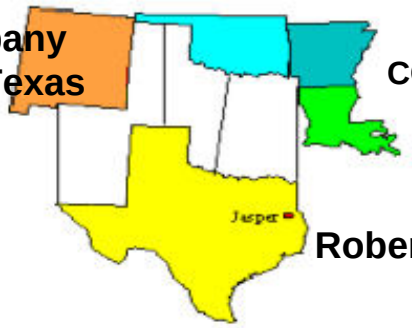
Jasper Creosoting Company
Jasper, Jasper County, Texas

EPA ID# TXD008096240
Site ID: 0601735



EPA REGION 6
CONGRESSIONAL DISTRICT 8

Contact:
Robert Sullivan 214-665-2223

Updated: May 2009

Current Status

- The Site is in the Remedial Action phase of the Superfund process. The EPA signed the Preliminary Close-Out Report on September 12, 2008, documenting the construction completion at the site. The EPA and State of Texas completed the Final Inspection at the site on August 12, 2008. The EPA initiated site construction on January 30, 2008.
- The EPA started the remedial action at the site on September 20, 2007.
- The EPA approved the final remedial design for the site on September 20, 2007.
- The EPA conducted a removal action in 1996 to remove existing tanks, structures and equipment, remove liquid waste for off-site disposal, drain the on-site impoundments, stabilize the remaining sludge, and consolidate the sludge and contaminated soil into an on-site waste cell. The EPA conducted a removal action in 1999 to address surface erosion on the on-site waste cell.
- The EPA conducted a Remedial Investigation/Feasibility Study (RI/FS) and baseline risk assessment for the site, completed in 2006. The primary focus of the RI/FS was to determine the extent of contamination in soil, sediment and ground water and to propose actions for mitigation.
- A time-critical removal action was conducted between July 7, 2005 and March 1, 2006 to address the immediate threats to human health and the environment that were identified during the RI/FS. The removal action implemented components of the Selected Remedy for contaminated soil and sediment, as described in the ROD. This removal action is consistent with all actions considered in the ROD.
- In August 2006, EPA completed a Proposed Plan and held a public meeting to discuss the preferred remedial alternative for the site. A Record of Decision was signed on September 20, 2006.
- To date, EPA has spent approximately $4.8 million for removal action and design work at this site. EPA's actions taken to date have considerably lessened the potential for human health or environmental exposure.

Benefits

The clean-up of the contamination present at the Jasper Creosoting Company Superfund site will ensure the protection of human health and the environment.

National Priorities Listing (NPL) History

NPL Proposal Date: March 6, 1998
NPL Final Date: July 28, 1998

Site Description

Location:

The Jasper Creosoting site is located at 601 N. McQueen Street in the City of Jasper, Jasper County, Texas. The geographic coordinates of the center of the site are approximately 93 degrees 58 minutes and 56 seconds west longitude and 30 degrees 56 minutes and 06 seconds north latitude.

Population:

The approximate population of the City of Jasper is 8,247 people. Approximately 1,100 people live within a one-mile radius of the site.

Setting:

Jasper Creosoting is a former wood treatment facility, which utilized coal-tar creosote and pentachlorophenol (PCP). The site occupies approximately 11 acres of a 21.22 acre tract and is bounded on the east by the Burlington Northern & Santa Fe (BNSF) Railway, on the west by N. McQueen Street, on the south by State Highway 776, and on the north by the inactive Louisiana Pacific Lumber Yard.

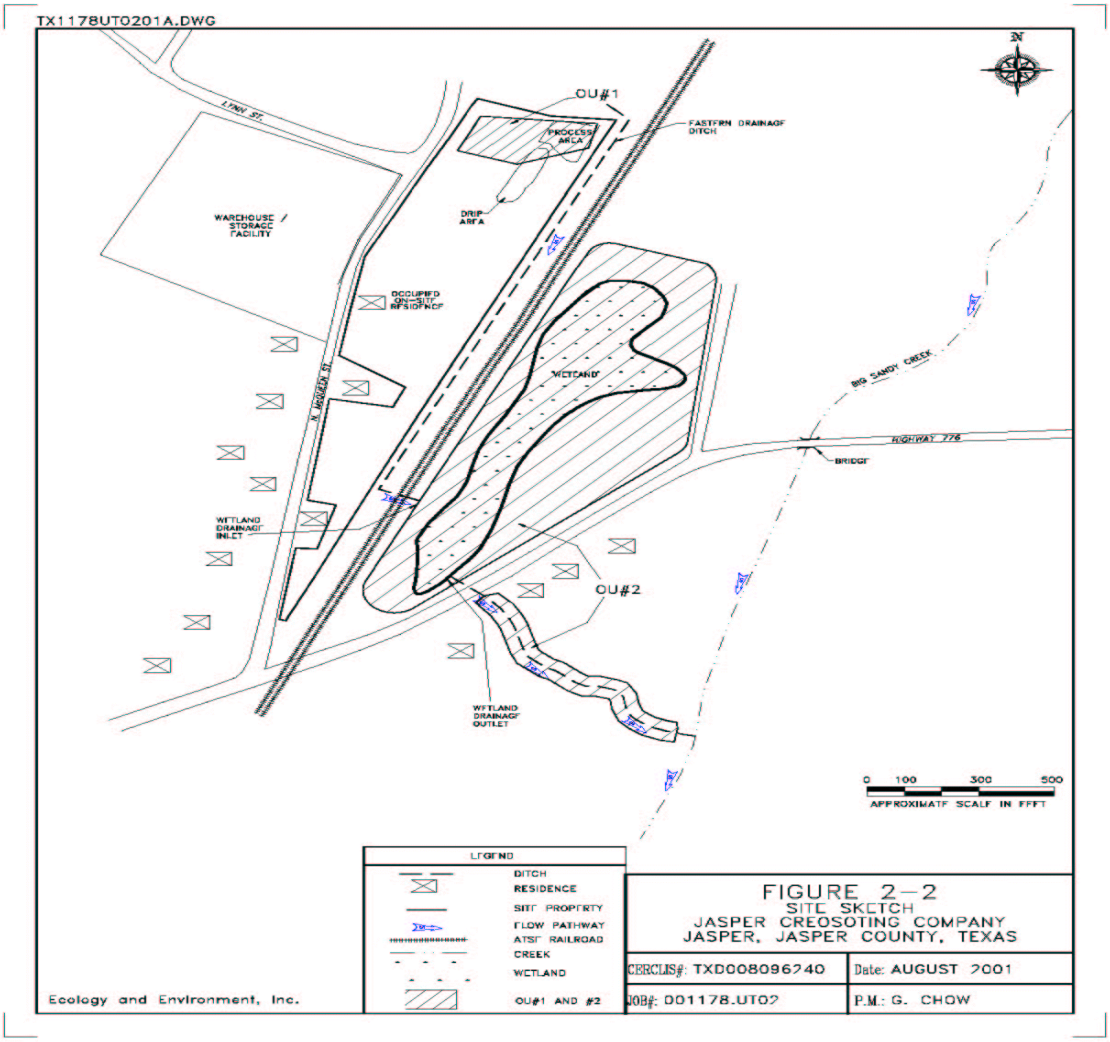
The area surrounding the site is both suburban and rural. Residences are located along both sides of McQueen Street west of the site. There is one occupied residence adjacent to the property. There are also residences to the east of the wetland area and southeast across Highway 776.

Drainage from the site flows to a ditch along the eastern boundary of the site (east drainage ditch). The ditch flows southwest along the site until reaching a culvert that runs east beneath the BNSF railroad tracks into the unnamed wetland area (drainage inlet). The wetland area continues about 500 feet to another culvert beneath Highway 776 (drainage outlet) where surface water drains into a small ditch. The ditch flows southeast another 500 feet into Big Sandy Creek, which is a tributary to B.A. Steinhagen Lake, approximately 12 miles west of the site.

The site is located on the outcrop of the Jasper Aquifer, a continuous 1,200-foot deep aquifer that serves as the primary source of drinking water for the Upper Jasper County Water Authority and supplies water to residential users. There are 27 drinking water wells located within four miles of the site. These wells range in depth from 22 feet to 640 feet BGS. All of these wells draw from the Jasper Aquifer. The nearest drinking water well to the site is a City of Jasper municipal water supply well located seven tenths of a mile southeast and hydraulically down-gradient from the site.

Based on the USDA soil survey classification map (USDA 1982); the site is located on soils of the Letney-Tehran association. The Letney-Tehran soil typically forms a dark, loamy, fine sand surface that is about 9 inches thick. This layer is underlain by 25 inches of very pale brown, loamy sand. The subsoil, extending to a depth of 70 inches, is a reddish-yellow sandy clay loam. This soil is well drained and has a medium water-holding capacity.

Site Map



Wastes and Volumes

The principal contaminants at the site include creosote [semi-volatile organic compounds (SVOCs), primarily polynuclear aromatic hydrocarbons (PAHs)], pentachlorophenol (PCP) and dioxins/furans.

Historical operations performed at JCC employed coal tar creosote and PCP dissolved in diesel to treat railroad ties and utility poles. Coal tar creosote, a listed hazardous waste (U051), is manufactured through the distillation of coal tar and is the most widely used wood preservative in the United States. It is a thick, oily liquid, typically amber to black in color, with a specific gravity of 1.03 to 1.09. Creosote contains over 300 different chemical compounds. One important group of environmentally significant compounds present in creosote is the PAHs. There are 16 PAHs routinely encountered at wood treating sites, seven of which have been identified as probable human carcinogenic polycyclic aromatic hydrocarbons (CPAHs). Although elevated levels of volatile organic compounds (VOCs) and metals were not expected to be as prevalent in environmental media at the Site, testing was performed on a subset of the soil and sediment samples, and all water samples, to ascertain the significance of these compounds, if present.

The major chemicals of potential concern include PAHs, PCP, and dioxins/furans.

Two samples were collected from the onsite temporary containment cell during the RI. The first sample was a composite of Visually Contaminated (VC) material encountered at depths between 2 and 9.5 feet, and the second a grab sample of visually clean (CL) soil taken at a depth of 11.5 feet, 2 feet below the base of the waste material. A TPAH concentration of 2,299 mg/Kg was detected in the VC composite sample. In the CL soil sample collected beneath the cell, a TPAH concentration of 7.64 mg/Kg was detected. A TCPAH concentration of 33 mg/Kg was detected in the VC sample. In the CL sample, taken beneath the cell, a TCPAH concentration of 0.06 mg/Kg was observed. The PCP concentration was 212 mg/Kg from the VC sample.

Subsurface soil samples were collected from 20 locations in the former process area placed on an approximate 100 x 100-foot grid in the area south of the waste cell. Subsurface soil samples were also collected from six locations, placed on approximate 300-foot centers, from the drainage ditch located along the Site's east property line. At each location a composite sample of visually contaminated (VC) material was prepared from aliquots of material retained at each 4-foot Geoprobe⌣ sample interval. A grab sample of visually clean (CL) material was also collected from the soil horizon immediately below the VC interval. TPAH concentrations in the VC samples collected in the former process area exceeded the 0.234 mg/Kg EPA Region 6 MSSL at 12 of the 23 locations. Residual creosote was observed at depths between zero and 14.5 feet. In the drainage ditch VC samples, TPAH concentrations exceeded the EPA Region 6 MSSL at each of the six sites. TPAH concentrations from the CL soil horizon in the former process area exceeded the EPA Region 6 MSSL at four locations. Total CPAH concentrations in the 29 VC samples from the former process area and drainage ditch exceeded the EPA Region 6 MSSL at 11 sites. Three subsurface soil samples collected from the VC soil horizon were tested for dioxins. Total dioxin concentrations, expressed in 2,3,7,8-TCDD equivalents exceeded the 1.77×10^{-5} mg/Kg EPA Region 6 MSSL at each location.

Surface water samples were collected from a six locations. One sample was collected immediately at the inlet to the forested wetland as water enters through a culvert under the railroad track. Two samples were collected from the un-named tributary: one at its beginning at the culvert under Highway 776, and one as the tributary becomes a trickle in the cattle grazing field just before it drains into Sandy Creek. Two samples were collected from Sandy Creek: one upstream of the Site as a reference station, and one downstream. One other sample was taken from Martin Dies Junior State Park to act as a reference for the sample in the wetland. Fifteen PAHs were detected in surface water in the wetland and un-named tributary to Sandy Creek. In most cases, concentrations decrease by an order of magnitude as the samples progress further from the Site. Detected concentrations of TPAH and individual PAH constituent concentrations are all above the National Recommended Water Quality Criteria (NRWQC). Acenaphthene was the lone PAH detected in the Sandy Creek sample downstream of the Site and in the reference samples. PCP was also detected in the forested wetland and un-named tributary samples at concentrations above the NRWQC. PCP was not detected in Sandy Creek or the reference stations.

The RI ground water hydro-geologic investigation included sampling of seven existing monitor wells and nine new monitor wells. During the June 2006 SRI, six new monitor wells were constructed.
TPAH concentrations in shallow ground water samples varied widely. Concentrations were highest in the area bounded by the onsite source area, but showed significant decreases down-gradient (southeast) of this area. The elevated concentrations onsite can be attributed to free-phase creosote present. Naphthalene concentrations account for the majority of the TPAH present. In the deep ground water zone, TPAH concentrations were significantly lower. Comparison of vertical TPAH concentrations shows significant vertical attenuation of the contaminant plume over a distance of 65 feet. This trend also occurs further down-gradient where TPAH concentrations declined 10 fold over a vertical distance of approximately 50 feet. Following installation of the new SRI monitor wells in June 2006, a visual survey of the Sandy Creek channel was performed. The survey, which extended approximately 100 feet upstream and 100 feet downstream of the FM 776 bridge, was possible due to the low water-level conditions. Visually stained sand, with a detectable creosote odor, was observed along the west bank of Sandy Creek

along an approximate 100-foot reach downstream of the bridge, and at isolated locations upstream. These observations, in conjunction with the analysis results of nearby well MW-18 and the strong upward gradients observed other wells indicate that the ground water contaminant plume is entering Sandy Creek in the vicinity of the FM776 bridge. Although just one round of sampling has been performed, the absence of PAHs at a well across the creek indicates no significant migration beyond Sandy Creek.

Sediment samples were collected from 18 locations in and around the forested wetland and the un-named tributary as part of the RI. Contamination is greatest in the 0 to 6-inch and 0 to 1-foot samples than at greater depths. The concentrations in the wetland are highest where water first flows into the wetland and decrease as the location moves away from the center channel. The extent of contamination was measured as deep as 4 feet at the inlet of the wetland, down to 2 feet in the center channel, and at about 1 foot in areas away from the center channel. Concentrations in the un-named tributary are highest in the middle of the tributary and lowest closest to Highway 776. The concentrations of TPAH and BaP TEQs are greater than the screening level in all of the 0 to 6-inch samples in the wetland and tributary, most of the 0 to 1-foot samples in the wetland, and a few of the 1- to 2-foot samples in the center of the wetland near the main channel. Concentrations are significantly lower at the downstream Sandy Creek station, where only two individual PAH constituents are estimated as detected and the concentrations of the detected constituents are two orders of magnitude lower than concentrations in the un-named tributary. The concentrations of TPAH and BaP TEQs in the Sandy Creek sample are below the screening level. Concentrations in Sandy Creek are similar to those for reference stations.

Biota/fish tissue samples were collected from crayfish, green sunfish, bass and catfish. PAHs were detected in the fish and crayfish sample collected downstream of the Site. The TPAH concentration was greater than the screening value for benthic invertebrates. However, the detection limits of three non-detect PAHs are greater than the screening value, while detected concentrations are lower than the screening value, as are the detection limits of all other PAHs. Two PAHs were detected in the sample from the reference area at concentrations greater than those from the sample downstream of the Site. The TPAH concentrations are below the screening value. Thus, PAH concentrations that have accumulated in benthic invertebrate tissue downstream of the Site warrant no additional concern.

Health Considerations

The chemicals of potential concern for the site include SVOCs/PAHs, phenolic compounds (i.e. PCP), and dioxins/furans. PAHs and phenolic compounds are the primary components of coal tar creosote, while dioxins/furans are contaminants of chlorinated phenols, in particular PCP. PAHs are carcinogens, capable of causing cancer at the point of contact i.e., on the skin, and are known to adversely affect the skin upon dermal exposure. In addition, many non-carcinogenic adverse effects are known to occur because of exposure to creosote, including lung, liver, kidney, thymus, adrenal glands, colon, and skin effects.

PCP is known to affect the liver, kidneys, blood, lungs, nervous system, immune system, and gastrointestinal tract. PCP vapors are irritating to the skin, eyes, and mouth. 2-Methylphenol and 3-methylphenol are known to cause a decrease in body weight and are neurotoxins. These two phenolics are also possible carcinogens. Some of the effects from exposure to dioxin and dioxin-like compounds are cancer, dermal, liver, and thyroid effects, on-set of diabetes, cardiovascular, respiratory, immunologic, neurologic, and reproductive effects.

There is a potential for receptors to experience adverse effects from exposure to PAHs, metals, and dioxins. All other constituents can be excluded from further risk assessment. The risk conclusions indicate that Sandy Creek and the un-named tributary present no risk to human health or ecological receptors. The drainage ditch presented risk to both human health and ecological receptors from PAHs, dioxins, carbazole, dibenzofuran, 4,6-dinitro-2-methylphenol, and PCP. The forested wetland presents risk to both human health and ecological receptors from PAHs, dioxins, carbazole, and PCP. However, re-evaluation of the sediment data collected during the SRI reveals that the remaining ecological risk posed by the wetland sediment, after completion of the 2005 EPA removal action, is acceptable.

The upland process area presents risk to human health from PAHs and dioxins. Ground water presents risk to human health from PAHs, dioxins, carbazole, benzene, and PCP. There is also potential future risk to ecological receptors in Sandy Creek based on the comparison of ground water data to surface water screening values.

It is the EPA's current judgment that the selected remedy identified in the ROD is necessary to protect public health and welfare and the environment from actual or threatened releases of hazardous substances into the environment.

Record of Decision (ROD)

The ROD was signed on September 20, 2006.

Major components of the selected remedy include:

Install a non-aqueous phase liquid (NAPL) recovery system to remove free phase and residual NAPL from the saturated zone to the extent practicable.

Install a hydraulic containment system to prevent plume expansion and/or protect Sandy Creek surface water.

Site Contacts

EPA Remedial Project Manager:	Bob Sullivan	214-665-2223 or 1-800-533-3508
EPA Site Attorney:	Ed Quinones	214-665-8035 or 1-800-533-3508
TCEQ Contact:	Buddy Henderson	512-239-1520 or 1-800-633-9363
EPA Public Liaison	Donn R. Walters	214-665-6483

EPA Superfund Region 6 Toll Free Number: 1-800-533-3508

Community Relations Plan: February 2000

Site Repository: Jasper Public Library
175 E. Water Street
Jasper, TX
409-384-3791