DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Prestolite Battery, Vincennes, Knox County, Indiana

STATEMENT OF BASIS

This decision document presents the selected remedial action for the Prestolite Battery Superfund Site in Vincennes, Knox County, Indiana, which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C.§ 9601 et seq., and is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300 to the extent practicable. This decision is based upon the contents of the Administrative Record for the site. The attached index identifies the items which comprise the Administrative Record upon which the selection of the remedial action is based.

The State of Indiana concurs with this Record of Decision.

ASSESSMENT OF THE SITE

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

DESCRIPTION OF THE SELECTED REMEDY

The remedy selected for ground water contamination includes continued monitoring of the shallow and intermediate aquifers at the site as well as monitoring of surface water and sediments. The selected remedy also incorporates institutional controls on the placement of drinking water wells and natural attenuation of shallow contaminated ground water.

The major components of the selected remedy include:

- Long term groundwater monitoring of the shallow and intermediate aquifers for volatile organic compounds and metals.

- Long term monitoring of surface water and sediments for volatile organic compounds and metals at the N. W. pond and Kelso Creek.

- Groundwater, surface water and sediments will be sampled semi-annually for the first three years, after which consideration will be given to reducing sample frequency to annually.

- Institutional controls will be implemented; one unused well will be abandoned (closed) and one active residential well will be closed and the residence connected to the city water supply.

- Natural attenuation of shallow groundwater.

This action will require the installation of additional monitoring wells in order to design an effective monitoring network. This action will require operation and maintenance activities to ensure continued effectiveness of this selected remedial alternative. The action being taken is consistent with section 121 of CERCLA, 42 U.S.C. Section 9621.

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. This remedy utilizes permanent solutions and considers alternative treatment (or resource recovery) technologies to the maximum extent practicable for this site.

The principle threats at the site have been dealt with through removal actions, which eliminated the source of ground water contamination. The results of the Remedial Investigation and Feasibility Study indicate that the levels of contaminants remaining in the ground water are being addressed via natural attenuation within a time frame not significantly longer than it would take to remove them via extraction, and that it is not effective to extract large amounts of ground water to remove the small amount of contaminants present. Thus, treatment of ground water to permanently and significantly reduce the toxicity, mobility and volume of contaminants was not found to be necessary to protect human health and the environment, or to be practical at the site at this time.

Because this remedy will result in hazardous substances remaining above health-based levels, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. If, however, the analytical results generated as a result of monitoring indicate the presence of contaminants above existing levels before the five year review, this particular remedy may be replaced by a treatment system.

Valdas V. Adamkus
Regional Administrator
U.S. Environmental Protection Agency

8/23/94
Date

RECORD OF DECISION SUMMARY
PRESTOLITE BATTERY SITE
VINCENNES, KNOX COUNTY, INDIANA

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RECORD OF DECISION SUMMARY

I. SITE DESCRIPTION

The Prestolite Battery site is an inactive lead-acid battery manufacturing facility located in Knox County, Indiana (see Figure 1). The facility occupies approximately 18 acres on U.S. Highway 41 northwest of the city of Vincennes (see Figure 2). The land use immediately surrounding the Prestolite site is residential and commercial. Five residences are situated on North Second Street immediately north of the site. and two residences are located on North Sixth Street immediately south of the site. The site is bordered on the west by an Indiana State Highway garage, and on the east by the parking lot of a local inn. A 5-acre pond (Northwest Pond) and associated wetland complex and an auto salvage yard lie immediately northwest of the site. The city limits of Vincennes lie approximately 500 feet to the west of the site.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

In 1945, the Autolite Battery Corporation established the facility for the manufacture of lead-acid batteries, primarily for use in cars and trucks. In 1955, the site was purchased by the Eltra Corporation, under the name Prestolite Battery. Allied Chemical Company (forerunner to Allied-Signal, Inc. (Allied)) acquired the Eltra Corporation in 1979. Allied announced the decision to cease production at the plant on March 6, 1985, and the facility has been inactive since closure in May 1985.

In the course of plant operations, manufacturing process wastes and wastewater became laden with lead, lead oxides, lead sulfates, and sulfuric acid. These lead-containing sludges and wastewaters were discharged to an on-site sewer system. Over time, these sewer lines became plugged with lead sludges, and as a result of leaks and sewer line back-ups, the soils around some of these sewers and associated sumps were contaminated. Lead dust was also released from the plant's ventilation system, contaminating surface soils in the vicinity. Accidental spills of process materials also contributed to the lead-contamination of on-site soils. Elevated concentrations of polychlorinated biphenyls (PCBs) were also present on-site in soils around a transformer pad near the northwest corner of the main building.

Prior to 1978, wastewaters were sent through the on-site sewer system directly to the Vincennes Publicly Owned Treatment Works (POTW) via the city sanitary sewer system. Beginning in 1978, wastewaters were subject to pH treatment on-site followed by placement into a wastewater sedimentation lagoon prior to discharge to the POTW. An analysis of the lagoon sediment indicated high levels of lead, iron, aluminum, arsenic, barium, and calcium. Based on file information, other chemicals potentially used at the site included trichloroethane, methylene chloride, paint thinner, epoxy resin, refined coal tar, and a lubricant containing trichloroethylene.

Beginning in 1982, Allied commenced investigations to assess the degree of contamination on- and off-site. Pursuant to these investigations, more than 7,000 cubic yards of lead- and PCB-contaminated soils were reportedly removed from both on- and off-site areas. The cleanup standard was to remove all lead-contaminated soil down to a level below 1,000 ppm, as approved by the Indiana State Board of Health (ISBH). This standard was coupled with a requirement to add lime to all remaining soils where lead levels exceeded 250 ppm to reduce the mobility of lead still in the soil. PCB soils were remediated to a level below 10 ppm. Other activities conducted by Allied included closure of the RCRA-regulated wastewater lagoon, sewer excavations, cleaning of the building roof and interior, and community blood sampling.

The Prestolite Battery site was first proposed for the National Priorities List (NPL) on September 18, 1985, based on a Hazard Ranking System (HRS) score of 46.67. The scoring was based on the potential for lead contamination to migrate to underlying groundwater, as well as the presence of PCBs in soils on-site. Because Allied's investigations showed no lead contamination of the groundwater, it requested that EPA reconsider the proposal to include the site on the NPL. Also during this time, Allied was implementing a RCRA closure plan for the on-site lagoon. The closure activities raised questions concerning whether RCRA or CERCLA authority should be used to address on-site contamination problems. In June 1988, the site was reproposed for the NPL under a RCRA status category that covers sites where RCRA corrective actions may not apply to all contamination at the site. The site was listed on the NPL on October 4, 1989.

Enforcement activities began in July 1987 when, pursuant to Section 104(c) of SARA, EPA requested that Allied submit all information regarding site contamination and removal actions

conducted at the site for EPA review. Based on EPA clean-up precedents, and the potential for use of the Prestolite Battery site for other than industrial purposes, EPA determined that a cleanup level of 500 ppm lead in soil could be appropriate for the site, and further investigation would be required. In January 1988, EPA provided Allied with a draft Administrative Order by Consent (AOC) and a Statement of Work (SOW) for conducting a Remedial Investigation/Feasibility Study (RI/FS) at the site. In February 1988, EPA and Allied began negotiations regarding the AOC for the implementation of the SOW. These negotiations were unilaterally ended by Allied on September 30, 1988. As a result, EPA applied for federal funds to conduct a Superfund-financed RI/FS under the Alternative Remedial Contracting Strategy (ARCS) program.

Subsequent to ending negotiations, Allied supplied EPA with a work plan, dated October 1, 1988, and during the period of October 1988 through February 1990, conducted a number of investigative sampling, soil excavation, and verification sampling activities. With the exception of a May 1989 removal of on-site soil piles (in response to an AOC), none of the work completed by Allied after October 1988 occurred under statutorily required EPA oversight. EPA took the position that Allied's activities at the site were in violation of CERCLA, Section 122(e)(6), and that these activities interfered with the EPA's ability to conduct an RI/FS. In August 1989, EPA referred the matter to the Department of Justice (DOJ), requesting the filling of a civil action to obtain an injunction ordering Allied to stop all present and future work so that the EPA could proceed with an orderly and timely RI/FS. In January 1990, the DOJ filed a two-count suit in the United States District Court for the southern district of Indiana to address the alleged CERCLA 122(e)(6) violation and to recover costs for the RI/FS.

In April 1990, Allied submitted its final report to EPA. EPA's RI/FS work plan was final in October 1990. The RI field work was postponed until the court addressed the request for injunction from the DOJ. In March 1991, a stipulation and order were agreed to by EPA and Allied, which enjoined Allied from undertaking certain activities at the site, as defined in the order, until EPA completed its RI/FS.

Phase I of EPA's RI was conducted from July through October 1991. During this investigation, the extent of lead soil contamination was determined both on- and off-site. The investigation also identified site-related volatile organic (VOC) contamination in the ground-

water, and lead contamination in the on-site sewer system and in the Northwest Pond/wetland complex. Based on the results of the Phase I RI, the EPA conducted a Phase II RI from December 1992 through March 1993 to fully define and characterize the extent of contamination in groundwater, the city sewer system, and in the Northwest Pond/wetland complex.

Based on the Phase I RI results, the EPA resolved to pursue cleanup of the lead contamination of both on-site and off-site soils as a removal action. As a result, on September 25, 1992, EPA entered into an AOC with Allied, requiring Allied to conduct an Expedited Response Action (ERA) to remove all lead-contaminated soil and debris, on-site and off-site, and decontaminate or remove all lead-contaminated portions of the on-site buildings, including surfaces and sewers. As stipulated by the AOC, lead-contaminated soils required remediation to a level below 530 ppm. From November 1993 through May 1994, Allied conducted Phase I of the ERA, under EPA oversight. During this phase, all of the on-site lead contamination was remediated, as well as limited off-site areas. Allied also addressed the city sewer system contamination defined in the EPA's Phase II RI. The Phase II ERA, which addresses the remaining off-site areas, is scheduled to be completed before the end of 1994.

Subsequent to the Phase II RI results, an FS was conducted by the EPA to address permanent remedies for the site-related groundwater contamination and impacts to the Northwest Pond and Kelso Creek.

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

In October of 1989, a public meeting was held to answer questions about the site, the upcoming Remedial Investigation and the Superfund Program. Prior to the meeting, a fact sheet was sent out informing the public about the site, the Superfund process and the activities planned for the RI/FS.

In June of 1991, an availability session was held to update the community on the site status and the beginning of RI field activities.

In October of 1992, an availability session was held to review the results of the Phase I RI, the signing of an AOC with Allied for the removal of all lead contamination above health based levels, both on-site and off-site, and the need to perform a Phase II RI.

In October of 1993, an availability session was held to update the community on the site status and the beginning of the on-site removal action.

In April of 1994, an availability session was held to review the results of the Phase II RI, the progress to date of the lead remediation and the options available for future site development.

A fact sheet about the Feasibility Study and the Proposed Plan was released to the public in early June of 1994. A public meeting was held on June 15, 1994 to discuss the Feasibility Study Report and the Proposed Plan and to accept oral and written comments. The public comment period ended on July 15, 1994.

The public participation requirements of CERCLA sections 113 (k) (2) (B) and 117, 42 U.S.C §§ 9613 (K) (2) (B) and 9617, have been met in the remedy selection.process. This decision document presents the selected remedial action for the Prestolite Battery Site, Vincennes, Knox County, Indiana, chosen in accordance with CERCLA. The decision for this site is based on the Administrative Record maintained in the information repository located at the Knox County Public Library in Vincennes, Indiana

IV. SCOPE & ROLE OF RESPONSE ACTION

This Record of Decision (ROD) addresses the final remedy for the Prestolite Battery site. Previous removal actions have eliminated the principle threat, the soils and sewer lines contaminated with lead and VOCs, from the site. This final remedy addresses residual contamination in the groundwater and surface water.

V. SITE CHARACTERISTICS

Pursuant to the authorities under CERCLA and the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), an RI was conducted at the site. The RI was conducted by the U.S. EPA between 1991 and 1993. A Baseline Risk Assessment was prepared by the U.S. EPA to evaluate the level of risk to human health and the environment. This section summarizes the analysis presented in these reports.

A) Site Topography

The Prestolite Battery site and surrounding study area are located in the Central Lowland physiographic province. This province encompasses the floodplain of the Wabash River and is described as a low-lying alluvial plain. Topography at the site is relatively flat, with an average elevation of 426 feet above mean sea level (msl). The site is approximately 25 feet higher in elevation than the Wabash River, which is located approximately 1 mile west of the site.

Several other surface water bodies are present in the area. These include the North Drainage Ditch, Kelso Creek, Snapp Creek, and the Northwest Pond. The North Drainage Ditch and Kelso Creek are located approximately 250 feet north and 500 feet west of the site, respectively. Kelso Creek discharges to the Wabash River, and the North Drainage Ditch discharges to Snapp Creek, located approximately 0.6 miles northwest of the site. Snapp Creek discharges to Kelso Creek. The Northwest Pond is a shallow surface water body and wetland area approximately 300 feet northwest of the site. Other wetland areas, as well as intermittent ditches and streams are also present in the area.

B) Site Geology

The site overlies Illinoisan glacial outwash and alluvial floodplain deposits. These unconsolidated sediments have filled a deep north-trending pre-glacial bedrock trough. The thickness of these sediments is highly variable, but may be up to 100 feet in the area. Bedrock underlying the unconsolidated sediments consists of the upper Pennsylvanian Dicksburg Hills Sandstone Member of the Pakota Formation. Specifically, there are five unconsolidated units present at the site.

From ground surface to an average depth of 10 feet, a brown silty clay is present. This unit decreases in thickness to the west, and grades to a brown silty sand/sand. Occasional fine sands and gravels are present, particularly near the base of this unit.

The second unit encountered is a brown to gray, fine to medium sand and fine gravel, and constitutes the shallow groundwater aquifer. This unit, with an average thickness of 12 feet, decreases in thickness to the east, with an increase of silt and clay.

In most portions of the site, the base of this aquifer is defined by a sharp contact with a soft, gray, organic silty clay below. Where present, this third unit ranges in thickness from 6 to 15 feet. Occasional peaty areas, wood, and gastropod fossils are present within this unit. To the east, occasional interbedded sands and gravels are present, and a color change to brown becomes evident. The organic silty clay is discontinuous over the southern corner of the site.

The fourth unit encountered is a gray fine to medium sand and gravel, and constitutes the intermediate groundwater aquifer. This unit, with an average thickness of 18 feet, is encountered beneath the organic silty clay. In the southern corner of the site, where the organic clay is discontinuous, these gray sands and gravels directly underlie the brown sands and gravels of the second unit. Lithologically, the sands and gravels composing the two units are similar, but the color change is distinct and produces a sharp contrast.

The fifth unconsolidated unit, with an average thickness of 25 feet, consists of a sequence of tills, interbedded silty sand and till, and sand and gravel. In general, this sequence appears to be continuous across the site; however, variations in the thickness of the beds within the sequence do exist. The moisture content of the till is low, but the silty sand and sand and gravel layers are typically saturated and under artesian pressure. These saturated units constitute the deep groundwater aquifer.

Underlying the unconsolidated sediments in the central and eastern portions of the site, the sandstone bedrock is brown to reddish brown and micaceous, with a weathered profile present in the upper 3 to 10 feet of the bedrock surface. To the west, bedrock is a blue-gray, dirty sandstone, with a minimal weathered profile. Depth to bedrock is highly variable across the site. From east to west, the bedrock surface ranges from 36 feet below ground surface (bgs) to 84 feet bgs.

C) Site Hydrology

Subsurface groundwater flow at the site has been divided into four distinct hydrostratigraphic units:

1. A shallow aquifer within the brown sands and gravels.
2. An aquitard represented by the gray, organic silty clay.
3. An intermediate aquifer within the gray sands and gravels.
4. A deep aquifer represented by the interbedded tills and sands.

Inasmuch as the southern corner of the site lacks continuity of the organic silty clay unit, the shallow and intermediate aquifers in this area are hydraulically connected. However, over the area of the groundwater contaminant plume, this organic silty clay unit is continuous and provides impermeable conditions (1.6×10^{-7} cm/sec), thus separating the shallow and intermediate aquifers in the area of concern. Groundwater flow in the shallow aquifer is to the west toward discharge to Kelso Creek.

D) Site Surface Water Hydrology

Several surface water bodies are in the vicinity of the Prestolite Battery site. The North Drainage Ditch is to the north across North Second Street. Site drainage reaches this ditch via the North Extension Ditch which crosses underneath North Second Street. Kelso Creek and the Wabash River are to the west, and Snapp Creek and the Northwest Pond to the northwest. All of the water bodies are surficially connected; the drainage moves from the North Drainage Ditch to Snapp Creek to Kelso Creek to the Wabash River. The only minor exception is the Northwest Pond; from which, an intermittent stream flows to Kelso Creek.

The North Drainage Ditch, Kelso Creek, and Snapp Creek are similar in characteristics. These water bodies are shallow, with relatively narrow valleys and steep banks. Area-wide drainage is to the Wabash River; consequently, its depth and valley width is more substantial, with a well-developed floodplain. Extensive wetlands are present along these drainageways; approximately 50 acres alone are along the Kelso and Snapp Creeks.

The Northwest Pond is a shallow (2 to 4 feet), 5-acre palustrine, unconsolidated bottom, intermittently exposed wetland, and is associated with an additional 20-acre wetland complex. This pond was reportedly excavated as a borrow pit to provide fill upon which an adjacent freight railroad line is built. No streams discharge into the pond; its apparent source is runoff from the immediately surrounding area and groundwater discharge.

EXTENT OF CONTAMINATION

Between 1991 and 1994, the RI/FS was conducted by the U.S. EPA at the Prestolite Battery site. The RI/FS was conducted to identify the types, quantities, and locations of contaminants

at the site, and to develop ways of addressing the contamination problems. The key findings of the RI are as follows:

1) Soils and Structures Investigation

Results from the surface and near surface soil sampling indicated that on- and off-site soils have been contaminated with inorganics, primarily lead. Elevated concentrations were primarily found in the top six inches of soil, and typically did not extend beyond 12 inches. Lead soil concentrations were as high as 405,000 ppm on-site. Elevated concentrations of antimony, arsenic, barium, cadmium, chromium, copper, and zinc were also detected in on-site soils. Low levels of site-related PCBs were also found in on- and off-site surface soils.

Similar lead and other inorganic concentrations were detected in on-site sewers and manholes, as well as in a portion of the city's sanitary sewer system immediately downstream of the site. The main building's interior surfaces and roof showed lead concentrations as high as 160,000 ppm. The primary sources of soil and structures contamination resulted from normal plant operations as well as process sewer leaks and accidental spills.

2) Hydrogeologic Investigation

Phase I groundwater sampling detected low levels of VOCs in on-site monitoring wells and in an off-site residential well. Further investigations during Phase II defined a plume of VOC contamination, approximately 800 feet long by 200 feet wide, which extends off-site in the direction of groundwater flow from the northwest corner of the site's main building. Contamination is confined to the shallow aquifer, and the highest concentration of total VOCs (165 ppb) was found in an off-site monitoring well. These VOCs include: tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethane (1,1-DCA), and 1,2-dichloroethene (1,2-DCE). Elevated concentrations of manganese, antimony, beryllium, and mercury were also detected in on-site monitoring wells downgradient of the building. These results indicate an on-site source associated with the main building, primarily the process sewers.

3) Surface Water and Sediment Investigation

Results of the surface water and sediment samples collected from the nearby ditches, creeks and pond showed that some elevated lead levels were present, particularly in the Northwest Pond/wetland complex. Lead concentrations in the sediments of the pond were as high as 1,146 ppm. Their presence may be site-related, but other potential sources cannot be discounted (the pond is adjacent to an auto salvage yard). The pond area also received additional ecological sampling (including toxicity tests and biological sample analysis) to complete the assessment of ecological risk posed by the presence of potentially site-related contaminants.

The results of this investigation also indicated that the groundwater plume identified had not impacted the Northwest Pond or Kelso Creek. Because of their downgradient locations, both of these surface water bodies have the potential to be impacted by the groundwater contaminants.

VI. SUMMARY OF SITE RISKS

During the RI, the U.S. EPA conducted a risk assessment which analyzed the health and environmental problems that could result if site-related contamination was not remediated. That analysis, called a Baseline Risk Assessment, compared the contamination levels at the site with Federal and State standards. It considered pathways by which people and wildlife could be exposed to site-related contaminants and whether such exposure could increase the incidence of carcinogenic (cancer-related) and noncarcinogenic (non-cancer related) diseases beyond the levels that normally occur in the study area.

During the Phase I investigation, a Human Health Evaluation (HHE) was conducted which focused on the risks associated with soil lead contamination. The evaluation concluded that 530 ppm of lead in soil would be protective of human health. This value was subsequently used as the soil lead cleanup level for the ERA. As a result of the recent ERA performed by Allied on the site soils, sewers, and structures, the risks associated with their contamination no longer exist.

In the Phase II investigation, the HHE focused on risks associated with groundwater usage, and an Ecological Risk Assessment was also completed. The risks related to the groundwater and Northwest Pond/wetland complex contamination are discussed below.

The assessment assumed that people could be exposed to groundwater contaminants through ingestion, inhalation, or dermal contact. Risks were calculated based on the maximum concentrations detected in the groundwater and reasonable maximum exposure assumptions. The contaminants of concern used in the HHE were PCE, TCE, antimony, and beryllium. These compounds are found in the shallow aquifer both on- and off-site.

Under present conditions, estimated excess cancer risks to current off-site residents from inhalation of vapors in indoor air are estimated to be 3×10^{-6} for both adults and children. EPA's acceptable range is 10^{-4} to 10^{-6}. If current off-site residents within the plume were to use private wells, additional cancer risks from exposure to groundwater contaminants are estimated to be 2×10^{-4} for adults and 6×10^{-5} for children. Total excess cancer risks associated with off-site groundwater are 2×10^{-4} for adults and 7×10^{-5} for children. Most of the cancer risk from groundwater usage (88% in adults, 70% in children) is attributable to ingestion of beryllium and PCE in drinking water; however, cancer risks from inhalation of PCE and TCE vapors and dermal exposure to PCE during showering are contributing factors.

For noncarcinogenic risks, the hazard indices calculated for current off-site residential groundwater use downgradient of the site are 9.4 for adults and 10 for children, primarily from ingestion of manganese in drinking water, indicating that adverse health effects could result from this exposure route. The acceptable hazard indices are less than or equal to 1.

For future on-site residents, the estimated excess cancer risk from inhalation of vapors in indoor air is approximately 9×10^{-7}. The total estimated excess cancer risks to future on-site residents from shallow groundwater usage are approximately 2×10^{-4} for adults and 5×10^{-5} for children. Most of the estimated excess cancer risk (97% in adults, 91% in children) is due to ingestion of beryllium and PCE in drinking water.

For noncarcinogenic risks, the total hazard indices calculated for future domestic use of the groundwater on-site are 19 for adults and 22 for children, primarily due to ingestion of manganese in drinking water. The hazard indices for ingestion of manganese are 17 for adults

and 20 for children. The hazard indices for ingestion of antimony in groundwater are 1.3 for adults and 1.5 for children.

In addition to performing an assessment of risks to human health, an assessment of risks to the environment was also performed. The results showed that the contamination in the Northwest Pond and wetland complex does not appear to pose a threat to the environment to the extent that would warrant an aggressive remedial action. However, the evidence is sufficient to suggest that the area should be monitored in the future.

VI. DESCRIPTION OF ALTERNATIVES

An array of alternatives for addressing groundwater contamination, as well as the potential surface water and sediment contamination of the Northwest Pond and Kelso Creek, was developed. The remedial alternatives considered were evaluated based on their ability to be protective of human health and the environment, to attain compliance with Federal and State environmental regulations, to be cost effective, and to use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent possible.

The alternatives analyzed at the Prestolite Battery site are presented below. The FS analyzed four alternatives: No Action; Limited Action; Institutional Actions/Extraction/Treatment/POTW Discharge; and Institutional Actions/Extraction/Treatment/Surface Water Discharge. The four alternatives are presented below:

Alternative 1: No Action

Capital Costs:	None
Annual O & M Costs:	None
Total Present Worth Costs:	None

The statute requires that the "No Action" alternative be evaluated at every site to establish a baseline for comparison. Under this alternative, no efforts would be made to mitigate the effects of groundwater contamination. The plume would continue to migrate in the direction of groundwater flow, through the downgradient portion of the aquifer, eventually discharging

into Kelso Creek. Any use of contaminated groundwater for domestic purposes, based on the site risk assessment, could potentially pose health risks.

Alternative 2: Limited Action

Capital Costs:	$ 30,000
Annual O & M Costs:	$ 30,000
Total Present Worth Costs:	$ 350,000

This alternative limits the potential for human exposure to contaminated groundwater, without actively reducing contaminant concentrations. Under this alternative, natural attenuation would be allowed to reduce the level of contamination within the plume. This alternative would include institutional controls in the form of deed restrictions (prohibiting installation of water supply wells within the plume and within a buffer zone around the plume, and limiting future use of contaminated areas), and performing well abandonment (sealing) for the contaminated unused residential well at 2620 North Second Street. Regarding the currently used, uncontaminated residential well at 2628 North. Second Street, this alternative proposes abandonment (sealing) of such well and the offer of an alternative water supply (municipal supply hook-up) to the owner of the property. Also, any potential future users of groundwater that could be impacted by the migrating contaminant plume will be offered hook-up to the municipal water supply.

Because groundwater contaminant concentrations will not decrease significantly within a short time frame, groundwater monitoring would be performed. Monitoring can be used to track contaminant concentrations in groundwater over time to determine if contaminant concentrations are changing within portions of the aquifer, or if contamination is expanding into as yet unaffected areas. Monitoring would consist of the collection of groundwater samples from existing and newly installed monitoring wells for VOC and metals analysis. Monitoring wells would be sampled semi-annually for the first three years, and then sampled annually for a period of approximately 20 years.

In addition, sediment and surface water samples would be collected from the Northwest Pond and Kelso Creek; and biota samples would be collected from each of these two habitats to

determine if these habitats are being significantly impacted by site-related VOC and metals contaminants. This sampling would be conducted annually for approximately 20 years.

The actual monitoring requirements (e.g., frequency, number of locations/samples) would likely need to be revised over time based on changes in contaminant concentrations, plume migration, or changes in groundwater flow direction.

Alternative 3: Institutional Actions; Extraction of Contaminated Groundwater; Groundwater Treatment Using Air Stripping; and POTW Discharge

Capital Costs:	$ 460,000
Annual O & M Costs:	$ 150,000
Total Present Worth Costs:	$ 1.5 Million

This alternative utilizes groundwater extraction and treatment to hydraulically contain the plume and to provide a more aggressive reduction in contaminant concentrations in groundwater than would be provided by natural attenuation. The groundwater extraction system would be operated to contain the contaminant plume until cleanup goals were attained. This alternative also includes the institutional controls and monitoring discussed in Alternative 2; however, provision of an alternate water supply to the residence at 2628 North Second Street would not be required under this alternative because it is assumed that an extraction system would be designed to hydraulically capture the plume, thereby preventing future contaminant migration toward this residential well. Long-term monitoring of Kelso Creek would not be required because the active capture of the plume would prevent the discharge of contaminants into the creek.

Based on groundwater modeling, it is estimated that a groundwater extraction system consisting of approximately two wells, each pumping at a rate of 10 gallons per minute, would be capable of achieving hydraulic control of the contaminant plume. One well would be located at the leading edge of the plume, and one would be located in the center of the plume, at the point of highest contaminant concentrations (this is for costing purposes only, a more detailed analysis would be required during the design phase to optimize the number of wells, well locations, and pumping rates).

Under this alternative, the extracted groundwater would be treated using an air stripping unit to reduce VOC concentrations. Although metals concentrations would not have to be reduced to attain POTW discharge limits, suspended solids in extracted groundwater and the moderately high levels of iron and manganese present in the groundwater might require that extracted groundwater be pretreated to prevent scaling or clogging in the air stripping unit. Pretreatment prior to air stripping would be accomplished using filtration, sedimentation, pH adjustment, and/or precipitation/coagulation/flocculation processes to remove solids and metals. Pretreated water would then be put through an air stripping unit to remove VOCs. Air stripping would be effective in reducing VOC concentrations to acceptable levels for POTW discharge. Exhaust air from the air stripper would be treated by vapor-phase carbon adsorption prior to emission to the atmosphere. The treated water discharged from the air stripping unit would then be piped into the sanitary sewer line tying into the POTW. The duration of groundwater extraction and treatment required to meet the maximum contaminant levels (MCLs) established is estimated to be 10 years.

Alternative 4: Institutional Actions; Extraction of Contaminated Groundwater; Groundwater Treatment Using Air Stripping; and Discharge to Surface Water

Capital Costs:	$ 469,000
Annual O & M Costs:	$ 171,000
Total Present Worth Costs:	$1.6 Million

This alternative is identical to Alternative 3; however, the treated effluent would be discharged to surface water (via the North Extension Ditch) instead of to the POTW. Surface water discharge would have to comply with an NPDES permit. In addition, the number of habitats requiring ecological monitoring would increase to include the North Drainage Ditch and Snapp Creek.

VIII. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

A. The Nine Evaluation Criteria

In selecting its preferred remedial alternative, U.S. EPA uses the following criteria to evaluate each of the cleanup alternatives developed in the FS. The nine evaluation criteria are summarized below:

1. Overall Protection of Human Health and the Environment addresses whether a remedy provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced or controlled through treatment, engineering controls or institutional controls.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) addresses how the proposed alternative complies with pertinent Federal and State environmental laws and/or justifies a waiver.

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.

4. Reduction of Toxicity, Mobility or Volume Through Treatment evaluates an alternative's use of treatment to reduce the harmful nature of contaminants, the contaminants' ability to move in the environment, and the amount of contamination present.

5. Short-term Effectiveness addresses the ability of alternatives to manage risks during construction and implementation phases, and reduce immediate risks posed by the hazardous materials present.

6. Implementability is the technical administrative feasibility of a remedy, including the availability of goods and services needed to implement a particular option.

7. Cost includes estimated capital and operation and maintenance costs.

8. Support Agency Acceptance indicates whether, based on its review of the FS and Proposed Plan, the support agency concurs, opposes, or has no comments on the preferred alternative.

9. Community Acceptance summarizes the public's general response to the alternatives described in this Proposed Plan and in the FS. Community acceptance will be assessed at the end of the public comment period.

B. Comparative Analysis

Based on the nine evaluation criteria, a comparison of the alternatives is performed to determine the relative advantages and disadvantages of each alternative for remediation of the Prestolite Battery site.

1. **Overall Protection of Human Health and the Environment**

Alternative 1 would provide no protection to human health or the environment. Alternatives 2, 3, and 4 would protect human health by eliminating exposure pathways through which human receptors could come in contact with contaminated groundwater (via well abandonment, alternate water supply, restrictions on new well installations). Alternatives 3 and 4 provide added protection by actively reducing contaminant concentrations in the aquifer, through groundwater extraction and treatment. This active remediation would reduce contaminant concentrations to below health-based cleanup goals within a shorter time frame than would natural attenuation.

Alternatives 3 and 4 would also hydraulically contain the contaminant plume, and therefore would prevent the plume from discharging into Kelso Creek. This discharge, however, is not expected to significantly impact Kelso Creek (i.e., discharge of contaminants from the plume would not cause Water Quality Criteria in the creek to be exceeded). Under Alternatives 2, 3, and 4, Kelso Creek and the Northwest Pond would be monitored to ensure that these habitats are not being significantly impacted by site contamination.

2. Compliance with Applicable and Relevant and Appropriate Requirements (ARARs)

Alternative 1 would not involve conducting any remedial action at the site, and, therefore no ARARs analysis is necessary for Alternative 1. Alternatives 2, 3 and 4 would meet Maximum Contaminant Levels (MCLs), which are relevant and appropriate for the groundwater, however, Alternatives 3 and 4 would achieve them in less time than Alternative 2. Alternatives 2,3, and 4 would comply with the action specific ARARs, such as well installation and abandonment requirements and requirements for the construction and operation of a groundwater extraction, treatment, and discharge system.

3. Long-term Effectiveness and Permanence

Alternatives 1 and 2 do not actively remediate site groundwater contamination. However, natural attenuation would eventually reduce contaminant concentrations below health-based level in approximately 20 years. Alternatives 3 and 4, by removing contaminants from the aquifer, would achieve permanance in about 10 years because the source of contamination has been removed. Alternatives 2,3 and 4 should maintain reliable protection once cleanup goals have been met.

4. Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 2 would not actively reduce contaminant toxicity, mobility, or volume through treatment. As contaminants naturally attenuate over time, concentrations would be reduced below toxic levels.

The groundwater extraction/treatment components of Alternatives 3 and 4 would reduce the toxicity of contaminants in the aquifer by reducing contaminant concentrations, would reduce the mobility of contaminated groundwater through hydraulic gradient control, and would reduce the volume of contaminants remaining in the aquifer.

5. **Short-term Effectiveness**

Alternative 1 would provide no protection from existing contamination. Alternatives 2, 3, and 4 would all provide measures of protection during the period until ground water cleanup goals are achieved. Alternative 2 provides for abandonment of existing wells, water supply hook-ups and institutional controls on installation of new wells, but would not provide an immediate reduction in contaminant concentrations. Alternatives 3 and 4 provide for institutional controls during the time of active groundwater remediation.

6. **Implementability**

There are no technical limitations to implementing Alternatives 1 and 2. While technically implementable, Alternatives 3 and 4 would be more complex, primarily because they would require the installation, operation, and maintenance of groundwater extraction, treatment, and discharge systems.

7. **Cost**

The costs of the individual alternatives are detailed below:

	Capital Cost	Annual O & M	Present Worth
Alt 1	None	None	None
Alt 2	$ 30,000	$ 30,000	$350,000
Alt 3	$ 460,000	$ 150,000	$1.5 million
Alt 4	$ 469,000	$ 171,000	$1.6 million

8. **Support Agency Acceptance**

The Indiana Department of Environmental Management concurs with the preferred alternative. (See attached Responsiveness Summary).

9. **Community Acceptance**

Community acceptance is assessed in the attached Responsiveness Summary. The Responsiveness Summary provides a thorough review of the public comments received on the RI/FS and the Proposed Plan, and the U.S. EPA's responses to the comments received.

IX. SELECTED REMEDY

The U.S. EPA has selected Alternative 2, Limited Action, as the appropriate remedy for the Prestolite Battery Site. The main components of the selected alternative are:

- Natural attenuation of groundwater contaminants.
- Implementation of institutional controls (e.g. deed restrictions, provision of an alternate water supply, well abandonment).
- Long-term monitoring of the shallow and intermediate groundwater aquifers for VOCs and metals.
- Long-term monitoring of Northwest Pond and Kelso Creek surface waters and sediments for VOCs and metals.

This alternative allows for natural attenuation to reduce the level of contamination within the plume. Institutional controls will prohibit the use of any existing wells for domestic purposes, as well as prohibit the drilling of any future wells into the contaminated groundwater. Monitoring of the shallow groundwater aquifer will be performed to track contaminant migration, evaluate the effectiveness of the natural attenuation process, and identify the occurrence of degradation compounds within the plume. Monitoring of the intermediate groundwater aquifer will be performed to ascertain whether or not contaminants have migrated to the lower aquifer. Monitoring of the Northwest Pond and Kelso Creek surface waters and sediments will be performed to identify changing ecological conditions in these areas, should they occur as a result of no active remediation.

The U.S. EPA recommends a limited remedial action be taken at the site for the following reasons:

(1) Contaminants of concern are present in relatively low concentrations that only marginally exceed the 10^{-4} risk-based threshold for human health exposure. Current observed concentrations do not pose a significant threat to environmental receptors.

(2) A relatively small volume (less than 0.5 gallons) of VOCs is present in the shallow aquifer, and groundwater extraction would not be efficient in removing these contaminants (i.e., a large volume of water would have to be extracted to remove a very small volume of contaminants). Further contribution of site VOCs to the groundwater is negligible. The probable on-site source of these contaminants (process sewers) has been removed.

(3) Over time, contaminants will migrate through the shallow aquifer a relatively short distance before they begin to discharge to Kelso Creek. Based on a comparison of regulatory standards to observed contaminant concentrations, this discharge should not negatively impact the water quality of the creek. Discharge of the plume, coupled with the process of natural attenuation, will reduce contaminant concentrations to levels at which they would pose no significant threats to human health or the environment within an estimated 20-year time frame.

(4) Institutional controls would minimize the only significant human health threats through the abandonment of impacted or potentially impacted private wells, restrictions on future well installation, and the offer of an alternate water supply to 2628 North Second Street. The private well at this residence is downgradient of the site; however, it is not within the contaminant plume. The well has the potential to be impacted should the groundwater flow change direction. Currently, no private wells within the contaminant plume are being used for domestic purposes. Finally, any potential future users of groundwater that could be impacted by the migrating contaminant plume, will be offered hook-up to the municipal water supply.

(5) Monitoring would be effective in tracking the migration of contaminants in the groundwater, assessing any potentially significant impacts to ecological receptors, and providing information regarding contaminant concentration changes or changes in flow directions. Although monitoring would not actively protect ecological receptors from future

expose to site contaminants, monitoring would provide a warning if contaminant concentrations increased and receptors were subsequently threatened.

The selection of a limited remedial action for the site would not preclude the implementation of future remedial actions, if such actions become necessary. If monitoring indicates that site contamination threatens human health or the environmental receptors, additional remedial actions could be implemented.

The Evaluation Table (table 1) shows that the best alternatives would be Alternative 2, 3 or 4. All three Alternatives would fully meet the nine evaluation criteria with the exception of the reduction of toxicity, mobility or volume through treatment, which would not be met by Alternative 2. However, Alternative 2 would provide reduction in the toxicity of contaminants through natural attenuation. Although this reduction in toxity would take longer under Alternative 2 than under Alternatives 3 or 4, there is no one currently impacted by the contaminant plume and future use of the contaminated aquifer is unlikely. Because the on-site source(s) of contamination have been removed, the low levels of contaminants detected in ground water are expected to decrease over time. Also, because of the relatively small volume of contaminants in the aquifer, a large volume of water would have to be extracted to remove a very small volume of contaminants under Alternatives 3 and 4, rendering these alternatives less cost effective for achievement of similar levels of protectiveness. The implementation of institutional actions would ensure that contaminated ground water would not be utilized in the future, and any changes in the characteristics of the plume would be quickly identified and evaluated by a comprehensive monitoring program. Therefore, Alternative 2, Limited Action, provides the best balance of trade-offs with respect to the nine criteria, without compromising criteria one or two.

IX. STATUTORY DETERMINATIONS

U.S. 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 must comply with ARARs under Federal and State environmental laws, unless a statutory waiver is justified. The selected remedy must also be cost effective and utilize permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for

remedies that employ treatment that permanently and significantly reduces the toxicity, mobility or volume of hazardous substances, pollutants and contaminants. The following sections discuss how the selected remedy meets the statutory requirements and preferences, where applicable.

A) Protection of Human Health and the Environment

The selected remedy is protective of human health as there will be no opportunity for contact with contaminated ground water. This condition will be achieved, through the selected remedy, by the implementation of institutional controls until such time when the contamination will be effectively remediated via natural attenuation. The selected remedy is projected to reduce overall site risks to within the acceptable risk range for carcinogens (i.e. less than 10^{-6} excess concern risk), and below the site-specific cleanup levels for non-carcinogens (i.e. a hazard index of less than one). The selected remedy poses no unacceptable short-term risks or cross-media impacts. In addition, the monitoring network proposed in the selected remedy will be designed to track the movement of the contaminant plume and detect adverse impacts to the aquifer, should they occur. This will allow for ongoing evaluation of groundwater quality and if necessary, reassessment of the need for active treatment. The selected remedy is protective of the environment because long term monitoring of surface water and sediments will assure that Federal and State surface water quality standards are not being exceeded and that accumulation of harmful compounds in the sediments is not occurring.

B) Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Applicable requirements are those cleanup standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental or facility siting law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State Environmental siting law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is relevant and appropriate to this particular site. ARARs are divided into chemical specific, action specific, and location specific groups.

Alternative 2 meets all applicable and relevant and appropriate requirement of Federal and State environmental laws. The pertinent ARARs for this remedial action are the MCLs established under the Federal Safe Drinking Water Act; surface water quality standards under Indiana State Water Quality Standards and Federal Ambient Water Quality Criteria for Protection of Aquatic Life (AWQCs). The Land Disposal Restrictions of RCRA do not apply to this remedial action because no RCRA hazardous wastes are being generated as a result of this remedy.

C) Cost-Effectiveness

The U.S. EPA believes that the selected remedy is cost-effective in mitigating the risks posed by the site contaminants within a reasonable period of time. Section 300.430(f)(ii)(D) of the NCP requires U.S. EPA to evaluate cost-effectiveness by comparing all the alternatives which meet the threshold criterion; protection of human health and the environment, against three additional balancing criteria: long-term effectiveness and permanence; reduction of toxicity mobility or volume; and short term effectiveness. The selected remedy provides the best overall balance of these criteria and provides for overall effectiveness in proportion to the cost. As discussed previously, overtime, contaminants will migrate through the shallow aquifer a relatively short distance before they begin to discharge to Kelso Creek. Based on a comparison of regulatory standards to observed contaminant concentrations, this discharge should not negatively impact the water quality of the creek. Discharge of the plume, coupled with the process of natural attenuation, will reduce contaminant concentrations to levels at which they would pose no significant threats to human health or the environment within an estimated 20-year time frame. It is estimated that Alternative 3 would provide the same reduction in contaminants within a period of 10 years. The selected remedy will be just as effective in its long term results as Alternative 3, yet Alternative 3 costs over four times as much to implement as the selected remedy.

A volume of less that .5 gallons of VOCs is present in the shallow aquifer, and groundwater extraction would be extremely inefficient in removing these contaminants (i.e. a large volume of water would have to be extracted to remove this very small volume of contaminants). Although groundwater extraction would result in MCLs being met more quickly, and consequently would reduce toxicity, mobility, and volume more quickly than the selected remedy, the far greater cost of extraction does not justify selection of Alternative 3 as a remedy, since that remedy does not provide more overall protectiveness than the selected remedy.

The Estimated cost of the selected remedy is:

Capital Costs: $30,000
Annual O&M Costs: $30,000
Net Present Value Cost: $350,000

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

U.S. EPA and the State of Indiana believe the selected remedy represents the maximum extent to which permanent solutions can be utilized in a cost-effective manner for the final remedy at the Prestolite Battery site. Of the alternatives that are protective of human health and the environment and comply with ARARs, U.S. EPA and the State have determined that the selected remedy provides the best balance in terms of long-term effectiveness and permanence, reduction of toxicity, mobility or volume, short-term effectiveness, implementability and cost while also considering the statutory preference for treatments as a principal element and considering State and community acceptance.

Based on the results of the RI/FS, a pump and treat ground water extraction system is not warranted at this time. Ground water in the shallow aquifer is not used for drinking water and discharges into the adjacent surface water. Contaminants found in the surface water are below enforceable levels. If future analytical results indicate the presence of contaminants above existing levels, this particular remedy may be replaced by a treatment system.

Additionally, if contaminant levels in the surface water increase to a level above state water quality standards or U.S. EPA AWQCs, then this remedy may require a treatment system.

The selected alternative is therefore considered to be the most appropriate solution to ground water contamination at the site because it provides the best balance with respect to the nine criteria and represents the maximum extent to which permanent solutions and treatment are practicable.

E) Preference for Treatment

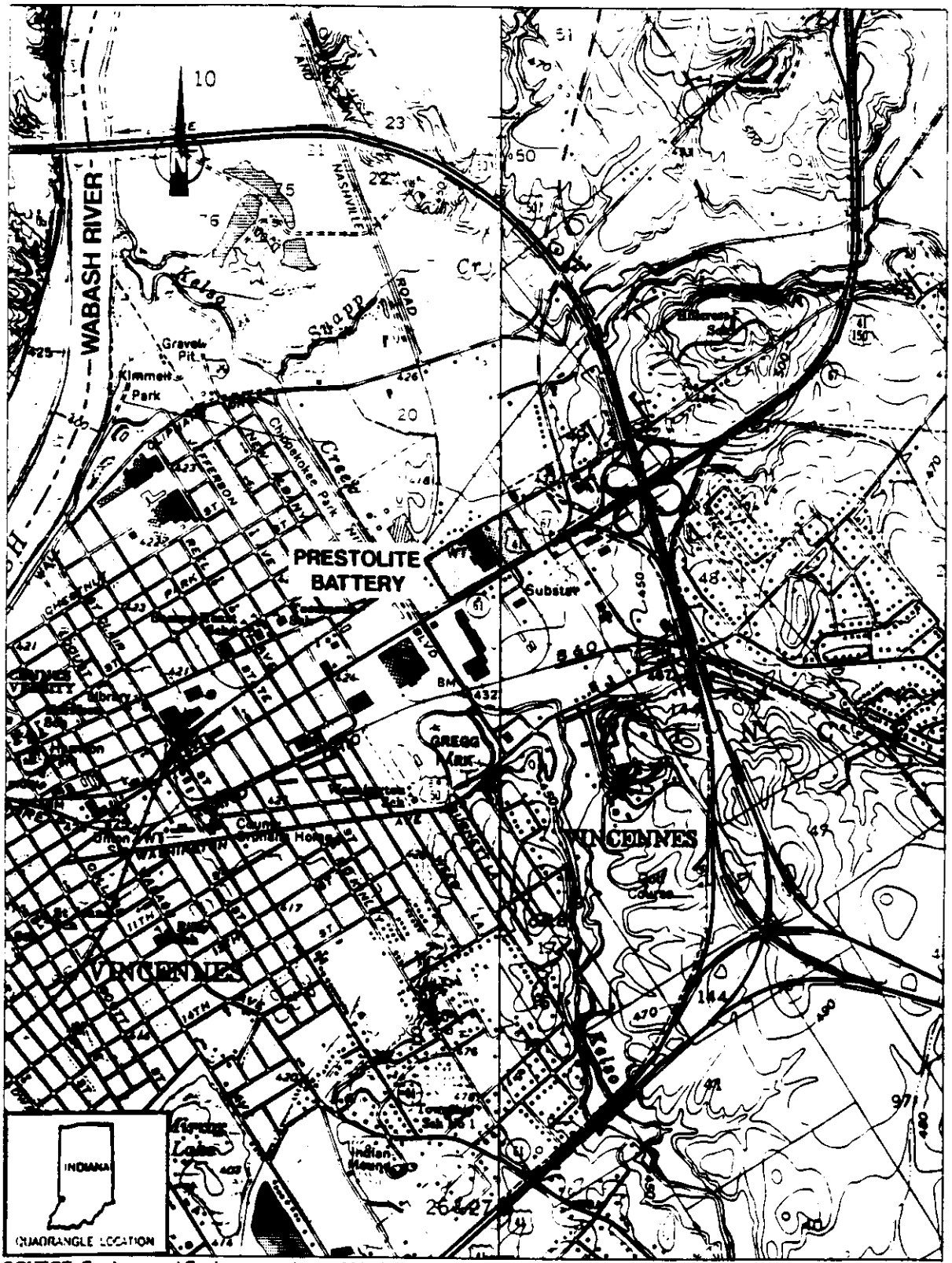
Based on the results of the RI/FS, treatment of ground water to permanently and significantly reduce toxicity, mobility, or volume of contaminants was not found to be necessary to protect human health and the environment, or to be practicable at the site at this time. However, if future analytical results indicate the degradation of surface and ground water to levels which are not protective of human health or the environment, then this remedy may have to be modified to include a treatment system.

X. EXPLANATION OF SIGNIFICANT CHANGES

There are no significant changes from the recommended alternative described in the Proposed Plan.

APPENDIX I

FIGURES AND TABLES

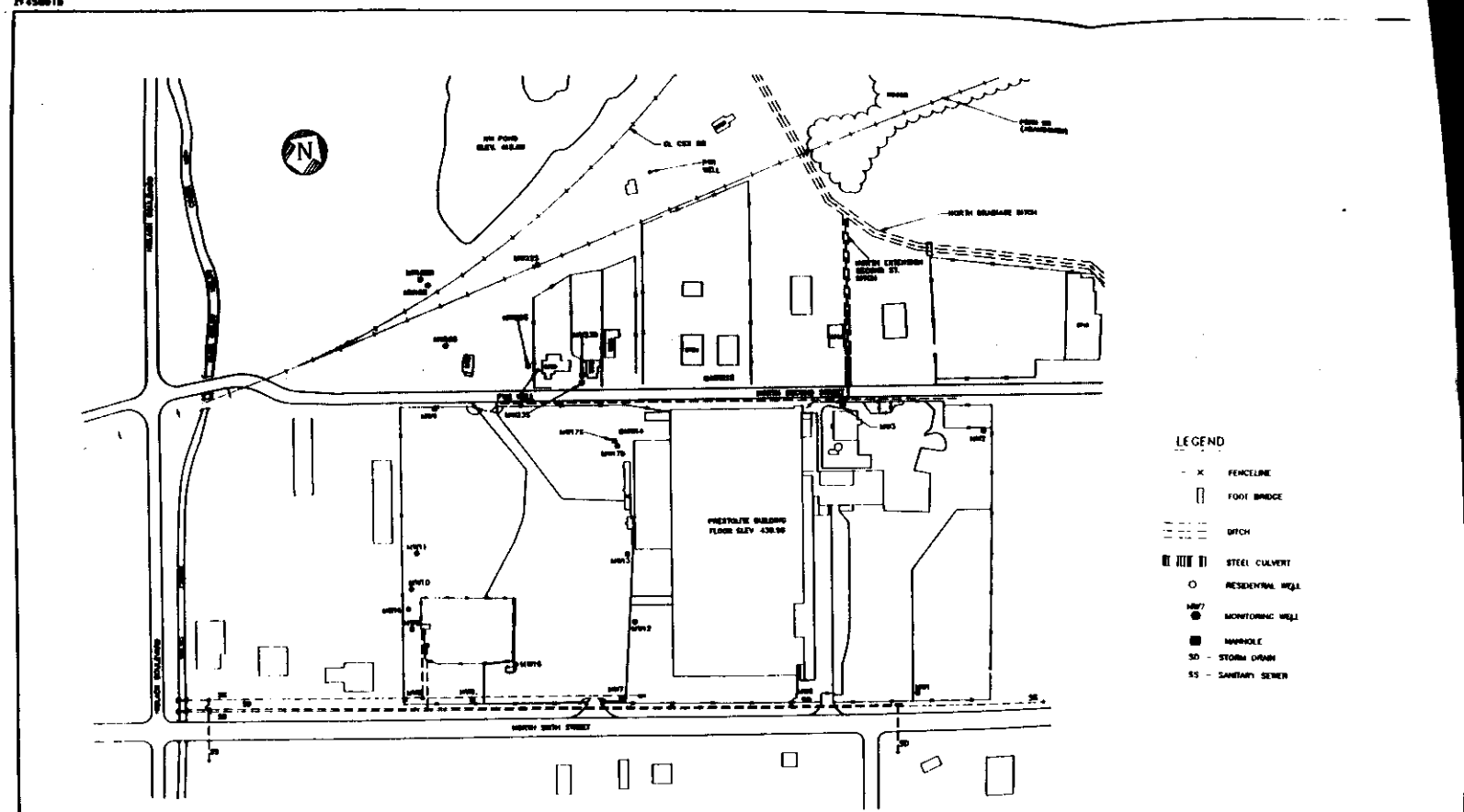


SOURCE: Ecology and Environment, Inc., 1992: BASE MAPS: USGS, Fritchton, IN Quadrangle, 7.5 Minute Series, 1974; Vincennes, IN Quadrangle, 7.5 Minute Series, 1965, Photorevised 1980.

SCALE

0 ½ 1 MILE

FIGURE 1 SITE LOCATION MAP



SCALE: 1" = 20'

ecology and environment

TABLE 1-ALTERNATIVE EVALUATION SUMMARY

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4
1. Overall protection of Health and Environment	NO	Full	Full	Full
2. Compliance with ARARs	N/A	Full	Full	Full
3. Long-Term Effectiveness and Permanence	NO	Full	Full	Full
4. Reduction of Toxicity, Mobility, or Volume through Treatment	NO	NO	Full	Full
5. Short-Term Effectiveness	N/A	Partial	Partial	Partial
6. Implementability	N/A	Full	Full	Full
7. Cost	$0	$350K	$1.5M	$1.6M
8. Support Agency Acceptance	IDEM Supports Alternative 2			
9. Community Acceptance	To be Evaluated after Public Comment Period			

Full: Fully meets criteria. **Partial:** Partially meets criteria. **N/A:** Not applicable. **NO:** Does not meet criteria

APPENDIX II

RESPONSIVENESS SUMMARY

PRESTOLITE BATTERY SUPERFUND SITE
VINCENNES, KNOX COUNTY, INDIANA

RESPONSIVENESS SUMMARY

This Responsiveness Summary has been prepared to meet the requirements of Section 113(k)(2)(B)(iv) and 117 (b) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) which requires a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations on the proposed plan for a remedial action.

OVERVIEW

Based on the findings of the remedial investigation and feasibility study, and prior to the public comment period, the U.S. EPA and Indiana Department of Environmental Management (IDEM) had selected a preferred alternative for the Prestolite Battery Site located in Vincennes, Knox County, Indiana.

The Proposed Plan addressed the final remedy for the Prestolite Battery site. Under an Administrative Order by Consent (AOC), an Expedited Response Action (ERA) conducted by the PRP has eliminated the principle threat, the soils and sewer lines contaminated with lead and VOCs, from the site. The feasibility study presented alternatives to addresses residual contamination in the ground water and the potential for contamination of surface water and sediments. The preferred alternative, "Limited Action", would provide for the long-term monitoring of the shallow and intermediate aquifers at the site as well as the monitoring of surface water and sediments. The preferred remedy also incorporates institutional controls on the placement of drinking water wells, the abandonment (closing) of nearby residential wells, and natural attenuation of shallow contaminated ground water.

This Responsiveness Summary addresses concerns expressed by the public during the 30-day public comment period on the Proposed Plan, which was held from June 15, 1994 to July 15, 1994.

Five written comments were received from the public during the public comment period. In addition, four oral comments were received during the Proposed Plan public meeting held on June 15, 1994. In general, the community was supportive of the preferred alternative, now the chosen remedy, as described above. Based on review of the public comments, no modifications to the preferred remedy were necessary.

BACKGROUND ON COMMUNITY INVOLVEMENT

The level of public interest regarding this site has been moderate to high throughout the Superfund project. The U.S. EPA and IDEM have held six public meetings concerning the site and released two "Fact Sheets" to the public. The site is located in a commercial and residential area at the gate-way to the city of Vincennes, on property with significant development potential. Since manufacturing operations ceased at the site in 1985, the plant and property have deteriorated to "eye-sore" status. The primary focus of residents' and city

officials' concerns have been the visual improvement of the property (i.e., demolition of the manufacturing plant), and facilitation of the sale of the property to a local developer. A few people had concerns about residential property values and potential health effects from soil and groundwater contamination. Since the initiation of the ERA and issuance of the Proposed Plan for public comment, the general public has been supportive of U.S. EPAs efforts and supportive of the selected final remedy.

SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES

The public comment period on the Feasibility Study and the Proposed Plan for the Prestolite Battery site was held from June 15, 1994 to July 15, 1994. Comments received during this time are summarized below. Copies of all written comments submitted to the U.S. EPA are included in the Administrative Record for the site which is located in the Knox County Library. The Administrative Record also contains a copy of the public meeting transcript.

Written Comments

Comment: Two separate residents whose homes' are located down-gradient of the Prestolite Battery site, each wrote comments expressing their concern over the identified ground water contamination beneath their property and the potential imposition of deed restrictions as a component of the proposed alternative. The focus of their concern was the potential devaluation of their property resulting from the ground water contamination and deed restriction.

Response: The results of the Remedial Investigation and Risk Assessment indicate that the current maximum concentrations of contaminants in ground water only marginally exceed the acceptable risk range associated with the domestic use of contaminated ground water. This means that if some time in the future ground water concentrations were to increase and residential wells were installed in the shallow aquifer, residents using that water could potentially be at risk. However, this scenario is not likely for several reasons: 1.) the shallow ground water is not currently being used as a drinking water source and most likely would not be used as a drinking water source in the future, based on the current availability and accessibility of a municipal water supply; 2) it is unlikely that ground water concentrations will increase in the future because the source(s) of contamination have been removed and the highest concentrations within the plume have been delineated. In fact, ground water concentrations are expected to decrease over time as a result of natural attenuation within the aquifer.

The U.S. EPA believes, however, that a prudent and conservative approach should be taken to protect human health and the environment, and therefore proposes that some type of institutional control be implemented to prevent the installation of shallow residential wells and the subsequent use of contaminated ground water. Deed restrictions on properties within and near-by the contaminant plume are only one option for accomplishing this goal. At this site, the U.S. EPA prefers to work toward the establishment of city or county ordinances to regulate the installation of wells near the site, and by this mechanism, prevent the use of contaminated ground water.

Comment: A local resident wrote a letter to the U.S. EPA stating that Prestolite used to dump their reject batteries in a local landfill located north of the Remedial Investigation study

area. The resident expressed a desire for someone to investigate the environmental impact of this landfill.

Response: The U.S. EPA appreciates your concern and will pass this information on to IDEM for further evaluation.

Comment: A letter from the PRP, Allied-Signal, Inc. generally supports the recommended Limited Action alternative proposed by U.S. EPA in the ROD with the following exceptions: 1) the recommended preliminary groundwater remediation goals for Antimony (6 ug/L) and Beryllium (1 ug/L). Antimony was undetected in all wells sampled with the exception of a duplicate sample for MW-17S which is shown as "B" qualified. Based on a review of the other results, this duplicate sample should be considered an anomaly and disregarded. Beryllium is not related to battery manufacturing. All of the samples where beryllium is detected were qualified results and all results were below the MCL. Additionally, a groundwater remediation goal of 1.0 ug/L is not appropriate when a background of 0.95 ug/L exists. 2) Developing a Sampling Plan for the NW Wetlands Complex. This complex is completely ringed by scrap vehicles in various stages of decomposition; probably many vehicles still containing batteries. Sampling has identifies elevated concentrations of zinc, vanadium, copper and chromium, in addition to lead; none of which are site-related. The concern with continued monitoring is one of liability. Since the source of lead on the plant site has been remediated in our Phase I remedial action and the off-site will be completed in Phase II, it is difficult to envision how any continued deterioration in the wetlands complex, if it should occur, would be attributable to the Prestolite site.

Response: 1) Antimony and beryllium were correctly identified as contaminants of potential concern during the Risk Assessment because they were detected in higher concentrations in wells down-gradient of the site when compared to concentrations in wells up-gradient of the site. Furthermore, U.S. EPA guidance on the use of qualified data in quantitative risk assessments (EPA/540/1-89/002) states that data with qualifiers ("B" in this case) indicates uncertainties in concentrations but not in identification. Therefore, these data can be used just as positive data with no qualifiers or codes. As potential contaminants of concern, these analytes were carried through into the Feasibility Study and preliminary ground water remediation goals were established to provide a baseline against which the effectiveness of potential remedial technologies could be evaluated. Because no active remediation will be conducted at the site under the Limited Action alternative, the preliminary remediation goals become moot. Because the Limited Action remedy will result in hazardous substances remaining above health-based levels, a review will be conducted by U.S. EPA within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. If analytical results generated as a result of monitoring indicate the presence of contaminants above existing levels before the five year review, this particular remedy may be replaced by a treatment system and remediation goals will be reviewed.

2) The development of a Sampling Plan for the NW Wetlands Complex is not a component of the Limited Action alternative. Sampling surface water and sediment in the NW Pond, however, is part of the selected remedy. The objective for this sampling is to monitor the potential for contaminated ground water discharge into the NW Pond. Both VOCs and metals were detected in the plume at concentrations above background. Similar to the response given above, the duration of monitoring and the analytical parameter requirements are subject to revision based on results of the monitoring, after the remedial action is initiated.

Oral Comments

Comment: A local environmental geologist stated that he supports the selected alternative and complimented the U.S. EPA on the thoroughness of the RI/FS and the expeditious manner in which it was carried out.

Response: The U.S. EPA appreciates your endorsement and support of the U.S. EPA's preferred plan for remedial action at the Prestolite Battery site.

Comment: A local official wanted to know if implementation of the selected alternative would impede the sale of the Prestolite property to a local developer.

Response: As far as the U.S. EPA is concerned, there is no reason why the ground water issue addressed by the selected alternative should impact anything going on with the property. Allied-Signal Inc. owns the property and they have completed the action to remove contaminated soils above levels that were detrimental to human health and the environment. Allied will furnish U.S. EPA with a completion report. U.S. EPA will approve the report and certify to the fact that Allied has accomplished what they were required to do. After U.S. EPA's approval of the Completion Report, the sale of the Prestolite property is an issue to be dealt with by Allied, the developer, and the developers lender.

Comment: The Mayor of Vincennes reiterated the previous comment regarding the selected alternative and it's impact on the potential sale of the Prestolite property.

Response: The U.S. EPA's position on the matter is that once the Completion Report is approved, the sale of the property is an issue for the seller, buyer, and lender to work out.

Comment: The Mayor of Vincennes stated: "I'd like to thank all of the people who were involved in this and also Allied-Signal. Since the process began you have been responsive to our requests for information and you have always been very courteous even when we ask you every time when the building is coming down, but it's been a pleasure having you here."

Response: The U.S. EPA appreciates your comment and wishes to thank the City of Vincennes and it's citizens for the support and cooperation displayed during the project.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Kathy Prosser
Commissioner

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Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

Mr. Valdas Adamkus
Regional Administrator
US. Environmental Protection Agency
77 West Jackson Blvd.
Chicago, IL 60604

Dear Mr. Adamkus:

Re: Record of Decision
Prestolite Battery Superfund Site
Vincennes, Indiana

The Indiana Department of Environmental Management has reviewed the U.S. Environmental Protection Agency's Record of Decision for the Prestolite Battery Superfund Site. IDEM fully concurs with the major components of the selected remedy for this site, which includes:

- Long term groundwater monitoring of the shallow and intermediate aquifers for volatile organic compounds and metals.

- Long term monitoring of surface water and sediments for volatile organic compounds and metals at the NW pond and Kelso Creek.

- Groundwater, surface water and sediments sampled semi-annually for the first three years, after which consideration will be given to reducing sample frequency to annually.

- Institutional controls. Abandonment of one unused well and one active residential well. Connection of the residence to the city water supply.

- Natural attenuation of shallow groundwater contamination.

We also agree that this action attains Federal and State requirements that are applicable, or relevant and appropriate to this remedy. Because this remedy will result in hazardous substances remaining in the groundwater above health-based levels, a review will be conducted within five years after commencement of the remedial action to ensure the remedy continues to provide adequate protection of human health and the environment.

IDEM staff have been working closely with Region V staff in the selection of an appropriate remedy for the Prestolite Battery site and are satisfied that the selected alternative adequately addresses the risks to human health and the environment posed by the groundwater.

Please be assured that IDEM is committed to accomplish cleanup of all Indiana sites on the NPL and intends to fulfill all obligations required by law to achieve that goal.

Sincerely,

Kathy Prosser
Commissioner

cc: Pat Carrasquero, IDEM
Bob Lance, US EPA Region V

APPENDIX III

ADMINISTRATIVE RECORD INDEX

COPY

ADMINISTRATIVE RECORD INDEX

PRESTOLITE BATTERY DIVISION
VINCENNES, INDIANA

FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TY
2 A01	2	86/10/16	Phone record of conversation with Wallace Turner of the IDEM concerning the current site status, Prestolite's actions to date and the proximity of local water supoplies	Dion Novack - USEPA		Communicati Record
2 A03	2	80/06/27	Request for approval to dispose of hazardous waste.	R.M.Loar - Prestolite	In.St.Bd. of Health	Corresponder
2/A06	2	81/06/02	Notification of Hazardous Waste Site	Edmund Geibel-Eltra Corp.	USEPA	Corresponder
2/A07	1	81/10/27	Results of clean-up program by Prestolite to control lead-contaminated stormwater run-off.	Richard Smith - Prestolite	R.Strong-In.Bd. of Health	Corresponder
2/A08	2	84/09/07	Letter confirming joint Prestolite-ISBH dicussions on waste pollution control program.	M.Gaudiello-Prestolite	Larry Kane - ISBH	Corresponder
2/A10	22	85/11/15	Prestolite's contention that it is inappropiate to list the site on the NPL.	William Blank - Allied Corp.	R.Wyer - USEPA	Corresponder
2/C04	16	87/06/[illegible]	[illegible]st for Information .	Basil Constantelos-USEPA	Cliss Keslar-Prestolite	Corresponder
2/D06	10	87/[illegible]	[illegible]l response to the [illegible]st for Information and a request for a thirty-day extension to complete their response.	Michael Gaudiello-Allied Signal	Bruce Pumphrey-USEPA	Corresponder
2/E03	1	87/08/06	Confirmation of a thirty day extension of time for Prestolite to respond to the USEPA's Request for Information.	Kenneth Stroup - Allied Signal	Tim Conway - USEPA	Corresponder
2/E04	1389	87/08/20	Response to June 1987	John Cromer - Atty. for Allied Corp	Bruce	Corresponder

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FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYP
			Request for Information with nineteen attachments.		Pumphrey-USEPA	
21/A03	2	87/08/31	Letter pointing out a discrepancy in the RCRA closure status as it was detailed in a letter by John Cromer.	Terry Gray - USEPA	J.Cromer-Mishkin, et al.	Correspondenc
21/A05	2	87/09/25	Notification of a proposed Superfund project.	Basil Constantelos-USEPA	S.Kennell-In.St.Bud get Ag	Correspondenc
21/A07	4	87/12/29	Special Notice of Potential Liability	Mary Gade - USEPA	W.Blank-Allied-Sign al	Corres[illegible]
21/A11	13	88/01/11	Response by the Atty. for Prestolite to the USEPA Special Notice Letter that "Triggers" negotiations with respect to the RI/FS(with attachments).	John Cromer-Cromer,Eaglesfield,etal	Mary Gade-USEPA	Correspondenc
21/B10	1	00/00/00	Memo setting out the basis for the USEPA's determination that the Prestolite site should be listed on the National Priority List.	Steve Hoare - USEPA	File	Memorandum
21/B11	3	00/00/00	To review and update the status of the Prestolite [illegible]ry Site in Vincennes, [illegible]a and to determine [illegible]re course of action.	William Miner - USEPA	Bob Lance - USEPA	Memorandum
21/B14	2	8A/[illegible]	[illegible]ition Memorandum on the [illegible] of contamination	Kathy McCormick-Ecol. & Envir.		Memorandum
21/C02	5	87/10/29	EO 12372 review recommendation and comment(s) for the RI/FS at the Prestolite site.	Kristin Kothe - St. of Indiana	Bob Lance - USEPA	Memorandum
21/C08	2	00/00/00	Work Assignment Statement of Work -Project Planning And Project Management For RI/FS Negotiation Support	USEPA		Reports/Studi

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21/C10	5	83/03/08	Preliminary Assessment	Scott McCone-Ecol. & Envir.	USEPA	Reports/Stud
21/D01	20	84/03/08	Portion of a report on lead contamination photocopied at the Presstolite site by the FIT team.	Weston Sper		Reports/Stud
21/E10	14	84/03/13	Site Inspection Report	Renee Hix - Ecology & Environment	USEPA	Reports/Stud
21/F10	5	84/08/21	Analytical results for soil samples tested for lead.	Kenneth Frato-ERM-Midwest	Ed Jankoski-Prestolite	Reports/Stud
21/G06	3	85/04/11	Handwritten report on the history of six spills since 1970 that have been reported and recorded.	Mary Jane Ripp - USEPA		Reports/Stud
21/G08	28	85/04/15	Hazardous Ranking System Scoring Package and Documentation Records	Mary Jane Ripp - USEPA		Reports/Stud
22/B08	173	86/03/11	Modifications to Prestolite Battery Closure Plan.			Reports/Stud
23/G09	13	86/04/30	Facility Management Plan	Renner & Snedeker-ISBH	Prestolite	Reports/Stud
24/A10	15	87/08/[illegible]	[illegible]al Site Visit Field [illegible]	Jacobs Engineering Group	USEPA	Reports/Stud
24/B10	47	87/[illegible]	[illegible] of Fact for the [illegible]dial Investigation at Prestolite Battery Division Vincennes, Indiana (marked Enforcement Confidential)	Metcalf&Eddy - Jacobs Eng.	USEPA	Reports/Stud

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U.S. EPA ADMINISTRATIVE RECORD
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1	05/00/94	Ecology and Environment, Inc.	U.S. EPA	Feasibility Study Report	185