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WASTE TRUCK FIRE RESEARCH AND TRAINING

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WASTE TRUCK FIRE RESEARCH AND TRAINING AT CAL POLY SAN LUIS OPISPO

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Poster Presented at the Solid Waste Association of North America
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Garbage Truck Driver Is Charged in California Fire That Killed 2

By Azi Paybarah
New York Times
Feb. 16, 2021

The driver of a waste truck was accused by the authorities of dumping a burning load of trash that sparked a deadly fire in 2019 that also destroyed more than 70 structures and killed 2 homeowners and destroyed more than 1,000 acres of vegetation.

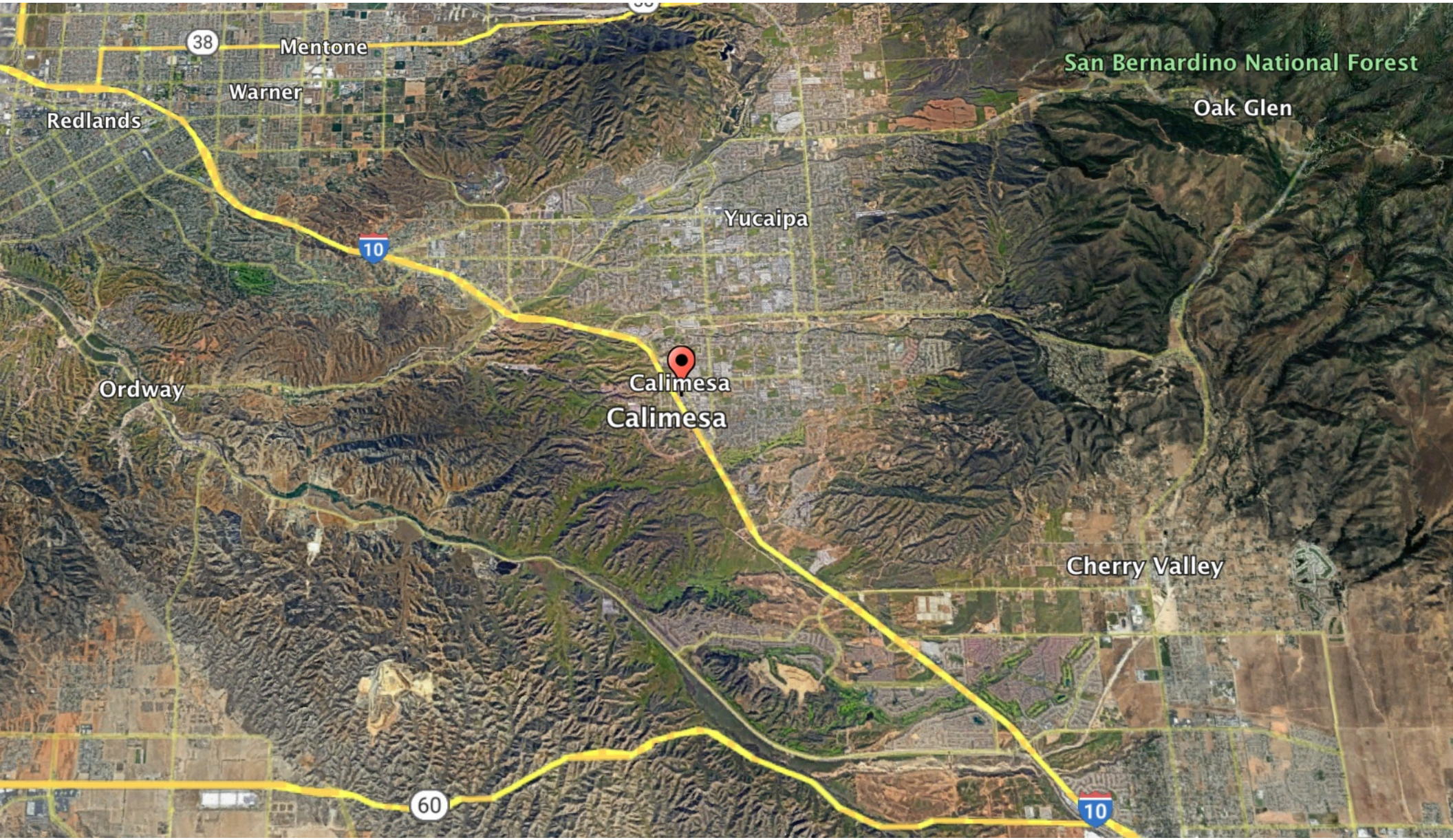
The deadly blaze broke out on Oct. 10, 2019, amid a spell of dry and windy weather that had led the authorities to warn residents about potential fires. The driver authorities said, dumping a burning load of trash on the side of the road in Calimesa, Calif., sparking a fire that quickly spread to a nearby field and shot black plumes into the sky.

The driver noticed smoke coming from his hopper, pulled over “and compacted the burning load inside the truck’s hopper,” according to a statement in support of an arrest warrant for from the California Department of Forestry and Fire Protection.

“The day was hot, dry and unusually windy,” it said. “The winds were blowing from the truck directly towards the dry brush wild land area.”

While the waste truck was pulled over, a driver of a Frito Lay truck stopped alongside him and warned him “multiple times about the fire danger presented by the high winds,” according to the statement. That driver asked the waste truck not dump his burning trash in that area, it said. Another driver who pulled over also warned him not to dump the trash, the report said.

The fire killed two people, destroyed more than 70 structures and grew to the size of Central Park. Both victims were found inside the Villa Calimesa Mobile Home Park, according to the Riverside County Sheriff’s Department. The fire was contained by Oct. 14, four days after it began. (Edited by the authors of this poster)


38
Mentone
Warner
Redlands
San Bernardino National Forest
Oak Glen
Yucaipa
10
Ordway
Calimesa
Calimesa
Cherry Valley
60
10

The spot where a garbage truck dumped a burning load, sparking the Sandalwood Fire that destroyed several residences in Calimesa on Oct. 10, 2019. (Credit: KTLA)

Aerial view of the Calimesa Mobile Home Park that was severely damaged in the Sandalwood fire. (Carolyn Cole/Los Angeles Times)

Judy Dorius of San Diego salvages iron pot stands from the burned remains of the home where their mother, Lois Arvickson, 89, died after the Sandalwood fire burned her mobile home and many others at the Villa Calimesa Mobile Home Park in Calimesa. (Gina Ferazzi / Los Angeles Times)

CAL FIRE INCIDENT REPORT

Date Started 10/10/2019 3:38 PM

Location Information Calimesa Boulevard and Sandalwood Drive
Latitude / Longitude [33.9925,-117.059167]

Admin Unit Unified Command: CAL FIRE/Riverside County Fire Department, City of Calimesa and City of Yucaipa

Resources Assigned

247 Personnel

1 Helicopter

17 Engines

1 Water Tender

10 Crews

Situation Summary

16 Structures Damaged

74 Structures Destroyed

2 Deaths

WASTE TRUCK FIRES RESEARCH AND TRAINING AT CAL POLY SAN LUIS OPISPO

Scope of Work

Cal Poly is conducting research on Solid Waste Truck fires to determine the current state of the art of fighting these fires and the concerns related to them. This initial research will help in the development of the training curriculum that is the ultimate goal of this project. Our project will focus on several aspects of Solid Waste truck fires.

A. Characteristics of Household Wastes

1. The biological, chemical, and physical characteristics of typical wastes found in household solid wastes. Typical examples include paper, cardboard, plastics, and food wastes.
2. The chemical and physical characteristics of household hazardous wastes which are sometimes illegally disposed of with household wastes. Typical examples include flammable paints and solvents, waste automotive oil, and lithium ion batteries.

B. Solid Waste Truck Designs and Specifications

1. Characterize the typical load capacity, typical dimensions, gross vehicle weights of solid waste trucks.
2. Characterize the existing load temperature sensors, alarm systems, and other instrumentation on solid waste trucks.

C. Combustion Characteristics of Typical Solid Waste Loads

1. Estimate the heat release rate (HRR) of typical solid waste loads.
2. Investigate/Estimate HRR curves for solid waste loads.
3. Research case studies on Waste Truck Fires

D. Fire Suppression Systems

1. Investigate the current fire suppression systems used on solid waste trucks (if any).
2. Investigate the current procedures for solid waste truck fires. What impact do the current procedures have on the environment and the potential spread of fire?

Research Partners

The Wildfire Conservancy, CAL FIRE/Riverside County Fire Department, and the Cal Poly Wild Land Urban Interface Fire Institute.

ABOUT THE AUTHORS

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Dr. Vigil is Professor Emeritus of Environmental Engineering at California Polytechnic State University, San Luis Obispo. He earned his BS degree in Civil Engineering at the University of California, Berkeley; his MS in Civil Engineering at Texas A&M University; and his PhD in Engineering at the University of California, Davis. Dr. Vigil is a Fellow of the Air and Waste Management Association, and a SWANA member. He is a Registered Professional Engineer in California, and a Board Certified Environmental Engineer. He is the co-author of "Integrated Solid Waste Management: Engineering Principles and Management Issues" (McGraw-Hill, 1993), one of the most widely used textbooks in the solid waste field. Dr. Vigil is a contributing faculty member in the Cal Poly Wildland-Urban Interface (WUI) Fire Institute.

DR. Chris Pascual

Dr. Pascual is a Professor of Mechanical Engineering and Fire Protection Engineering at Cal Poly, San Luis Obispo. He was one of the founding faculty members in 2010 of the MS in Fire Protection Engineering (FPE) program and continues to serve as co-director and graduate coordinator for the FPE programs at Cal Poly. In addition to his expertise in thermal sciences; Chris also teaches a Basic Fire Science class and co-teaches the culminating project for the MS Program. He is a contributing faculty member in the Cal Poly Wildland-Urban Interface (WUI) Fire Institute, which conducts research to reduce the consequences of wildland fires.