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**January 1998**

**EPA Superfund**  
**Explanation of Significant Difference**  
**for the Record of Decision:**

**City Disposal Corp. Landfill**  
**Dunn, WI**  
**6/11/1997**

U.S. Environmental Protection Agency  
Region 5, Library (PL-12J)  
77 West Jackson Boulevard, 12th Floor  
Chicago, IL 60604-3590



# EXPLANATION OF SIGNIFICANT DIFFERENCES

## FOR THE CITY DISPOSAL CORPORATION LANDFILL DUNN, WISCONSIN

The purpose of this document is to explain and justify changes to a portion of the remedy at the City Disposal Corporation Landfill (CDCL) Superfund site. In brief, the changes involve temporary extraction and treatment of contaminated groundwater at the site. According to this solution, contaminated groundwater will be extracted on-site and transported for off-site treatment and disposal. The extracted groundwater may be treated at a nearby publicly owned treatment works (POTW) or possibly another nearby Superfund site, the Hagen Farm site. For further details concerning the nature of these changes, please refer to Section IV herein, concerning the "Description of the Significant Differences and the Basis for the Differences."

### **I. Introduction**

The CDCL site is located on approximately 38 acres of land in section 30, township 6 North, range 10 East in Dane County, Wisconsin. The landfill was opened in the mid 1960s, and closed in 1977. Household wastes, industrial wastes, general construction wastes, and debris were disposed at the site. Industrial wastes included, but were not limited to, discarded solvents from plastics manufacture, paint wastes, oily residues, etc. Total volume of wastes disposed are approximately 700,000 cubic yards. Of the twelve cells which existed at the site for waste disposal, it is believed that Cells 6 and 12 received largely industrial wastes.

The site was placed on the National Priorities list in 1984. In 1987 and 1988, various persons entered into an agreement with the United States Environmental Protection Agency (U.S. EPA) for conduct of a Remedial Investigation and Feasibility Study (RI/FS). This effort was completed in 1992, and the RI/FS and a proposed plan for remedial action was placed before the public. Leading groundwater contaminants associated with the site were found to include tetrahydrofuran (THF), 2-butanone, acetone, carbon tetrachloride, trichloroethene (TCE), and toluene.

The lead agency for the remedial action at this site is the U.S. EPA. The State of Wisconsin's Department of Natural Resources (WDNR) is the support agency for the conduct of remedial activities at the CDCL site under the authority of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 1980 PL. 96-510, 42 U.S.C. 9600, *et seq.*, commonly known as Superfund. In September 1992 the U.S. EPA issued a Record of Decision (ROD) which outlined the remedy selection process and the selected remediation for this site. This document provides a discussion of significant changes to the manner in which the selected remedy will be carried out.

## **II. Requirements to Address Significant Changes**

As the lead agency, the U.S. EPA may determine that a significant change to the selected remedy, as described in the ROD, is necessary after the ROD is signed. Section 117 © of CERCLA requires that after adoption of a remedial action plan, as described in a ROD:

- ▶ (1) if any remedial action is taken,
- ▶ (2) if any enforcement action under Section 106 is taken, or
- ▶ (3) if any settlement or consent decrees under Section 106 or Section 122 is entered into, and if such action, settlement, or decree differs in any significant respects from the final plan, the lead agency shall publish an Explanation of Significant Differences (ESD) and the reasons such changes were made. (42 U.S.C. 9617(c))

The U.S. EPA, in consultation with the WDNR, has determined that significant changes should be made to the manner in which the remedial action plan, as described in the ROD, is carried out. These necessary changes are discussed further in Section IV.

The ESD will be available for review in the administrative record established for the CDCL site. This record is located in both the seventh-floor Records Center at U.S. EPA offices at 77 West Jackson Boulevard, Chicago, Illinois and at the information repository available locally for this site at the Dunn Town Hall, which is located at 4155 County Trunk Highway B, McFarland, Wisconsin. Opportunity for review is available during normal business hours. U.S. EPA Remedial Project Manager Russell Hart, (312) 886-4844, or WDNR Project Manager, Mike Schmoller, (608) 275-3303, may also be contacted.

## **III. Background**

### **A. Site History**

In September 1992, U.S. EPA signed a Record of Decision (ROD) calling for placement of a nonhazardous waste cover over the majority of the site, placement of a hazardous waste cover over Cells 6 and 12, landfill gas venting and treatment and groundwater extraction and treatment, along with appropriate monitoring.

In March 1993, U.S. EPA issued a Unilateral Administrative Order (UAO) which called for the private conduct of necessary remedial design and remedial action (RD/RA) to bring about execution of the ROD. The UAO was issued to a potentially responsible party, Waste Management of Wisconsin, Inc., associated with the site.

Conduct of the remedial work at the CDCL site has proceeded in two distinct phases. Source control elements of the remedy have been given first priority, such that design activity performed

in 1994 emphasized appropriate site cover and gas venting. It was reasoned that a reduction in infiltration of precipitation through the waste mass would help in simplifying groundwater control efforts. Hence, following remedial design approval by the agencies, installation of the landfill gas collection system and clay cap was performed from June through October 1995. Work on the collection system involved the excavation of trenches followed by the installation of piping. The cap included a 2-foot thick clay cap over the entire landfill, a 40-mil high density polyethylene geomembrane cap and geonet/geotextile composite drainage layer over Cells 6 and 12, and an 18-inch cover soil and 6-inch topsoil layer over the entire landfill. An on-site clay deposit was investigated and found to be suitable for cap construction, thereby removing a concern expressed by WDNR and the public about the potential difficulty of bringing in truckloads of clay from an outside source.

Once this work was complete, attention shifted to groundwater control elements of the remedy. In late 1995-early 1996, a pump test was conducted at the site to assist in providing an estimate of extraction rates necessary to capture the plume of groundwater contaminants. Treatability tests were conducted using site water samples to help determine the most efficient and cost-effective means of removing groundwater contaminants.

## **B. Summary of Site Contamination Regarding Groundwater**

For conceptual purposes, the site has been divided into six area zones so as to characterize groundwater contamination. Area zones I, IV, and VI are located east of Badfish Creek, southeast of the landfill, and southwest of the landfill, respectively. Organic chemical compounds have been found to be either at nondetectable levels or otherwise are at negligible levels in groundwater associated with these areas. Area VI is considered an upgradient zone.

Areas II and V are located north and east of Cell 12, respectively, while Area III is north of Cell 6. Sampling of groundwater wells in Area III resulted in findings of THF and TCE at levels of 12 and 8 ug/l, respectively. TCE was found at a level of 11 ug/l in Area V. Area II revealed sharply higher findings. At a depth of 58 feet, 2-butanone was detected at a concentration of approximately 520,000 ug/l, THF at a level of 170,000 ug/l, and toluene was 2000 ug/l. At the greater depth of 78 feet, concentrations of these contaminants dropped significantly. 2-butanone was 240 ug/l, THF at 2,100 ug/l, and toluene was at 43 ug/l.

## **C. ROD Provisions**

The original ROD was signed for the site on September 28, 1992. The ROD addressed the collection and treatment of contaminated groundwater. However, the U.S. EPA and WDNR have since determined that there is a need to make changes in the execution of the remedy with

regard to contaminated groundwater management. These changes are discussed in the following section.

#### **IV. Description of the Significant Differences and the Basis for the Differences**

##### **A. Description**

As described in the ROD, CDCL groundwater management was to have entailed on-site treatment of collected groundwater and discharge to nearby Badfish Creek in accordance with appropriate effluent limitations. Commencement of remedial action for groundwater management at CDCL was not contemplated until all pertinent design steps involving groundwater were complete.

However, U.S. EPA and WDNr believe that there is significant advantage to be realized by early commencement of remedial action for groundwater management at CDCL. This would likely involve temporary shipment of collected groundwater from CDCL to another compatible facility, and a combined discharge from the other facility. Badfish Creek would not be the expected receiving water for the discharge. A series of events leads to this conclusion.

##### **B. Basis**

As noted in Section III A of this document, treatability tests have been performed in an effort to determine the most efficient and cost-effective means of removing groundwater contaminants. The Groundwater Treatability Study Report which summarized these efforts gave equal weight to two leading approaches to possible permanent groundwater treatment at CDCL. These approaches consisted of either biological treatment as might be carried out in a sequencing batch reactor, or a combination of UV-oxidation supplemented by air stripping. The report recommended further pilot work, but noted that the ultimate decision could be aided if steady-state extraction conditions could be realized at the CDCL site.

Both WDNr and U.S. EPA strongly advocate that any necessary further field study to refine these treatment techniques not be performed as a "stand alone" item. Rather, we believe that commencing interim action as soon as possible to extract the contaminated groundwater and provide temporary off-site treatment would help bring about - if not steady-state conditions - then at least more predictable contaminant concentrations which may help in determining the long-term means of groundwater treatment at CDCL.

On December 3, 1996, U.S. EPA and Waste Management of Wisconsin, Inc. representatives appeared at a meeting of the Dunkirk Township board to discuss one possible means of performing interim action, which would be to utilize the nearby Hagen Farm groundwater treatment facility for receipt of groundwater originating from CDCL. CDCL and Hagen Farm groundwater and means of treatment now employed at Hagen Farm are compatible. In U.S.

EPA's view, the leading concerns raised at that time were the indeterminate length of time for groundwater hauling to be conducted, and the possibility of numerous daily trips between the sites.

In February 1997, WDNR and U.S. EPA received a modified plan concerning execution of the interim action. This plan was distributed to representatives of both Dunn and Dunkirk Townships. The time frame for conduct of the action had been considerably shortened, so as not to exceed six months. Also, the number of truck trips from CDCL to the as yet unnamed receiving destination had been reduced considerably. Under most circumstances, water would not be hauled more than five days per week, and usually only once daily. On Mondays or following holidays, 2-3 trips to the receiving destination may be necessary to work off volume accumulated. The appropriate destination might be any facility capable of providing adequate treatment of the CDCL water such that satisfactory effluent results are achieved.

In Wisconsin, major elements of the National Pollutant Discharge Elimination System (NPDES) and Resource Conservation and Recovery Act (RCRA) have been delegated to the State. Hence, the primary regulating body over such matters as appropriate hauling manifests, any necessary waste permits, appropriate degree of treatment prior to discharge, etc., would be handled by the WDNR. Local ordinances concerning compatibility and lack of interference with publicly owned treatment works (POTW) would also require attainment, as appropriate. The interim receiving facility could then be any facility which satisfactorily meets permit requirements and effluent limitations in accordance with appropriate waste management steps. In the case of a POTW, provided that Waste Management of Wisconsin, Inc. made ample demonstration to the POTW that the water would not interfere or pass through the POTW without sufficient treatment, and that the WDNR was satisfied the receiving POTW had an acceptable compliance history, the transaction should be able to occur.

WDNR and U.S. EPA expect that the interim action could be conducted from roughly the June-December 1997 time period. At the end of that time, monitoring results would be compiled, and a commitment made to a permanent treatment concept to be conducted at CDCL. During 1998, it would be expected that all groundwater treatment design would be completed, and a permanent groundwater treatment facility established at the CDCL site.

Three extraction wells would serve the CDCL site for this interim period. Usage would be made of the well from which samples were obtained for treatability study. This well is located in the highly contaminated Area II zone noted earlier in this document. Another extraction well has been installed elsewhere within Area II, approximately 100 feet from the first extraction well. A third extraction well has been installed in Area III. The CDCL extraction wells were installed near the end of 1996. Commencement of shipments of CDCL water could begin by June 1997, pending adequate demonstration of effluent attainment, no-interference, and waste management issues.

Both WDNR and U.S. EPA see considerable potential advantage to be gained through this interim action. Actual groundwater remedial action could commence at CDCL perhaps a year ahead of what would be possible otherwise, plus the insight gained in noting contaminant levels encountered during this time would provide valuable information in selecting the appropriate permanent treatment mechanism.

#### **V. Affirmation of the Statutory Determination**

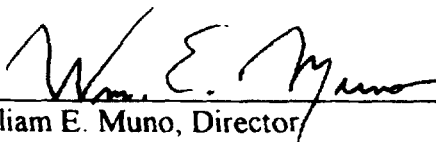
The U.S. EPA and the WDNR believe that the remedy proposed in this ESD remains protective of human health and the environment, and complies with state and federal requirements that are legally applicable or relevant and appropriate to this remedial action. The proposed remedy is also more cost effective than the remedy currently in the ROD. In addition, this revised remedy approach continues to utilize permanent solutions and treatment technologies to the maximum extent practicable for this site.

#### **VI. Support Agency Comments**

The WDNR, as the support agency, has had an opportunity to comment on this ESD. WDNR agrees with the modification to remedial action as described in this ESD.

#### **VII. Public Participation Activities**

The ESD will be added to the administrative record for the CDCL site. U.S. EPA has developed several Fact Sheets since the ROD was executed to inform interested parties as to CDCL site progress. U.S. EPA has provided both Dunn and Dunkirk Townships, in which are located the CDCL and Hagen Farm sites, respectively, a copy of the interim remedial action plan.

  
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William E. Muno, Director  
Superfund Division  
U.S. Environmental Protection Agency

6/11/97  
Date