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June 2, 2009

Ms. Denise Zeno, Work Assignment Manager
U.S. Environmental Protection Agency
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New York, NY 10007-1866

Document Control No.: SAT2.20113.118.786

**Subject: Site Reassessment Summary Letter Report
Work Assignment No.: 118, PAS Irwin Dump
Contract No.: EP-W-05-048**

Dear Ms. Zeno:

Weston Solutions, Inc. (WESTON®) is pleased to submit the Site Reassessment Summary Letter Report for the PAS Irwin Dump site (CERCLIS ID No. NYD000511618). If you have any questions, please contact me at (732) 417-5808.

Very truly yours,

WESTON SOLUTIONS, INC.

A handwritten signature in cursive script that reads "Michele Capriglione".

Michele Capriglione
Senior Project Scientist

enclosure

cc: I. Acosta, EPA (w/o enclosure)
W.S. Butterfield, WESTON (w/o enclosure)
site file

**SITE REASSESSMENT
SUMMARY LETTER REPORT
PAS IRWIN DUMP
BYER ROAD
OSWEGO, OSWEGO COUNTY, NEW YORK**

CERCLIS ID No.: NYD000511618

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Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Prepared by:

Region 2 Site Assessment Team 2
Weston Solutions, Inc.
Edison, New Jersey 08837

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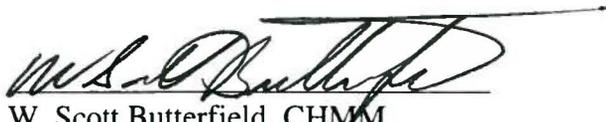
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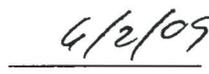
SUBMITTED BY:


Michele Capriglione

Senior Project Scientist


Date


W. Scott Butterfield, CHMM
SAT 2 Program Manager


Date

Introduction

The United States Environmental Protection Agency (EPA) has tasked the Weston Solutions, Inc. (WESTON) Region 2 Site Assessment Team (SAT 2) with a Site Reassessment to gather and evaluate new information on the PAS Irwin Dump site (CERCLIS ID No. NYD000511618) in Oswego, Oswego County, New York, and to determine if further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is warranted (Ref. 1, p. 1). Previous investigations conducted by New York State Department of Environmental Conservation (NYSDEC) and EPA have shown that drums of hazardous materials were buried on the site and that hazardous substances might have migrated to the ground surface and into the adjacent surface water (Ref. 3, pp. 7, 14-17). From September to December 2008, a removal action was conducted, during which drums and associated contaminated soils were removed from the site (Ref. 6, p. 11). This Site Reassessment Summary Letter Report provides a description of the PAS Irwin Dump site and a hazard assessment which includes a Hazard Ranking System (HRS) site score.

Site Location

The PAS Irwin Dump (a.k.a. Irwin Dump) site is located in a mixed residential/commercial neighborhood on Byer Road in a rural corner of the City of Oswego. The site consists of a former drum burial area that was part of a 4-acre construction debris landfill created in the 1970s. The site is bounded by commercial businesses to the east and west, Byer Road to the south, and woodlands to the north. Residences are located within 500 feet of the site to the west. A Lake Ontario tributary (i.e., Ont-66b) borders the site to the east and northeast (Ref. 1, pp. 1-2; 4, p. 2; 6, p. 8).

Site History

In the mid-1970s, a man hired by Pollution Abatement Services, Inc. (PAS) transported approximately 200 drums and some contaminated soil from the nearby PAS Superfund site to the Irwin Dump site and buried them (Ref. 5, pp. 4-5; 6, pp. 7-8). The drums were buried on the northern edge of the man's construction debris landfill, on an adjacent property (Ref. 4, pp. 2, 7-8). The drums were later found to contain various liquids and solids. These waste materials and associated contaminated soils contained several hazardous substances at elevated concentrations (Ref. 4, pp. 3-4, 9, 19-23; 5, p. 7).

The PAS Irwin Dump site came to the attention of public officials in 1976, when Oswego County Health Department (OCHD) representatives visited the site and observed approximately 50 drums protruding from the landfill and apparently leaking their contents (Ref. 3, p. 7). In September 1978, New York State Department of Health (NYSDOH) collected leachate and surface water samples at the site. Analytical results indicated the presence of tetrachloroethylene (PCE) at 10 micrograms per liter ($\mu\text{g/L}$) in the leachate sample and carbon tetrachloride at 5 $\mu\text{g/L}$ in the surface water sample, which was collected at the culvert beneath Byer Road just upstream of the fill area. OCHD collected additional stream and leachate samples at the site in November 1982. Analytical results from the leachate sample, collected from an old stream bed east of the fill area, indicated the presence of barium and zinc at respective concentrations of 650 and 37 parts per billion (ppb). A surface water sample collected at the Byer Road culvert contained zinc and 1,1,1-trichloroethane at concentrations below NYSDEC water quality limits (Ref. 9, pp. 5, 11, 25, 32, 34, 37, 39).

In June 1983, NYSDEC completed a Phase I report indicating that no groundwater or air contamination data were available for the PAS Irwin Dump site. Due to the lack of sufficient information to formulate a final HRS score for the site, a Phase II program was implemented (Ref. 9, p. 11). In August 1985, NYSDEC installed three monitoring wells (CW-2, CW-3, and CW-4) and collected groundwater, soil, surface water, sediment, and waste (i.e., leachate) samples (Ref. 9, pp. 14-16). Analytical results indicated that no contamination had been discovered; however, geophysical anomalies were noted indicating the possible presence of buried drums. NYSDEC concluded that the initial Phase II monitoring wells were not intercepting the suspected contaminant plume and initiated a second Phase II investigation (Ref. 3, pp. 13, 30, 39; 9, p. 8). NYSDEC installed an additional well (CW-5) at the site in 1986 (Ref. 3, p. 30).

From June to November 1991, NYSDEC conducted an expanded Phase II investigation that included a subsurface geophysical survey, excavation of four test pits, and installation of three downgradient monitoring wells (MW-1, MW-2, and MW-3) at the site. NYSDEC collected leachate samples from various areas of the site; a waste sample from a buried, leaking 55-gallon drum encountered in one of the test pits; subsurface soil samples from monitoring well boreholes; groundwater samples from the three new and four existing monitoring wells; and surface water/sediment samples from tributary Ont-66b. The waste sample from the leaking 55-gallon drum exhibited the characteristic of ignitability (ignitable below 140°F) and was classified as hazardous waste (EPA Waste Code D001). Organic compounds were not detected above sample quantitation limits (SQL) in the leachate, soil, surface water, or groundwater samples. Toluene was detected at 6 ppb in the upstream sediment sample from tributary Ont-66b (Ref. 3, pp. 14-17, 22-37, 58-103).

In 1998, EPA performed a removal assessment at the site in response to a referral from NYSDEC. EPA excavated 15 trenches, collected five soil samples, and collected groundwater samples from six on-site monitoring wells. No buried drums were identified on site during the 1998 assessment, and sample analytical results did not indicate significant contamination. NYSDEC returned to the site in 1999 to confirm the presence of the drum burial area. Excavation work at that time revealed more than 25 drums buried in the same area previously identified in 1991 (Ref. 4, pp. 2-3).

EPA and NYSDEC revisited the site in November 2007, at which time EPA observed ten partially-buried drums. EPA conducted a removal assessment at the site from December 10-14, 2007 and identified a drum burial area measuring approximately 40 feet by 60 feet in area and approximately 15 feet deep. EPA excavated 150 drums and 200 cubic yards of contaminated soil from this area and staged the materials on the ground surface of the site. During the excavation, EPA observed damaged and corroded drums buried haphazardly and leaking their contents into the surrounding soils. Drums contained clear liquids, brown and black resinous material, viscous tarry liquids, clear silicone-like gels, and rubbery-textured brown-orange solids. Materials in many of the drums had chemical odors, and organic vapors as high as 900 units were measured on a photoionization detector (PID) in the air around the excavation. EPA collected 17 samples from drums and seven waste/soil samples from the excavation during the removal assessment. Analytical results indicated that the waste material in at least six drums displayed the characteristic of ignitability or reactivity. Several hazardous substances, including acetone, toluene, ethylbenzene, xylene, benzene, 1,2-dichlorobenzene, trichloroethylene (TCE), phenol, naphthalene, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, 2,4-dinitrophenol, acetophenone, and 2-methylnaphthalene, were detected at elevated concentrations in the waste and soil samples (Ref. 4, pp. 3-4, 9, 19-23; 5, p. 7).

Based on the analytical results and observations made during the removal assessment, EPA recommended a CERCLA time-critical removal action for the site (Ref. 4, p. 6). In June 2008, EPA and several respondents issued an Administrative Settlement Agreement and Order on Consent for a Removal Action (Index No. CERCLA-02-2008-2018). The respondents included Ashland Inc., Bristol-Myers Squibb Company, General Electric Company, Honeywell International Inc., International Paper Company, Niagara Mohawk Power Corporation, Pharmacia Corporation, and SI Group, Inc. (Ref. 5, p. 1). The Order required: proper characterization, transportation, and off-site disposal of drums and contaminated soil already excavated and staged at the site; determination of the extent of soil contamination associated with the drum area; excavation of any other buried drums and other containers in the drum area; excavation of contaminated soil in the drum area; proper characterization, transportation, and off-site disposal of additional excavated drums and soil associated with the drum area; appropriate post-excavation soil sampling and analysis in the excavation area to document the adequacy of the soil removal; further investigation to determine the potential extent of groundwater contamination associated with the drum area; appropriate backfilling of the excavation and site restoration; and such other investigations, studies, and response actions as proposed and approved by EPA (Ref. 5, p. 11).

From September to December 2008, Conestoga-Rovers & Associates (CRA) executed a drum removal action on behalf of the PAS Irwin Joint Defense Group. Site removal activities were conducted in accordance with Site Work Plan, Health and Safety Plan, Transportation and Disposal Plan, and Quality Assurance Project Plan documents, submitted to and approved by EPA in September 2008 (Ref. 6, pp. 9-13). During the removal action, the following materials were removed from the site (Ref. 6, p. 42; 7, pp. 1-71):

- 3.56 tons of drum carcasses
- 1,651.67 tons of non-hazardous soil
- 5.9 tons of non-hazardous concrete
- 16.86 tons of non-hazardous bulk solids
- 44 overpacks of hazardous ignitable solids
- 1 overpack of hazardous ignitable liquids
- 14 overpacks of non-hazardous liquids/solids
- 51,250 gallons of non-hazardous wastewater

A final report for the removal action was submitted to EPA in February 2009 (Ref. 6, p. 1). In November 2008, CRA installed two new monitoring wells (MW-4 and MW-5) at the drum excavation area and collected groundwater samples from all new and existing on-site monitoring wells. The volatile organic compounds (VOC) benzene, chlorobenzene, and 1,2-dichlorobenzene were reported above detection limits in well MW-4, while the VOC methyl tert-butyl ether and the semivolatile organic compound (SVOC) caprolactam were reported above detection limits in upgradient well CW-4 (Ref. 6, pp. 26-27, 32, 91-102).

Current Hazard Assessment

A removal action was conducted at the PAS Irwin Dump site in 2008, during which the drums and associated contaminated soil were removed from the site (Ref. 6, p. 42; 7, pp. 1-71). Analytical

results for groundwater samples collected after the removal indicate the continued presence of a few VOCs and SVOCs at low levels (Ref. 6, pp. 26-27, 32, 91-102).

Sources – From September 2008 to December 2008, a removal action was conducted, during which the drums, their contents, and associated contaminated soil were removed from the site and disposed at facilities permitted under the Resource Conservation and Recovery Act (RCRA) (Ref., 6, p. 42; 7, pp. 1-71). As such, the removal meets the criteria for a qualifying removal and residual contaminated soil is considered to be the source (Ref., 8, p. 2).

Groundwater Migration Pathway – Based on a review of analytical results from groundwater samples collected by CRA in November 2008, there is an observed release of low levels of VOCs to groundwater. A groundwater sample collected from MW-5, the monitoring well installed in the immediate vicinity of the former drum area, indicated the presence of benzene, 1,2-dichlorobenzene, and chlorobenzene at concentrations above detection limits. These contaminants were not detected in the background (i.e., upgradient) monitoring well (Ref. 6, pp. 26-27).

Targets Associated with the Groundwater Migration Pathway – The PAS Irwin Dump site is underlain by glacial deposits composed primarily of silty sand and gravelly sand, with smaller amounts of sandy silt, clayey silt, and clay (Ref. 3, pp. 40, 50). The hydraulic conductivity of such deposits (i.e., predominantly sand) is approximately 10^{-4} centimeters per second (cm/s) (Ref. 16, p. 9). The thickness of the overburden deposits at the site ranges from 17 feet to more than 65 feet (Ref. 3, p. 52). Well yields from the overburden aquifer vary considerably, ranging from 0.25 to 1,000 gallons per minute (gpm). Underlying the glacial overburden is the Oswego Sandstone Formation (Ref. 3, pp. 40, 50).

Based on background information, there are no public wells and a minimal number of private wells within 4 miles of the site. Public water lines carrying surface water from Lake Ontario extend to all residential areas within the 4-mile target distance limit (TDL), and it is likely that most residents within 4 miles use public supplies as potable water. There are no designated wellhead protection areas (WHPA) within 4 miles of the site (Ref. 2, p. 3; 3, pp. 42, 114; 11, pp. 1-6).

Surface Water Migration Pathway – Based on the presence of low levels of contaminants detected in leachate and stream water during previous investigations, a release to surface water is suspected. As part of the expanded Phase II investigation in 1991, a leachate sample was collected along the northeast boundary of the site; TCE was detected in that sample (Ref. 3, pp. 14-16).

Targets Associated with the Surface Water Migration Pathway – Surface water bodies associated with the 15-mile surface water pathway include tributary Ont-66b, Glimmerglass Lagoon, and Lake Ontario. The probable point of entry (PPE) to surface water is located in tributary Ont-66b just east of the site. From the PPE, the surface water pathway extends north and northwest for approximately 1.1 mile, where it discharges to Glimmerglass Lagoon on the State University of New York (SUNY)-Oswego campus. Tributary Ont-66b continues from Glimmerglass Lagoon for 0.4 mile, where it discharges to Lake Ontario. The remainder

of the 15-mile TDL consists of an arc extending approximately 13.5 miles into Lake Ontario (Ref. 2, pp. 1, 4; 3, pp. 7-9, 44-45; 4, p. 2; 12, p. 1).

There is one drinking water intake located in Lake Ontario, approximately 3.5 mile downstream of the PPE to surface water. This intake serves an estimated 190,000 people (Ref. 2, p. 4; 11, pp. 1-5). Tributary Ont-66b and Glimmerglass Lagoon are not considered fisheries; however, Lake Ontario is a fishery (Ref. 12, p. 1). There are approximately 5.79 miles of HRS-eligible wetland frontage located along the surface water pathway, with the nearest wetland located in Glimmerglass Lagoon about 1.1 mile downstream of the PPE (Ref. 2, p. 4; 14, pp. 1-2). Five State-listed threatened or endangered species habitats occur along the 15-mile surface water pathway. The sensitive environments are not located within 1 mile downstream of the site (Ref. 13, p. 1).

Soil Exposure Pathway – Background information and sampling data indicate that contaminated soil did exist on site prior to removal activities; however, contaminated soil associated with the buried drum area was removed from the site during the removal action conducted from September to December 2008 (Ref. 4, pp. 3-4; 6, p. 42). Residual contaminated soil associated with the construction debris landfill might exist on site.

Targets Associated with the Soil Exposure Pathway – The PAS Irwin Dump site is located in a mixed residential/commercial neighborhood on Byer Road in a rural corner of the City of Oswego (Ref. 4, p. 2). There is one residence west of the site, possibly within 200 feet; however, the residence is located upslope of the former drum burial area and contaminants are not expected to have migrated to this residence. There are no known schools or daycare facilities within 200 feet of the site (Ref. 3, pp. 46, 55, 117). There are no known resource uses of soil or terrestrial sensitive environments on the site (Ref. 13, p. 1).

Air Migration Pathway – A release to air is neither observed nor suspected. Air samples have not been collected at the PAS Irwin Dump site. During the removal assessment in 2007, strong chemical odors were noted and organic vapor levels as high as 900 units were measured on the PID in the excavation area. However, the drums, contaminated soil, and other waste materials from that and subsequent excavations have been removed from the site for proper off-site disposal. During other on-site activities, there were other PID readings above background, but none were reported for the breathing zone (Ref. 3, pp. 35-36, 103-104; 4, pp. 3-4; 6, p. 42).

Targets Associated with the Air Migration Pathway – Approximately 27,996 people reside within 4 miles of the PAS Irwin Dump site (Ref. 2, p. 3; 15, pp. 1-8). Sensitive environments within 4 miles include 1,736 acres of HRS-eligible wetlands and nine State-listed threatened or endangered species habitats. The nearest sensitive environments is located approximately 0.7 from the site (Ref. 2, p. 3; 13, p. 1; 14, pp. 1-2).

ATTACHMENT A

REFERENCES

REFERENCES

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