U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Bennett Landfill Fire - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #16**
Begin Installation of Top Cover
Bennett Landfill Fire
B44Y
Chester, SC
Latitude: 34.7874300 Longitude: -81.4502500

To:
From: Matthew Huyser, OSC
Date: 9/4/2015
Reporting Period: 8/29/2015 - 9/4/2015

1. Introduction

1.1 Background

Site Number:	B44Y	**Contract Number:**	EP-S4-07-02
D.O. Number:	0134	**Action Memo Date:**	4/30/2015
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	5/26/2015	**Start Date:**	5/26/2015
Demob Date:		**Completion Date:**	
CERCLIS ID:	SCN000402727	**RCRIS ID:**	
ERNS No.:	1100014	**State Notification:**	11/2/2014
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category
Time-critical removal action.

1.1.2 Site Description
The Bennett Landfill Fire Site is a former construction debris and nonhazardous industrial waste landfill (defined by state regulations as a Class II landfill) that was additionally permitted to accept certain types of asbestos waste.

The landfill ceased accepting waste in 2014. On November 2, 2014, the landfill was found to be on fire and was believed to have been extinguished by November 7th. Due to increasing smoke concentrations in January 2015, SCDHEC requested that the EPA conduct a Removal Site Evaluation (RSE). EPA signed an Action Memorandum on April 30, 2015 to conduct a Time-Critical Removal Evaluation and mobilized to the Site to begin removal activities on May 26.

Additional information for this section is available in POLREP #4 from 6/5/2015.

1.1.2.1 Location
The Site is located at 4399 Pinkney Road, Chester, Chester County, South Carolina. The geographic coordinates of the Site are 34.7874300 degrees north and 81.4502500 degrees west.

Additional information for this section is available in POLREP #4 from 6/5/2015.

1.1.2.2 Description of Threat
The fire at the Bennett Industrial Landfill is actively releasing chemical compounds into the air, including benzene and formaldehyde, which are measured near the fire at concentrations exceeding industrial RMLs for air and concentrations within the surrounding community that are greater than three times the residential RSL. Conditions at the Site, if not addressed, will continue to deteriorate over time and resulting in increasing quantities of exposed asbestos which are susceptible to transport by wind and other weather conditions to the nearby population.

Additional information for this section is available in POLREP #4 from 6/5/2015.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
Additional information for this section is available in POLREP #4 from 6/5/2015.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

By August 31, ERRS contractors had completed installation of the cap over the asbestos landfill. The cap consists of two 12-inch compacted layers. The first 12-inch layer was composed of a mixture of compacted clay and sandy soil. The second and final 12-inch layer is composed of compacted clay. The boundary between the asbestos cell and the former burn area slope has been graded with a gradual slope to form a channel. The center of the channel has been lined with riprap consisting of 8-inch limestone and extending approximately 400-feet. The west side of the asbestos cell has been graded to a 3:1 slope and the "West Ridge Borrow Zone" has been excavated to a depth of approximately 10-feet. A wide channel has been shaped in the area of the "West Ridge Borrow Zone" which slopes upward on the east bank to the asbestos cell and upward on the west bank to the property line. From August 31 to September 1, ERRS completed installation of additional soil in the north end of the channel to reduce the overall grade.

Beginning August 31, ERRS flattened and shaped the exposed waste pile at the northeast corner of the Site near the scale house. The waste consists of approximately 2,400 cubic yards on the hilltop and an additional 300 cubic yards on the slope facing east towards Pinkney Road. The waste at the top was flattened and spread across an area that is approximately 130% of the original footprint. Waste on the slope was raked with the excavator on September 2 and 3 then spread over the top. Re-grading of exposed waste will continue up to the vegetation line of the old landfill. Silt fencing will be installed on the hillside September 9 in preparation for installation of cover material along the slope.

The southern portion of the West Ridge Borrow Zone continues to be excavated and will be utilized as cover material for the top of the landfill. On September 2-3, an initial layer of cover was placed on exposed waste located around air monitoring well #1. It is suspected that air infiltration to well #1 may have been occurring through this surface, however the soil has not yet been compacted and changes to air concentrations in well #1 may not be found for two weeks or more.

Installation of stormwater controls in the detention pond were completed by August 29. The floor of pond has been excavated at least 3-feet below the previous surface. The riser has been wrapped with silt fencing and surrounded with #2 limestone up to the initial overflow inlet. The entrance to the pond has been surrounded with an 18-inch check dam which will help reduce sediment loading to the pond during vegetation establishment. The outfall outside the west berm of the detention pond near the property line was surrounded with 8-inch limestone on September 2.

By August 29, approximately 1,000 square yards on the former burn area slope was covered with topsoil, grass seed, fertilizer, and straw matting. The grass seed consists of a fescue, rye, and clover mixture. The fertilizer is a slow release 17-17-17 granular product. The straw matting is consists of 8x112.5 foot rolls reinforced with a square plastic mesh. Sprouting of the grass and clover was observed within 3 days of sewing.

START contractors continued daily collection of subsurface air well measurements from August 31 to September 3. Well air readings appear to be consistent with previous four weeks.

2.1.2 Response Actions to Date

- May 25-29: ERRS mobilization, site preparation (access roads, entrance, trailer, work zones)
- June 1-2: Grading and wetting burned area
- June 3: First record of no morning smoke observed
- June 3-5: Continue grading and wetting burned area. Moved cover soils from borrow area to burned area
- June 5-26: Continue grading and covering operations.
- June 16: Exhausted stockpile of cover soil at top center of Site
- June 26 Initial cover soil installation completed.
- June 29 Initial six inches of clay cap begun. Completed on July 3rd.
- July 2nd Three additional gas monitoring wells installed to monitor landfill carbon monoxide and temperatures near former burn area.
- July 13-17: Began removal of trees and topsoil from West Ridge Borrow Zone
- July 14: Exhausted Old Yard Stockpile at the south side of the Site
- July 14-17: Begin installation of second 6" clay layer on burn area
- July 20-22: Complete second 6" clay lift on burn area
- July 22: Conducted compaction testing by PSI Inc - 30 of 34 grids passed
- July 23: Begin installation of third clay layer on landfill face area
- July 28: Complete excavation of 3 vertical feet of sediment from detention pond
- July 29: Consultation with Clemson University Extension Office for Soil quality and vegetation
- July 27-31: Continue installation of third clay layer on landfilled face area reaching 90% completion
- Aug 6: Conducted round 2 of compaction testing, 27 of 28 grids passed.
- Aug 14: Completed fourth and final clay layer on the face area
- Aug 12: Begin removal of Knoll Borrow Zone
- Aug 12: Begin initial cover installation on Asbestos Cell
- Aug 17 Initial cover of Asbestos Cell completed
- Aug 29 Final cover of Asbestos Cell completed
- Aug 25 Begin installation of topsoil on former burn area
- Aug 29 Begin installation of vegetative cover on former burn area
- Aug 29 Complete stormwater protection measures on detention pond.
- Aug 31 Begin grading exposed waste near scale house

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

Information for this section is available in POLREP #4 from 6/5/2015.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Start Date*	*Treatment*	*Est. % Complete*
Burning Area	Debris	Approx 3.0 acres	6/1/2015	Cover	18" of cover soils completed on 6/26. Initial clay cap completed 7/3. Final clay cap completed 8/14. (topsoil and vegetation remains)
Asbestos Cell	Debris	Approx 19,500 CY	n/a	Regrade & Cover	Initial cover completed 8/17/15. Final clay cap completed 8/29/2015. (vegetation remains)

2.2 Planning Section

2.2.1 Anticipated Activities

The first priority of the removal action will be to address the burning debris pile by installing a soil cover. Isolation of the burning material and reduction of oxygen supply will significantly reduce emissions from the smoldering fire. The second priority of the removal action will be to address the eroding asbestos disposal cell by re-grading and covering the area.

Air sampling and monitoring activities will be conducted on-site for worker health and safety and continued site investigation purposes. Air monitoring for respirable particulate matter (PM2.5) will continue off-site outside the fenceline and in downtown Lockhart, SC for the duration of the action.

Soil for cover and encapsulation will be obtained from on-site sources to the greatest extent possible. The disturbed areas of the Site will be secured with vegetation to provide a stable erosion-resistant surface. Total project time is estimated at approximately 3 months.

2.2.1.1 Planned Response Activities

- Isolation of burning material by removal and relocation of available fuel path and installation of earthen cover; ***(ONGOING)***
- Isolation of designated asbestos disposal cell through the installation of earthen cover; ***(COMPLETE)***
- Re-grading waste materials and native soils for purpose of cover installation; ***(ONGOING)***
- Installation of temporary measures to prevent off-site migration of dust or contaminants as removal operations are conducted; and, ***(ONGOING)***
- Continue sampling and monitoring, as needed, for site safety purposes and to further delineate or identify contaminants. ***(ONGOING)***

2.2.1.2 Next Steps

- Complete landfill cover operations with installation of topsoil, seed, fertilization, and matting
- Continue monitoring 4 well locations
- Complete grading of exposed waste near scale house
- Complete installation of cover materials at top of landfill
- Complete vegetation

ERRS will temporarily demobilize from September 4-8 for the Labor Day weekend. Two personnel will be on-Site to conduct equipment maintenance and watering activities during the demobilization. Crews will resume on September 9 and continue until completion.

Installation of topsoil and vegetation was suspended after August 29 in order to measure success rate of germination and watering needs. Topsoil and vegetation will resume after return from Labor Day weekend. Grass seed rate of 110 pounds per acre will be increased to 170-200 pounds per acre in order to assure better vegetation coverage.

2.3 Logistics Section

Installation of seed, fertilizer, and straw/hay will require mobilization of additional labor and equipment. Operations throughout the Site will continue simultaneously, where possible, and any equipment will be demobilized when no longer needed.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

OSC Matthew Huyser
OSC Perry Gaughan

3. Participating Entities

SCDHEC continues to provide technical assistance and information regularly

South Carolina Forestry Commission has offered to provide assistance with tree removal, if necessary

Chester County EMA and Union County EMA will provide technical assistance and information, as needed

Clemson Chester County Extension Office will provide technical assistance for soil amendment and seeding needs regarding final cover and vegetation

4. Personnel On Site

EPA (1)
SCDHEC (varies)
County EMA (varies)
ERRS (11)
START (1)

5. Definition of Terms

µg/m3	Micrograms per cubic meter (= 0.001 mg/m3)
AEGL	Acute Exposure Guideline Levels
AQI	Air Quality Index
C	Celsius
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
Conc	Concentration
ConcHR	Hourly (HR) average value recorded by an EBAM instrument
ConcRT	Real time (RT) concentration recorded by an EBAM instrument based on a rolling four-minute average
DHEC	South Carolina Department of Health and Environmental Control
EMA	Emergency Management Agency
EPA	U.S. Environmental Protection Agency
ERRS	Emergency and Rapid Response Services
mg/kg	Milligram per kilogram (= 1 ppm)
mg/L	Milligram per liter
mg/m3	Milligram per cubic meter (= 1000 µg/m3)
NAAQS	National Ambient Air Quality Standard (primary and secondary NAAQS for PM2.5 24-hour average is 35 µg/m3)
NPL	National Priorities List
OAQPS	EPA Office of Air Quality Planning and Standards
OSC	On-Scene Coordinator
PM2.5	Airborne particulate matter with particle diameters below 2.5 microns
ppb	Part per billion (cannot be used to describe a mass per volume unit such as µg/m3)
ppm	Part per million (cannot be used to describe a mass per volume unit such as mg/m3)
RML	Removal Management Level
RSL	Regional Screening Level
SCDHEC	South Carolina Department of Health and Environmental Control
START	Superfund Technical Assessment and Response Team
TWA	Time-weighted average

5.1 Regional Screening Levels (RSL) and Removal Management Levels (RML)

Regional Screening Levels (RSL) are conservative risk-based screening values developed by the U.S. EPA to help identify contaminants of potential concern. Contaminants that exceeded a RSL in at least one sample are then screened against industrial air Removal Management Levels (RML) that were calculated for this evaluation. RMLs are risk-based screening values developed by the U.S. EPA to determine whether sample concentrations are sufficiently elevated that they may warrant a removal action. Exceedance of a RML by itself does not require a removal action, nor does it imply that adverse health effects will occur.

6. Additional sources of information

6.1 Internet location of additional information/report

Site updates will be provided to the "Bulletins" section of epaosc.org/bennettlandfill

Documents, reports, and videos for public release will be posted to the "Documents" section of epaosc.org/bennettlandfill

6.2 Reporting Schedule

New POLREPS will be issued weekly on Fridays for the duration of on-site activities.

Daily photos of site conditions and progress are being posted to the "Images" section of epaosc.org/bennettlandfill. These photos are collected from the same general locations each day.

7. Situational Reference Materials

No pertinent information to report at this time.