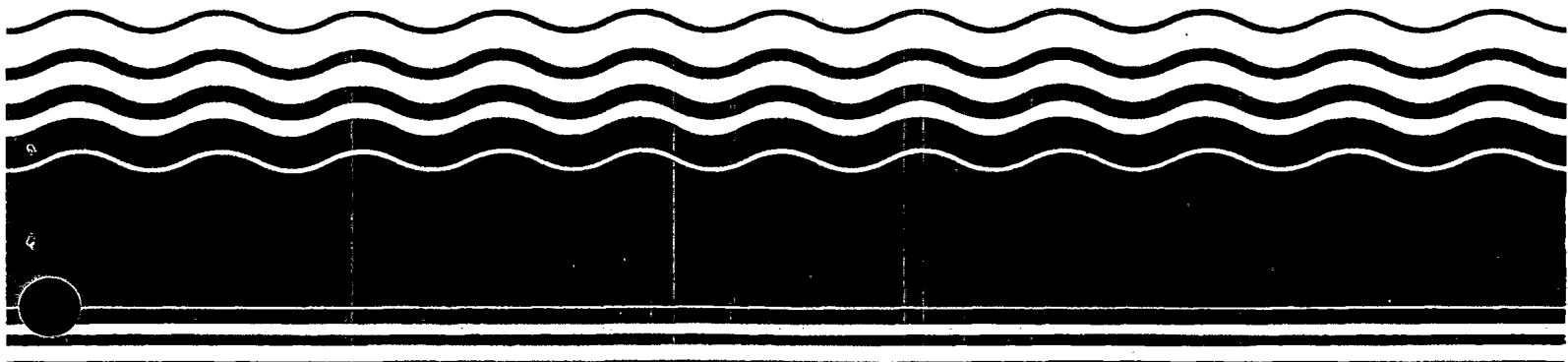


**PB99-963111
EPA541-R99-058
1999**

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

**Tri-County Landfill
Waste Management Illinois
South Elgin, IL
7/14/1999**








UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF: SR-6J

MEMORANDUM

DATE: September 27, 1999

SUBJECT: Explanation of Significant Differences (ESD)
Tri-County/Elgin Landfills Superfund Site
St. Charles Township, Kane County, Illinois
CERCLIS ID# ILD 048 306 138; Site Spill ID# 052G

FROM: John J. O'Grady (SR-6J)
Remedial Project Manager
Superfund Division 

TO: ROD CLEARINGHOUSE

Attached please find a hard-copy of the ESD for the Tri-County/Elgin Landfills Superfund Site that was signed on July 14, 1999.

If you have any questions, please contact me at your earliest convenience.

Sincerely,

John J. O'Grady (SR-6J)
Remedial Project Manager
Superfund Division
U.S. EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

SR-6J

EXPLANATION OF SIGNIFICANT DIFFERENCES

TRI-COUNTY-ELGIN LANDFILLS SUPERFUND SITE
ST. CHARLES TOWNSHIP, KANE COUNTY, ILLINOIS

I. Introduction

The Tri-County/Elgin Landfills Superfund Site (the Site) encompasses both the Tri-County and Elgin Landfills. The Site is located in northeastern Illinois on the east side of Kane County near the triple junction of Kane, Cook, and DuPage Counties. The Tri-County Landfill, an inactive landfill of 46.3 acres, the 16.2-acre Elgin Landfill, and the Elgin-Wayne Property of 4.0 acres, are located 2/3 of a mile southeast of the Village of South Elgin, St. Charles Township, Kane County, Illinois.

Response actions at the Site are being taken under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The lead and support regulatory agencies for the Site are the United States Environmental Protection Agency (U.S. EPA) and the Illinois Environmental Protection Agency (Illinois EPA), respectively.

Section 117(c) of CERCLA and Section 300.435(c)(2)(i) of the NCP establish procedures for explaining, documenting, and informing the public of significant changes to the remedy that occur after the Record of Decision (ROD) is signed. An Explanation of Significant Differences (ESD) is required when the remedial action to be taken differs from the remedy selected in the ROD but does not fundamentally alter the scope, performance, or cost of the remedy. Generally, an ESD is prompted when significant new information becomes available during or after the public comment period for the ROD. In the case of the Site, this information was provided in a pre-design investigation report which was developed under an Administrative Order on Consent (AOC), the final (100%) remedial design (RD) approved on September 30, 1997, a revision to the approved final RD Report, dated March 1999, and the final remedial action Work Plan approved on May 25, 1999.

This ESD and supporting documents are a part of the Administrative Record file which is available for viewing at the Gail Borden Public Library, Elgin, Illinois, and the U.S. EPA

Final Version; July 13, 1999
J. O'Grady

EXPLANATION OF SIGNIFICANT DIFFERENCES (Continued)

Regional Offices in Chicago, Illinois, during normal business hours. Notice of availability of this ESD and supporting documents will be published in a local newspaper of general circulation. The public is encouraged to review the updated Administrative Record to better understand the U.S. EPA's rationale for changing the selected remedy.

II. Site History

The Site includes two adjacent landfills, the Tri-County Landfill and the Elgin Landfill, respectively. While the two landfills supposedly had separate operations, historical aerial photographs indicate that the two disposal operations overlapped, to the point where the two landfills were indistinguishable. A short history for each landfill is provided below.

Tri-County Landfill

Prior to the 1940's, the Tri-County Landfill site was part of a gravel mining operation. Waste disposal at the Tri-County Landfill reportedly began in April 1968 and continued until December 1976. The Elgin-Wayne Disposal Company had initiated disposal operations at the landfill under a disposal permit issued by Kane County. During the period from 1968 to 1972, operations at the Tri-County Landfill were managed by the Elgin-Wayne Disposal Company. In 1970, the Tri-County Landfill Company (the actual owner of the property on record) was issued a permit by the Illinois Department of Health to operate the site as a solid waste disposal landfill (Permit 1970-DS-43).

The Tri-County Landfill Company was issued an operational solid waste disposal permit by the Illinois EPA in 1975 (Permit 1975-24-OP) and a supplemental permit was issued by the Illinois EPA in 1976 (Supplemental Permit 1976/409). However, site operations continued under the management of the Elgin-Wayne Disposal Company until 1976.

The Kane County Building and Zoning Permit, originally issued in 1970, stated that landfilling was to occur in trenches. However, inspection records on file at the Illinois EPA cite open dumping at the landfill and that the "area" method of landfilling was occasionally used. Background data suggests that waste was disposed of directly into the abandoned gravel quarry. Most of the dumping of liquid and industrial waste reportedly occurred at the Tri-County Landfill during the interval from 1968 to 1974.

Although the landfill operations ceased in December of 1976, the existing cover was not emplaced until early 1981. Correspondence from the Illinois EPA to Waste Management of Illinois, Inc., (WMI) on April 14, 1981, indicated that the landfill had been satisfactorily closed and covered. The State did caution WMI that if problems relating to leachate, surface drainage or erosion were to develop in the future, they should be promptly corrected. Additional correspondence from the State of Illinois to WMI through the end of 1981 cites erosion, ponding, and leachate problems occurring at the Tri-County Landfill.

EXPLANATION OF SIGNIFICANT DIFFERENCES (Continued)

Elgin Landfill

Like the Tri-County Landfill, the Elgin Landfill property was the site of a sand and gravel mining business that was operated by the Material Service Company until the late 1950's. Waste disposal operations began in 1961 under the name of the Elgin Landfill Company. No formal method of waste disposal was employed at the site and it appears that irregular areas were excavated, filled with waste, and eventually covered. The Elgin Landfill originally operated under a permit issued by Kane County in 1961.

Records detailing the amount and type of waste disposed report that residential and commercial rubbish, industrial waste and incinerator ash were disposed of at the landfill from 1961-1976.

Land Use

Most of the residential properties in the vicinity of the Site are located in the Village of South Elgin, approximately 2/3 of a mile west of the Site, west of the Woodland Landfill. The residences nearest the Site are located along Dunham and Stearns Roads approximately 1,000 feet southeast of the Site. A farm house is located approximately 1,200 feet north of the Site. Other residences, most of which are single-family dwellings, are scattered throughout the area surrounding the Site. Many of the homes and businesses in the area of the landfills rely on their own private wells to provide drinking water and water for general use. Several businesses operate on the Elgin portion of the Site, using water from wells that penetrate the landfill. These businesses are currently advised against potable use of their wells.

On the west and southwest boundaries, the Site properties are enclosed by the Prairie Path, which is a former railroad right of way converted into a public bicycle and footpath. The east and southeast Site boundary is bordered by Route 25, along which several commercial businesses are located. The northern property boundary of the Elgin Landfill is bordered by agricultural land. The land surrounding the Site to the north and to the east is used predominantly for agriculture. The land to the west of the Site is occupied by the Woodland Landfill. The Woodland Landfill is an active sanitary landfill which has accepted municipal and selected special wastes since 1976.

Surface water features in the area surrounding the Site include the Fox River, Brewster Creek, an unnamed tributary to Brewster Creek, and their associated wetlands. The Fox River is located approximately one mile to the west of the Site. Brewster Creek is a small, east to west flowing stream located 1/2-mile south of the Site. The unnamed tributary to Brewster Creek flows toward the Site from the east, by-passes the site on the south side, and continues to flow south to discharge into Brewster Creek, which flows west into the Fox River.

III. Site Enforcement Activities and the Record of Decision

In May 1971, the Elgin Jaycees, with the support of the Village of South Elgin and village residents, filed a complaint with the Illinois Pollution Control Board (IPCB). This complaint

Final Version; July 13, 1999

J. O'Grady

EXPLANATION OF SIGNIFICANT DIFFERENCES (Continued)

named the Tri-County Landfill Company and Elgin Landfill Company as respondents. The IPCB complaint was initiated because of suspected surface water and ground water contamination.

On April 12, 1973, the IPCB ordered the respondents to "cease and desist the causing of water pollution and the threat of water pollution on their respective sites," and to pay specified penalties and post bonds. State records indicate that several lawsuits and appeals ensued involving both landfills subsequent to the IPCB decision, and that the landfills continued to operate during the pendency of the litigation.

The Site was placed on the National Priorities List (NPL) of Superfund sites in March, 1989. The U.S. EPA conducted a Remedial Investigation (RI) and Feasibility Study (FS) from 1988 to 1992 to define the nature and extent of contamination and evaluate alternatives for Site cleanup. The RI identified contamination in soil, sediment, and ground water, and determined that a primary pathway for the contaminants to migrate off-site was through rain and snowmelt infiltrating through the inadequate landfill cover, leaching contaminants from the landfilled materials, and then transporting them to ground water and surface water by surface and subsurface flow. On September 30, 1992, the U.S. EPA signed a ROD selecting a remedy for the Site with the concurrence of the Illinois EPA.

The major components of the 1992 ROD include:

- ▶ excavation and consolidation under the landfill cap of contaminated sediments that exceed background;
- ▶ construction of a landfill cover in compliance with Title 35, Illinois Solid and Special Waste Management Regulations, section 807.305 and RCRA Subtitle D cover requirements, as applicable;
- ▶ collection, treatment, and disposal of leachate and contaminated groundwater at the landfill perimeter, with natural attenuation of off-site, low-level ground water contamination, to ultimately comply with drinking water or health-based standards in all ground water outside of the waste boundaries;
- ▶ active collection and treatment of landfill gases;
- ▶ comprehensive monitoring program to ensure the effectiveness of the remedy;
- ▶ institutional controls to limit land and groundwater use; and
- ▶ provisions for contingency measures to address new information or previously unknown problems, and flexibility on the type and timing of the ground water response component.

The estimated present worth of this remedy, as documented in the ROD, is \$12,624,000, with the ground water component accounting for \$3,000,000 of that cost.

The June 25, 1996, modification to the cleanup plan (an ESD) deferred implementation of the ground water component. This allowed for a period of observation to see how effective the other

EXPLANATION OF SIGNIFICANT DIFFERENCES (Continued)

components alone could be in reducing ground water contamination migration. Depending on long-term monitoring results, the ground water component may be constructed or deleted from the remedy.

An AOC for RD was signed on February 2, 1994, with two potentially responsible parties (PRPs), WMI and Browning Ferris Industries of Illinois, Inc. (BFI). The AOC refined certain design elements of the landfill cap and set specific performance standards for the barrier layer. It also provided some design flexibility to ensure that performance standards were met. Under the AOC, the Respondents conducted and reported to the U.S. EPA on a pre-design investigation (PDI), and then completed the RD. The purpose of the PDI was to acquire needed design parameters, determine background levels for soil and sediments, confirm hydrogeologic conditions, determine an appropriate period of attenuation for the off-site ground water, and ensure through sampling that residential wells were not being affected by the Site.

Negotiations for a remedial action consent decree ended in September, 1998. On September 24, 1998, a Unilateral Administrative Order (UAO) for remedial action was then issued to WMI, and the Tri-County Landfill Company. An additional UAO was issued to BFI on November 19, 1998. The Remedial Action Work Plan was approved, and the Notice of Authorization to Proceed with the Remedial Action was transmitted to the Respondents, on May 25, 1999. The RA is expected to be completed by Fall 2000. However, because of the deferred ground water component, this Site may not qualify as a construction completion until the ground water component is either constructed or eliminated. The Preconstruction Inspection and Meeting was conducted on June 9, 1999.

A *de minimis* settlement was offered to over 400 companies, of which 125 companies signed up for a settlement worth approximately \$2.1-million. The *de minimis* settlement was finalized on June 11, 1999.

For more details of the RI/FS, ROD, and AOC, please refer to the Administrative Record.

IV. Description of and Basis for Significant Differences

Background information on the Site, and its operating and regulatory histories, is contained in the RI Report prepared by WW Engineering & Science (1992), for the U.S. EPA. The PDI Report was prepared by Montgomery Watson (1996) for WMI and BFI and provided additional Site information to further support the RD. The Final (100% Complete) RD Report was prepared by Montgomery Watson (1997) for WMI and BFI. The U.S. EPA issued approval of the Final RD Report on September 30, 1997. The U.S. EPA issued two previous ESDs to the September 30, 1992, ROD: (1) The first, dated June 25, 1996, deferred the decision to install the groundwater treatment remedy for a period of 5 years after completion of the landfill cover construction; and

EXPLANATION OF SIGNIFICANT DIFFERENCES (Continued)

(2) The second, dated April 23 1998, concerned a change in the landfill cover configuration from the original ROD.

A revision to the approved Final (100 % Complete) Remedial Design Report, dated March 1999, was submitted by Montgomery Watson on behalf of WMI. The purpose of the revised RD is to install a high strength, low-permeability (1×10^{-8} cm/sec) asphalt cover, which replaces the previously approved asphalt layer, the geosynthetics, and 18 inches of the general fill layer over the geosynthetics. The revised asphalt cap which is to be installed only on the Elgin Landfill property and the Elgin-Wayne property will consist of two discreet layers. The first layer will be a variable thickness base layer, which will be used to develop the design slopes for positive drainage. This layer will be, at a minimum, 20 inches thick and will be compacted to a minimum of 90% of the modified Proctor maximum dry density or equivalent. The U.S. EPA allows that much of the existing surface may be compacted better than 90% of modified Proctor now from all of the years of traffic loading. Therefore, the Respondents and their contractors could trench and test the existing surface to determine the structural properties of the existing surface material. A design document would have to be submitted and approved in order to allow for any deviation from the 20" layer. The final layer will be a 4-inch thick combined modified asphalt binder and modified asphalt surface course of specially produced high-strength, low-permeability asphalt.

The rationale for modifying the remedy for this portion of the Site include the following: (1) the remedy is less intrusive to install which reduces the disruption to existing businesses during construction; (2) the remedy allows for the continued use of the Elgin Landfill and the Elgin-Wayne properties for container storage, parking, and other non-intrusive beneficial uses; (3) the remedy is more cost effective; (4) the 1×10^{-8} cm/sec permeability of the remedy will ensure that the new remedy will be as protective, if not more protective, than the alternative selected in the ROD; and (5) the design will incorporate a lysimeter that will definitively measure seepage that might occur through the low-permeability asphalt cap, alerting the U.S. EPA, the Illinois EPA, and the Respondents to the need for repair or reevaluation of the remedy.

Once this ESD is signed and placed in the Site Administrative Record, a further revision to the revised Remedial Design (dated March 1999) must be submitted for review and approval by the U.S. EPA, in consultation with the Illinois EPA. Among other issues that must be addressed in the revised RD are: (1) pavement design; (2) lysimeter location and design; (3) installation specifications; (4) results and conclusions from trenching/testing the existing surface for thickness, compaction, and suitability as a base layer for the asphalt surface; and (5) the maintenance plan.

The final grades for the Elgin Landfill property slope from the west towards the east at slopes varying from 2% to 3%. The Elgin-Wayne property slopes toward the southeast portion of that property at a 1% slope. The Elgin-Wayne property will drain to the southeast corner of its property. Since the majority of the property will be capped with the revised asphalt cap that will

EXPLANATION OF SIGNIFICANT DIFFERENCES (Continued)

have trucks parked on it, it will be necessary to separate the oil and grit from the stormwater prior to discharging the water to the surface water system. The Elgin Landfill property will drain towards the east. A swale near the center of the Elgin landfill property will divert some of the surface water into the series of swales on the Tri-County Landfill property and towards the southern end of the site. The eastern portion of the Elgin Landfill property will drain toward the existing drainage swales along Highway 25. The remainder of the Tri-County Landfill property will drain towards the south side of the property and the infiltration basin.

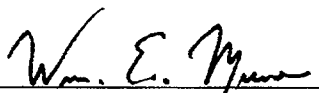
The existing water supply well and septic system on the Elgin-Wayne property will be abandoned. A replacement water supply well will be installed on the Elgin-Wayne property and will be either be installed outside the limits of waste or will be cased through the waste. A new septic system, likely consisting of a holding tank, will be installed for the Elgin-Wayne property.

V. Support Agency Comments

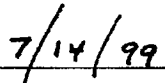
The Illinois EPA supports the change.

VI. Affirmation of Statutory Determinations

Considering the new information that has been developed and the changes that have been made to the selected remedy, the statutory determinations made in the ROD are still valid for the ESD.



William E. Muno, Director
Superfund Division



Date

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR
TRI-COUNTY/ELGIN LANDFILLS SITE
ELGIN, KANE COUNTY, ILLINOIS

UPDATE #6
EXPLANATION OF SIGNIFICANT DIFFERENCES

JULY 13, 1999

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	03/00/99	Montgomery Watson/Waste Management, Inc.	U.S. EPA	Remedial Action Work Plan for the Tri-County/ Elgin Landfills Site w/ Attached Cover Letter	289
2	03/19/99	Leibrock, M., Waste Management, Inc.	O'Grady, J., U.S. EPA	Revised Final (100%) Remedial Design Report for the Tri-County/ Elgin Landfills Site w/ Attached Cover Letter	56
3	04/05/99	Leibrock, M., Waste Management, Inc.	O'Grady, J., U.S. EPA	Letter re: Designation of Earth Tech, Inc. as Supervising Contractor for the Remedial Action at the Tri-County/Elgin Landfills Site	1
4	04/22/99	Asphalt Institute	U.S. EPA	Nine Articles from the Asphalt Institute and <i>Asphalt Magazine</i>	31
5	04/23/99	O'Grady, J., U.S. EPA	Leibrock, M., Waste Management, Inc.	Letter re: U.S. EPA's Comments on the Remedial Action Work Plan for the Tri-County/Elgin Landfills Site	5
6	05/14/99	Leibrock, M., Waste Management, Inc.	O'Grady, J., U.S. EPA	Letter re: WM's Response to U.S. EPA's April 23, 1999 Comments on the Remedial Action Work Plan for the Tri-County/Elgin Landfills Site	2
7	05/24/99	Leibrock, M., Waste Management, Inc.	O'Grady, J., U.S. EPA	Letter re: Construction Contractors for the Source Control Remedial Action at the Tri-County/Elgin Land- fills Site	1

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
8	05/25/99	O'Grady, J., U.S. EPA	Leibrock, M., Waste Management, Inc.	Letter re: U.S. EPA's Approval of the Remedial Action Work Plan and Notice of Authorization to Proceed with the Remedial Action at the Tri-County/Elgin Landfills Site	1
9	06/04/99	O'Grady, J., U.S. EPA	Miller, M., Browning- Ferris Industries	Letter re: U.S. EPA's Consideration of an Explanation of Signi- ficant Differences for the Landfill Cap Profile on the Elgin Landfill and Elgin-Wayne Portions of the Tri-County/Elgin Landfills Site	2
10	06/09/99	Dowden, J., Waste Management, Inc.	O'Grady, J., U.S. EPA	Letter re: WM's Desig- nated Project Coordinator for the Tri-County/Elgin Landfills Site	1
11	07/02/99	Wilder Construction Company	U.S. EPA	Various Articles re: MatCon (Modified Asphalt Technology for Waste Containment)	50
12	07/08/99	Herring, G., U.S. Army Corps of Engineers/ Omaha District	O'Grady, J., U.S. EPA	Hydrologic Evaluation of Landfill Performance (HELP) Model Run for the MATCOM material at the Tri-County/Elgin Landfills Site	23
13	07/12/99	O'Grady, J., U.S. EPA	Dowden, J., Waste Management & M. Miller, Browning- Ferris, Industries	Letter re: Explanation of Significant Differences for the Landfill Cap Profile on the Elgin Land- fill and Elgin-Wayne Portions of the Tri-County/ Elgin Landfills Site	2
14	00/00/00	IEPA	U.S. EPA	Letter: IEPA's Concur- rence with the Explanation of Significant Differences for the Tri-County/Elgin Landfills Site (PENDING)	

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
15	00/00/00	U.S. EPA	Public	Explanation of Significant Differences for the Tri-County/Elgin Landfills Site (PENDING)	

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