



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8**

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FEB 2 2012

Ref: 8EPR-ER

**ACTION MEMORANDUM**

**SUBJECT:** Memorandum for a Removal Action at the Rosebud Reservation Tire Fire Site pursuant to the On-Scene Coordinator's delegated authority under CERCLA Section 104.

**FROM:** Kerry Guy, On-Scene Coordinator  
Emergency Response Unit

**THROUGH:** Laura Williams, Unit Leader  
Emergency Response Unit

**TO:** David Ostrander, Director  
Preparedness, Assessment & Emergency Response Program

**I. Purpose**

The purpose of this memorandum is to document the decision to initiate emergency response actions described herein for the Rosebud Reservation Tire Fire Site (Site) located at a solid waste landfill three miles west of Carter, South Dakota, on the Rosebud Reservation.

This response was initiated under the On-Scene Coordinator's (OSC) \$250,000 authority and involves removal actions at the Site to address a tire fire on the Tribal landfill.

**II. Site Information**

**A. Site Description**

Site Name:	Rosebud Reservation Tire Fire
Superfund Site ID:	A828
NRC Case Number:	
CERCLIS Number:	SDN000802892
Site Location:	three miles west Carter, South Dakota
Lat/Long:	N 43.38122, - W 100.23509
Potentially Responsible Party:	N/A
NPL Status:	
Removal Start Date:	October 7, 2011

## **B. Site Background**

### **1. Removal Site Evaluation**

At approximately 11:00 am on October 6, 2011, EPA Region 8's Emergency Response Program received a referral from EPA personnel working with the Rosebud Sioux Tribe regarding a landfill fire on the Rosebud Reservation in South Dakota. EPA's phone duty OSC contacted Tammy Young, the Rosebud Sioux Solid Waste Director. The manager reported that a tire pile of up to 200,000 tires located on the east side of the Rosebud Sioux Tribe solid waste landfill was on fire and requested assistance. The Okreek fire had burned through the area the prior day and left the tire pile burning out of control. The local fire department declined to become involved in putting out the fire because of lack of proper equipment. EPA's OSC, Kerry Guy, was deployed to the Rosebud Reservation Site on the evening of October 6, 2011.

During his Preliminary Removal Assessment on October 7, 2011, the OSC confirmed the conditions identified by the landfill operator. A large cloud of heavy dark smoke was emanating from the burning tire pile. Due to strong winds from the south, the smoke cloud was flowing low to the ground to the point of obscuring visibility on Highway 18 just to the north. Based on accounts of the original height of the tire pile from the landfill manager, over 70% of the tires had been consumed in the initial "hot burning" phase as the Okreek fire passed through. The Okreek fire started on October 6, approximately four miles to the south of the Carter Landfill and traveled rapidly in a northerly direction due to gusting northern winds (up to 50 mph) for approximately 20 miles (averaging one mile wide) before being contained. The tire pile was then in a "smoldering phase" which was producing excessive emissions due to incomplete combustion.

The landfill operators of the Rosebud Sioux Tribe solid waste landfill are subject to limited resources and do not have the appropriate equipment or training to address the tire fire. The high emission-producing, smoldering tire fire could be expected to burn and off-gas for several weeks if not addressed.

In close proximity:

- Landfill superintendent, Leonard Bordeaux, lives on-site with his three grandchildren.
- US Highway 18 runs directly on the north side of the tire pile.
- The small town of Carter is located three miles to the east.

### **2. Physical Location and Site Characteristics**

The tire pile is located 54 miles east of Rosebud and three miles west of Carter along US Highway 18 in southern central South Dakota. GPS coordinates of the site are provided above.

The Site is located on the immediate east side of the Rosebud Sioux Tribe solid waste landfill, which is a Subtitle D solid waste facility. The landfill serves 20 reservation-wide communities including Corn Creek (approximately 60 miles to the



northwest of the landfill), White River, and Bull Creek - (approximately 60 miles to the east).

**3. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant or Contaminant**

Landfill personnel, including the superintendent who lives on-site with his three grandchildren and the field technician (Quenton two-Charger) are all at risk of exposure from the tire fire smoke. In addition, workers hauling daily loads, tribal members dropping off garbage, and motorists along US Highway 18 are all at risk of exposure to the smoke plume.

**III. Threats to Public Health Welfare or the Environment**

The conditions at the Site present a threat to public health and welfare and meet the criteria for initiating a Removal Action under Section 300.415(b)(2) of the NCP.

**A. Nature of Actual or Threatened Release of Hazardous Substances, Pollutants or Contaminants.**

Open tire fire emissions include pollutants such as particulates, carbon monoxide (CO), sulfur oxides (SOx), oxides of nitrogen (NOx), and numerous hazardous substances listed under 40 CFR 302.4. These include polynuclear aromatic hydrocarbons (PAHs), dioxins, furans, hydrogen chloride, benzene, toluene, polychlorinated biphenyls (PCBs); and metals such as arsenic, cadmium, nickel, zinc, mercury, chromium, and vanadium. Tire fire emissions pose significant acute (short-term) and chronic (long-term) health hazards to nearby residents and others exposed to the smoke plume. Depending on the length and degree of exposure, these health effects can include irritation of the skin, eyes and mucous membranes, respiratory effects, central nervous system depression and cancer.

**B. Check applicable factors (from 40 CFR 300.415) which were considered in determining the appropriateness of a removal action:**

All of the factors from 40 CFR §300.415(b)(2) of the NCP were considered, but the factors cited below form the basis for EPA's determination of both the threat presented and the appropriate action to be taken:

- X Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants [300.415(b)(2)(i)].
- Actual or potential contamination of drinking water supplies or sensitive ecosystems [300.415(b)(2)(ii)].
- Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that pose a threat of release [300.415(b)(2)(iii)].
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate [300.415(b)(2)(iv)].
- X\_ Weather conditions that may cause hazardous substances or pollutants to migrate or to be released [300.415(b)(2)(v)].

X\_ Threat of fire or explosion [300.415(b)(2)(vi)].

X The availability of other appropriate federal or state response mechanisms to respond to the release [300.415(b)(2)(vii)].

— Other situations or factors that may pose threats to the public health or welfare of the United States or the environment [300.415(b)(2)(viii)].

#### IV. Selected Removal Action and Estimated Costs

##### A. Situation and Removal Activities to Date

###### 1. Current Situation.

The tire fire has been extinguished.

###### 2. Removal activities to date:

On Friday, October 7, 2011, EPA met with Tammy Young, the Rosebud Sioux Solid Waste Director, and the Operations Chief, Ed Waggoner, at the Okreek fire Incident Command Center just east of Mission, SD, in the Rosebud multiuse building. The South Dakota Wildland Fire Suppression Division was responding to the Okreek fire in Mellette and Todd counties. Ed Waggoner provided an aerial of the tire pile on the east side of the landfill along with a map showing the extent of the Okreek fire. The Okreek fire had moved in a north direction starting four miles due south of the Carter landfill and had passed through the landfill and then, supported by strong northerly winds, continued north for another 18 miles before being contained. The fire had averaged about 1.5 miles in width. EPA reviewed its approach to the tire fire (tire separation followed by soil cover) with operations, which supported the approach. The operations meteorologist provided EPA response with forecast conditions of weather and wind for the next several days.

Conventional fire suppression tactics such as applying water on the pile are not effective in putting out scrap tire fires. The most effective approach is to remove unburned tires (fuel) from the pile and deal with burning tires by separation and extinguishing with water or by smothering with soil. The method employed at this Site was to excavate a trench along the east and southern end of the tire pile and then push sections of the smoldering pile into the trench while mixing with soil. This process was followed by applying a soil cover and compaction. Tires not involved in the fire were separated from the pile. Equipment included an excavator, bulldozer and compactor. A water truck was staged on-site and used for minor fire suppression where needed.

Excavation of a burial trench began on the morning of October 8, 2011. The trench dimensions were approximately 275-300 feet long, by 15 feet wide, by 5 feet deep. Trenching activities continued throughout the day. Hot spots within the smoldering tire pile were covered with soil to cool it down prior to working it with the equipment.

Pushing of the pile into the trench was initiated on October 9. The upper portion of the pile was pushed into the trench while mixing with soil. This was followed in sequence



by pushing the bottom section of the pile into the trench. The trench was then covered with cover soil and compacted. At the start of the activities, the pile was observed to be several feet in height, with the top two thirds of the original pile having been burned off and or consolidated down into the lower half of the pile. Resulting layers of smoldering accumulated matted material at the base of the pile typically burst into flames as the excavator opened the site up while separating and pushing sections towards the trench. Pile separation and extinguishing activities continued through the morning of October 10th. The tire pile fire was completely extinguished just before noon on October 10, 2011. Equipment was decontaminated on the afternoon of October 10.

As much as possible, work was initiated and conducted from an upwind position to avoid worker exposure to the smoke. START maintained Multi-Rays gas monitoring equipment in both the excavator and the bulldozer throughout the operation. Operators kept their cab doors closed with internal circulation on when venturing into the pile and smoke conditions. The gas meters were set to alarm for low O2 levels and for CO2 levels above the TWA (35 ppm).

EPA, START and ERRS demobilized from the Site on the morning of October 11.

### **3. Enforcement**

Where the responsible parties are known, an effort initially shall be made, to the extent practicable, to determine whether they can and will perform the necessary removal action promptly and properly.

## **B. Planned Removal Actions**

### **1. Proposed action description.**

The removal actions taken are described above. The tire fire has been extinguished and no further removal actions are planned.

### **2. Contribution to remedial performance.**

No long-term remedial action is necessary at the site.

### **3. ARARs**

Removal actions conducted under CERCLA are required to attain ARARs to the extent practicable. In determining whether compliance with ARARs is practicable, the OSC may consider appropriate factors, including the urgency of the situation and the scope of the removal action to be conducted.

### **4. Project Schedule.**

It was initially anticipated that if a removal action was conducted to put out the tire fire it could take up to one week. The removal actions documented in this action memorandum took 4 days.

### C. Estimated Costs\*

Contractor	
ERRS	
Labor	\$20,600
Equipment and Materials	\$24,500
START	
labor and reporting	\$15,000
Other Extramural Costs (Strike Team, other Fed Agencies)	\$0
Subtotal Extramural Costs	\$60,100
Contingency (20%)	\$12,000
<b>Total Removal Project Ceiling</b>	<b>\$72,100</b>

\*EPA direct and indirect costs, although cost recoverable,, do not count toward the Removal Ceiling for this removal action. Liable parties may be held financially responsible for costs incurred by the EPA as set forth in Section 107 of CERCLA.

### V. Expected Change in the Situation Should Action Be Delayed or Not Taken

A delay in action or no action at this Site would increase the actual or potential threats to the public health and/or the environment.

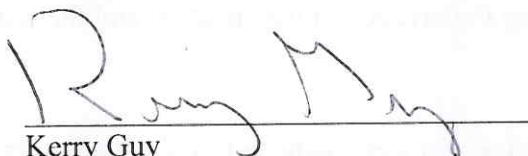
### VI. Outstanding Policy Issues

None

### VII. Approvals

This decision document represents the selected Removal Action for this Site, developed in accordance with CERCLA as amended, and is not inconsistent with the National Contingency Plan. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP section 300.415(b) criteria for a Removal Action and through this document; I am approving the proposed Removal Actions. The total removal project ceiling is \$72,100 and will be funded from the Regional removal allowance.

  
Kerry Guy  
Federal On-Scene Coordinator

2/2/2012  
Date