



Bio-system Cleanup Tinker Air Force Base, Oklahoma

Key Project Elements

- Military
- Remediation
- Site Assessment
- Waste Disposal

Client

Tinker Air Force Base (TAFB)

Duration

Completed 2017

Description

Enviro Clean (EC) was retained by TAFB to provide remediation duties related to a bio-system cleanup project. Upon arrival at the military base, EC personnel assessed the needs of the project and began formulating a plan. The environmental remediation plans would include the removal of pollution or contaminants from any environmental medias present; which could have included soil, groundwater, sediment, or surface water.

A prompt start to the project was important in lessening the impact potential on the environment. The EC team is seasoned in performing these types of responses and are well educated in remaining in compliance with any regulatory requirements associated with remedial work. EC addressed and performed all necessary steps associated with the bio-system cleanup project in both a timely and efficient manner.

For more information, please contact:

info@eccgrp.com

HUDSON REFINERY SITE

Client: Land O' Lakes

Location: Cushing, OK

Year Completed: Remedial Design - 2010

Remedial Action- 2014 (RA Report Submitted)

Operations & Maintenance-Ongoing

Contact: Byron Starns, Land O' Lakes Project Coordinator

(612) 335-1516

The Hudson Refinery Superfund Site was a former petroleum refinery that operated from 1922, or earlier, until 1982 and is located on approximately 200 acres within the City of Cushing in Payne County, Oklahoma. The refinery was last operated by the Hudson Refining Company who went bankrupt in 1987.

In 1995, an EPA Site Inspection Prioritization Report found soil contamination and 28,000 pounds of chemicals stored on the Site. In 1997, the EPA found ACM and various contaminated media that contained constituents recognized as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

On August 4, 1998, the EPA conducted a Site Investigation and determined that an imminent and substantial endangerment to public health and the environment existed at the Site and subsequently undertook an emergency removal action at the Site. This removal action entailed hazardous waste removal, the dismantlement of the process equipment, and the removal of many of the supporting structures.

On July 22, 1999, the EPA placed the Site on the National Priorities List. From 2001 to 2002, the EPA also undertook a non-time critical removal of contaminated media and performed other removal and demolition activities at the Site.

From 2004 through 2007, the Oklahoma Department of Environmental Quality (ODEQ), as lead agency, and the EPA, as support agency, conducted a **Remedial Investigation/Feasibility Study** (RI/FS) of the Site. The RI/FS evaluated potential human health and environmental risks from the various media remaining on the Site.

On November 23, 2007, the EPA issued the **Record of Decision, Hudson Refinery Superfund Site**, which outlined a remedy for the Site. EPA identified LOL, a Minnesota cooperative corporation, as a former owner of the Site based on a merger between LOL and Midland Cooperatives, Inc. (Midland). Midland owned and operated the Site from 1943 through 1977.

On January 6, 2009, the EPA issued a **Unilateral Administrative Order** (UAO) directing that LOL perform a RD for the remedy described in the ROD and that LOL implement the design by performing a RA. In January 2009, LOL selected the team of Envirocon and Benham (Subsequently SAIC) to perform the RD and RA components of the UAO. Key employees assigned to the project included Eldon Penn, Construction Manager, Envirocon, Jack Lawmaster and George (Buddy) Richardson, co-Project Managers, William (Bill) Torneten, Design and Certifying Engineer, David Brady, Site Superintendent, Matt Mugavero, Geologist, Paul Richardson, Environmental Specialist, and others, SAIC. These named individuals, as well as other project personnel are now in the employee of Enviro Clean.

Enviro Clean's current professional staff prepared RD and RA Work Plans, conducted a Supplemental Field Investigation, provided oversight during the RA, conducted post-excavation confirmation sampling, and prepared the RA Report, including certification. The remedy included the removal of ACM, dewatering of 10 surface impoundments, surface and subsurface pipe removal, excavation and off-site disposal of more than 70,000 cubic yards of refinery wastes and contaminated soils and sediment, backfill, and re-vegetation of the Site. Mr. Penn was the site Construction Manager, directing RA construction activities. Total project cost for the RD and RA was approximately \$12,500,000.

Groundwater impacts remaining at the site include free-phase hydrocarbons and dissolved-phase hydrocarbon constituents. **Enviro Clean continues to perform operations and maintenance activities at the site, including conducting groundwater monitoring.** Other O&M activities performed by Enviro Clean include, overseeing vegetation maintenance and conducting site security inspections.



OKMULGEE REFINERY

Client: ConocoPhillips (Then Phillips Petroleum Company)

Location: Okmulgee, OK

Year Completed: Construction- 2008

Brownfield Certificate – 2011

Contact: David Hathaway

ConocoPhillips

(918)661-6983



Enviro Clean was retained to provide comprehensive environmental services at this closed petroleum refinery that was once used for refining crude oil and providing bulk storage of refined products. Key employees assigned to the project included, Jack Lawmaster and George (Buddy) Richardson, co-Project Managers, William (Bill) Torneten, Design and Certifying Engineer, David Brady, Site Superintendent, Matt Mugavero, Geologist, Paul Richardson, Environmental Specialist, and others. Envirocon, Inc. was selected to provide construction services required to implement the selected remedy. Eldon Penn was Envirocon's site construction manager. ***These named individuals, as well as other project personnel, are now employees of Enviro Clean.***

At the time the refinery ceased operations, a number of waste management surface impoundments as well as approximately 300,000 cubic yards of contaminated soils, sediments and wastes remained on the site, including sediments deposited in the creek that traversed the site. The primary objectives of this project were, initially, to conduct a site investigation to understand the environmental conditions that were present at the site, and ultimately, to remediate the site in a manner to allow the current owner, the Okmulgee Area Development Corporation, to redevelop the property for industrial and commercial use, to the extent practicable.

Responsibilities:

Completion of site characterization.

Negotiations with ODEQ to develop site specific remediation goal levels for soil and groundwater.

Negotiations with ODEQ to approve an on-site remedy thus saving the client the cost of long range transportation and disposal costs and controlling future liability.

Completion of a remedial design

Development of bid specifications for contractor selection to implement the remedy as designed.

Selection of a sub-contractor and implementation of the remedy, which included a 26-acre on-site repository in which approximately 300,000 cubic yards of contaminated materials were consolidated.

Provide oversight during construction of the approved remedy.

Development of a community relations plans and coordination with primary stakeholders throughout the project.

Completion of a brownfield application to the ODEQ. Brownfield certification subsequently issued.

Coordination with the current landowner and ConocoPhillips to attract businesses to reuse property.



Military Base Remediation Tinker Air Force Base, Oklahoma

Key Project Elements

- Military
- Remediation
- Site Assessment
- Waste Disposal
- EnviroClean®

Client

Tinker Air Force Base (TAFB)

Duration

Completed 2018

Description

Enviro Clean (EC) was hired to provide remediation duties related to deteriorating pipe and contaminated soil on Tinker Air Force Base (TAFB). EC began the project by collecting soil samples for profiling. Once the samples were collected, the team began the excavation of the deteriorating pipes. It was during this step that EC discovered liquid within the pipes.

At this time, both the contractor and EC shut down the job for further investigation. Results of the investigation found that this project would now include the disposal of asbestos and a Jet A Fuel/water mixture.

EC formulated a plan and once again mobilized at TAFB. Work resumed on cutting the pipes for removal, along with sucking out all liquids present.

The EC team used a HAZMAT tanker to load, transport, and dispose of approximately 14,000 gallons of the Jet A fuel/water mixture (hazardous material) at the appropriate waste facility. In addition, EC excavated, transported, and disposed of contaminated soil at a local landfill. EC subcontracted the asbestos abatement which included the removal, transportation, and disposal of 3 loads of asbestos. Upon completion of these steps, the client was provided all appropriate paperwork (per state and federal regulations) pertaining to the proper disposal of the above.

Once EC had dug out all pipes and emptied them of all liquid/solid materials, they rinsed the inside walls of these pipes with a mixture of 800 gallons of water and 5 gallons of EnviroClean®.

The pipe was then cut into 30 ft sections, wrapped and loaded on a truck for hauling to a nearby facility for a metal check.

The EC team is seasoned in performing these types of responses and are well educated in remaining in compliance with any regulatory requirements associated with remedial work. EC addressed and performed all necessary steps associated with this project in both a timely and efficient manner.

For more information, please contact:
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NORM Survey & Disposal

Ponca City, Oklahoma

Key Project Elements

- NORM Survey
- NORM Disposal

Client

Undisclosed

Duration

Completed 2017

Description

The Waste Service team conducted a NORM (Naturally Occurring Radioactive Material) survey near Ponca City, OK. Upon arrival the team assessed the situation and conducted a NORM survey of the materials in question. Once complete, the team developed a plan of action to properly handle the material. The waste services team were contracted to oversee the final disposal of the NORM materials.

To learn more about our waste services and Enviro Clean, please contact: info@eccgrp.com





Saltwater Pit Closure Osage County, Oklahoma

Key Project Elements

- Sampling
- Waste removal
- Soil remediation

Client

Confidential

Duration

2014

Description

Enviro Clean provided services for the closure of a saltwater pit in Osage County. The pit had long been used by the client and its predecessors to store saltwater until they were directed by the Bureau of Land Management and/or the United States Environmental Protection Agency to close it. The pit was an unlined or partially clay-lined earthen structure with sloped earthen beams. At the time of the assessment, fluids inside the pit were largely covered with a thick black foam-like film that appeared to be emulsified crude oil.

Enviro Clean's pit assessment included the drilling/sampling of 3 hand-augered borings, collection and testing of water and sediment samples, and a topographic survey.

A small floating platform was employed to access the fluid-filled portions of the pit. The team used a 4-gas detector equipped with combustible gas, oxygen, hydrogen sulfate, and carbon monoxide detectors and used a GPS to identify the borings' positions. Samples from 3 borings, a water sample from the center location, and sediment were all collected and sent to a laboratory.

Enviro Clean then removed free liquids from the pit, removed tanks and ancillary equipment from the area, solidified the contents of the pit using fly ash to support the final cover, constructed a final cover, and graded the final soil cover and exterior slopes to direct runoff and reduce the potential for erosion. Once completed, two soil samples were prepared and sent to a lab to determine what soil amendments were recommended for the vegetation of the soil cover, exterior slopes, and adjacent areas. Enviro Clean established a Bermuda grass cover which will prevent erosion in the near term until native vegetation establishes itself and continues to prevent erosion.

For more information, please contact:

info@eccgrp.com



State 2 Abatement Plans Lea County, New Mexico

Key Project Elements

- Soil Sampling & Remediation
- Waste Removal

Client

Confidential

Duration

2014

Description

Enviro Clean provided remediation services on two sites that formerly contained oil and gas production tank batteries. Enviro Clean submitted and received approval on State 2 Abatement Plans for the sites by the New Mexico Oil Conservation Division. These plans called for excavation and removal of near-surface soils containing concentrations of chloride and/or total petroleum hydrocarbons (TPH) exceeding 1,000 mg/kg, installation of clay liners, installation of additional groundwater monitoring wells, and the monitoring of the groundwater at the sites until the concentrations of chloride and benzene were below the New Mexico Quality Control Commission standards.

Prior to conducting soil removal operations, a Geonics EM-38 was utilized to assess the ground conductivities. Enviro Clean then

excavated and removed the impacted soil and caliche utilizing a hydraulic track-mounted rock hammer and excavator. The impacted soil and caliche materials, totaling approximately 13,670 cubic yards (18,780 tons), were then loaded onto dump trucks to be taken to disposal facilities.

Enviro Clean then collected samples for testing and confirmed that the chloride and TPH impacted materials had been removed. The areas were then restored, which consisted of the placement, compaction, and contouring of soil backfill material and the installation of clay liners. The NMOCD approved Enviro Clean's proposal to install geosynthetic clay liners in lieu of compacted clay liners. The geosynthetic clay liners exceeded the permeability requirements and resulted in substantial cost savings for the client. Upon completion, the sites were revegetated with native grasses.

To remedy the impacted groundwaters, quarterly groundwater monitoring was conducted by Enviro Clean until the concentrations of chloride and benzene were below the NMQCC standards.

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