# Record of Decision

## Summary of Remedial Alternative Selection

Wilson Concepts of Florida, Inc. Site

Pompano Beach, Florida

Prepared by:
U.S. Environmental Protection Agency
Region IV
Atlanta, Georgia



# DECLARATION FOR THE RECORD OF DECISION

## SITE NAME AND LOCATION

Wilson Concepts of Florida, Inc. Site
Pompano Beach, Florida

## STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Wilson Concepts of Florida, Inc. Site (the "Site") in Pompano Beach, Florida. The final Site remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) 42 U.S.C. Section 9601 et seq., and to the extent practicable, the National Contingency Plan (NCP), 40 CFR Part 300. This decision is based on the administrative record file for the Site.

The State of Florida, as represented by the Florida Department of Environmental Regulation (FDER), has been the support agency during the Remedial Investigation process for the Wilson Concepts of Florida, Inc. Site. In accordance with 40 CFR 300.430, as the support agency FDER has provided input during this process. Based on comments received by FDER, it is expected that concurrence will be forthcoming; however, a formal letter of concurrence has not yet been received.

## DESCRIPTION OF THE REMEDY

This remedy is the final action for the Site. In the absence of any significant source of contamination in the soil at the Site, the No Action alternative was selected as the preferred alternative to address the soil. Due to a lack of significant ground water contamination, the No Action alternative was chosen for ground water at the Site. However, the ground water will be monitored quarterly for one year to verify that no site-related release of contaminants is occurring. If the results of the monitoring show that there is no unacceptable risk from exposure to site-related contaminants in the ground water, then the Site will be considered for deletion from the National Priorities List (NPL). However, should monitoring indicate that the Site poses a threat to human health or the environment, EPA, in consultation with the State of Florida, will reconsider the protectiveness of the "No Action" alternative and the feasibility of ground water remediation will be re-evaluated.

DECLARATION

Based on the results of the Remedial Investigation and Risk Assessment conducted at the Site, EPA has determined that no remedial action is necessary to ensure protection of human health and the environment. Because this remedy will not result in hazardous substances remaining on-site above health-based levels, the five-year review requirement will not apply to this action. Therefore, the Site now qualifies for inclusion in the "sites awaiting deletion" subcategory of the Construction Completion category of the National Priorities List.

for Greer C. Tidwell, Regional Administrator

9/22/92
Date

TABLE OF CONTENTS



LIST OF FIGURES

## LIST OF TABLES



## LIST OF APPENDICES

# DECISION SUMMARY FOR THE RECORD OF DECISION
# WILSON CONCEPTS OF FLORIDA, INC. SITE
# POMAPANO BEACH, FLORIDA

## 1.0 SITE LOCATION & DESCRIPTION

Wilson Concepts of Florida, Inc. formerly operated as a manufacturing and metal-finishing facility at 1408 SW Eighth Street, Pompano Beach, Florida (Figure 1-1). The Wilson Concepts of Florida, Inc. Site (the "Site") occupies approximately two acres in an industrialized section of Broward County in the municipality of Pompano Beach. The property is currently bordered on the north by SW Eighth Street, on the east by a fiberglass production facility, on the south by an industrial access road, and on the west by the Chemform National Priorities List (NPL) Site (Figure 1-2). Carter and Crawley Precision Metals, Inc. ("Carter and Crawley"), a metal working facility, currently operates at the Site.

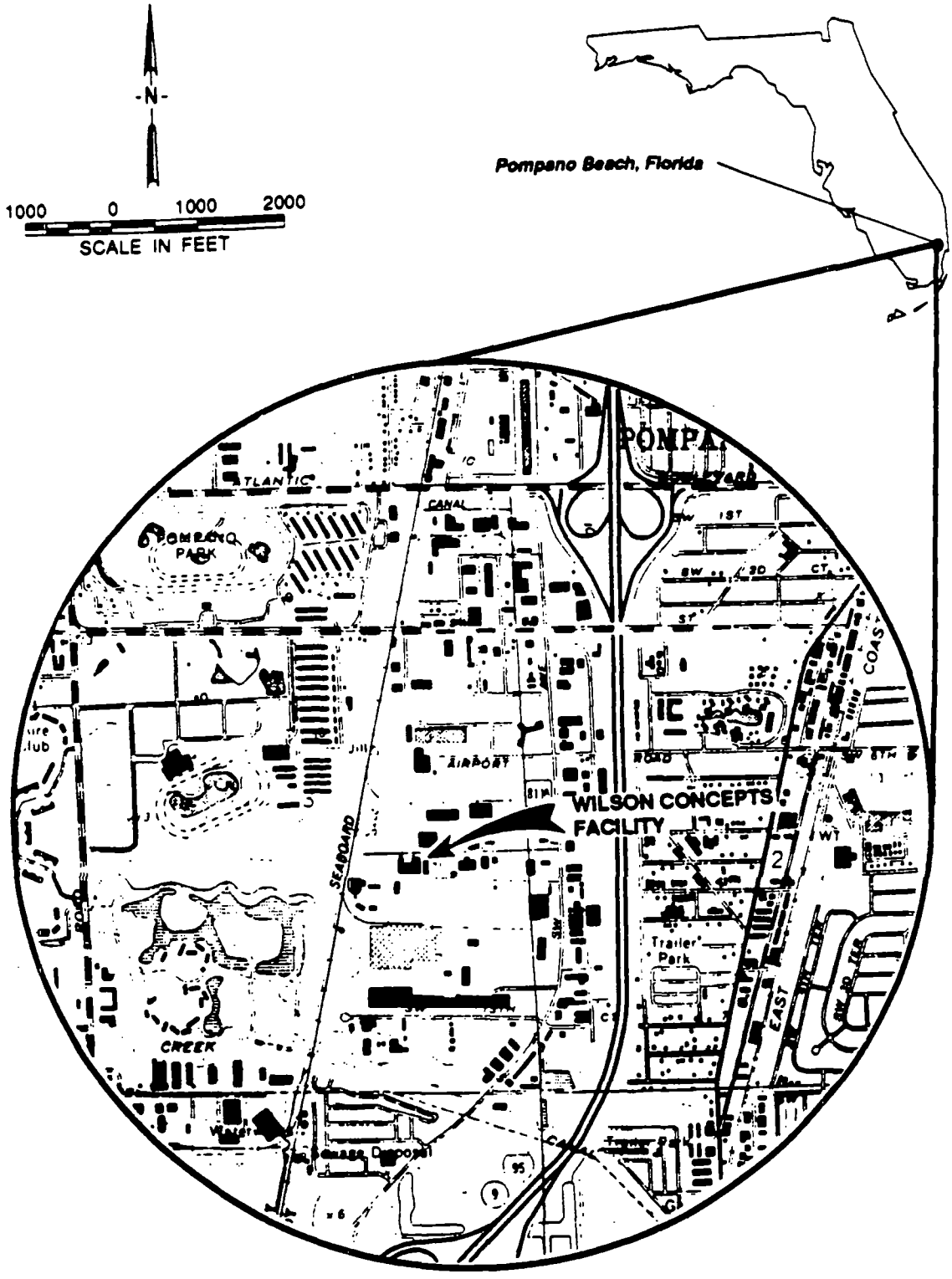
The Site is located in a highly industrialized area less than one half mile west of Interstate 95. The closest residential zoning lies just east of I-95. The Site is located within the city limits of Pompano Beach, which has a population of 72,400 (U.S.D.C., 1990). The city is divided into park services districts. The area surrounding the Site and the Site itself are not located within one of these districts, most likely due to the industrial nature of the area. The closest district, which is west of the Site, has a projected 1993 population of 2800.

An estimated 3000 feet south of the Site is the Pompano-Cypress Creek Canal, operated by the South Florida Water Management District which flows east toward and connects with Biscayne Bay. Directly underlying the Site is the Biscayne Aquifer, which supplies all potable water for Broward County and has been designated as a sole-source aquifer.

The Site is fenced and the majority of it is occupied by a large building which houses Carter and Crawley. The rest is covered by asphalt parking areas with grass-covered berms. A concrete pad occupies the southwest corner of the Site. Surface runoff at the Site flows to french drains in the parking lot. Some of these drains appear to be connected to a storm sewer system. A gravel drainfield which is bermed and covered by grass is located in the south-central portion of the Site.

## 2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

In 1967, John Nolan purchased the subject property and leased it to Southeast Tool and Die from 1967 to 1974. In July 1974, Wilson Concepts of Florida, Inc. ("Wilson Concepts") was formed after the purchase of Southeast Tool and Die by Claude Wilson of Wilson




SOURCE: USGS Fort Lauderdale North, Florida
7.5 Minute Quadrangle

CDM FPC ARCS IV

**SITE LOCATION MAP**

**WILSON CONCEPTS**
**POMPANO BEACH, FLORIDA**

**FIGURE NO.**

**1-1**

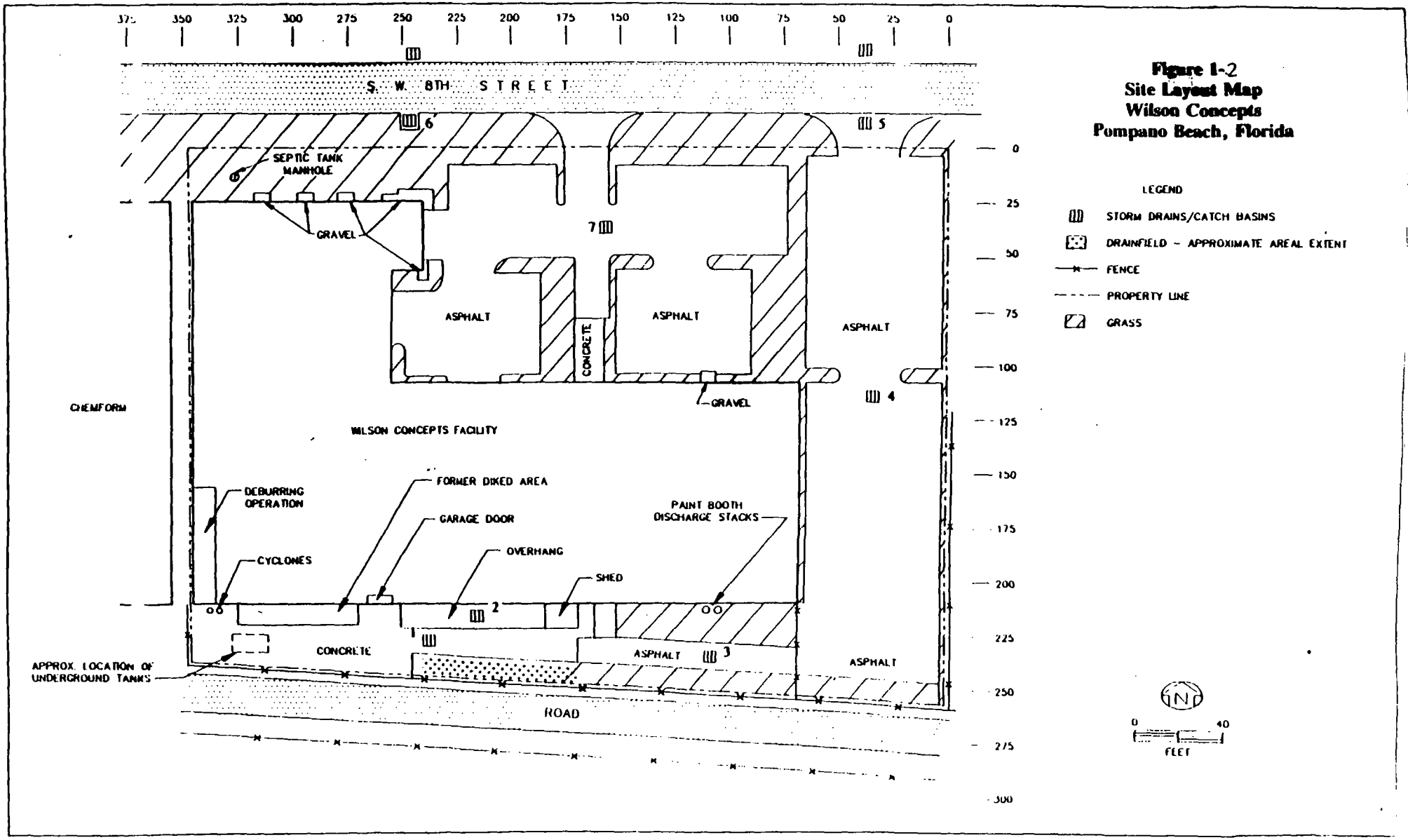



**Figure 1-2**
**Site Layout Map**
**Wilson Concepts**
**Pompano Beach, Florida**

Concepts of Dayton, Ohio. Wilson Concepts of Florida, Inc. manufactured jet aircraft engine parts and metal-working machinery and served as a contractor in the defense and aerospace industries. Associated operations at the facility included precision machining, drilling and milling of metal parts, vibratory deburring, degreasing, steam cleaning, and spray coating of parts. A variety of chemicals were used, including organic solvents, chlorinated solvents, petroleum products, paints, cyanides, acids, and bases.

From approximately 1974 to 1980, Wilson Concepts leased the property from John Nolan. In 1980, Wilson Concepts purchased the property and operated at the Site until April 1986, when Vengrowth Holdings, Inc. acquired the stock of Wilson Concepts of Florida, Inc. via a leveraged buyout financed by Centrust Savings Bank. In late 1987, Wilson Concepts filed for Chapter 7 reorganization. During the early part of 1988, Centrust Savings acquired title to the property. Subsequently, Centrust's assets have been acquired by the Resolution Trust Corporation (RTC). Since 1988, the property has been leased to Carter and Crawley, a metal machinery operation.

Raw materials usage at the Site over the last 10 years has been documented on two occasions. In the early 1980's, possibly as early as 1981, Wilson Concepts submitted a hazardous materials inventory list to the Broward County Environmental Quality Control Board (BCEQCB). The chemicals used at the Site included a variety of hydraulic and lubricating oils, metal protection agents, water coolants, methylene chloride, methyl ethyl ketone, and chemical cleaners (possibly corrosives).

In 1987, Centrust contracted with Hazards, Inc. to conduct a site inventory of chemicals and wastes found at the Wilson Concepts facility following acquisition of the property from Vengrowth Holdings, Inc. This inventory revealed products such as nitric, phosphoric, and hydrofluoric acids, alkali cleaners, sodium hydroxide, chromatic acid, lubricating oils, honing oils, mineral spirits, methyl ethyl ketone, 1,1,1-trichlorothane, kerosene, coolants, petroleum distillates, and detergents. Based on an inspection in late 1989 at the Carter and Crawley operation conducted by Wilson Concepts' consultant, chemicals currently used at the Site include 1,1,1-trichloroethane, machine oils, coolants, degreasers, corrosion inhibitor, carburetor cleaner, toluene, acids, and alkalis.

From 1976 through 1989, several inspections were conducted by BCEQCB which documented poor waste handling practices, including discharge of industrial wastes onto the ground. In August 1985, EPA conducted a Preliminary Assessment (PA) of the Site and in July 1986 requested its contractor, NUS, to perform a Sampling Investigation (SI). The results of this sampling caused the Site to be proposed for the NPL in July 1988. In March 1989, the Wilson

Concepts of Florida, Inc. Site was formally included on the NPL. A Potentially Responsible Party (PRP) Search Report was completed in April 1989.

On December 1, 1988, EPA issued Special Notice Letters to the PRPs identified in the PRP Search. On October 19, 1989 two of the PRPs, Wilson Concepts and Centrust Savings, entered into an Administrative Order on Consent (AOC) to conduct the Remedial Investigation/Feasibility Study (RI/FS) at the Site. Environmental Resources Management South, Inc. (ERM), contractor for the Potentially Responsible Parties (PRPs) from late 1989 to June 1991, conducted Phase I of the RI. Because of continued schedule delays, EPA notified the PRPs on July 23, 1991 that they were in violation of the AOC and that EPA would take over the project and complete the RI/FS.

## 3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Site is located in the industrial section of Pompano Beach, Florida. The closest residentially zoned area is east of I-95, about 1/2 mile east of the Site.

Community interviews were conducted by EPA in February 1990 to determine public interest in the Site. The conclusion drawn from these interviews is that there is minimal interest in the Site, probably due to the transient nature of the local population and the industrial setting around the Site. EPA held an Availability Session at the Pompano Beach Multipurpose Center on December 4, 1990 to provide information and answer questions on the RI to be conducted at the Site. Seven people attended. Attendees of the session indicated an interest in learning more about the Site and asked numerous questions about the Superfund process.

The RI, Risk Assessment, and Proposed Plan for the Site were released to the public on July 22, 1992. These documents were made available in both the administrative record and an information repository maintained at the EPA Records Center in Region IV, Atlanta, Georgia and at the Broward County Main Library in Fort Lauderdale, Florida. The notice of availability for these documents was published in the Ft. Lauderdale Sun Sentinel on July 20, 1992. A public comment period was held from July 22, 1992 through August 21, 1992. In addition, a public meeting was held on July 28, 1992. At the public meeting, which was attended by eleven people, representatives from EPA answered questions about the findings of the RI and Risk Assessment and presented EPA's Proposed Plan for the Site. A response to the comments received during this period is included in the Responsiveness Summary, which is part of this Record of Decision. This decision document presents the selected remedial action for the Wilson Concepts of Florida, Inc. Site, in Pompano Beach, Florida, chosen in accordance with CERCLA, as amended by SARA and, to the extent practicable, the National Contingency Plan. The decision for the Site is based on the

administrative record. These community relations activities fulfill the statutory requirements for public participation contained in CERCLA section 113(k)(2)(B)(i-v).

## 4.0 SCOPE AND ROLE OF RESPONSE ACTION

This ROD addresses the final response action for the Wilson Concepts of Florida, Inc. Site, addressing both soil and ground water. The baseline risk assessment indicates that no principal threat exists at the Site. The selected alternative will be protective of human health and the environment and is consistent with the NCP (40 CFR 300.430(e)).

## 5.0 SUMMARY OF SITE CHARACTERISTICS

### 5.1 SITE DRAINAGE

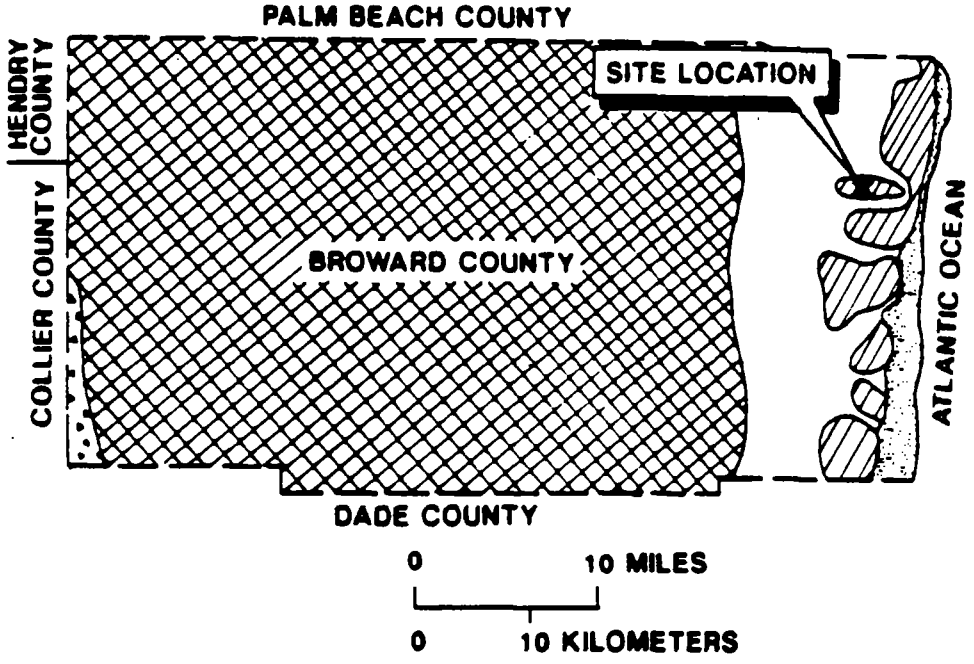
The Site lies on the Atlantic Coastal Ridge, which is up to five miles in width and forms the highest ground in the county. The relief of the Site is flat and most of it is covered by concrete, asphalt, and the building footprint. However, some grassy areas exist on the east, southeast, and northeast portions of the Site. The asphalt and concrete are primarily drained by a catch basin/storm drain system. The general locations of the storm drains/catch basins are numbered in Figure 1-2. Drain Number 1 appeared to have a PVC pipe running in the direction of the drainfield (toward the south). Drains 2 and 3 did not appear to have any pipes or conduits from them. A survey map dated April 17, 1986 indicated that a storm sewer pipe ran from drain 4 through drain 5 and into the storm sewer system under SW 8th Street. A PVC pipe coming from the direction of the sump in the loading area and two metal pipes of unknown origin were observed to enter Drain 7. Flooding on the Site has been observed after rain events. The east parking lot, north loading dock, and back alley on the south side of the Carter and Crawley building may stand under approximately four to six inches of water during a rain event.

Some drainage from the southwest corner of the Site to SW 12th Street has been observed, and additional surface water overflow in the northern portion of the Site generally flows into SW 8th Street and then into the storm sewer system.

### 5.2 SURFACE WATER FEATURES

The Atlantic Coastal Ridge is a natural barrier to drainage from the interior, except where breached by shallow sloughs or rivers. Pompano Beach and its surrounding vicinity are part of the Atlantic Coastal Ridge. The ridge is mantled by white quartz sand, thickest at the crest and thinning to less than five feet in the backswamp area, where it is underlain by a thin, permeable limestone layer. West of the Atlantic Coastal Ridge, as shown on Figure 5-1, are the Sandy Flatlands, which are lower in elevation and prior to

FIGURE 5-1
PHYSIOGRAPHIC FEATURES OF BROWARD COUNTY
PRIOR TO DEVELOPMENT
WILSON CONCEPTS
POMPANO BEACH, BROWARD COUNTY, FLORIDA




EXPLANATION

- MANGROVE AND COASTAL GLADES
- ATLANTIC COASTAL RIDGE
- SANDY FLATLANDS
- EVERGLADES
- BIG CYPRESS SWAMP

SOURCE: PARKER et al.1955, PLATE 12

development were poorly drained. Farther west are the Everglades, which cover most of Broward County. The Everglades are slightly lower than the Sandy Flatlands and, when natural conditions prevailed, were seasonally inundated. Drainage was slow and generally to the south, channeled behind the higher coastal area.

The crest of the Atlantic Coast ridge is approximately two miles inland and parallels the coast. West of the divide or crest of the ridge, the land surface descends rapidly to the backswamp area, which is approximately one-half mile west of the divide. The backswamp area slopes gently to the west five miles to the Everglades and consists of swampy sloughs and low intraswamp ridges.

Historically, the backswamp area remained wet for long periods, being poorly drained by sloughs toward the west and by underground flow toward the ocean. Subsequently, development for agriculture led to construction of a series of canals, ditches, dams and pumping stations to control water levels. Presently, the backswamp area is irrigated and drained by secondary canals that connect with either the Hillsboro Canal to the north or the Pompano-Cypress Creek Canal to the south. These canals (Figure 5-2) drain water from the Pompano Beach area and are part of the South Florida Water Management District's (SFWMD's) network of canals. The flow of the Pompano-Cypress Creek Canal is controlled by a spillway structure and a gated dam two miles farther upstream. During periods of heavy rainfall, these structures are adjusted to prevent local flooding; however, during most of the year, they are operated to hold high stages in the canal.

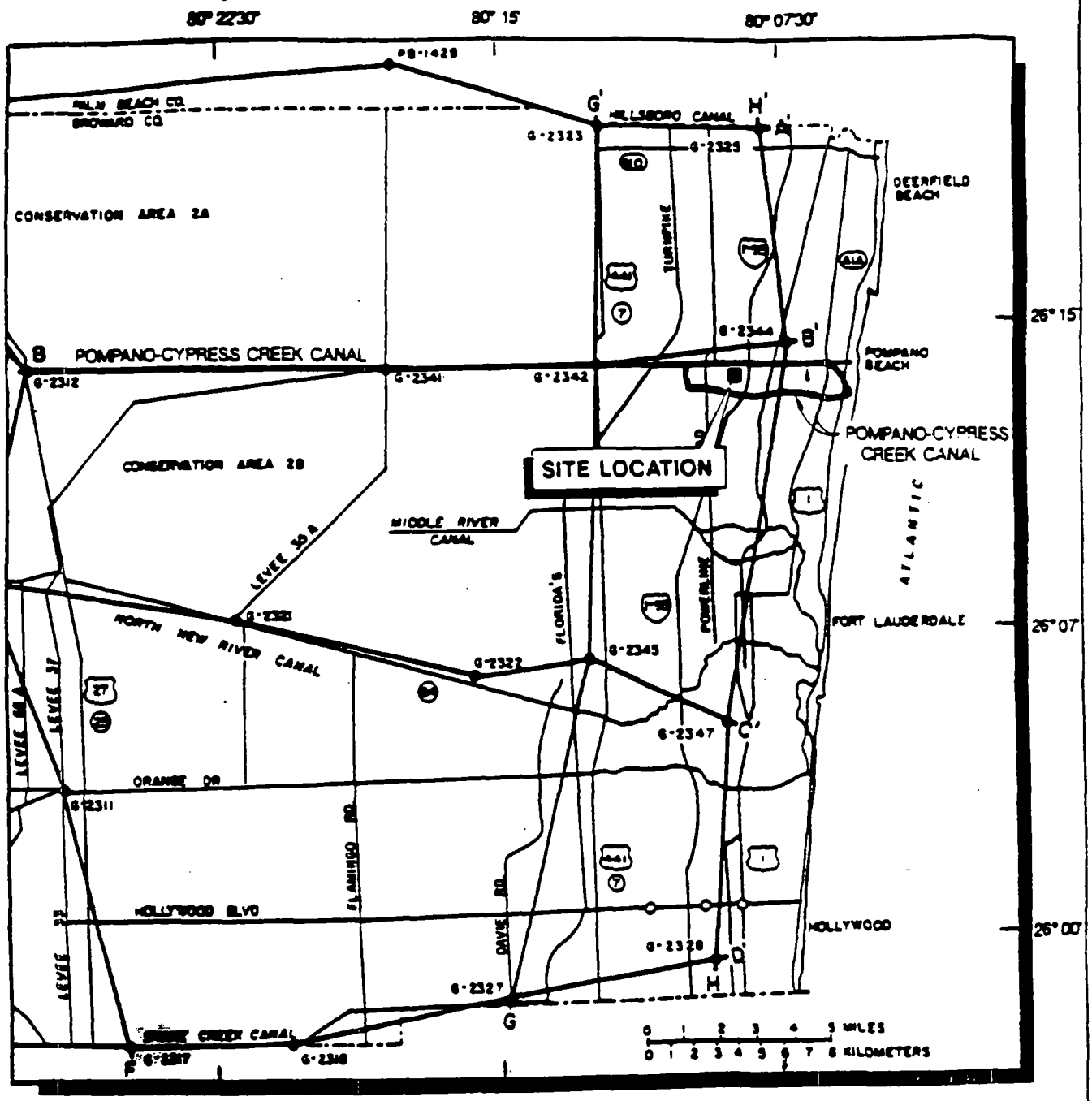
The west slope of the ridge area drains to the backswamp area; the east slope of the ridge drains to the Intracoastal Waterway. With increasing urbanization, this area now drains to the Intracoastal Waterway through storm sewers and a massive system of finger canals east of U.S. Highway 1.

## 5.3 GEOLOGY AND HYDROGEOLOGY

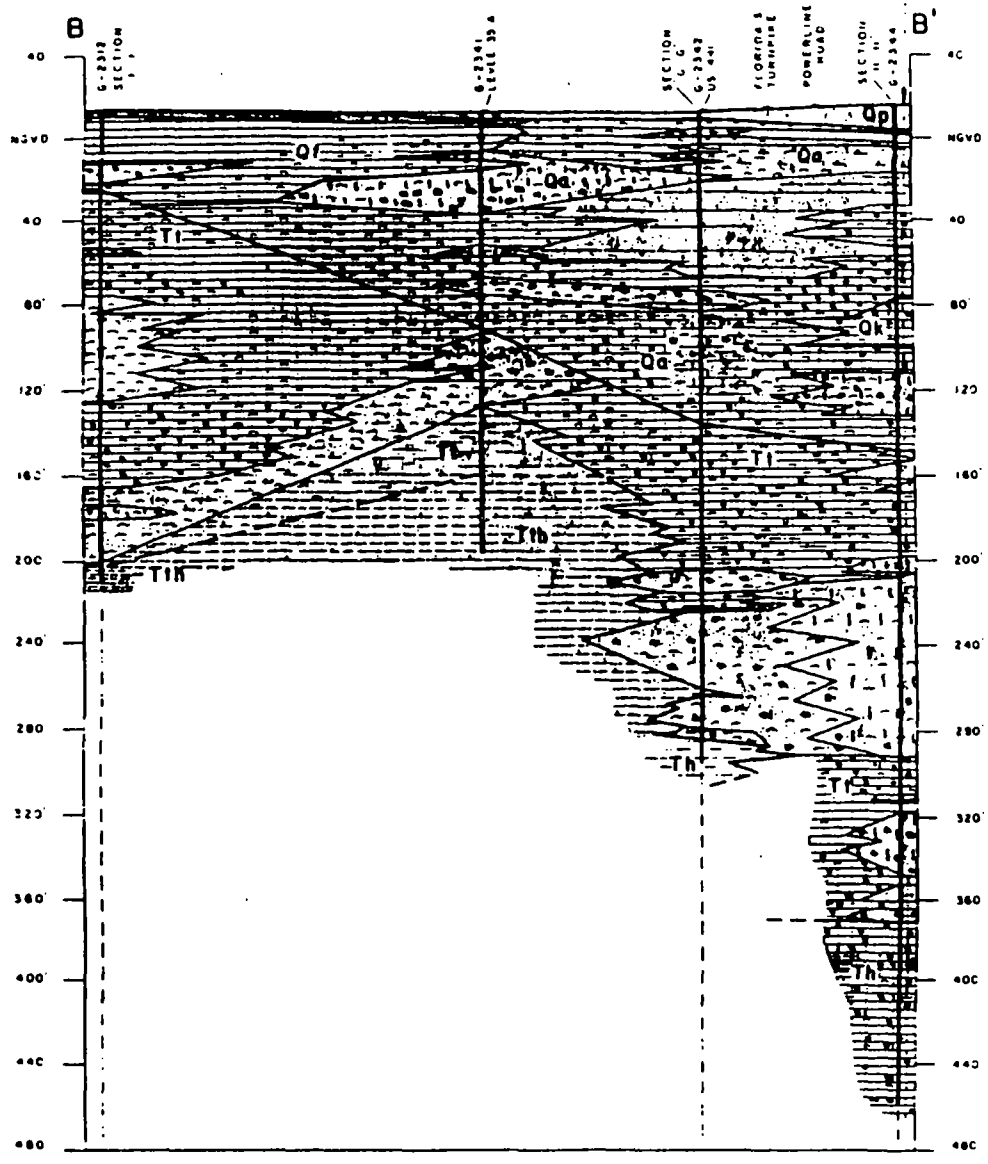
Figure 5-2 shows the location of geologic cross section B-B' in relation to the Site. Geologic cross section B-B' (Figure 5-3) illustrates the subsurface geology and lateral variability of individual geologic formations (Table 5-1) in and around the Site. The uppermost geologic unit is the Pamlico Sand, a late-Pleistocene terrace deposit of marine origin, consisting of mostly white to tan or black, fine to coarse quartz sand, with varying amounts of iron oxide. The Pamlico is approximately 45 to 50 feet thick in the study area and may contain thin (less than five feet) limestone interbeds of the Anastasia Formation.

Underlying the Pamlico is the main portion of the Anastasia Formation. The formation consists of a heterogeneous mixture of very fine to very coarse quartz sand, finely ground and broken

FIGURE 5-2
LOCATION OF TEST WELLS AND GEOLOGIC CROSS SECTIONS
WILSON CONCEPTS
POMPANO BEACH, BROWARD COUNTY, FLORIDA




SOURCE: CAUSARAS, 1985




**CDM FPC ARCS IV**

# EAST-WEST CROSS SECTION B-B'

## WILSON CONCEPTS

**POMPANO BEACH, FLORIDA**

**FIGURE NO.**

5-3

# TABLE 5-1
# GEOLOGIC FORMATIONS
# WILSON CONCEPTS, POMPANO BEACH, FLORIDA

| Geologic Age (Epoch) | Formation | Lithologic Characteristics | Hydrogeologic Characteristics | Thickness (feet) | Age Years |
|---|---|---|---|---|---|
| Pleistocene (Ice Age) | Pamlico Sand | Quartz sand, white to black or red. Mantles part of Miami and Anastasia formations. Occurs in sand dunes and in old beach ridges. | Poor to moderate water bearer yields low quantities of water to sand - point wells | 0 - 60 | 100,000 |
| | Miami Limestone | White to yellowish. Massive to stratified and cross-bedded, oolitic and bryozoan facies. | Generally perforated with vertical solution holes. Fair to good aquifer. | 0 - 40 | 100,000 |
| | Anastasia | Coquina, sand, calcareous sandstone and shell marl. Probably composed of deposits equivalent in age to marine members of Fort Thompson and Miami limestone. | Fair to good aquifer. | 0 - 120 | 100,000+ |
| | Key Largo Limestone | Coralline reef rock, hard and cavernous. Interfingers with bryozoan facies of Miami limestone and probably with Fort Thompson. | Excellent aquifer. | 0 - 200+ | 100,000+ |
| Pleistocene (Ice Age) | Fort Thompson Limestone | Alternating marine and freshwater marls, limestones, and sandstones. | Main component of Biscayne Aquifer in eastern part of Dade and Broward Counties. Northern extension much less permeable. | 1 - 150 | Upper Part |
| Pliocene | Caloosa-hatchee Marl | Sandy marl, clay, silt, sand and shell beds. | Poor to fair aquifer. | 0 - 25 | 2,000,000+ |
| Miocene | Tamiami Limestone | Cream, white and greenish-gray clayey marl, silt and shelly sands and sand marl, locally hardened to limestone. | The upper part, where permeability is high, forms the basal part of the Biscayne Aquifer. The lower and major part of the formation is of low permeability. | 0 - 100 | 6,000,000 |

Source: Hoffmeister, 1974

shells and redeposited calcium carbonate either in the form of calcite crystals or as cryptocrystalline cementing materials. Color of the formation ranges from white to gray or tan. Causaras (1985) shows the Anastasia to be approximately 100 feet thick in the Pompano Beach area. Causaras (1985) also reports a thin (20 feet thick) lens of Key Largo Limestone in the Pompano area. This formation has not previously been reported in the area and may be a questionable identification. Where more typically developed (i.e., in coastal Dade and Monroe counties), the Key Largo is highly permeable, hard, cavernous coralline reefal limestone.

Underlying the Anastasia is the Tamiami Formation, which is approximately 220 feet thick in the vicinity of the Site, according to Causaras (1985). As currently defined, the Tamiami includes all the upper Miocene material in southern Florida (Parker, 1951). As such, it is a heterogeneous unit ranging in composition from pure quartz sand to nearly pure limestone, which is generally white to grey in color. According to Tarver (1964), the percentage of carbonate material in the sediments generally increases with depth. The lower permeability sediments near the top of the Tamiami have traditionally been taken as marking the base of the Biscayne Aquifer (Parker, 1951, 1955).

Directly underlying the Site is the Biscayne Aquifer, which supplies all potable water for Broward County and has been designated as a sole-source aquifer. Regionally, the ground water table is high, from 1.62 to 6.24 feet above mean sea level (USGS, 1988) and typically 6 to 8 feet below ground surface, which is characteristic of South Florida. However, the water table would be low with respect to the surrounding areas, such as the Sandy Flatlands, Everglades, and backswamp areas referred to earlier. Site-specific information obtained by NUS during the 1986 study indicates that ground water is approximately four feet below grade at the Site, while the results of Phase I of the RI during 1990 and Phase II of the RI during 1991 indicate that the ground water is approximately 3.0 to 3.5 feet below grade.

## 5.4 RESULTS OF THE REMEDIAL INVESTIGATION

The purpose of the Remedial Investigation (RI) was to gather and analyze sufficient data to characterize the Site in order to perform the Baseline Risk Assessment, which determined the Site's impact on human health and the environment. Both the RI and Risk Assessment are used to determine whether remedial action is necessary at the Site.

Activities conducted during the RI included a soil-gas survey, surface and subsurface soil sampling, ground water sampling, and air sampling. Results of the soil-gas survey, both total organic vapor concentrations and methane-corrected vapor concentrations, indicated potential areas of contamination in the northeast corner at 1.5-2.0 feet below land surface (BLS) and 3.5-4.0 feet BLS, and

in the south-central portion of the Site at 1.5-2.0 feet BLS and 3.5-4.0 feet BLS. Areas of contamination were also indicated at 3.5-4.0 feet BLS throughout the southern portion of the Site and south of SW 12th Avenue.

In comparison, organic compounds were detected in five subsurface soil samples from 3.5-4.0 feet BLS, two subsurface soil samples from 1.5-2.0 feet BLS, and five surface soil samples. These detections showed only minimal correlation with the results of the soil-gas survey. Certain samples in areas which the soil-gas survey indicated potential organic contamination, showed no contamination in subsequent sampling. Other samples outside the area of potential contamination defined in the soil-gas survey showed low levels of organic compounds.

Of the five subsurface soil samples from 3.5-4.0 feet BLS in which organic compounds were detected, four were collected during Phase I of the RI for Target Compound List (TCL) and Target Analyte List (TAL) analyses. Acetone was detected in these four samples. Bis(2-Ethylhexyl)phthalate was detected in two of these four subsurface soil samples. In three of these four samples, the remaining organic compounds were detected at low estimated concentrations (< 6 µg/kg). Similarly, the fifth subsurface soil sample, collected in the northeast corner of the Site during Phase II of the RI, only contained two organic compounds at low estimated concentrations (< 15 µg/kg). However, one of the Phase I subsurface soil samples, located in the drainfield, exhibited organic contamination at concentrations ranging from 500 to 13,000 µg/kg for five compounds.

Three of the five surface soil samples were located along the southern property boundary and exhibited parts per million of bis(2-ethylhexyl)phthalate. Two of these were located in the area of the drainfield. In the two remaining surface soil samples in which organic contamination was detected, low estimated concentrations (< 6 µg/kg) of toluene were detected. One of these samples was located in the northwest corner of the Site, in the vicinity of an underground septic tank; the other was located in the north central portion of the Site. This detection is consistent with the detection of low concentrations (< 22 µg/kg) of organic compounds in sample 175W,50S(1.5-2.0'), collected during Phase I in the same vicinity. Toluene was also detected at a depth of 1.5-2.0' at low concentrations (< 6 µg/kg) on the south side of the Site. Inorganic constituents were detected in all soil samples at varying concentrations. The majority of the inorganic constituents detected were generally within the range expected in this area. The exceptions were strontium, calcium, chromium, mercury, vanadium, and zinc.

The direction of ground water flow is generally east to southeast. The ground water flow velocity was estimated as approximately 22 feet per year (0.06 feet per day). During Phase I ground water

sampling, organic constituents were detected in three wells (WCS-1, WCS-2, and WCD-14). During Phase II, organic compounds were detected in two wells, WCS-1 and MW-6. During Phase I of the RI, Maximum Contaminant Levels (MCLs) were exceeded for trichloroethylene in two wells and for bis(2-Ethylhexyl)phthalate in one well. These analytes were not detected in samples from the same wells during Phase II of the RI. MCLs for all constituents detected in ground water are contained in Appendix A, Tables A-4 and A-5. Inorganic constituents were detected in all wells at varying concentrations. Inorganic constituents of concern for the ground water included arsenic, chromium, manganese, molybdenum, nickel, strontium, titanium, and yttrium.

A total of nine air samples were collected and analyzed for seven constituents. Chloroethane, toluene, and trichloroethylene were detected in these samples at concentrations ranging from 0.7 to 5.2 parts per billion volume (ppbv).

Sample locations and results from the Wilson Concepts RI are included in Appendix A.

## 6.0 SUMMARY OF SITE RISKS

A Baseline Risk Assessment was conducted by EPA as part of the RI to estimate the health or environmental problems that could result if the Site were not remediated. Results are contained in the Final Baseline Risk Assessment Report, dated June 17, 1992. A Baseline Risk Assessment represents an evaluation of the "No Action" alternative, in that it identifies the risk present if no remedial action is taken. The assessment considers environmental media and exposure pathways that could result in unacceptable levels of exposure now or in the foreseeable future. Data collected and analyzed during the RI provided the basis for the risk evaluation. The risk assessment process can be divided into four components: contaminant identification, exposure assessment, toxicity assessment, and risk characterization.

### 6.1 CONTAMINANT IDENTIFICATION

The objective of contaminant identification is to screen the information that is available on hazardous substances present at the Site and to identify contaminants of concern (COCs) in order to focus subsequent efforts in the risk assessment process. COCs are selected based upon their toxicological properties, concentrations and frequency of occurrence at the Site. During the Risk Assessment for the Site, the following chemicals were identified as contaminants of concern in the ground water: acetone, 1,1-dichloroethane, chloroethane, 1,4-dichlorbenzene, arsenic, barium, magnesium, manganese, molybdenum, and zinc. Contaminants of concern in the surface soil were identified as toluene, bis(2-ethylhexl)phthalate, barium, cadmium, chromium, lead, copper, magnesium, manganese, mercury, nickel, molybdenum, vanadium, and

zinc. COCs in the subsurface soil are as follows: methyl ethyl ketone, acetone, methylene chloride, chloromethane, chlorodibromomethane, toluene, tetrachlorethylene, xylene, ethylbenzene, styrene, di(2-ethylhexyl)phthalate, arsenic, barium, chromium, copper, lead, magnesium, manganese, mercury, nickel, vanadium, and zinc.

## 6.2 EXPOSURE ASSESSMENT

An exposure assessment was conducted to estimate the magnitude of exposure to the contaminants of concern at the Site and the pathways through which these exposures could occur. Inhalation of particulates and ingestion of soil by workers were considered potentially complete exposure pathways under both the current and future use scenarios. Currently, the Site is located in an industrial area, which is expected to remain industrial according to the City of Pompano Beach Future Land Use Plan for 1998. Therefore, the future land use scenarios involve worker and trespasser exposure. However, risk from residential exposure to ground water was also calculated. Three pathways in addition to those described above were considered under the future industrial scenario: worker ingestion of drinking water from wells that may be drilled into the surficial aquifer and ingestion of soil or inhalation of particulates by potential trespassers at the Site. Future residential exposure was assumed to include ingestion of ground water.

After exposure pathways were developed, the concentrations at the exposure points were calculated. These exposure point concentrations were based on the reasonable maximum exposure (RME) scenario - that is, the highest exposure that is reasonably expected to occur at a Site. The RME is calculated by taking the 95% upper confidence limit on the mean of the natural logarithm (ln) transformed data. The data are transformed because the data are assumed to be lognormal. Exposure point concentrations for the inhalation of particulates pathway were developed through air modeling conducted by the EPA Air Programs Branch. Maximum concentrations of contaminants in surface soil rather than the RME values were used in the air modeling.

Once exposure point concentrations were developed, the chemical intake at each exposure point was calculated. These assumptions, along with the exposure point concentrations, are used in equations to develop the Chronic Daily Intake (CDI) for each exposure pathway. Exposure assumptions used in developing the CDIs are listed in Table 6-1. Exposure point concentrations and CDIs for each exposure scenario are listed in Tables 6-2 through 6-4.

TABLE 6-1

**Exposure Factors[1]**
**Wilson Concepts**
**Pompano Beach, Florida**

| Land Use | Potential Exposure Route | Daily Intake Rate | Exposure Frequency | Exposure Duration | Body Weight |
|---|---|---|---|---|---|
| Commercial/ Industrial | Ingestion of Potable Water | 1 liter | 250 days/year | 25 years | 70 kg |
| | Ingestion of Soil and Dust | 50 mg | 250 days/year | 25 years | 70 kg |
| | Inhalation of Contaminants | 20 cu.m/workday | 250 days/year | 25 years | 70 kg |
| Commercial/ Industrial Trespasser (> 6 years of age) | Ingestion of Soil and Dust | 100 mg | 350 days/year | 24 years | 70 kg |
| | Inhalation of Contaminants | 5 cu.m/event | 350 days/year | 24 years | 70 kg |
| Residential | Ingestion of Potable Water | 2 liters | 350 days/yr | 30 years | 70 kg |

[1] Source: Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors," OSWER Directive 9286.5-03.

TABLE 6-2: Oral Exposure Doses for Soil - Worker and Trespasser Scenarios

| | | WORKER SCENARIO | | TRESPASSER SCENARIO | |
|---|---|---|---|---|---|
| CONTAMINANT OF CONCERN | EXPOSURE POINT CONCENTRATION (mg/kg) | CARCINOGENIC CDI (mg/kg/day) | NONCARCINOGENIC CDI (mg/kg/day) | CARCINOGENIC CDI (mg/kg/day) | NONCARCINOGENIC CDI (mg/kg/day) |
| BARIUM | 6.61 | 1.15E-06 | 3.23E-06 | 3.10E-06 | 9.05E-06 |
| CADMIUM | 0.82 | 1.43E-07 | 4.01E-07 | 3.85E-07 | 1.12E-06 |
| CHROMIUM VI | 49.03 | 8.57E-06 | 2.40E-05 | 2.30E-05 | 6.72E-05 |
| COPPER | 15.40 | 2.69E-06 | 7.53E-06 | 7.23E-06 | 2.11E-05 |
| DI(2-ETHYLHEXYL)PHTHALATE | 7.55 | 1.32E-06 | 3.69E-06 | 3.55E-06 | 1.03E-05 |
| LEAD | 15.26 | 2.67E-06 | 7.47E-06 | 7.17E-06 | 2.09E-05 |
| MAGNESIUM | 570.00 | 9.96E-05 | 2.79E-04 | 2.68E-04 | 7.81E-04 |
| MANGANESE | 37.31 | 6.52E-06 | 1.83E-05 | 1.75E-05 | 5.11E-05 |
| MERCURY | 0.52 | 9.09E-08 | 2.54E-07 | 2.44E-07 | 7.12E-07 |
| MOLYBDENUM | 1.40 | 2.45E-07 | 6.85E-07 | 6.58E-07 | 1.92E-06 |
| NICKEL | 13.86 | 2.42E-06 | 6.78E-06 | 6.51E-06 | 1.90E-05 |
| TOLUENE | 5.60E-03 | 9.78E-10 | 2.74E-09 | 2.63E-09 | 7.67E-09 |
| VANADIUM | 7.20 | 1.26E-06 | 3.352E-0( | 3.38E-06 | 9.86E-06 |
| ZINC | 380.40 | 6.65E-05 | 1.86E-04 | 1.79E-04 | 5.21E-04 |

TABLE 6-3: Oral Exposure Doses for Inhalation of Particulates - Worker and Trespasser Scenarios

| CONTAMINANT OF CONCERN | EXPOSURE POINT CONCENTRATION (ug/m3) | WORKER SCENARIO CARCINOGENIC CDI (mg/kg/day) | WORKER SCENARIO NONCARCINOGENIC CDI (mg/kg/day) | TRESPASSER SCENARIO CARCINOGENIC CDI (mg/kg/day) | TRESPASSER SCENARIO NONCARCINOGENIC CDI (mg/kg/day) |
|---|---|---|---|---|---|
| BARIUM | 4.80E-06 | 3.35E-10 | 9.39E-10 | 1.13E-10 | 3.29E-10 |
| CADMIUM | 1.00E-08 | 6.99E-13 | 1.96E-12 | 2.35E-13 | 6.85E-13 |
| CHROMIUM VI | 2.30E-06 | 1.61E-10 | 4.50E-10 | 5.40E-11 | 1.58E-10 |
| COPPER | 1.30E-05 | 9.09E-10 | 2.54E-09 | 3.05E-10 | 8.90E-10 |
| DI(2-ETHYLHEXYL)PHTHALATE | 1.00E-07 | 6.99E-12 | 1.96E-11 | 2.35E-12 | 6.85E-12 |
| LEAD | 2.50E-08 | 1.75E-12 | 4.89E-12 | 5.87E-13 | 1.71E-12 |
| MAGNESIUM | 2.60E-04 | 1.82E-08 | 5.09E-08 | 6.11E-09 | 1.78E-08 |
| MANGANESE | 9.00E-05 | 6.29E-09 | 1.76E-08 | 2.11E-09 | 6.16E-09 |
| MERCURY | 2.60E-07 | 1.82E-11 | 5.09E-11 | 6.11E-12 | 1.78E-11 |
| MOLYBDENUM | 7.00E-07 | 4.89E-11 | 1.37E-10 | 1.64E-11 | 4.79E-11 |
| NICKEL | 3.00E-07 | 2.10E-11 | 5.87E-11 | 7.05E-12 | 2.05E-11 |
| VANADIUM | 3.60E-06 | 2.52E-10 | 7.05E-10 | 8.45E-11 | 2.47E-10 |
| ZINC | 1.00E-03 | 6.99E-08 | 1.96E-07 | 2.35E-08 | 6.85E-08 |

TABLE 6-4: Oral Exposure Doses for Ground Water - Residential Scenario

| CONTAMINANT OF CONCERN | EXPOSURE POINT CONCENTRATION (ug/l) | CARCINOGENIC CDI (mg/kg/day) | NONCARCINOGENIC CDI (mg/kg/day) |
|---|---|---|---|
| ACETONE | 18.00 | 2.11E-04 | 4.93E-04 |
| CHLOROETHANE | 46.00 | 5.40E-04 | 1.26E-03 |
| 1,1-DICHLOROETHANE | 12.00 | 1.41E-04 | 3.29E-04 |
| 1,4-DICHLOROBENZENE | 2.20 | 2.58E-05 | 6.03E-05 |
| ARSENIC | 12.00 | 1.41E-04 | 3.29E-04 |
| BARIUM | 22.71 | 2.67E-04 | 6.22E-04 |
| MAGNESIUM | 2956.46 | 3.47E-02 | 8.10E-02 |
| MANGANESE | 53.12 | 6.24E-04 | 1.46E-03 |
| MOLYBDENUM | 20.00 | 2.35E-04 | 5.48E-04 |
| ZINC | 11.00 | 1.29E-04 | 3.01E-04 |

## 6.3 TOXICITY ASSESSMENT

The purpose of a toxicity assessment is to weigh available evidence regarding the potential of the contaminants of concern to cause adverse effects in exposed individuals and to provide an estimate of the relationship between the extent of exposure and the likelihood of adverse effects. The toxicity assessment is based on toxicity values which have been derived from quantitative dose-response information. Toxicity values for cancer are known as slope factors (SFs) and those determined for noncarcinogenic effects are referred to as reference doses (RfDs).

Slope factors (SFs), which are also known as cancer potency factors (CPFs), have been developed by EPA's Carcinogenic Assessment Group 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 provide an upper-bound estimate of the excess lifetime cancer risk associated with exposure at that intake level. The term "upper-bound" reflects the conservative estimate of the risks calculated from the SF. Use of this approach makes underestimation of the actual cancer risk highly unlikely. SFs are derived from the results of human epidemiological studies or chronic animal bioassays to which animal-to-human extrapolation and uncertainty factors have been applied. SFs for the contaminants of concern at the Site are listed in Table 6-5.

Reference doses (RfDs) have been developed by EPA for indicating the potential for adverse health effects from exposure to chemicals exhibiting noncarcinogenic effects. RfDs, which are expressed in units of mg/kg-day, are estimates of lifetime daily exposure levels for humans, including sensitive individuals. Estimated intakes of chemicals from environmental media (e.g. the amount of a chemical ingested from contaminated drinking water) can be compared to the RfD. RfDs are derived from human epidemiological studies or animal studies to which uncertainty factors have been applied (e.g. to account for the use of animal data to predict effects on humans). These uncertainty factors help ensure that the RfDs will not underestimate the potential for adverse noncarcinogenic effects to occur. RfDs for the contaminants of concern at the Site are found in Table 6-5.

## 6.4 RISK CHARACTERIZATION

In this final step of the risk assessment, the results of the exposure and toxicity assessments are combined to provide numerical estimates of the carcinogenic and non-carcinogenic risks for the Site. Excess lifetime cancer risks are determined by multiplying the intake level with the slope factor. These risks are probabilities that are generally expressed in scientific notation (e.g. $1x10^{-6}$ or 1E-6). An excess lifetime cancer risk of $1x10^{-6}$

TABLE 6-5

**EPA Toxicity Values for Contaminants of Concern in Surface Soil and Groundwater**
**Wilson Concepts**
**Pompano Beach, Florida**

| Parameter | W.O.E. Class | RfDo (mg/kg/d) | RfDi (mg/kg/d) | Slope Factor 1/(mg/kg/d) Oral | Slope Factor 1/(mg/kg/d) Inhalation |
|---|---|---|---|---|---|
| Arsenic | A | 3.0E - 4 | - | 1.75 | 5.0E + 1* |
| Barium | - | 5.0E - 2 | 1.4E - 4* | - | - |
| Cadmium | B1 | 5.0E - 4 | - | - | 6.1E +0* |
| Chromium VI | A | 5.0E - 3 | 5.7E - 7* | - | 4.1E + 1* |
| Copper | D | 3.7E - 2* | - | - | - |
| Lead | B2 | - | - | - | - |
| Magnesium | - | - | - | - | - |
| Manganese | D | 1.0E - 1 | 1.1E - 4 | - | - |
| Mercury | D | 3.0E - 4* | 8.6E - 5* | - | - |
| Molybdenum | - | 4.0E - 3* | - | - | |
| Nickel | - | 2.0E - 2 | - | - | 8.4E - 1* |
| Vanadium | - | 7.0E - 3* | - | - | - |
| Zinc | D | 2.0E - 1* | - | - | - |

**TABLE 6-5**
**(Continued)**
**EPA Toxicity Values for Contaminants of Concern in**
**Surface Soil and Groundwater**
**Wilson Concepts, Pompano Beach, Florida**

| Parameter | W.O.E Class | RfDo (mg/kg/d) | RfDi (mg/kg/d) | Slope Factor 1/(mg/kg/d) | |
|---|---|---|---|---|---|
| | | | | Oral | Inhalation |
| Acetone | D | 1.0E - 1 | - | - | - |
| Di(2-ethylhexyl) phthalate | B2 | 2.0E - 2 | - | 1.4E - 2 | - |
| Chloroethane | - | - | 2.9E + 0 | - | - |
| 1,1-Dichloro-ethane | C | 1.0E - 1* | 1.4E - 1* | - | - |
| 1,4-Dichloro-benzene | C | - | 2E - 1* | 2.4E - 2* | - |
| Toluene | D | 2.0E - 1 | 5.7E - 1* | - | - |

**NOTES:**

| | | |
|---|---|---|
| W.O.E. Class | = | Weight of evidence for human carcinogenicity. |
| A | = | Known human carcingoen. |
| B1 | = | Probable human carcinogen, limited human data. |
| B2 | = | Probable human carcinogen, inadequate or no human data. |
| C | = | Possible human carcinogen. |
| D | = | Not classifiable as human carcinogen. |
| E | = | Evidence that not carcinogenic in humans. |
| RfDo | = | Reference dose oral (daily dose not associated with toxicity). |
| RfDi | = | Reference dose inhalation (daily dose not associated with toxicity). RfDi = RfC divided by 70 kg x 20 $m^3$/day |
| Slope Factor | = | Slope factor of the carcinogenic dose-response function. |
| * | = | Value derived from Health Effects Summary Table (HEAST), January 10, 1992. All other values derived from EPA's IRIS database, January 10, 1992. |
| - | = | Not established. |

indicates that, as a plausible upper bound, an individual has a one in one million additional chance of developing cancer, over a 70-year lifetime, as a result of site-related exposure to a carcinogen. The NCP states that sites should be remediated to chemical concentrations that correspond to an upper-bound lifetime cancer risk to an individual not exceeding $10^{-6}$ to $10^{-4}$ excess lifetime risk. Carcinogenic risk levels that exceed this range indicate the need for performing remedial action at a site.

Carcinogenic risk levels for each exposure scenario at the Site are listed in Tables 6-6. Carcinogenic risk for the onsite worker from accidental ingestion of soil is 1.8E-8 and from inhalation of particulates is 6.6E-9. Both of these risk values are well below the risk level determined to be protective by EPA (10E-4).

Future potential risk from exposure to contaminants at the Site was calculated, based on the assumption that the Site area would remain industrial in the future. Carcinogenic risk from future worker exposure to ground water at the Site was calculated to be 1.8E-7. Future risk from trespasser ingestion of soil would be 5.0E-8, whereas trespasser inhalation of particulates yields a risk of 2.2E-9. These risks are well below the protective level.

Future risk was also calculated for ground water based upon a residential scenario. Future potential risk from residential exposure to ground water was determined to be 6.2E-07. This risk value does not include the risk due to arsenic, as explained in Section 6.5 of this document.

To characterize potential noncarcinogenic effects, estimated intake levels are compared with toxicity values. Potential concern for noncarcinogenic effects of a single contaminant in a single medium is expressed as the Hazard Quotient (HQ) (or the ratio of the estimated intake derived from the contaminant concentration in a given medium to the contaminant's reference dose). A HQ exceeding unity (1.0) indicates a potential for site-related noncarcinogenic health effects. By adding the HQs for all contaminants within a medium or across all media to which a given population may be reasonably exposed, the Hazard Index (HI) can be generated. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media.

Noncarcinogenic risks for the exposure scenarios at the Site are listed in Table 6-6. Calculation of the current non-carcinogenic risk from worker ingestion of soil at the Site resulted in a Hazard Index (HI) of 9.5E-4, while worker inhalation of particulates resulted in a HI of 8.2E-3. Future potential exposure for workers through ingestion of ground water yielded a HI of 4.5E-1.

Ingestion of soil and inhalation of particulates by a potential trespasser would result in HI's of 2.3E-2 and 3.3E-4 respectively.

TABLE 6-6

**Summary of Risks**
**Wilson Concepts**
**Pompano Beach, Florida**

| Pathway | Cancer Risk | HI |
|---|---|---|
| **Current Use Scenario** | | |
| Inhalation of Particulates | 6.6E - 9 | 9.5E - 4 |
| Ingestion of Soil (Adult) | 1.8E - 8 | 8.2E - 3 |
| **Future Use Scenario** | | |
| Ingestion of Drinking Water (Residential) | 6.2E-7 | 2.0E-1 |
| Ingestion of Soil (trespasser) | 5.0E - 8 | 2.3E - 2 |
| Inhalation of Particulates (trespasser) | 2.2E - 9 | 3.3E - 4 |

HI = Sum of hazard quotients. Assumes same target organ affected.

Cancer risk = Probability of getting cancer from specified exposure.

These risk values are all below 1.0 which is the level which indicates a potential for site-related non-carcinogenic health effects.

Noncarcinogenic risk was also calculated under a future residential scenario. The HI for residential exposure to ground water was 0.2, excluding the risk due to arsenic, as explained in Section 6.5 of this document. This risk value is below the protective level of 1.0.

The results of the RI and Baseline Risk Assessment indicate that natural attenuation of contaminant levels at the Site has reduced the risk from exposure to site-related contaminants to levels which are protective of human health and the environment. Contaminant concentrations detected during the RI were lower than those in the Sampling Investigation data, which were used to rank the Site. Site contaminants appear to have undergone natural attenuation, in which natural processes such as evaporation, dispersion, and chemical reaction reduced the concentrations of chemicals in the soil and ground water.

## 6.5 DISCUSSION OF UNCERTAINTY

A key assumption used in the Baseline Risk Assessment was that the concentrations specified for various environmental media represent the true concentrations to which people will be exposed during the period of exposure. Actual concentrations will likely vary over time (as removal mechanisms such as wind, mechanical disturbances, biodegradation, and leaching take place) and space (contaminants are not uniformly distributed over the Site).

Another key assumption used in this evaluation is that the land use will remain industrial/commercial indefinitely. This assumption is supported by the Pompano Beach Land Use Plan through 1998. Further, it is assumed that the Site will remain paved over this period. This assumption is reasonable given the expected use of the property. However, because the Biscayne Aquifer is a sole-source aquifer, risk from exposure to ground water under a future potential residential scenario was calculated and the results included in the Baseline Risk Assessment Report as an appendix. These calculations (excluding arsenic) showed that the future risk at the Site would be within EPA's protective range for residential consumption of ground water, even if the Site were to become residential.

The only chemical which exceeds acceptable risk (1E-4) and acceptable HQ (1.0) is arsenic in ground water. Future residential carcinogenic risk was calculated to be 2.47E-04 and the noncarcinogenic HQ was 1.1. These risk calculations are based upon one sample, in which arsenic was detected at 12 ug/l, a level well below the drinking water standard of 50 ug/l. However, risk levels for arsenic are affected by a very conservative slope factor. A

memorandum from a previous EPA Administrator directing use of this slope factor states that the uncertainties associated with the quantification of inorganic arsenic are such that risk estimates (for both cancer and noncancer effects) could be modified downward as much as an order of magnitude (USEPA, 1988).

The selection of exposure scenarios also has a significant influence on estimated doses. Actual exposures to the receptor population will vary in accordance with the degree to which the receptors participate in the activities described by the exposure scenarios. The exposure scenarios presented in this assessment are very conservative (most work is conducted indoors, resulting in only extremely transient exposure periods to particulate emissions or contaminated soil) and likely overstate actual contaminant intakes for a worker.

## 6.6 ECOLOGICAL ASSESSMENT

The Site is located in the middle of a heavily industrial/commercial area with no habitat corridors and limited opportunity for foraging and shelter. There is no surface water located on any of the areas of concern. The existing fauna are isolated and confined (with the exception of avian species) by concrete and fences. The receptor populations are minimal notwithstanding the gopher tortoises found on a nearby property. The gopher tortoise's risk is extremely low due to the location and mobility characteristics of these animals as well as the low potential for off-site migration of the contaminants. The gopher tortoise's burrows are located approximately 600 feet northwest of the Site. Their life is spent typically in and around their burrows which become a more or less permanent home. These tortoises appear to be permanent inhabitants of this area. There is a very low potential for surface soil mobility through particulate emissions. The chance is remote that contaminated soil of any significant amount would be ingested by these tortoises.

No other significant receptor populations were identified. Avian activity might be more notable during the spring, but due to the location and size of the existing habitat, it is unlikely that any significant population would be attracted.

Aquatic life in the Pompano-Cypress Creek Canal are not considered as potential receptors because surface runoff from the Site does not reach the canal. In addition, ground water in the vicinity of the Site flows east-southeast, whereas the canal is located south of the Site. Constituents in the ground water would have to migrate several miles before intercepting the canal. Wells immediately downgradient of the Site between the Site and the canal showed extremely low contaminant levels. Therefore, Site contaminants in the ground water are not expected to reach the canal.

## 7.0 DESCRIPTION OF THE "NO ACTION" SELECTED ALTERNATIVE

EPA has determined, based on the results of the RI and Risk Assessment, that no action is needed for the soil at the Site. RI and Risk Assessment results also indicated that no action is necessary for the ground water at the Site. However, because the future potential noncarcinogenic risk from exposure to the ground water at the Site is close to the level at which EPA may consider taking action, the ground water at and around the Site will be monitored quarterly for one year to confirm that the few samples collected during the RI which contained contaminants above drinking water standards are not indicative of a release of contaminants from the Site. Quarterly monitoring will tentatively include EPA monitor wells MW-1 and one (1) new permanant wells to be installed along the eastern portion of the Site. In addition, ERM wells WCS-2, WCS-12, WCS-13, and WCS-14 or other downgradient wells shall be sampled. Wells to be sampled shall be finalized in a Sampling and Analysis Plan to be prepared prior to the start of monitoring. The samples shall be analyzed for volatile and extractable organic compounds and metals. Based upon EPA's Cost of Remedial Action (CORA) model, the estimated cost of the monitoring is $48,000 (Table 7-1). If monitoring indicates a potential threat to human health or the environment, EPA, in consultation with the State of Florida, will reconsider the protectiveness of this alternative and the need for protective measures or Site remediation.

## 8.0 DOCUMENTATION OF SIGNIFICANT DIFFERENCES

The selected remedy as presented in this decision document has no difference, significant or otherwise, from the proposed plan.

TABLE 7-1: Estimated Cost of Monitoring

CORA GROUNDWATER MONITORING COST MODULE (503)

SITE NAME: WILSON CONCEPTS, INC.

| INPUTS | | RESULTS | |
|---|---|---|---|
| Parameter | Value | Component | Total |
| Number of wells to install | 1 | CAPITAL COST | 12,000 |
| Average well depth (ft) | 25 | O & M COSTS | 36,000 |
| Protection during setup of drill rig & installation of above-grade piping | D | | |
| Protection during drilling | D | | |
| Average temp (degrees F) | 85 | | |
| Confidence level | H | | |
| Number of wells to monitor | 6 | | |
| Monitoring frequency | 4 | | |
| Monitoring requirements: | | | |
| 24 Plasma Metals | Y | | |
| Pest/PCB | N | | |
| GC-BN | N | | |
| GC-Acid | N | | |
| HSLORG | N | | |
| VOA GC/MS | Y | | |
| Acid GC/MS | Y | | |
| B/N GC/MS | Y | | |

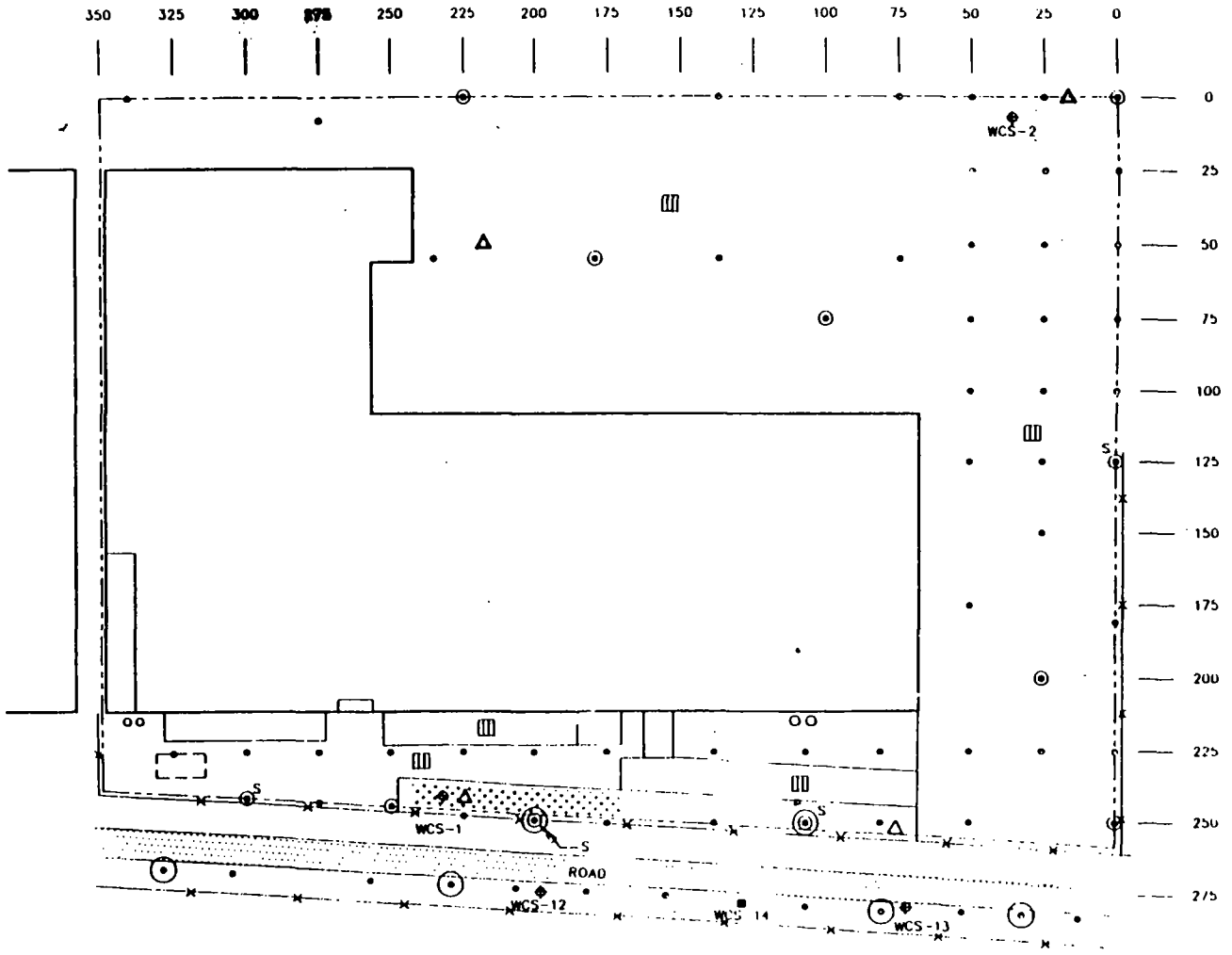
NOTES:

install 1 well, monitor 6, gc/ms analysis

# APPENDIX A

# REMEDIAL INVESTIGATION SAMPLING DATA AND LOCATIONS

**Figure A-1**
**Phase I Soil Sample Locations**
**Wilson Concepts**
**Pompano Beach, Florida**




LEGEND

- STORM DRAINS/CATCH BASINS
- DRAINFIELD - APPROXIMATE AREAL EXTENT
- FENCE
- PROPERTY LINE
- SHALLOW MONITOR WELL
- DEEP MONITOR WELL
- SOIL SAMPLE COLLECTED FOR FOR TCL ANALYSIS
- SOIL SAMPLE COLLECTED AT 1.5 - 2 FT. BELOW GRADE FOR METALS AND VOLATILES ANALYSES
- SOIL SAMPLE COLLECTED AT THE WATER TABLE FOR METALS AND VOLATILES ANALYSES
- S SPLIT SAMPLE COLLECTED BY DYNAMAC

0 40
FEET

**TABLE** A-1

## Analytical Results for Phase I Soil Samples Collected During Soil-Gas Survey Wilson Concepts, Pompano Beach, Florida



| SAMPLE | 175W,50S (1.5-2.0') | 0W,0S (1.5-2.0') | 100W,75S (1.5-2.0') | 0W,125S | 25W,200S | 0W,250S (1.5-2.0') | 100W,250S (1.5'2.0') | 100W,250S WT | 175W,250S (1.5-2.0') |
|---|---|---|---|---|---|---|---|---|---|
| ORGANICS | | | | | | | | | |
| Dichloromethane (ug/kg) | 22.000 | -- | -- | -- | -- | -- | -- | -- | -- |
| Toluene (ug/kg) | 10.000 | -- | -- | -- | -- | -- | -- | -- | -- |
| Xylenes (ug/kg) | 8.200 | -- | -- | -- | -- | -- | -- | -- | -- |
| INORGANICS | | | | | | | | | |
| Arsenic (mg/kg) | -- | 1.500 | -- | -- | -- | -- | -- | -- | -- |
| Barium (mg/kg) | -- | 21.000 | 4.900 | 2.300 | 9.900 | 3.400 | 1.100 | 4.400 | 1.500 |
| Chromium (mg/kg) | -- | 12.000 | 2.800 | 4.600 | 8.600 | 4.700 | -- | 3.200 | 3.000 |
| Lead (mg/kg) | -- | 7.700 | 0.580 | -- | 6.000 | 3.100 | -- | 1.200 | -- |
| Mercury (mg/kg) | -- | 0.140 | 0.200 | 3.300 | 0.038 | 0.031 | -- | 0.019 | -- |

-- Analyzed for but not detected

**TABLE** A-1

## Analytical Results for Phase I Soil Samples Collected During Soil-Gas Survey Wilson Concepts, Pompano Beach, Florida



| SAMPLE | 175W,250S WT | 225W,250S (1.5-2.0') | 275W,250S (1.5-2.0') | 25W,300S (3.0-3.5') | 75W,300S (3.0-3.5') | 225W,300S (3.0-3.5') | 325W,300S (3.0-3.5') |
|---|---|---|---|---|---|---|---|
| ORGANICS | | | | | | | |
| Dichloromethane (ug/kg) | -- | -- | -- | -- | -- | -- | -- |
| Toluene (ug/kg) | -- | -- | -- | -- | -- | -- | -- |
| Xylenes (ug/kg) | -- | -- | -- | -- | -- | -- | -- |
| INORGANICS | | | | | | | |
| Arsenic (mg/kg) | -- | -- | -- | -- | -- | -- | -- |
| Barium (mg/kg) | 1.900 | -- | 5.000 | 1.600 | 1.700 | -- | -- |
| Chromium (mg/kg) | 0.860 | 1.200 | 3.900 | 1.300 | -- | -- | 1.300 |
| Lead (mg/kg) | 0.650 | -- | 1.500 | 1.200 | 1.300 | 0.780 | 0.830 |
| Mercury (mg/kg) | 0.024 | -- | 0.029 | -- | -- | -- | -- |

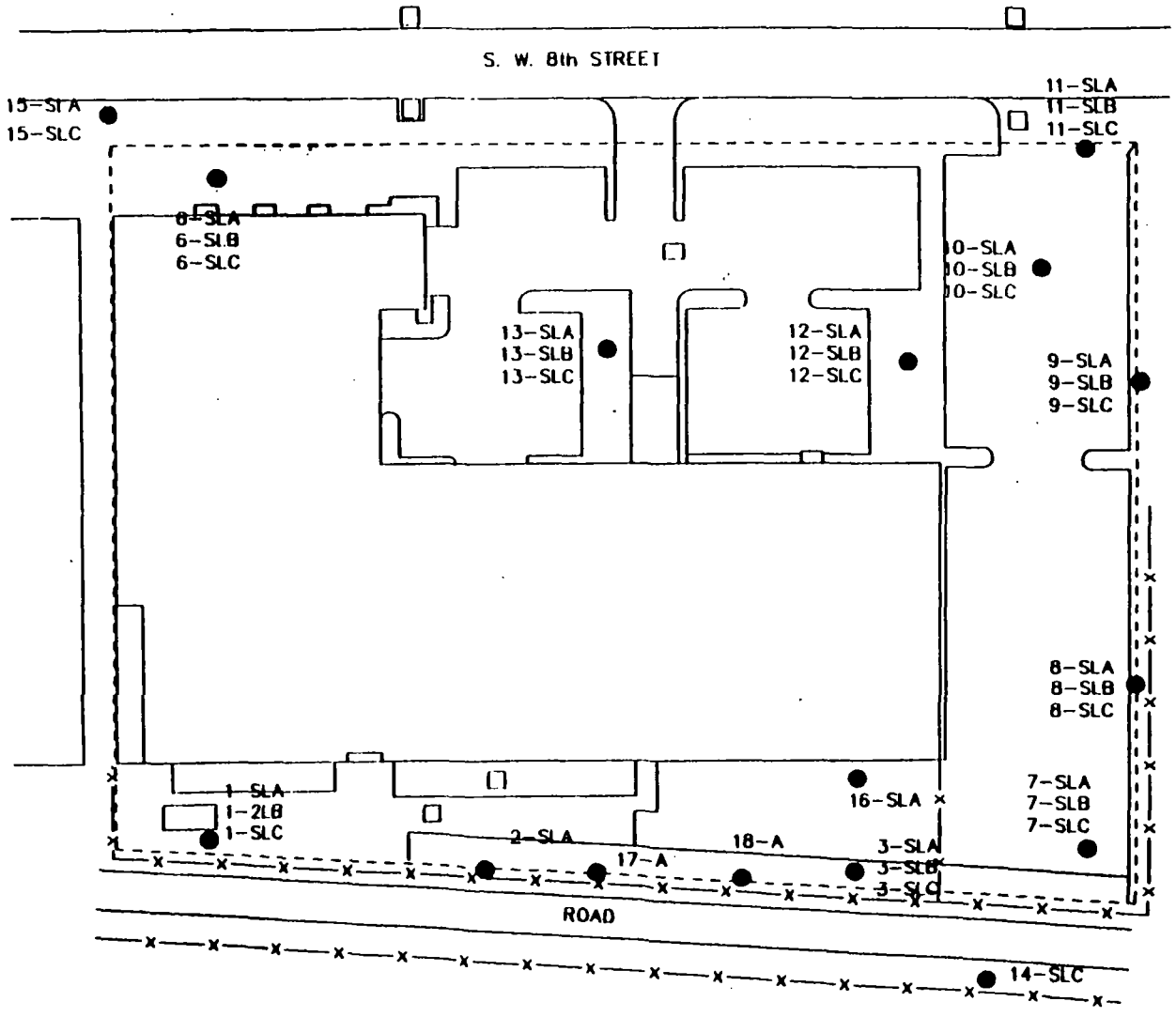
-- Analyzed but not detected

**TABLE** A-2

**Analytical Results for Phase I Soil Samples Collected for TCL and TAL Analyses Wilson Concepts, Pompano Beach, Florida**

| SAMPLE | 25W,0S (2.0-4.0') | 75W,250S (3.0-3.5') | 200W,50S (3.0-3.5') | 225W,250S (3.0-4.0') |
|---|---|---|---|---|
| ORGANICS | | | | |
| 2-Butanone (ug/kg) | -- | -- | -- | 8,100 |
| Acetone (ug/kg) | 130 B | 12 JB | 17 B | 3,500 B |
| bis(2-Ethylhexyl)phthalate | -- | 1,300 | -- | 13,000 |
| Chloromethane (ug/kg) | -- | -- | -- | 1,200 J |
| Dibromochloromethane (ug/kg) | -- | -- | -- | 500 J |
| Ethylbenzene (ug/kg) | -- | -- | 6 J | -- |
| Methylene Chloride (ug/kg) | -- | 4 J | -- | -- |
| Styrene (ug/kg) | -- | -- | 4 J | -- |
| Tetrachloroethylene (ug/kg) | -- | -- | 3 J | -- |
| Toluene (ug/kg) | 5 J | -- | 4 J | -- |
| INORGANICS | | | | |
| Aluminum (mg/kg) | 756 | 1,270 | 229 | 830 |
| Barium (mg/kg) | 9 J | 10.7 J | -- | 4.9 J |
| Calcium (mg/kg) | 1,940 | 4,500 | 1590 | 14,400 |
| Chromium (mg/kg) | 3.9 | 9.5 | -- | 573 |
| Iron (mg/kg) | 487 | 648 | 46.4 | 1,060 |
| Lead (mg/kg) | 1.2 | 3.1 | -- | 2.3 |
| Magnesium (mg/kg) | 29.3 J | 50.5 J | 19.5 J | 93.6 J |
| Manganese (mg/kg) | -- | -- | -- | 5 |
| Mercury (mg/kg) | 0.041 | 0.055 | 0.011 | 0.019 |
| Vanadium (mg/kg) | -- | 6 J | -- | -- |
| Zinc (mg/kg) | -- | -- | -- | 16.1 |

-- Analyzed for but not detected
B Detected in associated blank
J Estimated concentration




LEGEND

SLA – 0–6"
SLB – 1.5–2'
SLC – 3–3.5'
PROPERTY LINE
FENCE

APPROXIMATE SCALE

24 0 12 24

( IN FEET )

1 inch = 24 ft.

NORTH

EPA

Figure A-2
Phase II Soil Sample Locations
Wilson Concepts
Pompano Beach, Florida

TABLE A-3

Analytical Results for Phase II Soil Samples

Wilson Concepts, Pompano Beach, Florida

| | 1-SLA 09/24/91 | 1-SLB 09/24/91 | 1-SLC 09/24/91 | 2-SLA 09/25/91 | 3-SLA 09/24/91 | 3-SLB 09/24/91 | 3-SLC 09/24/91 | 6-SLA 09/24/91 | 6-SLB 09/24/91 | 6-SLC 09/24/91 |
|---|---|---|---|---|---|---|---|---|---|---|
| INORGANIC ELEMENTS | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |
| BARIUM | 5.6 | -- | 1.4 | 4.6 | 5.1 | 7.1 | 1.0 | 5.0 | 1.4 | 4.7 |
| COBALT | 1.0 | -- | -- | -- | 4.1 | 2.9 | -- | 2.1 | -- | -- |
| CHROMIUM | 9.3 | 3.0 | 5.5 | 4.1 | 8.1 | 6.6 | -- | 12 | 2.1 | 4.6 |
| COPPER | 1.0 | -- | -- | 1.7 | 2.3 | 1.2 | 1.6 | 7.9 | -- | 18 |
| MOLYBDENUM | -- | -- | -- | -- | -- | -- | -- | 1.4 | -- | -- |
| NICKEL | 3.9 | -- | -- | -- | 7.5 | -- | -- | 10 | 2.1 | 4.0 |
| LEAD | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- |
| STRONTIUM | 1400 | 3.4 | 25 | 48 | 2300 | 34 | 13 | 56 | 240 | 140 |
| TITANIUM | 36 | 18 | 28 | 21 | 28 | 24 | 14 | 22 | 35 | 23 |
| VANADIUM | 5.7 | -- | -- | -- | 4.6 | 2.7 | -- | -- | -- | -- |
| YTTRIUM | 2.6 | -- | -- | 1.3 | 2.3 | 3.2 | -- | 1.2 | -- | -- |
| ZINC | 4.2 | -- | -- | 5.5 | 7.8 | 1.6 | -- | 12 | -- | 6.9 |
| MERCURY | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.18 |
| ALUMINUM | 1200 | 310 | 520 | 430 | 640 | 660 | 110 | 680 | 350 | 360 |
| MANGANESE | 12 | -- | -- | 1.4 | 3.7 | 2.5 | -- | 6.0 | 2.8 | 2.3 |
| CALCIUM | 150000 | 200 | 1200 | 2400 | 160000 | 2900 | 1100 | 5600 | 25000 | 18000 |
| MAGNESIUM | 570 | 10 | -- | 19 | 240 | 38 | -- | 95 | 300 | 75 |
| IRON | 650 | 620 | 260 | 160 | 400 | 390 | 160 | 450 | 150 | 200 |
| SODIUM | 350 | -- | -- | -- | 530 | -- | -- | -- | -- | -- |
| EXTRACTABLE ORGANIC COMPOUNDS | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |
| BIS(2-ETHYLHEXYL) PHTHALATE | 8200 | -- | -- | 6100 | -- | -- | -- | -- | -- | -- |
| PURGEABLE ORGANIC COMPOUNDS | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |
| TOLUENE | -- | -- | -- | -- | -- | 5.3J | -- | 5.8J | -- | -- |

**********

***FOOTNOTES***

NA NOT ANALYZED

J ESTIMATED VALUE

-- MATERIAL WAS ANALYZED FOR BUT NOT DETECTED

TABLE A-3 (cont.)

Analytical Results for Phase II Soil Samples

Wilson Concepts, Pompano Beach, Florida

| | 7-SLA 09/25/91 | 7-SLB 09/25/91 | 7-SLC 09/25/91 | 8-SLA 09/25/91 | 8-SLB 09/25/91 | 8-SLC 09/25/91 | 9-SLA 09/25/91 | 9-SLB 09/25/91 | 9-SLC 09/25/91 | 10-SLA 09/25/91 | 10-SLB 09/25/91 | 10-SLC 09/25/91 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INORGANIC ELEMENTS | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |
| BARIUM | 4.0 | 3.4 | 1.3 | 7.8 | 2.1 | -- | 9.7 | 3.9 | 3.3 | 4.5 | 2.5 | 1.3 |
| COBALT | 2.6 | 1.1 | -- | 2.4 | -- | -- | 1.2 | 4.6 | -- | -- | -- | -- |
| CHROMIUM | 9.9 | 5.6 | 1.3 | 37 | 7.4 | -- | 7.6 | 6.7 | 1.6 | 4.5 | 2.3 | -- |
| COPPER | 14 | 2.6 | 1.0 | 7.4 | 2.6 | 3.8 | 18 | 10 | -- | -- | -- | -- |
| MOLYBDENUM | -- | -- | -- | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- |
| NICKEL | 7.6 | 2.0 | -- | 24 | -- | -- | 4.0 | 7.3 | -- | -- | -- | -- |
| LEAD | -- | -- | -- | 7.4 | -- | -- | 19 | 9.9 | -- | -- | -- | -- |
| STRONTIUM | 720 | 39 | 9.5 | 140 | 8.5 | 11 | 830 | 330 | 40 | 2100 | 700 | 5.7 |
| TITANIUM | 26 | 54 | 24 | 28 | 3.6 | 1.6 | 11 | 10 | 4.6 | 27 | 9.2 | 1.5 |
| VANADIUM | 4.5 | -- | -- | 3.0 | -- | -- | 7.2 | 1.6 | 1.3 | 5.0 | 1.3 | -- |
| YTTRIUM | 1.7 | 2.4 | -- | 2.8 | 1.7 | -- | 1.9 | 2.2 | 1.2 | 2.5 | 1.5 | -- |
| ZINC | 10 | 1.1 | 1.0 | 9.7 | -- | 3.7 | 34 | 12 | -- | -- | -- | -- |
| MERCURY | -- | -- | -- | -- | -- | -- | 0.06 | -- | -- | -- | -- | -- |
| ALUMINUM | 1100 | 1100 | 100 | 1600 | 370 | 120 | 880 | 840 | 380 | 1100 | 630 | 170 |
| MANGANESE | 8.0 | 3.6 | -- | 12 | 1.4 | -- | 17 | 3.8 | -- | 5.2 | 1.1 | -- |
| CALCIUM | 66000 | 500 | 620 | 13000 | 810 | 990 | 90000 | 25000 | 990 | 180000 | 44000 | 570 |
| MAGNESIUM | 240 | 42 | -- | 220 | 14 | -- | 490 | 140 | -- | 510 | 72 | -- |
| IRON | 810 | 470 | 80 | 1200 | 110 | 58 | 1600 | 430 | 130 | 350 | 150 | 130 |
| SODIUM | 230 | -- | -- | -- | -- | -- | 280 | 110 | -- | 570 | 190 | -- |
| EXTRACTABLE ORGANIC COMPOUNDS | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |
| HEXADECANOIC ACID | 3000JN | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PETROLEUM PRODUCT | N | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PURGEABLE ORGANIC COMPOUNDS | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |
| NONE DETECTED | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

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***FOOTNOTES***
NA - NOT ANALYZED
J - ESTIMATED VALUE
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
-- - MATERIAL WAS ANALYZED FOR BUT NOT DETECTED

TABLE A-3 (cont.)

Analytical Results for Phase II Soil Samples

Wilson Concepts, Pompano Beach, Florida

| | 11-SLA 09/25/91 | 11-SLB 09/25/91 | 11-SLC 09/25/91 | 12-SLA 09/25/91 | 12-SLB 09/25/91 | 12-SLC 09/25/91 | 13-SLA 09/25/91 | 13-SLB 09/25/91 | 13-SLC 09/25/91 | 14-SLC 12/04/91 | 15-SLA 09/25/91 | 15-SLC 09/25/91 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INORGANIC ELEMENTS | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |
| BARIUM | 3.6 | 3.7 | 1.3 | 5.1 | 4.2 | 2.7 | 4.4 | -- | 1.4 | 6.3 | 5.8 | 1.6 |
| COBALT | 4.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.9 | -- |
| CHROMIUM | 3.7 | 2.9 | -- | 4.1 | 4.2 | 1.5 | 4.7 | 1.5 | 2.5 | 1.8 | 8.1 | -- |
| COPPER | 4.5 | 1.2 | -- | 3.4 | -- | -- | 5.0 | -- | -- | -- | 8.7 | -- |
| NICKEL | 5.9 | -- | -- | 2.7 | -- | -- | 2.2 | -- | -- | -- | 7.9 | -- |
| LEAD | 20 | -- | -- | 5.1 | -- | -- | 5.5 | -- | -- | -- | 5.8 | -- |
| STRONTIUM | 160 | 60 | 5.4 | 990 | 1100 | 81 | 190 | 5.9 | 17 | 25 | 130 | 84 |
| TITANIUM | 7.6 | 4.2 | 1.5 | 12 | 16 | 4.3 | 19 | 25 | 23 | 30 | 8.9 | 11 |
| VANADIUM | -- | -- | -- | 3.1 | 2.7 | 2.3 | 1.2 | -- | -- | 1.7 | -- | -- |
| YTTRIUM | 1.3 | 2.4 | -- | 2.0 | 3.0 | 3.1 | 1.5 | -- | -- | 1.8 | 1.8 | -- |
| ZINC | 8.0 | 1.7 | -- | 3.3 | -- | -- | 5.4 | -- | -- | -- | 11 | -- |
| ALUMINUM | 440 | 480 | 140 | 860 | 1500 | 580 | 830 | 160 | 1000 | 560 | 840 | 480 |
| MANGANESE | 6.1 | 1.2 | -- | 4.6 | 2.1 | -- | 5.9 | -- | -- | 1.8 | 6.0 | -- |
| CALCIUM | 16000 | 5100 | 600 | 94000 | 72000 | 5800 | 26000 | 460 | 970 | 1700 | 9500 | 5200 |
| MAGNESIUM | 78 | 30 | -- | 290 | 140 | 26 | 150 | -- | 15 | 20 | 73 | 51 |
| IRON | 340 | 230 | 140 | 350 | 430 | 300 | 500 | 100 | 95 | 300 | 550 | 74 |
| SODIUM | -- | -- | -- | 290 | 300 | -- | -- | -- | -- | -- | -- | -- |
| EXTRACTABLE ORGANIC COMPOUNDS | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |
| BIS(DIMETHYLETHYL)METHYLPHENOL | -- | -- | 800JN | -- | -- | 800JN | -- | -- | -- | -- | -- | -- |
| PHENANTHRENE CARBOXYLIC ACID, OCTAHYDRO-DIMETHYL(METHYLETHYL)METHYL ESTER | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 800JN |
| 1 UNIDENTIFIED COMPOUND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 20000J |
| PURGEABLE ORGANIC COMPOUNDS | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |
| TOLUENE | -- | -- | -- | -- | -- | -- | 5.3J | -- | -- | 7.3J | -- | -- |
| (M- AND/OR P-) XYLENE | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14J | -- | -- |

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***FOOTNOTES***

NA - NOT ANALYZED
J - ESTIMATED VALUE
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
-- - MATERIAL WAS ANALYZED FOR BUT NOT DETECTED

TABLE A-3(cont.)

Analytical Results for Phase II Soil Samples

Wilson Concepts, Pompano Beach, Florida

| | 16-SLA 09/25/91 | 17-SLA 09/25/91 | 18-SLA 09/25/91 | 601-SL 09/24/91 | 602-SL 09/24/91 | 703-SLC 09/24/91 | 715-SLC 09/25/91 |
|---|---|---|---|---|---|---|---|
| **INORGANIC ELEMENTS** | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG | MG/KG |
| BARIUM | 9.2 | 4.9 | 6.8 | -- | NA | 1.1 | 1.9 |
| CADMIUM | 0.66 | -- | 0.82 | -- | NA | -- | -- |
| COBALT | 1.4 | 3.0 | 3.6 | -- | NA | -- | -- |
| CHROMIUM | 18 | 5.6 | 180 | -- | NA | 31 | 1.9 |
| COPPER | 9.5 | 12 | 25 | -- | NA | -- | -- |
| NICKEL | 11 | -- | 9.5 | -- | NA | 2.1 | -- |
| LEAD | 8.4 | 7.2 | 12 | -- | NA | -- | -- |
| STRONTIUM | 55 | 29 | 170 | -- | NA | 17 | 77 |
| TITANIUM | 8.4 | 3.1 | 11 | -- | NA | 29 | 21 |
| VANADIUM | 1.3 | -- | 2.9 | -- | NA | -- | -- |
| YTTRIUM | 4.3 | 1.1 | 1.0 | -- | NA | -- | -- |
| ZINC | 2000 | 22 | 48 | -- | NA | 1.0 | -- |
| MERCURY | 0.52 | -- | 0.06 | -- | NA | -- | -- |
| ALUMINUM | 2800 | 1100 | 710 | 12 | NA | 130 | 490 |
| MANGANESE | 180 | 7.0 | 14 | -- | NA | 2.9 | -- |
| CALCIUM | 4900 | 1200 | 27000 | -- | NA | 1400 | 4800 |
| MAGNESIUM | 71 | 27 | 220 | -- | NA | -- | 50 |
| IRON | 690 | 300 | 1400 | 130 | NA | 460 | 90 |
| SODIUM | -- | -- | 150 | -- | NA | -- | -- |
| **EXTRACTABLE ORGANIC COMPOUNDS** | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |
| BIS(2-ETHYLHEXYL) PHTHALATE | -- | 6800 | -- | -- | NA | -- | -- |
| PETROLEUM PRODUCT | -- | N | -- | -- | NA | -- | -- |
| **PURGEABLE ORGANIC COMPOUNDS** | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG | UG/KG |
| NONE DETECTED | -- | -- | -- | -- | -- | -- | -- |

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***FOOTNOTES***

NA - NOT ANALYZED
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
-- - MATERIAL WAS ANALYZED FOR BUT NOT DETECTED

TABLE A-4

Analytical Results[1] for Phase I
Ground-Water Samples
Wilson Concepts, Pompano Beach, Florida

| WELL LOCATION: | WCS-1 | WCS-2 | WCS-12 | WCS-13 | WCD-14 | MCL | FDWS | FGWGC |
|---|---|---|---|---|---|---|---|---|
| ORGANICS: | | | | | | | | |
| 1,1-Dichloroethane | -- | -- | -- | -- | 12 | NE | NE | 2,400 |
| Acetone | 13 | 18 | -- | -- | -- | NE | NE | 700 |
| *bis*(2-Ethylhexyl) phthalate | 23 | -- | -- | -- | -- | 4[2] | NE | 14 |
| Trichloroethylene | 170 | 130 | -- | -- | -- | 5 | 3 | NE |
| INORGANICS: | | | | | | | | |
| Aluminum | 378 | 4,630 | -- | -- | 280 | NE | NE | NE |
| Arsenic | -- | 12 | -- | -- | -- | 50 | 50 | NE |
| Barium | 15.6 J | 32.6 J | 18 | -- | -- | 2,000 | 1,000 | NE |
| Calcium | 110,000 | 115,000 | 100,000 | 110,000 | 47,000 | NE | NE | NE |
| Chromium | -- | 14.1 | -- | -- | -- | 100 | 50 | NE |
| Iron | 1,490 | 4,770 | 1,700 | 1,200 | 230 | 300[3] | 300[3] | NE |
| Lead | -- | 3.9 | -- | -- | -- | NE | NE | NE |
| Magnesium | 840 J | 1,610 J | 2,000 | 1,600 | 8,800 | 50[3] | 50[3] | NE |
| Manganese | 65.4 | 98.9 | -- | -- | 16 | NE | NE | 150 |
| Nickel | -- | 65.7 | -- | -- | -- | NE | NE | NE |
| Potassium | 1,000 | 2,000 J | 1,200 | -- | -- | NE | 160,000 | NE |
| Sodium | -- | -- | 6,100 | 8,200 | 3,500 | | | |

(1) All results in µg/L
(2) Proposed MCL
(3) Secondary standards
FDWS Florida Drinking Water Standard
FGWGC Florida Ground-Water Guidance Concentration
MCL Maximum Contaminant Level
NE Value does not exist

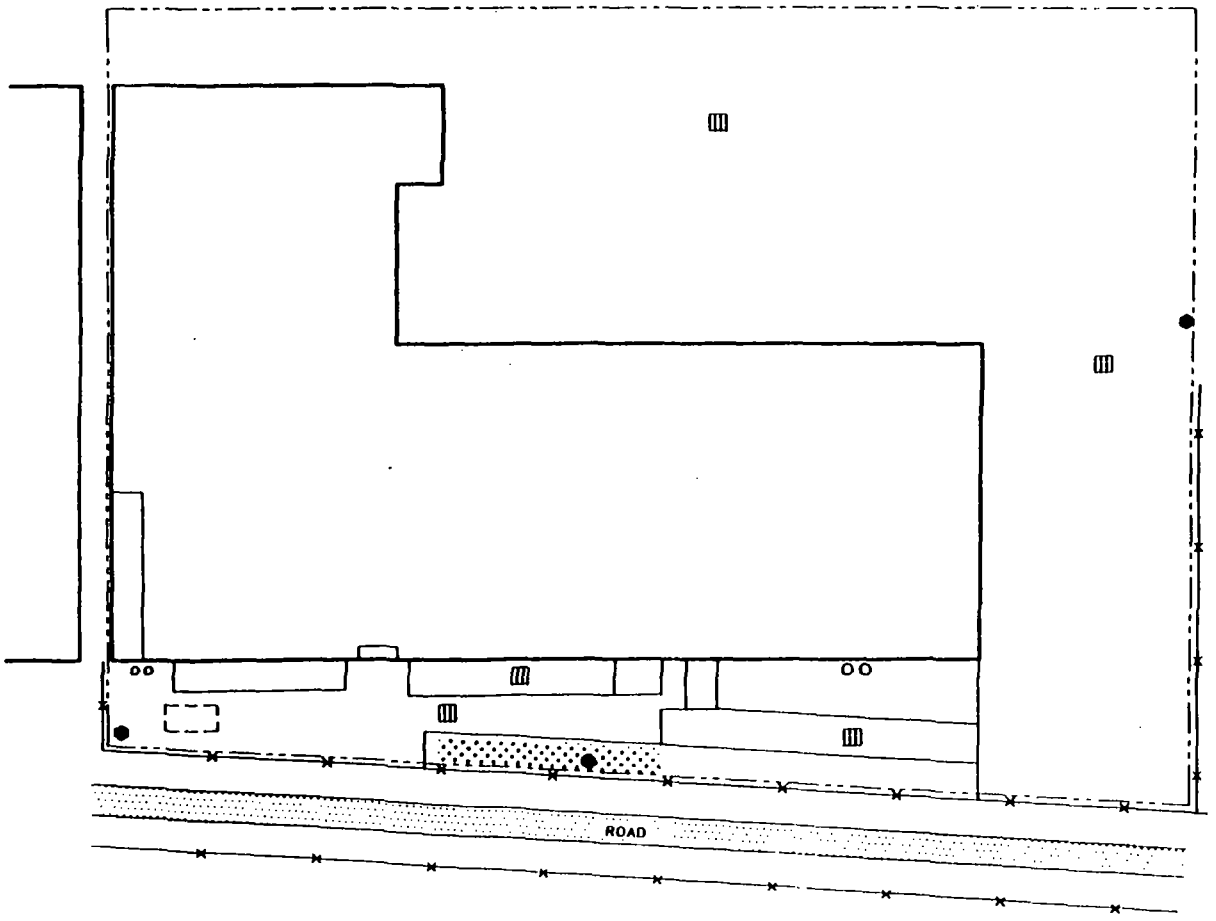
## TABLE A-5

**Analytical Results of Phase II**
**Ground-Water Samples**
**Wilson Concepts, Pompano Beach, Florida**

| WELL LOCATION: | MW-1 | TW-3 | TW-4 | MW-5[2] | MW-6 | WCS-1 | WCS-2 | WCS-12 | WCS-13 | WCD-14 | MCL | FDWS | FGWQC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INORGANICS** | | | | | | | | | | | | | |
| Aluminum | 440 | 170 | 460 | 860 | 500 | 110 | 190 | 200 | 120 | – | NE | NE | NE |
| Barium | – | 19 | 17 | – | 16 | 14 | 24 | 22 | 33 | 11 | 2,000 | 1,000 | NE |
| Calcium | 54,000 | 84,000 | 38,000 | 57,500 | 120,000 | 120,000 | 87,000 | 87,000 | 97,000 | 69,000 | NE | NE | NE |
| Iron | 1,300 | 520 | 390 | 130 | 150 | 880 | 670 | 3,700 | 1,400 | 290 | 300 (3) | 300 (3) | NE |
| Magnesium | 520 | 1,400 | 620 | 2,650 | 5,200 | 1,100 | 1,200 | 1,400 | 1,300 | 1,300 | NE | NE | NE |
| Manganese | – | 20 | – | – | 18 | 60 | 53 | 23 | 27 | – | 50 (3) | 50 (3) | NE |
| Molybdenum | – | 20 | – | – | – | – | – | – | – | – | NE | NE | NE |
| Sodium | 2,600 | 4,800 | 1,300 | 7,650 | 19,000 | 3,600 | 10,000 | 5,000 | 5,600 | 9,900 | NE | 160,000 | NE |
| Strontium | 560 | 1,000 | 430 | 745 | 1,600 | 430 | 700 | 1,000 | 1,200 | 810 | NE | NE | NE |
| Titanium | 12 | 11 | – | 17.5 | 20 | 14 | 12 | – | – | – | NE | NE | NE |
| Yttrium | – | – | – | – | – | – | – | – | – | 18 | NE | NE | NE |
| Zinc | 11 | – | – | – | – | – | 11 | – | – | – | 5,000 (3) | 5,000 (3) | NE |
| **PURGEABLE ORGANICS** | | | | | | | | | | | | | |
| 1,1-Dichloroethane | – | – | – | – | – | 2.6J | – | – | – | – | NE | NE | 2,400 |
| 1,4-Dichlorobenzene | – | – | – | – | 2.2J | – | – | – | – | – | 75 | 75 | NE |
| Chloroethane | – | – | – | – | – | 46 | – | – | – | – | NE | NE | 6,300 |
| Sulfur Dioxide | – | – | – | 6.5 | – | – | – | – | – | – | NE | NE | NE |
| **EXTRACTABLE ORGANICS** | | | | | | | | | | | | | |
| 1-Methylnaphthalene | – | – | – | – | – | – | – | – | – | 3JN | NE | NE | NE |
| Benzothiazolone | – | – | – | – | – | – | – | – | – | 6JN | NE | NE | NE |
| *bis*(Dimethyl)cyclohexadienodione | – | – | – | – | – | – | – | – | – | 3JN | NE | NE | NE |
| *bis*(Dimethyl)methylphenol | – | – | – | – | – | – | – | – | – | 7JN | NE | NE | NE |
| *bis*(Dimethyl)phenol | – | – | – | – | – | – | – | – | – | 2JN | NE | NE | NE |
| Chlorodimethylphenol | – | – | – | – | – | – | – | – | – | 10JN | NE | NE | NE |
| Diethylmethylbenzene | – | – | – | – | – | – | – | – | – | 5JN | NE | NE | NE |
| Dihydrodimethylindene | – | – | – | – | – | – | – | – | – | 1JN | NE | NE | NE |
| Dimethyl benzene | – | – | – | – | – | – | – | – | – | 2JN | NE | NE | NE |
| Dimethylphenol | – | – | – | – | – | – | – | – | – | 8JN | NE | NE | NE |
| Ethyldimethylbenzene | – | – | – | – | – | – | – | – | – | 5JN | NE | NE | NE |
| Methylpropylbenzene | – | – | – | – | – | – | – | – | – | 2JN | NE | NE | NE |
| Nonylphenol | – | – | – | – | – | – | – | – | – | 8JN | NE | NE | NE |
| Tetrahydromethylnaphthalene | – | 1JN | – | – | – | – | – | – | – | 2JN | NE | NE | NE |
| (Tetramethylbutyl)phenol | – | – | – | – | – | – | – | – | – | 20JN | NE | NE | NE |
| Petroleum Product | – | – | – | – | – | N | – | – | – | N | NE | NE | NE |
| 1 Unidentified compound | – | – | – | – | – | – | – | – | – | 10J | NE | NE | NE |

(1) Results in µg/L
(2) Reported as the average of sample and duplicate sample concentrations
(3) Secondary standards
NE Standard does not exist

**Figure A-4**
**Phase I Air Sampling Locations**
**Wilson Concepts**
**Pompano Beach, Florida**




LEGEND

- STORM DRAINS/CATCH BASINS
- DRAINFIELD - APPROXIMATE AREAL EXTENT
- FENCE
- PROPERTY LINE
- AIR SAMPLE LOCATION

## TABLE A-6

## Summary of Air Sampling Results
## Wilson Concepts, Pompano Beach, Florida

| Sample Location: | 350W,233S | 200W,250S | 0W,100S | 350W,238S | 200W,250S | 0W,100S | 350W,238S | 200W,250S | 0W,100S | GC/MS Detection Limits ppbv[1] |
|---|---|---|---|---|---|---|---|---|---|---|
| Traffic Report Number: | 31149 | 31150 | 31151 | 31154 | 31155 | 31152 | 31153 | 31156 | 31148 | --- |
| Canister Number: | S3 | S2 | S9 | S5 | S6 | S8 | S1 | S7 | S4 | --- |
| Date Collected: | 8/21/90 | 8/21/90 | 8/21/90 | 8/22/90 | 8/22/90 | 8/22/90 | 8/24/90 | 8/24/90 | 8/24/90 | --- |
| **Parameter** | | | | | | | | | | |
| 1,1,1-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| 1,1-Dichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | 1.0 |
| 1,1-Dichloroethylene | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5.0 |
| Vinyl Chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | 5.0 |
| Chloroethane | ND | 3.9 | ND | 1.6 | ND | ND | ND | 1.8 | ND | 0.7 |
| Toluene | 2.0 | 2.9 | ND | 1.0 | 1.7 | ND | 5.2 | 0.7 | 1.5 | 0.1 |
| Trichloroethylene | ND | ND | ND | ND | ND | ND | 4.7 | 2.4 | ND | 0.7 |

ND Not detected
(1) Parts per billion volume

# APPENDIX B

# RESPONSIVENESS SUMMARY

# RESPONSIVENESS SUMMARY
# WILSON CONCEPTS SUPERFUND SITE

## PART I - Summary of Commentors' Major Issues and Concerns

A public information meeting was held on July 28, 1992 at which the Environmental Protection Agency (EPA) presented its proposed plan for the Wilson Concepts Site. The plan included "No Action" for soils and "No Action" with one year of monitoring for the ground water. Eleven people were in attendance. The major concerns included the site's affect on local wells and water bodies, residual dangers from the site, what has happened to the contaminant concentrations that allowed the site to be placed on the National Priorities List, how the monitoring will be conducted and what will happen when it is completed. A 30-day public comment period began on July 22, 1992 and concluded on August 21, 1992. No comment letters were received during this time.

## PART II - Comments and Responses

Comment: One commentor at the public meeting inquired whether the previous monitoring data is available for review.

Response: The results of previous monitoring are contained in the Remedial Investigation Report, which is part of the Administrative Record for the Wilson Concepts Site located at the information repository, the Broward County Main Library in Ft. Lauderdale.

Comment: Another commentor asked if there is any residue left in the floor, walls, or ceiling that could present an abnormal danger to fire fighters responding to a fire. He also asked if any samples of the floor, walls, or ceiling were collected.

Response: No, there is no residual danger and there were no samples of the floor, walls, or ceiling taken.

Comment: A commentor noted that if the site qualified for the Superfund list, at one time it must have been considered to be extremely hazardous and wanted to know if there had been a comparison between the old data (from which the site was ranked) and the new data (from the Remedial Investigation (RI)).

Response: Levels of contaminants found during the Sampling Investigation conducted by EPA in 1986 were higher than those found during the RI, which involved more detailed sampling than was done during the SI. It appears that there was natural attenuation of the contaminants.

Comment: Is it possible that contamination has run off and concentrated in another location?

Response: Wells downgradient of the Wilson Concepts site were sampled and also showed low levels of contamination. Some of the volatile organics may have evaporated.

Comment: Is natural attenuation a normal phenomenon at Superfund Sites, or only experienced at Wilson Concepts?

Response: Natural attenuation takes place to some degree at every site. The original levels at Wilson were not as high as some other sites on the NPL, yet were high enough to get the site on the list.

Comment: A commentor stated that the SI indicated a problem near the underground storage tanks (USTs) in the southwest corner of the site, and later during the RI, this area was shown not to be a problem. What are EPA's conclusions regarding the comparison of the SI data and the RI data?

Response: The reduction of the contaminant levels from the SI to the RI was noted in the area of the USTs. EPA's conclusion was that the levels had attenuated naturally. The data relied upon in developing EPA's proposed plan was the RI data, which is more recent and more thorough.

Comment: Given that the site is not a big risk, what problems would a potential purchaser of the property face?

Response: This is a legal question and no EPA attorneys were present at the public meeting. However, the Remedial Project Manager mentioned that there may potentially be a problem purchasing a site that is still listed on the NPL.

Comment: Will the site remain on the NPL for at least one year?

Response: Yes, the site will remain on the NPL at least until one year of ground water monitoring has been completed.

Comment: If monitoring shows fluctuations in the contaminant levels, would that call for further study?

Response: If monitoring indicated significantly high contaminants levels, EPA would reevaluate the protectiveness of the "no action" alternative.

Comment: If monitoring shows high levels of contaminants in the ground water, would EPA pursue previously identified potentially responsible parties (PRPs) or would new owners be liable?

Response: This is a legal question. The commentor was given the name of the EPA attorney assigned to the Wilson Concepts site: Joyce Catrett, (404)347-2641, ext. 2266. The Remedial Project Manager also mentioned that if the contaminants detected are the same, EPA would probably continue with the same PRP list.

Comment: What constituents would be analyzed in the quarterly monitoring?

Response: Constituents which were detected in past investigations, including volatile organics, extractable organics, and metals, would be analyzed.

Comment: Does EPA have large map showing the site and surrounding streets to show at the public meeting?

Response: No, EPA did not have a big map to show at the public meeting, but offered to open up a AAA road map after the meeting for people to gather around.

Comment: Is there a threat to people fishing and kids playing in the Cypress Creek Canal, and has it been monitored?

Response: The canal has not been monitored. It is located approximately 1/2 mile due south of the site. Ground water flows in a more easterly direction. There are monitoring wells downgradient of the site that have not shown contamination.

Comment: Have public well fields in the area been alerted to the potential contamination, so they can monitor?

Response: No public well fields are located downgradient of the site, so we wouldn't expect anything from the site to reach the well fields. Public well fields routinely conduct monitoring.

Comment: Do the public well fields analyze for the same constituents as those found at the site?

Response: The commentor was told that EPA would get back to him with an answer. The Remedial Project Manager later discovered that analytes vary from well field to well field. A discussion with the Director of Environmental Engineering at the Broward County Public Health Unit revealed that public well fields in Broward County

analyze on an annual basis for all constituents required by the Safe Drinking Water Act and the Florida Administrative Code 17-550. This includes organic and inorganic constituents which have Primary and Secondary Drinking Water Standards. In addition, the public water supply systems analyze for a list of unregulated contaminants. For more specific information concerning analyses conducted at a particular well field, citizens should contact their particular water supply system or the Broward County Public Health Unit.

Comment: How long will EPA continue to monitor?

Response: EPA will monitor for one year, four quarterly monitorings to show the effects of seasonal fluctuations in the ground water. Because there's no contaminant source we would expect any problems to show up within one year.

Comment: How deep are the monitoring wells that will be sampled?

Response: Most wells are 10 to 12 feet deep with one deep well at 25 feet.

Comment: Could contaminants be washed from the site to nearby surface water (such as Cypress Creek Canal)?

Response: If surface runoff from the site were to flow in the direction of Cypress Creek, the canal is far enough away that the runoff would infiltrate into the ground prior to reaching the canal.

Comment: Will methylene chloride be analyzed for and is it a PCB?

Response: Methylene chloride is not a PCB, and it will be analyzed for during the quarterly monitoring.

Comment: Is this the only meeting for Wilson and Chemform and the last chance Pompano Beach will have to talk to EPA?

Response: A public Availability Session (Open House) was held in December 1990, prior to commencing the Remedial Investigation. Unless the ground water monitoring indicates a problem, there will not be another meeting. The EPA representatives can be contacted by telephone at any time.

Comment: Will EPA continue considering what plan to take until August 21 and then make a decision?

Response: Yes, EPA will accept comments until August 21, 1992 and then make a final decision. EPA will produce a document

called a Record of Decision after considering public comments, which will describe EPA's decision on these sites and will include EPA's responses to all comments received. The Record of Decision will then be made part of the Administrative Record and placed in the local repository.

Comment: One citizen wanted another meeting with better advertisement to better inform the public and local officials.

Response: EPA printed a notice in the newspaper and sent fact sheets announcing the meeting to all those on the site mailing list, including State, County, and City officials.

Comment: One citizen requested monitoring for longer than one year.

Response: If the first year of monitoring indicates a potential threat, EPA will reevaluate the protectiveness of the "no action" alternative.