McGRAW-EDISON
(Centerville, Iowa)

GENERAL DESCRIPTION

The site is about 14.2 acres located in the SW 1/4 of the SW 1/4, Section 6, T68N, R17W south of State Highway 5 near Centerville, Iowa. Cooper Industries, Inc. is the owner of record. The site was entered on the Registry in April 1990. The facility was constructed in 1965 for the Appanoose County Industrial Development Agency, which leased the facility to the McGraw-Edison Company from 1966 to 1978. McGraw-Edison manufactured toasters and toaster ovens, which included metal plating and a wastewater treatment system. Hazardous wastes were left in the plating area and throughout the wastewater treatment system when operations ceased in 1978. Peabody International Corporation occupied the site from 1978 until 1986. During this time, the buildings were used for the storage of grains or finished goods. Cooper Industries acquired McGraw-Edison in 1985 from Peabody in September 1990.

SITE CLASSIFICATION

This site is classified "b" in accordance with 455B.427.3. Hazardous wastes have been disposed of at the site, posing a significant threat to the environment.

TYPE AND QUANTITY OF HAZARDOUS WASTE

- **Metals and VOCs are the primary types of hazardous waste:**

The quantity of hazardous waste is undetermined. Soil is contaminated with heavy metals at several locations on the site. The elevated metals included chromium (11,300 mg/kg), nickel (47,100 mg/kg), copper (51,000 mg/kg), zinc (28,000 mg/kg), and lead (2,600 mg/kg). Contaminated soil was removed during the 1989 Phase I Removal and Phase II Removal actions. Trichloroethylene (TCE) was used as a degreasing solvent and stored in a 5,000 gallon above ground storage tank on the south side of the building. Groundwater is contaminated with TCE and one of its degradation products, 1,2-dichloroethylene. Observed concentrations of TCE are 810,000 ug/L (on-site) and 370 ug/L (off-site)

SUMMARY OF PUBLIC HEALTH AND ENVIRONMENTAL CONCERNS

- **The primary public health concern is for exposure to contaminated drinking water**

Three till units and four sand units have been identified in the glacial deposits beneath the site. Two of the sand units (Intermediate Sand and Channel Sand) are potential drinking water aquifers. The site is surrounded by residential, agricultural, and commercial properties. A well survey identified 216 wells within a one-mile radius of the site, two of which were contaminated with TCE from the site.

Surface drainage from the site flows into the Centerville Reservoir about one mile west of the site. The Centerville water supply is drawn from this reservoir. Surface water in the drainage ditch next to Highway 5 on the southwest corner of the site, has shown TCE contamination.

STATUS OF ASSESSMENT, MONITORING OR REMEDIAL ACTIONS

The EPA is lead agency for the site. An EPA Consent Agreement and Consent Order were issued in 1988 for site cleanup and investigation.

Soil:

From May 1989 to July 1990, Cooper Industries' conducted a Phase I removal action. This included the stabilization and removal of lagoon sludges, the removal of contaminated equipment and soil, the decontamination of concrete floors, and the back filling of excavated areas with clean soils. During the Phase I Removal action, additional areas of sludge contamination were discovered. In July 1990 the EPA conditionally approved a Phase II Soil Removal

Action work plan. In September 1990, there was a second EPA Consent Order for the Phase II Removal and the Groundwater Operable Unit Remedial Investigation/Feasibility Study (RI/FS). The Phase II removal included the removal of the additional sludge, further cleaning of concrete floors, de-commissioning of tanks and the removal of soils contaminated with TCE and other volatile organic compounds.

Ground water:

The company performed a RI/FS for the TCE in groundwater and remediation of the site is now focused on the TCE groundwater contamination on the south side of the site. The field activities for the RI/FS were conducted between October 1991 and May 1992. The RI/FS was approved by EPA in July 1993.

The Record of Decision (ROD) for remediation of the groundwater contamination was issued on September 24, 1993. The ROD required groundwater monitoring, on-site drainage controls, extraction and treatment of contaminated groundwater using filtration and ultra-violet oxidation. On March 30, 1994, the EPA issued a Unilateral Administrative Order (UAO) for Remedial Design and Remedial Action. This order directed Cooper Industries to design and implement the remedy described in the ROD. Cooper Industries agreed to comply with the terms of the UAO and has been acting accordingly. The EPA issued an Explanation of Significant Difference (ESD) in the ROD in June 1994 and June 1996. The 1994 ESD presented vacuum groundwater removal as an alternative to conventional pumping. Soil vapor extraction would be used to extract VOCs from the soils in the source area. The 1996 ESD increased the action level of TCE in soils from 200 to 750 part per billion (ppb). The EPA is issued a ROD Amendment in July 1999 to change the preferred remedy for the Groundwater Operable Unit. The revised alternative is to remediate the groundwater with an Iron Reactive Permeable Barrier and Natural Attenuation. The Groundwater Operable Unit Post ROD Supplemental, Feasibility Study was approved by EPA in April 1999.

The Treatability Study Report, Remedial Design Work Plan, and 30% Design Report were submitted to the EPA in January 1995. The draft Performance Standard Verification Plan (PSVP) was submitted in April 1996. Additional field investigation was completed in 1998. The 100% Design for the Enhanced Soil Vapor Extraction was completed in January 1999 and approved by EPA in May 1999. The system construction began with the installation of 80 extraction points into till unit 3 (upper 25') in the two SVE areas, then pre-frac air stress testing, installation of horizontal fractures, and post-frac air stress testing. Construction was started in August 1999. The 100% Design for the Iron Reactive Permeable Barrier (IRPB) was completed in May 1999 and accepted by EPA in August 1999. Construction of the IRPB was started in September 1999**.**

2002: The EPA has been monitoring sampling results to verify the performance of the Iron Reactive Permeable Barrier. Indications are that both the barrier and the soil vapor extraction system are working as planned.

2003: Iron Reaction Permeable Barrier Annual report was submitted and indicated the barrier was performing within it design parameters. McGraw Edison requested and received approval to operate the Dual Phase Soil Vapor Extraction System in a pulse mode, the system was operated continuously until this time. McGraw Edison has agreed to donate the facility to the City of Centerville. The City requested Department approval as required by 567-IAC-148. McGraw Edison is retaining all responsibility for the contamination at the site.

2005: The Iron Reactive Barrier continues to work as designed preventing the majority of dissolved phase contamination from migrating off site. McGraw Edison recently requested the Soil Vapor Extraction System be shut down because it was no longer effective. However, after further review it was demonstrated that the system was not ready to be shut down and on December 7, 2005 the EPA required McGraw Edison to restart the system as quickly as possible.

2007: In 2007 the City of Centerville sold the Former McGraw Edison facility to Lyle Cowen. The city failed to notify IDNR as required in the Registry of Hazardous Waste or Hazardous Substance Disposal Sites, IAC-567-148.6(5)b. IDNR is currently working with the city's attorney to resolve this issue. The Iron Reactive Barrier and Soil Vapor Extraction System continue to remove the trichloroethylene as designed.

2008: All issues concerning the sale of the property were resolved to IDNR satisfaction. The current property owner is now aware of the special requirements of a site on the Registry. The current property owner petitioned IDNR to approve a 'significant change in use' request. The legal section of IDNR determined that the new proposed use was

not a significant change (one form of manufacturing and storage to another form of manufacturing and storage) and no IDNR approval was required (IAC-567-148.6(5)a). The Iron Reactive Barrier and Soil Vapor Extraction System continue to remove the trichloroethylene as designed, however, additional iron slurry may be required in the near future.

2009: A small portion of the former McGraw Edison property was subdivided, sold, and then developed into a car wash facility. The property transfer was correctly and timely managed for this transaction. The first EPA 'Five Year Review' is in progress and should be completed early 2010. Currently the EPA does not have a project manage assigned to former McGraw Edison site.

2010: The EPA CERCLA Five Year Review is complete and EPA believes the TCE remediation remedy is failing. McGraw Edison will be required to perform further groundwater testing to determine the status of the two remedial systems, the soil vapor extraction system and iron reaction curtain. The additional assessment activities will be carried out early 2011.

2012: The U.S. Environmental Protection Agency (EPA) is issuing a *Proposed Plan* to recommend a change to the soil and groundwater remedies at the former McGraw-Edison Toastmaster site developed from the 1993 *Record of Decision* (ROD) for soil and in the 1999 *Amended Record of Decision* for groundwater. This Proposed Plan considers additional information developed since the 1993 ROD implemented the *Remedial Action* for soil and the 1999 ROD Amendment implemented the *Remedial Action* for groundwater at the former McGraw-Edison Toastmaster site. The Proposed Plan presents the EPA's *Preferred Alternative* under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) to address the remaining residual contamination at the former McGraw-Edison site in Centerville, Iowa. The preferred alternative is intended to be a final remedy under CERCLA. The proposed change alters the selected remedy for soil in the 1993 ROD and for groundwater in the 1999 ROD Amendment with respect to scope, performance and cost.

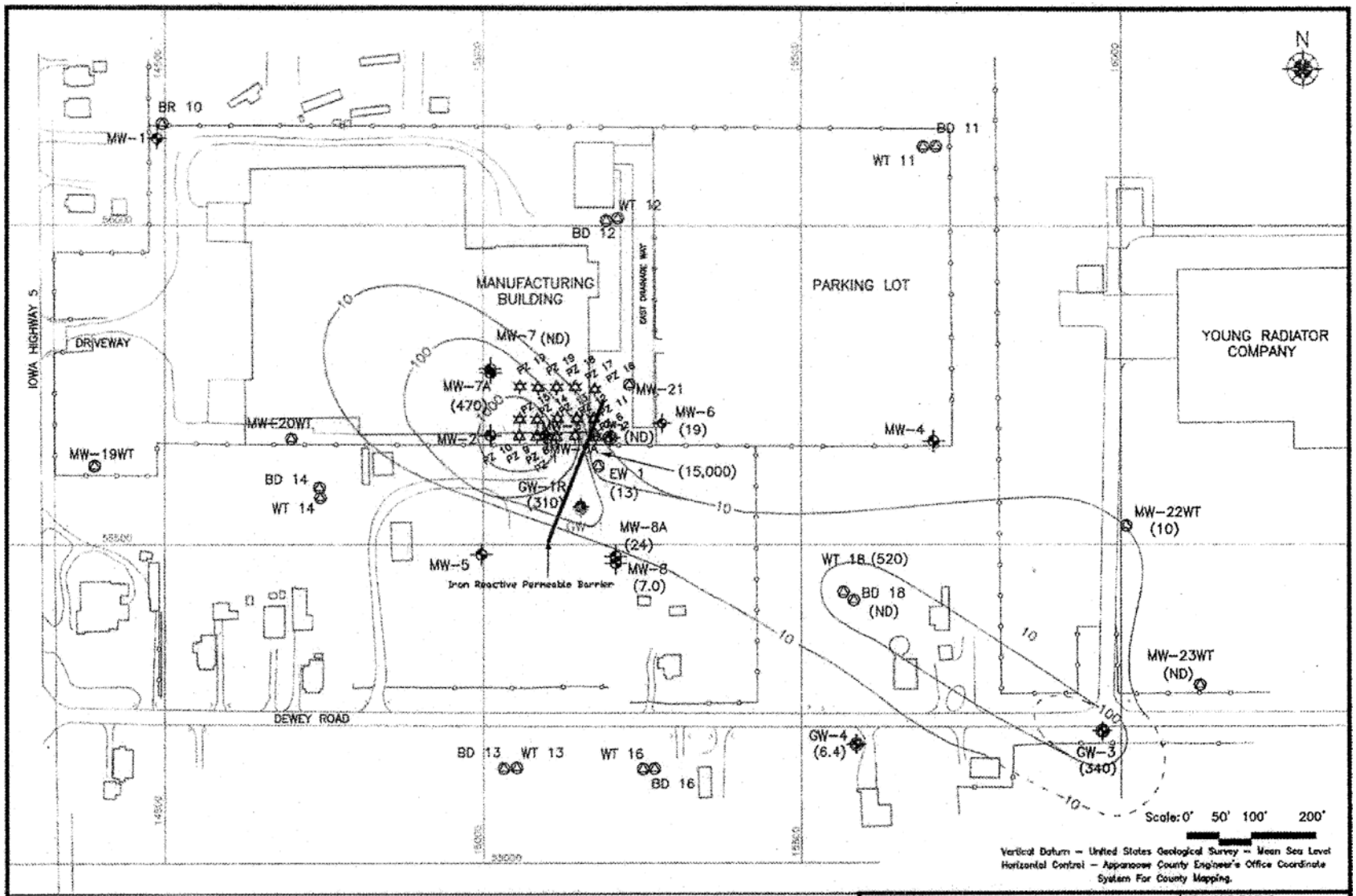
This Proposed Plan includes a summary of the following remedial action alternatives that were considered: Alternative N-1: No Action; Alternative S-1: Soil Vapor Extraction; Alternative S-2: Soil Excavation and On-Site Treatment with Indirect Heat Volatilization; Alternative S-3: In-Situ Mechanical Mixing with Chemical Agent; Alternative GW-1: Groundwater Recovery and Treatment; Alternative GW-2: In-Situ Bioremediation; and Alternative GW-3: In-Situ Chemical Oxidation and monitored natural attenuation (MNA).

The preferred alternative is: Alternative S-3: In-Situ Mechanical Mixing with Chemical Agent and contingent Alternative GW-1: Groundwater Recovery and Treatment, if required based on the performance evaluation of Alternative S-3. These alternatives were chosen because they best address the residual source materials and the down gradient contaminant plume. The soil alternative will reduce contaminant concentrations within the source materials and prevent further migration of contaminants from the source materials to groundwater. The soil alternative will be implemented first and groundwater will be monitored periodically for several years to determine the effectiveness of the soil remedy at reducing contaminant concentrations in the down gradient plume. The groundwater alternative will only be considered if monitoring indicates the need for an active groundwater remedy to further reduce contaminant concentrations in the down gradient plume and control off-site migration.

2013: Record of Decision (ROD) modification still in progress. Annual monitoring reports indicate iron reaction curtain is no longer containing the chlorinated solvent plume.

2014: As of December 2014 McGraw Edison is still reviewing comments received from IDNR and EPA for the proposed ROD modification and has not submitted any updates yet. EPA has started work on the second five year review report noting deficiencies in the current remedial efforts and a concern for future protectiveness.

2015: In January 2015 a fire destroyed the former McGraw Edison facility including the vapor extraction system.
A pilot work plan was submitted in May 2015 describing small scale testing for two soil and groundwater remedial proposals, in-situ soil stabilization and in-situ chemical oxidation. Pilot study results were reported in late June 2015 and shown a significant reduction in the TCE contamination along with the TCE daughter products. A site wide work plan is now being developed for the in-situ soil stabilization and in-situ chemical oxidation.



EXPLANATION

- 987.50 Groundwater Level Data – May 2005 (Feet Above MSL)
- 988 Groundwater Contour (Feet Above MSL) Dashed Where Inferred
- Monitoring Well Installed in 2003
- Monitoring Wells Installed in 1999
- Monitoring and Sump Wells Installed Prior to 1999

BORINGS CONVERTED TO MONITORING WELLS

- WT Top of Water Table Boring
- BD Base of Glacial Drift Boring
- BR Bedrock Boring
- EW Extraction Well
- Abandoned Monitoring Well

NM Level Not Measured

---- Chain-link Fence

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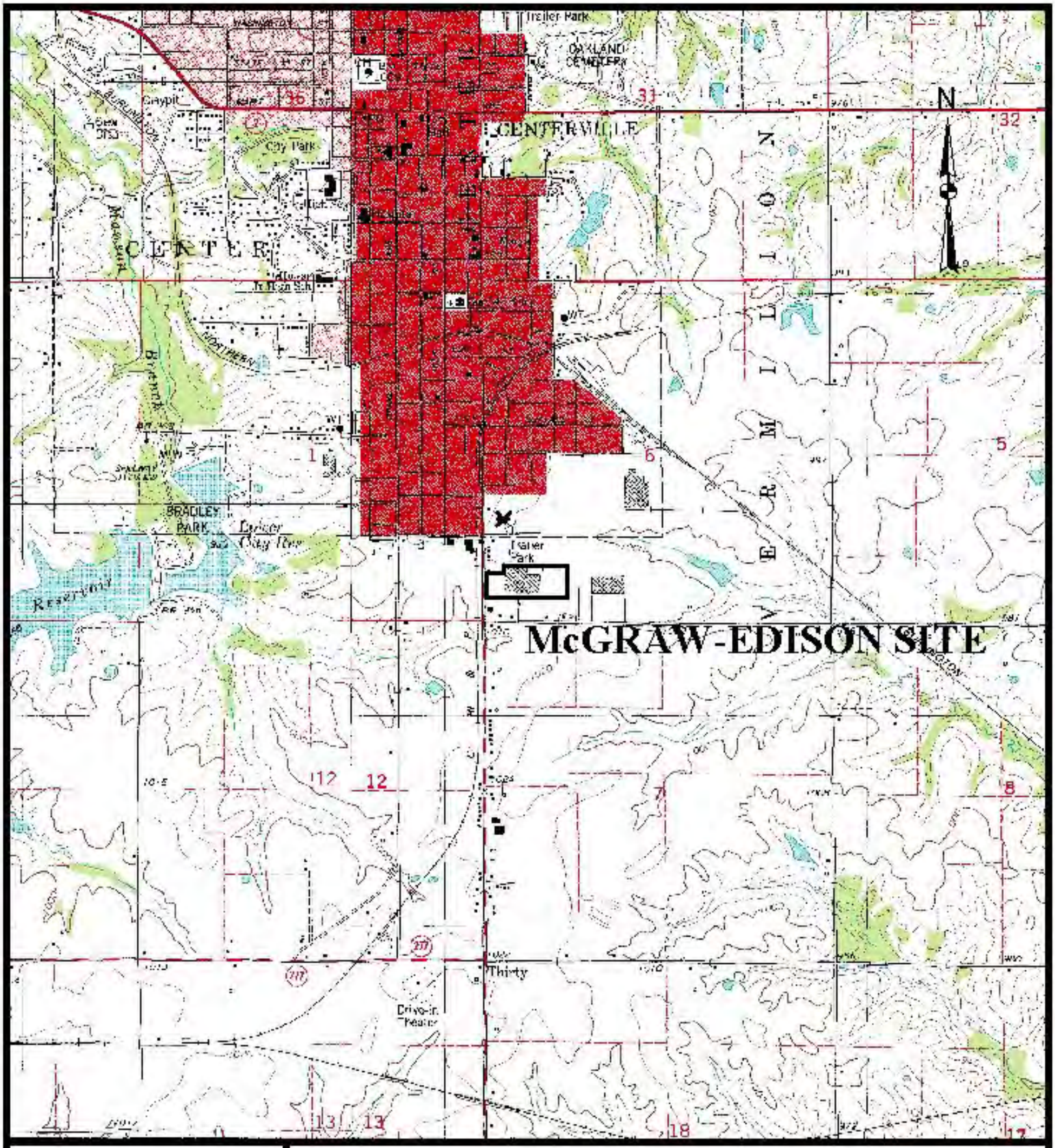
DRAWING TITLE
TCE Concentration Plume Map Groundwater

SCALE 1"=200'

JOB NUMBER	DWN BY	DATE	CAD FILE	SHEET
07.75098.0001	TJS	MAY 2005	07.75098.0001	Figure 2

(McGraw-Edison)



Contour Interval 10 Feet

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet