United States Environmental Protection Agency
Region V
POLLUTION REPORT

Date: Monday, May 23, 2005
From: Mark Durno

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Subject: Initial
Warren Recycling
300 Martin Luther King Blvd, Warren, OH

POLREP No.:	1	**Site #:**	B59U
Reporting Period:	4/25/2005 - 5/20/2005	**D.O. #:**	030228-0038
Start Date:	4/25/2005	**Response Authority:**	CERCLA
Mob Date:	3/22/2005	**Response Type:**	Time-Critical
Demob Date:		**NPL Status:**	Non NPL
Completion Date:		**Incident Category:**	Removal Action
CERCLIS ID #:	OHN000509209	**Contract #**	68-S5-03-06
RCRIS ID #:			

Site Description
Site Location:

The WRI Site is located at 300 Martin Luther King Boulevard in Warren, Trumbull County, Ohio. WRI has operated as a construction and demolition debris (C&D) landfill since 1994. A separate facility located on the same property operates as a transfer station for municipal solid waste from the City of Warren. The WRI facility is located on approximately 200 acres of land and is located in a mixed commercial and residential area. The C&D landfill was constructed in three phases and are described as follows.

• Grand-fathered area is the original cell which is unlined with no leachate collection. This area has clay cap of approximately 2 feet. For closure, the Ohio Environmental Protection Agency (OEPA) has required a 3 ft clay cap which has not been constructed to date.
• Phase I is located west of the grand-fathered area and was constructed under 1996 C&D landfill regulations. This area has an in-situ liner with a leachate collection system. This area also includes the "V-area" which is between the grand-fathered area and Phase I. These areas have a clay cap of approximately 2 feet; however, OEPA has required a 3 ft cap.
• Phase II is the active cell located on western portion of the property on approximately 15 acres. This cell is lined and has a drainage layer constructed out of tires. A leachate collection system is also installed.

The WRI facility is located in close proximity to residential areas and schools in the City of Warren, Ohio. Homes are located within 100 ft of the WRI property, which is not fenced. Some of the homes are located in the City of Warren, but most are in Warren Township (Leavittsburg). Labrae High School and Leavitt Elementary School are located within one mile of the WRI Facility. Bascom Elementary School is located within two miles.

Site Background:

In 1999, a criminal investigation was conducted at the WRI Site to investigate claims of illegal disposal of industrial waste. In Fall 2001, OEPA began to receive citizen complaints of odor and a number of health complaints in the areas surrounding the WRI facility. Currently, OEPA has a hot line for residents to report

odors and receives reports daily.

In May 2002, the Agency for Toxic Substances and Disease Registry (ATSDR) was petitioned to evaluate levels of hydrogen sulfide (H2S) in the air in the Warren Township communities adjacent to the WRI Site. In August 2002, ATSDR personnel visited the community and gathered information and reviewed ambient data collected for a short time (28 days) at five locations in the area. Based on the May 2002 data, ATSDR issued a Health Consultation in September 2002 that concluded exposure to H2S in the air at the levels reported in the data presented a public health hazard. ATSDR recommended additional testing to validate the original data.

From November 2002 through March 2003, U.S. EPA's Environmental Response Team (ERT) conducted indoor and outdoor air monitoring for H2S at seven residential locations. H2S in the air was detected at levels up to 6.1 parts per million (ppm) in air outside the houses and 38 parts per billion (ppb) inside of the houses.

The City of Warren Board of Health (WBH) is responsible for conducting routine inspections at the WRI facility as delegated under the authority of OEPA. In November 2003, OEPA informed the WBH that the WRI facility was not operating in substantial compliance with Ohio Law and the WBH should have denied/proposed denial of WRI's 2003 permit.

In June 2003, the WRI Site began to exhibit signs of subsurface heating along with excessive H2S odors and dust. Smoke had been noticed coming from cracks on the landfill and a "burning" smell was evident in the Phase II area of the landfill. Temperature probes were installed and numerous attempts were made to excavate and extinguish hot spots. On July 3, 2003, OEPA requested assistance from the U.S. EPA in conducting a thermal assessment at the WRI Site.

On July 1, 2003, WRI was ordered to comply with a Consent Order and Permanent Injunction by Trumbull County Court of Common Pleas. The order included provisions for abating H2S releases from the site.

On July 18, 2003, a contractor for U.S. EPA conducted a fly over of the WRI facility to collect data with a RS-800 infrared line scanner, and MR254 FTIR hyper-spectral Spectrometer. The data showed one major hot spot at the southwest corner of the landfill. Several other areas showed temperatures above 28oC. U.S. EPA submitted its data to OEPA for evaluation and use.

On November 11, 2003, the Ohio Department of Health (ODH) sampled 14 private water systems due to concerns about ground water in the vicinity of the WRI landfill. Analytical results indicated that 12 samples exceeded the U.S. EPA secondary maximum contamination level (MCL) for total dissolved solids of 500 milligram per liter (mg/L); 4 samples exceeded the secondary MCL for sulfate at 250 mg/L; one exceeded the secondary MCL for manganese of 0.05 mg/L; and five exceeded the secondary MCL for iron of 0.3 mg/L.

On November 21, 2003, ATSDR published the Health Consultation for Warren Township. The Health Consultation was based on an Exposure Investigation (EI) to determine if levels of H2S in indoor and outdoor air are present at levels of health concern in the greater Leavittsburg, Ohio, community. ATSDR concluded the following (as summarized):

• An urgent public health hazard existed based on the following conditions:
- People with preexisting cardiopulmonary disease or respiratory problems,
- Levels of H2S found in landfill vents create the potential for fire or explosion,
- Physical health hazards for those who access the unrestricted landfill;

• H2S was found indoors and outdoors so the opportunity for the community to eliminate or reduce their exposure is difficult or does not exist;

• Diminished quality of life due to reported complaints of headaches, nausea, and fatigue from H2S or other chemical fumes; and,

• Given the levels of H2S in the community's air, it is possible that workers near the source(s) may be exposed to levels that exceed occupational exposure guidelines.

On April 30, 2004, U.S. EPA collected two tedlar bag sample from residential communities near the WRI facility. Analytical results from tedlar bag 1 showed hydrogen sulfide at a concentration of 0.06 ppm (60 ppb); and tedlar bag 2 showed dimethyl sulfide at 0.53 ppm, dimethyl disulfide at 0.18 ppm, methyl mercaptan at 0.75 ppm, an n-butyl mercaptatn at 0.083 ppm.

WRI installed a pretreatment system to remove H2S from leachate prior to discharge to the sanitary sewer. The system consisted of a 1,000 gallon holding tank where leachate would be treated with hydrogen peroxide over a 10 minute time frame prior to discharge. OEPA's observations indicated that the holding time was approximately only 2 minutes. In June 2004, ATSDR and OEPA staff responded to severe odor complaints in the Leavittburg community. Using a calibrated handheld instrument near the sewer, H2S was detected at concentrations just below 100 ppm, the level determined by the National Institute for Occupational Safety and Health (NIOSH) to be immediately dangerous to life and health (IDLH). In July 2004, U.S. EPA informed WRI that they could not pump leachate into the sewer under these conditions. Currently WRI occasionally pumps leachate into tanker trucks and transports it to the City of Warren Waste Water Treatment Plant.

As of July 1, 2004, WRI became out of compliance with the above referenced Consent Order.

A portion of land west of Phase II had never been approved for use by OEPA and construction of this portion of the cell had not been completed. Since this portion of the cell was never complete, leachate began to pool and create a surface exposure. In August 2004, WRI completed the installation of a drainage layer and covered the area with clay in an attempt to minimize the surface exposure threat.

In early August, 2004, OEPA consulted U.S. EPA's Emergency Response Branch (ERB) to determine if conditions at the Site warranted a removal assessment, emergency response action, or time-critical removal. After completing a data review, U.S. EPA's ERB determined that, based on historical data, the Site meets the criteria for a time-critical removal action; however, further assessment work would be needed in the nearby residential neighborhood to determine if hazardous conditions continue to exist due to H2S releases from the Site.

U.S. EPA mobilized its Environmental Response Team (ERT) and Superfund Technical Assessment and Response Team (START) to conduct the off-Site assessment. From September 9 - October 6, 2004, continuous ambient monitoring for H2S was conducted at three historically critical locations. Additionally, periodic air sampling was conducted to verify the quality of the monitoring results. Results from this assessment indicated that H2S levels in the community were still present at levels considered to the threatening or hazardous to human health, as previously documented in the ATSDR health consultation (November, 2003).

On January 31, 2005, an Action Memorandum was approved that documented the site as a substantial threat to human health.

Current Activities

On March 23, 2005, U.S. EPA and its Emergency Rapid Response Services (ERRS) and Superfund Technical Assessment and Response Team (START) contractors met at the site to begin planning for necessary actions to substantially reduce releases of hydrogen sulfide from the landfill and eliminate high level exposure to nearby receptors. On April 25, 2005, U.S. EPA mobilized to the site, established site facilities and began initial actions to stabilize the site.

Site Activities to Date:

From April 25, 2005 through May 26, 2005, U.S. EPA and its ERRS and START contractors conducted the following activities:

- Approximately 20,000 tons of debris from a temporary staging location is being reconsolidated to the open-face of the landfill. This action is about 60% complete.
- U.S. EPA's Rapid Assessment Tool was utilized to conduct soil gas surveys of the entire landfill. Two full surveys have been conducted.
- Two areal surveys were conducted. The first was to collect stereoscopic photography of the landfill geography to established baseline drawings of current conditons. The second was an infrared image of the landfill to identify locations of potential subsurface fires (one location was found to have elevated surface temperatures).
- A temporary road is being constructed from S. Leavitt Road to the site for access to the south and west portions of the landfill.
- The site will be temporarily demobilized from May 27-30 for the Memorial Day holiday.

Planned Removal Actions

- Design and install a temporary, high capacity leachate treatment system.
- Design and install a surface water and storm water management system which includes capping of the

"phase 2 summit" location.
- Design and install a permanent leachate management system.
- If necessary, design and install a soil vapor extraction and treatment system.

Next Steps
- Complete western access road.
- Conduct treatability study with water treatment products for leachate management.
- Complete reconsolidation of remaining site debris.
- Cover the landfill's open-face.

Key Issues
- U.S. EPA plans to conduct public updates at a citizen's interest group monthly meeting. These meeting are conduct on the 3rd Tuesday of each month.

response.epa.gov/warrenrecycling