

NPL Site Narrative for Mason City Coal Gasification Plant

MASON CITY COAL GASIFICATION PLANT

Mason City, Iowa

Conditions at Proposal (January 18, 1994): Mason City Coal Gasification Plant covers approximately 2.3 acres in central Mason City, a north-central Iowa community with a population of approximately 29,000 people. The plant operated from 1900 to 1951 and was demolished in 1952. An electrical substation and small storage building currently occupy the southwest corner of the site. The remainder of the site is idle. Land use in the immediate vicinity consists of commercial and residential areas. The site is bounded to the east by South Pennsylvania Avenue, to the south by 5th Street Southeast, to the west by South Delaware Avenue, and to the north by a retaining wall along Willow Creek.

During excavation activities for installation of a sewer line in 1984, oily sludges were encountered in subsurface soils at the site. Subsequent investigations conducted by the site owner, Interstate Power Co. (IPW), revealed the presence of three underground storage structures containing oily sludge. The three structures and their contents were excavated, along with contaminated soil from around the structures. The excavated material was stockpiled directly onto the ground near the southeast corner of the site, and is covered with a membrane cap. This waste pile is one of two sources of hazardous substances at the site. Contaminated soil is also present in the north-central portion of the site. Soil samples collected from soil borings indicated that contaminated soil is present to depths to 13.5 feet. The area of contaminated soil is the second source of hazardous substances.

The site is situated on fill material consisting of sand, gravel, and construction rubble and debris, and is in direct contact with bedrock. Although the water table level fluctuates with precipitation, the water table in the fill material is typically present at depths ranging from 8 to 10 feet below land surface. A portion of the shallow ground water moving through the fill material and the upper portion of the bedrock discharges to Willow Creek. Well logs for the eight Mason City municipal drinking water wells, which are within 2 miles of the site, indicate that six of the wells are uncased through portions of the Cedar Valley aquifer. The Cedar Valley aquifer yields water to the municipal wells. Approximately 98 percent of the population of Mason City is supplied by the municipal drinking water supply.

The most significant contamination identified by a series of investigations conducted at the site between 1986 and 1989 by IPW, is the presence of polynuclear aromatic hydrocarbon (PAH) contamination in the on-site waste pile, on-site soil, bedrock and ground water beneath the site and Willow Creek, and in Willow Creek sediments. High concentrations of PAHs have been detected in samples of ground water collected from the uppermost aquifer, and in samples of Willow Creek sediment downstream from the site. Site characteristics indicated the potential for PAH-contaminated ground water in the uppermost aquifer to discharge to the surface water. Willow Creek is used for public recreational fishing.

The site owner is conducting a Remedial Investigation and Feasibility Study (RI/FS) at the site under EPA oversight. Field activities within the RI/FS include the installation of additional ground water monitoring wells, and the collection and analysis of soil, sediment, surface water, and ground water samples.

Status (December 1994): The FS is expected to be completed during the first quarter of fiscal year 1995. The Draft Engineering Evaluation/Cost Analysis (EE/CA) is under review at EPA in lieu of a Record of Decision (ROD). This is for the purpose of selecting a removal action. The planned completion date for the EE/CA is January 1, 1995.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at [ATSDR - ToxFAQs](http://www.atsdr.cdc.gov/toxfaqs/index.asp) (<http://www.atsdr.cdc.gov/toxfaqs/index.asp>) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.