JOHN DEERE SANITARY LANDFILL
(Dubuque, Iowa)

GENERAL DESCRIPTION

The Deere & Company landfill site is located about two miles north of the city of Dubuque. The 90-acre site, which includes a permitted sanitary landfill, lies in the northeast part of the SW 1/4 of Section 27, T90N, R2E, Dubuque County, Iowa. The site was entered on the Registry in June 1991.

SITE CLASSIFICATION

In 2013 this site is re-classified "d" in accordance with 455B.427.3. The site does not pose a significant threat to the environment but will required continued monitoring.

TYPE AND QUANTITY OF HAZARDOUS WASTE

John Deere has operated a permitted landfill at the site since 1975. The landfill is used almost exclusively for wastes from the John Deere Dubuque Works. The landfill has a synthetic liner, a leachate collection system, and a liner failure detection system. Control of run-off is provided by bermed waterways on both sides of the landfill and by a down gradient siltation basin. The site was used for the disposal of 4,323 tons of hazardous wastewater treatment sludge from 1980 to 1986. The sludge was a hazardous waste because of its leachable concentrations of lead, cadmium, selenium, arsenic, and chromium. Chromium electroplating waste stream was the primary source of these toxic metals.

Prior to the effective date for the new hazardous waste regulations (RCRA), Deere disposed of 1,101 tons of sludge in accordance with a Special Waste Authorization issued by the department. After November 1980 Deere was prohibited from disposing of this sludge which was designated a F006 hazardous waste.

In accordance with the RCRA regulations, Deere filed a petition with the EPA to delist the treatment sludge. The EPA granted a temporary delisting of the treatment sludge in 1981. As a result, Deere was again able to request authorization for disposal of the sludge at its landfill. From 1981 to 1986 Deere disposed of another 3,222 tons of the treatment sludge at the landfill. The department issued a Special Waste Authorization for this disposal.

During further review of the delisting petition, the EPA used an improved test for leachable heavy metals. This test showed levels of lead, cadmium, selenium, arsenic, and chromium that would require denial of the delisting petition. As a result of this review, Deere withdrew its delisting petition and the IDNR required Deere to cease disposal of the treatment sludge at the landfill.

From July 1986 through 1987 the sludge was sent to a hazardous waste facility in Illinois. Prior to 1988 Deere constructed a separate facility for the chromium electroplating waste. Without the electroplating waste stream, the industrial wastewater treatment sludge is not a hazardous waste. Therefore, starting in 1988, the department renewed the authorization for disposal of the industrial wastewater treatment sludge at the landfill.

The majority of waste disposed of at the landfill is powerhouse ash. Other non-hazardous industrial wastes include incinerator ash, floor sweepings, broken yard parts, coolant filter media, domestic wastewater treatment sludge, slag, and waste paint sludge, filters, and liners. From 1975 through June 1991 approximately 440,000 tons of non-hazardous waste was disposed of at the landfill. After disposal of foundry sand stopped in 1987, the landfill disposal rate dropped from about 30,000 tons to 17,000 tons per year.

SUMMARY OF HEALTH AND ENVIRONMENTAL IMPACTS

The northern part of Dubuque, several small communities, and numerous other dwellings are located within three miles of the site. Local communities use the groundwater. However, the landfill liner and leachate collection systems appear to have prevented any significant migration of contaminants to the groundwater.

Surface drainage from the site is to the southwest towards Bloody Run Creek. This small creek intercepts the Little Maquoketa River about 1½ miles to the south and the river flows into the impoundment of the Mississippi River about two miles to the east. However, all surface water that comes in contact with the waste is directed to the leachate collection system through the use of perimeter berms. Except during landfill start-up, the containment system appears to have been constructed and operated properly.

SUMMARY OF ASSESSMENT, MONITORING AND REMEDIAL ACTION

The IDNR Solid Waste Section is the lead agency for this site

- The site has three ground water monitoring wells that are sampled according to a June 1990 Groundwater Sampling Plan.

- Active landfill for disposal of Powerhouse Coal Ash, Paint Booth Sludge, Flood Sheet Sludge, Paint Booth Cleanout, Industrial Wastewater Treatment Sludge, Flame Cut Slag, Shot Blast Dust, and Laser Dust. Regular reporting as required for Industrial landfills. Permit renewed August 14, 2009 and will expire August 14, 2012.

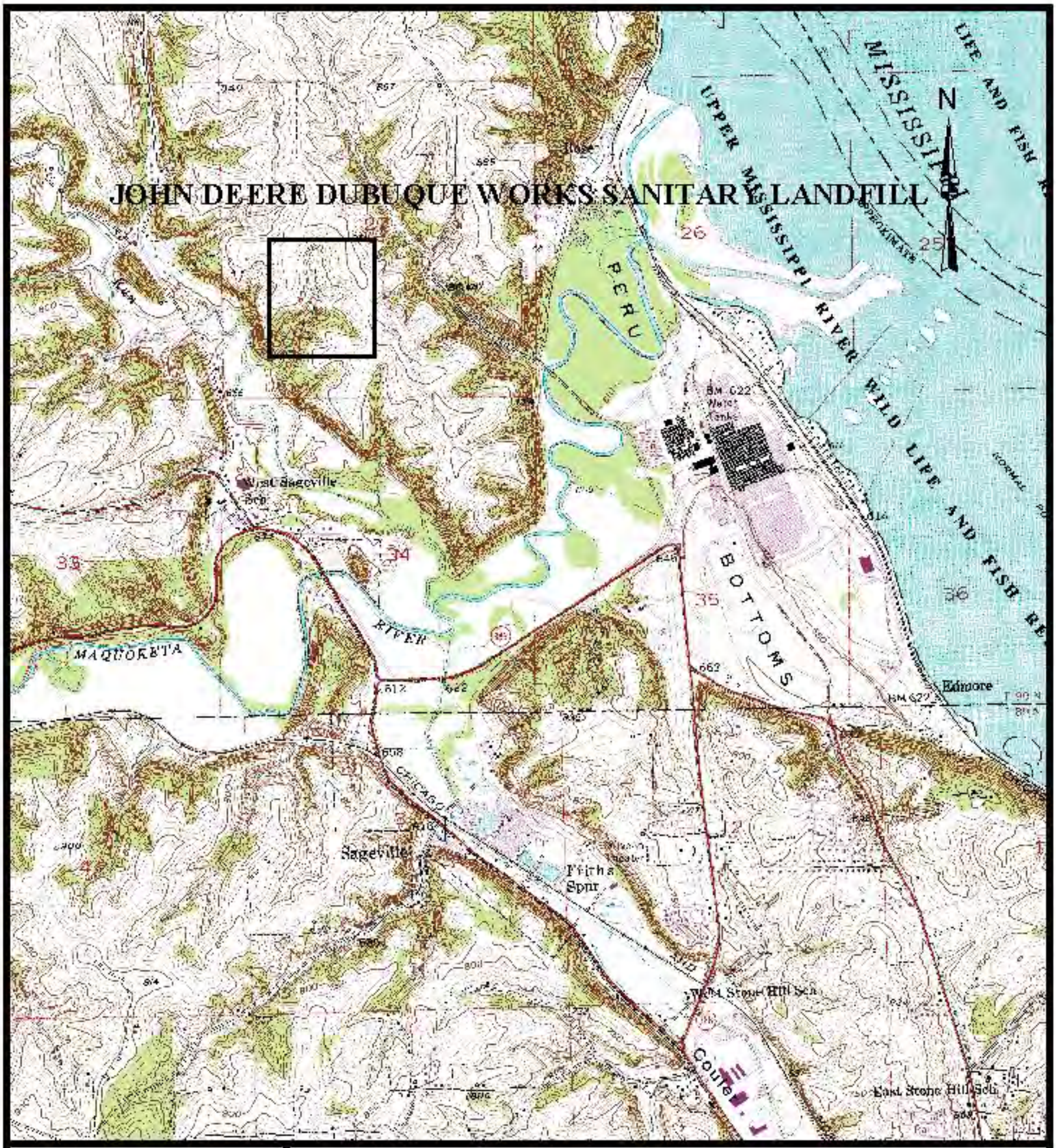
In 2012 The Landfill was granted a closure permit by the IDNR Solid Waste Section that requires continued monitoring.

As of 2013, the site has been re-classified to “d” closed requires continued management in the form of monitoring.

A Superfund five-year review was released in July 2013. The five-year review withheld a protectiveness determination pending evaluation of an ecological exposure pathway. Vapor intrusion was found not to be a threat at the site. An annual report will include monthly water-level monitoring data from paired monitoring wells to insure an inward gradient, i.e., groundwater moving towards site production wells and not off-site. Groundwater monitoring will be done at five-year intervals concurrent with five-year reviews.

The EPA serves as the lead oversight agency with the DNR in the support role.

(John Deere Dubuque Works Sanitary Landfill)



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Project #

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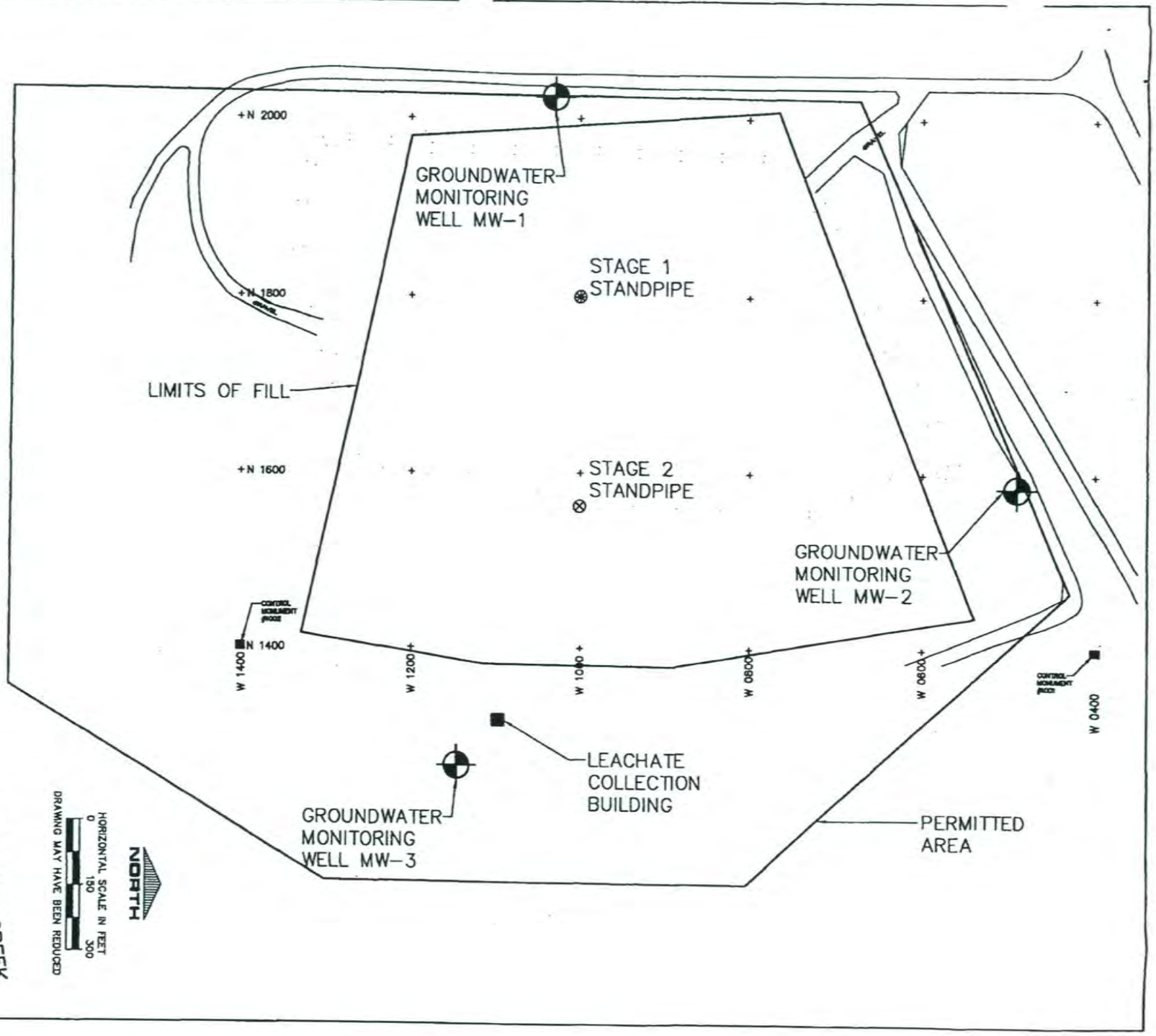
Project Description:
JOHN DEERE DUBUQUE WORKS
LANDFILL
GROUND WATER MONITORING
WELL LOCATION MAP

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