSCA double lined landfill facility (estimated at approximately 1,275 cubic yards),

- Stabilization of RCRA waste to prevent leaching of metals and disposal in a secure RCRA lined facility (approximate volume 2,124 cubic yards),

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- Disposal of non-RCRA wastes in an industrial waste landfill (approximate volume 120 cubic yards),

- Strategic placement of pumping wells to extract the contaminated ground water from the aquifer,
- Storage of pumped ground water in a central collection tank for subsequent treatment in an above-ground system,

- Treatment of the contaminated ground water to meet Federal and State Standards for surface water discharge. Treated ground water would then be either discharged as effluent to the facility non-contact cooling system or to a surface water discharge,

- Recommendation that local institutional controls, in the form of local zoning ordinances, be implemented in an attempt to control any future site use that could open an exposure pathway to subsurface soils,

- Recommendation that institutional controls will be provided/maintained to restrict access to those portions of the aquifer which remain above cleanup levels, and

- Implementation of a long-term monitoring program to track the migration and concentrations of the contaminants of concern.

The ground water alternative also stipulates contingency measures, outlined under Alternative 10 in the Summary of Remedial Alternatives section of this Record of Decision, whereby the ground water extraction and treatment system's performance will be monitored on a regular basis and adjusted as warranted by the performance data collected during operation. If it is determined, in spite of any contingency measures that may be taken, that portions of the aquifer cannot be restored to its beneficial use, ARARs may be waived based on technical impracticability of achieving further contaminant reduction. The decision to invoke a contingency measure may be made during periodic review of the remedy, which will occur at intervals of no less often than every five years.

The selected alternative is believed to provide the best balance of trade-offs among the alternatives with respect to the evaluation criteria. Based on the information available at this time, EPA believes the selected alternative would be protective of human health and the environment, would comply with ARARs, would be cost effective, and would utilize permanent technologies to the maximum extent practicable. The preferred alternatives also treat the most grossly contaminated material (surface soils, sediments, and ground water), meeting the statutory preference for the use of a remedy that involves treatment as a principal element.

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STATUTORY DETERMINATIONS

Under its legal authorities, EPA's primary responsibility at Superfund sites is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that when complete, the selected remedial action for this Site must comply with applicable, or relevant and appropriate environmental standards established under Federal and State environmental laws unless a statutory waiver is justified. The selected remedy also must be cost-effective and utilize permanent solutions and alternative treatment technologies or resource-recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes, as available. The following sections discuss how the selected remedy meets these statutory requirements. The contingent remedy will also meet these requirements.

<u>Protection of Human Health and the Environment</u>

Once excavation and shipment off-site of sediment and soils with unacceptable levels of contamination is completed, the unacceptable risks posed by these materials will be permanently removed. The soils and sediments will be shipped off-site for treatment and disposal, confirmatory sampling will be conducted in the excavated areas to ensure that all unacceptably contaminated material is removed, and the excavated areas will be covered with clean fill. In addition, EPA will recommend to local officials that institutional controls be implemented to prevent activities at the facility from opening an exposure pathway to the subsurface soils.

After design and construction of a ground water pump and treat system is completed, contaminated ground water will be pumped in order to contain the facility ground water contamination, and to restore the aquifer quality to appropriate State and Federal Standards for a Class IIa and GA aquifer. EPA will recommend to local officials that institutional controls be implemented to prevent installation of a drinking water well in areas effected by the contamiantion caused by releases at the facility.

<u>Compliance with ARARs</u>

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

<u>Action Specific ARARs</u>

Soils and Sediments -
6 NYCRR 373-1 Hazardous Waste Facility standards for permitting, 40 CFR 761 PCB Spill Cleanup Policy, and RCRA Land Disposal restriction under 40 C.F.R. 268, 40 C.F.R. 261

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determination of whether a waste is hazardous, 40 C.F.R.262 Hazardous waste generator requirements, and 40 C.F.R. 263 Hazardous waste transporter requirements.

Ground Water -
Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (40 C.F.R. 141.11-141.16) and 6 NYCRR Ground Water Quality Regulations (Parts 703.5, 703.6, 703.7) as well as NYS 10 NYCRR 5, 10NYCRR 170 (State Public Drinking Water Standards and State Public Drinking Water Sources Standards, 6 NYCRR 750-757 State Pollution Discharge Elmination System. For air pollution control 6 NYCRR 200, 201, 211, and 212, as well as 6NYCRR 257, and NYS Air Guide 1 will have been considered.

Chemical-Specific ARARs:

Since the ground water at the Site is classified by EPAas IIa (GA by NYSDEC), drinking water standards are relevant and appropriate. Again, these include SWDA MCLs and 6NYCRR Ground Water Quality Regulations. However, achieving chemical-specific ARARs for ground water is dependent on remediation of the contaminant sources at the facility. The remedial action is intended to result in attainment of chemical specific ground water ARARs providing that the remedy is effective in eliminating the sources of aquifer contamination.

Other potential remedial action objectives are presented in Table 18.

Cost-Effectiveness

The selected remedy is cost effective and provides the greatest overall protectiveness proportionate to costs. Excavation, segregation and shipment off-site for treatment and disposal at a present worth of $2,462,334, is more expensive than some of the other alternatives but it does not result in the incurrence of the cost of treatability studies; also it can be completed more quickly than these other alternatives at a reasonable cost. The present worth cost of the ground water treatment and discharge (to the non-contact cooling system or the surface water directly after treatment) is $2,388,322 based on pumping and treating for 20 years and pumping and treating 30 gallons per minute. This alternative provides for containment of the contaminant plume and restoration of the aquifer at the facility to meet Federal and State standards at a reasonable cost.

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.

FAC 003 1193

Preference for Treatment as a Principal Element

The preference for treatment as a principal element is satisfied since treatment of the principal threat (soil and sediment and ground water) will be conducted. The off-site treatment of soil and sediment may include stabilization and incineration, if necessary, to meet LDRs. For ground water treatment: filtration and/or precipitation, and air stripping of contaminants will be utilized to attain ARARs.

DOCUMENTATION OF SIGNIFICANT CHANGES

There are no significant changes from the preferred alternative presented in the Proposed Plan.

FAC 003 1194

APPENDIX I

FIGURES

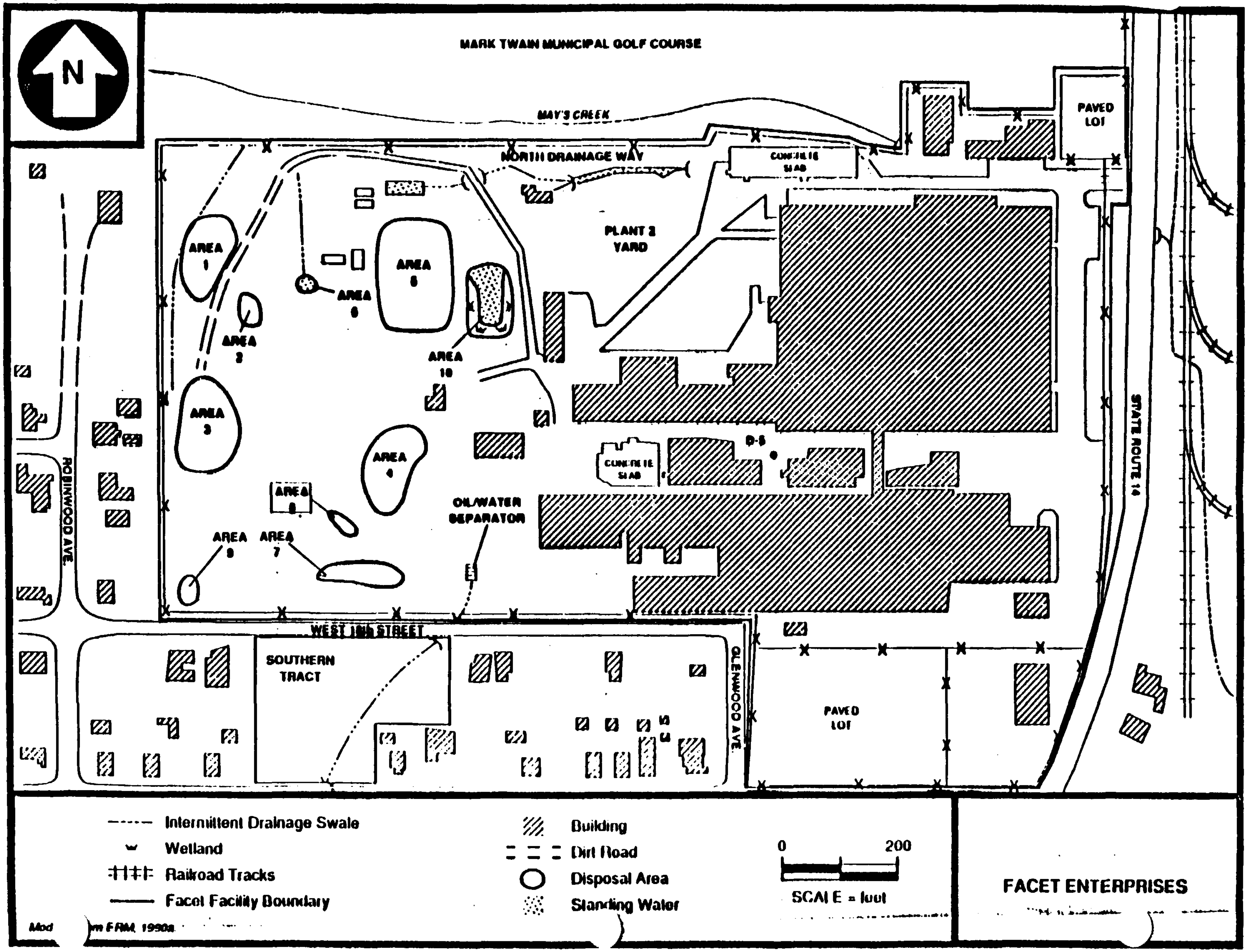
FAC 003 1195

Figures

Figure 1

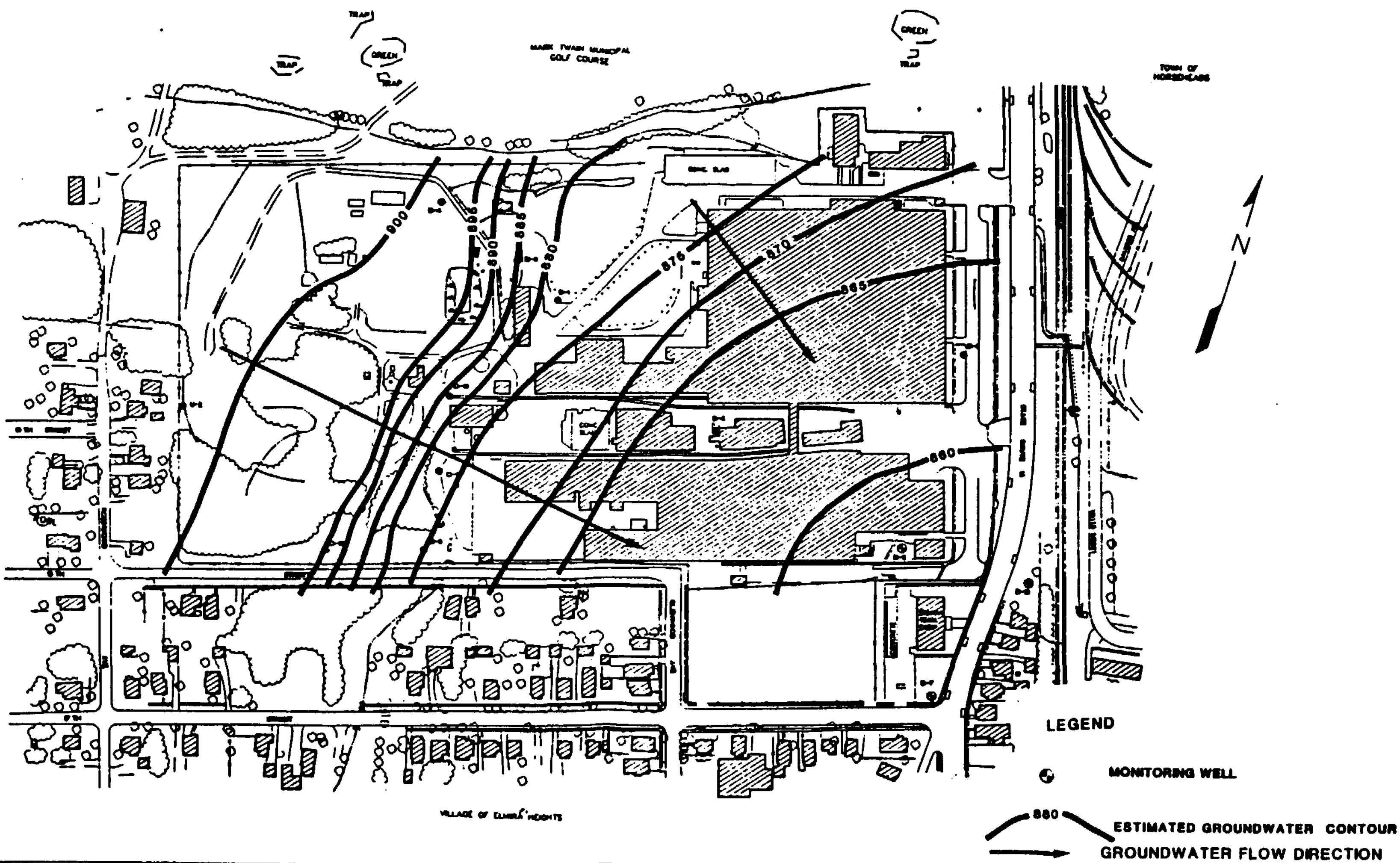
FAC 003 1197

Figure 2


N
MARK TWAIN MUNICIPAL GOLF COURSE
MAY'S CREEK
NORTH DRAINAGE WAY
CONCRETE SLAB
PAVED LOT
PLANT 2 YARD
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
AREA 6
AREA 7
AREA 8
AREA 9
AREA 10
OIL/WATER SEPARATOR
D-5
CONCRETE SLAB
ROBINWOOD AVE.
WEST 18th STREET
SOUTHERN TRACT
GLENWOOD AVE.
PAVED LOT
STATE ROUTE 14
Intermittent Drainage Swale
Wetland
Railroad Tracks
Facet Facility Boundary
Building
Dirt Road
Disposal Area
Standing Water
0
200
SCALE = feet
FACET ENTERPRISES
FRM, 1990a

FAC 003 1199

Figure 3



PUROLATOR PRODUCTS COMPANY

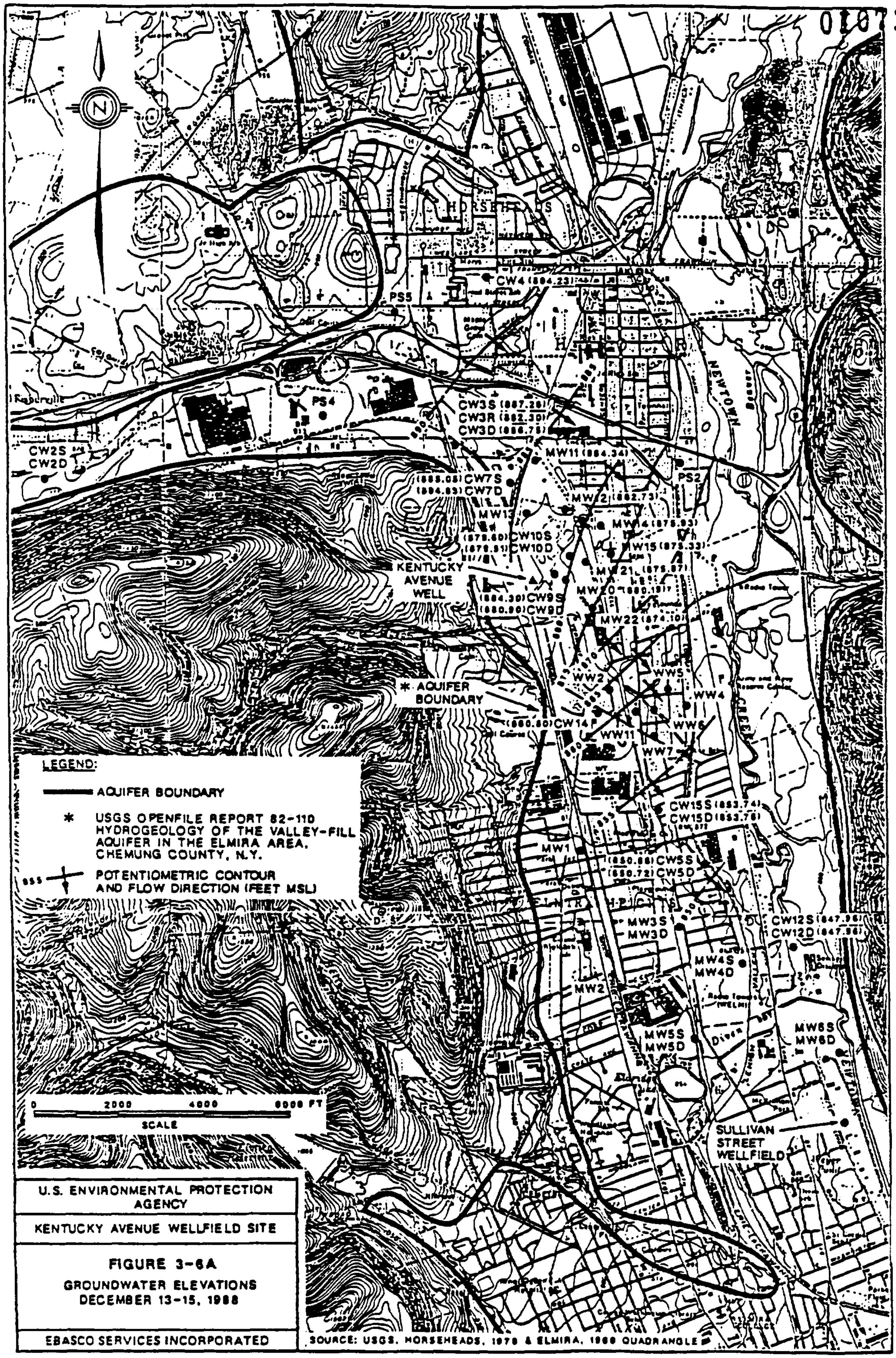
ERM-Northeast
Environmental Resources Management

ESTIMATED GROUNDWATER CONTOUR MAP

1":200'

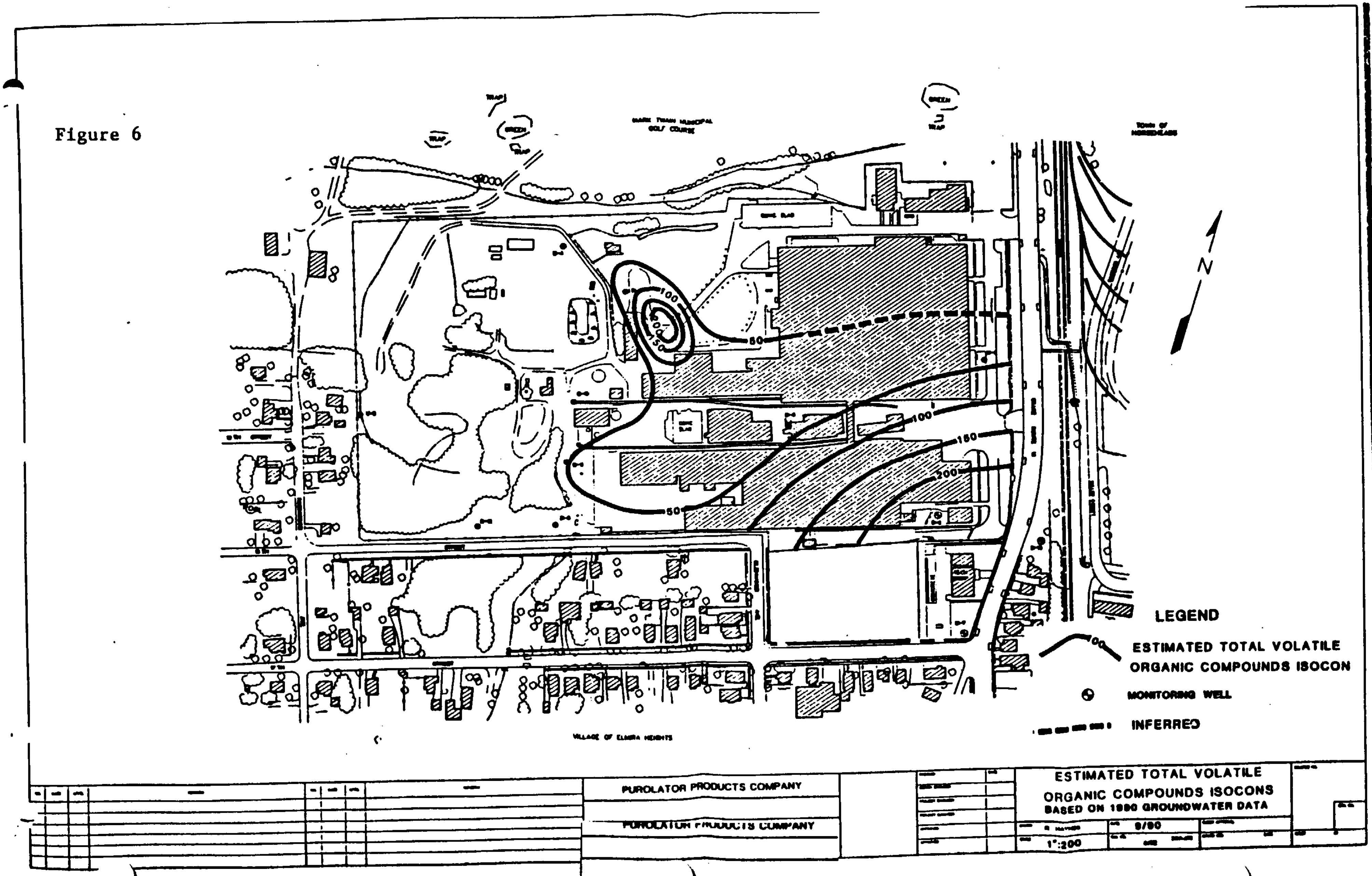
Figure 4

0107372



FAC 003 1200

Figure 6


MARK TWAIN MUNICIPAL GOLF COURSE
TOWN OF HORSEHEADS
N
50
100
150
200
LEGEND
ESTIMATED TOTAL VOLATILE ORGANIC COMPOUNDS ISOCON
MONITORING WELL
INFERRED
VILLAGE OF ELMIRA HEIGHTS
PUROLATOR PRODUCTS COMPANY
ESTIMATED TOTAL VOLATILE ORGANIC COMPOUNDS ISOCONS BASED ON 1990 GROUNDWATER DATA
9/90
1":200

FAC 003 1202

Figure 5

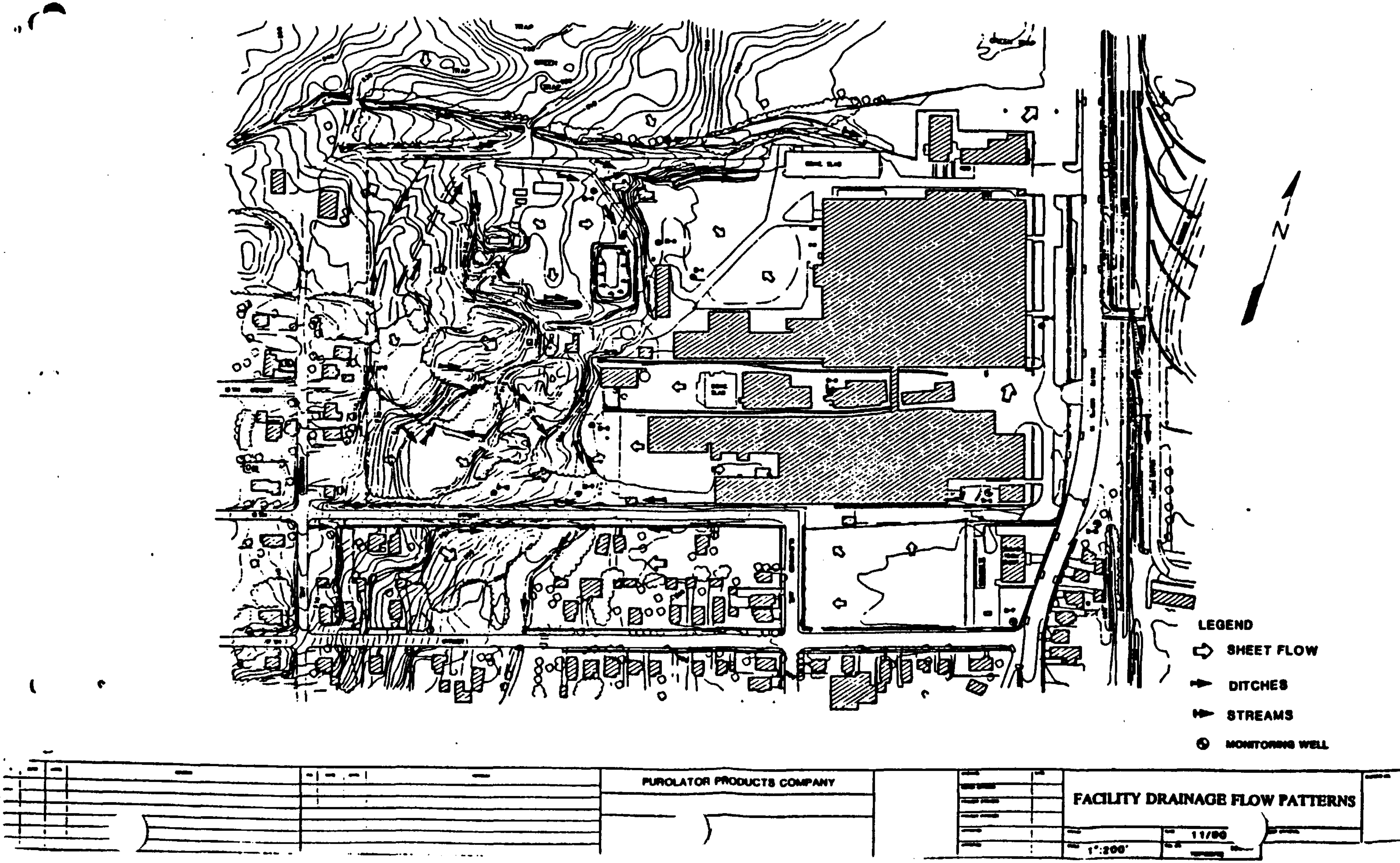
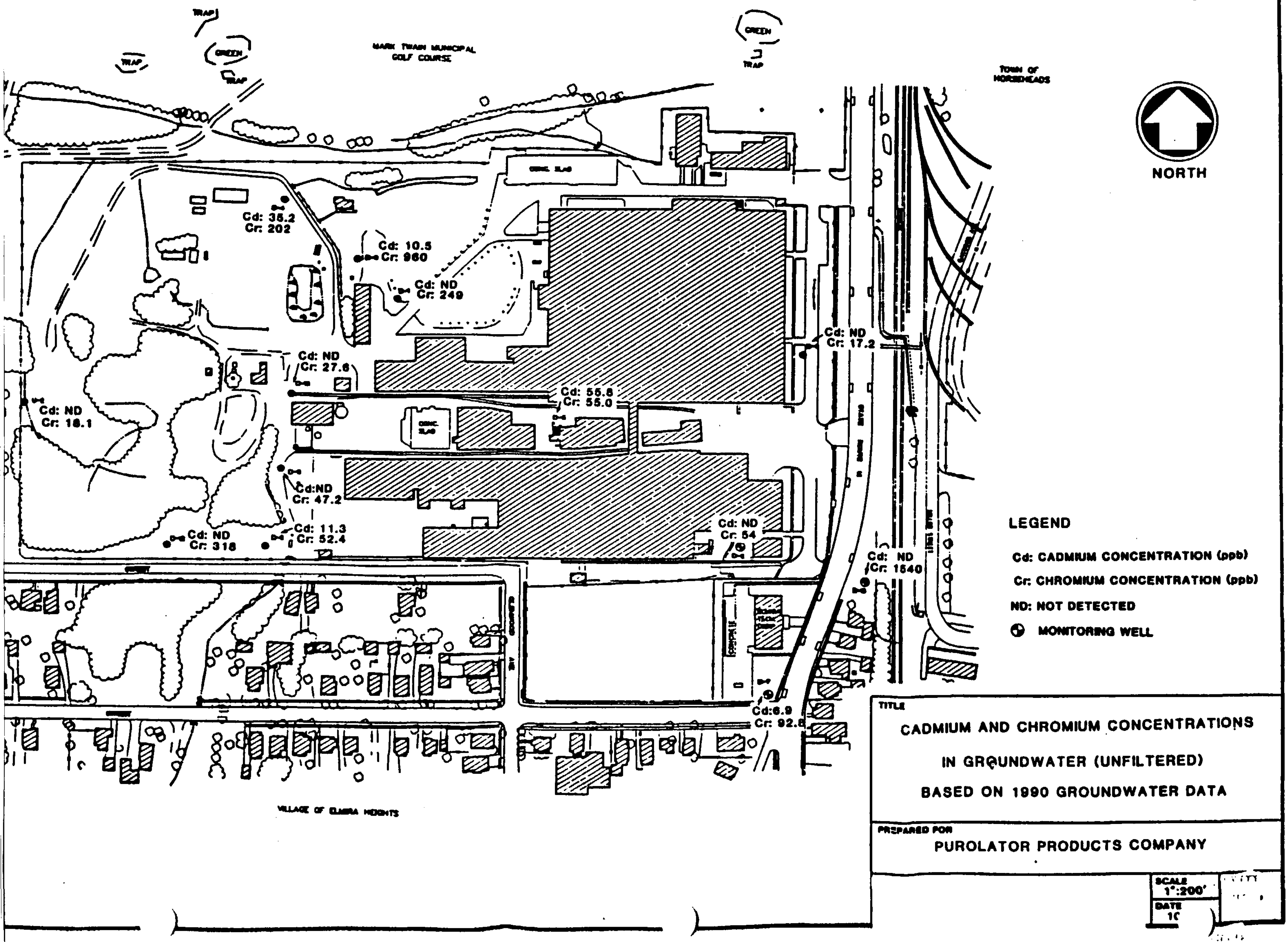


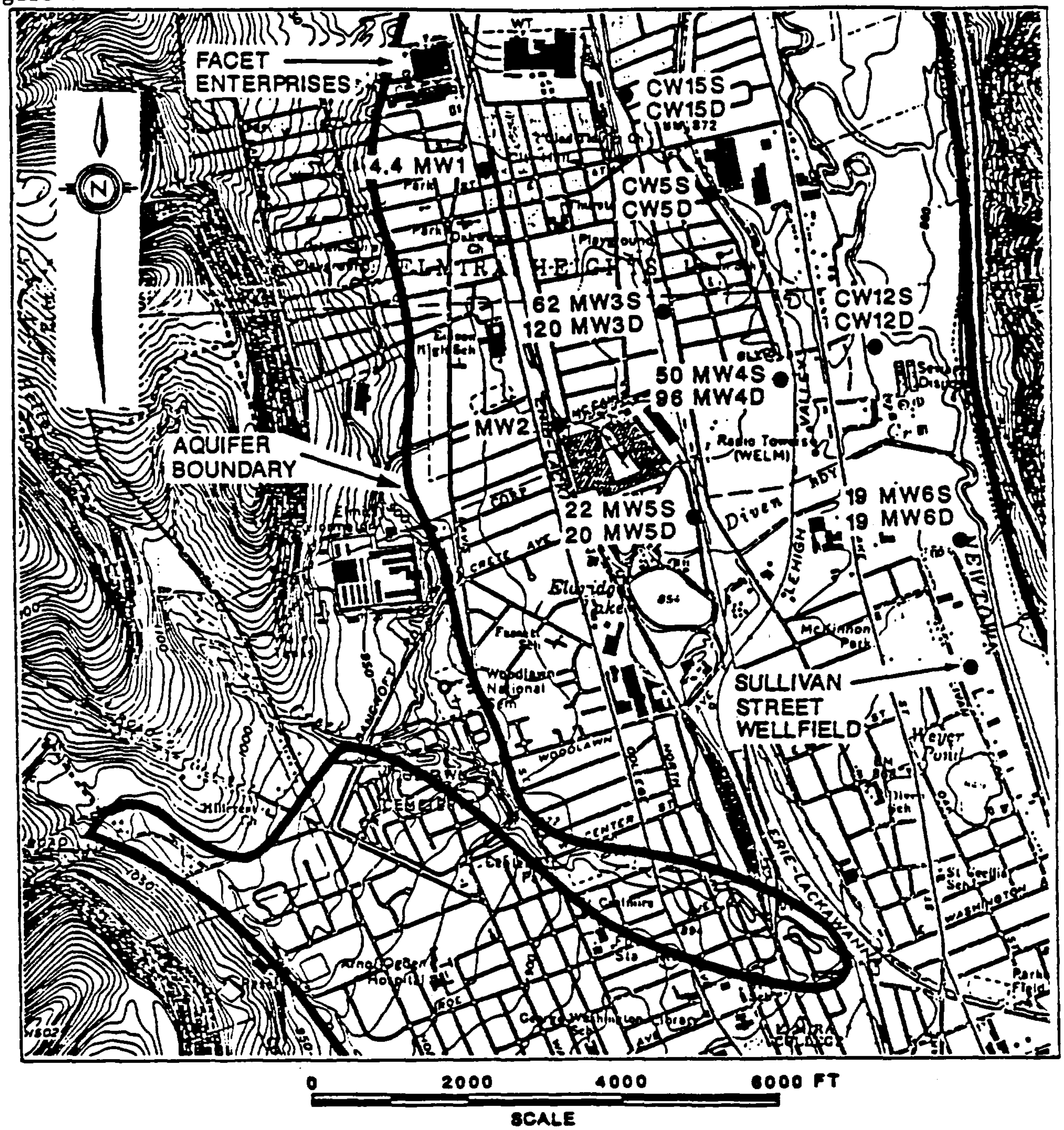
Figure 7

FAC 003 1203



0107534

Figure 8



LEGEND:

AQUIFER BOUNDARY

22 CONCENTRATION OF TCE IN ppb, JANUARY 1990

NOTE: NYSDEC WELLS WERE INSTALLED BY CLEAN HARBORS INC.,1989.

SOURCE: USGS, HORSEHEADS, 1978 & ELMIRA, 1969 QUADRANGLE

U.S. ENVIRONMENTAL PROTECTION AGENCY

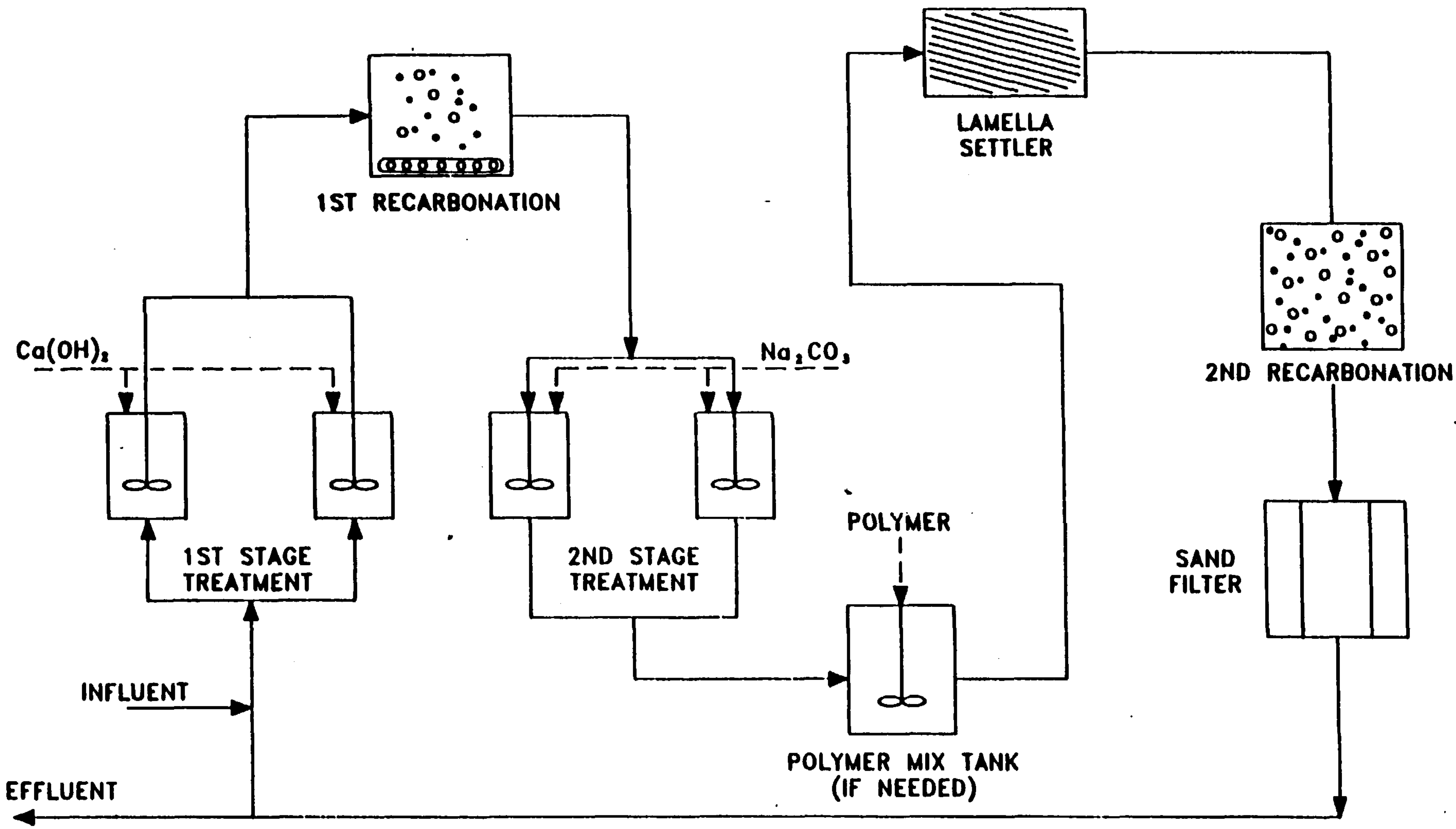
KENTUCKY AVENUE WELLFIELD SITE

TCE DISTRIBUTION IN SULLIVAN STREET MONITORING WELLS (NYSDEC)

EBASCO SERVICES INCORPORATED

FAC 003 1204

Figure 9



TITLE

PROCESS FLOW DIAGRAM
METALS REMOVAL SYSTEM
GROUND WATER TREATMENT

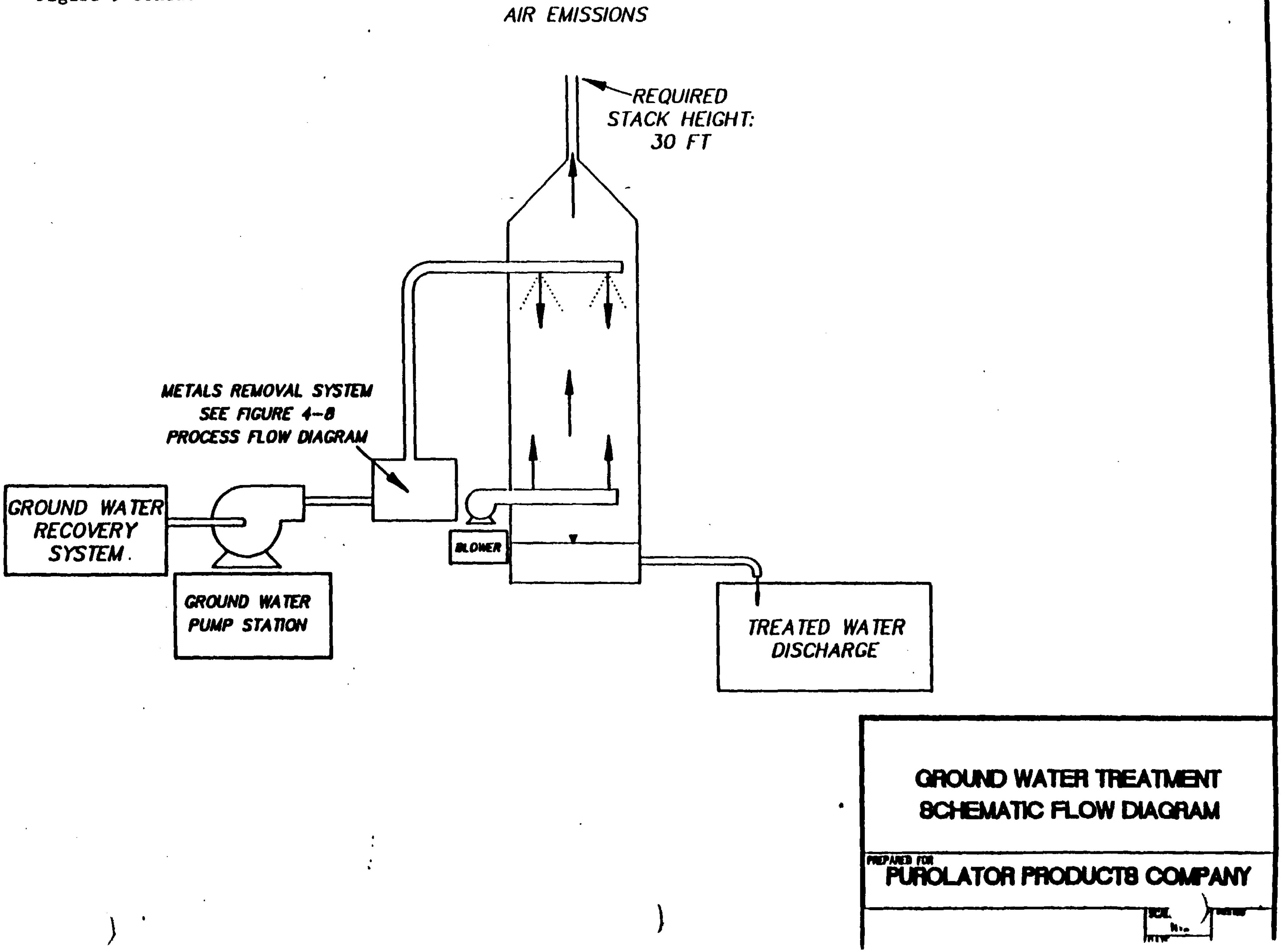
PREPARED FOR

PUROLATOR PRODUCTS COMPANY

FIGURE

DATE

Figure 9 contd.



APPENDIX II

TABLES

FAC 003 1207

TABLE

TABLE 1
VALID ANALYTICAL RESULTS
AREA 1 AND AREA 2 SOIL BORING SAMPLES
VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compound	SB5:4-6	SB5:6-8	SB51:6-8 (SB5:6-8 Dup.)	SB5:8-10	SB6:6-8	SB6:8-10	SB8:8-10	SB9:4-6	SB9:6-8	SB12:4-6	SB12:6-8	SB12:8-10
Acetone	7J	6J	8J	8J	---	---	---	---	9J	---	---	---
1,1-Dichloroethane	1J	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethene	12	5J	---	6	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	2J	---	---	---	---	---	---	---	---	---	---	---
Trichloroethene	110	89	12	53	3J	4J	---	---	---	12	30	42
Benzene	---	---	---	---	---	---	2J	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---	1J	---	---	---	---

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No volatile organic compounds were detected in SB6:4-6, SB7:4-6, SB7:6-8, SB7:8-10, SB8:4-6, SB8:6-8, SB9:8-10, SB10:4-6, SB10:6-8, SB10:8-10, SB11:4-6, SB11:6-8, SB11:8-10, SB13:0-2, SB13:2-4, and SB13:4-6.

--- = Compound not detected in this sample, but present in another.

J = Semi-quantitative due to concentration below Contract Required Quantitation Limit (CRQL).

TABLE 1 contd.

TABLE
VALID ANALYTICAL RESULTS
AREA 1 AND AREA 2 SOIL BORING SAMPLES
SEMI-VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compound	SB5:4-6	SB5:6-8	SB51:6-8 (SB5:6-8 Dup.)	SB5:8-10	SB7:6-8	SB7:8-10	SB10:8-10	SB11:6-8	SB12:6-8	SB12:8-10	SB13:0-2	SB13:2-4	SB13:4-6
2-Methylnaphthalene	---	---	---	---	---	---	---	---	---	---	45J	---	---
Phenanthrene	---	---	---	---	---	---	---	---	---	---	84J	---	---
Fluoranthene	---	---	---	---	---	---	---	---	---	---	100J	---	---
Pyrene	---	---	---	---	---	---	---	---	---	---	84J	---	---
Benzo(a)Anthracene	---	---	---	---	---	---	---	---	---	---	66J	---	---
Chrysene	---	---	---	---	---	---	---	---	---	---	66J	---	---
Benzo(b)Fluoranthene	---	---	---	---	---	---	---	---	---	---	130XJ	---	---
Benzo(k)Fluroanthene	---	---	---	---	---	---	---	---	---	---	130XJ	---	---
Benzo(a)Pyrene	---	---	---	---	---	---	---	---	---	---	51J	---	---
Di-n-Butylphthalate	---	---	---	---	---	---	---	86J	---	---	---	---	---
Bis(2-Ethylhexyl)phthalate	---	---	---	---	51J	53J	---	---	---	74J	72J	56J	44J
TIC Compounds													
Total Unknowns	230J	240J	240J	---	---	---	---	---	230J	230J	4750J	---	---
Total Unknown Hydrocarbons	---	---	---	140J	---	---	---	---	---	---	3620J	---	---
2H-1-Benzopyran-2-one	---	---	---	---	---	---	---	---	---	---	190JN	---	---
11H Benzofluorene	---	---	---	---	---	---	---	---	---	---	300J	---	---
Mono(2-Ether)Hexanedioic Acid	---	---	---	---	---	---	190JN	---	---	---	---	---	---
Trimethylhexane	---	---	---	---	---	---	---	300J	---	---	---	---	---

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No semi-volatile organic compounds were detected in SB6:4-6, SB6:6-8, SB6:8-10, SB7:4-6, SB8:4-6, SB8:6-8, SB8:8-10, SB9:4-6, SB9:6-8, SB9:8-10, SB10:4-6, SB10:6-8, SB11:4-6, SB11:8-10, and SB12:4-6.

--- = Compound not detected in this sample, but present in another.
J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.
X = Identifies coeluting indistinguishable isomers.
N = Identified TIC.

TABLE 1 contd.

TABLE -1
VALID ANALYTICAL RESULTS
AREA 1 AND AREA 2 SOIL BORING SAMPLES
METALS AND CYANIDE
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	SB5:4-6	SB5:6-8	SB51:6-8 (SB5: 6-8 Dup.)	SB5:8-10	SB6:4-6	SB6:6-8	SB6:8-10	SB7:4-6	SB7:6-8	SB7:8-10	SB8:4-6	SB8:6-8	SB8:8-10	SB9:4-6
Aluminum	10700J	10400J	8790J	8710J	8720	7460	8100	12400	12900	7740	13600J	11300J	11500J	7170
Arsenic	9.2	5.2	7.0	4.6	6.4J	---	---	4.9J	4.5J	---	7.0J	7.6J	5.7J	4.1J
Barium	91.6J	98.4J	84.3J	84.3J	80.6	73.0	89.4	125	137	63.9	129J	95.4J	95.4J	60.4
Beryllium	.50B	.59B	.42B	.46B	---	.23B	.26B	.43B	.53B	.30B	.51B	.41B	.38B	.31B
Cadmium	57.3J	77.9J	73.8J	351J	---	---	---	---	---	---	11.8	---	---	---
Chromium	2410J	224J	215J	548J	15.1	14.7	26.3	43.4	53.1	18.1	96.6J	49.6J	50.4J	12.5
Copper	1120J	82.7J	63.4J	532J	---	---	---	24.1J	27.2J	20.2J	30.4J	25.8J	26.1J	20.9J
Lead	9.8J	9.3J	10.2J	8.8J	9.7	8.5	9.2	---	---	---	10.8	9.8	11.4	---
Mercury	---	---	---	---	.12J	---	---	---	---	---	---	---	---	---
Nickel	29.2	25.5	23.4	37.9	21.9	16.9	17.0	29.6	32.9	22.1	27.8	26.3	30.2	22.7
Tin	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Zinc	242J	175J	174J	442J	63.4	59.0	60.1	81.3	88.5	68.6	139J	81.5J	87.2J	67.2
Cyanide	---	---	1.8	3.0	---	---	---	---	1.2	---	---	---	---	---

Analyte	SB9:6-8	SB9:8-10	SB10:4-6	SB10:6-8	SB10:8-10	SB11:4-6	SB11:6-8	SB11:8-10	SB12:4-6	SB12:6-8	SB12:8-10	SB13:0-2	SB13:2-4	SB13:4-6
Aluminum	9280J	12400J	13100	17500	12900	8870	9600	10800	20100	8760	15900	14900	17500	12100
Arsenic	3.0	7.5	1.98J	4.0J	3.8J	3.7J	8.7J	4.0J	8.9J	3.7J	7.8J	8.8J	---	11.5J
Barium	89.5J	110J	67.3	132	99.6	100	151	151	152	77.1	125	182	145	98.9
Beryllium	.47B	.63B	.52B	.54B	.53B	.32B	.32B	.35B	.72B	.33B	.57B	.54B	.75B	.38B
Cadmium	---	---	---	---	---	---	---	---	27.6	2.7	---	16.8	---	---
Chromium	15.8J	20.0J	18.5	25.8	19.6	16.7	14.4	16.6	113	67.3	100	545	25.1	18.5
Copper	9.1J	11.0J	21.9J	30.2J	24.6J	21.2J	23.8J	20.2J	42.7J	21.4J	26.1J	81.4J	32.5J	27.3J
Lead	9.3J	11.8J	---	---	---	---	---	---	---	---	10.4	---	---	---
Mercury	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nickel	23.0	27.1	31.1	38.2	33.0	24.3	30.8	25.6	43.6	32.2	29.6	28.0	32.2	31.6
Tin	4.2B	---	---	---	---	---	---	---	---	---	---	---	---	---
Zinc	63.5J	92.4J	66.2	105	94.5	69.2	78.2	70.2	137	88.7	81.2	137	80.3	87.0
Cyanide	---	---	---	---	---	---	---	---	---	---	---	7.0	3.8	---

Notes: All concentrations are in milligrams per kilogram (mg/kg = parts per million (ppm)).
--- = Analyte not detected in this sample but present in another.
J = Semi-quantitative due to QA/QC requirements.
B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

TABLE 2

TABLE 2

VALID ANALYTICAL RESULTS
AREA 3 SOIL BORING SAMPLES
VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compound	SB1:2-4	SB50:2-4 (SB1:2-4 Dup.)	SB2:8-10	SB4:6-8
Acetone	---	---	9J	---
1,2-Dichloroethene	---	3J	---	---
2-Butanone	6J	---	---	2J
Trichloroethene	2J	---	---	---
Toluene	---	---	2J	---

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No volatile organic compounds were detected in SB1:4-6, SB1:8-10, SB2:2-4, SB2:4-6, SB3:2-4, SB3:4-6, SB3:6-8, SB4:2-4, and SB4:4-6.

--- = Compound not detected in this sample, but present in another.

J = Semi-quantitative due to concentration below Contract Required Quantitation Limit (CRQL).

TABLE 2 contd.

TABLE
VALID ANALYTICAL RESULTS
AREA 3 SOIL BORING SAMPLES
SEMI-VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	SB1:2-4	SB50:2-4 (SB1:2-4 Dup.)	SB1:8-10	SB2:2-3	SB3:2-4	SB3:4-6	SB3:6-8	SB4:2-4	SB4:4-6	SB4:6-8
Benzoic Acid	---	---	---	---	---	---	---	67J	---	---
Pentachlorophenol	---	---	---	---	---	---	---	66J	---	---
Fluoranthene	50J	---	---	---	---	---	---	---	---	---
Pyrene	45J	---	---	---	---	---	---	---	---	---
Benzo(a)Anthracene	48J	---	---	---	---	---	---	---	---	---
Bis(2-Ethylhexyl)phthalate	---	40J	---	---	---	---	68J	---	---	52J
Benzo(b)Fluoranthene	69XJ	---	---	---	---	---	---	---	---	---
Benzo(k)Fluoranthene	69XJ	---	---	---	---	---	---	---	---	---
TIC Compounds										
Total Unknowns	2600J	1350J	220J	3760J	620J	2640J	590J	---	250J	---
Total Unknown Hydrocarbons	1220J	1650J	---	3240J	---	430J	---	---	---	---
Total Unknown Aldehydes	240J	---	---	---	---	---	---	---	---	---
Decane	---	---	---	---	150JN	---	---	---	---	---
Octadecanal	---	---	---	---	---	360JN	---	---	---	---

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No semi-volatile organic compounds were detected in SB1:4-6.

--- = Compound not detected in this sample, but present in another.
J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.
X = Identifies coeluting indistinguishable isomers.
N = Identified TIC.

TABLE 2 contd.

TABLE
VALID ANALYTICAL RESULTS
AREA 3 SOIL BORING SAMPLES
METALS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	SB1:2-4	SB50:2-4 (SB1:2-4 Dup.)	SB1:4 6	SB1:8-10	SB2:2-3	SB2:3-4	SB2:8-10	SB3:2-4	SB3:4-6	SB3:6-8	SB4:2-4	SB4:4-6	SB4:6-8
Aluminum	13600	12900J	12700	10800J	16100	15400	10900J	13300J	15800J	10000J	15000J	13000J	13500
Arsenic	7.3J	3.4J	8.4J	5.8	5.5J	6.0J	4.5	---	5.6	---	---	---	4.8J
Barium	147	103	50.5	74.3J	174	33.3B	66.3J	165	92.0J	70.4	152	121	128
Beryllium	.45B	.28B	.47B	.53B	.55B	.43B	.58B	.49B	.72B	---	.48B	.38B	.44B
Cadmium	---	1.5J	1.3J	72.3J	58.7J	5.7J	---	---	---	---	---	---	---
Chromium	26.5	29.9	47.5	466J	2110	66.4	22.1J	16.7	17.6J	15.2	19.3	15.9	17.2
Copper	27.9	243J	33 4	143J	270	23.1	12.2J	4.30J	5.28J	---	---	---	24.7
Lead	14.9	41.1J	12.4	11.7J	18.0	11.7	9.5J	15.9	16.4J	11.7	21.6	14.9	12.4
Mercury	---	---	---	---	.14J	---	---	---	---	---	---	---	---
Nickel	26.5	28.4	21.4	93.8	57.8	25.3	30.1	26.7	26.3	27.5	32.7	29.2	25.9
Zinc	88.9	278J	80.5	266J	209	73.7	84.5J	73.6J	81.1J	76.4J	78.1J	80.9J	74.4

Notes: All concentrations are in milligrams per kilogram (mg/kg - parts per million (ppm)).
Cyanide was not detected in any of these samples.

--- = Analyte not detected in this sample but present in another.

J = Semi-quantitative due to QA/QC requirements.

B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

TABL[illegible]
VALID ANALY[illegible]AL RESULTS
AREA 4 SOIL BORING SAMPLES
VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	SB21:10-14	SB22:9-11	SB23:6-9	SB32:6-9 (SB23:6-9 Dup.)	SB23:9-10	SB24:3-5	SB24:11-15
1,1-Dichloroethane	---	---	1J	---	---	---	---
Chloroform	---	---	---	---	---	---	5J
2-Butanone	---	---	29J	---	---	3J	4J
Benzene	---	---	3J	---	---	---	---
Toluene	210J	---	7	---	---	---	---
Ethylbenzene	520J	---	9	---	---	---	---
Xylenes	760J	3J	47	840J	4J	---	---
TIC Compounds							
Total Unknowns	7000J	13J	220J	35300J	---	---	---
Total Unknown Hydrocarbons	13600J	---	---	29600J	---	---	---
Unknown Sub. Cyclohexane	4000J	---	---	12000J	---	---	---
Decane	4300JN	---	---	---	---	---	---
Dimethyl Cyclohexane	---	---	180J	---	---	---	---
Dimethyl Cyclopentane	---	---	160J	---	---	---	---
Dimethyl Nonane	4000J	---	---	---	---	---	---
Dimethyl Octane	---	---	1570J	---	---	---	---
Ethylmethyl Benzene	---	8.5J	---	---	23J	---	---
Ethylmethyl Heptane	---	---	360J	---	---	---	---
Heptane	3300JN	---	---	---	---	---	---
Methyl Cyclohexane	5900JN	18JN	450JN	---	19JN	---	---
Methyl Nonane	---	---	390J	---	---	---	---
Methyl Propyl Cyclohexane	---	---	580J	---	---	---	---
Propylheptanol	---	---	320J	---	---	---	---
Trimethylbenzene	4000J	---	---	5900J	13J	---	---
Trimethyl Octane	---	---	---	10000J	---	---	---

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No volatile organic compounds were detected in SB22:11-13, SB22:13-15, SB23:11-13, SB24:0-3, SB25:2-4, SB25:4-6, and SB25:6-8.

--- Compound not detected in this sample, but present in another.

J Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.

N Identified TIC.

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TAB[illegible] 3 contd.
AREA 4 SOIL B[illegible]NG SAMPLES
SEMI-VOLATILE ORGANIC COMPOUNDS
PUROLATOR PRODUCTS COMPANY

TCL Compound	SB21:10-14	SB22:9-11	SB22:12-13	SB22:14-15	SB23:6-9	SB32:6-9 (SB:23:6-9 Dup.)	SB23:9-10	SB23:11-13	SB24:3-5	SB25:4-6
Napthalene	670J	---	---	---	---	1200J	56J	---	---	---
2-Methylnaphthalene	1400	---	---	---	1300J	1800J	120J	---	---	---
Acenaphthene	---	---	---	---	780J	560J	---	---	---	---
Dibenzofuran	---	---	---	---	580J	---	---	---	---	---
Fluorene	430J	---	---	---	1000J	1100J	---	---	---	---
Phenanthrene	1100	44J	48J	---	4900	5800	140J	---	---	---
Anthracene	---	---	---	---	1000J	930J	---	---	---	---
Di-n-Butylphthalate	---	---	44J	---	580J	---	---	---	---	---
Fluoranthene	---	42J	40J	---	4900	4500	63J	45J	---	---
Pyrene	---	85J	---	---	2600	3900	---	---	---	---
Benzo(a)Anthracene	---	190XJ	---	---	2300	3300	---	---	---	---
Chrysene	870	190XJ	110J	---	2100J	2800	---	---	---	---
Bis(2-Ethylhexyl)phthalate	---	---	---	---	970J	---	---	---	73J	---
Di-n-Octyl Phthalate	---	---	---	---	340J	---	---	---	---	---
Benzo(b)Fluoranthene	---	---	---	---	3100XJ	4200XJ	---	---	---	---
Benzo(k)Fluoranthene	---	---	---	---	3100XJ	4200XJ	---	---	---	---
Benzo(a)Pyrene	---	---	---	---	1400J	2000J	---	---	---	---
Indeno(1,2,3-cd)Pyrene	---	---	---	---	530J	850J	---	---	---	---
Dibenzo(a,h)Anthracene	---	---	---	---	---	360J	---	---	---	---
Benzo(g,h,i)Perylene	---	---	---	---	570J	800J	---	---	---	---
TIC Compounds										
Total Unknown	44100J	5390J	7700J	240J	143600J	145000J	4500J	---	5610J	---
Total Unknown Hydrocarbons	99900J	21000J	17900J	---	184000J	211000J	14500J	---	---	---
Total Unknown Cyclic Hydrocarbons	5700J	---	---	---	---	---	---	---	---	---
Total Unknown PAH	---	---	1300J	---	---	---	---	---	---	---
2-Cyclohexyl,2-Cyclodecane	8200JN	---	---	---	---	---	---	---	---	---
Dimethylheptadecane	---	3900JN	8130J	---	---	24000J	12500J	---	---	---
Hexatriacontane	---	---	---	---			1100JN	---	---	---
Iron,Tricarbonyl[N-(Phenyl)]	---	4400JN	---	---	20000JN	---	---	---	---	---
Methyl Tridecane	---	---	---	---	---	---	2100J	---	---	---
N-Propyl-Benzamide	---	---	---	---	---	---	---	---	---	---
Tetramethyl Benzene	6200J	---	---	---	---	---	---	---	---	460JN
Tetramethylheptadecane	---	---	---	---	---	---	3000J	---	---	---
2,6,10,14-Tetramethylpentadecane	---	---	---	---	21000JN	---	---	---	---	---
Undecylcyclohexane	---	---	---	---	---	---	1100J	---	---	---

Notes: All concentrations are in micrograms per liter (ug/l = parts per billion (ppb)).
No semi-volatile organic compounds were detected in SB23:0-3, SB24:11-15, SB25:6-8.

--- = Compound not present in this sample but present in another.
J = Semi-quantitative due to concentration below Contract Required Quantitation Limit (CRQL), data validation requirements or compound being a TIC.
N = Identified TIC.
X = Identifies coeluting indistinguishable isomers.

TABLE 3 contd.
VALID ANALYTICAL RESULTS
AREA 4 SOIL BORING SAMPLES
PESTICIDE/PCB COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compound	SB21:10-14	SB22:9-11	SB22:12-13	SB23:6-9	SB32:6-9 (SB23:6-9 Dup.)	SB23:9-10
Arochlor 1248	13000C	780	140	35000C	28000C	---
Arochlor 1254	---	---	---	---	---	190

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No pesticide/PCB compounds were detected in SB22:13-15, SB23:11-13, SB24:0-3, SB24:3-5, SB24:11-15, SB25:2-4, SB25:4-6, and SB25:6-8.

--- = Compound not detected in this sample, but present in another.

C = Value confirmed by GC/MS Analysis.

TABLE 3 contd.
VALID ANALYTICAL RESULTS
AREA 4 SOIL BORING SAMPLES
METALS AND CYANIDE
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	SB21:10-14	SB22:9-11	SB22:12-13	SB22:14-15	SB23:6-9	SB32:6-9 (SB23:6-9 Dup.)	SB23:9-10	SB23:11-13	SB24:0-3	SB24:3-5	SB24:11-15	SB25:2-4	SB25:4-6	SB25:6-8
Aluminum	13600J	28100J	16000	7480	20000J	21500	22900J	14600J	14600J	13500J	24400J	13700J	19200J	27100J
Antimony	---	---	---	9.98J	---	11.38J	---	---	---	---	---	---	---	---
Arsenic	16.6J	8.6J	3.9J	3.9J	9.6J	---	14.1J	14.5J	4.7J	3.0J	12.3J	7.4J	9.7J	8.2J
Barium	628J	272J	135	91.7	1110J	553	278J	150J	139J	84.1J	202J	81.7J	194J	252J
Beryllium	.64B	1.1B	.55B	.34B	.90B	1.0B	.96B	.51B	.65B	.59B	.99B	.56B	.75B	1.1B
Cadmium	322	2.3	4.5	---	476	160	44.0	10.6	---	---	---	---	---	---
Chromium	851J	40.9J	31.9J	12.8J	1250J	482J	137J	47.6J	21.3J	18.6J	35.4J	19.4J	29.1J	32.3J
Copper	221J	40.1J	31.1	15.4	382J	146	66.8J	29.8J	22.3J	16.3J	40.7J	20.5J	33.1J	28.1J
Lead	133	12.5J	13.1	7.9	235	88.0	28.0J	19.3J	11.4J	12.8J	17.8J	13.8J	14.4J	16.8J
Mercury	1.9J	.28J	---	---	2.2J	1.7	.94J	.24J	.27J	.36J	.33J	.31J	.22J	.26J
Nickel	273	60.1	44.2	19.5	366	159	79.6	38.3	29.7	24.0	48.0	27.4	43.0	52.1
Tin	---	---	---	---	5.2B	---	---	---	---	---	---	---	---	---
Zinc	1160J	141J	108J	48.2J	2590J	962J	293J	126J	84.8J	73.9J	154J	75.7J	104J	105J
Cyanide	57.9	1.7	2.9	---	38.5	29.1	18.2	2.5	---	---	1.0	---	---	---

Notes: All concentrations are in milligrams per kilogram (mg/kg = parts per million (ppm)).

--- = Analyte not detected in this sample but present in another.

J = Semi-quantitative due to QA/QC requirements.

B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

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TABLE 3 contd.

TABLE 6-9
VALID ANALYTICAL RESULTS
SEMI-VOLATILE ORGANIC COMPOUNDS, PESTICIDES AND PCBs
SOIL SAMPLES
1986 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Compound	L-1	L-2	L-4	L-8*	L-5	L-6	L-7	D-12-5	SB-31-7
PCB-1016	120	---	---	---	---	---	---	---	---
PCB-1248	---	24000	---	---	3150 J	---	---	---	---
PCB-1254	---	---	230	290	---	150	53	---	---
PCB-1260	110	---	---	---	---	---	---	---	---
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	96 J	---
Naphthalene	NA	NA	NA	NA	NA	NA	NA	170	---
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	140 J	---
Flurorene	NA	NA	NA	NA	NA	NA	NA	83 J	---
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	605	---
Anthracene	NA	NA	NA	NA	NA	NA	NA	190	---
Di-n-butylphthalate	NA	NA	NA	NA	NA	NA	NA	230	3600 J
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	550	---
Pyrene	NA	NA	NA	NA	NA	NA	NA	350	---
Benzo (a) Anthracene	NA	NA	NA	NA	NA	NA	NA	250 J	---
Chrysene	NA	NA	NA	NA	NA	NA	NA	370	---
Bis(2-ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	---	800 J

NOTES: All concentrations in parts per billion (ppb).

--- = Compound not detected in this sample, but present in another.

NA = Compound not analyzed for in this sample.

J = Semi-quantitative value due to QA/QC data validation requirements or value below CRQL.

* = L-8 is a duplicate of L-4.

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TABLE 4
VALID ANALYTICAL RESULTS
AREA 5 SOIL BORING SAMPLES
VOLATILE ORGANIC AND PESTICIDE/PCB COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL VOC	SB14:1-3	SB14:3-5	SB14:6-8	SB15:1-3	SB15:3.5-4.5	SB15:4-5	SB16:4-6	SB17:2-4	SB17:5-7	SB17:8-10	SB18:1-3	SB18:4-6	SB18:6-8	SB19:2-4	SB19:4-6	SB20:4-6	SB20:8.5-10
Carbon Disulfide	—	—	—	—	—	—	—	—	—	—	4J	—	1J	—	—	—	—
1,1-Dichloroethene	—	—	—	—	—	—	—	—	—	—	4J	5J	—	—	—	—	—
1,2-Dichloroethene	—	—	—	—	50	—	—	—	—	—	90	110	—	—	—	—	—
1,1,1-Trichloroethane	—	—	—	—	10	—	—	2J	—	—	—	—	—	—	—	—	—
Trichloroethene	4J	3J	2J	7	240EJ	27	3J	—	—	2J	14	19	—	30	2J	1J	2J
Toluene	—	—	—	—	—	—	—	5J	—	—	—	—	—	—	—	—	—
Ethylbenzene	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—
Styrene	—	—	—	—	—	—	—	1J	—	—	—	—	—	—	—	—	—
Xylenes	—	—	—	—	—	—	—	2J	—	—	—	—	—	—	—	—	—
TIC Volatiles																	
Total Unknowns	—	—	—	—	16J	—	—	35.8J	140J	—	245.1J	—	23J	—	—	—	—
Total Unknown Alcohols	—	—	—	—	—	—	—	—	—	—	—	—	31J	—	—	—	—
TCL Pesticide/PCB																	
Arochlor 1248	—	—	—	—	580	—	—	—	—	—	1500	—	—	—	—	—	—
Arochlor 1254	310	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes: All concentrations are in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No volatile organic and pesticide/PCB compounds were detected in SB16:0-2, SB16:2-4, SB19:6-8, and SB20:6-8.

— = Compound not present in this sample, but present in another.
J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.
B = Contamination found in associated blank. Sample value is greater than 10 times the associated blank value.
E = Estimated value. Sample result is over the instrument's linear calibration range by less than 10%.

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TABLE 4 contd.
VALID ANALYTICAL RESULTS
AREA 5 SOIL BORING SAMPLES
SEMI-VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	SB14:1-3	SB14:3 5	SB15:1-3	SB15:3.5-4.5	SB15:4-5	SB16:0-2	SB16:2-4	SB17:2-4	SB17:5-7
Benzoic Acid	220J	---	---	990J	---	---	---	85J	---
Acenaphthylene	---	---	---	---	---	---	---	---	---
Acenaphthene	---	---	---	---	---	---	---	---	---
Fluorene	---	---	---	---	---	---	---	---	---
N-Nitrosodiphenylamine	---	---	---	42J	---	---	---	---	---
Pentachlorophenol	---	---	---	---	---	54J	---	---	---
Phenanthrene	100J	---	---	---	---	---	---	---	---
Anthracene	---	---	---	---	---	---	---	---	---
Di-n-Butylphthalate	---	---	---	120J	---	110J	---	---	55J
Fluoranthene	84J	---	---	---	---	---	---	---	---
Pyrene	110J	---	---	---	---	---	---	---	---
Butylbenzylphthalate	---	---	---	160J	---	---	---	---	---
Benzo(a)Anthracene	---	---	---	---	---	---	---	---	---
Chrysene	---	---	---	190J	---	---	---	420	---
Bis(2-Ethylhexyl)phthalate	250J	52J	89J	340J	42J	---	---	---	180J
Di-n-Octyl Phthalate	---	---	---	74J	---	---	---	---	---
Benzo(b)Fluoranthene	84XJ	---	---	---	---	---	---	---	---
Benzo(k)Fluoranthene	84XJ	---	---	---	---	---	---	---	---
TIC Compounds									
Total Unknowns	57280J	8760J	---	171300J	---	220J	600J	36100J	10700J
Total Unknown Hydrocarbons	---	---	---	---	---	---	260J	63800J	8690J
Total Unk. Cyclic Hydrocarbons	---	---	---	---	---	---	---	4700J	---
Alochlor	---	---	210JN	---	---	---	---	---	---
Bromochlorobenzene	---	---	---	---	---	---	---	---	---
Benzo Quinoline	---	---	---	---	---	---	---	---	---
Dimethyl Heptadecane	---	---	---	---	---	---	300J	---	3900J
Heptadecane	---	---	---	---	---	---	---	---	990JN
Mono(2-Ether)Hexanedioic Acid	---	---	---	---	---	---	---	---	---
2,6,10,14-Tetramethyl Hexadecane	---	---	---	---	---	---	---	---	1000JN
2,6,10,15-Tetramethyl Heptadecane	---	---	---	---	---	---	---	---	2200JN

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No semi-volatile organic compounds were detected in SB14:6-8, SB15:6-8, SB16:4-6, and SB20:6-8.

--- = Compound not detected in this sample, but present in another.
J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.
X = Identifies coeluting indistinguishable isomers.
N = Identified TIC.

TABLE 4 (cont'd)

TCL Compounds	SB17:8-10	SB18:1-3	SB18:4-6	SB18:6-8	SB19:2-4	SB19:4-6	SB19:6-8	SB20:4-6	SB20:8.5-10
Benzoic Acid	---	84J	---	---	---	---	---	72J	---
Acenaphthylene	---	---	---	---	---	---	---	360	47J
Acenaphthene	---	---	---	---	---	---	---	77J	---
Fluorene	---	---	---	---	---	---	---	130J	---
N-Nitrosodiphenylamine	---	---	---	---	---	---	---	---	---
Pentachlorophenol	---	---	---	---	---	---	---	---	---
Phenanthrene	---	91J	---	---	95J	---	---	87J	---
Anthracene	---	---	---	---	---	---	---	530	---
Di-n-Butylphthalate	---	---	56J	47J	---	---	---	---	---
Fluoranthene	---	84J	---	---	340J	---	---	120J	---
Pyrene	---	130J	---	---	380J	---	---	130J	---
Butylbenzylphthalate	---	---	---	---	180J	---	---	---	---
Benzo(a)Anthracene	---	310J	---	---	380XJ	---	---	---	---
Chrysene	---	---	---	---	380XJ	---	---	---	---
Bis(2-Ethylhexyl)phthalate	75J	---	58J	---	1200	45J	53J	270J	---
Di-n-Octyl Phthalate	---	150J	---	---	230J	---	---	---	---
Benzo(b)Fluoranthene	---	---	---	---	---	---	---	---	---
Benzo(k)Fluoranthene	---	---	---	---	---	---	---	---	---
TIC Compounds									
Total Unknowns	---	120300J	9890J	870J	104000J	---	---	34300J	---
Total Unknown Hydrocarbons	---	20700J	2960J	---	92000J	---	---	31300J	---
Total Unk. Cyclic Hydrocarbons	---	---	---	---	---	---	---	---	---
Alochlor	---	---	---	---	---	---	---	---	---
Bromochlorobenzene	---	---	---	---	---	---	---	---	230J
Benzo Quinoline	---	---	---	---	---	---	---	2100J	---
Dimethyl Heptadecane	---	---	---	---	---	---	---	---	---
Heptadecane	---	---	---	---	---	---	---	---	---
Mono(2-Ether)Hexanedioic Acid	390JN	---	---	---	---	---	---	---	---
2,6,10,14-Tetramethyl Hexadecane	---	---	---	---	---	---	---	---	---
2,6,10,15-Tetramethyl Heptadecane	---	---	---	---	---	---	---	---	---

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No semi-volatile organic compounds were detected in SB14:6-8, SB15:6-8, SB16:4-6, and SB20:6-8.

--- = Compound not detected in this sample, but present in another.
J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.
X = Identifies coeluting indistinguishable isomers.
N = Identified TIC.

TABLE 4 contd.
VALID ANALYTICAL RESULTS
AREA 5 SOIL BORING SAMPLES
METALS AND CYANIDE
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	SB14:1-3	SB14:3-5	SB14:6-8	SB15:1-3	SB15:3.5-4.5	SB15:4-5	SB16:0-2	SB16:2-4	SB16:4-6	SB17:2-4
Aluminum	8220J	9870J	10600J	9470J	13700J	16100J	13300J	15100J	14400J	10900J
Antimony	---	---	---	---	---	---	---	---	---	---
Arsenic	8.3J	11.2J	5.4J	5.0J	9.4J	11.9J	5.4J	---	---	---
Barium	95.9J	56.5J	85.8J	64.3J	219J	173J	106J	131J	119J	52.6J
Beryllium	.28B	.26B	.28B	---	.56B	.61B	.39B	.58B	.50B	.31B
Cadmium	143	18.6	---	1.6	107	---	5.7	---	4.9	1.3
Chromium	296J	45.3J	25.8J	19.2J	2750J	112J	38.6J	19.2J	31.3J	19.2J
Copper	82.3J	34.2J	18.7J	32.0J	352J	35.1J	24.6J	16.6J	54.3J	39.3J
Lead	24.4	17.8	8.4	12.3	73.0	15.5	16.9J	40.7	11.8	11.2
Mercury	.12	---	---	---	.96	---	---	---	---	---
Nickel	130	36.7	227	22.6	138	34.4	29.3	25.6	40.3	26.9
Silver	2.0BJ	---	---	---	6.8J	---	---	---	---	---
Tin	115	12.8	---	---	113	---	---	---	---	---
Zinc	406J	128J	72.7J	92.4J	373J	102J	91.9J	79.0J	87.3	99.4J
Cyanide	2.2	1.6	1.0	.70	25.0	---	.63	---	---	---

Notes: All concentrations are in milligrams per kilogram (mg/kg = parts per million (ppm)).
SB15:6-8 not submitted for analysis.
--- = Analyte not detected in this sample but present in another.
J = Semi-quantitative due to QA/QC requirements.
B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

TABLE 4 (cont'd)

Analyte	SB17:5-7	SB17:8-10	SB18:1-3	SB18:4-6	SB18:6-8	SB19:2-4	SB19:4-6	SB19:6-8	SB20:4-6	SB20:7-8.5	SB20:8.5-10
Aluminum	18300J	15200J	9780J	9070J	20900J	7940J	9030J	9060J	9150J	8740J	11300J
Antimony	---	---	8.6BJ	---	---	23.7J	---	---	---	---	---
Arsenic	---	5.2J	2.3BJ	---	---	---	5.3J	5.3J	5.1J	5.1J	32.4J
Barium	124J	105J	132J	51.9J	126J	85.8J	76.9J	77.9J	55.1J	46.4J	116
Beryllium	.67B	.61B	.26B	.29B	.67B	---	.28B	.25B	.25B	.28B	.50B
Cadmium	---	---	439	15.7	1.9	3390	---	---	38.7	4.0	---
Chromium	29.1J	23.1J	4060J	54.6J	52.8J	13000J	26.9J	15.9J	94.8J	78.6J	126J
Copper	24.6J	21.9J	337J	38.6J	29.8J	1910J	38.1J	20.2J	94.4J	49.6J	23.6J
Lead	14.9	12.5	45.1	12.8	14.9	50.3	10.9J	22.8J	14.1J	9.4J	23.6J
Mercury	---	---	.39	---	---	---	.21J	.25J	.22J	.26J	.30J
Nickel	39.3	26.2	516	35.2	44.0	320	20.3	20.7	21.6	21.2	23.1
Silver	---	---	7.9J	---	---	3.0J	---	---	2.8J	---	---
Tin	---	---	193	9.7	---	133	---	---	---	---	---
Zinc	93.7J	71.6J	2290J	111J	106J	3460J	71.2J	62.8J	165J	72.1J	74.0J
Cyanide	.86	---	114	2.2	1.1	167	6.2	3.2	6.2	.57	.67

Notes: All concentrations are in milligrams per kilogram (mg/kg = parts per million (ppm)).
SB15:6-8 not submitted for analysis.
--- = Analyte not detected in this sample but present in another.
J = Semi-quantitative due to QA/QC requirements.
B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

TABLE 5
VALID ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	SS1:0-1	SS2:0-1	SS4:0-1	SS5:0-1	SS6:0-1	SS7:0-1	SS9:0-1	SS21:0-1 (SS9:0-1 Dup.)
Vinyl Chloride	2J	---	---	---	---	---	---	---
Methylene Chloride	---	---	---	22BJ	---	---	---	---
Acetone	---	---	---	5J	34J	---	---	---
Carbon Disulfide	---	---	---	---	---	---	---	15J
1,1 Dichloroethane	3J	---	---	---	---	---	---	---
1,2 Dichloroethene	43	2J	1J	---	4J	---	---	---
2-Butanone	---	---	---	---	9J	---	---	---
1,1,1 Trichloroethane	11	---	---	---	---	---	---	---
Trichloroethene	130	---	5J	---	2J	---	7J	10J
Chlorobenzene	---	---	---	1J	---	---	---	---
TIC Compounds								
Unknowns	---	---	---	---	---	99J	---	---

Notes: All concentrations are in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No volatile organic compounds were detected in SS3:0-1, and SS8:0-1.

--- = Compounds not present in this sample, but present in another.

J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.

B = Contaminant found in associated blank. Sample value is greater than 10 times the associated blank value.

TABLE 5 contd.
VALID ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
SEMI-VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	SS1:0-1	SS2:0-1	SS20:0-1 (SS2:0-1 Dup.)	SS3:0-1	SS4:0-1	SS5:0-1	SS6:0-1	SS7:0-1	SS8:0-1	SS9:0-1	SS21:0-1 (SS9:0-1 Dup.)
Phenol	—	—	---	—	57J	—	—	—	—	—	—
4-Methylphenol	---	---	---	---	100J	---	---	---	---	---	---
2,4 Dimethylphenol	---	---	---	---	180J	---	---	---	---	---	---
Benzoic Acid	—	—	---	—	—	—	990J	260J	—	—	—
Naphthalene	—	—	---	300J	1500	55J	7600J	210J	—	—	—
2-Methylnaphalene	—	—	---	110J	1700	84J	3000J	350J	72J	—	—
Acenaphthene	71J	—	---	260J	1900	---	8300J	—	---	—	—
Dibenzofuran	---	---	---	200J	1300	---	4900J	83J	---	—	---
Fluorene	—	—	---	250J	1800	---	8400J	—	---	—	—
Pentachlorophenol	—	---	---	---	—	49J	---	—	—	—	—
Phenanthrene	450	210J	130J	2600	10000	---	77000	260J	—	—	—
Anthracene	130J	50J	---	560	3400	---	18000	—	—	—	—
Di-n-Butylphthalate	—	59J	---	60J	95J	—	—	—	---	---	---
Fluoranthene	720	480	210J	3700	18000	220J	110000	210J	—	—	—
Pyrene	520	320J	140J	2400	11000	180J	65000	200J	—	—	—
Benzo(a)Anthracene	430	220J	350J	1400	8700	76J	43000	140J	—	3400J	—
Chrysene	340J	200J	190J	1500	7200	54J	32000	140J	—	3600J	490J
Bis(2 Ethylhexyl)Phthalate	46J	62J	80J	86J	300J	---	---	—	2200J	7300	—
Di-n-Octyl Phthalate	—	130J	--	---	—	---	---	—	—	—	---
Benzo(b)Fluoranthene	890XJ	410XJ	380XJ	2500XJ	19000XJ	52XJ	69000XJ	—	150J	---	—
Benzo(k)Fluoranthene	890XJ	410XJ	380XJ	2500XJ	19000XJ	52XJ	69000XJ	—	—	—	—
Benzo(a)Pyrene	350J	210J	200J	1400	7400	---	33000	—	—	—	---
Indeno(1,2,3-cd)Pyrene	---	---	99J	490	2800	---	16000	—	—	—	—
Dibenz(a,h)Anthracene	---	---	---	190J	810	---	5200J	—	---	—	—
Benzo(g,h,i)Perylene	---	---	99J	440	2500	---	17000	—	—	—	—
Acenaphthylene	---	---	--	---	150J	---	---	—	—	—	—

TABLE 5 contd.
VALID ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
METALS AND CYANIDE
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	SS1:0-1	SS2:0-1	SS20:0-1 (SS2:0-1 Dup.)	SS3:0-1	SS4:0-1	SS5:0-1	SS6:0-1	SS7:0-1	SS8:0-1	SS9:0-1	SS21:0-1 (SS9:0-1 Dup.)
Aluminum	9420	8280	10300	14400J	6910J	16400J	6760J	8180J	7550	7840J	7440J
Antimony	---	---	---	---	---	---	---	---	11.7J	25.9J	18.1J
Arsenic	11.3J	---	---	9.5J	---	247	6.4J	16.3	4.1J	8.1J	---
Barium	229	129	152	288	2510J	732J	588	88.4J	318	766J	697J
Beryllium	---	.36B	---	.47B	.52B	7.6	.44B	.76B	---	---	---
Cadmium	25.1J	50.9J	17.1J	2.9	26.5J	---	78.9J	---	622	796J	830J
Chromium	1280	823	641	28.1	169J	26.2J	1220	10.6J	3940	10100J	7370J
Copper	33.7	46.6J	34.3J	83.8J	1210J	56.6J	442J	64.3J	459J	1110J	819J
Lead	19.6	20.3	15.3	29.5	292J	57.1J	88.2J	14.1J	110	311J	286J
Mercury	---	.13J	.31J	.12	.35	.13	.51	---	.52	.78J	1.1J
Nickel	119	59.6	46.9	40.4	224	52.5	138	---	198	452J	520J
Selenium	---	---	---	---	---	---	---	---	---	---	---
Silver	---	---	---	---	---	---	---	---	2.6BJ	4.6BJ	---
Thallium	---	---	---	---	---	16.7J	---	---	---	---	---
Tin	---	---	---	---	15.5	---	---	5.4	435	387J	478J
Zinc	106	135	121	162J	2840J	95.1J	535J	44.1J	3880	11100J	12600J
Cyanide	.74	2.3	1.2	.73	3.6	---	10.7	---	25.5	40.3J	38.5J

Notes: All concentrations are in milligrams per kilogram (mg/kg= parts per million (ppm)).
--- = Analyte not detected in this sample but present in another.
J = Semi-quantitative due to QA/QC requirements.
B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

TABLE 5 contd.
VALID ANALYTICAL RESULTS
SURFACE SOIL SAMPLES
PESTICIDE/PCB COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compound	SS2:0-1	SS20:0-1 (SS2:0-1 Dup.)	SS3:0-1	SS4:0-1	SS5:0-1	SS6:0-1	SS7:0-1	SS8:0-1	SS9:0-1	SS21:0-1 (SS9:0-1 Dup.)
HeptachlorEpoxide	15	---	---	---	---	---	---	---	---	---
Arochlor 1248	---	540	3700C	5300C	320	11000C	1000	3300C	14000C	8900C
Arochlor 1254	---	---	---	1000	---	---	---	---	---	---

Notes: All concentrations are in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No pesticide/PCB compounds were detected in SS1:0-1.

--- = Compound not present in this sample, but present in another.

C = Value confirmed by GC/MS analysis.

TABLE 6-11
VALID ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
SOIL SAMPLES
1986 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Compound	SB-5-5	SB-8-5	SB-8-7.5	SB-10-2.5	SB-10-7.5	SB-11-2.5	SB-11-7.5	SB-12-2.5	SB-12-5	SB-13-2.5	SB-15-2.5	SB-15-2.5 (DUP)	SB-15-7.5
Trichloroethene	12.4	50.8	23.5 J	28.9	25.4 J	253	39.7 J	118	65.1	7.57	83.9	139	118
Tetrachloroethene	---	150	---	6.34	---	---	---	---	---	---	---	---	---
1,1,-Dichloroethane	---	---	---	8 58	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	13.5 J	18.5	15.0 J	20.5	---	20.2 J	---	14.6	---	---	8.04
t-1,2-Dichloroethene	---	---	9.22 J	--	13.0 J	---	---	---	---	---	---	---	5.75
Trichlorofluoromethane	---	---	---	---	---	---	---	---	---	---	---	---	---
Methylene Chloride	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---

Compound	SB-17-7.5	SB-18-2.5	SB-18-5	SB-19-5	SB-20-5	SB-22-5	SB-22-5 (DUP)	SB-22-7.5	SB-23-7.5	SB-23-7.5 (DUP)	SB-24-2.5	SB-24-7.5	SB-25-2.5
Trichloroethene	7.13	156	16.9	14.9	7.59	28.9	18.9	23.6	---	---	112	27.5	4.92
Tetrachloroethene	7.65	7.83	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	18.5	11.2	19.8	---	24.7	22.7	---	20.7	---	25.7	---	21.6
t-1,2-Dichloroethene	---	---	---	---	---	---	---	---	---	---	22.6	10.4	---
Trichlorofluoromethane	---	---	---	---	---	---	---	---	---	---	---	---	15.0
Methylene Chloride	---	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 6

TABLE 6-11 (cont'd)

Compound	SB-25-2.5 (DUP)	SB-26-2.5	SB 26-7.5	SB-27-7.5	SB-27-7.5 (DUP)	SB-29-10	SB 31-7	SB-31-7 (DUP)	D-9-2.5	D-9-5	D-9-7.5
Trichloroethene	5.14	121	3.46	58.5	42.4	5.69	5.07	7.53	47.7	98.2	44.4
Tetrachloroethene	---	7.97		12.7	17.8	---		---	5.86	7.31	---
1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	26.9	48.1	12.2	18.1	20.4	---	---	---	---	20.8	---
t-1,2-Dichloroethene	---	---	---	---	---	---	---	---	---	---	22.2
Trichlorofluoromethane	18.4	29.0	---	15.3	13.1	---	---	---	---	---	---
Methylene Chloride	---	15.8	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	---	---	--	---	---	---	---	---	---	14.3	---

Notes: All concentrations are in parts per billion (ppb).
--- = Compound not detected in this sample, but present in another.
J = Semi-quantitative value due to QA/QC data validation requirements.

TABLE 7

VALID ANALYTICAL RESULTS

OIL/WATER SEPARATOR SAMPLES

VOLATILE ORGANIC COMPOUNDS, PESTICIDES/PCBs

AND TOTAL PETROLEUM HYDROCARBONS

1990 REMEDIATION INVESTIGATION

PUROLATOR PRODUCTS COMPANY

TCL - VOC	SW-OWS	SED-OWS	SB26*	SB27:0-4	SB:28:2-4
Acetone	91J	6800J	---	---	---
Chloroform	0.6J	---	---	---	---
Toluene	---	---	---	2J	---
Chlorobenzene	---	---	---	1J	---

TIC Volatiles					
Unknown Compounds	65J	---	---	---	---
Unknown Hydrocarbons	120J	50000J	---	---	---
Decane	---	24000JN	---	---	---
Undecane	25JN	---	---	---	---
Undecane and Unknown	---	13000J	---	---	---
Dichlorobenzene and Unknown	---	15000J	---	---	---
Ethylmethylbenzene	---	6200J	---	---	---
Trimethylbenzene	---	8800J	---	---	---
TCL Pesticide/PCB					
Delta - BHC	---	---	---	130	---
Total Petroleum Hydrocarbons	1100	180000	NA	3000	NA

Notes: All volatile and pesticide concentrations are in micrograms per kilogram (ug/kg) except SW-OWS which is in micrograms per liter (ug/l). Both units are equivalent to parts per billion (ppb). TPH concentrations are milligrams per liter (mg/l) for SW-OWS and milligrams per kilogram (mg/kg) for SED-OWS and SB27:0-4. Both units are equivalent to parts per million (ppm).

--- = Compound not present in this sample but detected in another.

J = Estimated value due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL), or compound being a TIC.

N = Identified TIC.

NA = Not analyzed for in this sample.

* = Sample from SB26 was collected at a depth of 5.5 to 7.5 feet.

TABLE 7
VALID ANALYTICAL RESULTS
OIL/WATER SEPARATOR SAMPLES
SEMI-VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	SW-OWS	SED-OWS	SB26	SB27:0-4	SB28:2-4
Phenol	---	---	---	390J	---
2-Methylphenol	---	---	---	230J	---
4-Methylphenol	---	---	---	550J	---
Nitrobenzene	---	220J	---	---	---
2,4-Dimethylphenol	---	---	---	550J	---
Naphthalene	---	400J	---	18000	---
2-Methylnapthalene	---	1000J	---	6400	---
Acenaphthylene	---	---	---	880J	---
Acenaphthene	---	380J	---	25000	---
Dibenzofuran	---	180J	---	15000	---
Diethylphthalate	---	---	71J	---	---
Fluorene	15J	650J	---	26000	---
Phenanthrene	29J	3100J	55J	190000	---
Anthracene	---	3100J	---	31000	---
Fluoranthene	22J	2300J	79J	320000	---
Pyrene	48J	2400J	69J	210000	---
Benzo(a)Anthracene	21J	---	50J	160000	---
Chrysene	32J	---	---	130000	---
Bis(2-Ethylhexyl)phthalate	---	1700J	---	---	---
Benzo(b)Fluoranthene	60XJ	3400J	40J	330000XJ	---
Benzo(k)Fluoranthene	60XJ	3400J	---	330000XJ	---
Benzo(a)Pyrene	18J	1300J	---	130000	---
Indeno(1,2,3-cd)Pyrene	---	890J	---	29000	---
Dibenzo(a,h)Anthracene	---	400J	---	12000	---
Benzo(g,h,i)Perylene	---	1000J	---	28000	---

TIC Compounds	SW-OWS	SED-OWS	SB26	SB27:0-4	SB28:2-4
Total Unknowns	28300J	71000J	4900J	302000J	3120J
Total Unknown Hydrocarbons	48000J	96200J	160J	86000J	---
Total Unknown PAH	---	---	---	344000J	---
Total Unknown Alcohol	2800J	---	---	---	---
Benzofluoranthene	---	---	---	50000J	---
Benzonapthofuran	---	---	---	56000J	---
Dimethylphenanthrene	---	---	---	36000J	---
Dodecanamide,N,N-Bis(2-Hydro)	---	---	480JN	---	---
Heptadecane	---	---	---	---	370JN
Hexadecane	---	---	---	---	370JN
Hexadecanoic Acid	---	---	520JN	---	---
Methyl Chrysene	---	---	---	50000J	---
Tetradecanoic Acid	---	---	360JN	---	---

Notes: SW-OWS concentrations in micrograms per liter (ug/l = parts per billion (ppb)). All other concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL), or compound being a TIC.
N = Identified TIC.
X = Identifies coeluting indistinguishable isomers.
--- = Compound not detected in this sample, but present in another.

TABLE 7 contd.
VALID ANALYTICAL RESULTS
OIL/WATER SEPARATOR SAMPLES
METALS AND CYANIDE
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	SW-OWS	SED-OWS	SB26	SB27:0-4	SB28:2-4
Aluminum	933J	9700	13000J	10900J	13600J
Arsenic	---	7.7J	5.0J	10.9J	3.4J
Barium	165BJ	256	98.8J	319J	156J
Beryllium	---	---	.60B	.61B	.67B
Cadmium	11.5J	44.0J	---	41.4	---
Chromium	16.2J	153J	18.5J	45.1J	37.7J
Copper	67.1J	425	23.5J	502J	41.4J
Lead	51.9J	158J	11.4J	58.3	12.3J
Mercury	---	.65	.24J	.43J	.25J
Nickel	---	73.5	22.8	129	31.0
Tin	---	26.5	---	8.4	---
Zinc	269J	767	75.1J	675J	78.0J
Cyanide	---	2.7J	---	4.3	---

Notes: All concentrations, except for SW-OWS, are in milligrams per kilogram (mg/kg = parts per million (ppm)). Units for SW-OWS are micrograms per liter (ug/l = parts per billion (ppb)).

--- = Analyte not detected in this sample but present in another.
J = Semi-quantitative due to QA/QC requirements.
B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

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TABLE 8
VALID ANALYTICAL RESULTS
UNNAMED DRAINAGE WAY SEDIMENT SAMPLES
VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compound	TS1:2-3	TS2:0-1	TS2:2-3	TS4:0-1	TS21:0-1 (TS4:0-1 Dup.)	TS6:0-1	TS7:0-1	TS20:0-1 (TS7:0-1 Dup.)	TS9:0-1
2-Butanone	---	---	---	---	---	---	---	1J	---
Trichloroethene	3J	2J	8	5J	6J	6	3J	7J	3J

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No volatile organic compounds were detected in TS1:0-1, TS1:5-6, TS2:5-6, TS3:0-1, TS3:2-3, TS3:5-6, TS4:2-3, TS4:5-6, TS5:0-1, TS5:2-3, TS5:5-6, TS8:2-3, TS8:5-6, TS8:0-1.

J = Semi-quantitative due to concentration below Contract Required Quantitation Limit (CRQL).

— = Compound not detected in this sample, but present in another.

VALID ANALYTICAL RESULTS
UNNAMED DRAINAGE (SEDIMENT SAMPLES
SEMI-VOLATILE O NIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TABLE 8 contd.

TCL Compounds	TS1:0-1	TS1:2-3	TS2:0-1	TS2:2-3	TS2:5-6	TS3:0-1	TS4:0-1	TS21:0-1 (TS4:0-1 Dup.)	TS4:2-3
Phenol	---	---	---	---	---	---	---	---	---
4-Methylphenol	---	---	---	---	---	50J	---	---	---
Nitrobenzene	---	---	---	---	470J	---	---	---	---
Benzoic Acid	---	82J	---	80J	---	240J	780J	360J	---
Naphthalene	110J	330J	190J	68J	---	350J	330J	120J	---
2-Methylnaphthalene	130J	540	330J	110J	---	620	490	130J	---
Acenaphthylene	---	76J	120J	---	---	72J	69J	---	---
Acenaphthene	---	51J	95J	---	---	67J	120J	---	---
Dibenzofuran	---	160J	120J	---	---	200J	170J	---	---
Fluorene	---	85J	140J	---	---	73J	140J	---	---
Pentachlorophenol	---	---	---	---	---	---	---	---	---
Phenanthrene	540J	560	1200	99J	---	670	1500	260J	---
Anthracene	140J	76J	170J	---	---	100J	210J	---	---
Di-n-Butylphthalate	---	140J	---	---	---	67J	66J	160J	---
Fluoranthene	890	890	1500	200J	---	560	2500	300J	---
Pyrene	430J	520	950	110J	---	600	1700	---	---
Benzo(a)Anthracene	380J	530	1600	130J	---	810	1100	280J	---
Chrysene	420J	480	880	140J	---	480	1100	280J	---
Bis(2-Ethylhexyl)phthalate	---	60J	---	---	---	---	100J	330J	82J
Di-n-Octyl Phthalate	---	---	---	---	---	---	---	---	---
Benzo(b)Fluoranthene	690XJ	1300XJ	1300XJ	190JXJ	---	1000XJ	1700XJ	460XJ	---
Benzo(k)Fluoranthene	690XJ	1300XJ	1300XJ	190JXJ	---	1000XJ	1700XJ	460XJ	---
Benzo(a)Pyrene	380J	440J	600	100J	---	320J	770	300J	---
Indeno(1,2,3-cd)Pyrene	120J	130J	300J	58J	---	190J	310J	200J	---
Dibenzo(a,h)Anthracene	---	62J	---	---	---	56J	98J	---	---
Benzo(g,h,i)Perylene	110J	160J	470	51J	---	300J	380J	190J	---
1,2,4-Trichlorobenzene	---	---	---	---	46J	---	---	---	---
4-Chloro-3-Methylphenol	---	---	---	---	---	---	---	---	---
TIC Compounds									
Benzeneamine,Hydrochloride	---	---	---	---	930JN	---	---	---	---
BenzoFluorene	---	---	---	---	---	---	---	---	---
BenzoPyrene	310J	---	---	---	---	---	---	---	---
Decane	---	---	---	---	---	---	---	---	---
4-Methyl Octane	---	---	---	---	---	---	---	---	200JN
Total PCB	---	3500J	---	3690J	---	30600J	8700J	---	---
Total Unknown Aldehyde	4900J	---	---	---	---	---	---	---	---
Total Unknown Hydrocarbon	4520J	---	---	520J	---	1700J	14140J	---	3030J
Total Unknown Sub.Hydrocarbon	5400J	---	---	---	---	---	---	---	---
Total Unknown PAH	---	---	---	---	---	---	---	---	---
Total Unknowns	1840J	36260J	80600J	14430J	---	83800J	20370J	263200J	2250J

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No semi-volatile organic compounds were detected in TS1:5-6, TS3:2-3, TS3:5-6, TS5:5-6.

J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.
N = Identified TIC.
X = Identifies coeluting indistinguishable isomers.
--- = Compound not detected in this sample, but present in another.

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TABLE ((cont'd)

TCL Compounds	TS4:5-6	TS5:0-1	TS5:2-3	TS6:0-1	TS6:2-3	TS6:5-6	TS7:0-1	TS20:0-1 (TS7:0-1 Dup.)	TS8:0-1	TS9:0-1
Phenol	---	---	---	---	---	---	---	100J	---	---
4-Methylphenol	---	---	---	---	---	---	210J	320J	---	290J
Nitrobenzene	---	---	---	---	---	---	---	---	---	---
Benzoic Acid	---	---	---	130J	---	---	230J	440J	640J	180J
Naphthalene	---	45J	---	---	---	---	440J	460J	550J	470J
2-Methylnaphthalene	---	80J	---	45J	---	---	550J	560J	690J	690J
Acenaphthylene	---	130J	---	---	59J	---	---	110J	---	140J
Acenaphthene	---	---	---	---	---	---	330J	470J	840J	350J
Dibenzofuran	---	51J	---	---	---	---	290J	310J	540J	330J
Fluorene	---	130J	---	---	59J	---	340J	450J	600J	320J
Pentachlorophenol	---	---	---	---	---	---	---	370J	440J	---
Phenanthrene	43J	380J	---	84J	120J	---	4300	6600	8300	3900
Anthracene	---	92J	---	---	---	---	570J	770J	950J	690J
Di-n-Butylphthalate	---	---	---	---	---	---	---	---	390J	---
Fluoranthene	75J	310J	---	140J	130J	45J	15000	15000	20000	11000
Pyrene	55J	250J	---	100J	94J	---	5600J	11000	13000J	6700
Benzo(a)Anthracene	54J	250J	---	100J	94J	---	3900J	8000	11000	4400
Chrysene	42J	150J	---	74J	67J	---	5100J	7000	11000	5500
Bis(2-Ethylhexyl)phthalate	---	53J	---	---	---	---	890J	1200B	600J	440J
Di-n-Octyl Phthalate	---	---	---	---	---	---	440J	---	---	---
Benzo(b)Fluoranthene	88XJ	290XJ	---	180XJ	120XJ	42J	12000XJ	18000XJ	30000XJ	17000XJ
Benzo(k)Fluoranthene	88XJ	290XJ	---	180XJ	120XJ	---	12000XJ	18000XJ	30000XJ	17000XJ
Benzo(a)Pyrene	52J	150J	---	87J	55J	---	5600J	8200	11000	6200
Indeno(1,2,3-cd)Pyrene	---	58J	---	---	---	---	1800J	4000	6000	4100
Dibenzo(a,h)Anthracene	---	---	---	---	---	---	830J	800J	1500J	1000J
Benzo(g,h,i)Perylene	---	62J	---	---	---	---	1800J	3900	6300	4900
1,2,4-Trichlorobenzene	---	---	---	---	---	---	---	---	---	---
4-Chloro-3-Methylphenol	---	---	---	---	---	---	---	---	---	160J
TIC Compounds										
Benzeneamine, Hydrochloride	---	---	---	---	---	---	---	---	---	---
BenzoFluorene	---	230J	---	---	---	---	---	---	---	---
BenzoPyrene	---	---	---	---	---	---	---	---	---	---
Decane	---	---	---	150JN	---	---	---	---	---	---
4-Methyl Octane	---	---	---	---	---	---	---	---	---	---
Total PCB	---	---	---	1310J	---	---	---	---	---	---
Total Unknown Aldehyde	---	---	---	---	---	---	---	---	---	---
Total Unknown Hydrocarbon	---	---	---	3600J	---	---	78000J	---	111200J	52800J
Total Unknown Sub.Hydrocarbon	---	---	---	---	---	---	---	---	---	---
Total Unknowns	700J	5490J	800J	5670J	2070J	1020J	389000J	386600J	394300J	168100J

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion = (ppb)).
No semi-volatile organic compounds were detected in TS1:5-6, TS3:2-3, TS3:5-6, TS5:5-6.

J = Semi-quantitative due to QA/QC criteria outside of control limits, value below Contract Required Quantitation Limit (CRQL) or compound being a TIC.
N = Identified TIC.
X = Identifies coeluting indistinguishable isomers.
--- = Compound not detected in this sample, but present in another.
B = Contaminant found in associated blank. Sample value is greater than 10 times the associated blank value.

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TABLE 8 contd.
VALID ANALYTICAL RESULTS
UNNAMED DRAINAGE WAY SEDIMENT SAMPLES
PESTICIDE/PCB COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compound	TS1:0-1	TS1:2-3	TS2:0-1	TS2:2-3	TS3:0-1	TS4:0-1	TS21:0-1 (TS4:0-1 Dup.)	TS5:0-1	TS6:0-1	TS7:0-1	TS20:0-1 (TS7:0-1 Dup.)
Heptachlor Epoxide	---	---	---	---	---	---	---	---	---	31	---
Dieldrin	---	---	---	---	---	---	---	---	---	39	---
Arochlor 1260	---	---	---	---	---	---	240	---	---	---	---
Arochlor 1254	570	3400C	1500C	1100C	6800C	3000C	---	210	1200C	---	570

Notes: All concentrations in micrograms per kilogram (ug/kg = parts per billion (ppb)).
No pesticide/PCB compounds were detected in TS1:5-6, TS2:5-6, TS3:2-3, TS3:5-6, TS4:2-3, TS4:5-6, TS5:2-3, TS5:5-6, TS6:2-3, TS6:5-6, TS8:0-1, TS9:0-1.

C = Value confirmed by GC/MS analysis.

--- = Compound not detected in this sample, but present in another.

TABLE 8 contd.
VALID ANALYTICAL RESULTS
UNNAMED DRAINAGE WAY SEDIMENT SAMPLES
METALS AND CYANIDE
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	TS1:0-1	TS1:2-3	TS1:5-6	TS2:0-1	TS2:2-3	TS2:5-6	TS3:0-1	TS3:2-3	TS3:5-6	TS4:0-1	TS21:0-1 (TS4:0-1 Dup.)
Aluminum	15400J	20000J	12100J	10100J	15200J	14800J	14600	21800J	15300	8620	10100
Antimony	—	—	—	...	—	—	—	—	—	—	10.6BJ
Arsenic	—	6.3J	9.2J	15.7	12.0	2.4	...	—	23.0J	—	—
Barium	510	327	126	260J	637J	127J	455	253	174	830J	194J
Beryllium	.65B	.76B	.40B	.65B	.95B	.60B	.63B	1.0B	.40B	.44B	.30B
Cadmium	9.6J	6.7J	—	44.8J	59.1J	1.5J	49.4J	—	—	55.6J	372J
Chromium	68.4	56.1	16.5	246J	208J	22.0J	373	27.8	22.3	150J	3920J
Copper	146J	72.4J	—	181J	217J	4.9BJ	338	—	—	542	814
Lead	61.5J	45.8J	13.2	153J	126J	43.9J	199J	16.0	14.0	109J	106J
Mercury	.44	2.3	.12	.88	.60	—	.99J	—	—	.57J	.97J
Nickel	38.7	34.9	23.0	41.8	59.9	20.9	73.0	21.4	21.5	96.5J	1510J
Tin	—	—	—	7.7	5.2B	—	5.1B	—	—	7.7	—
Zinc	217J	160J	58.3J	443J	386J	80.7J	964	102J	65.1	621J	1090J
Cyanide	.82	16.7	—	.87	1.3	—	3.7	—	—	19.8	49.5

Notes: All concentrations are in milligrams per kilogram (mg/kg = parts per million (ppm)).

— = Analyte not detected in this sample but present in another.

J = Semi-quantitative due to QA/QC requirements.

B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

TABLE 8 (cont'd)

Analyte	TS4:2-3	TS4:5-6	TS5:0-1	TS5:2-3	TS5:5-6	TS6:0-1	TS6:2-3	TS6:5-6	TS7:0-1	TS20:0-1 (TS7:0-1 Dup)	TS8:0-1	TS9:0-1
Aluminum	18400	18100	20600J	25100J	14000J	21100J	22100J	14400	8300J	10500J	9850	15600J
Antimony	---	---	---	---	---	---	---	---	---	---	---	---
Arsenic	9.5J	5.0J	---	---	8.8J	---	---	---	6.0J	5.5	6.8J	5.8J
Barium	254	230	243	297	166	257	334	179	183	224J	319	222
Beryllium	.89B	.66B	.69B	.94B	.30B	.71B	.85B	.46B	.32B	.82B	.40B	.68B
Cadmium	81.5J	22.4J	52.6J	2.7J	---	4.7J	18.8J	---	25.9J	38.3J	56.8J	28.1J
Chromium	87.1	30.0	39.4	40.9	23.0	32.7	40.6	16.8	157	299J	226	347
Copper	79.9	34.2	104J	---	---	---	33.3	---	269J	349J	427	329
Lead	17.3	14.1	36.9J	18.6	11.0	25.8	18.2	12.8	143J	190J	218J	192J
Mercury	---	---	.21	.40	---	.29	.19	.11J	.62J	.68	.90J	.58
Nickel	60.1	35.5	63.9	30.9	21.8	30.3	38.4	24.1	57.0	80.2	77.0	83.9
Tin	---	6.0B	---	---	---	---	---	---	8.5	13.1	12.6	16.7
Zinc	96.7	85.0	126J	111J	58.4J	113J	132J	61.2	619J	801J	794	855J
Cyanide	1.1	---	61.0	.74	---	2.2	1.5	---	1.6	1.2	1.3	1.4

Notes: All concentrations are in milligrams per kilogram (mg/kg = parts per million (ppm)).
--- = Analyte not detected in this sample but present in another.
J = Semi-quantitative due to QA/QC requirements.
B = *Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).*

TABLE 9
PREVIOUS INVESTIGATIONS ANALYTICAL RESULTS
PUROLATOR PRODUCTS COMPANY

Event:	USEPA	July 28, 1980									NYSDEC	March 25, 1981				NYSDEC	June 10, 1981			
Location:	Area 1	Area 1	Area 2	Area 2	Area 3	Area 4	N.Ditch	S.Ditch	N. Ditch	S. Ditch	N.Ditch	002	Area 6	"Tap"	*	Area 3	Area 1/2**	Area 4	Area 6	S.Ditch
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil	Sed.	Sed.	Water	Water	Sed	Water	Water	Water	Soil	Soil	Soil	Soil	Water	Water
Sample #:	50851	50852	50853	50854	50855	50856	50857	50858	80149	80150	#5	#7	#9	#10	"Soil"	81-161-02	81-161-03	81-161-04	81-161-05	81-161-06
Organics (ppb)																				
Chloroform	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	—	—	—	—	N/A	200	—	N/A	—
Methylene Chloride	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	—	—	—	—	N/A	610	200	N/A	5
t-1,2 Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	—	—	5	N/A	—	—	—	—	—
1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21	—	20	—	N/A	N/A	—	—	N/A	6
Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34	5	180	44	N/A	N/A	200	—	N/A	—
alpha-BHC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.02	—	N/A	N/A	330	—	N/A	—
gamma-BHC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	—	—	—	N/A	N/A	30	—	N/A	—
alpha-Endosulfan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	—	—	—	N/A	N/A	—	—	N/A	0.07
Heptachlor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	—	—	—	N/A	N/A	20	—	N/A	—
PCB-1248	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	—	—	—	N/A	N/A	—	320000	N/A	—
Metals (ppm)																				
Arsenic	40	440	250	80	30	800	320	80	—	—	—	—	—	—	30	2.9	28	N/A	—	—
Beryllium	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33	—	—	—	—	—
Cadmium	4	33	3	4	200	1200	2300	70	0.134	0.017	0.088	0.016	0.007	0.008	31	130000	22	N/A	—	—
Chromium	120	1400	380	540	3200	1200	940	780	0.214	—	0.040	0.005	16	0.008	480	130000	16	N/A	5.4	—
Copper	240	330	310	380	580	5300	680	540	0.165	—	0.548	0.008	0.014	—	1000	13000	25	N/A	0.040	0.025
Lead	140	120	100	140	100	1100	180	200	—	—	—	0.04	—	—	~230	~180	—	N/A	0.080	—
Mercury	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.84	—	0.57	N/A	—	—
Nickel	54	58	52	40	100	100	80	97	0.035	—	—	—	—	0.03	800	~400	33	N/A	—	—
Silver	—	—	—	—	—	—	—	—	—	—	0.01	0.007	0.007	0.012	0.16	—	0.24	N/A	—	—
Selenium	30	100	3	100	200	180	220	140	—	—	—	—	—	—	—	—	—	N/A	—	—
Thallium	20	20	20	20	200	20	20	20	—	—	—	—	—	—	—	—	—	N/A	—	—
Zinc	70	130	80	2500	250	32000	380	380	0.27	0.020	1.3	0.075	0.058	0.088	20	35000	17	N/A	—	0.1
Cyanide	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	—	0.016	0.013	—	N/A	N/A	N/A	N/A	N/A	N/A

Notes: All organic concentrations are in parts per billion (ppb), all metals concentrations are in parts per million (ppm).
– = Compound not detected in this sample, but present in another.
NA = Compound not analyzed for in this sample.
NYSDEC analyses performed by RECRA Research.
* = Location of "Faust Soil" unknown.
** = (Area 1/2) = Composite soil from Area 1 and Area 2.

TABLE 9
PREVIOUS INVESTIGATIONS ANALYTICAL RESULTS
PUROLATOR PRODUCTS COMPANY

Event:	USEPA	July 28, 1980								
Location:	Area 1	Area 1	Area 2	Area 2	Area 3	Area 4	N.Ditch	S.Ditch	N. Ditch	S. Ditch
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil	Sed.	Sed.	Water	Water
Sample #:	30031	30032	30033	30034	30035	30036	30037	30038	80149	80150
Organics (ppb)										
Chloroform	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
t-1,2 Dichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
alpha-BHC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
gamma-BHC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
alpha-Endosulfan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCB-1248	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Metals (ppm)										
Arsenic	40	440	250	80	38	600	320	60	—	—
Beryllium	—	—	—	—	—	—	—	—	—	—
Cadmium	4	33	3	4	200	1200	2500	70	0.134	0.017
Chromium	120	1400	380	540	3200	1200	940	780	0.214	—
Copper	240	530	310	200	580	5300	800	540	0.165	—
Lead	140	120	180	140	100	1100	180	280	—	—
Mercury	—	—	—	—	—	—	—	—	—	—
Nickel	34	38	52	40	100	160	80	97	0.036	—
Silver	—	—	—	—	—	—	—	—	—	—
Selenium	38	100	3	100	200	160	220	140	—	—
Thallium	26	20	20	20	200	20	20	25	—	—
Zinc	70	130	80	2300	290	32000	380	380	0.27	0.020
Cyanide	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Event:	NYSDEC	March 25, 1981				NYSDEC	June 10, 1981			
Location:	N.Ditch	002	Area 6	"Tap"	*	Area 3	Area 1/2**	Area 4	Area 6	S.Ditch
Matrix:	Soil	Water	Water	Water	Soil	Soil	Soil	Soil	Water	Water
Sample #:	#5	#7	#9	#10	"Soil"	81-161-02	81-161-03	81-161-04	81-161-05	81-161-0[illegible]
Organics (ppb)										
Chloroform	—	—	—	—	—	N/A	200	—	N/A	—
Methylene Chloride	—	—	—	—	—	N/A	610	200	N/A	5
t-1,2 Dichloroethene	—	—	—	5	N/A	—	—	—	—	—
1,1,1-Trichloroethane	21	—	28	—	N/A	N/A	—	—	N/A	6
Trichloroethene	34	5	180	44	N/A	N/A	200	—	N/A	—
alpha-BHC	N/A	N/A	0.02	—	N/A	N/A	330	—	N/A	—
gamma-BHC	—	—	—	—	N/A	N/A	30	—	N/A	—
alpha-Endosulfan	—	—	—	—	N/A	N/A	—	—	N/A	0.07
Heptachlor	—	—	—	—	N/A	N/A	20	—	N/A	—
PCB-1248	—	—	—	—	N/A	N/A	—	220000	N/A	—
Metals (ppm)										
Arsenic	—	—	—	—	58	2.8	28	N/A	—	—
Beryllium	—	—	—	—	33	—	—	—	—	—
Cadmium	0.080	0.010	0.007	0.005	31	130000	22	N/A	—	—
Chromium	0.040	0.005	16	0.006	480	130000	18	N/A	3.4	—
Copper	0.540	0.008	0.014	—	1000	13000	25	N/A	0.040	0.025
Lead	—	0.04	—	—	~230	~180	—	N/A	0.080	—
Mercury	—	—	—	—	0.84	—	0.57	N/A	—	—
Nickel	—	—	—	0.03	800	~480	33	N/A	—	—
Silver	0.01	0.007	0.007	0.012	0.16	—	0.24	N/A	—	—
Selenium	—	—	—	—	—	—	—	N/A	—	—
Thallium	—	—	—	—	—	—	—	N/A	—	—
Zinc	1.3	0.075	0.080	0.080	20	35000	17	N/A	—	0.1
Cyanide	—	0.016	0.013	—	N/A	N/A	N/A	N/A	N/A	N/A

Notes: All organic concentrations are in parts per billion (ppb), all metals concentrations are in parts per million (ppm).
- = Compound not detected in this sample, but present in another.
NA = Compound not analyzed for in this sample.
NYSDEC analyses performed by RECRA Research.
* = Location of "Facet Soil" unknown.
** = (Area 1/2) = Composite soil from Area 1 and Area 2.

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TABLE 10
VALID ANALYTICAL RESULTS
SURFACE WATER SAMPLES
VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	SW-1	SW-2	SW-10 (SW-2 Dup.)	SW-3	SW-4	SW-5	SW-6	SW-7
1,1-Dichloroethane	---	---	---	---	---	---	0.4J	---
cis-1,2-Dichloroethene	0.2J	0.7J	0.6J	---	---	---	5J	0.5J
Trichloroethene	---	11J	10	26J	---	---	2J	---
Chloroform	0.03J	0.08J	0.07J	---	---	---	---	---
1,1,1-Trichloroethane	---	5J	4	---	---	---	---	---
Chloromethane	6J	6J	4	24J	---	---	6J	4J
Acetone	---	---	---	34BJ	5J	3J	---	---
Carbon Disulfide	---	---	---	0.1J	---	---	0.1J	---
TIC Compounds								
Unknown Compounds	1.0J	---	---	2.2J	0.5J	---	1.5J	0.9J
Unknown Hydrocarbons	---	---	---	7.9J	---	---	---	---

Notes: All concentrations are in micrograms per liter (ug/l = parts per billion (ppb)).
Of the compounds detected, only TCE has a guidance value (11ppb) for Class C waters as presented in NYSDEC Water Quality Standards, Parts 700-705, effective September 1, 1991.

--- = *Compound not present in this sample but present in another.*

J = Semi-quantitative due to concentration below Contract Required Quantitation Limit (CRQL), data validation requirements or compound being a TIC.

B = Contaminant found in associated blank. Sample value is greater than 10 times the associated blank value.

TABLE 10 contd.
VALID ANALYTICAL RESULTS
SURFACE WATER SAMPLES
SEMI-VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	SW-1	SW-2	SW-10 (SW-2 Dup.)	SW-3	SW-4	SW-5	SW-6	SW-7
bis (2-Ethylhexyl)phthalate	---	---	---	5J	---	---	9J	4J
Benzoic Acid	---	---	---	---	---	---	---	3J
1,2-Dichlorobenzene	---	---	---	---	---	---	2J	2J
TIC Compounds								
Dimethylheptadecane	---	---	---	52J	---	---	198J	---
Tetramethylpentadecane	---	---	---	48J	---	---	---	---
Trimethyldodecane	---	---	---	---	---	---	38J	72J
Unknowns	---	---	---	62J	---	---	192J	990J
Unknown Hydrocarbons	---	---	---	462J	---	---	490J	1570J
Unknown Cyclic Hydrocarbons	---	---	---	---	---	---	28J	---

NOTES: All concentration are in micrograms per liter (ug/l = parts per billion (ppb)).
Of the compounds detected, only 1,2-Dichlorobenzene has a standard (5.0 ppb) for Class C waters as presented in NYSDEC Water Quality Standards, Parts 700-705, effective September 1, 1991.

--- = Compound not present in this sample but present in another.

J = Semi-quantitative due to concentration below Contract Required Quantitation Limit (CRQL), data validation requirements or compound being a TIC.

TABLE 10
VALID ANALYTICAL RESULTS
SURFACE WATER SAMPLES
METALS AND CYANIDE
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	NYS SWS	SW-1	SW-2	SW-10 (SW-2 Dup.)	SW-3	SW-4	SW-5	SW-6	SW-7
Aluminum	100	174B	127B	134B	766	133B	379	194BJ	548J
Arsenic	190[1]	---	---	---	---	---	3.0B	---	---
Barium	NS	81.8B	149B	150B	1100	45.8B	81.4B	163BJ	240J
Cadmium	5	---	---	---	5.4	---	---	77.8J	76.6J
Chromium	16	---	---	---	11.6	---	---	1290J	2190J
Copper	22	---	---	---	36.7J	---	27.0J	29.0J	70.8J
Lead	110	2.7BJ	---	---	15.7J	---	9.9	11.3J	28.1J
Nickel	2185	---	---	---	---	---	---	---	62.2J
Zinc	30	---	18.6BJ	17.9BJ	153	30.2	171	335J	894J
Cyanide	5.2[2]	---	---	---	20.5B	41.3	---	---	12.7

Notes:		All concentrations are in micrograms per liter (ug/l = parts per billion (ppb)).
NYS SWS	=	New York State Surface Water Standard for Class C waters as presented in NYSDEC Water Quality Standards, Parts 700-705, effective September 1, 1991, based on a reported average hardness of 125 ppm.
NS	=	No standard.
1	=	Dissolved form.
2	=	As free cyanide.
---	=	Analyte not present in this sample but present in another.
J	=	Estimated value due to QA/QC requirements.
B	=	Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).

TABLE 11
VALID ANALYTICAL RESULTS
GROUNDWATER SAMPLES
VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	NYS GWS	MWU-2	MWD-1	MWD-20 (MWD-1 dup.)	MWD-2	MWD-3	MWD-4	MWD-5	MWD-6	MWD-7	MWD-8	MWD-9	MWD-10	MWD-11	MWD-12	MWD-13	MWRB-1
Methylene Chloride	5	—	69BJ	—	—	—	—	—	—	—	—	—	—	—	—	—	3BJ
1,1-Dichloroethane	5	—	2J	—	2J	—	—	0.3J	—	1J	—	0.8J	—	—	—	1J	—
cis-1,2-Dichloroethene	5	—	32J	41J	41	0.4J	—	19J	0.3J	160J	7J	9	0.8J	23J	—	47J	—
Trichloroethene	5	—	120J	140J	190J	—	4	10J	6J	64J	40J	44	—	—	—	160	—
1,1-Dichloroethene	5	—	—	—	2J	—	—	—	—	1J	—	—	—	—	—	—	—
Chloroform	7	—	—	—	0.2J	—	—	—	1J	0.08J	0.1J	0.05J	—	—	—	0.1J	—
1,1,1-Trichloroethane	5	—	—	6J	13J	—	—	—	—	0.4J	—	0.9J	—	—	—	0.8J	—
Vinyl Chloride	2	—	—	—	—	0.4J	—	—	—	33J	—	—	—	26J	—	—	—
1,2-Dichloroethane	5	—	—	—	—	0.3J	—	—	—	—	—	—	—	—	—	—	—
Ethylbenzene	5	—	—	—	—	0.4J	—	—	—	—	—	—	—	—	—	—	—
Trichlorofluoromethane	5	—	—	19J	—	0.2J	—	0.4J	—	—	0.1J	—	—	—	—	—	—
Isopropylbenzene	5	—	—	—	—	0.7J	—	—	—	—	—	—	—	—	—	—	—
trans-1,2-Dichloroethene	5	—	—	—	—	—	—	0.2J	—	2J	0.3J	1	—	1J	—	0.3J	—
Chloromethane	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8J
Acetone	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8BJ
TIC Compounds																	
Unknown Compounds	NS	—	—	—	28J	0.9J	—	0.7J	—	—	2.4J	—	—	—	—	—	—
Unknown Hydrocarbons	NS	—	—	5.0J	—	—	—	—	—	—	0.9J	—	—	—	—	—	—
Hexane	NS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0JN

Notes: All concentrations are in micrograms per liter (ug/l = parts per billion (ppb)).

NYS GWS = New York State Groundwater Standard as presented in NYSDEC Water Quality Standards, Parts 700-705, effective September 1, 1991.

NS = No standard.

— = Compound not present in this sample, but present in another.

J = Semi-quantitative due to concentration below Contract Required Quantitation Limit (CRQL), data validation requirements or compound being a TIC.

B = Contaminant found in associated blank. Sample value is greater than 10 times the associated blank value.

N = Identified TIC.

Groundwater samples were collected during the 1990 RI using a WaTerra inertial pump consisting of a stainless steel check valve and teflon tubing. USEPA Region II representatives have raised concerns that sampling groundwater monitoring wells with this pump may result in a loss of volatile organic compounds, thus biasing volatile organic compound analytical results low. Therefore, the data presented on this table are assumed to represent minimum concentrations of volatile organic compounds in the groundwater samples. USEPA Region II has since re-sampled selected monitoring wells utilizing approved bailer methodology as presented in Appendix H.

TABLE 11 contd.
VALID ANALYTICAL RESULTS
GROUNDWATER SAMPLES
SEMI-VOLATILE ORGANIC COMPOUNDS
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

TCL Compounds	MWU-2	MWD-1	MWD-20 (MWD-1 Dup.)	MWD-2	MWD-3	MWD-4	MWD-5	MWD-6	MWD-7	MWD-8	MWD-9	MWD-10	MWD-11	MWD-12	MWD-13
bis (2-Ethylhexyl)phthalate	---	---	---	4J	---	---	---	---	---	---	---	---	---	---	---
Benzoic Acid	---	---	---	---	---	---	---	---	---	---	---	---	3J	---	---
TIC Compounds															
2,5-Cyclohexadiene-1,4-Dione	---	---	---	---	---	---	8.0JN	---	---	---	---	---	---	---	---
Unknown Oxygenated Alkane	---	---	---	---	---	---	---	---	---	---	---	---	10J	---	---
1,2-Benzenediol,3-Fluoro-	---	---	---	---	---	---	---	---	---	---	16JN	---	---	---	---
Total Unknowns	---	74J	---	---	172J	---	---	---	---	78J	116J	---	20J	32J	---

NOTES: All concentrations are in micrograms per kilogram (ug/kg = parts per billion (ppb)).
Of the compounds detected, only bis(2-Ethylhexyl)phthalate has a standard (50 ppb) as presented in NYSDEC Water Quality Standards, Parts 700-705, effective September 1, 1991.

--- = Compound not present in this sample but present in another.

J = Semi-quantitative due to concentration below CRQL or data validation requirements.

N = Identified TIC.

TABLE 11 contd.
VALID ANALYTICAL RESULTS
GROUNDWATER SAMPLES
METALS AND CYANIDE
1990 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	NYS GWS	MWU-2	MWD-1	MWD-1F	MWD-20 (MWD-1 Dup.)	MWD-20F (MWD-1F Dup.)	MWD-2	MWD-3	MWD-4	MWD-4F	MWD-5
Aluminum	NS	6360	29800J	125B	22500	137B	29900	21100	4570	186B	39400
Antimony	3*	---	---	NA	---	NA	---	---	---	---	40.1B
Arsenic	25	---	9.2B	---	10.2	2.2B	7.3B	6.5B	3.4B	---	3.0B
Barium	1000	140B	778	75.4B	917	76.0B	491	547	171B	56.3B	679
Beryllium	3*	---	1.6B	NA	1.2B	NA	1.1B	1.2B	---	---	1.5B
Cadmium	10	---	---	---	---	---	---	11.3	35.2	---	55.8
Chromium	50	18.1	249	33.4J	296	43.3J	54.0	52.4	202	145J	55.0
Copper	200	31.2J	152J	15.6B	154J	17.2B	168	148	73.7J	9.5	1200J
Lead	25	10.1J	36.2J	---	40.2J	---	---	46.8J	8.7J	---	111J
Mercury	2	---	.25	---	---	---	.26	---	---	---	5.6
Nickel	100**	---	74.1	---	71.7	---	88.4	62.3	86.7	---	79.1
Silver	50	---	---	---	---	---	---	---	---	---	---
Zinc	300	104	261J	7.2B	222J	10.1B	413	264	66.1J	5.6B	615
Cyanide	100	---	36.7	NA	32.8	NA	---	36.6	99.4	NA	---

Notes: All concentrations in micrograms per liter (ug/l = parts per billion (ppb)).
NYS GWS = New York State Groundwater Standard as presented in NYSDEC Water Quality Standards, Parts 700-705, effective September 1, 1991.
NS = No standard.
* = Guidance value.
** = Tentatively proposed USEPA MCL
--- = Analyte not present in this sample but present in another.
J = Semi-quantitative value due to QA/QC requirements.
B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).
NA = Analyte not analyzed for in this sample.
F = Filtered sample.

TABLE 11 (cont'd)

Analyte	NYS GWS	MWD-6	MWD-7	MWD-8	MWD-9	MWD-10	MWD-11	MWD-11F	MWD-12	MWD-13	MWRB-1
Aluminum	NS	9080	43300	8900	29600	6380	9710	131B	95500J	45500J	102B
Antimony	3*	---	---	---	---	---	---	NA	45.8BJ	43.5BJ	---
Arsenic	25	3.9B	7.1B	3.7B	20.4	5.1B	6.8B	5.1B	---	6.7BJ	---
Barium	1000	294	739	517	672	118B	237	113B	911J	613J	---
Beryllium	3*	---	1.8B	---	1.4B	---	---	NA	4.2BJ	1.9BJ	---
Cadmium	10	---	6.9	---	10.5	---	---	---	---	---	---
Chromium	50	20.5	92.8	17.2	960	27.6	47.2	---	318J	1540J	---
Copper	200	31.8J	274	34.1J	456	30.9J	68.7J	9.1B	337J	353J	---
Lead	25	50.1J	58.2J	27.8J	45.8J	6.2J	15.3J	---	146J	56.8J	---
Mercury	2	---	---	.25	.77	---	---	---	.25J	---	---
Nickel	100**	---	117	---	338	64.1	---	---	290J	602J	---
Silver	50	---	---	---	10.2	---	---	---	---	---	---
Zinc	300	124	698	147	254	65.0J	106	6.3B	1180J	792J	10.7BJ
Cyanide	100	---	---	---	31.9	---	---	NA	---	---	---

Notes: All concentrations in micrograms per liter (ug/l = parts per billion (ppb)).
NYS GWS = New York State Groundwater Standard as presented in NYSDEC Water Quality Standards, Parts 700-705, effective September 1, 1991.
NS = No standard.
* = Guidance value.
** = Tentatively proposed USEPA MCL
--- = Analyte not present in this sample but present in another.
J = Semi-quantitative value due to QA/QC requirements.
B = Value is above Instrument Detection Limit (IDL), but below Contract Required Detection Limit (CRDL).
NA = Analyte not analyzed for in this sample.
F = Filtered sample.

TABLE 11 contd.
VALID ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
GROUNDWATER SAMPLES
1986 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Compound	D-1	D-2	D-4	D-5	D-6	D-7	D-8	D-8 (DUP)	D-9	D-11	D-11 (DUP)	D-12	D-13	PW-3	FT
1,1-Dichloroethene	5.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---
t-1,2-Dichloroethene	31	176	---	11.5	2.96	189	25.4	23.4	---	14 Q	12	---	140	8.85	---
1,1,1-Trichloroethane	2.5 J	46.5	---	---	---	---	---	---	---	---	---	---	---	1.50	---
Trichloroethene	140	438	7.3 Q	10.0	13.9	66.5	51.3	55.1	34	---	---	---	268	9.57	2.97
Tetrachloroethene	1.0 J	---	---	---	---	---	---	---	---	---	---	---	---	0.35	0.48
Chlorobenzene	---	---	---	1.42	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	---	---	---	---	---	14.0	---	---	3.1 J	15 Q	22	---	---	---	---
Trichlorofluoromethane	---	---	---	---	---	---	---	---	---	---	---	---	---	0.86	---
1,1-Dichloroethane	---	---	---	---	---	---	---	---	2.3 J	---	---	---	---	0.58	11.4
Methylene Chloride	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8.03
Chloroform	---	---	---	---	---	---	---	---	---	---	---	---	43.6	---	---
Total Xylenes	---	---	---	---	---	---	---	---	---	---	---	11B	---	---	---

NOTES: All concentrations are in micrograms per liter (ug/l = parts per billion (ppb)).
--- = Compound not detected in this sample, but present in another.
J = Semi-quantitative value due to QA/QC data validation requirements or value below CRQL.
Q = Qualitative value due to QA/QC data validation requirements.
B = Compound found in associated blank. Sample value is greater than five times the associated blank value.

TABLE 11 contd.
VALID ANALYTICAL RESULTS
SEMI-VOLATILE ORGANICS COMPOUNDS,
PESTICIDES AND PCBs
GROUNDWATER SAMPLES
1986 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Compound	MWD-1	MWD-9	MWD-11	MWD-11 (DUP)	MWD-12
Pentachlorophenol	300	---	---	---	---
Bis(2-ethylhexyl)phthalate	7 Q	5	3	4	3
4,4' - DDT	---	---	---	0.02	---
Methoxychlor	3.0	---	---	---	---

NOTES: All concentrations are in parts per billion (ppb).
--- = Compound not detected in this sample but present in another.
Q = Qualitative due to QA/QC data validation requirements.

TABLE 11 contd.
VALID ANALYTICAL RESULTS
TOTAL AND DISSOLVED METALS AND CYANIDE
GROUNDWATER SAMPLES
1986 REMEDIAL INVESTIGATION
PUROLATOR PRODUCTS COMPANY

Analyte	MWD-1 Total	MWD-1 Filt.	MWD-3 Total	MWD-3 Filt.	MWD-4 Total	MWD-4 Filt.	MWD-9 Total	MWD-9 Filt.	MWD-10 Total	MWD-10 Filt.	MWD-11 Total	MWD-11 Filt.	MWD-11D Total	MWD-11D Filt.	MWD-12 Total	MWD-12 Filt.	MWU-2 Total	MWU-2 Filt.
Arsenic	12 J	---	10 J	5	5 J	---	10 J	---	16 J	---	9 J	3	12 J	5	41 J	---	18 J	---
Cadmium	---	---	---	---	7	---	---	---	---	---	---	---	---	---	---	---	6	---
Chromium	280	42	41	---	119	67	58	11	64	---	62	---	78	---	135	---	106	---
Copper	115	---	135	---	68	---	137	29	86	---	125	21	157	---	193	---	355	---
Lead	50	---	53	---	14	---	18	---	28	---	21	---	69	---	63	---	17	---
Mercury	---	---	0.2	0.1	0.1	---	0.2	---	0.1	---	0.2	0.1	0.1	---	---	---	---	---
Nickel	65	---	69	---	61	---	68	---	109	---	78	---	---	---	201	---	218	---
Zinc	165 J	---	208 J	---	75 J	---	130 J	---	251 J	---	162 J	---	218 J	---	568 J	---	648 J	---
Cyanide	51 J	NA	24	NA	100	NA	27	---	---	NA	---	NA	---	NA	---	NA	NA	NA

NOTES: All concentrations are in parts per billion (ppb).
D-11D is duplicate sample of D-11.
--- = Analyte not detected in this sample, but present in another.
NA = Analyte not analyzed for in this sample.
J = Semi-quantitative value due to QA/QC data validation requirements.

TABLE 12

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

-- TYPE=Groundwater (Unfiltered) --

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Vinyl Chloride	3	13	0.40	20.0	0.86	.	0.5	6.0
Methylene Chloride	2	13	2.00	69.0	1.91	.	1.0	20.0
1,1-Dichloroethene	1	13	1.00	1.0	0.86	.	1.0	12.0
1,1-Dichloroethane	6	13	0.30	2.0	0.69	.	1.0	1.0
cis-1,2-Dichloroethene	11	13	0.30	160.0	5.70	.	1.0	1.0
Chloroform	4	13	0.05	2.0	0.59	.	1.0	12.0
1,2-Dichloroethane	1	13	0.30	0.3	0.89	.	1.0	12.0
1,1,1-Trichloroethane	4	13	0.90	11.0	1.09	.	1.0	5.0
Trichloroethene	9	13	4.00	190.0	9.69	.	1.0	1.0
Ethylbenzene	1	13	0.40	0.4	0.91	.	1.0	12.0
Trichlorofluoromethane	4	13	0.10	19.0	0.82	.	1.0	10.0
trans-1,2-Dichloroethane	6	13	0.20	2.0	0.83	.	1.0	12.0
Isopropylbenzene	1	13	0.70	0.7	0.95	.	1.0	12.0
Benzoic Acid	1	11	3.00	3.0	20.62	.	50.0	50.0
bis(2-Ethylhexyl)phthalate	1	13	4.00	4.0	4.91	.	10.0	10.0
Aluminum	13	13	4570.00	95500.0	28016.86	.	.	.
Antimony	3	13	40.10	45.0	21.54	.	35.0	35.0
Arsenic	12	13	3.00	20.4	5.25	.	2.0	2.0
Barium	13	13	118.00	911.0	450.14	.	.	.
Beryllium	8	13	1.10	4.2	1.04	.	1.0	1.0
Cadmium	5	13	6.90	55.0	5.28	.	5.0	5.0
Chromium	13	13	17.20	1540.0	104.28	.	.	.
Copper	13	13	30.90	1200.0	144.06	.	.	.
Lead	12	12	6.20	146.0	36.19	.	.	.
Mercury	6	13	0.25	5.6	0.21	.	0.2	0.2
Nickel	10	13	62.30	602.0	83.12	.	39.0	39.0
Silver	1	13	10.20	10.2	4.30	.	8.0	8.0
Zinc	13	13	65.00	1180.0	257.85	.	.	.
Cyanide	4	13	31.90	99.4	9.82	.	10.0	10.0
Tin	1	13	16.10	16.1	8.39	.	15.9	15.9

TABLE 12 contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Groundwater (Filtered)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Aluminum	3	3	131.00	186.00	147.238	.	.	.
Arsenic	2	3	2.20	5.10	2.239	.	2	2
Barium	3	3	56.38	113.00	78.384	.	.	.
Chromium	2	3	38.35	145.00	25.552	.	6	6
Copper	3	3	9.10	16.40	11.234	.	.	.
Zinc	3	3	5.60	8.65	6.733	.	.	.

TABLE contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Groundwater (Background)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Aluminum	1	1	6360.0	6360.0	6360.0	.	.	.
Barium	1	1	140.0	140.0	140.0	.	.	.
Chromium	1	1	10.1	10.1	10.1	.	.	.
Copper	1	1	31.2	31.2	31.2	.	.	.
Lead	1	1	10.1	10.1	10.1	.	.	.
Zinc	1	1	104.0	104.0	104.0	.	.	.

TAB(.2 contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Soil (Surf.)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Methylene Chloride	1	7	22.00	22.00	5.00	.	5.00	18.00
Acetone	2	7	5.00	34.00	7.28	.	10.00	14.00
1,2-Dichloroethene (total)	2	7	1.00	4.00	2.54	.	5.00	6.00
2-Butanone	1	7	9.00	9.00	5.97	.	10.00	12.00
Trichloroethene	2	7	2.00	5.00	2.89	.	5.00	6.00
Chlorobenzene	1	7	1.00	1.00	2.49	.	5.00	7.00
Benzoic Acid	1	5	990.00	990.00	936.86	.	1800.00	2000.00
Naphthalene	4	6	55.00	7600.00	411.40	.	370.00	380.00
2-Methylnaphthalene	5	6	45.00	3000.00	245.98	.	370.00	370.00
Acenaphthene	3	6	260.00	8300.00	515.81	.	370.00	410.00
Dibenzofuran	3	6	200.00	4900.00	421.14	.	370.00	410.00
Fluorene	3	6	250.00	8400.00	512.68	.	370.00	410.00
Pentachlorophenol	2	4	49.00	54.00	215.16	.	1800.00	1800.00
Phenanthrene	5	6	84.00	77000.00	1332.59	.	370.00	370.00
Anthracene	3	6	560.00	18000.00	747.41	.	370.00	410.00
Di-n-butylphthalate	2	4	60.00	110.00	126.62	.	380.00	410.00
Fluoranthene	5	6	100.00	110000.00	1760.94	.	370.00	370.00
Pyrene	5	6	84.00	65000.00	1298.79	.	370.00	370.00
Benzo(a)anthracene	5	6	66.00	43000.00	886.69	.	370.00	370.00
Chrysene	5	6	54.00	32000.00	781.53	.	370.00	370.00
bis(2-Ethylhexyl)phthalate	3	5	72.00	430.00	158.00	.	370.00	410.00
Benzo(b)fluoranthene	5	6	52.00	69000.00	1265.06	.	370.00	370.00
Benzo(k)fluoranthene	5	6	52.00	69000.00	1265.06	.	370.00	370.00
Benzo(a)pyrene	4	6	51.00	33000.00	933.39	.	370.00	410.00
Indeno(1,2,3-cd)pyrene	3	6	490.00	16000.00	755.82	.	370.00	410.00
Dibenzo(a,h)anthracene	3	6	190.00	5200.00	386.74	.	370.00	410.00
Benzo(g,h,i)perylene	3	6	440.00	17000.00	753.66	.	370.00	410.00
Aroclor-1248	5	7	320.00	11000.00	756.15	.	90.00	91.00
Aroclor-1254	1	7	1000.00	1000.00	200.81	.	170.00	1000.00
Aluminum	7	7	6760.00	16400.00	10865.77	.	.	.
Arsenic	7	7	5.40	247.00	17.39	.	.	.
Barium	7	7	88.40	2510.00	334.88	.	.	.
Beryllium	7	7	0.39	7.60	0.75	.	.	.
Cadmium	5	7	2.90	78.90	5.75	.	1.10	1.30
Chromium	7	7	10.60	1220.00	85.66	.	.	.

TABLE 12 Contd.

(Continued)

TYPE=Soil (Surf.)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Copper	7	7	24.60	1210.00	110.42	.	.	.
Lead	7	7	14.10	292.00	41.70	.	.	.
Mercury	4	7	0.12	0.51	0.12	.	0.10	0.11
Nickel	6	7	20.00	224.00	41.00	.	0.40	0.40
Selenium	1	7	11.00	11.00	0.63	.	0.43	2.30
Thallium	1	7	16.70	16.70	0.43	.	0.43	0.52
Zinc	7	7	44.10	2040.00	200.44	.	.	.
Cyanide	5	7	0.63	10.70	1.40	.	0.54	0.63
Tin	2	7	5.40	15.50	2.97	.	3.50	4.20

TABLE 12 contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

---------- TYPE=Soil (Subsurf.) ----------

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Acetone	6	70	7.00	170.00	7.52	9.83	10.00	73.00
Carbon Disulfide	2	70	1.00	4.00	2.84	2.96	5.00	7.00
1,1-Dichloroethane	4	70	1.00	5.00	2.83	3.02	5.00	7.00
1,2-Dichloroethene (total)	7	70	2.00	110.00	3.44	5.24	5.00	7.00
Chloroform	1	70	5.00	5.00	2.90	2.98	5.00	7.00
2-Butanone	5	70	2.00	29.00	5.76	6.36	11.00	32.00
1,1,1-Trichloroethane	3	70	2.00	10.00	2.89	3.05	5.00	7.00
Trichloroethene	23	70	1.00	240.00	4.25	9.62	5.00	7.00
Benzene	2	70	2.00	3.00	2.86	3.00	5.00	7.00
Tetrachloroethene	1	70	1.00	1.00	2.83	2.95	5.00	7.00
Toluene	4	71	2.00	210.00	3.10	4.01	5.00	7.00
Ethylbenzene	3	71	7.00	520.00	3.18	4.54	5.00	7.00
Styrene	1	70	1.00	1.00	2.83	2.95	5.00	7.00
Xylene (total)	5	71	2.00	760.00	3.33	6.24	5.00	7.00
N-Nitroso-Di-n-propylamine	1	68	400.00	400.00	189.10	194.41	340.00	430.00
Benzoic Acid	8	68	67.00	2100.00	787.31	1112.81	1600.00	2100.00
Naphthalene	3	70	56.00	1200.00	192.29	215.52	340.00	430.00
2-Methylnaphthalene	3	70	120.00	1550.00	197.17	226.60	340.00	430.00
Acenaphthylene	2	68	47.00	360.00	185.33	196.66	340.00	430.00
Acenaphthene	2	69	77.00	670.00	188.41	200.01	340.00	430.00
Dibenzofuran	1	69	580.00	580.00	190.27	198.20	340.00	430.00
Fluorene	3	70	130.00	1050.00	193.32	208.97	340.00	430.00
N-Nitrosodiphenylamine	1	68	42.00	42.00	183.14	193.96	340.00	430.00
Pentachlorophenol	1	68	66.00	66.00	874.77	988.16	1600.00	2100.00
Phenanthrene	9	71	44.00	5350.00	185.02	241.97	340.00	430.00
Anthracene	2	69	530.00	965.00	194.78	210.61	340.00	430.00
Di-n-butylphthalate	7	69	44.00	580.00	172.57	198.80	340.00	420.00
Fluoranthene	10	70	40.00	4700.00	173.53	230.42	340.00	430.00
Pyrene	7	70	45.00	3250.00	187.34	223.83	340.00	430.00
Butylbenzylphthalate	2	69	160.00	180.00	186.68	180.00	340.00	430.00
Benzo(a)anthracene	5	70	48.00	2800.00	193.74	226.15	340.00	430.00
Chrysene	7	71	110.00	2450.00	200.80	234.45	340.00	430.00
bis(2-Ethylhexyl)phthalate	22	70	40.00	1200.00	152.54	216.49	340.00	430.00
Di-n-octylphthalate	4	70	74.00	340.00	186.18	193.97	340.00	430.00
Benzo(b)fluoranthene	3	69	69.00	3650.00	190.42	224.41	340.00	430.00

TABLE 12 contd.

(Continued)

TYPE=Soil (Subsurf.)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Benzo(k)fluoranthene	3	69	69.00	3650.00	190.42	224.41	340.00	430.00
Benzo(a)pyrene	1	69	1700.00	1700.00	193.26	212.26	340.00	430.00
Indeno(1,2,3-cd)pyrene	1	69	690.00	690.00	190.75	200.18	340.00	430.00
Dibenzo(a,h)anthracene	1	69	360.00	360.00	188.96	360.00	340.00	430.00
Benzo(g,h,i)perylene	1	69	685.00	685.00	190.73	200.05	340.00	430.00
Aroclor-1248	6	71	140.00	31500.00	62.04	173.10	84.00	100.00
Aroclor-1254	2	70	190.00	310.00	95.98	105.21	170.00	1000.00
Aluminum	71	71	7170.00	20100.00	12434.26	14011.09	.	.
Antimony	4	71	0.60	23.70	4.26	4.70	7.10	9.30
Arsenic	70	71	1.50	32.40	5.82	7.71	2.70	2.70
Barium	71	71	33.30	831.50	109.43	142.45	.	.
Beryllium	67	71	0.23	1.10	0.43	0.55	0.21	0.24
Cadmium	29	71	1.30	3390.00	2.52	84.36	1.00	1.30
Chromium	71	71	12.50	13000.00	53.03	301.63	.	.
Copper	71	71	3.70	1910.00	34.19	109.00	.	.
Lead	71	71	3.60	161.50	14.70	20.30	.	.
Mercury	21	71	0.12	1.95	0.09	0.10	0.10	0.13
Nickel	71	71	16.90	516.00	36.09	53.43	.	.
Silver	6	71	1.00	7.90	1.03	1.22	1.60	2.10
Zinc	71	71	40.20	3460.00	110.30	200.56	.	.
Cyanide	27	71	0.57	167.00	0.75	4.53	0.54	0.63
Tin	8	71	4.20	193.00	2.51	5.73	3.20	4.20

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

-- TYPE=Soil-Oil/Wat. Sep. (Subsurf.) --

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Toluene	1	3	2.00	2.00	2.62	.	6.00	6.00
Chlorobenzene	1	3	1.00	1.00	2.00	.	6.00	6.00
Naphthalene	1	3	15000.00	15000.00	836.34	.	390.00	400.00
2-Methylnaphthalene	1	3	5600.00	5600.00	602.21	.	390.00	400.00
Acenaphthene	1	3	21000.00	21000.00	935.61	.	390.00	400.00
Dibenzofuran	1	3	13000.00	13000.00	797.39	.	390.00	400.00
Diethylphthalate	1	2	71.00	71.00	119.16	.	400.00	400.00
Fluorene	1	3	22000.00	22000.00	950.23	.	390.00	400.00
Phenanthrene	2	3	55.00	190000.00	1270.54	.	400.00	400.00
Anthracene	1	3	50000.00	50000.00	1312.70	.	390.00	400.00
Fluoranthene	2	3	79.00	320000.00	1716.34	.	400.00	400.00
Pyrene	2	3	69.00	210000.00	1425.72	.	400.00	400.00
Benzo(a)anthracene	2	3	50.00	160000.00	1169.61	.	400.00	400.00
Chrysene	1	3	130000.00	130000.00	1717.92	.	390.00	400.00
Benzo(b)fluoranthene	2	3	40.00	330000.00	1302.00	.	400.00	400.00
Benzo(k)fluoranthene	1	3	330000.00	330000.00	2343.47	.	390.00	400.00
Benzo(a)pyrene	1	3	130000.00	130000.00	1717.92	.	390.00	400.00
Indeno(1,2,3-cd)pyrene	1	3	35000.00	35000.00	1109.29	.	390.00	400.00
Dibenzo(a,h)anthracene	1	3	12000.00	12000.00	776.39	.	390.00	400.00
Benzo(g,h,i)perylene	1	3	34000.00	34000.00	1090.62	.	390.00	400.00
Aluminum	3	3	10900.00	13600.00	12444.27	.	.	.
Arsenic	3	3	3.40	10.90	5.70	.	.	.
Barium	3	3	90.80	319.00	170.04	.	.	.
Beryllium	3	3	0.60	0.67	0.63	.	.	.
Cadmium	1	3	41.40	41.40	2.10	.	1.00	1.00
Chromium	3	3	10.50	45.10	31.57	.	.	.
Copper	3	3	23.50	502.00	70.75	.	.	.
Lead	3	3	11.40	50.30	20.14	.	.	.
Mercury	3	3	0.24	0.43	0.30	.	.	.
Nickel	3	3	22.80	129.00	45.01	.	.	.
Zinc	3	3	75.10	675.00	150.13	.	.	.
Cyanide	1	3	4.30	4.30	0.65	.	0.51	0.51
Tin	1	3	0.40	0.40	2.01	.	3.20	3.30

TABLE 12 (...td.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Plant 2 Yard Soil-Surf. (1986 data)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Methylene Chloride	1	20	15.00	15.00	1.9973	3.051	3.10	6.00
1,1-Dichloroethane	1	20	0.50	0.50	0.5105	0.085	0.00	0.00
trans-1,2-Dichloroethene	2	20	17.70	22.60	0.9156	3.046	1.30	1.30
1,1,1-Trichloroethane	9	20	11.60	40.10	10.6917	10.571	0.50	16.00
Trichloroethene	11	20	5.03	253.00	11.7071	719.223	3.00	3.90
Tetrachloroethene	5	20	5.06	20.50	3.1340	5.201	4.30	4.00
Trichlorofluoromethane	2	2	16.70	29.00	22.0060	.	.	.

TABLE 12 contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Plant 2 Yard Soil-Subsurf. (1986 data)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
trans-1,2-Dichloroethene	5	21	5.75	22.2	1.2740	6.3440	1.30	1.3
1,1,1-Trichloroethane	10	21	0.04	23.7	9.0790	14.5403	0.50	19.0
Trichloroethene	10	21	3.46	110.0	17.3334	91.9965	3.20	4.4
Tetrachloroethene	4	21	7.31	150.0	2.0056	22.3635	0.30	4.0
1,2-Dichlorobenzene	1	21	14.30	14.3	1.0009	1.6949	1.90	1.9
Trichlorofluoromethane	1	1	14.20	14.2	14.2000	.	.	.

TABLE 1(ntd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Soil (Background)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Acetone	1	3	5.00	5.00	5.63	.	11.0	13.0
Phenanthrene	1	3	120.00	120.00	162.60	.	350.0	410.0
Fluoranthene	1	3	220.00	220.00	199.10	.	350.0	410.0
Pyrene	1	3	220.00	220.00	199.10	.	350.0	410.0
Benzo(a)anthracene	1	3	140.00	140.00	171.25	.	350.0	410.0
Chrysene	1	3	120.00	120.00	162.60	.	350.0	410.0
Benzo(b)fluoranthene	1	3	230.00	230.00	202.07	.	350.0	410.0
Benzo(k)fluoranthene	1	3	230.00	230.00	202.07	.	350.0	410.0
Benzo(a)pyrene	1	3	130.00	130.00	167.00	.	350.0	410.0
Indeno(1,2,3-cd)pyrene	1	3	53.00	53.00	123.89	.	350.0	410.0
Benzo(g,h,i)perylene	1	3	60.00	60.00	129.12	.	350.0	410.0
Aluminum	3	3	14400.00	16300.00	15347.00	.	.	.
Arsenic	3	3	4.00	7.40	5.14	.	.	.
Barium	3	3	87.90	103.00	94.66	.	.	.
Beryllium	3	3	0.50	0.71	0.62	.	.	.
Chromium	3	3	10.80	42.20	25.70	.	.	.
Copper	3	3	4.80	5.90	5.20	.	.	.
Lead	3	3	12.90	33.40	20.05	.	.	.
Mercury	2	3	0.15	0.85	0.19	.	0.1	0.1
Nickel	3	3	16.00	30.60	22.98	.	.	.
Zinc	3	3	72.70	105.00	90.22	.	.	.

TABLE (contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Sediment-Drain Swale (Surf.)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
2-Butanone	1	9	1.00	1.00	5.61	.	12.0	18.0
Trichloroethene	5	9	2.00	6.00	3.65	.	6.0	9.0
Toluene	1	9	2.00	2.00	3.29	.	6.0	9.0
4-Methylphenol	3	8	50.00	300.00	213.87	.	370.0	760.0
Benzoic Acid	5	8	130.00	640.00	500.87	.	1900.0	3700.0
Naphthalene	8	9	45.00	550.00	235.57	.	370.0	370.0
4-Chloro-3-methylphenol	1	7	160.00	160.00	232.04	.	370.0	760.0
2-Methylnaphthalene	9	9	45.00	690.00	268.69	.	.	.
Acenaphthylene	5	7	72.00	140.00	140.85	.	370.0	760.0
Acenaphthene	6	9	67.00	840.00	226.83	.	370.0	760.0
Dibenzofuran	7	9	51.00	540.00	210.48	.	370.0	760.0
Fluorene	7	9	73.00	600.00	221.44	.	370.0	760.0
Pentachlorophenol	1	7	440.00	440.00	1043.52	.	1800.0	3700.0
Phenanthrene	9	9	84.00	8300.00	1083.19	.	.	.
Anthracene	8	9	92.00	950.00	256.21	.	370.0	370.0
Di-n-butylphthalate	3	7	67.00	390.00	190.40	.	370.0	760.0
Fluoranthene	9	9	140.00	20000.00	1738.28	.	.	.
Pyrene	9	9	100.00	13000.00	1257.24	.	.	.
Benzo(a)anthracene	9	9	100.00	11000.00	1111.55	.	.	.
Chrysene	9	9	74.00	11000.00	939.70	.	.	.
bis(2-Ethylhexyl)phthalate	5	9	53.00	1500.00	294.01	.	370.0	760.0
Benzo(b)fluoranthene	9	9	180.00	30000.00	1945.75	.	.	.
Benzo(k)fluoranthene	9	9	180.00	30000.00	1945.75	.	.	.
Benzo(a)pyrene	9	9	87.00	11000.00	855.29	.	.	.
Indeno(1,2,3-cd)pyrene	8	9	58.00	6000.00	483.73	.	370.0	370.0
Dibenzo(a,h)anthracene	5	9	56.00	1500.00	309.32	.	370.0	760.0
Benzo(g,h,i)perylene	8	9	62.00	6300.00	554.18	.	370.0	370.0
Heptachlor epoxide	1	9	31.00	31.00	7.85	.	9.0	68.0
Dieldrin	1	9	39.00	39.00	14.92	.	18.0	140.0
Aroclor-1254	7	9	210.00	6800.00	858.87	.	290.0	1400.0
Aroclor-1260	1	9	240.00	240.00	143.15	.	180.0	1400.0
Aluminum	9	9	9360.00	21100.00	13336.27	.	.	.
Antimony	1	9	10.60	10.60	5.34	.	8.1	12.7
Arsenic	8	9	3.20	15.70	5.38	.	2.3	2.3
Barium	9	9	203.50	512.00	311.74	.	.	.
Beryllium	9	9	0.37	0.71	0.58	.	.	.
Cadmium	9	9	4.70	213.00	33.80	.	.	.
Chromium	9	9	32.70	2035.00	180.06	.	.	.
Copper	9	9	21.80	670.00	202.56	.	.	.
Lead	9	9	35.00	210.00	103.37	.	.	.

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TABLE - contd.

(Continued)

TYPE=Sediment-Drain Swale (Surf.)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Mercury	9	9	0.21	0.99	0.57	.	.	.
Nickel	9	9	30.30	003.25	75.60	.	.	.
Zinc	9	9	113.00	964.00	433.01	.	.	.
Cyanide	9	9	0.02	61.00	3.16	.	.	.
Tin	6	9	5.10	16.70	5.47	.	3.7	3.7

TABLE contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Sediment-Drain Swale (Subsurf.)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Trichloroethene	2	12	3.00	8.0	3.30	.	6.00	7.00
Nitrobenzene	1	12	470.00	470.0	219.30	.	380.00	470.00
Benzoic Acid	2	12	80.00	82.0	635.09	.	1800.00	2100.00
1,2,4-Trichlorobenzene	1	12	46.00	46.0	180.60	.	380.00	470.00
Naphthalene	2	12	68.00	330.0	190.05	.	380.00	430.00
2-Methylnaphthalene	2	12	110.00	540.0	206.11	.	380.00	430.00
Acenaphthylene	2	12	59.00	76.0	166.85	.	380.00	430.00
Acenaphthene	1	12	51.00	51.0	179.04	.	380.00	430.00
Dibenzofuran	1	12	160.00	160.0	196.94	.	380.00	430.00
Fluorene	2	12	59.00	85.0	168.41	.	380.00	430.00
Phenanthrene	4	12	43.00	560.0	172.07	.	380.00	430.00
Anthracene	1	12	76.00	76.0	185.10	.	380.00	430.00
Di-n-butylphthalate	1	12	140.00	140.0	194.76	.	380.00	430.00
Fluoranthene	5	12	45.00	890.0	176.96	.	380.00	430.00
Pyrene	4	12	55.00	520.0	172.55	.	380.00	430.00
Benzo(a)anthracene	4	12	54.00	530.0	174.98	.	380.00	430.00
Chrysene	4	12	42.00	480.0	166.24	.	380.00	430.00
bis(2-Ethylhexyl)phthalate	2	12	60.00	82.0	168.85	.	380.00	430.00
Benzo(b)fluoranthene	5	12	42.00	1300.0	182.03	.	380.00	430.00
Benzo(k)fluoranthene	4	12	88.00	1300.0	206.07	.	380.00	430.00
Benzo(a)pyrene	4	12	52.00	440.0	160.69	.	380.00	430.00
Indeno(1,2,3-cd)pyrene	2	12	58.00	130.0	173.54	.	380.00	430.00
Dibenzo(a,h)anthracene	1	12	62.00	62.0	181.98	.	380.00	430.00
Benzo(g,h,i)perylene	2	12	51.00	160.0	174.69	.	380.00	430.00
Aroclor-1254	2	12	1100.00	3400.0	158.10	.	180.00	210.00
Aluminum	12	12	12100.00	25100.0	17212.40	.	.	.
Arsenic	8	12	2.40	23.0	2.87	.	0.50	2.30
Barium	12	12	126.00	637.0	232.74	.	.	.
Beryllium	12	12	0.30	1.0	0.64	.	.	.
Cadmium	7	12	1.50	81.5	3.57	.	1.10	1.30
Chromium	12	12	16.80	208.0	36.12	.	.	.
Copper	12	12	4.40	217.0	17.36	.	.	.
Lead	12	12	11.00	126.0	21.30	.	.	.
Mercury	6	12	0.11	2.3	0.14	.	0.10	0.13
Nickel	12	12	20.90	60.1	30.37	.	.	.
Zinc	12	12	58.30	386.0	98.46	.	.	.
Cyanide	5	12	0.74	16.7	0.65	.	0.57	0.66
Tin	2	12	5.20	6.0	2.34	.	3.70	4.60

TABLE 1 ontd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Sediment-N. Drainage Way

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Methylene Chloride	1	3	8.00	8.00	7.01	.	14.0	17.00
Phenanthrene	3	3	580.00	4400.00	1564.31	.	.	.
Anthracene	1	3	1200.00	1200.00	1989.02	.	4300.0	6100.00
Fluoranthene	3	3	630.00	8500.00	2523.25	.	.	.
Pyrene	3	3	560.00	8300.00	2557.74	.	.	.
Benzo(a)anthracene	2	3	1700.00	4000.00	2445.21	.	4300.0	4300.00
Chrysene	2	3	2300.00	4800.00	2873.08	.	4300.0	4300.00
bis(2-Ethylhexyl)phthalate	1	3	1400.00	1400.00	2460.69	.	4300.0	9900.00
Benzo(b)fluoranthene	2	3	2300.00	4000.00	2704.43	.	4300.0	4300.00
Benzo(k)fluoranthene	2	3	2000.00	3700.00	2515.11	.	4300.0	4300.00
Benzo(a)pyrene	2	3	2000.00	3900.00	2559.63	.	4300.0	4300.00
Indeno(1,2,3-cd)pyrene	2	3	1100.00	2000.00	1678.63	.	4300.0	4300.00
Benzo(g,h,i)perylene	2	3	1000.00	1800.00	1570.01	.	4300.0	4300.00
Aroclor-1248	1	3	1100.00	1100.00	253.16	.	100.0	590.00
Aluminum	3	3	5480.00	6680.00	5999.79	.	.	.
Arsenic	3	3	7.50	13.20	10.19	.	.	.
Barium	3	3	130.00	398.00	222.88	.	.	.
Cadmium	3	3	96.20	883.00	225.51	.	.	.
Calcium	3	3	18200.00	176000.00	69763.78	.	.	.
Chromium	3	3	225.00	4340.00	863.35	.	.	.
Cobalt	1	3	6.80	6.80	3.49	.	4.0	5.20
Copper	3	3	208.00	2870.00	712.53	.	.	.
Iron	3	3	14100.00	20400.00	16133.70	.	.	.
Lead	3	3	40.30	111.00	60.46	.	.	.
Magnesium	3	3	4130.00	5870.00	4788.82	.	.	.
Manganese	3	3	165.00	632.00	345.94	.	.	.
Mercury	3	3	0.28	0.32	0.31	.	.	.
Nickel	3	3	47.10	202.00	115.27	.	.	.
Potassium	2	3	810.00	1120.00	538.89	.	345.0	345.00
Vanadium	2	3	11.00	15.40	8.89	.	0.3	0.30
Zinc	3	3	572.00	7730.00	1652.18	.	.	.
Cyanide	1	3	7.10	7.10	1.09	.	0.8	0.92

TABLE (contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Sediment-Mays Crk. (Dwngrd)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Acetone	1	1	290.00	290.00	290.00	.	.	.
Naphthalene	1	1	3600.00	3600.00	3600.00	.	.	.
2-Methylnaphthalene	1	1	2500.00	2500.00	2500.00	.	.	.
Acenaphthene	1	1	6400.00	6400.00	6400.00	.	.	.
Dibenzofuran	1	1	4900.00	4900.00	4900.00	.	.	.
Fluorene	1	1	7600.00	7600.00	7600.00	.	.	.
Phenanthrene	1	1	55000.00	55000.00	55000.00	.	.	.
Anthracene	1	1	14000.00	14000.00	14000.00	.	.	.
Fluoranthene	1	1	58000.00	58000.00	58000.00	.	.	.
Pyrene	1	1	56000.00	56000.00	56000.00	.	.	.
Benzo(a)anthracene	1	1	29000.00	29000.00	29000.00	.	.	.
Chrysene	1	1	26000.00	26000.00	26000.00	.	.	.
bis(2-Ethylhexyl)phthalate	1	1	990.00	990.00	990.00	.	.	.
Benzo(b)fluoranthene	1	1	36000.00	36000.00	36000.00	.	.	.
Benzo(k)fluoranthene	1	1	50000.00	50000.00	50000.00	.	.	.
Benzo(a)pyrene	1	1	22000.00	22000.00	22000.00	.	.	.
Indeno(1,2,3-cd)pyrene	1	1	6300.00	6300.00	6300.00	.	.	.
Benzo(g,h,i)perylene	1	1	5900.00	5900.00	5900.00	.	.	.
Aluminum	1	1	11300.00	11300.00	11300.00	.	.	.
Arsenic	1	1	22.00	22.00	22.00	.	.	.
Barium	1	1	195.00	195.00	195.00	.	.	.
Beryllium	1	1	1.20	1.20	1.20	.	.	.
Cadmium	1	1	24.10	24.10	24.10	.	.	.
Calcium	1	1	6390.00	6390.00	6390.00	.	.	.
Chromium	1	1	92.20	92.20	92.20	.	.	.
Cobalt	1	1	8.40	8.40	8.40	.	.	.
Iron	1	1	21900.00	21900.00	21900.00	.	.	.
Lead	1	1	53.80	53.80	53.80	.	.	.
Magnesium	1	1	3930.00	3930.00	3930.00	.	.	.
Manganese	1	1	276.00	276.00	276.00	.	.	.
Mercury	1	1	0.86	0.86	0.86	.	.	.
Nickel	1	1	23.90	23.90	23.90	.	.	.
Potassium	1	1	1630.00	1630.00	1630.00	.	.	.
Vanadium	1	1	19.60	19.60	19.60	.	.	.
Zinc	1	1	439.00	439.00	439.00	.	.	.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Sediment-Area 6

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Vinyl Chloride	1	2	2.00	2.00	3.67	.	13.50	13.50
1,1-Dichloroethane	1	2	3.00	3.00	3.12	.	6.50	6.50
1,2-Dichloroethene (total)	2	2	2.00	43.00	9.27	.	.	.
1,1,1-Trichloroethane	1	2	11.00	11.00	5.98	.	6.50	6.50
Trichloroethene	1	2	130.00	130.00	20.55	.	6.50	6.50
Acenaphthene	1	2	71.00	71.00	124.27	.	435.00	435.00
Phenanthrene	2	2	170.00	450.00	276.59	.	.	.
Anthracene	2	2	50.00	130.00	80.62	.	.	.
Di-n-butylphthalate	1	2	59.00	59.00	112.63	.	430.00	430.00
Fluoranthene	2	2	345.00	720.00	498.40	.	.	.
Pyrene	2	2	230.00	520.00	345.83	.	.	.
Benzo(a)anthracene	2	2	285.00	430.00	350.07	.	.	.
Chrysene	2	2	195.00	340.00	257.49	.	.	.
bis(2-Ethylhexyl)phthalate	2	2	46.00	71.00	57.15	.	.	.
Di-n-octylphthalate	1	2	130.00	130.00	167.18	.	430.00	430.00
Benzo(b)fluoranthene	2	2	395.00	690.00	522.06	.	.	.
Benzo(k)fluoranthene	2	2	395.00	690.00	522.06	.	.	.
Benzo(a)pyrene	2	2	205.00	350.00	267.86	.	.	.
Indeno(1,2,3-cd)pyrene	1	2	99.00	99.00	145.89	.	430.00	430.00
Benzo(g,h,i)perylene	1	2	99.00	99.00	145.89	.	430.00	430.00
Heptachlor epoxide	1	2	15.00	15.00	8.66	.	10.00	10.00
Aroclor-1248	1	2	540.00	540.00	164.32	.	100.00	100.00
Aluminum	2	2	9290.00	9420.00	9354.77	.	.	.
Arsenic	2	2	4.90	11.30	7.44	.	.	.
Barium	2	2	140.50	229.00	179.37	.	.	.
Beryllium	1	2	0.36	0.36	0.22	.	0.26	0.26
Cadmium	2	2	25.10	34.00	29.21	.	.	.
Chromium	2	2	732.00	1280.00	967.97	.	.	.
Copper	2	2	33.70	40.45	36.92	.	.	.
Lead	2	2	17.80	19.60	18.68	.	.	.
Mercury	1	2	0.22	0.22	0.11	.	0.12	0.12
Nickel	2	2	53.25	119.00	79.60	.	.	.
Zinc	2	2	106.00	128.00	116.48	.	.	.
Cyanide	2	2	0.74	1.75	1.14	.	.	.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Sediment-Area 10

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Carbon Disulfide	1	2	15.00	15.00	7.75	.	8	8
Trichloroethene	1	2	8.50	8.50	5.83	.	8	8
2-Methylnaphthalene	1	1	72.00	72.00	72.00	.	.	.
Benzo(a)anthracene	1	2	3400.00	3400.00	940.21	.	520	520
Chrysene	1	2	2045.00	2045.00	729.18	.	520	520
bis(2-Ethylhexyl)phthalate	2	2	2200.00	7300.00	4007.49	.	.	.
Benzo(b)fluoranthene	1	1	150.00	150.00	150.00	.	.	.
Aroclor-1248	2	2	3300.00	11450.00	6146.95	.	.	.
Aluminum	2	2	7550.00	7640.00	7594.87	.	.	.
Antimony	2	2	11.70	22.00	16.04	.	.	.
Arsenic	2	2	4.10	7.25	5.45	.	.	.
Barium	2	2	318.00	731.50	482.30	.	.	.
Cadmium	2	2	622.00	813.00	711.12	.	.	.
Chromium	2	2	3940.00	8735.00	5866.51	.	.	.
Copper	2	2	459.00	964.50	665.36	.	.	.
Lead	2	2	110.00	298.50	181.20	.	.	.
Mercury	2	2	0.52	0.94	0.70	.	.	.
Nickel	2	2	198.00	486.00	310.21	.	.	.
Silver	2	2	2.60	4.60	3.46	.	.	.
Zinc	2	2	3880.00	11850.00	6780.71	.	.	.
Cyanide	2	2	25.50	39.40	31.70	.	.	.
Tin	2	2	432.50	435.00	433.75	.	.	.

TABLE 12 contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Surf. Water-Mays Crk. (Upgrd)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Chloromethane	1	1	6.00	6.00	6.00	.	.	.
cis-1,2-Dichloroethene	1	1	0.20	0.20	0.20	.	.	.
Chloroform	1	1	0.03	0.03	0.03	.	.	.
Aluminum	1	1	174.00	174.00	174.00	.	.	.
Barium	1	1	81.00	81.00	81.00	.	.	.
Lead	1	1	2.70	2.70	2.70	.	.	.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Sediment-Oil/Wat. Sep.

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Acetone	1	1	6800.00	6800.00	6800.00	.	.	.
Nitrobenzene	1	1	220.00	220.00	220.00	.	.	.
Naphthalene	1	1	400.00	400.00	400.00	.	.	.
2-Methylnaphthalene	1	1	1000.00	1000.00	1000.00	.	.	.
Acenaphthene	1	1	380.00	380.00	380.00	.	.	.
Dibenzofuran	1	1	180.00	180.00	180.00	.	.	.
Fluorene	1	1	650.00	650.00	650.00	.	.	.
Phenanthrene	1	1	3100.00	3100.00	3100.00	.	.	.
Anthracene	1	1	3100.00	3100.00	3100.00	.	.	.
Fluoranthene	1	1	2300.00	2300.00	2300.00	.	.	.
Pyrene	1	1	2400.00	2400.00	2400.00	.	.	.
bis(2-Ethylhexyl)phthalate	1	1	1700.00	1700.00	1700.00	.	.	.
Benzo(b)fluoranthene	1	1	3400.00	3400.00	3400.00	.	.	.
Benzo(k)fluoranthene	1	1	3400.00	3400.00	3400.00	.	.	.
Benzo(a)pyrene	1	1	1300.00	1300.00	1300.00	.	.	.
Indeno(1,2,3-cd)pyrene	1	1	890.00	890.00	890.00	.	.	.
Dibenzo(a,h)anthracene	1	1	400.00	400.00	400.00	.	.	.
Benzo(g,h,i)perylene	1	1	1000.00	1000.00	1000.00	.	.	.
Aluminum	1	1	9700.00	9700.00	9700.00	.	.	.
Arsenic	1	1	7.70	7.70	7.70	.	.	.
Barium	1	1	256.00	256.00	256.00	.	.	.
Cadmium	1	1	44.00	44.00	44.00	.	.	.
Chromium	1	1	153.00	153.00	153.00	.	.	.
Copper	1	1	425.00	425.00	425.00	.	.	.
Lead	1	1	150.00	150.00	150.00	.	.	.
Mercury	1	1	0.65	0.65	0.65	.	.	.
Nickel	1	1	73.50	73.50	73.50	.	.	.
Zinc	1	1	767.00	767.00	767.00	.	.	.
Cyanide	1	1	2.70	2.70	2.70	.	.	.
Tin	1	1	26.50	26.50	26.50	.	.	.

TABLE contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Surf. Water-Mays Crk. (Dwngrd)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Chloromethane	1	1	5.000	5.000	5.000	.	.	.
cis-1,2-Dichloroethene	1	1	0.650	0.650	0.650	.	.	.
Chloroform	1	1	0.075	0.075	0.075	.	.	.
1,1,1-Trichloroethane	1	1	4.500	4.500	4.500	.	.	.
Trichloroethene	1	1	10.500	10.500	10.500	.	.	.
Aluminum	1	1	130.500	130.500	130.500	.	.	.
Barium	1	1	149.500	149.500	149.500	.	.	.
Zinc	1	1	18.250	18.250	18.250	.	.	.
Cyanide	1	1	20.400	20.400	20.400	.	.	.

TABLE 12 contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Surf. Water-Area 10

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Chloromethane	2	2	4.0	6.0	4.90	.	.	.
Carbon Disulfide	1	2	0.1	0.1	0.22	.	1	1
1,1-Dichloroethane	1	2	0.4	0.4	0.45	.	1	1
cis-1,2-Dichloroethene	2	2	0.5	5.0	1.58	.	.	.
Trichloroethene	1	2	2.0	2.0	1.00	.	1	1
1,2-Dichlorobenzene	2	2	2.0	2.0	2.00	.	.	.
Benzoic Acid	1	2	3.0	3.0	8.66	.	50	50
bis(2-Ethylhexyl)phthalate	2	2	4.0	9.0	6.00	.	.	.
Aroclor-1248	2	2	1.3	3.0	1.97	.	.	.
Aluminum	2	2	194.0	548.0	326.06	.	.	.
Barium	2	2	163.0	240.0	197.79	.	.	.
Cadmium	2	2	76.6	77.8	77.20	.	.	.
Chromium	2	2	1290.0	2190.0	1680.80	.	.	.
Copper	2	2	29.0	70.8	45.31	.	.	.
Lead	2	2	11.3	28.1	17.82	.	.	.
Nickel	1	2	62.2	62.2	34.83	.	39	39
Zinc	2	2	335.0	894.0	547.26	.	.	.
Cyanide	1	2	12.7	12.7	7.97	.	10	10

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Surf. Water-Oil/Wat. Sep.

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Chloromethane	1	1	5.0	5.0	5.0	.	.	.
Fluorene	1	1	15.0	15.0	15.0	.	.	.
Phenanthrene	1	1	29.0	29.0	29.0	.	.	.
Fluoranthene	1	1	22.0	22.0	22.0	.	.	.
Pyrene	1	1	48.0	48.0	48.0	.	.	.
Benzo(a)anthracene	1	1	21.0	21.0	21.0	.	.	.
Chrysene	1	1	32.0	32.0	32.0	.	.	.
Benzo(b)fluoranthene	1	1	60.0	60.0	60.0	.	.	.
Benzo(k)fluoranthene	1	1	60.0	60.0	60.0	.	.	.
Benzo(a)pyrene	1	1	18.0	18.0	18.0	.	.	.
Aluminum	1	1	933.0	933.0	933.0	.	.	.
Barium	1	1	165.0	165.0	165.0	.	.	.
Cadmium	1	1	11.5	11.5	11.5	.	.	.
Chromium	1	1	16.2	16.2	16.2	.	.	.
Copper	1	1	67.1	67.1	67.1	.	.	.
Lead	1	1	51.9	51.9	51.9	.	.	.
Zinc	1	1	269.0	269.0	269.0	.	.	.

TABL 12 contd.

SUMMARY STATISTICS FOR FACET SITE, BY CHEMICAL AND MEDIUM/AREA

TYPE=Surf. Water-Drain Swale (Dwngrd)

Analyte	Num. Times Detected	Num. Samples Analyzed	Lowest Detected Conc.	Highest Detected Conc.	Geom. Mean Conc.	95 Pct. Upp. Conf. Limit	Min. Detect. Limit	Max. Detect. Limit
Chloromethane	1	3	24.00	24.00	1.017	.	1.0	1.0
Acetone	3	3	3.00	34.00	7.990	.	.	.
Carbon Disulfide	1	3	0.10	0.10	0.292	.	1.0	1.0
bis(2-Ethylhexyl)phthalate	1	3	5.00	5.00	5.000	.	10.0	10.0
Endrin ketone	1	3	0.12	0.12	0.067	.	0.1	0.1
Aluminum	3	3	133.00	766.00	337.992	.	.	.
Arsenic	1	3	3.00	3.00	2.466	.	2.0	10.0
Barium	3	3	45.00	1100.00	160.064	.	.	.
Cadmium	1	3	5.40	5.40	3.232	.	5.0	5.0
Chromium	1	3	11.60	11.60	4.709	.	6.0	6.0
Copper	2	3	27.00	36.70	15.026	.	0.0	0.0
Lead	2	3	9.90	15.70	5.377	.	2.0	2.0
Zinc	3	3	30.20	171.00	92.440	.	.	.
Cyanide	1	3	41.30	41.30	10.107	.	10.0	10.0
Tin	1	3	20.50	20.50	10.902	.	15.9	15.9

TABLE 13

TABLE EXPOSURE PATHWAY: INGESTION OF SEDIMENTS IN AREAS 6 & 10 BY TRESPASSERS, PRESENT AND FUTURE SCENARIOS

VARIABLE	RANGE	MIDPOINT	VALUE USED	RATIONALE	REFERENCE
Receptor Population				Trespassers	
Body Weight (Kg)					
Youth (Age 9-18)	30.7 - 66.7	48.7	50	50th percentile values in range; value used is ave. of range	EFH, 1989
Duration of Exposure (Years)					
Youth	1 - 10	5	10	Total years in age group	
Exposure Frequency (Days/Year)					
Youth	1 - 273	136.5	39	Assume youth trespasses 1 d/wk during spring, summer, and fall (39 weeks total)	
Ingestion Rate (Mg/Day)					
Youth	100 - 200	150	100	Value used is specified for children more than 6 years old	RAGS, 1989
Fraction Ingested from Contaminated Source (Unitless)	-	-	1	Assume that all soil contacted is contaminated	RAGS, 1989
Averaging Time (Days)					
Youth					
noncarcinogens	365 - 3650	1825	3650	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	18250	25550		

EFH, 1989. Exposure Factors Handbook, EPA /600/8-89/043. Exposure Assessment Group, Office of Health and Environmental Assessment. 1989

RAGS, 1989. Risk Assessment Guidance for Superfund, Volume I, EPA 540/1-89/002. Office of Emergency and Remedial Response. December 1989.

SEAM, 1988. Superfund Exposure Assessment Manual, EPA 540/1-88/001. Office of Remedial Response. April 1988.

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TABLE 13

TABLE EXPOSURE PATHWAY: INGESTION OF SEDIMENTS IN MAY'S CREEK BY LOCAL RESIDENTS, PRESENT AND FUTURE SCENARIOS

VARIABLE	RANGE	MIDPOINT	VALUE USED	RATIONALE	REFERENCE
Receptor Population				*Local Residents*	
Body Weight (Kg)					
Small Child (Age 3-6)	-	-	17.4	Value specified in EFH	EFH, 1989
Adult	-	-	70	By convention	RAGS, 1989
Duration of Exposure (Years)					
Small Child	1 - 3	2	3	Total years in age group	
Adult	1 - 30	15	30	90th percentile for time at a single residence	RAGS, 1989
Exposure Frequency (Days/Year)					
Small Child	1 - 273	136.5	143	Assumes 5 d/wk outdoors during summer & 3 d/wk during spring and fall (39 weeks total)	
Adult	1 - 273	136.5	78	Assume 2 d/wk outdoors during spring, summer, & fall (39 weeks total)	
Ingestion Rate (Mg/Day)					
Child	-	-	200	Value used is specified in RAGS	RAGS, 1989
Adult	-	-	100	Value used is specified in RAGS	RAGS, 1989
Fraction Ingested from Contaminated Source (Unitless)	-	-	1	Assume that all soil contacted is contaminated	RAGS, 1989
Averaging Time (Days)					
Child					
noncarcinogens	365 - 1095	730	1095	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	18250	25550		
Adult					
noncarcinogens	365 - 10950	5658	10950	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	18250	25550		

EFH, 1989. Exposure Factors Handbook, EPA /600/8-89/043. Exposure Assessment Group, Office of Health and Environmental Assessment. 1989

RAGS, 1989. Risk Assessment Guidance for Superfund, Volume I, EPA 540/1-89/002. Office of Emergency and Remedial Response. December 1989.

SEAM, 1988. Superfund Exposure Assessment Manual, EPA 540/1-88/001. Office of Remedial Response. April 1988.

FAC 003 1276

TABLE 13

TABLE EXPOSURE PATHWAY: INGESTION OF ONSITE SUBSURFACE SOILS BY UTILITY WORKERS, PRESENT AND FUTURE SCENARIOS

VARIABLE	RANGE	MIDPOINT	VALUE USED	RATIONALE	REFERENCE
Receptor Population				Utility Workers	
Body Weight (Kg)					
Adult	-	-	70	By convention	RAGS, 1989
Duration of Exposure (Years)					
Adult	1 - 30	15	20	Best professional judgement	
Exposure Frequency (Days/Year)					
Adult	1 - 365	182.5	10	Assume maintanence of buried utilities is necessary 10 for d/yr	
Ingestion Rate (Mg/Day)					
Adult	-	-	100	Value used is specified in RAGS	RAGS, 1989
Fraction Ingested from Contaminated Source (Unitless)	-	-	1	Assume that all soil contacted is contaminated	RAGS, 1989
Averaging Time (Days)					
Adult					
noncarcinogens	365 - 10950	5475	7300	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	18250	25550		

EFH, 1989. Exposure Factors Handbook, EPA /600/8-89/043. Exposure Assessment Group, Office of Health and Environmental Assessment. 1989

RAGS, 1989. Risk Assessment Guidance for Superfund, Volume I, EPA 540/1-89/002. Office of Emergency and Remedial Response. December 1989.

SEAM, 1988. Superfund Exposure Assessment Manual, EPA 540/1-88/001. Office of Remedial Response. April 1988.

FAC 003 1277

TABLE 13

TABLE EXPOSURE PATHWAY: INGESTION OF ONSITE SURFACE SOILS BY TRESPASSERS, PRESENT AND FUTURE SCENARIOS

VARIABLE	RANGE	MIDPOINT	VALUE USED	RATIONALE	REFERENCE
Receptor Population				Trespassers	
Body Weight (Kg)					
Youth (Age 9-18)	30.7 - 66.7	48.7	50	50th percentile values in range; value used is ave. of range	EFH, 1989
Duration of Exposure (Years)					
Youth	1 - 10	5	10	Total years in age group	
Exposure Frequency (Days/Year)					
Youth	1 - 273	136.5	39	Assume youth trespasses 1 d/wk during spring, summer, and fall (39 weeks total)	
Ingestion Rate (Mg/Day)					
Youth	100 - 200	150	100	Value used is specified for children more than 6 years old	RAGS, 1989
Fraction Ingested from Contaminated Source (Unitless)	-	-	1	Assume that all soil contacted is contaminated	RAGS, 1989
Averaging Time (Days)					
<u>Youth</u>					
noncarcinogens	365 - 3650	1825	3650	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	18250	25550		

EFH, 1989. Exposure Factors Handbook, EPA /600/8-89/043. Exposure Assessment Group, Office of Health and Environmental Assessment. 1989

RAGS, 1989. Risk Assessment Guidance for Superfund, Volume I, EPA 540/1-89/002. Office of Emergency and Remedial Response. December 1989.

SEAM, 1988. Superfund Exposure Assessment Manual, EPA 540/1-88/001. Office of Remedial Response. April 1988.

FAC 003 1278

TABLE 13

TABLE EXPOSURE PATHWAY: INGESTION OF SEDIMENTS IN THE NORTH DRAINAGE DITCH BY TRESPASSERS, PRESENT AND FUTURE SCENARIOS

VARIABLE	RANGE	MIDPOINT	VALUE USED	RATIONALE	REFERENCE
Receptor Population				Trespassers	
Body Weight (Kg)					
Youth (Age 9-18)	30.7 - 66.7	48.7	58	50th percentile values in range; value used is ave. of range	EFH, 1989
Duration of Exposure (Years)					
Youth	1 - 10	5	10	Total years in age group	
Exposure Frequency (Days/Year)					
Youth	1 - 273	136.5	39	Assume youth trespasses 1 d/wk outdoors during spring, summer, and fall (39 weeks/total)	
Ingestion Rate (Mg/Day)					
Youth	100 - 200	150	100	Value used is specified for children more than 6 years old	RAGS, 1989
Fraction Ingested from Contaminated Source (Unitless)	-	-	1	Assume that all soil contacted is contaminated	RAGS, 1989
Averaging Time (Days)					
Youth					
noncarcinogens	365 - 3650	1825	3650	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	18250	25550		

EFH, 1989. Exposure Factors Handbook, EPA /600/8-89/043. Exposure Assessment Group, Office of Health and Environmental Assessment. 1989

RAGS, 1989. Risk Assessment Guidance for Superfund, Volume I, EPA 540/1-89/002. Office of Emergency and Remedial Response. December 1989.

SEAM, 1988. Superfund Exposure Assessment Manual, EPA 540/1-88/001. Office of Remedial Response. April 1988.

FAC 003 1279

TABLE 13

TABLE EXPOSURE PATHWAY: INGESTION OF SEDIMENTS IN HEIGHTS DRAINAGE SWALE BY LOCAL RESIDENTS, PRESENT AND FUTURE SCENARIOS

VARIABLE	RANGE	MIDPOINT	VALUE USED	RATIONALE	REFERENCE
Receptor Population				Local Residents	
Body Weight (Kg)					
Small Child (Age 3-6)	-	-	17.4	Value specified in EFH	EFH, 1989
Adult	-	-	70	By convention	RAGS, 1989
Duration of Exposure (Years)					
Small Child	1 - 3	2	3	Total years in age group	
Adult	1 - 30	15	30	90th percentile for time at a single residence	RAGS, 1989
Exposure Frequency (Days/Year)					
Small Child	1 - 273	136.5	143	Assumes 5 d/wk outdoors during summer & 3 d/wk during spring and fall (39 weeks total)	
Adult	1 - 273	136.5	78	Assume 2 d/wk outdoors during spring, summer, & fall (39 weeks total)	
Ingestion Rate (Mg/Day)					
Child	-	-	200	Value used is specified in RAGS	RAGS, 1989
Adult	-	-	100	Value used is specified in RAGS	RAGS, 1989
Fraction Ingested from Contaminated Source (Unitless)	-	-	1	Assume that all soil contacted is contaminated	RAGS, 1989
Averaging Time (Days)					
<u>Child</u>					
noncarcinogens	365 - 1095	730	1095	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	18250	25550		
<u>Adult</u>					
noncarcinogens	365 - 10950	5658	10950	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	18250	25550		

EFH, 1989. Exposure Factors Handbook, EPA /600/8-89/043. Exposure Assessment Group, Office of Health and Environmental Assessment. 1989

RAGS, 1989. Risk Assessment Guidance for Superfund, Volume I, EPA 540/1-89/002. Office of Emergency and Remedial Response. December 1989.

SEAM, 1988. Superfund Exposure Assessment Manual, EPA 540/1-88/001. Office of Remedial Response. April 1988.

TABLE 13

TABLE EXPOSURE PATHWAY: INHALATION OF CONTAMINANTS VOLATILIZED FROM GROUND WATER WHEN RESIDENTS SHOWER, PRESENT AND FUTURE SCENARIOS

VARIABLE	RANGE	MIDPOINT	VALUE USED	RATIONALE	REFERENCE
Receptor Population				Local Residents	
Contaminant Concentration (Mg/Cu. M)					
Modeled value (See Appendix C)					
Body Weight (Kg)					
Adult	-	-	70	By convention	RAGS, 1989
Exposure Time (Hours/Day)					
Adult	0.116 - 0.2	0.158	0.2	90th percentile value for showering	RAGS, 1989
Duration of Exposure (Years)					
Adult	1 - 70	35	30	90th percentile for time at a single residence	RAGS, 1989
Exposure Frequency (Days/Year)	1 - 365	182.5	365	Assume daily showers	SEAM, 1988
Inhalation Rate (Cu. M/Hour)					
Adult	-	-	0.6	Value used is an hourly rate that is specific to showering activities	RAGS, 1989
Averaging Time (Days)					
Adult					
noncarcinogens	365 - 25550	12775	10950	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	12775	25550		

EFH, 1989. Exposure Factors Handbook, EPA /600/8-89/043. Exposure Assessment Group, Office of Health and Environmental Assessment. 1989

RAGS, 1989. Risk Assessment Guidance for Superfund, Volume I, EPA 540/1-89/002. Office of Emergency and Remedial Response. December 1989.

SEAM, 1988. Superfund Exposure Assessment Manual, EPA 540/1-88/001. Office of Remedial Response. April 1988.

FAC 003 1281

TABLE 13

TABLE EXPOSURE PATHWAY: INGESTION OF GROUND WATER BY LOCAL RESIDENTS, PRESENT AND FUTURE SCENARIOS

VARIABLE	RANGE	MIDPOINT	VALUE USED	RATIONALE	REFERENCE
Receptor Population				Local Residents	
Body Weight (Kg)					
Child (Age <6)	11.6 - 17.4	15	15	Midpoint of range	EFH, 1989
Adult	-	-	70	By convention	RAGS, 1989
Duration of Exposure (Years)					
Child	1 - 6	3	6	Total years in age group	
Adult	1 - 70	35	30	90th percentile for time at a single residence	RAGS, 1989
Exposure Frequency (Days/Year)	1 - 365	182.5	365	Value used is specified in RAGS	RAGS, 1989
Ingestion Rate (L/Day)					
Child	-	-	1	Value used is specified in EFH	EFH, 1989
Adult	-	-	2	Value used is specified in RAGS	RAGS, 1989
Averaging Time (Days)					
Child					
noncarcinogens	365 - 2190	1095	2190	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	12775	25550		
Adult					
noncarcinogens	365 - 25550	12775	10950	Range, midpoint, & value used are based on exposure duration	RAGS, 1989
carcinogens	10950 - 25550	12775	25550		

EFH, 1989. Exposure Factors Handbook, EPA /600/8-89/043. Exposure Assessment Group, Office of Health and Environmental Assessment. 1989

RAGS, 1989. Risk Assessment Guidance for Superfund, Volume I, EPA 540/1-89/002. Office of Emergency and Remedial Response. December 1989.

SEAM, 1988. Superfund Exposure Assessment Manual, EPA 540/1-88/001. Office of Remedial Response. April 1988.

FAC 003 1282

TABLE 14

TABLE POTENTIAL NONCARCINOGENIC EFFECTS OF FACET COCs: TOXICITY VALUES

Contaminant of Concern	Chronic RfD (oral) (mg/kg/day)	Confidence Level (a)	Critical Effect/Species	Uncertainty and Modifying Factors (b)	RfD Source
Volatiles					
Acetone	1×10^{-1}	low	increased liver weight and nephrotoxicity/rat	UF = 1,000 MF = 1	IRIS (2/91) (U.S. EPA study)
Benzene	--	--	--	--	--
2-Butanone	5×10^{-2}	medium	no adverse effects observed	UF = 1000 MF = 1	IRIS (3/6/91) (LaBelle and Brieger, 1955)
Carbon disulfide	1×10^{-1}	medium	fetal toxicity/malformations in rabbits	UF = 100 MF = 1	IRIS (2/5/91) (Hardin et. al., 1981)
Chloroform	1×10^{-2}	medium	fatty cyst formation in liver/dog	UF = 1,000 MF = 1	IRIS (2/91) (Heywood et. al., 1979)
Chloromethane	---	---	---	---	Heast, 1990
1,1-Dichloroethane	1×10^{-1}	---	---	---	HEAST, 1990
1,2-Dichloroethane	7.4×10^{-2} (d)	--	--	--	U.S. EPA Drinking Water Regulations and Health Advisories, 1990
cis-1,2-Dichloroethylene	1×10^{-2}	---	---	---	HEAST, 1990

TABLE 14

TABLE (CONTINUED)

Contaminant of Concern	Chronic RfD (oral) (mg/kg/day)	Confidence Level (a)	Critical Effect/Species	Uncertainty and Modifying Factors (b)	RfD Source
trans-1,2-Dichloroethylene	2×10^{-2}	low	increased serum alkaline phosphatase in male mice	UF = 1,000 MF = 1	IRIS (2/91) (Barnes et. al., 1985)
1,1-Dichloroethylene	9×10^{-3}	medium	hepatic lesions in rats	UF = 1000 MF = 1	IRIS (2/91) (Quast et. al., 1983)
Ethylbenzene	1×10^{-1}	low	liver and kidney toxicity/rat	UF = 1,000 MF = 1	IRIS (2/91) (Wolf, et al., 1956)
Methylene Chloride	6×10^{-2}	--	liver toxicity/rat	UF = 100 MF = 1	IRIS (2/91)
Tetrachloroethylene	1×10^{-2}	medium	hepatotoxicity in mice	UF = 1000 MF = 1	IRIS (2/91) (Buben and O'Flaherty, 1985)
Toluene	2×10^{-1} (c,e)	--	CNS effects/rat	UF = 100 MF = NA	HEAST, 1990
1,1,1-Trichloroethane	9×10^{-2}	medium	slight growth retardation in guinea pigs	UF = 1,000 MF = 1	IRIS (2/91) (Adams et. al., 1950 Torkelson et. al., 1958)
Trichloroethylene	7×10^{-3}	--	--	--	U.S. EPA Drinking Water Regulations and Health Advisories, 1990
Trichlorofluoromethane	3×10^{-1}	medium	histopathology in rats/mice	UF = 1,000 MF = 100	IRIS (2/91) (NCI, 1978)

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TABLE 14

TABLE (CONTINUED)

Contaminant of Concern	Chronic RfD (oral) (mg/kg/day)	Confidence Level (a)	Critical Effect/Species	Uncertainty and Modifying Factors (b)	RfD Source
Vinyl Chloride	1.4×10^{-3} (d)	--	--		U.S. EPA Drinking Water Regulations and Health Advisories, 1990
Xylenes (total)	2×10^{0}	medium	hyperactivity, increased mortality/rats	UF = 100	IRIS (2/91)
Base Neutral/Acid Extractable					
Acenaphthene	6×10^{-2}	low	hepatoxicity in mice	UF = 3,000 MF = NA	IRIS (3/91) (U.S. EPA, 1989)
Acenaphthylene	6×10^{-2}	---	---	---	U.S. EPA Drinking Water Regulations and Health Advisories, 1990 (DWRHA, 1990)
Anthracene	3×10^{-1}	low	no effects in mice	UF = 3,000 MF = 1	IRIS (3/91) (U.S. EPA, 1989)
Benzoic Acid	4×10^{0}		irritation, malaise/human	UF = 1 MF = 1	IRIS (2/91) (U.S. EPA, 1987)
Benzo(a)anthracene	---	---	---	---	IRIS (3/91)
Benzo(a)pyrene	---	---	---	---	IRIS (2/91)
Benzo(b)fluoranthene	---	---	---	---	IRIS (3/91)
Benzo(g,h,i)perylene	4×10^{-3} (g)	---	---	---	IRIS (3/91)

TABLE 14

[redacted]

TABLE (CONTINUED)

Contaminant of Concern	Chronic RfD (oral) (mg/kg/day)	Confidence Level (a)	Critical Effect/Species	Uncertainty and Modifying Factors (b)	RfD Source
Benzo(k)fluoranthene	—	—	—	—	IRIS (3/91)
Bis(2-ethylhexyl) phthalate	2×10^{-2}	medium	increased liver weight/ guinea pig	UF = 1,000 MF = 1	IRIS (10/90); (Carpenter, et al., 1953)
Chrysene	—	—	—	—	IRIS (3/21/91)
Dibenzo(a,h) anthracene	—	—	—	—	—
Dibenzofuran (f)	–	–	–	–	–
Di-n-butyl phthalate	1×10^{-1}	low	increased mortality in rats	UF = 1,000 MF = 1	IRIS (3/91) (Smith, 1953)
Di-n-octyl phthalate	2×10^{-2}	–	elevated kidney and liver weights/rat	UF = 1000 MF = NA	HEAST, 1990 (Piekacz, 1971; EPA, 1987)
Fluoroanthrene	4×10^{-2}	low	nephropathology, liver weight changes, hematological changes/mice	UF = 3,000 MF = 1	IRIS (3/91) (U.S. EPA, 1980)
Fluorene	4×10^{2}	low	hematological changes/mice	UF = 3000 MF = 1	IRIS (3/91) (U.S. EPA, 1989)
Indeno(1,2,3-cd)pyrene	—	—	—	—	IRIS (3/91)
2-Methyl naphthalene	—	—	—	—	—
Naphthalene	4×10^{-3}	—	ocular and internal lesions/rat	—	HEAST, 1990

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TABLE 14

TABLE (CONTINUED)

Contaminant of Concern	Chronic RfD (oral) (mg/kg/day)	Confidence Level (a)	Critical Effect/Species	Uncertainty and Modifying Factors (b)	RfD Source
Pentachlorophenol	3×10^{-2}	medium	liver/kidney pathology/rat	UF = 1,000 MF = 1	IRIS (2/91) (Schwetx et. al., 1978)
Phenanthrene	---	---	---	---	IRIS (3/91)
Pyrene	3×10^{-2}	low	kidney effects/mice	UF = 3,000 MF = 1	IRIS (3/91) (U.S. EPA, 1989)
Pesticides/PCBs					
Aroclor-1248	1.2×10^{-4} (d)	---	---	---	IRIS (2/91)
Aroclor-1254	1.2×10^{-4} (d)	---	---	---	IRIS (2/91)
Inorganics					
Aluminum	---	---	---	---	---
Antimony	4×10^{-4}	low	reduced lifespan, altered blood chemistries/rat	UF = 1,000 MF = 1	IRIS (2/91) (Shroeder, et al., 1970)
Arsenic	1×10^{-3} (c)	--	keratosis and hyper-pigmentation/human	UF = 1 MF = NA	HEAST, 1990
Barium	7×10^{-2}	medium	increased blood pressure in humans	UF = 3 MF = 1	IRIS (2/91) (Wones et. al., 1990; Brenniman and Levy, 1984)

TABLE 14

TABLE (CONTINUED)

Contaminant of Concern	Chronic RfD (oral) (mg/kg/day)	Confidence Level (a)	Critical Effect/Species	Uncertainty and Modifying Factors (b)	RfD Source
Beryllium	5×10^{-3}	low	no observed adverse effect/rat	UF = 100 MF = 1	IRIS (2/91) (Shroeder and Mitchner, 1975)
Cadmium	5×10^{-4}	high	significant proteinuria/ human	UF = 10 MF =1	IRIS (2/91) (U.S. EPA, 1984)
Chromium VI	5×10^{-3}	low	not defined/rat	UF = 500 MF = 100	IRIS (2/91) (MacKenzie, et. al., 1958)
Copper	--	--	--	--	IRIS (2/91)
Cyanide	2×10^{-2}	medium	weight loss, thyroid effects, myeline degeneration in rats	UF = 100 MF = 5	IRIS (2/91) (Howard and Hanzal, 1955; Philbrick et. al., 1979)
Lead	No threshold	--	--	--	IRIS (2/91)
Mercury	3×10^{-4}	--	neurotoxicity, kidney effects/rat	UF = 1,000	HEAST, 1990; (Fawer, et. al., 1987)
Nickel	2×10^{-2}	medium	decreased body weight/rat	UF = 100 MF = 3	IRIS (2/91)
Silver	3×10^{-3}	medium	argyria/humans	UF = 2 MF = 1	IRIS (2/91); (Gaul and Staud, 1935; East, et. al., 1980)

TABLE 14

TABLE (CONTINUED)

Contaminant of Concern	Chronic RfD (oral) (mg/kg/day)	Confidence Level (a)	Critical Effect/Species	Uncertainty and Modifying Factors (b)	RfD Source
Tin	6×10^{-1}	—	—	—	HEAST, 1990
Zinc	2×10^{-1}	—	anemia/humans	UF = 10 MF = N/A	HEAST, 1990 (Pories, et. al., 1967; Prasad, et. al., 1975)

-- not available

(a) Confidence level from IRIS; rated either high, medium, or low.
(b) Uncertainty Factor (UF) and Modifying Factor (MF) are adjustments used to account for the following uncertainties:

UFs (10-fold factor for each):

- variation in human sensitivity
- animal to human extrapolation
- extrapolation from subchronic to chronic NOAEL
- extrapolation from LOAEL to NOAEL

MFs (greater than zero and less than or equal to 10)

- Professional judgment based on scientific uncertainties of study and database other than those listed above; default value is 1.

(c) Under review by the EPA RfD Work Group; therefore, no IRIS entry.
(d) No RfD available. Chronic protective dose derived from Long-Term Health Advisory (HA) for adults as follows:

$$\text{Protective dose (mg/kg/day)} = \frac{\text{(Long-term HA } \mu g/L\text{) (2L exposure/day)}}{70\text{ kg } (\mu g/L)} \quad (mg/1000\ \mu g)$$

(e) New revised RfD pending.
(f) Available data inadequate for quantitative risk assessment (HEAST, 1990).
(g) The RfD for naphthalene is used as a surrogate for PAHs showing evidence of noncarcinogenic effects.

Note: Sources are IRIS (EPA, 1991b) and HEAST (EPA, 1990a).

TABLE 15

TABLE SUMMARY OF NONCARCINOGENIC HAZARD INDICES (HI) FOR THE FACET SITE[a]

Scenario	Receptor	Current/ Future	Acute HI	Chronic HI
Ground Water				
Ingestion	Resident	C/F	2.0×10^{0}(b)*	2.0×10^{1}(b)*
			4.6×10^{0}(c)*	4.6×10^{1}(c)*
Volatiles Inhalation While Showering	Re[illegible]	[illegible]	N/A	2.4×10^{-3}
Soil				
Surface Soil - Ingestion			[illegible] $\times 10^{-2}$	1.6×10^{-1}
Subsurface Soil - Ingestion			3.9×10^{-2}	6.8×10^{-3}
Surface Soil, Plant 2 Yard - Ingestion		[illegible]F	6.6×10^{-8}	2.2×10^{-5}
Subsurface Soil, Plant 2 Yard - Ingestio[illegible]		C/F	1.7×10^{-7}	6.2×10^{-7}
Oil/Water Separator - Ingestion		C/F	3.5×10^{-3}	4.1×10^{-3}
Sediment				
Height's Drainage Swale - Ingestion	Resident	C/F	1.3×10^{-1}(b)	2.4×10^{-1}(b)
			1.0×10^{0}(c)*	3.5×10^{0}(c)*
North Drainage Ditch - Ingestion	Trespasser	C/F	5.1×10^{-1}	3.9×10^{-1}
May's Creek - Ingestion	Resident	C/F	1.1×10^{-2}(b)	2.9×10^{-2}(b)
			8.5×10^{-2}(c)	4.3×10^{-1}(c)
Area 6 - Ingestion	Trespasser	C/F	3.9×10^{-2}	6.8×10^{-2}
Area 10 - Ingestion	Trespasser	C/F	5.8×10^{-1}	6.0×10^{-1}

[a]Dermal pathways not evaluated quantitatively based on current EPA Region II guidance for the Facet site (EPA, 1992).
(b) - adult
(c) - child
* HI exceeds one (1).

TABLE 15

TABLE SUMMARY OF NONCARCINOGENIC HAZARD INDICES (HI) FOR THE FACET SITE[a]

Scenario	Receptor	Current/ Future	Acute HI	Chronic HI
Ground Water				
Ingestion	Resident	C/F	2.0×10^{0}(b)* 4.6×10^{0}(c)*	2.0×10^{1}(b)* 4.6×10^{1}(c)*
Volatiles Inhalation While Showering	Resident	C/F	N/A	2.4×10^{-3}
Soil				
Surface Soil - Ingestion	Trespasser	C/F	7.3×10^{-2}	1.6×10^{-1}
Subsurface Soil - Ingestion	Worker	C/F	3.9×10^{-2}	6.8×10^{-3}
Surface Soil, Plant 2 Yard - Ingestion	Trespasser	C/F	6.6×10^{-4}	2.2×10^{-5}
Subsurface Soil, Plant 2 Yard - Ingestion	Worker	C/F	1.7×10^{-7}	6.2×10^{-7}
Oil/Water Separator - Ingestion	Worker	C/F	3.5×10^{-3}	4.1×10^{-3}
Sediment				
Height's Drainage Swale - Ingestion	Resident	C/F	1.3×10^{-1}(b) 1.0×10^{0}(c)*	2.4×10^{-1}(b) 3.5×10^{0}(c)*
North Drainage Ditch - Ingestion	Trespasser	C/F	5.1×10^{-1}	3.9×10^{-1}
May's Creek - Ingestion	Resident	C/F	1.1×10^{-2}(b) 8.5×10^{-2}(c)	2.9×10^{-2}(b) 4.3×10^{-1}(c)
Area 6 - Ingestion	Trespasser	C/F	3.9×10^{-2}	6.8×10^{-2}
Area 10 - Ingestion	Trespasser	C/F	5.8×10^{-1}	6.0×10^{-1}

[a]Dermal pathways not evaluated quantitatively based on current EPA Region II guidance for the Facet site (EPA, 1992).
(b) - adult
(c) - child
* HI exceeds one (1).

TABLE 16

TABLE .. POTENTIAL CARCINOGENIC EFFECTS OF FACET COCS: SLOPE FACTORS

Chemical	Slope Factor $(mg/kg/day)^{-1}$	EPA Weight of Evidence Classification	Type of Cancer/Species	Slope Factor Source
Volatiles				
Acetone	--	D	lack of data in humans and animals	IRIS (2/91)
Benzene	2.9×10^{-2} (oral) 2.9×10^{-2} (inhal)	A	leukemia/human	IRIS (2/91) (Rinsky, et al., 1981; Ott, et al., 1978; Wang, et al., 1983)
2-Butanone	--	D	lack of data in humans and animals	IRIS (3/91)
Carbon Disulfide	--	D	lack of data in humans and animals	IRIS (2/91)
Chloroform	6.1×10^{-3} (oral) 8.1×10^{-2} (inhal)	B2	kidney tumors/rat hepatocellular carcinoma/ female mouse	IRIS (2/91) (Jorgensen, et al., 1985; NCI, 1976)
Chloromethane	1.3×10^{-2} (oral) 6.3×10^{-3} (inhal)	C	mouse kidney mouse kidney	HEAST, 1990 (CIIT, 1981; NIOSH, 1984; US EPA, 1986,87)
1,1-Dichloroethane	--	C	hemangio-sarcoma in rat	IRIS (2/91) (NCI, 1978)
1,2-Dichloroethane	9.1×10^{-2} (oral)	B2	liver/rat and mouse	IRIS (2/91)

TABLE .16 (CON JED)

Chemical	Slope Factor (mg/kg/day)$^{-1}$	EPA Weight of Evidence Classification	Type of Cancer/Species	Slope Factor Source
cis-1,2-Dichloroethylene	--	--	--	--
trans-1,2-Dichloroethylene	--	D	lack of data in humans and animals	IRIS (2/91)
1,1-Dichloroethylene	6.0×10^{-1} (oral)	C	adrenal pheochromocytomas in male rat/F344	IRIS (2/91) (NTD, 1982)
	1.2 (inhal)		kidney adenocarcinoma in male Swiss mouse	IRIS (2/91) (Maltoni, et al. 1977, 1985)
Ethylbenzene	--	D	lack of animal bioassay and human studies	IRIS (2/91)
Methylene Chloride	7.5×10^{-3} (oral)	B2	liver/rat and mice 1.4×10^{-2} (inhal)	IRIS (2/91)
Tetrachloroethylene	5.1×10^{-2} (oral)	B2	liver/mouse	HEAST, 1990 (NCI, 1978)
Toluene	--	D	no human data; inadequate animal data	IRIS (2/91)
1,1,1-Trichloroethane	--	D	no human data; inadequate animal data	IRIS (2/91)
Trichloroethylene	1.1×10^{-2} (oral) 1.7×10^{-2} (inhal)	B2	lung and liver tumors/mouse	HEAST, 1990 (Maltoni, et al., 1986)

TABLE 16 (CONTINUED)

Chemical	Slope Factor $(mg/kg/day)^{-1}$	EPA Weight of Evidence Classification	Type of Cancer/Species	Slope Factor Source
Trichlorofluoromethane	--	D	lack of data in humans and animals	IRIS (2/91)
Vinyl Chloride	1.9 (oral) (b)	A	lung and liver/rat	HEAST, 1990 (Maltoni, et al., 1980)
Xylenes (total)	--	D	animal and human data inadequate	IRIS (2/91)
Base Neutral/Acid Extractable				
Acenaphthene	--	--	--	IRIS (3/91)
Acenaphthylene	--	D	no human data; inadequate animal data	IRIS (3/91)
Anthracene	--	D	no human data; inadequate animal data	IRIS (3/91)
Benzoic Acid	--	D	no human data; inadequate animal data	IRIS (2/91)
Benzo(a)anthracene	1.15×10^{1} (c)	B2	human carcinogenicity in mixture (d)	IRIS (3/91) (US EPA, 1984, 1990; IARC, 1984)

TABLE 16 (CONTINUED)

Chemical	Slope Factor $(mg/kg/day)^{-1}$	EPA Weight of Evidence Classification	Type of Cancer/Species	Slope Factor Source
Benzo(a)pyrene	1.15×10^{1}	B2	hamster respiratory tract/mouse stomach	AWQC (1986) (Thyssen, et al., 1990 US EPA, 1980; Neal and Rigden, 1967)
Benzo(b)Fluoroanthrene	1.15×10^{1}(c)	B2	human carcinogenicity in mixture (d)	IRIS (3/91) (US EPA, 1984, 1990; IARC, 1984)
Benzo(g,h,i)perylene	--	D	no human data; inadequate animal data	IRIS (3/91)
Benzo(k)flouranthene	1.15×10^{1}(c)	B2	human carcinogenicity in mixture (d)	IRIS (3/91) (US EPA, 1984, 1990; IARC, 1984)
Bis(2-ethylhexyl) phthalate	1.4×10^{-2} (oral)	B2	hepatocellular carcinoma and adenoma/mouse	IRIS (2/91) (NTP, 1982)
Chrysene	1.15×10^{1}(c)	B2	liver tumors in male mice	IRIS (3/91) (Wislocki, et. al., 1986; Buening et. al., 1986)
Dibenz(a,h)anthracene	1.15×10^{1}(c)	B2(b)	N/A	HEAST, 1990
Dibenzofuran	--	D	lack of data in humans and animals	IRIS (2/91)
Di-n-butyl phthalate	--	D	lack of data in humans and animals	IRIS (3/91)

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TABLE 16 (CONTINUED)

Chemical	Slope Factor (mg/kg/day)$^{-1}$	EPA Weight of Evidence Classification	Type of Cancer/Species	Slope Factor Source
Di-n-octylphthalate	--	--	--	--
Fluoranthene	--	D	no human data; inadequate animal data	IRIS (3/91)
Fluorene	--	D	no human data; inadequate animal data	IRIS (3/91)
Ideno(1,23-cd)pyrene	1.15 x 10^{1}(c)	B2	epidermoid carcinomas in rat's lungs	IRIS (3/91) (Deutsch-Wenzel, et. 1983)
2-Methyl naphthalene	--	--	--	--
Naphthalene	--	D	no human data; inadequate animal data	IRIS (3/91)
Pentachlorophenol	1.2 x 10^{-1}	B2(b)	liver, adrenal, circulatory systems	HEAST, 1990
Phenanthrene	--	D	no human data; inadequate animal data	IRIS (3/91)
Pyrene	--	D	no human data; inadequate animal data	IRIS (3/91)

TABLE 16 (CONTINUED)

Chemical	Slope Factor $(mg/kg/day)^{-1}$	EPA Weight of Evidence Classification	Type of Cancer/Species	Slope Factor Source
Pesticides/PCBs				
Aroclor-1248	7.7 (oral)	B2	hepatocellular carcinoma/ rats and mice	IRIS (2/91) (Norback and Weltman, 1985)
Aroclor-1254	7.7 (oral)	B2	hepatocellular carcinoma/ rats and mice	IRIS (2/91) (Norback and Weltman, 1985)
Inorganics				
Aluminum	--	--	--	--
Antimony	--	--	--	IRIS (2/91)
Arsenic	1.75 (oral)	A	skin/humans	IRIS (2/91)
Barium	--	--	--	IRIS (2/91)
Beryllium	4.3 (oral)	B2	gross tumors all sites/rats	IRIS (2/91)
Cadmium	6.1 (inhal)	B1	lung cancer/humans lung tumors/rats	IRIS (2/91) (Thun, et al., 1985)
Chromium VI	4.1×10^{1} (inhal)	A	lung cancer/humans	IRIS (2/91) (Mancuso, 1975)
Copper	--	D	--	IRIS (2/91)

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TABLE 16 (CONTINUED)

Chemical	Slope Factor $(mg/kg/day)^{-1}$	EPA Weight of Evidence Classification	Type of Cancer/Species	Slope Factor Source
Cyanide	--	D	lack of data on humans and animals	IRIS (2/91)
Lead(a)		B2	--	IRIS (2/91)
Mercury	--	D	no human data/inadequate animal data	IRIS (2/91)
Nickel	--	D	--	IRIS (2/91)
Silver	--	D	--	IRIS (2/91)
Tin	--	--	--	--
Zinc	--	D	animal and human data inadequate	IRIS (3/91)

(a) EPA Cancer Assessment Group recommends numerical estimate not be used for lead.
(b) IRIS input pending.
(c) Per EPA guidance, the benzo(a)pyrene slope factor is used as a surrogate for other PAHs where sufficient evidence of carcinogenicity exists, as designated in IRIS or HEAST.
(e) Soot containing these chemicals was found to be carcinogenic (IRIS, 1991).

Sources: IRIS - See EPA, 1991b.
HEAST - See EPA, 1990a.

TABLE . SUMMARY OF CARCINOGENIC RISK ESTIMATES FOR THE FACET SITE[a]

Scenario	Receptor	Current/ Future	Incremental Risk
Ground Water			
Ingestion	Resident	C/F	2.0×10^{-3}**
Volatiles Inhalation While Showering	Resident	C/F	8.0×10^{-5}*
Soil			
Surface Soil - Ingestion	Trespasser	C/F	1.1×10^{-4}**
Subsurface Soil - Ingestion	Worker	C/F	4.2×10^{-7}
Surface Soil, Plant 2 Yard - Ingestion	Trespasser	C/F	2.5×10^{-10}
Subsurface Soil, Plant 2 Yard - Ingestion	Worker	C/F	2.4×10^{-11}
Oil/Water Separator - Ingestion	Worker	C/F	1.5×10^{-4}**
Sediment			
Height's Drainage Swale - Ingestion	Resident	C/F	4.0×10^{-4}**
North Drainage Ditch - Ingestion	Trespasser	C/F	8.8×10^{-6}*
May's Creek - Ingestion	Resident	C/F	6.5×10^{-4}**
Area 6 - Ingestion	Trespasser	C/F	1.7×10^{-6}*
Area 10 - Ingestion	Trespasser	C/F	5.1×10^{-6}*

* Exceeds 10^{-6} risk.
** Exceeds 10^{-4} risk.
[a]Dermal pathways not evaluated quantatively based on current EPA Region II guidance for the Facet site (EPA, 1992).

TABLE 17

TABLE . SUMMARY OF CARCINOGENIC RISK ESTIMATES FOR THE FACET SITE[a]

Scenario	Receptor	Current/ Future	Incremental Risk
Ground Water			
Ingestion	Resident	C/F	2.0×10^{-3}**
Volatiles Inhalation While Showering	Resident	C/F	8.0×10^{-5}*
Soil			
Surface Soil - Ingestion	Trespasser	C/F	1.1×10^{-4}**
Subsurface Soil - Ingestion	Worker	C/F	4.2×10^{-7}
Surface Soil, Plant 2 Yard - Ingestion	Trespasser	C/F	2.5×10^{-10}
Subsurface Soil, Plant 2 Yard - Ingestion	Worker	C/F	2.4×10^{-11}
Oil/Water Separator - Ingestion	Worker	C/F	1.5×10^{-4}**
Sediment			
Height's Drainage Swale - Ingestion	Resident	C/F	4.0×10^{-4}**
North Drainage Ditch - Ingestion	Trespasser	C/F	8.8×10^{-6}*
May's Creek - Ingestion	Resident	C/F	6.5×10^{-4}**
Area 6 - Ingestion	Trespasser	C/F	1.7×10^{-6}*
Area 10 - Ingestion	Trespasser	C/F	5.1×10^{-6}*

* Exceeds 10^{-6} risk.
** Exceeds 10^{-4} risk.
[a]Dermal pathways not evaluated quantatively based on current EPA Region II guidance for the Facet site (EPA, 1992).

TABLE 18

PUROLATOR PRODUCTS COMPANY

CHEMICAL	MAX.CONC. (ug/l)	GROUND WATER ARAR (1)		SOURCE (2)	MAX. CONC. IS GREATER THAN ARAR
ORGANICS					
n-Butylbenzene	13	5	Standard	NYSDEC (9/90)	YES
Chloroform	1	7	Standard	NYSDEC (5/91)	NO
1,1-Dichloroethane	2	5	Standard	NYSDEC (9/90)	NO
1,2-Dichloroethane	0.3	5	Standard	NYSDEC (9/90)	NO
1,1-Dichloroethene	2	5	Standard	NYSDEC (9/90)	NO
cis-1,2-Dichloroethene	160	5	Standard	NYSDEC (9/90)	YES
trans-1,2-Dichloroethene	2	5	Standard	NYSDEC (9/90)	NO
Dichlorodifluoromethane	2	5	Standard	NYSDEC (9/90)	NO
Ethylbenzene	12	5	Standard	NYSDEC (9/90)	YES
Isopropylbenzene	8	5	Standard	NYSDEC (9/90)	YES
4-Isopropyltoluene	12	5	Standard	NYSDEC (9/90)	YES
Methylene Chloride	69	5	Standard	NYSDEC (9/90)	YES
Naphthalene	23	50	Standard	NYSDEC (9/90)	NO
n-Propylbenzene	22	5	Standard	NYSDEC (9/90)	YES
1,1,1-Trichloroethane	13	5	Standard	NYSDEC (9/90)	YES
Trichloroethene	190	5	Standard	NYSDEC (9/90)	YES
Trichlorofluoromethane	19	5	Standard	NYSDEC (9/90)	YES
1,2,4-Trimethylbenzene	18	5	Standard	NYSDEC (9/90)	YES
1,3,5-Trimethylbenzene	81	5	Standard	NYSDEC (9/90)	YES
Vinyl Chloride	33	2	Standard	NYSDEC (5/91)	YES
Xylenes	14	5	Standard	NYSDEC (9/90)	YES
INORGANICS					
Aluminum	95500		NA (3)	—	—
Antimony	45.8	3	Guidance Value (4)	NYSDEC (9/90)	YES
Arsenic	20.4	25	Standard	NYSDEC (5/91)	NO
Barium	911	1000	Standard	NYSDEC (5/91)	NO
Beryllium	4.2	3	Guidance Value (4)	NYSDEC (9/90)	YES
Cadmium	55.8	10	Standard	NYSDEC (5/91)	YES
Chromium	1540	50	Standard	NYSDEC (5/91)	YES
Copper	1200	200	Standard	NYSDEC (5/91)	YES
Lead	146	25	Standard	NYSDEC (5/91)	YES
Mercury	5.6	2	Standard	NYSDEC (5/91)	YES
Nickel	602	100	Tentative Proposed MCL (4)	USEPA (5/90)	YES
Silver	10.2	50	Standard	NYSDEC (5/91)	NO
Tin	16.1	21000	Chronic RfD (4)	USEPA-HEAST (1991)	NO
Zinc	1180	300	Standard	NYSDEC (5/91)	YES
Cyanide	99.4	100	Standard	NYSDEC (5/91)	NO

NOTES:

(1) When no ARAR has been established, an appropriate guidance or other health-based value is listed, as noted.

(2) a. NYSDEC, 1991. Revision of Water Quality Regulations for Surface Water and Ground Waters. May.

b. NYSDEC, 1990. Division of Water - Technical and Operational Guidance Series (1.1.1) - Ambient Water Quality Standards and Guidance Values. September.

c. USEPA, 1991b. Health Effects Assessment Summary Tables (HEAST). January.

d. USEPA, 1990a. Fact Sheet - Drinking Water Regulations under the Safe Drinking Water Act. May.

(3) No ARAR or health-based toxicity value available. RA did not identify aluminum as a chemical of concern. Therefore, no remediation goal is developed.

(4) No ARAR available as defined in USEPA, 1989a. Therefore, an acceptable concentration was derived using the USEPA oral chronic reference dose (RfD) and the standard exposure assumptions of 2 liters/day ingestion rate and 70 kg average body weight.

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POTENTIAL ARARs AND TBCs
FEASIBILITY STUDY
PUROLATOR PRODUCTS COMPANY

Citation	Description	Type	Reason for Listing
NYS; 6 NYCRR 756	State pollutant discharge elimination system	action	May relate to on-site treatment of wastes.
NYS; 6 NYCRR 757	State pollutant discharge elimination system	action	May relate to on-site treatment of wastes.
NYS; TOGS 1	Technical and operational guidance for pollutant discharge elimination system	action	May relate to on-site treatment of wastes.
NYS; TOGS 2	Technical and operational guidance for ground water	action	May relate to remediation of ground water.
NYS; 10 NYCRR 5	State public drinking water standards	chemical	May relate to remediation of ground water.
NYS; 10 NYCRR 170	State public drinking water source standards	chemical	May relate to remediation of ground water.

GLOSSARY OF ACRONYMS

ARARs - Applicable or Relevant and Appropriate Requirements

CAA - Clean Air Act

CWA - Clean Water Act

OSHA - Occupational Safety and Health Act

RCRA - Resource Conservation and Recovery Act

SDWA - Safe Drinking Water Act

TBCs - To Be Considered

TSCA - Toxic Substances Control Act

TABLE 18

POTENTIAL ARARs AND TBCs
FEASIBILITY STUDY
PUROLATOR PRODUCTS COMPANY

Citation	Description	Type	Reason for Listing
OSHA; 29 CFR 1910	Guidelines and requirements for workers at hazardous waste sites (subpart 120) and standards for air contaminants (subpart 1)	action	May relate to remediation of all areas.
CAA; 40 CFR 50	National Ambient air quality standards	chemical	May relate to on-site treatment of wastes.
CAA; 40 CFR 52	National ambient air quality standards attainment areas	location	May relate to on-site treatment of wastes.
CAA; 40 CFR 60	New source performance standards	action	May relate to on-site treatment of wastes.
CAA; 40 CFR 61	National emission standards for hazardous air pollutants	action, chemical	May relate to on-site treatment of wastes.
CWA; 40 CFR 122	Treatment system discharge standards	action, chemical	May relate to ground water remediation.
CWA; 40 CFR 136	Approved test methods for discharge monitoring	action	May relate to ground water remediation.
SDWA; 40 CFR 141	National primary drinking water standards	chemical	May relate to remediation of ground water.
RCRA; 40 CFR 261	Determination of whether a waste is hazardous	action, chemical	May relate to remediation of all areas.
RCRA; 40 CFR 262	Hazardous waste generator requirements	action	May relate to off-site disposal of wastes.
RCRA; 40 CFR 263	Hazardous waste transporter requirements	action	May relate to off-site disposal of wastes.
RCRA; 40 CFR 264	TSDF standards	action, chemical, location	May relate to remediation of all areas.

APPENDIX III

ADMINISTRATIVE RECORD INDEX

Document Number: FAC-001-0001 To 0191 Date: / /

Title: Facet Enterprises, Inc., Motor Components Division (Nature of business, history of operation, and other background information)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: FAC-001-0192 To 0192 Date: 06/30/80

Title: Record of Communication (providing a description of the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Leichter, Irv: US EPA
Recipient: Spear, Richard: US EPA
Attached: FAC-001-0193

Document Number: FAC-001-0193 To 0203 Parent: FAC-001-0192 Date: 06/27/80

Title: Potential Hazardous Waste Site - Site Inspection Report (for the Facet Enterprises site)

Type: REPORT
Author: Leichter, Irv: US EPA
'ecipient: none: US EPA

Document Number: FAC-001-0204 To 0372 Date: 09/16/83

Title: Hydrogeologic Investigations, Facet Enterprises, Inc., Elmira, New York - Final Report

Type: REPORT
Author: Little, William M.: Radian Corporation
Recipient: none: Facet Enterprises

Document Number: FAC-001-0373 To 0392 Date: 06/10/82

Title: Revised Proposal to Perform an Investigation of Geology and Ground-Water Conditions at Facet Enterprises, Elmira, New York

Type: PLAN
Author: none: Radian Corporation
Recipient: Jackson, David W.: Facet Enterprises

Document Number: FAC-001-0393 To 0422 Date: 05/22/86

Title: Health and Safety Plan for Supplemental Hydrogeologic Investigations, Facet Enterprises, Inc., Elmira, New York

Type: PLAN
Author: Grimshaw, T.W.: Radian Corporation
Little, William M.: Radian Corporation
Recipient: Wyant, Clyde: Facet Enterprises

Document Number: FAC-001-0423 To 0445 Date: 05/22/86

Title: Quality Assurance Plan, Supplemental Hydrogeologic Investigations, Facet Enterprises, Inc., Elmira, New York

Type: PLAN
Author: Grimshaw, T.W.: Radian Corporation
Little, William M.: Radian Corporation
Recipient: Wyant, Clyde: Facet Enterprises

Document Number: FAC-001-0446 To 0446 Date: 06/18/86

Title: (Letter forwarding the attached draft Field Operations Plan for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Sachdev, Dev R.: Ebasco Services
Recipient: Alvi, M. Shaheer: US EPA
Dolan, Charles: US EPA
Attached: FAC-001-0447

Document Number: FAC-001-0447 To 0614 Parent: FAC-001-0446 Date: 06/01/86

Title: Field Operations Plan, Supplemental RI/FS, Facet Enterprises, Inc., Site

Type: PLAN
Author: Fitzgerald, Daniel: Ebasco Services
Recipient: none: US EPA

Document Number: FAC-001-0615 To 0637 Date: 07/07/86

Title: Quality Assurance Plan, Remedial Investigation for the Facet Enterprises Site, Elmira, New York

Type: PLAN
Author: Grimshaw, T.W.: Radian Corporation
Little, William M.: Radian Corporation
Recipient: Wyant, Clyde: Facet Enterprises

Document Number: FAC-001-0638 To 0860 Date: 10/27/89

Title: Laboratory Quality Assurance Plan, Work Plan Document II, Attachment I, Remedial Investigation, Facet Enterprises, Inc.

Type: PLAN
Author: none: CompuChem
Recipient: none: Facet Enterprises

Document Number: FAC-001-0861 To 0947 Date: 10/27/89

Title: Quality Assurance Project Plan, Work Plan Document II, Remedial Investigation, Facet Enterprises, Inc.

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: Facet Enterprises

Document Number: FAC-001-0948 To 1007 Date: 10/27/89

Title: Health & Safety Plan, Work Plan Document III, Remedial Investigation, Facet Enterprises, Inc.

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: Facet Enterprises

Document Number: FAC-001-1008 To 1086 Date: 11/16/89

Title: Field Sampling Plan, Work Plan Document I, Remedial Investigation, Facet Enterprises, Inc.

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: Facet Enterprises

Document Number: FAC-001-1087 To 1143 Date: 05/24/90

Title: Field Oversight Plan, Facet Enterprises Site, Village of Elmira Heights, Chemung County, New York

Type: PLAN
Author: Angers, Alan K.: Alliance Technologies Corporation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-001-1144 To 1162 Date: / /

Title: Appendix B: Site Safety Plan, RI Field Oversight Activities, Facet Enterprises Site, Elmira Heights, New York

Type: PLAN
ondition: DRAFT
Author: none: Alliance Technologies Corporation
Recipient: none: US EPA

Document Number: FAC-001-1163 To 1168 Date: 10/31/90

Title: (Memo detailing conversations with Alliance about the soil sampling schedule for the Facet Enterprises site, and forwarding copies of telephone logs and pages from a log book)

Type: CORRESPONDENCE
Author: Blasting, James F.: ERM-Northeast
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-001-1169 To 1180 Date: 06/14/91

Title: QA Plan Short Form/Sampling Plan - Facet Enterprises, Elmira, NY - Groundwater Sampling, Remedial Support

Type: PLAN
Author: Brochu, Amy J.: US EPA
Scalise, Laura: US EPA
Recipient: none: US EPA

Document Number: FAC-001-1181 To 1199 Date: 07/12/91

Title: Completed Analysis Report (for the Facet Enterprises site)

Type: DATA
Author: illegible, Gerard: US EPA
Recipient: none: none

Document Number: FAC-001-1200 To 1201 Date: 07/22/91

Title: (Letter providing information on three active oil sumps located at the Facet Enterprises facility)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-001-1202 To 1206 Date: 07/18/91

Title: (Letter providing information on the cause of death of trees at the Purolator site in Elmira, New York)

Type: CORRESPONDENCE
Author: Sinclair, Wayne A.: none
Recipient: Blasting, James F.: ERM-Northeast

Document Number: FAC-001-1207 To 1221 Date: 07/01/91

Title: Review of Risk Assessment of Purolator Products Company Superfund Site at Elmira Heights, New York

Type: PLAN
Author: Mahagaokar, Suneeta: Environmental Safety and Health Affairs
Recipient: none: none

Document Number: FAC-001-1222 To 1330 Date: 08/27/91

Title: Field Sampling Plan, Work Plan Appendix II, Document I, Test Trench Excavation, Purolator Products Company RI

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: Purolator Products Company

Document Number: FAC-001-1331 To 1388 Date: 08/27/91

Title: Health & Safety Plan, Work Plan Appendix II, Document III, Test Trench Excavation Purolator Products Company RI

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: Purolator Products Company

Document Number: FAC-001-1389 To 1412 Date: / /

Title: USEPA Comments/Purolator Response, Test Trench Excavation Work Plan Purolator Products Company

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: none

Document Number: FAC-001-1413 To 1428 Date: 08/07/81

Title: (Memo forwarding the attached data from sampling conducted on June 10, 1981)

Type: DATA
Author: Hogan, Maureen: NY Dept of Environmental Conservation
Recipient: Herington, Carol C.: NY Dept of Environmental Conservation

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Document Number: FAC-001-1429 To 1429 Date: 08/25/81

Title: Transmittal Slip (forwarding the attached Sampling Inspection Report for the Facet Enterprises site for review)

Type: CORRESPONDENCE
Author: Herington, Carol C.: NY Dept of Environmental Conservation
Recipient: Rankin, John: NY Dept of Environmental Conservation
Attached: FAC-001-1430

Document Number: FAC-001-1430 To 1438 Parent: FAC-001-1429 Date: 03/25/81

Title: Sampling Inspection Report, Facet Enterprises, Inc., Horseheads, Chemung County

Type: REPORT
Author: Herington, Carol C.: NY Dept of Environmental Conservation
Recipient: none: NY Dept of Environmental Conservation

Document Number: FAC-001-1439 To 1439 Date: 06/26/81

Title: (Letter forwarding the attached analytical results for sixteen samples received on March 26 and 27, 1981)

Type: CORRESPONDENCE
Author: Ploscyca, James A.: Recra Research
Recipient: Herington, Carol C.: NY Dept of Environmental Conservation
Attached: FAC-001-1440

Document Number: FAC-001-1440 To 1457 Parent: FAC-001-1439 Date: 06/26/81

Title: Analytical Report - New York States Department of Environmental Conservation Priority Pollutant Analyses

Type: REPORT
Author: none: Recra Research
Recipient: none: NY Dept of Environmental Conservation

Document Number: FAC-001-1458 To 1487 Date: 07/09/81

Title: Analytical Report - New York State Department of Environmental Conservation, Priority Pollutant Analyses

Type: REPORT
Author: none: Recra Research
Recipient: none: NY Dept of Environmental Conservation

Document Number: FAC-001-1488 To 1488 Date: 01/31/89

Title: New York State Department of Environmental Conservation - Industrial Chemical Survey (for Facet Enterprises, Inc.)

Type: DATA
Author: none: NY Dept of Environmental Conservation
Recipient: none: NY Dept of Environmental Conservation

Document Number: FAC-001-1489 To 1536 Date: 06/22/90

Title: (Letter forwarding the attached MDL Study done for EPA Method 524.2 along with Organic Performance Evaluation Sample Summary Reports and a Corporate Introduction)

Type: DATA
Author: Shringarpure, Jayant: Southwest Laboratory of Oklahoma, Inc.
Recipient: Giglio, Rick: CompuChem

Document Number: FAC-001-1537 To 1544 Date: 08/08/90

Title: (Letter summarizing and forwarding the attached laboratory results for samples taken from the drywell at the Facet Enterprises site)

Type: DATA
Author: Argus, Lawrence D.: ERM-Northeast
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-001-1545 To 1629 Date: 11/01/90

Title: Report: Dry-Wells Analysis at Purolator Products Co., Elmira, New York, October, 1990

Type: REPORT
Author: Brown, Lindsey K.: FLI Environmental Services
Criss, Stanley C.: FLI Environmental Services
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-001-1630 To 1654 Date: 11/29/90

Title: (Letter requesting that the raw data packages for the identified data be submitted to the EPA Monitoring Management Branch for data validation audits)

Type: DATA
Author: Josephson, J. Jeff: US EPA
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-001-1655 To 1659 Date: 09/24/91

Title: (Letter discussing review of inorganic data generated during the Remedial Investigation activities of 1990)

Type: CORRESPONDENCE
Author: Blasting, James F.: ERM-Northeast
Recipient: Howland, Reeve B.: Purolator Products Company
Attached: FAC-001-1660 FAC-001-1661

Document Number: FAC-001-1660 To 1660 Parent: FAC-001-1655 Date: 07/25/91

Title: (Memo discussing the revalidation of Inorganic data for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Sheikh, Hanif: US EPA
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-001-1661 To 1730 Parent: FAC-001-1655 Date: 06/25/91

Title: (Memo forwarding the attached technical data validation report and providing comments)

Type: DATA
Author: Boshart, Dale S.: Roy F. Weston, Inc.
Recipient: Sheikh, Hanif: US EPA

Document Number: FAC-001-1731 To 1743 Date: 12/30/91

Title: (Letter forwarding copies of the Final Field Sampling Plan, Quality Assurance Plan, and Health and Safety Plan, and responses to EPA comments on the Quality Assurance Plan for Test Trench Excavation at the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-001-1744

Document Number: FAC-001-1744 To 1771 Parent: FAC-001-1731 Date: 08/20/86

Title: Standard Operating Procedure - Appendix A.1: Data Assessment - Contract Compliance

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

Document Number: FAC-001-1772 To 1795 Date: 05/18/90

Title: Addendum to Work Plan Documents - Remedial Investigation, Facet Enterprises, Inc.

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: Facet Enterprises

Document Number: FAC-001-1796 To 1822 Date: / /

Title: Work Plan - Soil and Surface Water Investigation

Type: PLAN
Author: none: Facet Enterprises
Recipient: none: none

Document Number: FAC-001-1823 To 1823 Date: 02/28/83

Title: (Letter forwarding the attached Final Remedial Action Master Plan for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Cassis, Jeffrey A.: Camp Dresser & McKee (CDM)
Recipient: Deieso, Donald: US EPA
Attached: FAC-001-1824

Document Number: FAC-001-1824 To 1842 Parent: FAC-001-1823 Date: 02/17/83

Title: Remedial Action Master Plan for Facet Enterprises Site, Elmira Heights, NY

Type: PLAN
Author: none: CC Johnson & Associates
cipient: none: none

Document Number: FAC-001-1943 To 1976 Date: 07/26/85

Title: Work Plan - Supplemental Hydrogeologic Investigations, Facet Enterprises, Inc., Elmira, New York

Type: PLAN
Author: none: Radian Corporation
Recipient: Jackson, David W.: Facet Enterprises

Document Number: FAC-001-1983 To 2024 Date: 07/07/86

Title: Remedial Investigation Work Plan for the Facet Enterprises Site, Elmira, New York

Type: PLAN
Author: none: Radian Corporation
Recipient: Wyant, Clyde: Facet Enterprises

Document Number: FAC-001-2025 To 2026 Date: 10/07/86

Title: (Letter forwarding the attached Final Work Plan for the Facet Enterprises Remedial Investigation/Feasibility Study Oversight Project)

Type: CORRESPONDENCE
Author: Sachdev, Dev R.: Ebasco Services
Recipient: Alvi, M. Shaheer: US EPA
Dolan, Charles: US EPA
Attached: FAC-001-2027

Document Number: FAC-001-2027 To 2046 Parent: FAC-001-2025 Date: 01/08/87

Title: Final Work Plan RI/FS Oversight, Facet Enterprises, Incorporated, Elmira, NY

Type: PLAN
Author: Sisovsky, Patricia: Ebasco Services
Recipient: none: US EPA

Document Number: FAC-001-2047 To 2168 Date: 06/17/91 Confidential

Title: Revision 2 - Field Oversight Work Plan, Purolator Products Company Site, Elmira, New York - RI/FS Compliance Oversight

Type: PLAN
Author: Foster, Charles H.: Alliance Technologies Corporation
Recipient: Taccone, Tom: US EPA
Attached: FAC-001-2048

Document Number: FAC-001-2048 To 2048 Parent: FAC-001-2047 Date: 08/19/91

Title: (Handwritten Record of Communication detailing a phone conversation with Laura Scalise about the review of the Purolator Test Trench QAPP and Oversight QAPP)

Type: CORRESPONDENCE
Author: Taccone, Tom: US EPA
Recipient: file: US EPA

Document Number: FAC-002-0001 To 0036 Date: 12/04/91

Title: Work Plan, Oil Investigation Purolator Products Company, Elmira, New York

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: Purolator Products Company

Document Number: FAC-002-0037 To 0038 Date: 09/12/86

Title: (Letter forwarding the enclosed Draft Field Activities Summary Report for the Facet Enterprises, Inc., site in Elmira, New York)

Type: CORRESPONDENCE
Author: Sachdev, Dev R.: Ebasco Services
Recipient: Alvi, M. Shaheer: US EPA
Dolan, Charles: US EPA
Attached: FAC-002-0039

Document Number: FAC-002-0039 To 0138 Parent: FAC-002-0037 Date: 09/01/86

Title: Field Activities Summary Report RI/FS Oversight, Facet Enterprises, Inc. Site, Elmira, New York

Type: REPORT
Condition: DRAFT
Author: Sisovsky, Patricia: Ebasco Services
Recipient: none: US EPA

Document Number: FAC-002-0139 To 0140 Date: 11/26/86

Title: (Letter forwarding the enclosed Draft Report, Remedial Investigation Review for the Facet Enterprises, Inc., site in Elmira, New York)

Type: CORRESPONDENCE
Author: Sachdev, Dev R.: Ebasco Services
Recipient: Alvi, M. Shaheer: US EPA
Dolan, Charles: US EPA
Attached: FAC-002-0141

Document Number: FAC-002-0141 To 0177 Parent: FAC-002-0139 Date: 11/01/86

Title: Draft Report Review of RI Document, Facet Enterprises, Inc., Site, Elmira, New York

Type: REPORT
Condition: DRAFT
Author: Sisovsky, Patricia: Ebasco Services
Recipient: none: US EPA

Document Number: FAC-002-0178 To 0178 Date: 07/30/90

Title: Final Report, NYSDEC Consent Order Case No. R8-0771-90-04, Schedule 1, Paragraph 4

Type: REPORT
Author: none: ERM-Northeast
Recipient: Howland, Reeve B.: Purolator Products Company
Attached: FAC-002-0179

Document Number: FAC-002-0179 To 0185 Parent: FAC-002-0178 Date: 07/31/90

Title: (Letter providing an Engineering Report and associated drawings identifying and reviewing all surface drainage, areas of potential runoff and collection and/or wastewater disposition for the drainage area and the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Miller, Richard C.: ERM-Northeast
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-002-0186 To 0718 Date: 11/15/91

Title: 1990 Remedial Investigation Report, Purolator Products Company, Elmira, New York

Type: REPORT
Author: none: ERM-Northeast
Recipient: none: Purolator Products Company

Document Number: FAC-002-0719 To 0719 Date: 02/13/92

Title: (Letter forwarding the enclosed Risk Assessment, Revision 3 for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Feinberg, Charles: Alliance Technologies Corporation
Recipient: Moyik, Cathy: US EPA
Attached: FAC-002-0720

Document Number: FAC-002-0720 To 1147 Parent: FAC-002-0719 Date: / /

Title: Risk Assessment Revision 3, Facet Enterprises Site, Elmira Heights, New York

Type: PLAN
Author: none: Alliance Technologies Corporation
Recipient: none: US EPA

Document Number: FAC-002-1148 To 1214 Date: / /

Title: (Sections of a report detailing aspects of the Remedial Investigation performed at the Facet Enterprises site)

Type: PLAN
Condition: INCOMPLETE
Author: none: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-1215 To 1264 Date: / /

Title: Appendix C (from the Remedial Investigation Report for the Facet Enterprises site)

Type: PLAN
Condition: INCOMPLETE
Author: none: ERM-Northeast
Recipient: none: none

FAC 003 1319

Document Number: FAC-002-1265 To 1356 Date: / /

Title: Appendix G (from the Remedial Investigation for the Facet Enterprises site)

Type: PLAN
Condition: INCOMPLETE
Author: none: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-1357 To 1360 Date: / /

Title: (A section of a document discussing facts establishing defendants liability)

Type: PLAN
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: FAC-002-1361 To 1362 Date: 08/08/85

Title: (Memo listing issues that must be addressed before the Facet Enterprises Quality Assurance and Work Plan can be approved)

Type: CORRESPONDENCE
Author: Gatton, Lisa: US EPA
Recipient: Dolan, Charles: US EPA

Document Number: FAC-002-1363 To 1364 Date: 08/20/85

Title: (Letter commenting on Radian's Quality Assurance and Remedial Investigation Work Plan for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Dolan, Charles: US EPA
Recipient: Little, William M.: Radian Corporation

Document Number: FAC-002-1365 To 1369 Date: 10/15/85

Title: (Memo forwarding four pages of 40 CFR Part 136, which pertain to comments received on the Facet Enterprises Quality Assurance Project Plan)

Type: CORRESPONDENCE
Author: Gatton, Lisa: US EPA
Recipient: Dolan, Charles: US EPA

Document Number: FAC-002-1370 To 1372 Date: 08/25/86

Title: (Letter commenting on the potential public health exposure and the adequacy of the proposed investigation for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Weiss, Dennis R.: NY Dept of Health
Recipient: Dolan, Charles: US EPA

Document Number: FAC-002-1373 To 1373 Date: 12/03/86

Title: (Letter discussing the investigations of groundwater and soil contamination in Horseheads/Elmira area)

Type: CORRESPONDENCE
Author: Dolan, Charles: US EPA
Recipient: Driscoll, John T.: S. M. Fleckinger Company, Inc.

Document Number: FAC-002-1374 To 1374 Date: 02/05/87

Title: (Letter forwarding the attached summary of details outlining Ebasco's recommended additional sampling activities for Facet Enterprises, Inc.)

Type: CORRESPONDENCE
Author: Petrino, Patricia: Ebasco Services
Recipient: Dolan, Charles: US EPA
Attached: FAC-002-1375

Document Number: FAC-002-1375 To 1379 Parent: FAC-002-1374 Date: / /

Title: Scope of Work, Facet Enterprises, Details for Recommended Additional Field Investigation Studies

Type: PLAN
Author: none: Ebasco Services
Recipient: none: none

Document Number: FAC-002-1380 To 1382 Date: 02/17/87

Title: (Letter containing the New York State Department of Environmental Conservation's and Chemung County Health Department's comments on the draft Remedial Investigation Report, Volume I for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Nosenchuck, Norman H.: NY Dept of Environmental Conservation
Recipient: Luftig, Stephen D.: US EPA

Document Number: FAC-002-1383 To 1385 Date: 03/10/87

Title: (Letter commenting on the October 1986 Draft Remedial Investigation Report for the Facet Enterprises site)

Type: CORRESPONDENCE
ondition: MISSING ATTACHMENT
Author: Weiss, Dennis R.: NY Dept of Health
Recipient: Dolan, Charles: US EPA

Document Number: FAC-002-1386 To 1386 Date: 03/18/87

Title: (Handwritten memo requesting that the recipient handle the remedial part of the clean-up at the Facet Enterprises site)

Type: CORRESPONDENCE
Author: unknown, Joel: US EPA
Recipient: none: US EPA

Document Number: FAC-002-1387 To 1398 Date: 03/14/88

Title: (Letter containing EPA's, NYSDEC's, and NYSDOH's comments on the Remedial Investigation Report for the Facet Enterprises site, dated October 1986)

Type: CORRESPONDENCE
Author: Czapor, John: US EPA
Recipient: Little, William M.: Radian Corporation

Document Number: FAC-002-1399 To 1405 Date: 04/14/88

Title: (Letter responding to EPA's March 14, 1988, letter commenting on Radian's October 1986 Remedial Investigation Report for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Little, William M.: Radian Corporation
Recipient: Czapor, John: US EPA

Document Number: FAC-002-1406 To 1406 Date: 05/09/88

Title: (Letter discussing the water problem caused by the inadequate drainage of a ditch in the vicinity of the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Elford, Gordon R.: none
ecipient: Brink, Gordon R.: Elmira Heights (Village of)

Document Number: FAC-002-1407 To 1407 Date: 05/10/88

Title: (Letter discussing the potential health and environmental hazard of the West Side Drainage Channel in the vicinity of the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Benjamin, Charles R.: Chemung County Health Department
Recipient: Brink, Gordon R.: Elmira Heights (Village of)

Document Number: FAC-002-1408 To 1408 Date: 05/10/88

Title: (Letter recommending a solution to the drainage and flooding problem in the vicinity of the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Buddle, Allan F.: NY Dept of Environmental Conservation
Recipient: Brink, Gordon R.: Elmira Heights (Village of)

Document Number: FAC-002-1409 To 1414 Date: 06/13/89

Title: (Letter commenting on Radian's April 14, 1988, response to EPA's Remedial Investigation comment letter)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Morahan, Thomas: Radian Corporation

Document Number: FAC-002-1415 To 1417 Date: 06/21/89

Title: (Letter stating that Facet Enterprises' Work Plan, "Soil and Surface Water Investigation", is incomplete and forwarding specific concerns and recommendations based on what was submitted)

Type: CORRESPONDENCE
Author: Brown, Bradley A.: NY Dept of Environmental Conservation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-1418 To 1418 Date: 06/22/89

Title: (Cover sheet forwarding comments on the Facet Sampling Plan)

Type: CORRESPONDENCE
Author: Sosnow, Mike: NY Dept of Environmental Conservation
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-1419

Document Number: FAC-002-1419 To 1421 Parent: FAC-002-1418 Date: 06/22/89

Title: (Letter commenting on the Facet Tributary Sampling Plan)

Type: CORRESPONDENCE
Author: Sosnow, Michael C.: NY Dept of Environmental Conservation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-1422 To 1422 Date: 07/03/89

Title: (Letter agreeing with a June 13, 1989, letter which stated that additional field work should be conducted and that a meeting should be held to discuss the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Wyant, Clyde: Facet Enterprises
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-1423 To 1423 Date: 07/10/89

Title: (Letter which constitutes Radian's monthly progress report for June 1989 for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Morahan, Thomas: Radian Corporation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-1424 To 1425 Date: 09/29/89

Title: (Letter responding to the Village of Elmira's request for guidance in sampling the soils to be excavated from the ditch originating from the outfall located at Facet's southern fenceline)

Type: CORRESPONDENCE
Author: Rollins, Dixon F.: NY Dept of Environmental Conservation
Recipient: Winkkey, Eric: Elmira Heights (Village of)

Document Number: FAC-002-1426 To 1426 Date: 10/05/89

Title: (Letter forwarding a list of Technically Acceptable Laboratories and stating that the samples should be analyzed for cyanide)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Rollins, Dixon F.: NY Dept of Environmental Conservation
Recipient: Winkkey, Eric: Elmira Heights (Village of)

Document Number: FAC-002-1427 To 1427 Date: 10/27/89

Title: (Letter forwarding a list of sampling parameters for groundwater monitoring wells located in the Newton Creek Aquifer)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Josephson, J. Jeff: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-1428 To 1428 Date: 02/06/90

Title: (Letter forwarding Region II's data validation package)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Josephson, J. Jeff: US EPA
Recipient: Wolff, Doug: ERM-Northeast
Attached: FAC-002-1429

Document Number: FAC-002-1429 To 2225 Parent: FAC-002-1428 Date: / /

Title: (Data Validation package for inorganics, volatile organics, semivolatile organics and pesticide organics from June 29, through July 18, 1990)

Type: DATA
Author: none: various
Recipient: none: none

FAC 003 1326

Document Number: FAC-002-2226 To 2228 Date: 02/15/90

Title: (Letter containing NYSEDC's Division of Hazardous Waste Remediation, Division of Fish and Wildlife and NYSDOH's comments on ERM-Northeast's draft Field Sampling Plan for the Remedial Investigation at the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Brown, Bradley A.: NY Dept of Environmental Conservation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2229 To 2235 Date: 02/21/90

Title: (Letter commenting on the Field Sampling/Work Plan, Quality Assurance Work Plan Document and the Health and Safety Plan for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2236 To 2236 Date: 02/09/90

Title: (Memo stating why the November 16, 1989, Field Sampling Plan for the Facet Enterprises site is unacceptable to the New York Division of Air Resources)

Type: CORRESPONDENCE
Author: Fossa, Art: NY Dept of Environmental Conservation
Recipient: Brown, Bradley A.: NY Dept of Environmental Conservation

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Document Number: FAC-002-2237 To 2237 Date: 03/07/90

Title: (Letter forwarding the attached monthly progress report for February 1 to February 28, 1990)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Facet Enterprises
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2238

Document Number: FAC-002-2238 To 2239 Parent: FAC-002-2237 Date: 03/07/90

Title: Facet Enterprises, Inc., Remedial Investigation Monthly Report for February, 1990

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2240 To 2240 Date: 03/09/90

Title: (Letter forwarding ERM's responses to EPA's comments on the Remedial Investigation plans originally submitted for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Facet Enterprises
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2241

Document Number: FAC-002-2241 To 2250 Parent: FAC-002-2240 Date: 03/08/90

Title: (Letter responding to EPA's comments regarding the Facet Remedial Investigation Work Plan documents)

Type: CORRESPONDENCE
Author: Blasting, James F.: ERM-Northeast
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2251 To 2252 Date: 03/19/90

Title: (Letter containing answers to questions raised during a March 14, 1990, meeting, regarding Facet Enterprises' Remedial Investigation)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2253 To 2253 Date: 03/22/90

Title: (Letter discussing a March 14, 1990, meeting which was attended by parties involved in the remedial investigation at the Facet Enterprises facility)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Blasting, James F.: ERM-Northeast
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2254 To 2254 Date: 03/30/90

Title: (Letter confirming a telephone conversation in which it was stated that Facet Enterprises cancelled its April 2, 1990, plans to begin sampling and testing at the site)

Type: CORRESPONDENCE
Author: Garrett, Theodore L.: Covington & Burling
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2255 To 2256 Date: 04/05/90

Title: (Letter confirming that neither Facet Enterprises nor ERM-Northeast will begin sampling for the Remedial Investigation until the review and approval process for the Remedial Investigation Work Plan documents is completed)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2257 To 2257 Date: 04/12/90

Title: (Letter forwarding the attached monthly progress report for March, 1990, for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Facet Enterprises
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2258

FAC 003 1329

Document Number: FAC-002-2258 To 2260 Parent: FAC-002-2257 Date: 04/03/90

Title: Facet Enterprises, Inc., Remedial Investigation Monthly Progress Report for March, 1990

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2261 To 2262 Date: 05/14/90

Title: (Letter commenting on the oversight Work Plan for the Facet Enterprises site Remedial Investigation)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: Angers, Alan K.: Alliance Technologies Corporation

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Document Number: FAC-002-2263 To 2265 Date: 05/14/90

Title: (Letter commenting on the Addendum to Field Sampling/Work Plan for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
ecipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2266 To 2266 Date: 05/16/90

Title: (Letter forwarding the attached results of analyses pertaining to samples taken in the open channel south of the Facet outfall and a map indicating the location of the samples)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Cazorla, Jean: Elmira Heights (Village of)
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2267 FAC-002-2268

Document Number: FAC-002-2267 To 2267 Parent: FAC-002-2266 Date: 05/11/90

Title: (Letter discussing the results of volatile and semi-volatile GC/MC analysis, total metals, and EP toxicity metals)

Type: CORRESPONDENCE
Author: Buck, John H.: Buck Environmental Services
Recipient: Cazorla, Jean: Elmira Heights (Village of)

FAC 003 1330

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Document Number: FAC-002-2268 To 2284 Parent: FAC-002-2266 Date: 05/10/90

Title: (Laboratory reports and EP Toxicity laboratory reports of samples taken from the waterway south of the Facet Enterprises site)

Type: DATA
Author: Buck, John H.: Buck Environmental Services
Recipient: none: Elmira Heights (Village of)

Document Number: FAC-002-2285 To 2286 Date: 05/18/90

Title: (Letter explaining changes made to the Work Plan Addendum regarding the sampling and analysis program for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Blasting, James F.: ERM-Northeast
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2287 To 2287 Date: 05/21/90

Title: (Letter forwarding the updated "Addendum to Work Plan Documents, Remedial Investigation, Facet Enterprise, Inc.", which incorporates comments received on the original Addendum)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Howland, Reeve B.: Facet Enterprises
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2288 To 2288 Date: 06/01/90

Title: (Letter listing analytical methods used in the Elmira Heights analytical package dated May 11, 1990)

Type: CORRESPONDENCE
Author: Buck, John H.: Buck Environmental Services
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2289 To 2289 Date: 06/13/90

Title: (Letter approving the resubmitted Addendum to the Field Sampling/Work Plan dated May 21, 1990, for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2290 To 2290 Date: 06/28/90

Title: (Letter forwarding the attached ERM-Northeast letter and referenced enclosures documenting Southwest Laboratories qualifications regarding S.A.S. 524.2 - Revision 3)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2291

Document Number: FAC-002-2291 To 2292 Parent: FAC-002-2290 Date: 06/28/90

Title: (Letter stating that CompuChem has subcontracted Special Analytical Service (SAS) Testing, listing the procedure for becoming accepted by EPA to perform SAS work, and forwarding; sample results and analyses)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Blasting, James F.: ERM-Northeast
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2293 To 2295 Date: 07/31/90

Title: Purolator Products Company, Remedial Investigation, Monthly Report for July, 1990

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none
Attached: FAC-002-2296

FAC 003 1332

Document Number: FAC-002-2296 To 2300 Parent: FAC-002-2293 Date: 07/10/90

Title: ERM Quality Assurance Audit (for the Purolator (Facet) Remedial Investigation)

Type: OTHER
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2301 To 2313 Date: 07/03/90

Title: (Letter discussing the approach, procedure, and results of the proton magnetometry survey conducted as part of the Remedial Investigation and forwarding the attached maps of the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Blasting, James F.: ERM-Northeast
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-002-2314 To 2314 Date: 07/12/90

Title: (Letter forwarding the attached monthly progress report for June 1990 for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2315 FAC-002-2317

Document Number: FAC-002-2315 To 2316 Parent: FAC-002-2314 Date: 07/11/90

Title: Purolator Products Company, Remedial Investigation, Monthly Report for June, 1990

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2317 To 2321 Parent: FAC-002-2314 Date: 06/26/90

Title: ERM Quality Assurance Audit (for the Purolator (Facet) Remedial Investigation)

Type: OTHER
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2322 To 2323 Date: 08/08/90

Title: (Letter forwarding the attached monthly progress report for July, 1990 for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2324 FAC-002-2327

Document Number: FAC-002-2324 To 2326 Parent: FAC-002-2322 Date: 07/31/90

Title: Purolator Products Company, Remedial Investigation, Monthly Report for July, 1990

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2327 To 2331 Parent: FAC-002-2322 Date: 07/10/90

Title: ERM Quality Assurance Audit (for the Purolator (Facet) Remedial Investigation)

Type: OTHER
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2332 To 2332 Date: 09/06/90

Title: (Letter forwarding the monthly progress report for August, 1990, and discussing the Village of Elmira Heights street construction program)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2333

FAC 003 1334

Document Number: FAC-002-2333 To 2334 Parent: FAC-002-2332 Date: 08/30/90

Title: Purolator Products Company, Remedial Investigation, Monthly Report for August, 1990

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2335 To 2335 Date: 11/12/90

Title: (Letter forwarding the attached monthly progress report for October, 1990, and stating that Purolator Products was granted a two week extension for the submission of the Facet Enterprises draft Remedial Investigation)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2336

Document Number: FAC-002-2336 To 2336 Parent: FAC-002-2335 Date: 11/05/90

Title: Purolator Products Company, Remedial Investigation, Monthly Report for October, 1990

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2337 To 2337 Date: 10/12/90

Title: (Letter forwarding the attached monthly report for September 1990 for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-002-2338

Document Number: FAC-002-2338 To 2338 Parent: FAC-002-2337 Date: 10/10/90

Title: Purolator Products Company, Remedial Investigation, Monthly Report for September, 1990

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2339 To 2339 Date: 11/16/90

Title: (Letter forwarding copies of the 1990 draft Remedial Investigation Report for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2340 To 2340 Date: 10/19/90

Title: (Letter confirming that the draft RI Report for the Facet Enterprises site will be sent to EPA and that an analytical data summary report will be sent to EPA during the week of October 15, 1990)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-002-2341 To 2342 Date: 11/29/90

Title: (Letter discussing and forwarding the analytical results of sampling at drywells #1 and #3)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Kiser, David J.: NY Dept of Environmental Conservation

FAC 003 1336

Document Number: FAC-002-2343 To 2343 Date: 11/29/90

Title: (Memo forwarding the draft Remedial Investigation Report for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Josephson, J. Jeff: US EPA
Recipient: Adams, Darvene: US EPA

Document Number: FAC-002-2344 To 2344 Date: 01/03/91

Title: (Letter forwarding Field Notes for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Feinberg, Charles: Alliance Technologies Corporation
Recipient: Moyik, Cathy: US EPA
Attached: FAC-002-2345

Document Number: FAC-002-2345 To 2389 Parent: FAC-002-2344 Date: / /

Title: Facet Enterprises Site Book #1

Type: OTHER
Author: none: Alliance Technologies Corporation
Recipient: none: US EPA

Document Number: FAC-002-2390 To 2392 Date: 01/07/91

Title: (Letter commenting on the draft Remedial Investigation Report for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Cross, Gardiner: NY Dept of Environmental Conservation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2393 To 2404 Date: 02/12/91

Title: (Letter commenting on the 1990 draft Remedial Investigation Report for the Facet Enterprises site and containing maps of the site)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

FAC 003 1337

Document Number: FAC-002-2405 To 2406 Date: 03/13/91

Title: (Letter responding to EPA's Comments on the 1990 draft Remedial Investigation Report for the Facet Enterprises site and forwarding the modified pages for the Remedial Investigation Report)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Petersen, Carole: US EPA

Document Number: FAC-002-2407 To 2428 Date: 03/14/91

Title: (Letter of transmittal forwarding revised pages and figures of the 1990 Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Blasting, James F.: ERM-Northeast
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2429 To 2443 Date: 03/14/91

Title: U.S. EPA Comments/Purolator Response, 1990 Remedial Investigation, Purolator Products Company, Executive Summary

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: none

Document Number: FAC-002-2444 To 2444 Date: 03/20/91

Title: (Letter stating that information regarding Allied-Signal's solvent disposal at Purolator's Elmira plant is not presently available)

Type: CORRESPONDENCE
Author: Young, Carl H., III: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2445 To 2446 Date: 04/02/91

Title: (Letter commenting on the "Test Trench Excavation Work Plan Appendix II" for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Cross, Gardiner: NY Dept of Environmental Conservation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2447 To 2447 Date: 05/14/91

Title: (Letter forwarding the attached "Technical Review of Purolator Products Company, Remedial Investigation, Test Trench Excavation Work Plan, Appendix II")

Type: CORRESPONDENCE
Author: Feinberg, Charles: Alliance Technologies Corporation
Recipient: Moyik, Cathy: US EPA
Attached: FAC-002-2448

Document Number: FAC-002-2448 To 2471 Parent: FAC-002-2447 Date: 05/10/91

Title: Technical Review of Purolator Products Company, Remedial Investigation, Test Trench Excavation Work Plan, Appendix II, Facet Enterprises Site

Type: PLAN
Author: Foster, Charles H.: Alliance Technologies Corporation
Recipient: Taccone, Tom: US EPA

Document Number: FAC-002-2472 To 2473 Date: 05/24/91

Title: (Letter listing the changes that must be made to the Remedial Investigation in order for Purolator Products Company to be in compliance with Administrative Order #60205)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-002-2474 To 2474 Date: 06/04/91

Title: (Letter discussing the fencing of the southern tract of the Purolator (Facet) site and forwarding a copy of a May 14, 1991 letter stating additional details for the proposed work)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Wilson, Lloyd: NY Dept of Health
Attached: FAC-002-2475

Document Number: FAC-002-2475 To 2476 Parent: FAC-002-2474 Date: 05/14/91

Title: (Letter discussing the fencing around the southern tract of the Purolator (Facet) site)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2477 To 2484 Date: 06/05/91

Title: (Letter forwarding the Risk Assessment Report and results of the oversight samples taken at the North Drainage Way for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: INCOMPLETE; MISSING ATTACHMENT
Author: Petersen, Carole: US EPA
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-002-2485 To 2486 Date: 06/07/91

Title: (Letter listing the information needed to conduct the confirmatory sampling analysis at the Facet Enterprises site is a manner acceptable to EPA)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2487 To 2488 Date: 06/24/91

Title: (Memo discussing a June 19, 1991, sampling trip report for the Facet Enterprises site, when monitoring wells were sampled)

Type: CORRESPONDENCE
Author: Brochu, Amy J.: US EPA
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2489 To 2489 Date: 07/24/91

Title: (Memo discussing the analytical results of sampling conducted on June 19, 1991 at the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Brochu, Amy J.: US EPA
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-002-2490 To 2490 Date: 07/25/91

Title: (Memo discussing the revalidation of inorganic data for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Sheikh, Hanif: US EPA
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-0001 To 0001 Date: 08/02/91

Title: (Letter commenting on Purolator Product's Test Trench Field Sampling Plan and Health and Safety Plan, each dated February 14, 1991)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Howland, Reeve B.: Purolator Products Company
Attached: FAC-003-0002

Document Number: FAC-003-0002 To 0016 Parent: FAC-003-0001 Date: / /

Title: Attachment I, Field Sampling Plan Work Plan, General Comments

Type: PLAN
Author: none: US EPA
Recipient: none: Purolator Products Company

Document Number: FAC-003-0017 To 0017 Date: 09/11/91

Title: (Letter forwarding the attached Dames & Moore draft report regarding the results of the efforts to locate drywells #2 and #5)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0018 FAC-003-0019

Document Number: FAC-003-0018 To 0018 Parent: FAC-003-0017 Date: 07/11/91

Title: Inspection and Repair of Monitoring Wells - 7/10/91 - 7/11/91

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: FAC-003-0019 To 0040 Parent: FAC-003-0017 Date: 08/28/91

Title: (Report summarizing the investigations conducted to locate seven drywells and providing recommendations for further work to open and inspect the drywells)

Type: REPORT
Condition: DRAFT
Author: Blickwedehl, Robert D.: Dames & Moore
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0041 To 0041 Date: 09/16/91

Title: (Letter forwarding the attached monitoring well maintenance activities performed by ERM-Northeast on July 10 and 11, 1991)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0042

Document Number: FAC-003-0042 To 0042 Parent: FAC-003-0041 Date: 07/11/91

Title: Inspection and Repair of Monitoring Wells - 7/10/91 - 7/11/91

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: FAC-003-0043 To 0044 Date: 09/17/91

Title: (Letter discussing Purolator Products Company's comments on the draft final Risk Assessment Report for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Petersen, Carole: US EPA
Recipient: Boruta, Roman E.: Purolator Products Company

Document Number: FAC-003-0045 To 0045 Date: 09/18/91

Title: (Letter stating that Purolator Products Company is not required to submit a feasibility study work plan and providing assistance on how to address the floating product in monitoring well D-5)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Boruta, Roman E.: Purolator Products Company

Document Number: FAC-003-0046 To 0050 Date: 09/24/91

Title: (Letter commenting on EPA's review of the inorganic data generated during the Remedial Investigation activities of 1990)

Type: CORRESPONDENCE
Author: Blasting, James F.: ERM-Northeast
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-003-0051 To 0052 Date: 09/27/91

Title: (Letter commenting on Purolator Products Company's response to EPA's comments on the test trench work plan)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0053 To 0054 Date: 10/10/91

Title: (Letter forwarding minutes of the October 1, 1991, meeting and identifying relevant action items)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Boruta, Roman E.: Purolator Products Company
Recipient: Petersen, Carole: US EPA

Document Number: FAC-003-0055 To 0055 Date: 10/18/91

Title: (Letter commenting on the revised section 5 of the Test Trench Work Plan and stating that another revision to section 5 is necessary)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0056 To 0056 Date: 10/24/91

Title: (Letter forwarding the attached monthly activity report for September 1991)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0057

Document Number: FAC-003-0057 To 0058 Parent: FAC-003-0056 Date: 10/03/91

Title: Purolator Products Company, Remedial Investigation, Monthly Report for September 1991

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: US EPA

Document Number: FAC-003-0059 To 0060 Date: 10/28/91

Title: (Letter responding to EPA's comments on the 1990 Remedial Investigation organics data)

Type: CORRESPONDENCE
Author: Blasting, James F.: ERM-Northeast
Recipient: Skaggs, James R. Jr.: Purolator Products Company
Attached: FAC-003-0061

Document Number: FAC-003-0061 To 0062 Parent: FAC-003-0059 Date: 10/28/91

Title: Table I: 10/28/91, Organics Data Validation Review, 1990 Remedial Investigation, Purolator Products Company

Type: FINANCIAL/TECHNICAL
Author: none: ERM-Northeast
Recipient: none: none

Document Number: FAC-003-0063 To 0063 Date: 10/29/91

Title: (Letter forwarding the revised Risk Assessment for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Josephson, J. Jeff: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0064 To 0064 Date: 11/27/91

Title: (Letter forwarding the attached draft tables summarizing the costs incurred at the Kentucky Avenue Wellfield site and costs projected to be incurred at the Sullivan Street Wells)

Type: CORRESPONDENCE
Author: Doyle, James: US EPA
Recipient: Garrett, Theodore L.: Covington & Burling
Attached: FAC-003-0065 FAC-003-0066

Document Number: FAC-003-0065 To 0065 Parent: FAC-003-0064 Date: 06/07/91

Title: (Table of a draft estimate of all EPA costs as of June 7, 1991, at the Kentucky Avenue Wellfield site including anticipated future costs at the Sullivan Street Wellfield)

Type: FINANCIAL/TECHNICAL
Author: none: none
Recipient: none: none

Document Number: FAC-003-0066 To 0066 Parent: FAC-003-0064 Date: / /

Title: Costs Associated with Air Stripper Design at Sullivan Street Wellfield - Subject to Change

Type: FINANCIAL/TECHNICAL
Author: none: none
Recipient: none: none

Document Number: FAC-003-0067 To 0073 Date: 11/19/91

Title: (Letter commenting on the Purolator Test Trench Quality Assurance Plan and the Field Sampling Plan)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0074 To 0074 Date: 11/26/91

Title: (Letter discussing an October 31, 1991, letter regarding the investigation of the non-aqueous phase contamination present at monitoring well D-5 at the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0075 To 0077 Date: 11/29/91

Title: (Letter discussing the action items raised in Mr. Boruta's October 10, 1991, letter)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Boruta, Roman E.: Purolator Products Company

Document Number: FAC-003-0078 To 0078 Date: 12/05/91

Title: (Letter forwarding a draft copy of the work plan for the floating product at the Facet Enterprises site and requesting written comments on the plan)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Josephson, J. Jeff: US EPA
Recipient: Cross, Gardiner: NY Dept of Environmental Conservation

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Document Number: FAC-003-0079 To 0079 Date: 12/09/91

Title: (Letter forwarding the attached proposed schedule for the Elmira test trenching)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Petersen, Carole: US EPA
Attached: FAC-003-0080

Document Number: FAC-003-0080 To 0080 Parent: FAC-003-0079 Date: / /

Title: Figure 9-1, Test Trench Excavation, Purolator Products Company, Elmira, N.Y.

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: FAC-003-0081 To 0081 Date: 12/04/91

Title: (Memo forwarding the attached response to the September 24, 1991, ERM revalidation of the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Sheikh, Hanif: US EPA
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0082

Document Number: FAC-003-0082 To 0085 Parent: FAC-003-0081 Date: 10/17/91

Title: (Memo discussing the differences between ERM's and EPA's interpretation of recognized data validation guidelines and practices)

Type: CORRESPONDENCE
Author: Boshart, Dale S.: Roy F. Weston, Inc.
Recipient: Sheikh, Hanif: US EPA

Document Number: FAC-003-0086 To 0086 Date: 01/16/92

Title: (Sign-in sheet for the Facet Enterprises site January 16, 1992, meeting)

Type: OTHER
Author: various: various
Recipient: none: various

Document Number: FAC-003-0087 To 0087 Date: 01/28/92

Title: (Letter stating that as of March 31, 1992, Alliance Technologies Corporation will incur expenditures of $100,195.00 which is approximately 75% of the presently authorized amount)

Type: CORRESPONDENCE
Author: Feinberg, Charles: Alliance Technologies Corporation
Recipient: Moyik, Cathy: US EPA

Document Number: FAC-003-0088 To 0088 Date: 01/31/92

Title: (Letter providing EPA with an update of the Elmira Plant drywell investigation being conducted under NYSDEC Consent Order #R8-0771-90-04)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-0089 To 0089 Date: 02/14/92

Title: (Letter forwarding Revision 3 of the Risk Assessment for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Josephson, J. Jeff: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0090 To 0090 Date: 02/21/92

Title: (Memo stating that the revised Field Oversight Work/Quality Assurance Plan for the Purolator Products Company Site Drum Excavation has been approved)

Type: CORRESPONDENCE
Author: Scalise, Laura: US EPA
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-0091 To 0092 Date: 02/24/92

Title: (Letter requesting approval to establish a staging area for "roll off" containers, and asking that the use of lined staging areas for storage of contaminated soil be used)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0093

Document Number: FAC-003-0093 To 0093 Parent: FAC-003-0091 Date: 08/01/91

Title: "Roll Off" Container Location Map, Area 4

Type: GRAPHIC
Author: none: ERM-Northeast
Recipient: none: Purolator Products Company

Document Number: FAC-003-0094 To 0095 Date: 03/30/92

Title: (Letter discussing the intrusion of water into the Disposal Area 1/2 excavation at the Purolator Products Company)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-0096 To 0097 Date: 03/31/92

Title: (Letter commenting on Mr. Skaggs' March 30, 1992, letter regarding dewatering activities in excavation areas where drum removal is being conducted at the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0098 To 0145 Date: 04/23/92

Title: Bi-Weekly Oversight Summary Report, Period 30 March 1992 to 10 April 1992, Test Trench Excavation, Purolator Products Company Site (Facet Enterprises)

Type: REPORT
Author: Foster, Charles H.: Alliance Technologies Corporation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-0146 To 0146 Date: 05/08/92

Title: (Letter confirming a May 19, 1992, meeting and forwarding the attached proposed meeting agenda, which is to be reviewed)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0147

Document Number: FAC-003-0147 To 0147 Parent: FAC-003-0146 Date: 05/19/92

Title: Facet Enterprises Superfund Site, Meeting Agenda, May 19, 1992, 9:00 AM

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: FAC-003-0148 To 0148 Date: 05/11/92

Title: (Letter forwarding the attached ERM-Northeast monthly reports for January 1992, through March 1992, for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Howland, Reeve B.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0149 FAC-003-0150 FAC-003-0151

Document Number: FAC-003-0149 To 0149 Parent: FAC-003-0148 Date: 03/13/92

Title: Purolator Products Company, Remedial Investigation, Monthly Report for January, 1992

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-003-0150 To 0150 Parent: FAC-003-0148 Date: 03/13/92

Title: Purolator Products Company, Remedial Investigation, Monthly Report for February, 1992

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-003-0151 To 0151 Parent: FAC-003-0148 Date: 04/15/92

Title: Purolator Products Company, Remedial Investigation, Monthly Report for March, 1992

Type: REPORT
Author: Blasting, James F.: ERM-Northeast
Recipient: none: none

Document Number: FAC-003-0152 To 0153 Date: 05/22/92

Title: (Letter listing the facilities Purolator Products Company is considering using to dispose of waste generated as part of the test trenching Interim Remedial Measure)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0154

Document Number: FAC-003-0154 To 0154 Parent: FAC-003-0152 Date: / /

Title: Purolator Products Company, Test Trench Excavations, Perimeter Ambient Air Monitoring

Type: FINANCIAL/TECHNICAL
Author: none: none
Recipient: none: none

Document Number: FAC-003-0155 To 0156 Date: 05/27/92

Title: (Letter forwarding the attached minutes of the May 19, 1992, meeting and listing the action items discussed during the meeting)

Type: CORRESPONDENCE
Author: Boruta, Roman E.: Purolator Products Company
Recipient: Petersen, Carole: US EPA
Attached: FAC-003-0157 FAC-003-0159

Document Number: FAC-003-0157 To 0158 Parent: FAC-003-0155 Date: 05/19/92

Title: EPA/Purolator Meeting Minutes, Facet Enterprises Inc., Superfund Site, May 19, 1992

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: FAC-003-0159 To 0159 Parent: FAC-003-0155 Date: 05/19/92

Title: Attachment I, Facet Enterprises Site, May 19, 1992 (Attendance list)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: FAC-003-0160 To 0161 Date: 05/29/92

Title: (Letter stating that all the facilities mentioned in Mr. Skaggs' May 22, 1992, letter are acceptable for off-site disposal of waste from the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0162 To 0164 Date: / /

Title: (Letter commenting on the Addendum to the Field Sampling/Work Plan for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-003-0165 To 0166 Date: / /

Title: (Letter expressing concern over installation of a rail track near the Facet Enterprises site due to elevated levels of PCBs in the landfill surface soils)

Type: CORRESPONDENCE
Author: Nosunchuck, Norman H.: NY Dept of Environmental Conservation
Recipient: Luftig, Stephen D.: US EPA

Document Number: FAC-003-0167 To 0172 Date: / /

Title: (Letter commenting on the Field Sampling/Work Plan, Quality Assurance Work Plan Document, and the Health and Safety Plan for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: DRAFT; MARGINALIA
Author: Petersen, Carole: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-003-0173 To 0174 Date: / /

Title: (Letter forwarding a validated copy of the confirmatory sampling data from the selected monitoring wells at the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Josephson, J. Jeff: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0175 To 0175 Date: 01/17/91

Title: 1990 RI Sediment Sample Locations (Map of the Village of Elmira Heights)

Type: GRAPHIC
Author: none: Alliance Technologies Corporation
Recipient: none: none

Document Number: FAC-003-0176 To 0181 Date: 03/06/91

Title: (Letter forwarding the attached summary of New York State Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered (TBC) standards for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Belmore, Edward R.: NY Dept of Environmental Conservation
Recipient: Petersen, Carole: US EPA
Attached: FAC-003-0182

Document Number: FAC-003-0182 To 0251 Parent: FAC-003-0176 Date: 09/25/90

Title: (Memo forwarding Ambient Water Quality Standards and Guidance Values for toxic and non-conventional pollutants)

Type: CORRESPONDENCE
Author: Pagano, Salvatore: NY Dept of Environmental Conservation
Recipient: various: NY Dept of Environmental Conservation

Document Number: FAC-003-0252 To 0256 Date: 06/11/91

Title: (Letter forwarding an attached list and map of the current, active tanks and underground tanks that have been removed from the Purolator Products Elmira facility)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-0257 To 0827 Date: 03/05/92

Title: Feasibility Study Report, Purolator Products Company, Elmira, New York

Type: REPORT
Author: none: ERM-Northeast
Recipient: none: Purolator Products Company

Document Number: FAC-003-0828 To 0846 Date: 05/01/92

Title: Superfund Proposed Plan, Facet Enterprises, Inc., Site, Village of Elmira Heights, New York

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

Document Number: FAC-003-0847 To 0869 Date: 01/01/92

Title: Supplement to the Feasibility Study, Facet Enterprises, Inc., Superfund Site, Elmira, New York - Spring 1992

Type: PLAN
Author: Miller, Alison: Alliance Technologies Corporation
Recipient: Foster, Charles H.: Alliance Technologies Corporation

Document Number: FAC-003-0870 To 0873 Date: 07/13/89

Title: (Letter discussing the Work Plan Soil and Surface Water Investigation, Motor Components Division, Facet Enterprises, Inc., Elmira, New York)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-003-0874 To 0874 Date: 12/07/90

Title: (Letter discussing the submittal of a draft Feasibility Study Work Plan for the Facet Enterprises site and requesting a meeting to discuss the Feasibility Study and the Draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: Howland, Reeve B.: Purolator Products Company

Document Number: FAC-003-0875 To 0875 Date: 08/02/91

Title: (Letter discussing the status of Southwest Laboratories and how to proceed with the Feasibility Study)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Boruta, Roman E.: Purolator Products Company

Document Number: FAC-003-0876 To 0907 Date: 09/24/91

Title: (Letter forwarding the attached soil sampling summary table, analytical reports, and laboratory data reports for sampling performed for the Facet Enterprises site Feasibility Study)

Type: DATA
Author: Blasting, James F.: ERM-Northeast
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0908 To 0913 Date: 11/29/91

Title: (Letter providing comments on the draft Feasibility Study Report for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Cross, Gardiner: NY Dept of Environmental Conservation
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-0914 To 0921 Date: 12/23/91

Title: (Letter providing comments on the draft Feasibility Study for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Petersen, Carole: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-0922 To 0923 Date: 01/14/92

Title: (Letter forwarding the preliminary response to comments and a Technical Memorandum for EPA's review)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-0924 FAC-003-0930

Document Number: FAC-003-0924 To 0929 Parent: FAC-003-0922 Date: / /

Title: Preliminary Response to Comments, Administrative Order, Index II, CERCLA 60205 Facet Enterprises Superfund Site, Elmira, New York

Type: PLAN
Author: none: ERM-Northeast
Recipient: none: US EPA

FAC 003 1357

Document Number: FAC-003-0930 To 1016 Parent: FAC-003-0922 Date: 01/14/92

Title: Technical Memorandum No. 1 - Preliminary Response to USEPA Comments and Revised Remediation Goals and Volume Estimates for Soil and Sediment

Type: FINANCIAL/TECHNICAL
Author: none: ERM-Northeast
Recipient: none: Purolator Products Company

Document Number: FAC-003-1017 To 1018 Date: 01/31/92

Title: (Letter forwarding the attached summary of discussion for EPA's review and identifying certain items requiring action or response)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-1019

Document Number: FAC-003-1019 To 1023 Parent: FAC-003-1017 Date: 01/24/92

Title: Summary of Discussion - Facet Enterprises Site, Feasibility Study

Type: PLAN
Author: none: Purolator Products Company
Recipient: none: none

Document Number: FAC-003-1024 To 1025 Date: 02/06/92

Title: Exhibit B (Letter discussing the need for an extension of time in which to complete the Final Feasibility Study for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-1026 To 1026 Date: 02/18/92

Title: (Letter forwarding documents in response to EPA comments on the draft Feasibility Study)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-1027 To 1027 Date: 03/05/92

Title: (Letter forwarding copies of the Final Feasibility Study for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Petersen, Carole: US EPA

Document Number: FAC-003-1028 To 1030 Date: 03/20/92

Title: (Letter discussing submittal of the draft Feasibility Study report and detailing the status of the relationship between Purolator (Facet) and EPA)

Type: CORRESPONDENCE
Author: Callahan, Kathleen C.: US EPA
Recipient: Boruta, Roman E.: Purolator Products Company

Document Number: FAC-003-1031 To 1032 Date: 04/21/92

Title: (Letter forwarding the draft Proposed Plan for the Facet Enterprises site for NYSDEC's review)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Petersen, Carole: US EPA
Recipient: Belmore, Edward R.: NY Dept of Environmental Conservation

Document Number: FAC-003-1033 To 1033 Date: 04/28/92

Title: (Letter responding to EPA's letter of March 20, 1992, regarding the Final Feasibility Study submittal date and discussing Purolator's responsiveness throughout the Facet Enterprises project)

Type: CORRESPONDENCE
Author: Boruta, Roman E.: Purolator Products Company
Recipient: Petersen, Carole: US EPA

Document Number: FAC-003-1034 To 1035 Date: 05/15/92

Title: (Letter providing concurrence with the selected remedial alternative from the draft Proposed Plan for the Facet Enterprises site and providing additional comments)

Type: CORRESPONDENCE
Author: Markell, David L.: NY Dept of Environmental Conservation
Recipient: Josephson, J. Jeff: US EPA
Attached: FAC-003-1036

Document Number: FAC-003-1036 To 1036 Parent: FAC-003-1034 Date: 05/12/92

Title: (Letter providing comments on the Preferred Remedial Action Plan (PRAP) for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Wilson, Lloyd: NY Dept of Health
Recipient: Cross, Gardiner: NY Dept of Environmental Conservation

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Document Number: FAC-003-1037 To 1037 Date: 05/18/92

Title: (Memo documenting the cost estimate for Alternative 8 of the Facet Enterprise site Proposed Plan)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: file: US EPA

Document Number: FAC-003-1038 To 1038 Date: 06/02/92

Title: (Letter forwarding a copy of the Proposed Plan and the Supplement to the Feasibility Study, and giving notice of the Public Meeting for the Facet Enterprises site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Josephson, J. Jeff: US EPA
Recipient: Skaggs, James R. Jr.: Purolator Products Company

Document Number: FAC-003-1039 To 1039 Date: 01/04/91

Title: (Letter modifying a State Pollutant Discharge Elimination System (SPDES) permit for Hardinge Brothers, Inc., in Horseheads, NY)

Type: CORRESPONDENCE
Author: Scott, Robert K.: NY Dept of Environmental Conservation
Recipient: Matteson, Jim: Hardinge Brothers, Inc.
Attached: FAC-003-1040

Document Number: FAC-003-1040 To 1044 Parent: FAC-003-1039 Date: 01/04/91

Title: State Pollutant Discharge Elimination System (SPDES) Discharge Permit (for Hardinge Brothers, Inc.)

Type: OTHER
Author: Scott, Robert K.: NY Dept of Environmental Conservation
Recipient: Matteson, Jim: Hardinge Brothers, Inc.

Document Number: FAC-003-1045 To 1046 Date: 03/09/90

Title: (Letter discussing analytical results for samples collected on December 12, 1989, during an annual inspection of the Facet Enterprises facility)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Kiser, David J.: NY Dept of Environmental Conservation
Recipient: Howland, Reeve B.: Facet Enterprises

Document Number: FAC-003-1047 To 1048 Date: 03/17/88

Title: (Handwritten memo discussing the transfer of sites within EPA Office of Regional Counsel)

Type: CORRESPONDENCE
Author: Thompson, Margaret: US EPA
Recipient: Schaaf, Eric: US EPA

Document Number: FAC-003-1049 To 1049 Date: 07/31/91

Title: (Letter discussing the cause of dead trees at the Purolator Products (Facet Enterprises) site)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-1050 To 1050 Date: 11/28/88

Title: (Memo forwarding the attached draft Preliminary Health Assessment for the Facet Enterprises site for review)

Type: CORRESPONDENCE
Author: Nelson, William: Agency for Toxic Substances & Disease Registry (ATSDR)
Recipient: Visnic, Chris: US EPA
Attached: FAC-003-1051

Document Number: FAC-003-1051 To 1064 Parent: FAC-003-1050 Date: 10/01/88

Title: Draft Preliminary Health Assessment, Facet Enterprises, Inc., NY

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

Document Number: FAC-003-1065 To 1074 Date: 05/01/89

Title: Preliminary Health Assessment For Facet Enterprises, Inc., CERCLIS No. NYD073675514, Chemung County, Elmira Heights, New York

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

Document Number: FAC-003-1075 To 1075 Date: 05/22/92

Title: (Letter discussing the availability of public documents for the Facet Enterprises site)

Type: CORRESPONDENCE
Author: Josephson, J. Jeff: US EPA
Recipient: Brink, Gordon R.: Elmira Heights (Village of)

Document Number: FAC-003-1076 To 1076 Date: 01/16/92

Title: EPA Meeting Agenda, January 16, 1992

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

Document Number: FAC-003-1077 To 1077 Date: 01/09/92

Title: (Letter forwarding a proposed agenda for a January 16, 1992, meeting between EPA and Purolator)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Josephson, J. Jeff: US EPA

Document Number: FAC-003-1078 To 1078 Date: 09/27/91

Title: (Letter forwarding a proposed agenda for an October 1, 1991, meeting between EPA and Purolator Products Company)

Type: CORRESPONDENCE
Author: Skaggs, James R. Jr.: Purolator Products Company
Recipient: Taccone, Tom: US EPA
Attached: FAC-003-1079

Document Number: FAC-003-1079 To 1079 Parent: FAC-003-1078 Date: 10/01/91

Title: EPA Meeting Agenda, October 1, 1991

Type: PLAN
Author: none: Purolator Products Company
Recipient: none: US EPA

Document Number: FAC-003-1080 To 1081 Date: 10/10/91

Title: (Letter forwarding minutes from the October 1, 1991, Facet Enterprises site meeting between EPA and Purolator, and identifying specific action items)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Boruta, Roman E.: Purolator Products Company
Recipient: Petersen, Carole: US EPA
Attached: FAC-003-1082

Document Number: FAC-003-1082 To 1085 Parent: FAC-003-1080 Date: 10/01/91

Title: EPA/Purolator Meeting Minutes, Facet Enterprises, Inc., Superfund Site, October 1, 1991

Type: PLAN
Author: none: Purolator Products Company
Recipient: none: US EPA

Document Number: FAC-003-1086 To 1086 Date: 04/14/89

Title: (Letter forwarding copies of articles from the Elmira Star Gazette dealing with groundwater contamination in the Newtown Creek Aquifer)

Type: CORRESPONDENCE
Condition: MISSING ATTACHMENT
Author: Considine, L. Edward: Elmira Water Board
Recipient: Josephson, J. Jeff: US EPA

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Document Number: FAC-003-1087 To 1087 Date: 02/24/89

Title: (Letter expressing concern and requesting information about a toxic waste site on the Facet Enterprises facility in Elmira Heights, New York)

Type: CORRESPONDENCE
Author: Brink, Gordon R.: Elmira Heights (Village of)
Recipient: Lynch, Kevin: US EPA

Document Number: FAC-003-1088 To 1092 Date: / /

Title: (Maps and graphics of the piping and sewer systems around the Facet Enterprises site)

Type: GRAPHIC
Author: none: various
Recipient: none: none

Document Number: FAC-003-1093 To 1159 Date: 11/01/77

Title: Groundwater Model Application to the Chemung Basin 208 Study Area, New York State

Type: FINANCIAL/TECHNICAL
Author: Reisenauer, A.E.: Battelle Pacific Northwest Laboratories
Recipient: none: The Southern Tier Central Regional Planning and Development Board

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APPENDIX IV

STATE LETTER OF CONCURRENCE

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

Thomas C. Jorling
Commissioner

JUN 30 1992

Ms. Kathleen C. Callahan
Director
Emergency & Remedial Response Division
USEPA, Region II
26 Federal Plaza
New York, NY 10278

Dear Ms. Callahan:

Re: Facet Enterprises Site, Chemung Co, NY
Record of Decision

The purpose of this letter is to confirm the New York State Department of Environmental Conservation's concurrence with USEPA's Record of Decision for the Facet Enterprises NPL Site in Elmira Heights, NY. The selected remedial measure will remove a significant source of groundwater contamination in the Newtown Creek Aquifer.

The ROD notes that EPA will evaluate the need for further action in areas 1,2, and 3 based on the results of confirmatory sampling performed after the drum removal. NYSDEC must have the opportunity to review and concur with this decision when it is made.

We greatly appreciate USEPA's efforts to have as much contaminated material as possible removed from the site for proper treatment and disposal. However, as mentioned in the ROD, some hazardous substances will remain on-site. We support efforts to restrict access to this site in the future to prevent inadvertent human exposure to these substances. A deed restriction would be the most effective means to accomplish this. If this option is unavailable, then NYSDEC and NYSDOH retain the option of filing a deed notification letter with the appropriate local authorities.

Sincerely,

for Charles Goddard

Michael J. O'Toole, Jr. P.E.
Director
Division of Hazardous Waste Remediation

GC/kp

cc: A. Carlson

FAC 003 1367

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To Jeff Josephson	From George Harris
Co.	Co.
Dept.	Phone #
Fax #	Fax #

TOTAL P.01

APPENDIX V

RESPONSIVENESS SUMMARY

FAC 003 1368

SIGN-IN SHEET

FACET ENTERPRISES PUBLIC Meeting
Elmira Heights, N.Y. 6/16/92

NAME	ADDRESS
Gardiner Cross	NYSDEC 50 Wolf Rd Albany, NY 12203
Jim Skaggs	Po Box 2967 Houston, TX ~~[illegible]~~ 77252
RALPH KREBS	106 LILAC DR. H'HEADS, NY 14845
Ed DERRY	282 Robinwood Elmira HTS. 14903
Robert J. Kurcoba	ELMIRA WATER BOARD
J Bruce Fox	" " "
Dominic Scaringe	" " "
DAVID SEELY	40 CHURCHILL PL - BIG FLATS, NY 14814
Joseph W. Poliseo	703 Fern Dell Dr. Elmira, NY 14905
Al & Pat Salas	278 ROBINWOOD AVE ELMIRA HTS. NY. 14
[illegible]	111 Hoffman St Elmira NY 14905
Kim Mann	NYS Dept Health, Albany
Andy Michalko	209 SCOTTWOOD HGHTS
Marion Smith	208 SHERIDAN AVE ELM HTS.
Donald Evelson	253 W. 18th St. Elmira Hgts.
Joanna Derry	232 W 14 St. El. Hgts.
Marjorie & Walter Melville	285 Robinwood Ave. El Hgts.

STATE OF NEW YORK
COUNTY OF CHEMUNG

- -

In the Matter

of

Facet enterprises Superfund Site

Village of Elmira Heights, Chemung County, New York

- -

A Public Meeting held at Village of Elmira Heights Village Hall, Elmira Heights, New York, on the 16th day of June, 1992, commencing at 7:00 PM.

BEFORE: CZERENDA COURT REPORTING, INC
164 Court Street
Bingamton, New York 13902
BARBARA L. HEURING
Shorthand Reporter
Notary Public
Binghamton - (607) 723-5820
(800) 633-9149

ALSO PRESENT:

Ann Rychlenski, Community Relations Coordinator
Kevin Lynch, Chief Western New York Superfund Section II
Jeff Josephson, Remedial Project Manager
James Doyle, Office of Regional Counsel

FAC 003 1370

MS. RYCHLENSKI: Good evening. Hi. Thank you for all coming out here tonight.

My name is Ann Rychlenski, and I'm a community coordination advisor in the United States Environmental Protection Agency. This is to present the proposed plan for the Superfund site, Facet Enterprises, in Elmira heights.

I want to introduce my constituents. Immediately to my right is James Doyle. He's with our office of regional counsel. This is Mr. Kevin Lynch, he's a section chief with the Superfund. Kevin is going to be speak to you about Superfund and explain the ins and outs of Superfund. And right there at the very end is Mr. Jeff Josephson, and Jeff is the project manager for the EPA on the Facet site.

Jeff is going to be talking about a couple things about a remedial investigation and feasiblity study,

FAC 003 1371

field investigations EPA did at the site, how much it is and where it is, and feasiblity study, which is pretty much what it sounds like, to see how indeed can we clean this up, what is the most feasible way. And Jeff is going to be speak about the proposed plan and this is the proposed plan for the clean up itself.

I wanted to speak about a few things. We have a stenographer here, and her purpose is to keep a record of this meeting. This is a public hearing and we are going to be taking public comment here tonight. So, whatever you say, whatever comments you have, whether they're questions or comments as to how we're doing our job, that will be going on the public record.

In addition, we will be having something known as the public comment period, and that goes until June 27, I believe, close of business June 27. If you wish to put any comments in writing about how you feel about the proposed plan for clean up, you can do that and send it on to Jeff. And it has to be postmarked by the 27th of June, and that will also go into record.

One of the reasons we do this is because community acceptance of the selection process is very, very important. And this is how we get community comment, so it is important that your comments be on the record. Once we get all those comments, EPA will look at them and respond to them in a document. All the documents pertinent to this site, all the information will be right here in the Village Hall so you can come in and look at them and go through them and see what you think and make your comments accordingly so they are available to you.

I just want to let you know, after we're done with the presentations, we will have a question and answer period. For the purposes of keeping a clear record of this meeting, when you ask your questions or give your comments, please stand, please speak clearly and please state your name each time you comment or give a question, and that's so the stenographer can keep a record. I think that's about it.

Without any further ado, I will turn this over to Mr. Lynch. I just want to acknowledge here Mr. Mann from the New York State Department of Health, and I believe there are some representatives from the Elmira Water Board here tonight. And where are they? Just wanted to acknowledge it. That's about it. And with no further ado, Kevin?

MR. LYNCH: I'd like to take a couple minutes to talk about the law we work under and process we do. In the late 70s there were a couple of environmental emergencies that came up; one the Love Canal where it was discovered people were living on a leaking hazardous waste; and a chemical control fire where some 80 thousand barrels of waste were piled up in an incinerator in New Jersey.

Up until that time we realized the federal government had no way of dealing with thses and passed the Comprehensive and Liability Act, which also had with it a $1.5 Billion fund to pay for the actions we'd take. This is called the Superfund, and that's what we've been known as ever since.

When they looked at the world out there, world of sites, they thought there were going to be hundreds of sites out there, and they wanted to approach the worst sites. They created a national priorities list. You can get a site on the list a number of different ways; the most common ways, the state would nominate a site to us, we would do preliminary assessment, we would gather any information that was out there about the site, possibly a site investigation where we go out and grab samples themselves to evaluate the sites. We were trying to look at the sites -- the most potential for harm so we could address them first.

The information we get, we put in a mathematical model. If it's above a certain score, it goes on the national priority list and we address it using the Superfund. If it's below the number, the state usually addresses it using the state fund. Once it gets on the list, there are a couple ways we can take action. One, emergency situation, threat of a fire or people drinking seriously contaminated water, we can take emergency actions called removals.

The normal way we go about a site, we would do a study which is a remedial investigation feasibility study. Remedial investigation goes into the field, takes environmental samples, soil, the air, groundwater, to try to determine the nature and extent of the problem. What we're looking for is what is out there, where is it, where is it going. We take that information and do a feasibility study, which is a study of different alternative solutions which we analyze through certain criteria. We have to identify what's the best thing we do with the site once we do that.

We go through the remedy selection process, the agency will try to identify what we believe the best thing to do out there, put it in a proposed plan and then we present it to the public, which we're going to do tonight, and we ask for your comments on it. At that time, we'll come back, take the comments, present everything to our regional administrator. He will sign what we call a record of decision, which is the decision on the solution of what we'll do, what we'll implement at the site.

Once selected, they go into a detailed design and go and implement that design. Now, the Superfund, $1.5 Billion sounded like a lot of money, actually it is a lot of money, and in '85 they added a lot more to it. There are thousands more sites than originally thought than when they passed this, thought it would be a one-shot deal, go out there, clean up the sites. And we're finding tens of thousands of sites across America and these billions of dollars isn't enough to clean up all those sites.

They're much more complicated problems than we thought we were going to find and have taken a lot more to address them and lot more expensive than we thought they would be. The law also allows for an enforcement and it talks to potentially responsible parties and these are anyone who helped create the problem, it could be whoever manufactured the hazardous substance, who set the site, who owned, operated the site or anyone who transported to the sight, all of these people are liable for the cost of cleaning up the site. It's an approach, if you're part of the problem, you have to be part of the sollution.

The EPA addresses that. We will go out and give those responsible parties the opportunity to perform the work, and if they say no, we have a number of choices, we can fund it ourselves, and we can order them to do it and bring them to court to enforce that order and we can go to court and sue them if we fund it ourselves and we would sue them to recover our cost.

In this case, when we went out, one of the potential contributors, Facet agreed to do these studies, anything they do they have to give us plans on, how they're going to do it, they have to be approved by us and we have contractors out on the field watching and making sure they do that. Perolator has since taken over the company and they have completed the study.

Jeff Josephson will be presenting the results of that remedial investigation feasibility study and EPA's proposed plan.

MR. JOSEPHSON: I have a number of investigations to summarize, and I'm going to speak in very general terms. If you have a questions after the talk, I'll be happy to answer them. I will be summarizing a remedial investigation, risk assessment feasibility study, and presenting the proposed plan. The remedial investigation and feasibility study were conducted by Perolator Products Compand and the risk assessment and proposed plan were conducted by EPA.

The remedial investigation considers the types of contaminants that are present at the site, the concentrations that exist and the potential for contamination to leave the facility.

A risk assessment utilizes the

information gained during the remedial investigation and determines what risk the contamination poses to human health and the environment.

The feasibility study incorporated the information from the remedial investigation and risk assessment and looks for alternatives for handling the contaminants.

The proposed plan is EPA's summary of the alternatives in the feasibility study and we also present what the agency feels is the proper approach to the problems.

Remedial Investiation.

for your information, the remedial investigation concentrated on known or suspected disposal areas in the back, or the western edge of the property. In addition, we looked at a piece of property south of the Facet facility and May's creek, which is north of the facility. The investigation consisted of conducting a number of soil borings and sediment analyses from the disposal areas, from the streams and in addition, groundwater, monitoring wells that have been installed at the facility and have been sampled.

A total of 85 soil samples were selected from surface soils or from subsurface borings in known or suspected disposal areas.

25 sediments samples collected from streams, ponds or lagoons at the facility or in streams adjacent to the facility.

14 groundwater samples collected from the monitoring or production wells.

8 water samples collected from streams or lagoons at the facility or in streams adjacent to the facility.

Magnetometer survey - conducted at disposal areas to determine the location of buried drums at the facility.

Evaluation for the presence of critical habitats or endangered species at the facility was conducted.

In addition, information collected during a preliminary investiagion conducted in 1986, and data/information collected by EPA and New York State Department of Environmental Conservation during various inspections at the facility were incorporated into the remedial investigation/feasibilty study reports and proposed plan.

To summarize the results of the remedial investigation, soil contamination exists in waste disposal areas formally used at the facility. The contamination consists of volatiles, that would be solvents such as trichloroethylene; semivolatiles; PCBs, metals; that have been used at the facility. The contamintion primarily exists in subsurface soils.

Sediments in May's creek, the unnamed drainageway south of the facility, the area 6 pond, and the area

10 lagoon have accumulated inorganics, PCBs and semivolatiles at unacceptable concentrations. Investigations conducted by Purolator for the New York State Department of Environmental Conservation at dry wells indicate that sediments in the dry wells is contaminated.

Groundwater collected from some monitoring wells located at the facility are contaminated with volatile organic contaminants, and inorganic contaminants at levels wich exceed federal/state standards for drinking water. At monitoring well D-5, pure product was detected floating on the water surface.

In addition, buried drums have been discovered during the RI and are believed to contain metal plating wastes, as well as other liquid and solid waste materials. The drummed waste when released contributes to the soil and groundwater contamination present at the site. To date, 469 buried drums have been removed and from the facility and 30,000 gallons of waste were removed from disposal areas 1, 2, 3 and 4. In addition, 2,250 tons of soil have been removed.

In addition to determining the nature and types of contaminants and concentrations, one of the purposes of the remedial investigation is to determine groundwater flow direction from the facility in order to determine which way the contamination flows from the property.

I have a map here of the facility. These are the plant buildings, this is Route 14 here. This information is determined by measuring water levels in the monitoring wells at the plant. Based on these water levels at the plant, the conclusion is that the groundwater flow is to the southeast. Furthermore, based on this conclusion, we have concluded that contamination from the facility flows toward the southeast into the Newton Creek aquifier.

Risk_Assessment.

I will summarize the results of the risk assessment. The risk assessment considers what contaminant concentrations are present at the site, and the toxicity of these contaminants.

Equally in addition, and equally as important, the risk assessment considers the pathway, and exposure potential of these contaminants to the population.

For the Facet Enterprises, Inc, site, the exposure pathways considered are: Ingestion of untreated groundwater and ingestion of sediments soils. The exposure pathway analysis evaluates conservative assumptions regarding potential exposure to the contamination.

For contamination that has left the facility and has accumulated in sediments in drainage ways, exposure potential (ingestion of sediment groundwater or surface water) is evaluated for children and adults.

For contamination at the facility exposure potential is evaluated for trespassers, and industrial workers because access to the facility is restricted by a fence and security measures are present at the plant.

Using concentration and toxicity of contaminants, exposure pathway and exposure potential, both carcinogenic and non-carcenogenic risk is evaluated for the Superfund site.

The results of the risk assessment indicate that some of the soil contaminants in some of the disposal areas are present at elevated concentrations which, as determined by the site specific risk assessment, pose an unacceptable risk to human health or the environment. The risk is evaluated conservatively for industrial workers which might come in contact with subsurface soils. In other areas of the facility contaminants are present, but the levels detected during the remedial investigation do not indicate that they pose a risk to human health or the environment.

A relatively small volume of contaminants accumulated in stream sediments in May's creek, and the unnamed drainageway south of the Facet facility pose an unacceptable risk. Using conservative assumptions regarding ingestion of these contaminated soils, the carcinogenic risk exceeds the Environmental Protection Agency's Superfund action level. Removal of these sediments is required to permanently remove the risk. The risk has been temporarily reduced by the installation of a fence around the unnamed drainageway south of the plant.

The volume of soils, sediments which exceed cleanup levels is estimated to be 3,000 to 6,000 cubic yardds.

Based on the results of the

remedical investigation and, the risk assessment a feasibility study is conducted.

Feasibility Study.

The feasibility study incorporates the information gathered and then looks at technologies and methods for handling contamination for the soils and sediments contamination. The alternatives involved primarily treating the material at the plant and putting it back after it no longer contains the levels, consolidating the material and putting it at the facility underneath a cap which would prevent public exposure to that material.

In addition, the treatment alternatives for the site includes a low-temperature thermal absorption that would subject material to low temperature heat, and drive out volatiles or stabalizization of contaminants so the metals can no longer be released to the environment.

In addition, we looked for off site alternatives, that is, to dig up the volume of the material that is unacceptable and send it off site to a permitted landfill, and possibly what would be required would be to consolidate the material, send it off site for treatment and for final disposal off site.

In addition, as required by the Superfund law, we also evaluate a no-action alternative, and that is we evaluate what the site conditions would be if no action is taken.

In addition, we also evaluate what the potential exposure is and long term effects of just restricting access to the property, that would include deed restrictions to prevent future investment of the property.

For groundwater, a no-action alternative is evaluated and groundwater treatments are evaluated. The groundwater treatment alternatives looks at a number of different technologies to remediate the contamination that's in the groundwater.

Each of these alternatives is evaluated according to criteria developed in the Superfund. They include overall protection of human health and environment, compliance with ARARs, long-term effectiveness and permanence, reduction of toxicity, mobility or volume through treatment, short-term effectiveness, implementability, cost and state and acceptance.

Based on that evaluation, EPA develops a proposed plan. For the Facet Enterprises site, EPA is to consolidate soil and sediments and ship off site for treatment and disposal. Based on the remedial investigation results, between 3,000 and 6,000 cubic yards of soil which exceeds cleanup levels will be consolidated from the disposal areas. The material will be characterized for off-site treatment and disposal. The estimated cost based on RI results are $2,462,334, with time and disposal is approximately one year.

For groundwater, the preferred alternative is: Groundwater will be pumped from strategically-placed recovery wells, and treated. The treated water will be discharged either to the facility non-contact cooling system and discharged to surface water, or discharged after treatment directly to the surface water. Based on the assumptions in the feasibility study, the total cost will be $2,388,322. The time required to remediate groundwater at the facility to federal and state is based on model in the feasibility study is 20 years.

Now we open session to questions and comments.

MR. LYNCH: I'd like to think we were thorough enough to cover everything.

MS. DAIRY: Have they made a determination if you are going to -- has the determination made made it is going to be cleaned up and when?

MR. LYNCH: When the determination will be made, the plan that we just proposed that Jeff just described, what we will do now is based on comment we get here, we will recommend to a regional administrator. What we think we're going to recommend is this proposal. If we've done our job right, we should be proposing something that should be accepted.

We will make that recommendation after the public comment period closes, which will be June 27th. So sometime soon after that, depending on the massive comments we get, we will be making a recommendation to him, he will then make that decision.

A time that it would take to implement after that is we would have a series of negotiations with these potential and responsible parties to see if they want to do it, which would take about three months. Actually the law requires us to give 120 days, and the design for the soil would take nine months to a year to do that, so it would be roughly a year from now is when we would start the action.

MS. DAIRY: From the information that you've given us, it sounds like to me and from the diagrams that the contaminants -- now, I'm looking at the upper most part of the property, there's a fence that goes around so it looks to me like any contaminants are below that fence. You don't seem to have found any -- as far as you know, there's no problem beyond that fence, water doesn't run uphill?

MR. JOSEPHSON: I'll address that. Here's a map of the facility you're talking about this area.

MS. DAIRY: Robinwood Avenue area.

MR. JOSEPHSON: As you may know, we've excavated drums from this area and soil. That material will be removed during the month of July.

We conducted some conformational sampling up there to insure all the material that's at unacceptable levels has been removed. We're waiting for the result. We may have to go up and dig up some more. Beyond that fence line, we don't really know. We have evaluated historical photographs from the 40s, 50s and '60s, and they don't show that disposal activities occurred beyond that fence line, and to my knowledge, no, I don't know they did.

In addition, the groundwater map shows that groundwater flow is to the southeast. The wells in this area are monitoring the deep water groundwater that is at 30 feet and we don't know the flow of very shallow groundwater, but is is very unlikely to flow in the opposite direction. It's probably very localized.

groundwater.

MS. DAIRY: Even though right now it's conjecture is just how far it's gone, I do know there are local banks that have refused to work with people along Robinwood Avenue until this is cleaned up. So I feel, if there's -- how would these people, supposing they needed a sampling done, how would they go about this to clear up their own?

MR. JOSEPHSON: For one thing, they can look at the studies that have been conducted to see the information they needed. If after the meeting they wanted to talk to us about it, we can talk to them and see what exactly the problem is. We could talk to the bank and see what their concerns are, and that's about all I can say.

MS. SELWAR: My name is Pat Selwar. You've tested the water, you've tested the ground. Has there been a test of the air quality?

MR. JOSEPHSON: Yes, there has.

MS. SELWAR: How did that make out?

MR. JOSEPHSON: There are results of testing of the air quality during the remediation and drum removal and excavation. I have some of the results with me. The company Purolator, who measured volitiles and particulates, there were no volatiles detedted and particulates were normal, below any kind of level of concern. And I have these numbers and please get a copy of it. That's the work we've done so far.

MS. SELWAR: Now, this would be over a long period of time for residents that's lived there for 30, 40, 50 years?

MR. JOSEPHSON: We haven't monitored for that long.

MS. SELWAR: What I meant, would your test prove there shouldn't have been any?

MR. JOSEPHSON: No, I wouldn't say.

MR. LYNCH: The monitoring we do

is when we are taking activities when we are disturbing the ground is when you would expect something is going to migrate. That's when you would expect it, but we can't draw the conclusion back that nothing has in 30 years.

MS. SELWAR: Is there anyway when they were put in the ground if there were fumes generated at that point?

MR. JOSEPHSON: I don't think there's any way to know for sure. If they conducted some kind of monitoring during that operation, possibly.

MS. RYCHLENSKI: Are there any more questions or comments?

MR. LYNCH: If there are no other questions, we will be around for a while. If someone wants to come up and individually talk to us, we will be glad to talk to them also.

MS. RYCHLENSKI: Before you leave or if you want to come up and talk to us before you leave, please sign in.

There are sign-in sheets. If you haven't already signed in, please give your name and address so I can have it for my mailing list, I can keep you informed what's happening. And there are proposed plans for clean up there.

If you don't have one, please take it. And if you want to write to us and let us know what you think about it, please let Jeff know and do that by the 27th. Thanks a lot for coming out.

- - - - -

STATE OF NEW YORK :
COUNTY OF BROOME :

I, BARBARA L. HEURING, Shorthand Reporter, do certify that the foregoing is a true and accurate transcript of the proceedings in the matter of Facet Enterprises, held in Elmira Heights, New York, on June 16, 1992.

BY: Barbara L. Heuring

BARBARA L. HEURING
Shorthand Reporter
Notary Public
CZERENDA COURT REPORTING, INC
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Purolator.
Products Company

June 26, 1992

VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. J. Jeff Josephson, Project Manager
Western New York Compliance Section
EPA Region II
Jacob K. Javits Federal Building
26 Federal Plaza
New York, New York 10278

RE: ADMINISTRATIVE ORDER, INDEX II, CERCLA 60205
FACET ENTERPRISES - ELMIRA, NY

Dear Mr. Josephson:

This is in response to your letter dated May 26, 1992, in which you provided Purolator a copy of the Proposed Remedial Action Plan (PRAP) for the Facet Enterprises Superfund Site. Purolator agrees with EPA in selection of Alternative 10 as the preferred remedial alternative for groundwater treatment. We also agree with some of the elements of the proposed remediation for soil and sediment (Alternative 8). However, Purolator does not agree with the overall selection of Alternative 8 as the preferred remedial alternative for soil and sediment. Based on our evaluation of the 1991 Remedial Investigation (RI) and the 1992 Feasibility Study (FS), the results of the recent drum removal project and our in-depth knowledge of the site, we feel that Alternative 7 combined with stabilization should be the selected remediation method. There are numerous factors that led us to that conclusion as follows:

(1) LIABILITY - Utilizing the on-site disposal alternative allows Purolator to manage the stabilized waste materials. This would preclude the possibility that further liability could be incurred by our company in the event an off-site disposal facility is not managed properly.

(2) EXPOSURE POTENTIAL - Off-site treatment and disposal will require additional handling of the material on-site, transporting the material off-site (150 to 300 trucks), and additional handling at the disposal facilities. This transportation and additional handling creates the potential for unnecessary

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to TSCA regulations due to the presence of PCBs in concentrations over 50 ppm. Information provided in the 1991 Remedial Investigation (RI) and the 1992 FS demonstrates that the majority of this material is not subject to TSCA. In particular, the PCB concentrations of 24 ppm and 35 ppm represent approximately 920 cubic yards of the 1,274 cubic yards referred to in the PRAP as TSCA waste. This issue appears to be the result of an error in the 1991 draft FS as discussed above in comment 2, paragraph 1. Additional TSCA issues related to the validity of pre-1991 RI PCB data and the applicability of the TSCA "anti-dilution" rule are presented in Section 2.1 of the comments on the 1992 FS Supplement (Attachment II).

<u>RCRA Classification</u> - The PRAP and the 1992 Supplemental FS have made hazardous versus non-hazardous volumetric determinations based on waste characterizations that appear to be unsubstantiated by field data. Specifically, the 1992 Supplemental FS uses a criteria of <50 ppm PCBs, >5 ppm Arsenic, and >5 ppm Chromium to designate sediment and soils as hazardous waste. Since data gathered during a 1991 TCLP testing program (as described in the 1992 FS) indicate that Areas 4, 5, 7, 8, 10, Unnamed Drainage Ditch, May's Creek and the North Drainage Way do not exceed these TCLP metal or PCB thresholds (with the exception of some Area 4 soils), the 1992 Supplemental FS criteria used to determine hazardous waste volumes is incorrect.

Therefore, 1992 Supplemental FS soil volumes used to determine PRAP Remedial Alternative costs appear to be invalid without revisiting the conclusions outlined in the 1992 Supplemental FS. In addition, the impact of Land Disposal Restrictions (LDRs) restrictions on characteristic wastes should also be revisited to ensure that on-site treatment and disposal options does not provide equally protective but more cost effective remedial alternatives.

4. <u>GROUNDWATER ELEVATIONS</u> - The PRAP (Analysis of Alternatives, compliance with ARARs) states that Alternative 7 would not meet the New York State Department of Environmental Conservation (NYSDEC) hazardous waste requirements for landfill construction because of the presence of perched ground water. Purolator disagrees with this conclusion based on two factors.

First, the material to be placed in the Facility RCRA-type cell in Alternative 7 is not a hazardous waste. This includes Area 6 sediment which, although it did not pass the TCLP test, would be stabilized and rendered non-hazardous prior to placement in the cell. The remaining soil and sediment evaluated for disposal in the on-site cell in the FS is not a hazardous waste since it passed all TCLP testing and it is not

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derived from a listed hazardous waste. As a result, use of NYSDEC hazardous waste regulations is not applicable.

Secondly, it appears that EPA erred in referencing 6 NYCRR 373-2, of the NYS Hazardous Waste Treatment, Storage and Disposal regulations, by including the following statement in the PRAP:

> *Alternative 7 would not meet 6 NYCRR 373-2 for all contaminated soil or sediments because groundwater must be greater than 5 feet from the cell bottom,...*

Page 202 of 6 NYCRR 373-2 (Attachment II) states that "*no waste shall be closer than 10 feet to an aquifer or bedrock.*" The document describes an aquifer as "*a geologic formation...capable of yielding a significant amount of ground water to wells or springs.*" The formation in the proposed RCRA-type cell area is low-permeability till which yields very little water (U-1, drilled by Radian, was dry and the depth to water in U-2 is 30 feet; also, U-2 is a very low producer). Clearly, the "perched ground water" referenced by EPA does not constitute an aquifer capable of significant groundwater yield.

The second part of the PRAP comment deals with ground water recharge:

> *...and because the area proposed for the landfill is a groundwater recharge zone.*

NYCRR 373-2 states that "*no facility shall be located over groundwater recharge areas serving public water supplies.*" The regulations also state that exceptions are possible. All published reports regarding the Elmira-Horseheads-Big Flats Primary Aquifer delineates the edge of the aquifer very near the central portion of the Facet site. Therefore, the proposed onsite RCRA-type cell location is not within the delineated aquifer zone.

It may be that EPA is confusing Part 373 regulations with Part 360 regulations. The 6 NYCRR 360 regulations deal with solid waste management facilities. Those regulations state that "*a minimum separation of five feet must be maintained between the base of the constructed liner system and the seasonal high groundwater table.*" The citation and the Part 360 definitions of "groundwater" and "groundwater table" are included in Attachment II. Note that "perched water" is included in the definition of "groundwater." Part 360 also restricts siting landfills over "primary water supply and principal aquifers"; however, exceptions are allowed.

It is important to note that 6 NYCRR Part 360 and 6 NYCRR 373-2 are stated as ARARs in the 1992 FS because off-site disposal at industrial (i.e., Part 360) and RCRA (i.e., Part 373-2) landfills was considered. Also, construction of the on-site RCRA-type cell, though exempt from permitting requirements, should comply with applicable parts of the regulations.

5. <u>ON-SITE VS. OFF-SITE PREFERENCE</u> - On-site alternatives evaluated in the 1992 FS provide similar and possibly increased benefits over the off-site alternative (Alternative 8) recommended in the PRAP. In addition, adding stabilization to Alternative 7 would make this alternative equivalent to the selected remedy, at approximately one-half the cost. The issue of the benefits of on-site versus off-site disposal is discussed in more detail in Section 2.3 of the attached comments to the 1992 FS Supplement. The comment notes contained in the preamble to the 1990 National Contingency Plan (NCP) clearly state that CERCLA and the NCP are neutral with respect to this issue and intend no preference for either on-site or off-site disposal, if treatment is part of the remedy.

   In addition, a search of the Records of Decision (RODs) issued by EPA Region II since 1988 to the present was conducted. This search was conducted for sites that had similar contaminants (PCBs, PAHs and/or metals). Out of these 87 RODs, 31 addressed soils containing elevated levels of these contaminants. Of these 31 RODs, 17 selected on-site treatment and/or disposal, 10 selected off-site treatment and/or disposal and 4 selected a combination of on-site and off-site. If the 4 RODs that included both on-site and off-site are not included, the 17 RODs recommending on-site treatment and/or disposal represents 63% of the remaining RODs. This analysis clearly demonstrates a preference for on-site treatment and/or disposal. A more detailed report on this analysis is included in Attachment III.

6. <u>COSTS</u> - The PRAP (Summary of Remedial Alternatives) presents an estimated cost for alternative 8 of approximately $2.5 million . This cost is based on an estimate presented in the 1992 FS Supplement. There are four inconsistencies in the 1992 FS Supplement that affect the costs estimated for this alternative, which are as follows:

   A. Soil density (described above);

   B. Area 6 sediment;

   C. Area 4 soil (described above); and

   D. Additional cost factors

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The soil density issue and the error in the Area 4 soil quantity estimated were described above. The Area 6 sediment quantity refers to the omission of 55 cubic yards of Area 6 sediment from the 1992 FS Supplement calculations. Also, the additional cost factors for engineering and construction oversight recommended in the USEPA CERCLA cost estimating guide, were used in the 1992 FS but not in the 1992 FS Supplement. Section 2.2 and Table 1 of the Attachment I provides additional information on these issues. As a result, Purolator does not feel that the costs for Alternative 8, as presented in the 1992 FS Supplement and the PRAP, are consistent with the cost of the other alternatives and cannot be compared to the other alternatives because of these inconsistencies. Table 1 through 3 of attachment II, present a calculation of the total cost of off-site disposal based on the quantities presented in the 1992 FS, a multiplier of 1.5 to convert cubic yards to tons, and handling, transportation and disposal costs comparable to those used in the 1992 FS Supplement.

II. SPECIFIC COMMENTS

1. *Page 2, paragraph 4* - Although residences are within 60 feet of the "site" property line, the distance between "present manufacturing facilities" and residences is 500 to 1,000 feet.

2. <u>Page 3, paragraph 4</u> - The PRAP should state when and by whom leachate was observed and that leachate has not been present in recent years.

3. *Page 3, paragraph 5* - Area 4 discharge **may have** been discharged to the North Drainage Ditch via a swale prior to 1941 (according to plant personnel).

4. *Page 3, paragraph 5* - The 1981 data which reportedly indicated PCBs in Area 4 soil at 320 ppm is suspect because sampling reports and laboratory procedures and complete analytical reports are not available. EPA should produce data reports or qualify this statement. ERM's resampling of this 1981 location during the recent drum investigation indicated a PCB concentration of 43 ppm.

5. *Page 3, paragraph 6* - The 1981 sampling was reportedly conducted by NYSDEC, not EPA. As stated above, the data is of questionable value because sampling documentation and data reports are not available. 1990 RI sampling results (performed in accordance with CLP protocol) indicate maximum values as follows: 13,000 ppm chromium, 3,390 ppm cadmium and 1,910 ppm copper in one sample.

increased exposure to the general public, neighbors adjacent to the site, workers at the site and workers at the disposal facilities.

(3) ON-SITE VS. OFF-SITE PREFERENCE - EPA Region II has utilized on-site treatment and disposal in other Superfund sites within the Region. Our information indicates that since 1988, out of 87 sites remediated in Region II, there have been 31 sites that addressed soils containing similar contaminants (PAHs, PCBs and/or metals). Of these 31 sites, 63% of the Records of Decision selected on-site treatment and/or disposal versus off-site treatment and/or disposal. This analysis appears to demonstrate an Agency preference for on-site versus off-site disposal.

(4) GROUNDWATER ELEVATIONS - Purolator does not agree with the Agency in its interpretation of the applicability of 6 NYCRR 373-2 with respect to restricting the construction of the RCRA-type cell in the proposed location. Purolator feels that the state regulation does not preclude construction of this cell and this alternative should not be excluded from consideration. (Reference Attachment I for more detailed discussion on this issue).

(5) COST - The Agency states in its discussion of cost that the cost of Alternative 8 versus Alternative 4 and 5 is not substantially higher (the difference between Alternative 8 and 4 is approximately $900,000). Purolator disagrees with this statement. "Substantial" is a relative term that depends on the position of the party defining the term. While $900,000 is stated in the PRAP as not being substantial, it is substantial to Purolator Products Company and the Elmira plant. Specifically, $900,000 represents more than 35% of the cost for the soil and sediment remediation when considering the difference between Alternatives 8 and 4.

In addition to the comments in this letter, Purolator's complete detailed comments addressing both the PRAP and the 1992 Feasibility Study Supplement are included as Attachments I - III.

In summary, Purolator agrees with the selected alternative for groundwater and most of the elements of the proposed soil and sediment remediation, but does not agree in total with the selected alternative for soil and sediment for the reasons stated above. Purolator feels that Alternative 7 (on-site disposal in a RCRA-type cell) combined with stabilization should be the preferred plan for remediating this site. This method would achieve the goals of the 1992 Feasibility Study (FS) while reducing risks associated with the additional handling and transportation that would be required with off-site treatment. In addition, this method would be more cost effective.

Therefore, Purolator requests that EPA reconsider its proposed remedial action plan for soil and sediment and further investigate the use of an on-site stabilization and disposal in an on-site RCRA-type cell. Again we feel that this is the most viable option for remediating the site and achieving the goals of the 1992 FS. We request that the Agency give this its fullest consideration and pursue further review of this method vigorously. I feel that our mutual goal of remediating the Facet Enterprises Superfund Site is close at hand and want to reiterate that Purolator is committed to cooperating with EPA in achieving that goal.

Should you have any questions concerning this matter or require further information concerning our preferred remedial alternative proposal, please contact me at 713/546-6273.

Sincerely,

James R. Skaggs, Jr.

James R. Skaggs, Jr.
Manager, Environmental Services

JRS/it

Attachments

ATTACHMENT I

PUROLATOR PRODUCTS COMPANY COMMENTS
ON EPA REGION II PROPOSED REMEDIAL ACTION PLAN
FOR THE FACET ENTERPRISE SITE
MAY 26, 1991

JUNE 26, 1992

FAC 003 1408

PUROLATOR PRODUCTS COMPANY COMMENTS
ON EPA REGION II PROPOSED REMEDIAL ACTION PLAN
FOR THE FACET ENTERPRISE SITE
MAY 26, 1991

Purolator Products Company has reviewed the Environmental Protection Agency's (Agency) Proposed Remedial Action Plan (PRAP) dated May 26, 1992. General and specific comments concerning the PRAP are listed below.

I. GENERAL COMMENTS

1. CONTAMINANT CONCENTRATION - The PRAP continuously references "elevated levels" of contaminants in the soil, but does not define "elevated levels." An effort should be made to qualify what this term means so that it will be more relevant in the scope of understanding the significance of these levels. In addition, contaminant values are stated throughout the document in parenthesis, resulting in a very misleading presentation. EPA should state that the maximum detected concentration of selected analytes are presented in parenthesis throughout the document.

2. WASTE QUANTITY ESTIMATES - The 1992 Feasibility Study (FS) Supplement utilized 3,480 cubic yards of soil and sediment, which was the quantity presented in the draft 1991 Feasibility Study (FS) submitted to EPA in October, 1991. An error in calculating the volume of Area 4 soil to be remediated was corrected in the 1992 Feasibility Study (FS) submitted to EPA on March 5, 1992. The error consisted of adding approximately 920 cubic yards of Area 4 soil based on the PCB concentration of 35 ppm in sample SB-23 to two categories of soil, thereby counting this single soil volume twice. The correct estimate of soil and sediment to be remediated is 2,533 cubic yards.

   In addition, The 1992 FS Supplement assumed a lower soil density (i.e., 1.0 ton per cubic yard) than the soil density that was utilized in the 1992 FS (i.e., 1.5 tons per cubic yard). As explained in the attached comments on the 1992 FS Supplement (Attachment II, Section 2.2.1), a single soil density must be used in order to compute comparable remedial costs. Since soil quantity estimates are in cubic yards and the costs computed by Alliance for Alternative 8 are based on tons, the number of tons assumed to be present per cubic yard directly affects the estimated costs.

3. WASTE CLASSIFICATION - In addition to the quantity of soil and sediment, another key basis of PRAP selected remedial alternative 8 is the classification of waste in accordance with TSCA and RCRA regulations. These two issues are described below.

   TSCA Classification - The PRAP (Evaluation of Alternatives) states that approximately 1,275 cubic yards of soil, presumably from Area 4, would be subject

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27. *Page 15, paragraph 3* - Monitoring wells in the area of the proposed RCRA-type cell indicate a depth to ground water capable of significant water yield at approximately 30 feet.

28. *Page 15, paragraph 5* - EPA has never produced or been able to reference a document which classified ground water as class 2A aquifer.

29. *Page 16, paragraph 9* - See adjusted volume and cost calculations.

30. *Page 17, paragraph 3* - As stated earlier in the PRAP, the summary should state metals precipitation if necessary.

31. *Page 17, paragraph 6* - RCRA waste exists only in Area 6 due to the leachable cadmium. In addition, based on the 1991 RI there does not appear to be 2,124 c.y. of RCRA waste at the site. Rather, most of the material appears to be non-hazardous.

32. *Page 17, paragraph 7* - It will be difficult to find an industrial waste landfill to accept site soil; furthermore, Purolator may choose to send waste to a secured "RCRA" landfill for security and should be able to retain that option.

33. *Page 17, paragraph 9* - Storage of pumped ground water should not be specified.

34. *Page 17, paragraph 11* - "Long term monitoring" should be described more specifically. Does this mean ground water monitoring, effluent monitoring or other?

16. *Page 5, paragraph 4 & 10* - The drum excavation final count was 469 drums.

17. *Page 6, paragraph 1* - The soil removed during the drum excavation will be disposed of in a secured RCRA hazardous waste landfill with the exception of a small volume of PCB - containing soil that will be disposed of in a TSCA landfill.

18. *Page 6, paragraph 1* - What is the source of the Summer 1992 data?

19. *Page 8, paragraph 2* - Purolator is not aware of an on-site "reservoir" of contaminants that exists at the site. EPA needs to clarify what is meant by this statement.

20. *Page 8, paragraph 3* - EPA needs to be more specific with respect to what areas and volumes of material must be remediated despite being within acceptable risk guidelines. Purolator is concerned that this may be an open-ended loophole that could require potentially unlimited remediation based on undefined "uncertainties".

21. *Page 9, paragraph 2* - Soil from Area 5 was tested by the TCLP method and "passed"; however, Purolator has agreed to resample Area 5. Area 10 sediment was similarly sampled and passed the TCLP method; therefore, Area 10 should not be referenced here.

22. *Page 10, paragraph 8* - Product recovery may not be possible, since less than one inch of oil has been detected at monitoring well D-5. Therefore, product recovery should only be mentioned as a possibility.

23. *Page 10, paragraph 10* - EPA should state specifically how many TCLP samples need to be taken in Area 5 and the exact conditions under which the results of the TCLP analyses would lead to remediation.

24. *Page 12, paragraph 1* - This section contains an incorrect definition of a RCRA waste. A material is defined as a RCRA waste if it is either listed or is a characteristic RCRA waste; i.e., due to ignitability, reactivity, pH, or toxicity (failure of TCLP tests). Total Arsenic and chromium values are not related to RCRA characterization. As such, the site waste is generally not RCRA waste.

25. *Page 13, paragraph 13* - The RI identified RCRA waste in Area 6 sediment only. All other waste is considered characteristically non-hazardous.

26. *Page 15, paragraph 1* - Land disposal restrictions do not prevent the off-site disposal of listed hazardous waste.

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6. *Page 3, paragraph 9* - It appears that EPA is misinterpreting the use of a previous stormwater conveyance pipe whose elevation would produce drainage.

7. *Page 3, paragraph 10* - Stating that coal ash was from the "production facility" is misleading; the source of the ash was primarily from the plant coal-fired boilers.

8. *Page 4, paragraph 1* - According to the 1990 RI report, the 1986 investigation included sampling fourteen monitoring wells resulting in the detection of eight VOCs, semi-volatiles, and five inorganics above federal and state ground water standards (GWS).

9. *Page 4, paragraph 6* - "Numerous" semi-volatile organic compounds (SVOCs) related to oil were detected in Area 4 soil; however, only seven VOCs were detected (not including TCE) and only toluene, ethylbenzene and xylene were detected at over 100 ppb. All other VOC concentrations were below 1 ppm.

10. *Page 4, paragraph 7* - This is an example of misleading use of a maximum concentration as displayed in parenthesis (see general comments). Only one Area 5 soil sample contained chromium at 13,000 ppm; all other values were at least one order of magnitude lower. Although TCE was detected in fourteen soil samples, nine values were below 10 ppb, four values were at or below 30 ppb, and only one (240 ppb) exceeded 30 ppb.

11. *Page 4, paragraph 9* - PCB concentrations for the three samples from Area 7 are as follows: 3.7 ppm, 5.3 ppm and 0.32 ppm; therefore, EPA's statement is incorrect. Also, the SVOC statement is misleading because the maximum concentration for one SVOC was 19 ppm while the total of all detected SVOCs did not exceed 22 ppm.

12. *Page 4, paragraph 10* - The 1990 RI states that eighteen SVOCs were detected in Area 8. Also, PCBs were detected in only one sediment sample at a concentration of 11 ppm.

13. *Page 4, paragraph 12* - Sediment samples, not surface soil samples, were collected in Area 10.

14. *Page 4, paragraph 14* - A total of 22 TCL SVOCs were in soil near the oil/water separator, 8 of which exceeded 100,000 ppb (not ppm). Soil samples, not sediment samples, contained the metals at concentrations listed.

15. *Page 5, paragraph 3* - As stated earlier, the 1980 data is suspect and the recent data from Alliance sampling is not referenced.

ATTACHMENT II

Review and Critique
Supplement to the Feasibility Study
Facet Enterprise Site

Elmira, New York

Attachment II

Review and Critique

Supplement to the Feasibility Study

Facet Enterprises Site

Elmira, New York

1.0 INTRODUCTION

ERM-Northeast (ERM) has reviewed the "Supplement to the Feasibility Study" for the Facet Enterprises Inc. Superfund Site, Elmira, New York, prepared by Alliance Technologies for the U.S. Environmental Protection Agency (USEPA). Based on this review, ERM has prepared comments on six major and four minor technical issues related to the FS Supplement. They are:

Major Technical Issues

1. TSCA "Anti-Dilution" Rule Interpretation.
2. Cost Estimate Corrections.
3. On-site vs. Off-site Preference.
4. RCRA Classification.
5. Stabilization.
6. Appropriateness of Non-hazardous Waste Landfill Disposal.

Minor Technical Issues

1. Table 1 and Table 2 Comments.
2. PCBs in May's Creek.
3. Soil Segregation.
4. Future PCB Requirements.

Comments related to each issue are presented below.

2.0 MAJOR TECHNICAL ISSUES

Major technical issues related to the FS Supplement have the greatest potential to affect the evaluation of the soil and sediment remedy described in the FS Supplement and, in particular, the cost estimates for the FS Supplement remedy. Comments related to each of the six major technical issues listed in Section 1.0 are presented.

2.1 TSCA "Anti-Dilution" Rule (FS Supplement, Assumptions, Item 6)

Toxic Substances Control Act (TSCA) regulations prohibit dilution of PCBs to escape TSCA disposal requirements. This prohibition, referred to as the anti-dilution rule, has been interpreted by the USEPA to mean that only PCBs that have been deposited in the environment after the effective date of the regulation, February 17, 1978, are treated, for the purposes of determining disposal requirements, as if they were at the concentration of the original material. In addition, USEPA policy also states that the USEPA is not subject to the TSCA anti-dilution provision at CERCLA sites when it selects a remedy. Refer to Section 2.2, "Guidance on Remedial Actions at Superfund Sites with PCB Contamination" (EPA/540/G-90/007; August 1990).

The statement in the FS Supplement concerning PCBs assumes that the TSCA "anti-dilution" rule would apply if PCBs were derived from a PCB source greater than 50 ppm. PCBs were not disposed in Area 4 after February 17, 1978. As reported in the RI, this area was covered and graded in 1971. In addition, this is a CERCLA site and USEPA is not subject to the TSCA "anti-dilution" provisions when it is selecting a remedy. As a result, the TSCA "anti-dilution" rule does not apply to the Site. The FS Supplement also does not address the questions concerning the validity of the one sample analysis for which PCB concentrations were reported to exceed 50 ppm, as described on page 2-68 of the Final Draft Feasibility Study (ERM, March 5, 1992).

2.2 Cost Estimate Corrections (FS Supplement, Various Sections)

ERM identified four assumptions used in the information provided by Alliance to vendors for their use in estimating the costs for off-site disposal that are significantly different than those used in the Final Draft FS. They are:

1. Soil Density
2. Area 6 Soil Quantity
3. Area 4 Soil Quantity
4. Additional Cost Factors

In order to be able to compare the cost of the alternative evaluated in the FS Supplement to the costs of the alternatives evaluated in the Final Draft FS, the FS Supplement cost estimate should have used the same assumptions as those used in the Final Draft FS. Each of these assumptions are described below. The corrected cost estimate, using the unit price provided to Alliance by the vendors, are presented in Table 1. In addition, the cost estimate notes presented in the FS Supplement have been corrected and are included here as Appendix A.

2.2.1 Soil Density (FS Supplement, Assumptions, Item 9). Soil Density varies from about 1.0 to 1.5 tons per cubic yard. The FS Supplement used 1.0 tons per cubic yard. However, the FS Supplement should have used 1.5 tons per cubic yard, the soil density used in the FS, in order to be consistent with the cost estimate in the Final Draft FS. As a result, all soil quantities used in the FS Supplement estimate of costs should be increased by 50 percent to be comparable to the costs presented in the Final Draft FS. The costs shown in Table 1 and the vendor information provided in Appendix A have been corrected to address this discrepancy.

2.2.2 Area 6 Soil (FS Supplement, Recommendations, Table of Quantities). As described in Section 2.4.2.2 of the Final Draft FS, the USEPA requested that soil in Area 6 be evaluated for remediation. Although the RA concluded that the concentrations of chemicals in this area do not pose unacceptable human health risks, a sediment sample collected from this area and analyzed for TCLP metals revealed a concentration of cadmium in excess of the TCLP limit. The costs shown in Table 1 and the vendor information provided in Appendix A have been corrected to address this discrepancy.

2.2.3 Area 4 Soil (FS Supplement, Recommendations, Table of Quantities). The data from Area 4 clearly identifies approximately 1,035 cubic yards of the 1,275 cubic yards listed as TSCA waste in the FS Supplement as containing PCBs in concentrations less than the TSCA threshold concentration of 50 ppm. There appears to be an error in the FS Supplement since the 1,035 cubic yards of non-TSCA Area 4 soil is listed again in the FS Supplement in the following categories:

Treatment 2: Stabilization and Disposal in a RCRA Lined Landfill Facility
Quantity = 920 cubic yards (approximately) of Area 4 subsurface soil

Treatment 3: No Treatment Proposed, Industrial Non-hazardous Landfill Facility
Quantity = 120 cubic yards (approximately) of Area 4 surface soil

The total quantity of potential TSCA soil, then, is approximately 240 cubic yards (1,275 cubic yards - 1,035 cubic yards), not 1,275 cubic yards. In addition, minor changes (i.e., approximately 10 cubic yards) made to soil quantities in the Final Draft FS for Areas 8 and 10 and the Unnamed Drainage Way were not incorporated into the FS Supplement. The costs shown in Table 1 and the vendor information provided in Appendix A have been corrected to address this discrepancy.

2.2.3 Additional Cost Factors (FS Supplement, Table 4). In accordance with the procedures outlined in Section 3.2.1.2 of the USEPA document "Remedial Action Costing Procedures Manual" (EPA/600/8-87/049; October 1987) for estimating the cost of remedial actions at CERCLA sites, the Final Draft FS used the following additional cost factors:

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Mobilization = 10 percent
Engineering and Construction Oversight = 15 percent
Contingency = 25 percent

Although it may be assumed that the costs provided by vendors to Alliance included mobilization in the cost estimate, the additional engineering and construction oversight and contingency costs factors should have been included in the FS Supplement costs. This adjustment is necessary to comply with the guidelines provided in the USEPA cost manual and to be able to directly compare the FS Supplement costs to the costs presented in the Final Draft FS. As a result, the FS Supplement costs should be increased by a factor of 40 percent (i.e., engineering and construction oversight, 10 percent, and contingency, 25 percent). The costs shown in Table 1 and the vendor information provided in Appendix A have been corrected to address this discrepancy.

2.2.4 Summary. The FS Supplement cost estimates, adjusted for corrections in volume estimates, soil density and additional cost factors, range from $1,341,540 for Chemical Waste Management to $2,184,550 for Delaware Container Corporation.

2.3 On-site vs. Off-site Preference (FS Supplement, Identification of Treatment/Disposal Options)

The FS Supplement states that soil to be remediated must be removed from the generator site. This statement implies a preference for off-site treatment and/or disposal. CERCLA and the National Contingency Plan (NCP) provide no support to a preference for either on-site or off-site disposal. This issue is described in the preamble to the NCP (Federal Register, May 8, 1990, page 8725):

> "One commenter noted that EPA had omitted in the proposal a reference to the statute's bias against off-site land disposal of untreated waste. EPA notes the omission and has changed proposed Section

300.430{f}{3{{iii}(Section 300.430{f}{1}{ii}{E} in the final rule) to clarify that an alternative that relies on the off-site transport and land disposal of untreated hazardous substances will be the least favored alternative where practicable treatment technologies are available, as determined by analysis using the nine criteria. EPA notes that CERCLA does not express a preference for or bias against off-site remedies involving treatment and that the NCP is similarly neutral."

In addition, the evaluation of the FS Supplement alternative for the six NCP criteria, summarized in Table 3 of the FS Supplement, also applies to the on-site alternative evaluated in the FS (Alternative VII: Disposal in a Facility RCRA-type Cell) if stabilization is included. As described in the FS, stabilization is of limited benefit to Site soil, since the potential risk posed by metals in soil (i.e., arsenic an chromium) were due to possible ingestion by humans, not potential ground water impacts. As previously stated, TCLP tests of Site soil to be remediated, except for the 55 cubic yards of Area 6 soil, did not exceed the maximum allowable concentration, demonstrating that leaching of chemicals in all but Area 6 soil to ground water is not a problem.

2.4 RCRA Classification (FS Supplement, Identification of Treatment/Disposal Options)

The total waste concentration of arsenic and chromium in soil (i.e., not extract or leachate) above 5 ppm does not classify this material as a RCRA characteristic hazardous waste. The correct description is that concentrations of arsenic or chromium above 5 ppm in TCLP test leachate from a soil sample would classify this material as a RCRA hazardous waste. The soil in each potential area of concern at the Site was tested using TCLP and all but Area 6 soil did not exceed the RCRA TCLP maximum allowable concentration for any parameter. In addition, RCRA guidance states that if the total waste concentration is twenty times or less the TCLP maximum allowable concentration, the waste cannot be a characteristic hazardous waste. Refer to page 2-6 of "CERCLA Compliance With Other

Laws Manual", OSWER Directive 9234.1-01, August 8, 1988. If it does exceed twenty times the maximum allowable concentration, then testing is recommended. Two of the four arsenic concentrations listed in Table 1 of the FS Supplement are less than twenty times the maximum allowable concentration (i.e., 100 ppm, or 5 ppm times 20) and would not even require additional TCLP testing for arsenic.

In addition, none of the soil in the areas of concern evaluated in the FS was derived from a listed RCRA hazardous waste. As a result, the FS Supplement classification of Site material with PCBs levels less than 50 ppm and arsenic and chromium greater than 5 ppm as a RCRA hazardous waste is inappropriate. This material is clearly a non-hazardous waste. Moreover, soil that is a characteristic RCRA hazardous waste due to TCLP results can be treated (i.e., stabilized on-site) and rendered non-hazardous.

2.5 Stabilization (FS Supplement, Identification of Treatment/Disposal Options)

The FS Supplement recommends stabilization of all soil in the Treatment 2 category, approximately 2,123 cubic yards. (Refer to Section 2.2, above, for corrections to soil quantity estimates.) Only soil that exceeds the TCLP limits for metals needs to be stabilized prior to land disposal. Since the TCLP results for all areas except Area 6 did not exceed the maximum allowable concentration, all but 55 cubic yards (i.e., Area 6 soil) would not require stabilization prior to land disposal.

2.6 Appropriateness of Non-hazardous Waste Landfill Disposal (FS Supplement, Identification of Treatment/Disposal Options)

Relying on vendors to develop a remedial approach to disposal is not appropriate. Although reliable vendors can be expected to recommend an approach that complies with ARARs, they can not be expected to recommend a cost-effective remedial alternative. It is the consultant's role to investigate alternative approaches and to select a cost-effective remedial approach. As a result, the statement in the FS Supplement that only one vendor proposed disposal of non-hazardous waste in an industrial waste landfill may be misleading. The use of an industrial waste landfill for disposal of all Site soil except Area 6 soil satisfies all RCRA Subtitle C and Subtitle D requirements and is an appropriate cost-effective approach to off-site disposal.

3.0 MINOR TECHNICAL ISSUES

ERM identified four minor technical issues related to the FS Supplement which, although they do not greatly affect the selection of the remedy, should be addressed in the final FS Supplement. They are:

1. Table 1 and Table 2 Comments
2. PCBs in May's Creek
3. Soil Segregation
4. Future PCB Requirements

Comments related to each of these issues are presented below.

3.1 Table 1 and Table 2 Comments

The following comments relate to Table 1 of the FS Supplement:

a. The table is missing the 3,920 ppm result for chromium in the Unnamed Drainage Way.

b. The term "chromium hexavalent" used in Table 1 is not correct. The analytical results listed were for total chromium (i.e., the sum of hexavalent and trivalent chromium).

c. The quantity of soil and the analytical results for Area 6 are not listed. The USEPA requested that Area 6 soil be evaluated for remediation.

d. The volume of Area 4 soil is not correct. Refer to discussion in Section 2.2.3, above.

e. With respect to the "Z" notation in Table 2, samples were analyzed for all target compound list and priority pollutant metals analytes. The full list of analytes and results were included in Section 9.0 of the Remedial Investigation report and used in the Risk Assessment prepared by Alliance. The FS clearly states that the data provided in Section 2.0 of the FS is a summary of the RI data and the chemicals for which data is presented are those chemicals which the Risk Assessment identified as presenting potentially unacceptable risks.

3.2 PCBs in May's Creek (FS Supplement, Assumptions, Item 2)

The assumption made in the FS Supplement that PCBs are present in concentrations equal to the quantitation limit of 13 ppm is not appropriate. Even the USEPA risk assessment guidance, which is very conservative, recommends using one half the detection limit as an assumed concentration for calculating potential risks. The only conclusion that can be made is that PCBs may be present, but that the concentration is unknown. Additional samples may be taken and analyzed using special analytical techniques, but this soil is to be remediated for PAHs and arsenic whether PCBs are present or not.

3.3 Soil Segregation (FS Supplement, Assumptions, Item 4)

Soil from each area of concern does not need to be kept separate. Soil should only be kept separate depending on the treatment and/or disposal requirements. That is, Area 7 soil containing metals only should be kept separate from soil from other areas. Area 4 soil which may contain PCBs in concentrations above 50 ppm should also be kept separate. Also, it is not necessary to store waste in roll-off containers. Soil can be moved directly to

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trucks for disposal or can be stored in lined areas of the Site temporarily. The use of roll-off containers is more expensive and more susceptible to spills during transportation.

3.4 Future PCB Requirements (FS Supplement, Recommendations)

The FS Supplement statement that future regulations may also become more stringent for PCBs less than 25 ppm should be clarified. It is unlikely that future regulations governing PCB concentrations less than 25 ppm would be more stringent, since current USEPA risk assessment guidance identifies 25 ppm as an acceptable PCB concentration for soil in industrial areas. PCBs are relatively immobile in the environment and future off-site landfill problems due to the disposal of soil containing PCBs in concentrations less than 25 ppm are unlikely.

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TABLE 1

CORRECTED FS SUPPLEMENT COST ESTIMATES

Vendor	Corrected Direct Costs[1]	Corrected Total Costs[2]
Advanced Environmental Technology Corporation	$1,481,160	$2,073,620
Chemical Waste Management	$ 958,240	$1,341,540
Delaware Container Company	$1,560,390	$2,184,550
Environmental Waste Technology	$ 829,870	$1,161,820
Envirosafe Services of Ohio, Inc.	$1,189,600	$1,665,440
Stout Environmental, Inc.	$1,330,000	$1,862,000
Waste Conversion, Inc.	$ 929,400	$1,301,160

Notes:

1. Represents vendor costs presented in the FS Supplement corrected for the following:
   a. soil density of 1.5 tons per cubic yard
   b. addition of 55 cubic yards of Area 6 soil
   c. deletion of 1,035 cubic yards of Area 4 soil

2. Represents adjusted direst costs increased 40 percent for the following additional cost factors:
   a. Engineering and Construction Oversight: 15 percent
   b. Contingency: 25 percent

   Total Additional Cost Factor: 40 percent

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Appendix A
(To Attachment II)

Revised Vendor Cost Estimates

Supplement to the Feasibility Study

Facet Enterprises Site

Elmira, New York

NOTES - VENDORS SUBMITTING PROPOSALS

Vendor 1

Advanced Environmental Technology Corporation
4914 W. Genesee Street
Camillus
NY 13031

EPA Identification number: NJD 980536563

Contact: Nadia Godhan tel: 315-468 3060
fax: 315-468 3089

Proposal:

Chromium waste to be stabilized and TSCA landfill (~~470~~ tons) $400/ton = ~~$188,~~ $282,000
470 x 1.5 = 705

PCB = 0, waste to landfill (~~18~~ tons) $/ 286/ton = ~~$5,~~ $7,700
18 x 1.5 = 27

All other waste to be stabilized and TSCA landfill (~~3,030~~ tons) $358/ton = ~~$1,084~~ $1,099,060

Transportation: 2533 - (470 + 18) = 2045 x 1.5 = 3070

Dump truck (30 tons) [2533 ÷ 30 = 84] $750/load = ~~$88~~
total of ~~118~~ loads required $63,000
Dump truck drop off $300/truck = ~~$36~~ $25,20
Dump truck rental $50/day = ~~$5~~
(assume 1 day) $4,200

$1,481,161
Total Cost = ~~$1,407,688~~

Comments:

- All disposal to take place at Model City, NY.
- This vendor has not quoted for sampling or labour to load tr
- Taxes not included.

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Vendor 2

Chemical Waste Management
1135 Balmer Road
Model City
NY 14107

EPA Identification number: ILD000672121

Contact: John Halcovitch tel: 717-648 1155
fax: same

Proposal:

PCB > 50ppm, TSCA waste — $281 / ton = ~~$358,~~
direct to TSCA landfill (~~1,275~~ tons) — $101,160
240 x 1.5 = 360

RCRA waste to stabilization — $260 / ton = ~~$421,~~
and RCRA landfill (~~1,621~~ tons) — $651,820
1,621 + 50 c.y. (Area 6) = 1,671 x 1.5 = 2,507

* RCRA waste to RCRA landfill — $220 / ton = ~~$136,8~~
no stabilization required for — $205,260
As < 25 ppm 622 x 1.5 = 933 — total cost = ~~$916,575~~
(2533 - (240 + 1671)) = 622 — $958,240

* This vendor's facility at Model City has a variance until May 8, allowing Arsenic levels up to 25ppm to be landfilled without stabilization

Comments:

- All transportation, treatment and disposal costs are included.
- Taxes (6% community tax, 7% NY sales tax) included.
- Disposal at Model City, NY.
- On site sampling available at $1,200 / day.
- 5 gallon sample required for stabilization assessment
- Generator waste profile report required.

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Vendor 3

Delaware Container Company
West 11th Avenue and Valley Rd
Coatesville
PA 19320

EPA Identification number: PAD 064375470

Contact: John Fetterman tel: 215-383 6600
fax: 215-383 9406

Proposal:

PCB > 50 ppm, TSCA waste $275/ton = ~~$35~~
disposal at TSCA landfill (~~1,275~~ tons) $99,000
(240 x 1.5 = 360)

RCRA waste to stabilization $395/ton = ~~$ 885~~
and RCRA landfill (~~2,243 tons~~) $1,358,800
2,243 + 50 (Area 6) = 2293 x 1.5 = 3,440

Transportation:

total of ~~3,518~~ tons $27/ton = ~~$94~~
2,533 x 1.5 = 3800 tons $102,590

Total costs = ~~$1,331,5~~
$1,560,390

Comments:

- Disposal to take place at Model City, NY.
- Insurance surcharge of 5% of disposal and transportation costs not included
- Demurrage at $60/hour charged after first 1½ hrs.

Vendor 4

Environmental Waste Technology
1039 Chestnut Street
PO Box 36
Newton Upper Falls
Ma. 02164

Contact: Keith Genovese tel: 617-332-2877
800-445-7943
fax: 617-332-8712

Proposal:

PCB > 50ppm, TSCA waste $310/ton = ~~$395~~
to Model City TSCA landfill (~~1,275~~ tons) $111,600
240 x 1.5 = 360

RCRA waste to stabilization and $215/ton = ~~$456~~
RCRA landfill at Michigan Disposal Inc. $700,900
of Belleville, Michigan (~~2123~~ tons)
2533 - (240 + 120) = 2173 x 1.5 = 3260

non-RCRA, non-hazardous waste $96.50/ton = ~~$H~~
PCB < 25ppm, As < 5ppm to $17,370
landfill at American Landfill Inc. of
Waynesburg, Ohio (~~1250~~ tons)
120 x 1.5 = 180

Total cost = ~~$863,275~~
$829,870

Comments:

- All transportation, treatment and disposal costs included.
- New York sales tax included.
- Transportation by: TSCA waste - Model City (CWM) transporter
  RCRA waste - Dart Trucking Company / Cranfield, Ohio.
- loading / demurrage at $85/load after first 2 hours
- Require analysis as follows: TCLP RCRA 8 metals plus Copper, Nickel, Zinc and Thallium, pH, flashpoint, total reactivity (cyanide and sulfide), PCBs, TCLP zero head extractables, TCLP acid and neutral extractables.

A-4 - Cost $825 / sample.

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Vendor 5

Envirosafe Services of Ohio, Inc.
1600 Madison Avenue
Toledo
Ohio 43624

EPA Identification number: OHD 045243706

Contact: Blaine Hines tel: 419-255.5100

Proposal:

PCB > 50ppm, TSCA waste — $140/ton = ~~$178,50~~ $50,400
TSCA landfill at Grandview, Idaho
(~~1,275~~ tons)
240 × 1.5 = 360

RCRA waste to stabilization — $250/ton = ~~$560,~~ $860,000
and RCRA landfill at Ohio
(~~2,243~~ tons)
2533 - 240 = 2293 × 1.5 = 3,440

Transportation:
360 ~~1,275~~ tons to Grandview, Idaho — $250/ton = ~~$318,7~~ $90,000
3.440 ~~2,243~~ tons to Ohio — $55/ton = ~~$123,~~ $189,200

Total costs = ~~$1,181,365~~ $1,189,600

Comments:

- Both TSCA and RCRA landfill facilities owned by this ver
- A sample of contaminated soil required
- Vendor can provide analysis at $450 lab fee.

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Vendor 6

Stout Environmental, Inc.
115 Rome Street
Farmingdale
NY 11735

EPA Identification number: NYD 000 691949

Contact: Keith Bullock
tel: 516-249-4384
fax: 516-249-0724

Proposal:

- TSCA waste to TSCA landfill $350/ton = ~~$1,234,2~~
- RCRA waste to stabilization and RCRA landfill $1,330,000

(~~3,528~~ tons)

2533 × 1.5 = 3800

Total cost = ~~$1,831,300~~
$1,330,000

Comments:

- Transportation included in above
- TCLP analysis can be provided at $950 each

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A-6

Vendor 7

Waste Conversion Inc.
Subsidiary of Stout Environmental Inc
2321 North Penn Road
Hatfield
PA 19440

EPA Identification number: PAD085690592

Contact: Maria Ziccardi — tel: 215-822 2676
fax: 215-997 1315

Proposal:

PCB > 50 ppm, TSCA waste to landfill (~~1,275~~ tons) — $375/ton = ~~$478,12~~ $135,000
240 × 1.5 = 360

RCRA waste to stabilization and RCRA landfill (~~2,243~~ tons) — $200/ton = ~~$448,6~~ $688,000
2243 + 50 (AREA 6) = 2293 × 1.5 = 3440

Transportation:

~~3,518~~ tons, all to Model City — $28/ton = ~~$98,5~~ $106,400
2533 × 1.5 = 3800

Comments: — TOTAL: $929,400

- Although this is a subsidiary of Stout Environmenta separate bids have been submitted. Both are aware of each other's bids.
- Lab waste approval fee of $150 / sample.

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revisions or modifications to the forms. Application also includes the information required by the department under Part 373.

(11) "Approved program" or "approved State" means a State which has been approved or authorized by EPA under 40 CFR part 271 (see section 370.1(e) of this Part).

(12) "Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs.

(13) "Authorized representative" means the person responsible for the overall operation of a facility or an operational unit (i.e., part of a facility), such as the plant manager, superintendent or person of equivalent responsibility.

(14) "Authorized treatment, storage or disposal facility" or authorized facility" with respect to a particular hazardous waste means a treatment, storage or disposal facility which is authorized, under the laws and regulations of both the Federal Government and the state in which it is located, to accept the hazardous waste for treatment, storage or disposal.

(15) "Bedrock" means cemented or consolidated earth materials exposed on the earth's surface or underlying unconsolidated earth materials.

(16) "Bodily injury" means injury to the body, sickness, or disease including death resulting from any of these.

(17) "Boiler" means an enclosed device using controlled flame combustion and having the following characteristics:

(i) (a) the unit must have physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases;

(b) the unit's combustion chamber and primary energy recovery section(s) must be of integral design. To be of integral design, the combustion chamber and the primary energy section(s) (such as waterwells and superheaters) must be physically formed into one manufactured or assembled unit. A unit in which the combustion chamber and the primary energy recovery sections(s) are joined only by ducts or connections carrying flue gas is not integrally designed; however, secondary energy recovery equipment (such as economizers or air preheaters) need not be physically formed into the same unit as the combustion chamber and the primary energy recovery section. The following units are not precluded from being boilers solely because they are not of integral design: process heaters (units that transfer energy directly to a process stream), and fluidized bed combustion units;

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Federal, State or local hazardous waste control statutes, regulations or ordinances.

(66) "Final authorization" means approval by EPA of a State program which has met the requirements of section 3006(b) of RCRA and the applicable requirements of 40 CFR part 271, subpart A. (see section 370.1(e) of this Part.

(67) "Final closure" means the closure of all hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under Subparts 373-2 and 373-3 of this Title are no longer conducted at the facility unless subject to the provisions in section 372.2(a)(8) of this Title.

(68) "Final cover" means the cover material placed on all surfaces of a landfill where no additional refuse will be deposited within one year. These areas must be designed and constructed in accordance with the requirements of section 373-2.14 of this Title.

(69) "Flood plain" shall mean any land susceptible to being inundated by water from any source. A 100-year flood plain is that land inundated by a 100-year flood that has a one percent chance of occurring in any given year.

(70) "Food-chain crops" means tobacco, crops grown for human consumption and crops grown for feed for animals whose products are consumed by humans.

(71) "Forbidden explosive" defined in 49 CFR 173.51 (see section 370.1(e) of this Part.)

(72) "Freeboard" means the vertical distance between the lowest elevation of the top of a tank or surface impoundment dike, and the surface of the waste contained therein.

(73) "Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure.

(74) "Functionally equivalent component" means a component which performs the same function or measurement and which meets or exceeds the performance specifications of another component.

(75) "Generator" means any person, by site, whose act or process produces hazardous waste as defined in Part 371 of this Title or whose act first causes a hazardous waste to become subject to regulation.

(76) "Generator state" means the state which is the point of origin for a hazardous waste shipment.

(77) "Groundwater" means those waters in the zone of saturations, including perched water areas.

373-2.14(a) A4

Section 373-2.14 Secure Landburial Facilities.

(a) Applicability. The regulations in this section apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as section 373-2.1(a) of this Subpart provides otherwise.

(b) Site Characteristics.

(1) The soil beneath the facility shall have a hydraulic conductivity of 10^{-5} centimeters per second or less as determined by in situ hydraulic conductivity test methods and shall be subject to the approval of the department.

(2) No waste shall be closer than 10 feet to an aquifer or bedrock.

(3) No facility shall be located over groundwater recharge areas serving public water supplies.

(4) Facilities shall be located at an elevation not less than five feet above a flood plain unless provisions have been made to prevent the encroachment of flood waters.

(5) All fill areas or excavations shall terminate no closer than fifty feet from the boundary lines of the property on which the secure landburial facility is operated.

(6) The required horizontal separation between deposited hazardous waste and any surface waters shall be determined for each secure landburial facility by reference to soil attenuation characteristics, drainage, and natural or man-made barriers.

(c) Design and operating requirements.

(1) Any landfill that is not covered by paragraph (3) of this subdivision or section 373-3.14(j)(1) of this part must have a liner system for all portions of the landfill (except for existing portions of such landfill). The liner system must have:

(i) a liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the landfill. The liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The composition and thickness of the liner, and the hydraulic conductivity of any natural material required as part of the liner, shall be subject to approval of the department. In no case, shall the hydraulic conductivity of any approved liner consisting of natural material be greater than 10^{-7} centimeters per second. The liner must be:

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(10) "Aquifer" means a consolidated or unconsolidated geologic formation, group of formations or part of a formation capable of yielding a significant amount of groundwater to wells or springs. Two types of highly productive aquifers in unconsolidated (nonbedrock) formations are defined in subparagraphs (i) and (ii) of this paragraph. The ultimate determination of the presence and extent of these aquifers rests with the department.

(i) "Primary water supply aquifer" or "primary aquifer" means a highly productive aquifer which is presently used as a source of public water supply by major municipal water supply systems.

(ii) "Principal aquifer" means a formation or formations known to be highly productive or deposits whose geology suggests abundant potential water supply, but which is not intensively used as a source of water supply by major municipal systems at the present time. Some water supply development has taken place in some of these areas but it is generally not as intensive as in the primary aquifer areas.

(11) "Architect/engineer procurement" means an approach whereby a consulting engineering firm is hired by a person to plan and develop the design for a solid waste management facility, which includes, but is not limited to, preparation of an engineering report and complete and biddable contract documents for facility construction.

(12) "Asbestos waste" for the purposes of this Part is friable solid waste that contains more than one percent asbestos by weight and can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure. Asbestos waste also includes any asbestos-containing solid waste that is collected in a pollution control device designed to remove asbestos.

(13) "Ash residue" means all the solid residue and any entrained liquids resulting from the combustion of solid waste or solid waste in combination with fossil fuel at a solid waste incinerator, including bottom ash, boiler ash, fly ash, and the solid residue of any air pollution control device used at a solid waste incinerator.

(14) "Authorized representative" means the individual responsible for the overall operation of a solid waste management facility or an operational unit of a facility, such as the plant manager, superintendent, or individual of equivalent responsibility who has authority and knowledge to make and implement decisions regarding operating conditions at the facility.

(15) "Baseline parameters" means the list of standard chemical species or other samples listed in the Water Quality Analysis Table in paragraph 360-2.11(c)(6) of this Part.

(16) "Bedrock" means cemented or consolidated earth materials exposed on the earth's surface or underlying unconsolidated earth materials, including decomposed and weathered rock and saprolite.

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(65) "Full service procurement" means an approach whereby a single person is responsible for the solid waste management facility design, construction, startup, testing, operation, and possible ownership.

(66) "Garbage" means putrescible solid waste including animal and vegetable waste resulting from the handling, storage, sale, preparation, cooking or serving of foods. Garbage originates primarily in home kitchens, stores, markets, restaurants and other places where food is stored, prepared, or served.

(67) "Generator" means any person whose act or process produces a solid waste or whose act first causes solid waste to be subject to regulation under this Title.

(68) "Geocomposite" means a manufactured material using geotextiles, geogrids, geomembranes, or combinations of same, in a laminated or composite form.

(69) "Geogrid" means a deformed or nondeformed netlike polymeric material used with foundation, soil, rock, earth, or any other geotechnical engineering-related material as an integral part of the man-made structure or system to provide reinforcement to soil slopes.

(70) "Geomembrane" means an essentially impermeable membrane used with foundation, soil, rock, earth, or any other geotechnical engineering-related material as an integral part of a man-made structure or system designed to limit the movement of liquid or gas in the system.

(71) "Geonet" means a type of a geogrid that allows planar flow of liquids and serves as a drainage system.

(72) "Geosynthetics" means the generic classification of all synthetic materials used in geotechnical engineering applications, including geotextiles, geogrids, geomembranes, and geocomposites.

(73) "Geotextile" means any permeable textile used with foundation, soil, rock, earth or any other geotechnical engineering-related material as an integral part of a man-made structure or system designed to act as a filter to prevent the flow of soil fines into drainage systems, to provide planar flow for drainage, or to serve as a cushion to protect geomembranes, or to provide structural support.

(74) "Groundwater" means water below the land surface in the saturated zone of the soil or rock. This includes perched water separated from the main body of groundwater by an unsaturated zone.

(75) "Groundwater table" means the naturally occurring seasonally high surface of groundwater at which it is subjected to atmospheric pressure. Groundwater table does not include the potentiometric head level in a confined aquifer.

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to identify the sites that appear to be the most environmentally suitable. At a minimum, the site evaluation criteria in subdivision (e) of this section must be applied to evaluate the suitability of these sites for landfill development.

(iv) Preliminary field investigations must be conducted at the highest ranking available site or sites, to identify any major obstacles to site development, and to provide sufficient data to differentiate among the preferred sites and support a siting decision.

(b) A site selection study will not be required pursuant to this Part for expansions of existing facilities if the proposed expansion is not located in an area identified in subdivision 360-1.14(c) of this Part; complies with the landfill siting restrictions identified in subdivision (c) of this section; is consistent with the intent of the landfill siting requirements of subdivision (d) of this section and can satisfy the landfill construction requirements identified in section 360-2.13 of this Part. For such expansions, the site selection report may be limited to a demonstration of the suitability based upon these criterion.

(c) Landfill siting restrictions. In addition to the provisions of subdivision 360-1.14(c) of this Part, the following landfill siting restrictions apply.

(1) Primary water supply and principal aquifers:

(i) Except in Nassau and Suffolk Counties, and except as provided in subparagraph (ii) of this paragraph, no new landfill and no lateral expansion of an existing landfill may be constructed over primary water supply aquifers, principal aquifers, or within public water supply wellhead areas.

(ii) The commissioner may allow lateral expansions of landfills in operation on the effective date of this Part [December 31, 1988] that are on principal aquifers if there is a demonstrated public need for the capacity provided by the expansion that cannot be reasonably provided elsewhere and that outweighs the potential risk of contamination to the aquifer. Additionally, the facility's expansion must promote the implementation of the State's solid waste management priorities set forth in ECL 27-0106 and must be an integral part of any local solid waste management plan that may be in effect for the planning unit (as defined in ECL 27-0107) within which the facility is located; and the expansion must comply with all other requirements of this Part. However, the maximum time period allocated by the commissioner for any such expansion must not exceed seven years from the effective date of this Part. In granting any expansion under this subparagraph, the department must impose specific conditions that are reasonably necessary to assure that the expansion will, to the extent practicable, have no significant adverse impacts on public health or safety or on the environment and such approval contributes to the proper management of solid waste at the earliest possible time.

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(b) One permanent survey benchmark of known elevation measured from a U.S. Geological Survey benchmark must be established and maintained for each 25 acres of developed landfill, or part thereof, at the site. This benchmark must be the reference point for establishing vertical elevation control.

(c) The New York Transverse Mercator (NYTM) coordinates must be established. Horizontal control must be established and one of its points must be the benchmark of known NYTM coordinates.

(d) A minimum separation of five feet must be maintained between the base of the constructed liner system and the seasonal high groundwater table. At landfill sites where it has been adequately demonstrated that the underlying soils are homogeneous and have representative coefficients of permeability of less than 5×10^{-6} centimeters per second and exhibit a minimum thickness of 10 feet, this minimum five feet separation requirement may be reduced or waived. In such cases, the department will require additional groundwater drainage systems to ensure that the seasonal high groundwater table does not come in contact with the lowermost portion of the landfill liner during construction and until the hydrostatic pressures are equalized by weight of the liner system and waste.

(e) A minimum of ten feet vertical separation must be maintained between the base of the constructed liner and bedrock. The nature of the materials making up this separation, whether natural or backfilled, is subject to department approval.

(f) Liner system. The minimum liner requirement for all landfills accepting mixed solid waste must consist of the following:

(1) On all bottom areas where the landfill slope is less than or equal to 25 percent, the liner system must consist of a double composite liner separated by a secondary leachate collection and removal system.

(2) On all side slope areas where the landfill slope is greater than 25 percent the liner system need only consist of an upper geomembrane liner and a lower composite liner separated by a secondary leachate collection and removal system.

(3) A composite liner must consist of two components, an upper geomembrane liner placed directly above a low permeability soil layer meeting the requirements specified in subdivisions (j) and (k) of this section. Each composite liner is considered a single liner.

(4) The double composite liner system must include a primary leachate collection and removal system consisting of a 24-inch granular soil layer with a leachate collection pipe network. The primary leachate collection and removal system lies above the primary (upper) composite liner. The primary composite liner consists of a 60 mil geomembrane that directly overlays an 18-inch thick low permeability soil layer. The primary composite liner lies above the secondary leachate collection and

ATTACHMENT III

Record of Decision Review

FAC 003 1441

ERM-Northeast

475 Park Avenue South • 7th Floor • New York, New York 10016 • (212) 447-1900 • Telefax (212) 447-1904

June 9, 1992

Mr. James R. Skaggs, Jr.
Pennzoil Company
700 Milam St., 12th Floor
Houston, Texas 77002

RE: Purolator Site, Elmira, NY
Identification of RODs Issued for On-Site
and Off-Site Treatment and/or Disposal of Soils

Dear Mr. Skaggs:

At your request, ERM-Northeast conducted a search of U.S. Environmental Protection Agency (USEPA) Records of Decision (RODs) to: (1) determine the number of sites in USEPA Region 2 where on-site treatment and/or disposal of soil with elevated concentrations of PCBs, PAHs, and/or metals was recommended; and (2) determine whether a preference for on- or off-site treatment and/or disposal exists. As discussed in our June 4, 1992 letter to you, the ROD search was conducted by the USEPA.

To facilitate your request, the RODs retrieved were limited to the following:

- o USEPA Region 2;
- o 1988 to present;
- o on-site or off-site treatment and/or disposal; and
- o soils containing PCBs, PAHs and/or metals.

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Three ROD searches were conducted. All three searches were limited to RODs issued by USEPA Region 2 in the years from 1988 to the present. The first search was limited to on-site treatment and/or disposal of soils containing PCBs, PAHs and/or metals. (The results of this search were discussed in our June 4, 1992 letter to you.) The second search was limited to off-site treatment and/or disposal of soils containing PCBs, PAHs and/or metals, and the third search was limited to soils containing PCBs, PAHs and/or metals. For the last search, neither on-site nor off-site was specified so that the total number of sites requiring soils remediation could be identified.

The searches were first reviewed to determine the total number of sites utilizing on-site or off-site treatment and/or disposal. The general soil search was then reviewed to determine if any appropriate sites had been omitted from the other two searches because the keywords on-site or off-site were not included in the text.

In addition to these searches, ERM-Northeast files were also reviewed for additional sites. This exercise revealed that all applicable sites in our files were also included in the database.

A summary of the information obtained from the search is presented in Table 1. Out of the 87 RODs issued in Region II since 1988, 31 addressed soils containing elevated levels of PCBs, PAHs and/or metals. This total (31) was therefore used as the basis for data analyses.

Based upon the information collected, sites were broken into the following six groups: (1) no treatment (cap or containment); (2) on-site treatment and/or disposal; (3) on-site treatment and off-site disposal; (4) off-site treatment and disposal; (5) off-site treatment and on-site cap; and (6) on-site and off-site treatment. The first two groups address sites where on-site treatment and/or disposal was specified, the third and fourth groups address sites where off-site treatment and/or disposal was specified, and the last two groups address sites where a combination of the two was specified. The breakdown of the 31 on-site and off-site soil treatment and/or disposal RODs is as follows:

- on-site treatment and/or disposal -> 17 RODs -> 55% of all applicable RODs
- off-site treatment and/or disposal -> 10 RODs -> 32% of all applicable RODs
- on-site and off-site treatment and/or disposal -> 4 RODs -> 12% of all applicable RODs

If the four RODs where the remedy included both on-site and off-site treatment and/or disposal are not included, the 17 RODs recommending on-site treatment and/or disposal would represent 63% of the remaining 27 RODs. This analysis demonstrates that recent USEPA Region 2 RODs show a preference (i.e., 55 percent to 63 percent) for on-site treatment and/or disposal.

A summary of specified treatment technologies along with soil volumes is presented in Table 2. This summary indicates that both on-site and off-site treatment and/or disposal was recommended for a wide range of soil volumes. On-site treatment soil volumes ranged from 1,250 cubic yards to 60,000 cubic yards and off-site treatment volumes ranged from less than 5 to 54,000 cubic yards.

Soil volumes for on-site stabilization ranged from 5,900 to 30,000 cubic yards. Unfortunately, the number of sites where this technology was recommended (two) is inadequate to obtain an accurate lower limit soil volume for feasibility of this treatment technology. However, soil volumes for low temperature thermal treatment (LTTT), a treatment technology which entails significantly higher mobilization and capital costs than

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stabilization, ranged from 1,600 to 60,000 cubic yards. Because high costs tend to limit the feasibility of on-site treatment to higher soil volumes and stabilization generally has a lower investment cost than LTTT, stabilization would be feasible at lower soil volumes than LTTT. As a result, the lower level soil volume for stabilization would be less than 1,600 cubic yards. As estimated in the FS, the soil volume for which stabilization could be used at the Purolator site is approximately 2,500 cubic yards.

A detailed list of the site names, the year the ROD was issued and its number (e.g., 89/077), the chemicals of concern at the site, the treatment technology specified and the quantity of soils requiring treatment and/or disposal is included as Attachment #1. In addition, computer printouts for the database searches are also attached.

Should you have any questions regarding this matter, please feel free to contact me at (212) 447-1900.

Sincerely,
ERM-Northeast

Carla Weinpahl
Project Engineer

cc: Jim Blasting, ERM-Northeast
John Iannone, ERM-Northeast

The ERM Group

TABLE 1

SUMMARY OF INFORMATION
USEPA REGION 2 SOIL REMEDIATION RODs
1988 - PRESENT

ROD Database Search Field: 1988-Present Region II Soils with PAHs, PCBs and/or metals			
Category	Notes	# Sites	Percent
No Treatment (Cap or Containment)	A	7	22%
On-Site Treatment and/or Disposal	A	10	32%
On-Site Treatment and Off-Site Disposal	B	1	3%
Off-Site Treatment and Disposal	B	9	29%
Off-Site Treatment and On-Site Cap	C	2	6.5%
Combination of On-Site and Off-Site Treatment	C	2	6.5%
	Total	31	100%

Notes:

A. Included in total of 17 on-site treatment and/or disposal RODs.
B. Included in total of 10 off-site treatment and/or disposal RODs.
C. Included in total of 4 on-site and off-site treatment and/or disposal RODs.

TABLE 2

TREATMENT TECHNOLOGY SUMMARY
USEPA SOIL REMEDIATION RODs
1988 - PRESENT

Treatment Technology	Volume of Soils, cubic yards	No. of Sites*
On-Site Treatment		
Low Temperature Thermal Treatment	1,600 to 60,000	6
Stabilization/Solidification	5,900 to 30,000	2
Soil Flushing**	4,100	2
Soil Washing	22,000 to 48,700	3
Dechlorination	48,700	1
Vapor Extraction**	not specified	2
Steam or Air Soil Stripping**	1,250	1
Off-Site Treatment		
Unspecified	<5 to 54,000	6
Incineration	930 to 4,500	5
RCRA Landfill	40	3
Landfill	not specified	1
Stabilization and Landfill	120	1

* The total number of sites is greater than 31 since some sites specified more than one soil treatment technology.
** In-situ soil treatment technologies

SITE NAME / CHEMICALS OF CONCERN	ON-SITE TREATMENT										DISPOSAL		OFF-SITE TREATMENT / DISP								
	NO TREATMENT CONTAINMENT ONLY	NO TREATMENT CAP ONLY	LOW TEMPERATURE THERMAL OR ENHANCED VOL.	STABILIZATION OR SOLIDIFICATION	SOIL FLUSHING	SOIL WASHING	DECHLORINATION	VAPOR EXTRACTION	STEAM OR ?-STRIPPING		BACKFILL OR LANDFILL	CAP	UNSPECIFIED	INCINERATION	RCRA OR HW LF	LANDFILL	STABILIZATION & LANDFILL				
EWAN PROPERTY (SOURCE) VOC, Cr, Pb 88/73														4,500 yd³ X							
EWAN PROPERTY (RESIDUAL) VOC, Cr, Pb 89/95						22,000 yd³ X					X										
RINGWOOD MINES Ar, Pb, PHCs 88/75													AMT UNKN. X								
SMS INSTRUMENTS VOC, Cr, Pb 89/83									1,250 yd³ X												
ROEBLING STEEL PCB, Pb, Ar, Cr 90/100															METALS 40 yd³ X		120 yd³ X				
FAA TECHNICAL CENTER VOCs, PCBs, Cr 90/105														930 yd³ X							
HOOKER - 102nd 90/117 VOC, PCB, PHENOL, Ar		OFF-SITE SOIL LOW SED X													HIGH CONC X SED						SEDIMENT LOW - UNDER HIGH - INC. + CAP OVER ENTIRE SI
MATTIACE PETROCHEMICAL 90/119 VOC, Ar, Cr, Pb, PHENOL													X								
SEALAND RESTORATION 90/104 (INTERIM) VOC, PCB, PEST, Cr, Pb												EXC. AREA X	20 yd³ X	4,762 yd³ X							
KING OF PRUSSIA VOC, Cr, Pb 90/113						METALS X ~ SLUDGE, SOIL SEDIMENT					X			X ~ SOIL w/ CONTAM FROM DRUMS. + DRUMS							
HOOKER CHEMICAL/RUCO PCBS 90/121														>500 X		>10 <500 X					

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…E NAME …ICALS OF CONCERN	NO TREATMENT CONTAINMENT ONLY	NO TREATMENT CAP ONLY	LOW TEMPERATURE THERMAL OR ENHANCED VOL.	STABILIZATION OR SOLIDIFICATION	SOIL FLUSHING	SOIL WASHING	DECHLORINATION	VAPOR EXTRACTION	STEAM OR AIR STRIPPING		BACKFILL OR LANDFILL	CAP	UNSPECIFIED	INCINERATION	RCRA OR HW LF	LANDFILL	STABILIZATION
	ON-SITE TREATMENT										DISPOSAL		OFF-SITE TREATMENT/DISP				
…REMONT PETROCHEMICAL 90/123 …, Ar, Cr, Pb, ASBESTOS			1,600 yd³ X								X						
…BAL LANDFILL 91/147 …Ar, Cr, Pb		X															
…TEL LANDFILL …, Ar, Cr, Pb 91/160		X															
…K OIL CO. 88/054 …, VOC, METALS				30,000 yd³ X							X						
…RI LANDFILL 88/74 …, Ar, Cr, Pb			(VOL?) X													X	
…RICAN THERMOSTAT 90/110 …, Ar, Cr, Pb			6,800 yd³ X								X		<5 yd³ X				
…-BUC LANDFILL 88/68 …, PCB, Ar, Pb	X	X															
…DLAWN TPK RT 532 90/102 …, PHENOL …, PCB, PEST, RADIONUCL.													54,000 yd³ X				
…LOW SAND & GRAVEL 88/64 …, PCB, PHENOL		X															
	1	4	3	1							3		2			1	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ATTACHMENT #1

SITE NAME / CHEMICALS OF CONCERN	ON-SITE TREATMENT: NO TREATMENT CONTAINMENT ONLY	NO TREATMENT CAP ONLY	LOW TEMPERATURE THERMAL OR ENHANCED VOL.	STABILIZATION OR SOLIDIFICATION	SOIL FLUSHING	SOIL WASHING	DECHLORINATION	VAPOR EXTRACTION	STEAM OR STRIPPING	DISPOSAL: BACKFILL OR LANDFILL	CAP	OFF-SITE TREATMENT/DISP: UNSPECIFIED	INCINERATION	RCRA OR HW LF	LANDFILL	SOLIDIFICATION	
CLOTHIER DISPOSAL 89/077 VOCs, PAHs, PCBs, METALS		X															
FULTON TERMINALS 89/081 VOC, PAH, Cr, Pb			4,000 yd³ X							X	X						
DE REWAL CHEMICAL CO. 89/087 VOC, PAH, Cr, Pb			2,100 yd³ ORG. X	5,900 yd³ INORG X						X							
BYRON BARREL & DRUM 89/089 VOC, PAH, Cr, Pb					4,100 yd³ X												+ EVALUATION TREATABILI[TY] FOR 1,100 INORG. CONT
N. SEA MUNICIPAL LF 89/085 PAH, VOC, Ar, Pb		X															
WOODLAWN TPK RT 72. 90/101 PHENOLS, Pb, Cr VOC, PCB, PEST, RADIONUCLIDE												26,000 yd³ X ← AND 19 yd³ RADIOLOGICALLY CONT. MATERIAL (TOTAL FOR BOTH SITES)					
MYERS PROPERTY 90/115 VOC, PCB, PAH, DIOXIN Ar, Pb, PESTICIDES						ORG X	ORG + INORG X			X							
						48,700 yd³											
VESTAL WATER SUPPLY 90/130 PAH, VOC, Cr, Pb								X									
IMPERIAL OIL CO. 90/128 VOC, PAH, PCB, Ar, Cr, Pb				POSSIBLE PRETREATMENT LOCATION UNKNOWN										PCB >1 mg/kg X → 3,700 yd³			
SOLVENT SAVERS 90/111 VOC, PAH, PCB, Ar, Cr, Pb			39,000 yd X; 1000 yd³ PCBs OR →		X ← OR →			X					?				PCBs: LTT OR INC. LOW VOC: POSSIBLY VE.
SCIENTIFIC CHEMICALS 90/109 PAH, VOC, PCB, Ar, Cr, Pb	X																
	1	2	3	1	2	1	1	2		2	1	1		1			

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RESPONSIVENESS SUMMARY
FOR THE REMEDIAL ACTION
AT THE
FACET ENTERPRISES, INC. SUPERFUND SITE
VILLAGE OF ELMIRA HEIGHTS, CHEMUNG COUNTY, NEW YORK

<u>Section</u>

RESPONSIVENESS SUMMARY
FOR THE
FACET ENTERPRISES, INC. SITE
VILLAGE OF ELMIRA HEIGHTS, NEW YORK

INTRODUCTION

This Responsiveness Summary provides a summary of citizen's comments and concerns and the U.S. Environmental Protection Agency's (EPA) responses to those comments regarding the Remedial Investigation/Feasibility Study (RI/FS) Reports and Proposed Plan for the Facet Enterprises, Inc. Site (Facet Site or Site). EPA, in consultation with the New York State Department of Environmental Conservation (NYSDEC), will select a final cleanup remedy for the Facet Site only after reviewing and considering all public comments received during the public comment period.

EPA held a public comment period from May 27, 1992 through June 27, 1992 to provide interested parties with the opportunity to comment on the RI/FS and Proposed Plan for the Facet Site. A Public Information Meeting was held to discuss the remedial alternatives in the FS and to present EPA's preferred remedial alternative for controlling contamination at the Site. The meeting was held at the Village of Elmira Heights Village Hall, Village of Elmira Heights, New York on June 16, 1992 at 7:00 p.m.

This community relations responsiveness summary is divided into the following sections:

I. **OVERVIEW:** This section briefly outlines the EPA's preferred remedial alternative.

II. **BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS:** This section provides a brief history of community concerns and interests regarding the Facet Site.

III. **COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS AND RESPONSES:** This section summarizes oral comments received by EPA at the public meeting for the Facet Site and those raised in written comments by the Purolator Products Company.

I. OVERVIEW

At the beginning of the public comment period, EPA published its preferred alternative for the Facet Site located in the Village of Elmira Heights, Chemung County, New York. EPA generally prefers treatment or removal technologies which reduce the toxicity, mobility, or volume of waste contaminants.

EPA screened possible alternatives, giving consideration to nine key criteria:

Threshold criteria, including:

--Overall protection of human health and the environment

--Compliance with Federal, State, and local environmental laws

Balancing criteria, including:

--Long-term effectiveness

--Short-term effectiveness

--Reduction of mobility, toxicity,or volume

--Ability to implement

--Cost, and

Modifying criteria, including:

--State acceptance, and

--Local acceptance

EPA weighed State and local acceptance of the remedy prior to reaching the final decision regarding the remedy for the Site.

EPA's selected alternative for addressing contaminated soils and ground water at the Site are: Soil and Sediment Alternative 8 - Consolidate Soil and Sediment, Ship Off-Site for Treatment and Disposal; and Ground Water Treatment Alternative 10 - Metals Precipitation/Filtration, and Volatiles Removal with Air Stripping. If necessary, air pollution controls will be installed. Based on current information, the preferred alternatives provide the best balance of trade-offs among the alternatives with respect to the above-listed nine criteria that EPA uses to evaluate alternatives.

II. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

To obtain public input on the feasibility study report and the proposed remedy, EPA held a public comment period from May 27, 1992 to June 27, 1992. A public meeting was held on June 16, 1992.

Approximately 20 people, including local residents, representatives from local industry, state and local government officials, and local television and newspaper media attended the public meeting. During the question and answer session, EPA was asked questions concerning contamination at the facility boundary detected during the RI, in particular along Robinwood Avenue. Also, questions were asked concerning air contaminant emissions during future response activities at the Site, and during the recent drum excavation.

A summary of the questions posed during the meeting is provided in Section III.

III. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS AND RESPONSES

This section summarizes oral comments raised at the public meeting and EPA's response to these comments as well as a response to written comments submitted to EPA.

A. SUMMARY OF QUESTIONS AND RESPONSES FROM THE PUBLIC MEETING CONCERNING THE FACET ENTERPRISES, INC. SUPERFUND SITE

COMMENT:

A citizen asked if a final cleanup decision has been made by EPA and when will the cleanup begin?

EPA'S
RESPONSE:

No final decision on the cleanup activities is made until after the public comment period has ended and EPA has considered all comments. After a final decision is made, negotiations are conducted with potentially responsible parties (PRPs) to determine if they are willing to implement the selected remedial action. If the PRPs do not agree, EPA may either unilaterally order them to conduct the remedy, or EPA may fund the remedial action. In either case, the design of the remedy is then conducted. After review and approval of the design and design work plans (estimated to take one year), the Site cleanup work can begin.

COMMENT:

A citizen requested information regarding soil and sediment contamination, ground water contamination concentrations, and ground water flow direction at the western boundary of the facility.

EPA'S
RESPONSE:

Four-hundred and sixty-nine drums were excavated from approximately 50 feet from the western boundary of the facility. In addition, 2,250 tons of contaminated soil, and 30,000 gallons of contaminated liquid have been temporarily contained. This material is scheduled for shipment off-site for treatment and disposal to permitted waste management facilities during July 1992.

Confirmational sampling was conducted during the drum and soil excavation. EPA will be receiving the results during the Summer of 1992, and based on the results of this sampling, and after consultation with NYSDEC, EPA will decide if additional excavation is required to remove soil and sediment contamination which is either above health-based cleanup levels or poses a threat to ground water quality. Additional soil data is available in the 1990 Remedial Investigation Report.

Beyond the facility fence line, along the western boundary of the facility property, no samples have been collected. However, based on evaluation of historical photographs from the 1940's, 1950's and 1960's it does not appear that disposal activities occurred in the residential areas west of the facility.

Ground-water flow direction at the western margin of the facility was determined during the Remedial Investigation to be in a south-easterly direction. The western-most monitoring well for the Site did not show any volatile organic contamination during sampling conducted for the Remedial Investigation. The depth to the ground water in this monitoring well is approximately 36 feet below the ground surface. No monitoring wells in this area are screened to monitor shallow, perched, ground water quality. However, based on the topography at the facility it is unlikely that if unimpeded, perched ground water from the facility would flow in a westerly direction.

COMMENT:

A citizen indicated that local banks have refused credit to residents along Robinwood Ave., and wanted to know how they could get sampling done to satisfy the banks if this type of information was requested by the banks.

EPA'S
RESPONSE:

Studies conducted to date at the Site may contain the requested sampling data. EPA representatives are available to discuss with the public the significance of any data collected to date at the Site, upon request to the EPA Project Manager. The available information should be evaluated carefully before additional sampling is conducted to eliminate any sampling redundancy.

FAC 003 1455

COMMENT:

A citizen requested if air sampling has been conducted at the Site. This citizen inquired about historical releases of air contaminants during the disposal activities at the facility.

EPA'S
RESPONSE:

Air quality monitoring was conducted both during the Remedial Investigation, for characterization purposes, and during the drum removal activities at the facility, to ensure protection to on-site workers and the public. Air monitoring conducted along the perimeter of the facility during drum and soil removal activities did not indicate that any volatile organic contaminants were present. Furthermore, particulate emissions were not elevated to a level of concern. Air quality monitoring during the Remedial Investigation did not indicate the presence of contaminants at levels of concern.

EPA does not have any data concerning past releases of any air contaminants during historical disposal activities. Monitoring data collected during the Remedial Investigation and during the drum and soil removal activities will not indicate if releases occurred during past disposal activities.

B. SUMMARY OF WRITTEN COMMENTS AND EPA RESPONSES CONCERNING THE FACET ENTERPRISES SUPERFUND SITE

EPA received written comments dated June 26, 1992 from the Purolator Products Company. The letter indicates that Purolator agrees with EPA in selection of Alternative 10 as the alternative for ground water treatment. Purolator also indicates that they agree with some of the elements of the proposed remediation for soil and sediment as detailed in Alternative 8. However, Purolator indicates that an on-site RCRA cell (landfill) combined with stabilization should be the selected remedial alternative. The following summarizes their comments and provides EPA response to those comments.

i) Comments from the Purolator Products Company - June 26, 1992

COMMENT:

1. Building an on-site RCRA cell (landfill) allows Purolator to manage the hazardous substances, and would preclude the possibility that further liability could be incurred by Purolator in the event that an off-site treatment/disposal facility in not managed properly.

EPA'S
RESPONSE:

It is not appropriate to consider, in the selection of a remedy, what impact a particular remedy will have on potential future liability of a party. The nine criteria for the selection of a remedy, as set forth in the NCP at 40 CFR 300.430(e)(9)(iii), do not include the consideration of the potential for future liability of a party. Also, as stated above, EPA has determined, based on data gathered during the RI and drum excavation as well as comments from NYSDEC, that the geological conditions at the Site are not conducive to the siting of the RCRA cell as proposed. Furthermore, the cost estimates for treating the wastes on-site, constructing the RCRA cell, and placing the wastes therein versus off-site disposal seem to indicate that the former may be more costly. Lastly, the potential for liability exists for Purolator as a result of the generation and continued presence of hazardous substances at the Site, whether those substances remain at the facility or at an off-site facility. Consequently, selecting on-site disposal is neither consistent with the applicable regulations (NCP and NYCRR 373) nor technically justified.

COMMENT:

2. Purolator is concerned that off-site treatment and disposal will require additional handling of material on-site, transporting the material off-site, and that the additional handling creates the potential for unnecessary, increased exposure to the general public, neighbors adjacent to the Site, workers at the Site and workers at the disposal facilities.

EPA'S
RESPONSE:

Additional Handling of Material

For all soil and sediment treatment or disposal alternatives consolidation of wastes is required and therefore the potential for exposure does exist. For on-site treatment and disposal options, additional potential exposure exists to workers responsible for treating the soils or sediments which contain hazardous substances. For off-site disposal options additional potential exposure exists for material handlers loading/unloading the materials into/off of trucks.

Worker protection on-site as well as at disposal facilities is achieved through the use of a health and safety plan, as required by OSHA (40 C.F.R. 1910). Monitoring, protective clothing, and respirators, where required, will provide protection for workers during remedial actions. Areas of the site will be marked prior to initiating any remedial action and Facility personnel who have not been trained in health and safety issues will not be given access to these areas of the site.

Monitoring of air contaminants and particulates during the remedial action and comparison with established action levels set for the perimeter of the facility or response activity will prevent exposure to the general public including residents adjacent the facility. Action levels developed for perimeter locations will trigger a response to stop the unacceptable releases of contaminants or particulates.

Any transportation of hazardous waste is regulated by the Resource Conservation and Recovery Act, Department of Transportation and State regulations (such as 6 NYCRR 364 Waste transporter permits) which eliminate or minimize exposure to wastes.

In the event that remediation of soil and sediment generates dust and other particulates as a result of excavation activities or heavy truck traffic, dust control measures such as the use of water and/or foam would be used.

COMMENT:

3. EPA Region II has a historical preference for on-site disposal rather than off-site disposal for 31 Superfund sites with similar types of contamination.

EPA'S
RESPONSE:

The selection of the remedial action for a Superfund Site is a site-specific decision which is based on among other things, the evaluation of the alternatives conducted in accordance with the nine criteria set forth in the National Contingency Plan. This evaluation is based on information included in the Feasibility Study along with other information contained in the site-specific administrative record, and is set forth in the Proposed Plan.

For the Region II sites where EPA selected on-site treatment or disposal, site specific conditions warranted this decision, while for the remaining sites, off-site disposal was the appropriate remedy. (See the following comment regarding the conditions at the Facet Site as they relate to siting an on-site RCRA landfill).

COMMENT:

4. Purolator indicates that EPA misinterpreted NYCRR 373, and does not feel that the NYCRR 373-2 precludes construction of a RCRA cell (landfill) on the property. Furthermore, the comments indicate that Purolator believes that EPA may be confusing NYCRR 360 with NYCRR 373.

EPA
RESPONSE:

Data collected during the 1990 RI and existing United States Geological Survey studies indicate that the western portion of the facility is in an aquifer recharge zone, while under the eastern portion of the facility there is Newtown Creek Aquifer soils and/or sediments and transitional Newtown Creek aquifer soils and sediments. In the western area of the facility where the on-site RCRA landfill has been proposed, substantial quantities of perched groundwater which recharges the aquifer would be less than five feet from the RCRA cell this would not meet the requirement that the wastes be less than 10 feet from the aquifer.

EPA does not feel that NYCRR 373 has been misinterpreted for the following reasons:

A. Ground Water

a) Figure 1 (attached) is an excerpt from the Department of Interior United States Geological Survey "Surficial Geology" Open File Report 82-110. Sheet 1 of 7 illustrates the surficial geology at the Site and indicates that the portion of the facility where a RCRA Cell was considered is underlain by: "Kame and kame terrace sand and gravel; ice contact deposits; some sorting and secondary calcite cementation; high permeability".

Boring logs from the Site are consistent agreement with this interpretation that some other soils underlying the site are highly permeable.

b) Figure 2 (attached) is an excerpt from the Department of Interior United States Geological Survey Open File Report 92-110, Sheet 3 of 7 illustrating infiltration potential of soils. Soils at the Site in the area of the proposed RCRA cell or landfill are classified as having "moderate" infiltration potential (0.63 to 2.0 inches per hour).

Soil borings and drum excavations conducted during the RI at Disposal Areas near the proposed RCRA landfill indicate discontinuous layers of sand and gravel along with discontinuous clay layers. This strongly supports that the potential for downward migration of contaminants exists. The levels of inorganics detected during the 1990 RI at monitoring well D-12 may be attributable to metal plating waste discovered in Disposal Area 3 which has leached into the ground water. Ground-water flow direction determined during the 1990 RI indicates that ground-water flow direction is to the south-east.

c) The perched water table at the facility is capable of yielding substantial amounts of ground-water. Evidence of this includes the collection of approximately 30,000 gallons of water during the recently conducted drum excavation activities in this portion of the facility.

d) Construction of any clay and/or synthetic lined landfill may cause shallow, perched ground water to back up behind the landfill structure. Over time this could possibly flood residential areas, some of which are located approximately 50 feet from the western boundary of the proposed RCRA landfill.

EPA is not confusing NYCRR Part 373 with NYCRR Part 360. A typographic error exists in the Proposed Plan which should state that no waste shall be closer than 10 feet to an aquifer or bedrock. However, site conditions are not appropriate for a landfill built pursuant to NYCRR Part 360 because a minimum separation of 5 feet must be maintained between the base of the constructed liner and the seasonal high ground water.

Comment:

5. Purolator comments that the Supplement to the Feasibility Study has made a classification of hazardous vs. nonhazardous waste based on waste characterizations unsubstantiated by field data.

EPA
RESPONSE:

EPA disagrees with this comment for the following reasons:

<u>RCRA Wastes</u>

a) Listed wastes are present at the Site. In EPA's comments on the draft Feasibility Study dated 12/23/91, EPA provided Purolator with NYSDEC Community Right to Know forms completed by Facet Enterprises, Inc. and submitted to the NYSDEC which indicate that F006 a RCRA listed waste is disposed at the facility.

In addition, characteristic hazardous wastes have been identified in Disposal Area 6 during sampling conducted for the FS.

Furthermore, preliminary data collected during the 1992 drum removal provided as an attachment to the Responsiveness Summary and those data contained in the site file demonstrates that soils at the site are 1) characteristic wastes, and/or have soils which have PCBs which exceed 50 ppm which would make them subject to TSCA. Manifests located in the Site file from the 1992 drum/soil removal also indicate hazardous wastes are present at the site.

b) Sampling for TCLP extraction and Toxicity Characteristic analysis which was conducted by Purolator during the FS to determine the presence or absence of hazardous waste was not conducted pursuant to an EPA approved sampling plan, nor were EPA oversight contractors present during the sampling. In addition, much of the sampling was conducted by compositing samples, therefore the results are not conclusive regarding the concentration of constituents that might be present. Furthermore, in Disposal Area 6 one sample (which was not a composite sample) revealed the presence of characteristic hazardous waste.

<u>TSCA Wastes</u>

The volume of soil in Disposal Area 4 contaminated with PCBs at a level above the TSCA regulatory level used in the Supplement to the FS is an estimate based on the RI report, the FS, and historical sampling conducted at Disposal Area 4. Preliminary data collected during the 1992 drum removal activities supports the estimate. Confirmational sampling to be conducted during the remedial design and remedial action will establish the exact volume that will be remediated.

COMMENT:

6. Purolator has commented that $900,000 is a substantial difference in cost between Alternatives 4 or 5 compared with Alternative 8.

EPA
RESPONSE:

Soil and sediment at the Site is contaminated with both organic (including PCBs) and inorganic hazardous substances. Both listed and characteristic hazardous wastes are present. Consequently, there is a high probability that clean-up levels determined for the site, along with Land-Disposal Regulations, would probably require both stabilization and low-temperature thermal treatment technologies to be utilized at the facility. This is supported by the preliminary data collected during the drum removal activities. The combined costs (Alternatives 4 and 5) would be approximately $3,924,782. Moreover, treatability studies would be required to determine the effectiveness of the technologies, and substantive requirements for air permits for low temperature thermal treatment would have to be met. Although substantial when compared individually, if the costs for Alternatives 4 and 5 are combined ($3,924,782) the off-site treatment and disposal option is less expensive ($2,462,334).

ii) Attachment I - General Comments from Purolator Products Company

<u>The Proposed Plan</u>

COMMENT:

1. <u>Contaminant Concentration</u>

The Proposed Plan continuously refers to elevated levels of contaminants but no definition of what constitutes "elevated" is given. Also, the proposed plan does not indicate that the concentrations given are maximum concentrations. The Proposed Plan is misleading because only the maximum concentrations are presented without discussing other sampling results.

EPA
RESPONSE:

EPA does not believe that the Proposed Plan is misleading. The purpose of the Proposed Plan is to summarize in a concise manner the results of the Remedial Investigation, Feasibility Study, and the Risk Assessment which can be understood by the general public, and to present EPA's proposed alternative. On Page 1 of the Proposed Plan we indicate "Detailed information on all of the material discussed here (in the Proposed Plan) may be found in the November 1991 Remedial Investigation Report, the March 1992 Feasibility Study Report..." etc. In these documents, detailed discussions and comparisons of background soil concentrations of chemical parameters can be compared to areas impacted by activities at the facility. Or, for example, upgradient concentrations of volatile organic contaminants (0 ppb) when compared to downgradient concentrations of volatile organics (>200 ppb) reveal <u>elevated</u> or above background concentrations of organics in ground water as a consequence of waste disposal activities at the Site. For ease of discussion in the Proposed Plan, the maximum detected concentration was placed in parenthesis.

COMMENT:

2. Waste Quantity Estimates and Waste Classification

Purolator expressed the following concerns: 1) EPA has overestimated the total volume of soils in Disposal Area 4 that might be subject to Toxic Substance and Control Act (TSCA) regulations; 2) the FS Supplement relied on volume data from the October 1991 draft FS rather than data from the March 1992 FS; 3) the FS Supplement uses a soil density of 1 when the FS uses a soil density of 1.5; and 4) Purolator indicates that the October 1991 draft FS indicated that the total volume of soil requiring remediation is 3,480 cubic yards while the March 1992 draft FS indicates that only 2,533 cubic yards of soil require remediation. The 920 cubic yard difference between the March 1992 FS and the October 1991 draft FS is due to an error in the October 1991 draft FS. EPA used the information from the October 1991 draft FS in the Supplement to the FS and the Proposed Plan.

EPA
RESPONSE:

The reason that the FS supplement uses the volume from the October 1991 draft FS is because at the time that EPA directed Alliance Technologies to complete the FS Supplement (March 1992) the revised FS was not available. However, the "error" of 920 cubic yards that Purolator references is irrelevant because the exact volume will be determined during the remedial design and remedial action.

Furthermore, in EPA's written comments on the RI to Purolator Products Company dated 2/12/91, EPA expressed its concern over the approach that Purolator used in the 1990 RI sampling, or lack of sampling, of oil saturated sediments which contain PCBs in Disposal Area 4. Purolator's decision during the field work to send non-lagoon (later termed "background") samples from Disposal Area 4 to a laboratory for analysis, while not sampling observed oil saturated soils and sediments, has resulted in some uncertainty concerning the total volume of soil requiring remediation. For this reason EPA used a conservative value for the volume of PCB contaminated soils and sediments needing remediation from the draft FS. In any event, EPA will require confirmational sampling to ensure that soils and sediments with unacceptable levels of PCBs are removed.

Use of 1 versus 1.5 for density does affect the cost estimate for the removal of the soils and sediments. However, the cost estimate in the Proposed Plan is higher than the cost estimate in the Supplement and therefore has accounted for the uncertainty in soil densities at the site.

Preliminary analytical data from samples collected from the stock piled soil accumulated from Disposal Area 4 during the Summer 1992 drum removal activities confirmed that additional soils requiring remediation exist in Area 4 and therefore the estimated volumes are still valid in the Proposed Plan

iii. Attachment I - Specific Comments from Purolator Products Company

COMMENT:

1. "Page 2 - Paragraph 4 - Although residences are within 60 feet of the "site" property line, the distance between "present manufacturing facilities" and residences is 500 to 1,000 feet."

EPA
RESPONSE:

For the purpose of discussion in the Proposed Plan, property owned by Purolator Products Company, west of Route 14 and north of 18th Street was considered as the present manufacturing facility.

COMMENT:

2. "Page 3, paragraph 4 - The PRAP should state when and by whom leachate was observed and that leachate has not been present in recent years."

EPA
RESPONSE:

The documentation of leachate observed at the facility is present in the site administrative file. Leachate was observed as recently as during the drum removal activity at the site during the Spring of 1992.

COMMENT:

3. "Page 3, paragraph 5 - Area 4 discharge **may have** been discharged to the North Drainage Ditch via a swale prior to 1941 (according to plant personnel)."

FAC 003 1464

EPA
RESPONSE:

EPA Agrees.

COMMENT:

4. "Page 3, paragraph 5 - The 1981 data which reportedly indicated PCBs in Area 4 soil at 320 ppm is suspect because sampling reports and laboratory procedures and complete analytical reports are not available. EPA should produce data reports or qualify this statement. ERM's resampling of this 1981 location during the recent drum investigation indicated a PCB concentration of 43 ppm."

EPA
RESPONSE:

The data reports provided by NYSDEC to EPA are contained in the Administrative Record. EPA believes that the data is valid. Although PCB concentrations at the site have not recently been measured as high as 320 ppm, this is the maximum value detected to date. Materials contaminated with PCBs above 50 ppm have however been detected at the Site since completion of the RI Report. Attachment 1 illustrates that PCB contaminated materials at concentrations above 50 ppb were detected in both Disposal Areas 1 and 4.

COMMENT:

5. "Page 3, paragraph 6 - The 1981 sampling was reported conducted by NYSDEC, not EPA. As stated above, the data is of questionable value because sampling documentation and data reports are not available. 1990 RI sampling results (performed in accordance with CLP protocol) indicate maximum values as follows: 13,000 ppm chromium, 3,390 ppm cadmium and 1,910 ppm copper in one sample."

EPA
RESPONSE:

EPA acknowledges that the 1981 sampling was conducted by NYSDEC and not EPA. As stated above, data reports provided by NYSDEC are available in the Administrative Record for the site. The comment on the 1990 RI sampling results is acknowledged.

COMMENT:

6. "Page 3, paragraph 9 - It appears that EPA is misinterpreting the use of a previous stormwater conveyance pipe whose elevation would produce drainage."

EPA
RESPONSE:

EPA agrees.

COMMENT:

7. "Page 3, paragraph 10 - Stating that coal ash was from the "production facility" is misleading; the source of the ash was primarily from the plant coal-fired boilers."

EPA
RESPONSE:

See EPA response to comment #1 in **iii. Attachment I - Specific Comments from Purolator Products Company** located on page 14.

COMMENT:

8. "Page 4, paragraph 1 - According to the 1990 RI report, the 1986 investigation included sampling fourteen monitoring wells resulting in the detection of eight VOCs, semi-volatiles, and five inorganics above federal and state ground water standards (GWS)."

EPA
RESPONSE:

Page 6-40 of the 1990 RI states that "Fourteen volatile organic compounds were reportedly detected in the wells." Page 1-19 of the Feasibility Study contains a summary of the 1986 RI and states that: "Fourteen volatile organic compounds were reportedly detected in Facility monitoring wells."

COMMENT:

9. "Page 4, paragraph 6 - "Numerous" semi-volatile organic compounds (SVOCs) related to oil were detected in Area 4 soil; however, only seven VOCs were detected (**not** including TCE) and only toluene, ethylbenzene and xylene were detected at over 100 ppb. All other VOC concentrations were below 1 ppm."

EPA
RESPONSE:

The Proposed Plan does not contradict this comment.

COMMENT:

10. "Page 4, paragraph 7 - This is an example of misleading use of a maximum concentration as displayed in parenthesis (see general comments). Only one Area 5 soil sample contained chromium at 13,000 ppm; all other values were at least one order of magnitude lower. Although TCE was detected in fourteen soil samples, nine values were below 10 ppb, four values were at or below 30 ppb, and only one (240 ppb) exceeded 30 ppb."

EPA
RESPONSE:

The purpose of the Proposed Plan is to summarize in a concise manner the results of the Remedial Investigation, Feasibility Study, and the Risk Assessment which can be understood by the general public, and to present EPA's proposed alternative. On Page 1 of the Proposed Plan we indicate "Detailed information on all of the material discussed here (in the Proposed Plan) may be found in the November 1991 Remedial Investigation Report, the March 1992 Feasibility Study Report..." etc. In these documents, detailed discussions and comparisons of background soil concentrations of chemical parameters can be compared to areas impacted by activities at the facility. Or, for example, upgradient concentrations of volatile organic contaminants (0 ppb) when compared to downgradient concentrations of volatile organics (>200 ppb) reveal <u>elevated</u> or above background concentrations of organics in ground water as a consequence of waste disposal activities at the Site. For ease of discussion in the Proposed Plan, the maximum detected concentration was placed in parenthesis.

COMMENT:

11. "Page 4, paragraph 9 - PCB concentrations for the three samples from Area 7 are as follows: 3.7 ppm, 5.3 ppm and 0.32 ppm; therefore, EPA's statement is incorrect. Also, the SVOC statement is misleading because the maximum concentration for one SVOC was 19 ppm while the total of all detected SVOC did not exceed 22 ppm."

EPA
RESPONSE:

The errors are acknowledged. This error was due to the fact that Table 9-26 in the 1990 RI is unlear as to the exact sample collection location. The Record of Decision Decision will reflect these corrections.

FAC 003 1467

COMMENT:

12. "Page 4, paragraph 10 - The 1990 RI states that eighteen SVOCs were detected in Area 8. Also, PCBs were detected in only one sediment sample at a concentration of 11 ppm."

EPA
RESPONSE:

The errors are acknowledged. This error was due to the the fact that Table 9-26 in the 1990 RI is unlear as to the exact sample collection location. The Record of Decision Decision will reflect these corrections.

COMMENT:

13. "Page 4, paragraph 12 - Sediment samples, not surface soil samples, were collected in Area 10."

EPA
RESPONSE:

The typographic errors are acknowledged. The Record of Decision will reflect these corrections.

COMMENT:

14. "Page 4, paragraph 14 - A total of 22 TCL SVOCs were in soil near the oil/water separator, 8 of which exceeded 100,000 ppb (not ppm). Soil samples, not sediment samples, contained the metal at concentrations listed."

EPA
RESPONSE:

The typographic errors are acknowledged. The Record of Decision will reflect these corrections.

COMMENT:

15. "Page 5, paragraph 3 - As stated earlier, the 1980 data is suspect and the recent data from Alliance sampling is not referenced."

FAC 003 1468

EPA
RESPONSE:

The 1980 data is not referenced above, however, EPA believes that this data is valid. The data packages are contained in the site file. The recent data collected by Alliance is available in the Risk Assessment

COMMENT:

16. "Page 5, paragraph 4 & 10 - The drum excavation final count was 469 drums."

EPA
RESPONSE:

This agrees with the EPA oversight contractor accounting. At the time that the Proposed Plan was prepared, only 461 drums had been identified and removed. Since that time, as Purolator points out, 469 drums have been removed.

COMMENT:

17. "Page 6, paragraph 1 - The soil removed during the drum excavation will be disposed of in a secured RCRA hazardous waste landfill with the exception of a small volume of PCB - containing soil that will be disposed of in a TSCA landfill."

EPA
RESPONSE:

The Proposed Plan does not contradict this comment. It states, rather, that the material will be sent to a permitted industrial waste landfill. However, materials removed from the subsurface may require treatment to meet all Land Disposal Regulations.

COMMENT:

18. "Page 6, paragraph 1 - What is the source of the Summer 1992 data?"

EPA
RESPONSE:

The source of the data will be those final data provided by Purolator Products Company and data collected for EPA by Alliance Technologies, Inc. (EPA's oversight contractor) once those data are validated.

COMMENT:

19. "Page 8, paragraph 2 - Purolator is not aware of an on-site "reservoir" of contaminants that exists at the site. EPA needs to clarify what is meant by this statement."

EPA
RESPONSE:

Accumulations of contaminated sediments and soils in the unnamed drainageway south of the Facet facility and Mays Creek have been determined to be a result of releases of contaminants from the Facet Site. Historical releases include point source discharges from the oil/water separator. The 1990 Remedial Investigation Plate 2 (attached) illustrates that the piping systems from the disposal areas lead to the Oil/Water separator and then to either the Unnamed drainage way south of the facility or to the North Drainageway.

The drum disposal areas at the facility are considered to have been on-site reservoirs or sources of contamination. Until all the contaminated soils which present a risk to ground water are removed they will continue to be considered an on site reservoir.

In addition, contaminated soils and sediments in dry wells are deemed on-site reservoirs, or sources of ground water contamination.

COMMENT:

20. "Page 8, paragraph 3 - EPA needs to be more specific with respect to what areas and volumes of material must be remediated despite being within acceptable risk guidelines. Purolator is concerned that this may be an open-ended loophole that could require potentially unlimited remediation based on undefined "uncertainties"."

EPA
RESPONSE:

The paragraph that is being referenced here does not define the areas for remediation but simply states some of the uncertainties associated with generating risk numbers with a limited data base. The areas to be remediated are defined in the section entitled "Cleanup Levels for the Site."

COMMENT:

21. "Page 9, paragraph 2 -soil from Area 5 was tested by the TCLP method and "passed"; however, Purolator has agreed to resample Area 5. Area 10 sediment was similarly sampled and passed the

TCLP method; therefore, Area 10 should not be referenced here."

EPA
RESPONSE:

See EPA response to comment #5 in **i) Comments from the Purolator Products Company - June 26, 1992** located on page 10.

Area 10 sediments contained 10,000 ppm chromium. This concentration of chromium indicates that this area presents a potentially unacceptable risk to ground water quality, and therefore additional testing is required in this area.

Superfund Publication 9347.3 -11FS, CERCLA Compliance with RCRA Toxicity Characteristics (TC) Rule: Part II indicates that for Record of Decisions signed after September 25, 1990, wastes shipped off-site must be evaluated for the toxicity characteristic to ensure that applicable RCRA Subtitle C requirements are met the time of disposal.

COMMENT:

22. "Page 10, paragraph 8 - Product recovery may not be possible, since less than one inch of oil has been detected at monitoring well D-5. Therefore, product recovery should only be mentioned as a possibility."

EPA
RESPONSE:

EPA personnel from the Monitoring and Management Branch of the Environmental Services Division re-sampled selected monitoring wells at the Site during June of 1991 that had been sampled by Purolator during the 1990 field season. This re-sampling was required because, after an EPA review of field notes, it was determined that Purolator conducted some of the field work in 1990 with methods that were not approved by EPA.

As a result of this re-sampling effort, EPA personnel detected previously unreported product floating on the water table at the Site (at well D-5). At that time, the EPA personnel estimated that the layer of floating product was 1-foot thick. This thickness of oil will require recovery. Further determination during the remedial design will confirm the need to recover the floating product.

COMMENT:

23. "Page 10, paragraph 10 - EPA should state specifically how many TCLP samples need to be taken in Area 5 and the exact conditions under which the results of the TCLP analyses would lead to remediation."

EPA
RESPONSE:

The number will be determined during the remedial design phase of the project. Those samples that fail characterization as a hazardous waste, or based on TCLP indicate the ability to leach into groundwater will require remediation.

COMMENT

24. "Page 12, paragraph 1- This section contains an incorrect definition of a RCRA waste. A material is defined as a RCRA waste if it is either listed or is a characteristic RCRA waste; i.e., due to ignitability, reactivity, pH, or toxicity (failure of TCLP tests). Total Arsenic and chromium values are not related to RCRA characterization. As such, the site waste is generally not RCRA waste."

EPA
RESPONSE:

See EPA responses to comment # 5 in **i. Comments from the Purolator Products Company - June 26, 1992** located on page 10, and EPA response to comment # 3 in **iv. EPA Comments on Attachment II - Purolator's Review and Critique of the Supplement to the Feasibility Study, Facet Enterprises Site, Elmira, New York** located on Page 26.

COMMENT:

25. "Page 13, paragraph 13 - The RI identified RCRA waste in Area 6 sediment only. All other waste is considered characteristically non-hazardous."

EPA
RESPONSE:

See EPA responses to comment # 5 in **i. Comments from the Purolator Products Company - June 26, 1992** located on page 10, and EPA response to comment # 3 in **iv. EPA Comments on Attachment II - Purolator's Review and Critique of the Supplement to the Feasibility Study, Facet Enterprises Site, Elmira, New York** located on Page 26.

COMMENT:

26. "Page 15, paragraph 1 - Land disposal restrictions do not prevent the off-site disposal of listed hazardous waste."

EPA
RESPONSE:

Land Disposal Restrictions do not permit off-site disposal of untreated RCRA listed hazardous waste.

COMMENT:

27. "Page 15, paragraph 3 - Monitoring wells in the area of the proposed RCRA-type cell indicate a depth to ground water capable of significant water yield at approximately 30 feet."

EPA
RESPONSE:

The monitoring well closest to the proposed RCRA landfill does have ground water at a depth of approximately 30 feet. However, during the drum excavation activities at the Site perched ground water capable of yielding significant quantities of water was observed.

COMMENT

28. "Page 15, paragraph 5 - EPA has never produced or been able to reference a document which classified ground water as class 2A aquifer."

EPA
RESPONSE:

Information and publications regarding classification of aquifers by EPA can be obtained from EPA Guidance for Ground Water Classification (Final Draft , December 1986). This document forms the basis for classification of the Newtown Creek Aquifer as a Class IIa aquifer. The State of New York Classifies this aquifer as "GA" indicating that it is a potential drinking water supply.

COMMENT:

29. "Page 16, paragraph 9 - See adjusted volume and cost calculations."

EPA
RESPONSE:

See EPA response to comment number # 2 in **ii) Attachment I - General Comments from Purolator Products Company** located on page 13.

COMMENT:

30. "Page 17, paragraph 3 - As stated earlier in the PRAP, the summary should state metals precipitation **if necessary.**"

EPA
RESPONSE:

Acknowledged. The Record of Decision will reflect this correction.

COMMENT:

31. "Page 17, paragraph 6 - RCRA waste exist only in Area 6 due to the leachable cadmium. In addition, based on the 1991 RI there does not appear to be 2,124 c.y. of RCRA waste at the site. Rather, most of the material appears to be non-hazardous."

EPA
RESPONSE:

See EPA Response to comment # 5 in **i) Comments from the Purolator Products Company - June 26, 1992** located on page 10.

COMMENT:

32. "Page 17, paragraph 7 - It will be difficult to find an industrial waste landfill to accept site soil; furthermore, Purolator may choose to send waste to a secured "RCRA" landfill for security and should be able to retain that option."

EPA
RESPONSE:

The option of disposing of non-hazardous waste in a hazardous waste landfill would not be excluded by the selected remedial alternative.

COMMENT:

33. "Page 17, paragraph 9 - Storage of pumped ground water specified."

EPA
RESPONSE:

This will remain specified. Tank storage of pumped water is often required, as it often is, prior to treatment and/or discharge. The need for storage at this site will be determined by the final pumping rate required to remediate ground water, and whether the water is discharged after treatment directly to surface water or to the facility non-contact cooling system prior to surface water discharge.

COMMENT:

34. "Page 17, paragraph 11 - "Long term monitoring" should be described more specifically. Does this mean ground water monitoring, effluent monitoring or other ?"

EPA
RESPONSE:

Ground water sampling, and effluent monitoring will be required. If site conditions indicate that releases from the site by surface water run-off or point source discharges are resulting in accumulation of contaminants in sediments in streams or drainage ways these too may be periodically monitored.

iv. EPA Comments on Attachment II - Purolator's Review and Critique of the Supplement to the Feasibility Study, Facet Enterprises Site, Elmira, New York

<u>Attachment II - Major Technical Issues</u>

TSCA "Anti-Dilution" Rule

COMMENT:

1. Purolator indicates that they believe that Assumption 6 in the Supplement to the Feasibility Study indicates that the TSCA anti-dilution policy applies to all PCB waste at the Facet Site.

EPA
RESPONSE:
The Supplement to the FS does not indicate that the TSCA anti-dilution policy applies to PCB contaminated waste at the Facet

Site. Assumption 6 only indicates that the source of the PCBs was less than 50 ppm. Therefore no evaluation of the TSCA anti-dilution policy was required. For CERCLA sites the TSCA anti-dilution policy does not apply.

COMMENT:

2. Purolator has provided a re-calculation of costs in the Supplement to the FS based on assumptions used in their Feasibility Study. Purolator commented that some of the volume calculations were based on the draft FS not the final FS. Purolator indicated that Alliance Technologies should have used 1.5 tons per cubic yard instead of 1 ton per cubic yard in the calculations.

EPA
RESPONSE:

The cost for Alternative 8 in the Proposed Plan is different than the cost for Alternative 8 in the Supplement to the FS as described in a memo contained in the Administrative Record. Essentially, in estimating the cost for Alternative 8 in the Proposed Plan, EPA took into consideration some of the uncertainties associated with off-site shipment, treatment, and disposal of wastes including differing soil densities.

The volume calculations utilized in the Supplemental FS were based on the draft FS because Purolator did not meet the submission date for submitting the revised FS to EPA. Therefore the information contained in the revised FS was not available to EPA when we contracted with Alliance to complete the Supplement to the FS. However, the additional volume from Disposal Area 6 which was reflected in the revised FS adds a cost of approximately $20,000 to the disposal option.

COMMENT:

3. Purolator comments that the Supplement to the FS does not provide an accurate definition of a RCRA Hazardous Waste. Purolator indicates that page 2-6 of "CERCLA Compliance With Other Laws Manual," OSWER Directive 9234.1-01 August 8, 1988 indicates that if a total metal concentration is less than 20 times the Toxicity Characteristic Rule regulatory level, no additional TCLP testing would be required.

EPA
RESPONSE:

The Supplement to the FS does not attempt to define RCRA waste. The Supplement merely provides the regulatory levels above which a material is considered a hazardous waste if that material has been extracted according to the TCLP procedure. In order to comply with RCRA requirements that are applicable or relevant and appropriate it is necessary to determine if RCRA characteristic waste is present. In determining the presence of RCRA wastes that are hazardous because they exhibit the characteristic of toxicity, the Toxicity Characteristic Rule promulgated by EPA on March 29, 1990 (and effective September 25, 1990) is utilized. Wastes which exhibit a characteristic must be disposed in a Subtitle C landfill or treated until they no longer exhibit the characteristic before disposal in a Subtitle D landfill.

Likewise, in the Proposed Plan, EPA listed for illustrative purposes only, the regulatory levels at which soils and sediments would be considered hazardous waste as determined by the Toxicity Characteristic Rule.

Page 2-6 of the "CERCLA Compliance With Other Laws Manual," OSWER Directive 9234.1-01 August 8, 1988 referenced above is a guidance for determining when sampling for hazardous waste should be conducted. The Manual provides examples, for illustrative purposes, for when testing for hazardous waste would likely be required. The text indicates that a decision about whether or not testing for hazardous waste should be conducted is dependent on site-specific factors related to the waste disposal history, sampling data, available manifests etc. Page 2-5 of the "CERCLA Compliance With Other Laws Manual," OSWER Directive 9234.1-01 August 8,1988 states that "The lead agency (EPA in this case) must use best professional judgement to determine, on a site-specific basis, if testing for hazardous characteristics is necessary." For this Site, the following factors have led to the determination that TCLP testing is required.

a) Sampling for TCLP extraction and Toxicity Characteristic analysis which was conducted by Purolator during the FS to determine the presence or absence of hazardous waste was not conducted pursuant to an EPA approved sampling plan, nor were EPA oversight contractors present during the sampling. In addition, much of the sampling was conducted by compositing samples, therefore the results are not conclusive regarding the concentration of constituents that might be present. Furthermore, in Disposal Area 6 one sample (which was not a composite sample) revealed the presence of characteristic hazardous waste.

b) Listed wastes are present at the Site. In EPA's comments on the draft Feasibility Study dated 12/23/91, EPA provided Purolator with NYSDEC Community Right to Know forms completed by Facet Enterprises, Inc. and submitted to the NYSDEC which indicate that F006 waste (a RCRA listed waste) is disposed at the facility.

c) Preliminary data collected during the 1992 drum removal provided as an attachment to the Responsiveness Summary demonstrates that soils at the site are 1) characteristic wastes, and/or have soils which have PCBs which exceed 50 ppm.

e) On August 13, 1992, Purolator submitted the manifests from the 1992 drum and soil removal activities to EPA. The submittal indicates that the soils that Purolator shipped were RCRA Hazardous wastes and included the following:

Solid

	Volume	Total Weight
a) F008 (Cadmium and Chromium)	2685 yds.	> 6,000,000 lbs.
b) F001 (TCE, Cadmium and Chromium)	195 yds.	300,140 lbs.
c) F001 and F008 (Cadmium, Chromium, TCE, PCBs > 60 ppm	-	760,650 lbs.
d) F011 and F012 Waste Poison (sodium cyanide)	96 yds.	-

Liquid

	Volume
a) F001 and F008 Cadmium, TCE, 111 -Trichloroethane, PCBs	29,715 gallons
b) D002, D004, D005, and D007 Chromic Acid waste	990 gallons

COMMENT:

4. RCRA Waste - a) Purolator comments that RCRA wastes are incorrectly defined in the Proposed Plan and the Supplement; b) Purolator comments that there are no RCRA wastes at the site; and c) Furthermore, Purolator comments that no additional testing for RCRA waste is required.

EPA
RESPONSE:

a) The purpose of the Proposed Plan is to summarize in a concise manner the results of the Remedial Investigation, Feasibility Study, and the Risk Assessment which can be understood by the general public, and to present EPA's indicate "Detailed information on all of the material discussed here (in the Proposed Plan) may be found in the November 1991 Remedial Investigation Report, the March 1992 Feasibility Study Report..." etc.

b) Listed wastes are present at the Site. In EPA's comments on the draft Feasibility Study dated 12/23/91, EPA provided Purolator with NYSDEC Community Right to Know forms completed by Facet Enterprises, Inc. and submitted to the NYSDEC which indicate that F006 waste (a RCRA listed waste) is disposed at the facility.

Also, characteristic hazardous wastes have been identified in Disposal Area 6 during sampling conducted for the FS.

Preliminary data collected during the 1992 drum removal provided as an attachment to the Responsiveness Summary demonstrates that soils at the site are 1) characteristic wastes, and/or have soils which have PCBs which exceed 50 ppm.

c) EPA believes that additional testing for RCRA waste is required for the following reasons. Sampling for TCLP extraction and TC analysis which was conducted by Purolator during the FS to determine the presence or absence of hazardous waste was not conducted pursuant to an EPA approved sampling plan, nor were EPA oversight contractors present during the sampling. In addition, much of the sampling was conducted by compositing samples, therefore the results are not conclusive regarding the concentration of constituents that might be present. Furthermore, in Disposal Area 6 one sample (which was not a composite sample) revealed the presence of characteristic hazardous waste.

See also the response to Comment 3 on page 26.

COMMENT:

5. Purolator comments that the FS Supplement states that all waste in the Treatment 2 category requires stabilization.

EPA
RESPONSE:

For off-site disposal, wastes that fail Land Ban Disposal Restrictions would require treatment or stabilization prior to disposal. The FS Supplement uses the volumes presented for cost estimating purposes only.

COMMENT:

6. Purolator comments that relying on vendors to develop remedial

alternatives is unreliable. Purolator indicates that a consultant select a remedial approach. Furthermore, Purolator comments that all waste at the Site, except from Disposal Area 6, can go to a hazardous waste landfill without treatment.

EPA
RESPONSE:

EPA did not rely on vendors to evaluate Alternative 8 -Off-site Treatment and Disposal of Contaminated Soils and Sediments. The alternative is evaluated in the Supplement to the Feasibility Study which was conducted by Alliance Technologies Inc., a consultant to EPA. Furthermore, EPA does not use consultants to select a remedial approach. After consideration of the Remedial Investigation, Feasibility Study, and Risk Assessment, EPA releases a Proposed Plan which summarizes the evaluation of alternatives and indicates EPA preferred alternative. After a public comment period ends, EPA considers all comments a remedy.

EPA disagrees with Purolator that all wastes at the Site except from Disposal Area 6, can go to a hazardous waste landfill without treatment. See response to comment #5 page 10 above.

Attachment II - Minor Technical Issues

Table 1 Comments

COMMENT:

1. "The table is missing the 3,920 ppm result for chromium in the Unnamed Drainage Way."

EPA
RESPONSE

EPA agrees with this comment.

COMMENT:

2. "The term "chromium hexavalent" used in Table 1 is not correct. The analytical results listed are total chromium (i.e. the sum of hexavalent and trivalent chromium)."

EPA
RESPONSE

EPA agrees with this comment.

FAC 003 1480

COMMENT:

3. "The quantity of soil and analytical results for Area 6 are not listed. The USEPA requested that Area 6 soil be evaluated for remediation."

EPA
RESPONSE:

At the time that EPA directed Alliance Technologies Inc. to complete the Supplement to the Feasibility Study, the information in the revised Feasibility Study was not available.

COMMENT:

4. The volume of Area 4 soil is not correct.

EPA
RESPONSE:

See EPA Response to comment # 2 in **ii) Attachment I - General Comments from Purolator Products Company** located on page 13.

COMMENT:

5. Purolator commented that the "Z" notation used in the Supplement to the FS was not required because the FS indicated that analysis for a full list of analytes had been conducted and only detects are reported in the FS.

EPA
RESPONSE:

EPA agrees with this comment.

COMMENT:

6. Purolator comments that using 13 ppm as the PCB concentration in the Mays Creek is incorrect. The data only supports the conclusion that PCBs are present in the Mays Creek.

EPA
RESPONSE:

The Supplement to the FS used this value because Mays Creek may have been used in the past for disposal of PCB contaminated wastes from Disposal Area 4. Also, sediments collected from the North Drainageway which empties into Mays Creek contain PCBs.

During the RI sampling, only a limited number of samples were collected by Alliance Technologies from Mays Creek. The quantitation limit for PCBs during this sampling was 6.5 ppm and 13 ppm. In the FS report on page 2-74 the text states "The comparison shows that sample MC-4 exceeds the remediation goals for PAHs, arsenic and possibly PCBs (the quantitation limits of 6.5 ppm and 13 ppm for PCB arochlors in the sample are above the 1 ppm PCB remediation goal for sediment in this area)." Due to the identification of this potential problem Alliance Technologies used a conservative estimate of PCB concentrations present.

COMMENT:

7. Purolator comments that contaminated soils do not need to be segregated. Soil should only be kept separated depending on treatment and or disposal requirements.

EPA
RESPONSE:

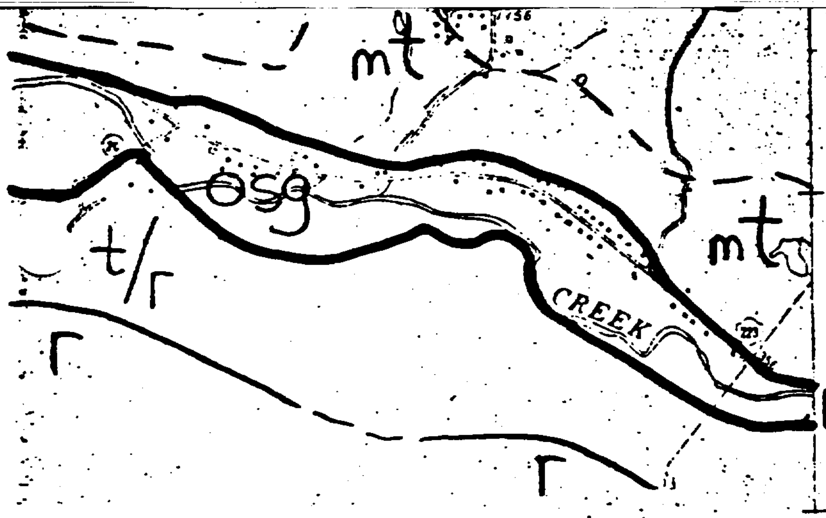
EPA agrees that if treatment or disposal alternatives do not require segregated wastes, then the waste can be mixed.

COMMENT:

8. Purolator commented that the Supplement to the Feasibility Study incorrectly states that future PCB landfill requirements are likely to become more stringent.

EPA
RESPONSE:

Future regulations are not considered in the selection of a remedy since the ARARs are "frozen" at the time of the remedy selection.



EXPLANATION

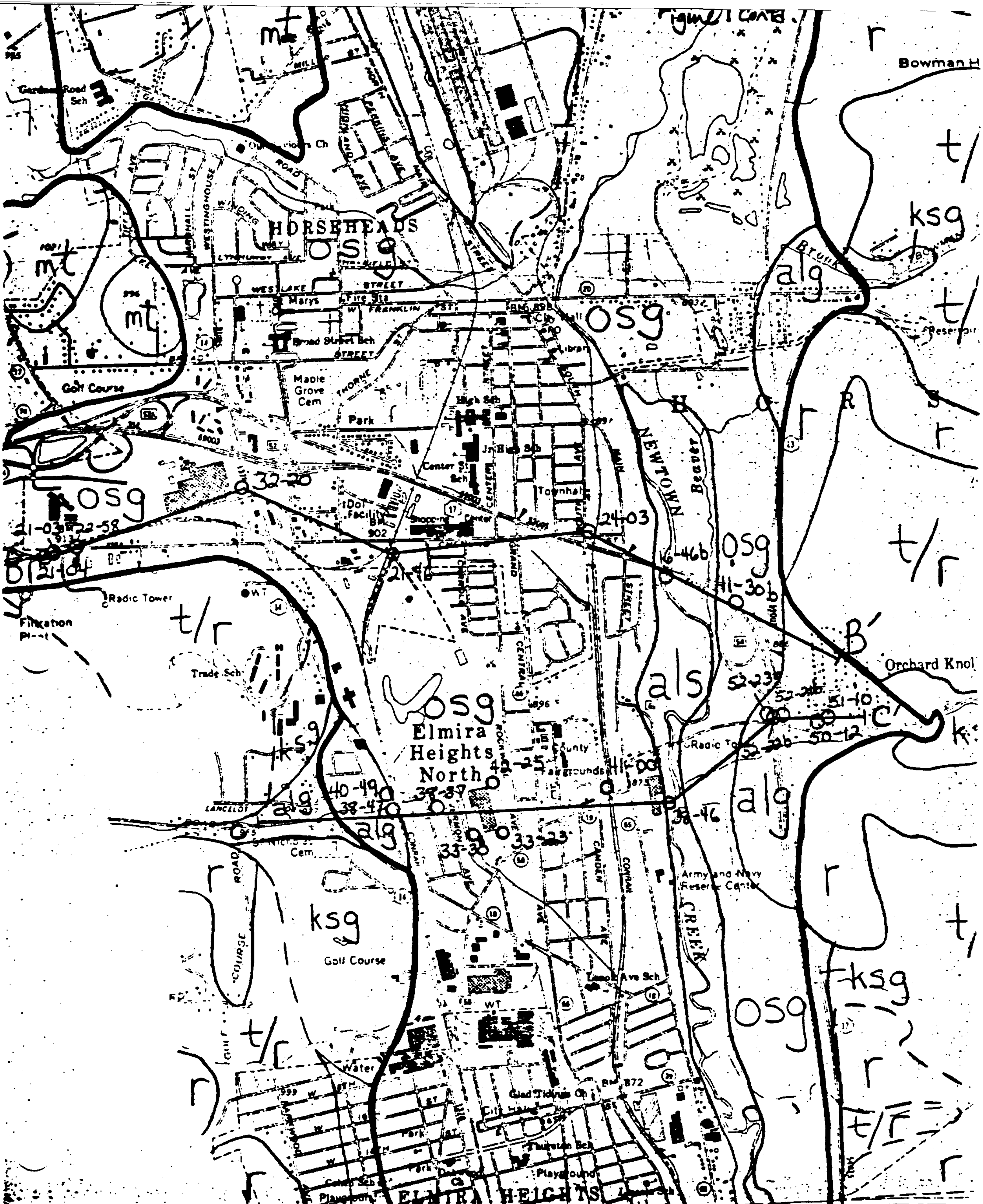
Age	Map unit	Description
	af	Artificial fill
	w	Open-water area
QUATERNARY	pm	Peat, marl, muck, and clay; bog deposits of postglacial to recent age; low permeability
QUATERNARY	alg	Alluvial sand and gravel; stream, fan, channel, and terrace deposits of postglacial to recent age; high permeability
QUATERNARY	als	Alluvial silt and (or) very fine sand; floodplain deposits of postglacial to recent age; low permeability
QUATERNARY	lss	Lake silt and fine sand; offshore deposits in proglacial or postglacial lakes; thin bedded to massive; low to moderate permeability
QUATERNARY	osg	Outwash sand and gravel; meltwater deposits; stratified and well sorted; high permeability
QUATERNARY	ksg	Kame and kame terrace sand and gravel; ice-contact deposits; some sorting and secondary calcite cementation; high permeability
QUATERNARY	mt	Morainal till; generally stony with limited admixture of poorly sorted gravel deposited at edge of ice sheet; low permeability
QUATERNARY	t/r	Till over bedrock (undifferentiated); glacial deposits of unstratified silt and sand, with occasional pebbles, cobbles, and boulders, generally less than 30 feet thick; low permeability
DEVONIAN	r	Bedrock (undifferentiated); shale and siltstone; low to moderate permeability in fractures and joints

GEOLOGIC CONTACT--dashed where approximately located

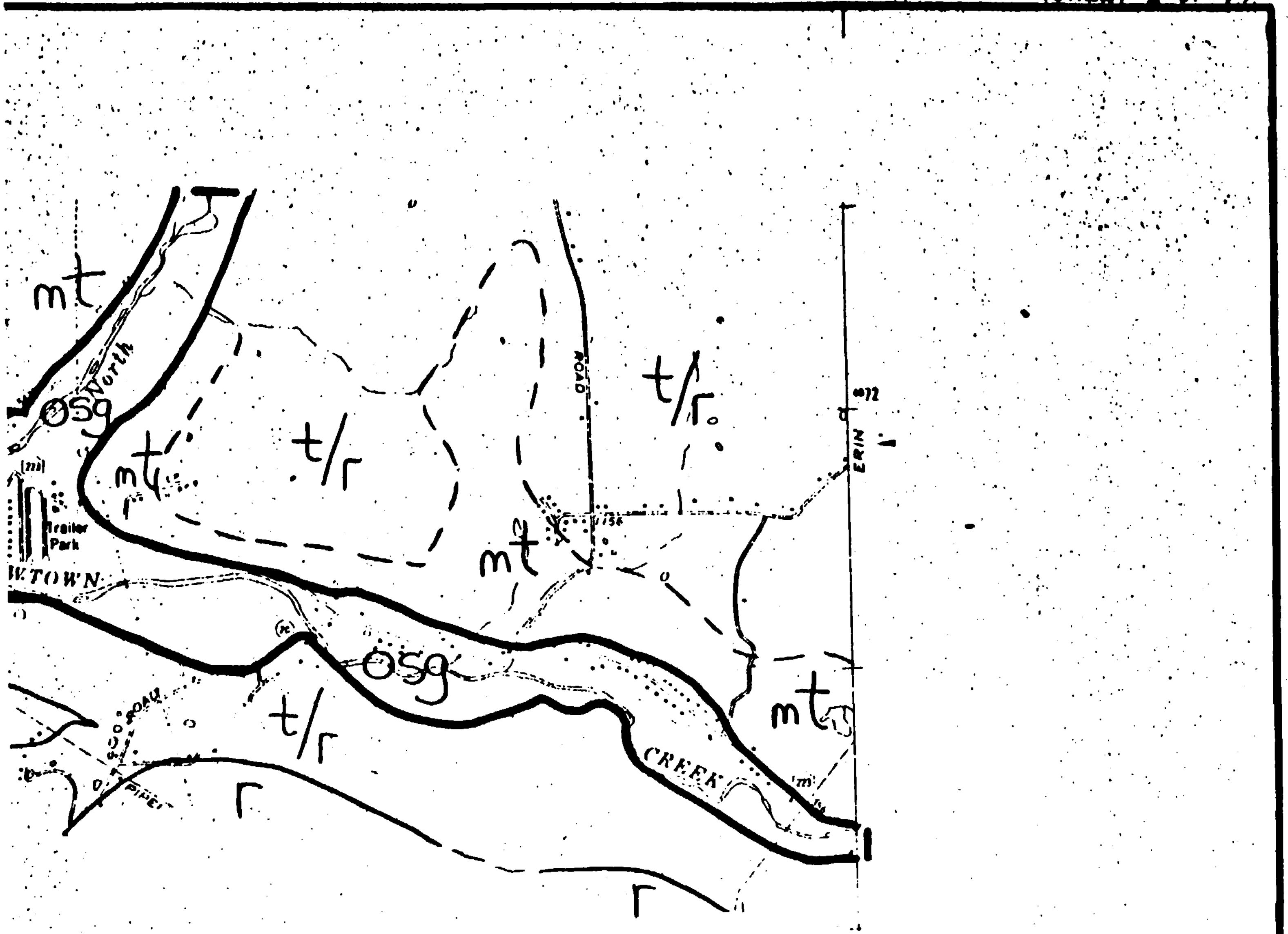
A ——— A' LINE OF SECTION--see sheet 2, "Geologic Sections"

AQUIFER BOUNDARY--dashed where full extent of aquifer

Figure 1 Cont'd



30"



EXPLANATION

af	Artificial fill

FAC 003 1485

Figure 2

EXPLANATION

Map Units	Classification	Infiltration rate, in inches per hour
1	Very low	less than 0.20
2	Low	0.20 to 0.63
3	Moderate	0.63 to 2.0
3/1	Thin (1-40 in), moderately permeable, irregular occurring soil derived from weathered bedrock or thin till, but very low permeable bedrock frequently crops out at surface or is usually at a depth of about 20-40 in.	
4	Moderate to high	2.0 to 6.3
5	Too variable to estimate	

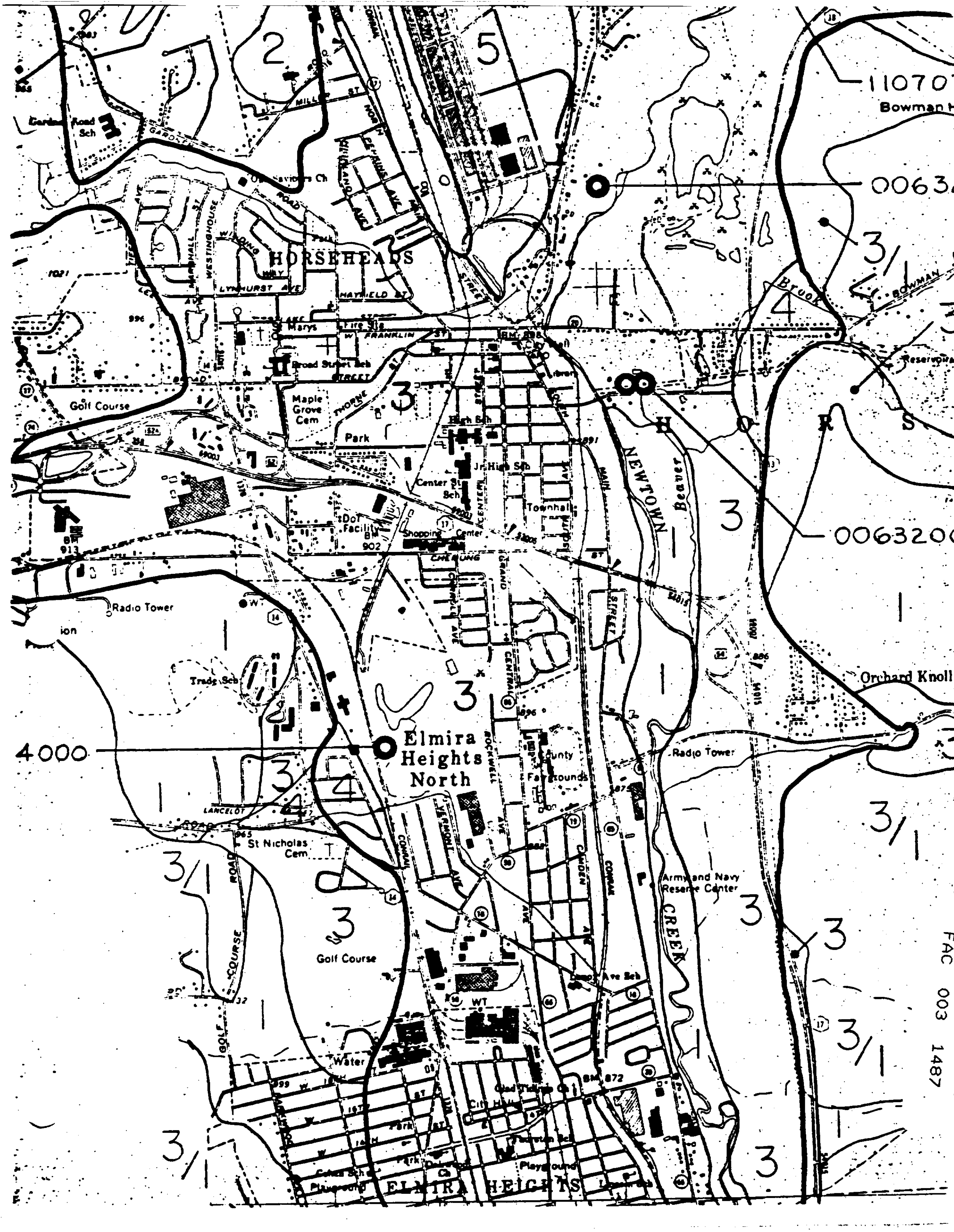
NOTE

Range of infiltration rates are derived from a soil survey of Chemung County (1973) and are estimates of the rate that water moves in the B horizon of soils (usually 10-40 inches below land surface). The estimates are based on infiltration and permeability tests, soil texture and structure, porosity, and drainage observations.

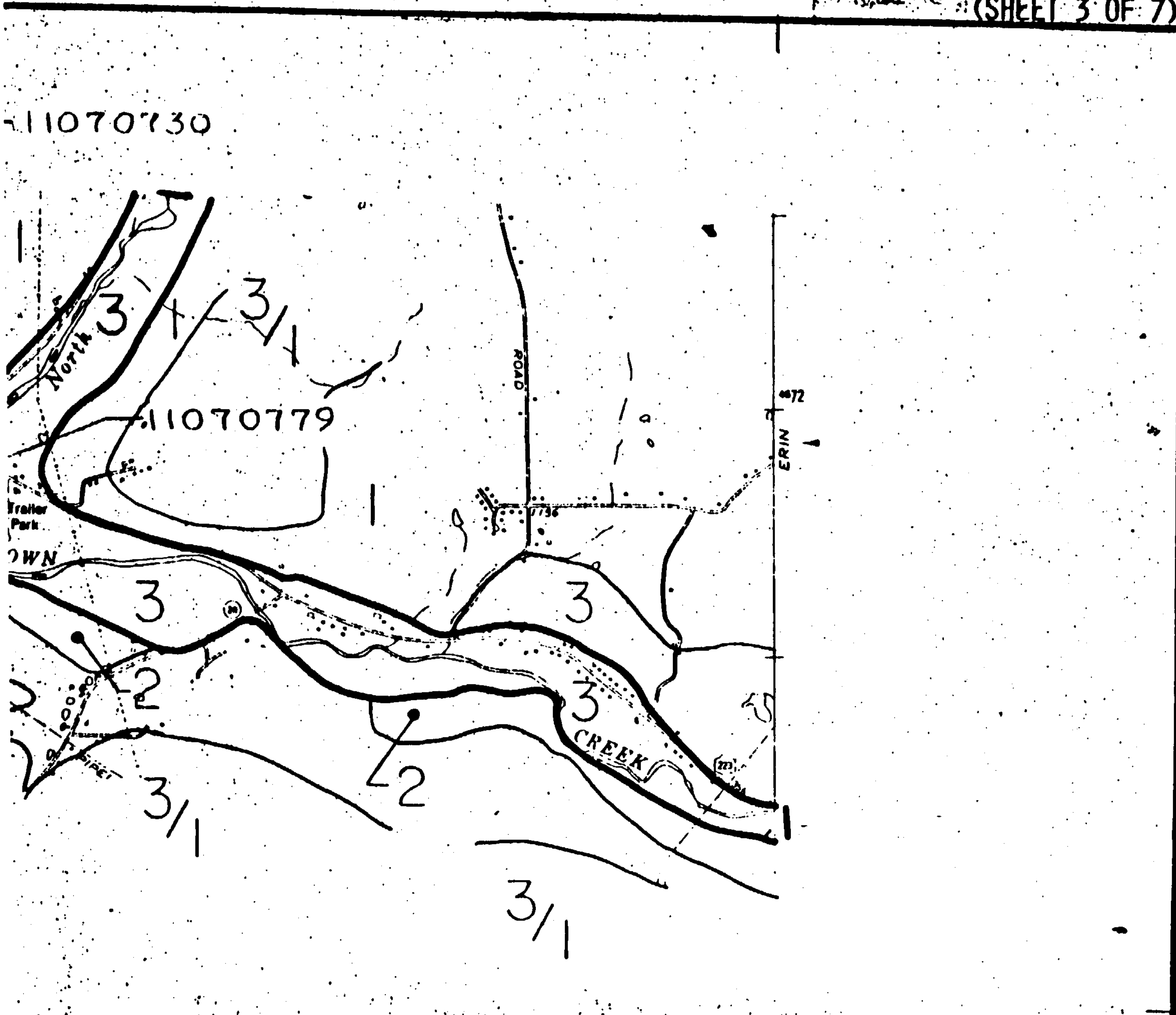
The boundaries of the units of soil permeability may not always coincide with the geologic units. For example, in the formation of soil in till, the B horizon may be several times more permeable than the parent material due to disturbances such as freeze-thaw, root penetration, and burrowing by animals and insects. Also, a permeable sand and gravel unit will usually develop a less permeable B horizon due to the accumulation of clay, iron, aluminum, and other compounds leached from the A horizon.

BOUNDARY OF UNITS OF WATER-INFILTRATION POTENTIAL--approximately located

FAC 003 1486



2
5
1107070
Bowman H
0063
3/1
HORSEHEADS
Brook
Bowman
4
St Marys
Franklin St
Broad Street Sch
Maple Grove Cem
Thorne St
Park
3
Golf Course
High Sch
Jr High Sch
Center St Sch
Townhall
DoT Facility
BM 902
BM 913
Shopping Center
Chemung St
Newtown
Beaver
Reservoir
0063200
Radio Tower
Trade Sch
Orchard Knoll
Elmira Heights North
4000
County Fairgrounds
Lancelot Road
St Nicholas Cem
Army and Navy Reserve Center
Creek
Golf Course
Golf Course Road
WT
Water
City Hall
Playground
ELMIRA HEIGHTS
FAC 003 1487



EXPLANATION

Map Units	Classification	Infiltration rate, in inches per hour

Figure 2 contd.

TABLE 5-1

PRELIMINARY ANALYTICAL RESULTS
STOCKPILE SOILS CHARACTERIZATION - AREAS 1, 3 AND 4
1992 TEST TRENCH EXCAVATIONS
PUROLATOR PRODUCTS COMPANY

ANALYTE	TCLP LIMIT	SAMPLE NUMBER														
		1-3-7	1-3-8	1-3-9 [1]	1-3-10	1-3-11	1-3-12	1-3-16	1-3-17	1-3-18	3-1-6	3-2-1	3-5-1	4-2-3	4-4-1X6	4-5-1X2
TICs																
Unknown Hydrocarbons		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	12218J	NA
Unknown Substituted Cyclohexene		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	2300J	NA
Unknown		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	17800	NA
TOTAL PCB's (ug/kg)																
PCB-1248		21000	45000	36000	NA	NA	2400	3600	60000	18000	1600	2300	—	5400	95000	43000
PCB-1254		—	—	—	NA	NA	—	—	—	—	950	—	740	1700	—	—
PCB-1260		—	—	—	NA	NA	—	—	—	—	—	180	—	—	—	—
TPH (mg/kg)		NA	NA	NA	NA	NA	NA	NA	NA	NA	17600	5130	38400	NA	ND	NA
Cyanide (mg/kg)		361	144	151	NA	NA	NA	222	14.7	33.5	NA	NA	NA	ND	ND	NA
pH		ND	ND	ND	ND	ND	NA	ND	ND	ND	NA	NA	NA	ND	ND	NA
Reactivity (mg/kg)																
Cyanide		533	130	121	41.5	ND	NA	ND	ND	ND	6.06	11.1	350	ND	ND	NA
Sulfide		*	*	*	*	ND	NA	ND	ND	ND	*	*	*	ND	ND	NA

NOTES:

ND No data as of April 30, 1992.
1 1-3-9 is duplicate of 1-3-8.
— Not detected in this sample but detected in other samples.
* Not found in any sample to date; however, some data is still outstanding.
NA Not analyzed.
Shaded values exceed TCLP limit.

TABLE 5-1

PRELIMINARY ANALYTICAL RESULTS
STOCKPILE SOILS CHARACTERIZATION - AREAS 1, 3 AND 4
1992 TEST TRENCH EXCAVATIONS
PUROLATOR PRODUCTS COMPANY

ANALYTE	TCLP LIMIT	SAMPLE NUMBER														
		1-3-7	1-3-8	1-3-9 [1]	1-3-10	1-3-11	1-3-12	1-3-16	1-3-17	1-3-18	3-1-8	3-2-1	3-6-1	4-2-3	4-4-1X8	4-5-1X2
TCLP SVOA (mg/ℓ)		•	•	•	NA	NA	•	•	•	•	•	•	•	ND	•	NA
TCLP PEST (mg/ℓ)		•	•	•	NA	NA	NA	•	•	•	NA	NA	NA	•	NA	NA
TCLP METALS (mg/ℓ)																
Cadmium	1.0	1.49	2.51	3.83	NA	NA	NA	2.32	5.68	4.64	1.32	2.39	—	ND	ND	NA
Chromium	5.0	4.07	3.96	3.79	NA	NA	NA	2.65	—	27.58	—	—	—	ND	ND	NA
TCLP Volatiles (mg/kg)																
Trichloroethene	0.5	4.598	5.109	1.554	NA	NA	NA	—	—	—	NA	NA	NA	NA	—	ND
TCL Volatiles (ug/kg)																
Acetone		—	1200J	—	NA	NA	NA	—	130B	26000	NA	NA	NA	NA	60BJ	NA
Methylene Chloride		3300B	2600B	1600B	NA	NA	NA	65B	33B	430BJ	NA	NA	NA	NA	9B	NA
1,2 Dichloroethene		210J	190J	180J	NA	NA	NA	—	—	—	NA	NA	NA	NA	4J	NA
Trichloroethene		1700	4100	6100	NA	NA	NA	44	—	3900	NA	NA	NA	NA	6J	NA
Toluene		190J	—	200J	NA	NA	NA	—	4J	—	NA	NA	NA	NA	20	NA
1,1,1-Trichloroethane		—	240J	360J	NA	NA	NA	—	400	—	NA	NA	NA	NA	—	NA
2-Butanone		—	—	—	NA	NA	NA	—	4J	—	NA	NA	NA	NA	—	NA
1,1 Dichloroethane		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	2J	NA
Benzene		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	5J	NA
Tetrachloroethene		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	8J	NA
Chlorobenzene		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	3J	NA
Ethylbenzene		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	34	NA
Xylene		—	—	—	NA	NA	NA	—	—	—	NA	NA	NA	NA	190	NA