U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT (POLREP)

I. HEADING

Date:	May 12, 2004
Subject:	**Green Hill Road Site, Johnston, RI:** Removal Action
From:	USEPA New England, Boston, MA
On-Scene Coordinator:	Alex Sherrin
Polrep No.:	5

II. BACKGROUND

Site No.:	01AX
Delivery Order No.:	0090
Response Authority:	CERCLA
ERNS No.:	NA
CERCLIS:	RIN000103195
NPL Status:	Not on NPL
State Notification:	RIDEM notified
Action Memorandum:	Approved, February 20, 2003
Start Date:	OSC conducted initial site walk with Emergency and Rapid Response Service (ERRS) contractor on February 25, 2003.
Completion Date:	NA

See previous POLREPs for additional information

III. SITE INFORMATION

A. Physical Location/Site Characteristics

This site is located on plat 31, plot 37 on Green Hill Road (Latitude and Longitude: 41°47.97 N, 71°31.60 W respectively) in Johnston, Rhode Island. The once forested 21.12 acre property was clear cut to provide room for a pile of construction and demolition (C&D) debris (wood, pressure-treated wood, plastic, glass, wallboard). The pile occupies approximately 12 acres and is about 70' thick at its highest point.

B. Other Actions To-Date

On October 21, 2002, the Johnston Fire Department (the Fire Department) contacted Rhode Island Department of Environmental Management (DEM) emergency personnel to inform them of an ongoing fire at an unlicensed landfill on Green Hill Road. DEM officials responded to the scene and observed that the stockpile of shredded C&D material had tripled in size since they had seen it last in1999 and which they now estimated to be approximately 1,000,000 yd^3. The Fire Department was able to address the fire breakout using fire fighting foam, soil cover, and heavy equipment while DEM provided air monitoring assistance.

The Fire Department subsequently responded a number of times to flame and smoke breakouts at the site. When the local resources were exhausted, DEM activated their emergency response

contractor to bring soil cover material to the site and to provide personnel and equipment to spread it. By the beginning of February, 2003, DEM and their contractor had completed their work at the site which included the excavation of a deep firewall trench around the then current hot spot. They notified EPA that after they were done containing a new surface outbreak of fire, they no longer had the resources to continue. Based mainly on the number of hazardous substances detected in an earlier round of air samples collected from a smoke breakout, EPA prepared an action memorandum which was signed by the Assistant Director for the Office of Site Remediation and Restoration on February 20, 2003.

IV. RESPONSE INFORMATION

A. Situation

1. Current Situation

Three deep firewall trenches have been excavated (two by EPA and one by DEM) and backfilled with a dense silty soil. These trenches have been tied into the cap which was constructed mainly with the same silty soil and covered with approximately six inches of loam. A combination of the trenches and the cap have effectively cut the landfill into four approximately equal sized cells. Recent environmental monitoring indicates that the site is stable. No signs of fire or smoke breakouts have been observed for a number of months. Recent temperature readings collected in April 2004 from the previously installed thermal monitoring wells indicated normal landfill temperatures (approx 120° F). Post-excavation air samples collected from the well pipes have shown normal landfill gasses such as methane and carbon dioxide as opposed to the myriad of volatile organics detected in a smoke plume prior to EPA mobilization.

Prior to demobilizing from the site on October 10, 2003, the RI DEM arranged for a contractor to hydroseed the newly constructed cap to stabilize the cover material. The hydroseed failed to adequately root and the continuous heavy rain in October 2003 and early spring of 2004 resulted in significant erosion of the cover material. A number of deep channels formed and some of the silt material washed from the pile into the access road surrounding the pile. Two attempts have been made to repair and stabilize the situation, but additional work is required.

2. Removal Activities to-Date

Upon mobilization to the site, EPA's Emergency and Rapid Response Services (ERRS) contractor, Shaw E & I (Shaw) began a number of site preparation activities. This included stockpiling soil cover material, stabilizing the site access roads with geotechnical fabric and gravel, constructing an emergency access road out of the site, and increasing the staging area for future operations. Soon after mobilizing to the site, a number of fire and/or smoke breakouts occurred at various locations around the pile. Shaw addressed these breakouts using heavy equipment to collapse the open vent holes and cover the areas with soil cover material. Since many of the breakouts were occurring on the northern slope, that section of the pile was graded and covered with approximately two feet of cover material. Once the site was stabilized, the crew installed two firewall trenches and began to shape and grade the remainder of the pile. The trenches were tied into the firewall previously constructed by DEM and were installed to a depth where the debris had composted (approximately 30' - 40' below grade) and no longer posed a combustion threat. As previously mentioned, the firewalls separate the pile into four roughly equivalent sized portions and totaled about 1,500 feet in length.

Prior to laying down the final cap, Shaw shaped and graded the majority of the landfill to eliminate particularly steep sections. Once the pile was shaped, it was completely covered with an approximate two foot layer of fine grained silty soil which was also tied into the firewalls. The landfill was covered in this manner to cut off the oxygen which had been feeding both the subsurface fire and the aerobic bacteria which is slowly consuming the material and giving off heat as part of the natural processes. The silt cap was then covered with a layer of loam to support hydroseed and a subsequent vegetative cover. This was done in an effort to stabilize the cap and prevent precipitation runoff from eroding the pile cover material.

As described above in Section IV.A.1., cap erosion became an issue in the fall of 2003. On October 21, EPA and Shaw re-mobilized to the site to remove the washed out silt from the roadway and place it back onto the pile. In addition, hay bales and silt fence were placed in strategic places on the cap to limit future erosion. Additional loam was delivered to the site which was packed into some of the recently formed gullies. Regrading the eroded areas and setting of the silt fence and hay bales was somewhat hampered due to extremely soft and muddy conditions.

On October 27, a geotechnical engineer with the US Army Corps of Engineers visited the site at the request of the OSC to provide technical advice regarding the continuing erosion issues. An organic type of erosion matting was recommended, but installation would not be possible until the spring of 2004.

On December 15 through 19, 2003, Shaw remobilized to the site to conduct final erosion control measures until the spring. Using heavy equipment and backfill and stone delivered to the site, the crew constructed a series of berms and swales designed to catch any additional silt runoff.

As mentioned in earlier POLREPs, there has been a lot of interagency coordination between DEM and EPA. When EPA first became involved in October, 2002, its role was to assist DEM actions by providing aerial photography with thermal imaging, installing thermal monitoring wells, and providing a landfill fire expert for technical assistance. DEM was able to assist EPA actions prior to site closure by providing a final cover of loam over the silt cap and subsequent hydroseeding.

On February 17, 2004, the 12 month Emergency Exemption Action Memorandum was signed, and on March 26, 2004 site access extension was granted by the United States District Court for the District of Rhode Island until September 30, 2004.

On April 1, 2004, OSC Gary Lipson relinquished control of the site to OSC Alex Sherrin.

On April 7, 2004, a geotechnical engineer from EPA visited the site at the request of the OSC to review the erosion and provide assistance in developing the final erosion control measures.

B. Planned Removal Activities

EPA and their ERRS contractor will return to the site in 2004 for additional erosion control activity. Preliminary plans call for refilling of the gullies, regrading, construction of permanent swales, placement of erosion matting and additional haybales, and re-hydroseeding of the areas that have been disturbed. EPA will be working with the DEM regarding the division of labor and resources to complete these tasks. If the erosion were allowed to continue unchecked, it would

undermine the integrity of the cap and possibly allow oxygen to be re-introduced to the pile's subsurface. This in turn could begin the burning cycle all over again and present an immediate risk to public health and the environment. EPA will meet with DEM in May 2004 to discuss future division of labor.

Once the erosion issues have been attended to, no further EPA actions are expected at this site. It is expected that as the pile slowly decomposes over time, areas of settlement may occur. It is possible that settlement may lead to cracking which could conceivably introduce fresh oxygen to the pile's subsurface and once again begin the combustion cycle. EPA will leave a stockpile of the silt cover material at the site in the event that DEM must respond to a breakout in the future. It is not anticipated that future breakouts, if they occur at all, will be very severe or endanger the entire pile because the firebreak trenches and cap are now in place. The majority of the thermal monitoring wells are still in place. Therefore, the subsurface temperatures can be monitored if there are any unusual smoke or odor occurrences.

V. COST INFORMATION

	CEILING	SPENT	REMAINDER
Cleanup Contractor Costs	$ 915,000	$ 915,000	$ 0
START	125,000	125,000	0
Extramural Subtotal	1,040,000	1,040,000	0
20% Contingency			
Cleanup Contractor Costs	$ 183,000	$ 123,000	$ 60,000
START	25,000	16,725	8,275
Extramural Total	208,000	139,725	68,275
EPA Regional Personnel	$ 225,000	$ 150,000	$ 75,000
Total Project Ceiling	$1,473,000	$ 1,329,725	$ 143,275

The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.[1]

CASE PENDS

[1] This figure does not include indirect costs which will be used for cost recovery purposes. The current indirect multiplier is 27.02%. Therefore, the total recoverable cost ceiling is $1,473,000 x 1.2702 = $1,871,005