



STATEMENT OF QUALIFICATIONS

ENVIRONMENTAL REMEDATION EXPERIENCE



HARD HAT SERVICES™
Engineering, Construction and Management Solutions

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INTRODUCTION

Hard Hat Services (HHS) is a design-build firm specializing in engineering and installation of sustainable solutions for Remediation clients as well as other Industrial clientele. Our expertise lies in all facets of environmental remediation, water applications, and construction management. Whether we are called upon to respond to a spill emergency, clean up historical Industrial contamination, or treat process waste streams, Hard Hat Services delivers results with our extensive experience and innovation. Our environmental engineering and construction staff work together to ensure your projects run smoothly from beginning to end. Whether it's initial planning, sampling and site design, or installation and construction, Hard Hat Services makes sure that your projects are completed on-time and within budget and deliver the results you expect.

Every project Hard Hat Services undertakes has environmental impacts and we constantly seek out ways to increase sustainability for every client.



Designing and Building Sustainable **Clean, Green** Solutions
For Industry



Dist Tech and Great West Casualty - Kirby, Pennsylvania

In December, 2004, a tanker truck ran off I-79 in Kirby, Pa. and released 2,000 gallons of pure toluene. The incident caused soil and groundwater contamination and impacted a nearby trout stream. Limited access in this rural area made the project even more demanding.

First, the area's steep slope had to be stabilized. HHS developed a unique shoring wall construction technique for the project. This involved a thorough geotechnical investigation and the design of a mechanical stabilization system. A top-down shoring system with an anchored concrete shoring wall and soil anchors was installed. Excavation of the contaminated soil also required removal of the existing impacted fill soils above the water table in conjunction with the shoring system. Because of the particular hazardous waste category that pure toluene falls into, soil could not be hauled away. Instead, approximately 3,000 cubic yards of soil were treated on site with a thermal desorption remedy.

To address the groundwater contamination, a pump and treat system with an air stripper was used. Backfilling and site restoration were then completed. Treated soil and structural fill were used to cover the shoring wall. The entire area was then seeded and mulched. The client was released from any further obligation to the site.

Lincoln Wood Products, Contaminated Sediment Dredging and Bank Restoration – Wausaw, Wisconsin

In July of 2008 Hard Hat Services (HHS) acted as the General Contractor for a contaminated sediment removal project on the Wisconsin River. The project scope included removal of PAH contaminated sediment from the river, source removal activities on the river bank, sediment dewatering, water treatment, and river bottom and bank restoration. HHS's scope included:

- Installation, maintenance, and removal of all turbidity and sediment migration control features.
- Construction and removal/restoration of a 50-ft. x 120-ft. sediment dewatering basin.
- Setup and operation of a water treatment facility, with final discharge back to the river. During completion of the work approximately 600,000 gals. of water was treated and discharged.
- Subaqueous sediment removal of approximately 3,500 tons of contaminated river sediment.
- Removal of approximately 800 tons of source material (from the river bank and adjacent shoreline).
- Dewatering (as necessary) of the removed sediments.
- Subaqueous sand capping in the removal areas – 6-inch sand layer of approximately 1,000 tons.



- Final river bank stabilization and restoration including installation of an activated carbon reactive core mat – approximately 320-lf.

This project was completed for the contracted amount, and was completed approximately 4 weeks ahead of schedule.

St. Louis River / Interlake / Duluth Tar Site – Duluth, Minnesota

HHS was retained to provide project management services for this Response Action (RA), which has a budget of about \$60 million. The site is on the St. Louis River, approximately four river miles upstream of Lake Superior. The site includes approximately 255 acres of land and river embayments, wetlands, and shipping slips. The aquatic portion of the site is approximately 90 acres. Approximately 800 people live within one mile of the site. Onsite sediments are contaminated with Polycyclic Aromatic Hydrocarbons (PAHs), remnants of historical pig iron, coking plants, coal refiners, and tar manufacturers. The ROD requires a combination of dredging and *in situ* capping along with the construction of an underwater contained disposal facility. HHS is serving as the representative on site during the RA. HHS is also responsible for overall project construction management services, which includes constructability reviews, pre-qualification and bid-phase services for RA Contractors, and on-site construction administration and management during the Response Actions. As project Construction Manager, HHS prepares overall project cost budgets, schedules, and scope documents to ensure proper coordination with Regulatory Agencies and project Team members. During RA activities, HHS is responsible for the daily oversight of the RA Contractors, and reports on the daily progress of the work. HHS also participates in construction management services as necessary during the Response Actions. HHS reports directly to the Project Director, and coordinates efforts with the other project Team members.

As Project Managers, our objective is to control and mitigate our client's project-related risks to preserve their rights for cost recovery.

Waukegan Harbor Superfund Site - Waukegan, Illinois

HHS personnel provided preliminary engineering and cost estimating services, supported negotiations with regulatory agencies, prepared the final design, and managed construction of a \$21 million dollar remedy for the removal, treatment, and containment of sediments containing polychlorinated biphenyls (PCBs). Management and support of the project was continuous for 13 years through completion of the construction.

The tasks completed by Hard Hat Services personnel included:

- Preparation of preliminary designs for containment structures and dredging plans
- Preparation of cost estimates to support the preliminary designs
- Support the owner in negotiations with the United States Environmental Protection Agency and the Illinois Environmental Protection Agency
- Prepared cost estimates and pricing for completion of final design and construction of the negotiated remedy



- Managed implementation of the remedy that included the following components:
- Construction of a new marina slip to replace an existing slip used by a pleasure boating facility
- Construction of a double sheet pile cut-off wall across the slip
- Installed a soil-bentonite filled slurry wall around the closed slip
- Installed two soil-bentonite filled slurry walls on property north of the harbor
- Moved 5,000 cubic yards of sediment with more than 500 ppm PCBs to the north property from the closed slip
- Removed PCBs from 13,000 cubic yards of sediment with more than 500ppm PCBs using thermal desorption technology
- Dredged 35,000 cubic yards of sediment from the harbor into the closed slip
- Constructed RCRA caps on each of the three soil-bentonite enclosed containments
- Installed monitoring wells and a ground water extraction and treatment system at each containment

The HHS personnel were responsible for preparing or managing the preparation of all work plans, designs and documents required for the approval of the project. The final design and construction phase of the project occurred between 1988 and 1994.

PCB Treatment Inc. - Kansas City, Missouri & Kansas

Hard Hat Services was the overall Project Technical Manager and Quality Assurance firm for a \$35MM Removal Action. Specifically, HHS managed the removal and dismantlement of two (2) PCB impacted buildings located in Kansas City, Missouri and Kansas City, Kansas.

The PTI sites were referred to Superfund during early 1995. The EPA and the Steering Committee put together and released an Engineering Evaluation/Cost Analysis (EE/CA) for the sites. USEPA and the Steering Committee entered into an Administrative Order on Consent (AOC). The Steering Committee is a group of Potentially Responsible Parties (PRP) that were once customers of PCB Treatment Inc. Under the AOC, the PRPs conducted a site investigation and used this information to develop the EE/CA. In addition, and after the EE/CA the PRPs completed a Removal Site Evaluation (RSE), which included sampling and analysis of interior building walls and floors as well as exterior soil.

The HHS project role was to provide overall project management and on-site construction management for multiple subcontractors, schedule and budget control, and liaison with the USPEA and other regulatory agencies. In addition, HHS was responsible for on-site sampling of the contaminated concrete and surrounding soils, to delineate which debris should be sent to a TSCA facility, and which could go to a municipal solid waste landfill.

The buildings were demolished using a controlled measure to isolate the contaminated areas and minimize dust hazards.

Both buildings have been successfully dismantled. The building debris and materials were disposed of properly following all local, state, and federal regulations. As Project



Managers, our objective is controlling and mitigating the Group's project-related risks. The main risks associated with the PCB Treatment Inc. Removal Action projects were:

- Costs
- Long-Term Liability
- Health and Safety
- Compliance

Westinghouse Former Fuel Cycle Facility – St. Louis, Missouri

HHS provided environmental project management services to Westinghouse Electric Company LLC (Westinghouse) at its former fuel cycle manufacturing facility in Hematite, Missouri.

The Hematite facility had been in operation for nearly 50 years prior to its acquisition by Westinghouse in 2000. Westinghouse ceased production at the facility in June 2001 and began decommissioning activities at the site. At the request of the Missouri Department of Natural Resources (MDNR), the Missouri Department of Health and Senior Services (DHSS) took samples from several private wells in the vicinity of the site. The results indicated that volatile organic compounds (VOCs) were present in a drinking water well on the property. Subsequent sampling identified seven additional wells where VOCs were present. In response to the identified contamination, Westinghouse authorized preparation of an Engineering Evaluation/Cost Analysis (EE/CA) in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). HHS oversaw preparation of that document, including public participation requirements. HHS also oversaw preparation of the design for extension of the local public water supply, bidding and completion of the project.

Lordship Gun Club - Stratford, Connecticut

The Lordship Gun Club operated on Lordship Point from 1926 through 1986 as a rod and gun club. The facility was used by the Remington Arms Company and was open to the public on weekends. Operations included shooting skeet and trap over the open waters of Long Island Sound. During operation of the Gun Club, it was estimated that lead shot was discharged up to 300 feet offshore in the ocean. The remedial plan negotiated with the State of Connecticut required removal of the lead shot found in the inter-tidal zone and upland areas of the site where feeding waterfowl could ingest the shot.

HHS worked with American Marine Constructors to prepare work plans and design a system for dredging the sediment containing the lead shot. The sediment was processed to remove the lead shot and then the sediment was restored to the beach. The design included the preparation of a mass removal criterion for assuring the success of the project in meeting the restoration goal of 99.8% removal. The system was installed and tested in the spring of 2000, with processing of the sediment occurring in fall 2000 and spring 2001. The equipment treated approximately 65,000 cubic yards of sediment and produced approximately 300 tons of lead shot. The treated sediment exceeded the lead shot removal goal by a factor of two.



Specific responsibilities of the project included:

- Prepared detailed project operations planning documents, including a Comprehensive Project Work Plan, a Process Plant Design and Operation Plan, a Construction Operations Plan, a Process Plant Verification Plan, and a Quality Control Plan.
- Developed programs to protect the environment during site operations and prepared an Erosion and Sedimentation Control Plan, a Fuel Storage and Spill Containment Plan, a Waste Management Plan, a Noise Control Plan.
- Developed programs to protect site workers and the public during dredging and treatment operations and prepared a comprehensive Site-Specific Health and Safety Plan.
- Prepared the conceptual and detailed engineering design for the dredging.
- Managed the detailed design and fabrication of an innovative treatment system to remove lead shot from the dredged sediment.
- Provided support to the owner in obtaining state and federal environmental permits required for dredging.
- Provided oversight for the dredging of sediment, the processing to remove lead shot by gravity separation, and the backfilling of clean sediment.

Confidential Client, Ag Chem Facility Environmental Remediation - Peru, Illinois

HHS performed an investigation of an anhydrous ammonia release at this Ag Chem facility, and conducted the environmental cleanup. The project included geotechnical and chemical soil sampling, excavation of over 1,000 cubic yards of contaminated soil, backfilling and construction of a reinforced concrete drive and parking surface, and the installation and operation of a soil vapor extraction system to remove ammonia from the soil and groundwater. The project was successful in receiving a review and approval from the Illinois EPA and the issuance of a No Further Remediation Letter by the IEPA.

Burlington Industries Sludge Lagoon Closure - Clarksville, Virginia

HHS prepared a review and analysis of options and a constructability review for closure of the sludge lagoons at the Clarksville, VA site. The property has been historically used for the disposal of sludge from the operation of a wastewater treatment facility at the Burlington Performance Wear Division plant. The lagoons were stabilized by mixing the sludge with fly ash, solidifying the ponds. Afterwards, the lagoons were regraded to eliminate low spots and minimize the potential for future drainage and ponding problems.

The Boldt Company, Fox River Sediment Removal Project - Wisconsin

The Fox River between Lake Oshkosh and Green Bay Wisconsin contains several paper mills. The mills recycled carbonless copy paper in the 1950's and 1960's. Recycling of the paper resulted in the release of some Polychlorinated Biphenyl (PCB) into the river. As part of the continuing efforts between the State of Wisconsin and the Paper Mills, a demonstration of sediment removal by hydraulic dredging was undertaken in 1999 to measure the environmental impact versus benefit of sediment removal.



HHS was part of a team for the remedial design and remedial action bid package preparation for the Demonstration Project. The demonstration, performed by others, removed approximately 20,000 cubic yards of PCB-containing sediment from the Lower Fox River in Green Bay, Wisconsin. HHS's responsibilities included developing and implementing a sediment sampling and bench-scale testing program to obtain data for the remedial design, designing a sediment removal, dewatering, and disposal demonstration program, and preparing contractor bid packages.

Contaminated Sediment Removal from Grand Calumet River, US Steel – Gary, Indiana

The Grand Calumet River flows through a heavy industrial area in Northwest Indiana, and high concentrations of a large number of contaminants, including PCBs, metals, and volatile and semi-volatile organics have been detected in the river sediment. HHS personnel have completed a number of the sediment investigation, technology assessment, and sediment removal study activities required for the 5-mile stretch of contaminated river, including:

- Performed sediment sampling, bench-scale sediment settling and dewatering tests
- Provided sediment removal services
- Designed and constructed a unique test chamber to evaluate dredging air emissions
- Evaluated foundation conditions, earthwork requirements, and structural needs for river access ramps.

Heavy Metal-Contaminated Sediment Removal, Cannelton Industries – Sault Ste. Marie, Michigan

Heavy metals and aesthetically undesirable materials from a former tannery operation were found in the near shore sediments on Whitefish Bay just upstream of the Sault Ste. Marie ship locks. The initial planning by others was focused on sediment removal with landfilling on the former tannery site immediately adjacent to the town elementary school.

HHS personnel lead a successful effort to change the decision by the regulatory agencies from removal by dredging and placement in a confined disposal facility to an in-situ stabilization and capping remedy. The remedy included the partial removal of sediment, the placement of a clean capping layer, and stabilization of the area from the erosive forces of the St. Mary's river and ice flows.

Niagara River Sediment Removal, Glen Springs Holdings – Tonawanda, New York

The owners asked a contractor to remove the upper sediments in the Niagara River and place the sediments in the adjacent 102nd Street Landfill. The sediments were in a cove area with shallow water. However, the sediment below the shallow sediment was very soft and similar to the sediment requiring removal.



HHS personnel designed a soil cofferdam to separate the shallow water cove from the main channel of the Niagara River. The cofferdam was designed to allow for settlement of the underlying soft sediment without risking overtopping of the cofferdam. The area inside the cofferdam was dewatered and the sediment was excavated using conventional construction equipment. The earth cofferdam design was more cost effective than steel sheet piling. Because of HHS' expertise in soil mechanics, the owners saved considerable expense on the project.

Metal Plating Sludge Removal, PRP Group – Kalamazoo, Michigan

A former City of Kalamazoo power plant was converted to a metal plating waste treatment facility in about 1960. Cyanide metal plating wastes were pumped into the basement of the building and were neutralized by the addition of lime. The effluent was discharged to the Kalamazoo River through two subsurface intake and outlet tunnels that were originally the water intake and outlets for the power plant. The site's buildings, tanks, and the underground tunnels were contaminated with metal plating sludges.

HHS personnel designed and built a cofferdam to dewater the cooling water intake from the Kalamazoo River. After installing the cofferdam, sediments were removed from 200 feet of the intake pipe by vacuum suction. HHS also designed and installed reinforcing in the partially collapsed power plant to allow other contractors to safely enter and remove the above-ground contents of the building and tanks.

PCB-Impacted Sediment Removal from the Housatonic River, Confidential Client – Pittsfield, Massachusetts

Polychlorinated Biphenyl (PCB) were used from the 1920's to 1970's in the manufacturer of transformers in Pittsfield, Massachusetts. Some of the PCBs ended up in sediments of a 26-acre lake adjacent to the manufacturing facility and the Housatonic River flowing south from Pittsfield. The river includes extensive backwaters and wetland areas and old mill pond dams which acted as sediment traps on the river. The State of Massachusetts required the manufacturer to perform a RCRA facility investigation and corrective action assessment for the manufacturing site, adjacent lake, and downstream river.

HHS provided services for the preliminary assessment of corrective action measures for sediments in the 26-acre lake and the Housatonic River. The preliminary assessment included evaluation of sediment removal technologies, evaluation of in-situ sediment restoration technologies, siting issues for confined disposal facilities, evaluation of sediment treatment technologies, and the preliminary design of sediment capping.

Asbestos Containment, WR Grace – Walpole, Massachusetts

Portions of this 21-acre site were used from 1915 to the mid-1930's for the manufacture of woven asbestos products. Some materials from the operation were deposited on the site and on the banks of the Neponset River in Walpole, Massachusetts.

HHS personnel supported the negotiation of a remedy to enclose a section of the Neponset River in a large diameter oval culvert to prevent the further erosion of the river bank soil containing asbestos. HHS personnel designed a pumping system to temporarily bypass the river



during sediment removal and installation of the culvert. The remainder of the site was capped and wetland areas along the bank were restored to their pre-industrial condition.

PCB Sludge Study and Creek Diversion, Hansen Holdings – Kalamazoo, Michigan

The mill pond on Portage Creek in Kalamazoo, Michigan was filled with paper mill sludge in the 1950's and 1960's. The sludge contained PCBs from the recycling of carbonless copy paper at the adjacent Paper Mill. The site owner was proceeding towards a stream diversion with closure of the sediments in place under the authority of the Michigan Department of Natural Resources.

HHS personnel completed on-site field trials on the load support characteristics of the sediment for use in designing a cap. HHS personnel also provided an assessment of options for the diversion of the creek around the pond to allow for capping and closure of the sediments in-place. The creek diversion was complicated by the requirement to have the creek reenter its original channel at the mill pond dam.

PCB and Heavy Metal Remediation, GE – Fort Edward, New York

In 1973, the Fort Edward Dam on the Hudson River was removed by the dam's owner. The dam was installed in the 1820's to divert water into the Lake Champaign Canal. During the life of the dam, slab wood, sawdust, and sediment accumulated behind the dam. In the 1900's PCBs and heavy metals from upstream industries and sewer discharges accumulated in the sediment and sawdust behind the dam. On removal of the dam a part of the sediments were transported downstream and a large part of the sediment remained behind as remnant bank deposits. The site consisted of four separate remnant sediment deposits totaling approximately 50 acres.

HHS personnel supported the negotiations with the regulatory agencies to develop a remedial solution for the remnant deposits. The work included sampling and testing of the sediments to determine the storm flow suspension potential without remedial action. The testing also included the determination of the upper elevation limit for remedial action. Alternatives from no action to complete removal were examined and the risk of each assessed. The final remedy approved by the USEPA was capping with an armor protective layer to reduce the possibility of future suspension of the sediments during storm flow. HHS personnel were also involved in the management of the construction to install the cap and armor.

