

# El Dorado – Personal Protective Equipment (PPE) Report

## Entrapment Site

The entrapment site is located next to the dozer line approximately 100 yards above Highway 38. It was exposed to a significant, relatively long-duration flame front. Much of the surrounding burnable vegetation was consumed by fire; only burnt stobs of brush and thicker tree branches and trunks remain. The yellow flame-resistant shirt marks the fatality site.



*Figure 1: Photograph of the fatality site showing the dozer line and severity of the fire. The yellow shirt marks the fatality site.*

## Fatality Site

The firefighter was found in the prone position on the edge of the dozer line.



*Figure 2: A close-view photograph of the exact fatality site along the edge of the dozer line.*

## Personal Protective Equipment

### Fire Shelter – M2002

The fire shelter was found directly next to the left side of body, still accordion folded. It is not clear if the shelter was removed from the pack or carry case. However, since the shelter was still accordion folded and only slightly expanded shows that the shelter was, very likely, still encased in its polyvinyl chloride (PVC) bag at the time of entrapment. No remnants of the PVC bag remain.

Condition: Exposed edges of the shelter show delamination of the foil from the cloth and some aluminum burned away. Internal folds of the shelter remain intact. The Para-Aramid fabric shake handles were consumed by fire. Note: the shelter has been pulled apart to show in internal folds.



*Figure 3: Photograph showing the condition of Charlie Morton's fire shelter.*

### Flame-Resistant (FR) Clothing

Shirt - Appears to have been Forest Service specification 5100-91.

Condition: The shirt was mostly consumed by fire with only small pieces of charred, dye sublimated, and intact fabric remaining.

Pants - Appears to have been Para-aramid blend pants.

Condition: The pants were mostly consumed by fire with only small pieces of charred, dye sublimated, and intact fabric remaining.

### Equipment

#### Fireline Pack

The pack appeared to still be worn at the time of entrapment, remnants of the pack were found directly on and next to the body. Burnable contents of the pack were consumed by fire.

#### Hand Tool – Rhino

The Rhino was found 6 feet from body. The wooden handle of the tool was consumed by fire.

Table 1: Item conditions and the corresponding temperatures.

Item Condition	Corresponding Temperature
Vegetative Fire (typical)	1800°F
Meta-Aramid Cloth – Autoignition	1300°F
Fire Shelter Aluminum – Melt	1220°F
Para-Aramid Cloth Pants – Char	970°F
Meta-Aramid Cloth Shirt – Char	825°F
Nylon Pack Webbing and Material – Melt	500°F
Meta-Aramid Cloth (shirt and pants) – Dye Sublimation*	425°F
Human Survivability (estimated)	300°F

\*Dye Sublimation occurs when heat “bakes” the dye out of the flame-resistant fabric.