Kuraray Investigation – Factual Update

Kuraray America EVAL Facility, Pasadena TX
Fire, May 19, 2018

Steve Cutchen
October 24, 2018

Kuraray America EVAL Facility, Pasadena TX
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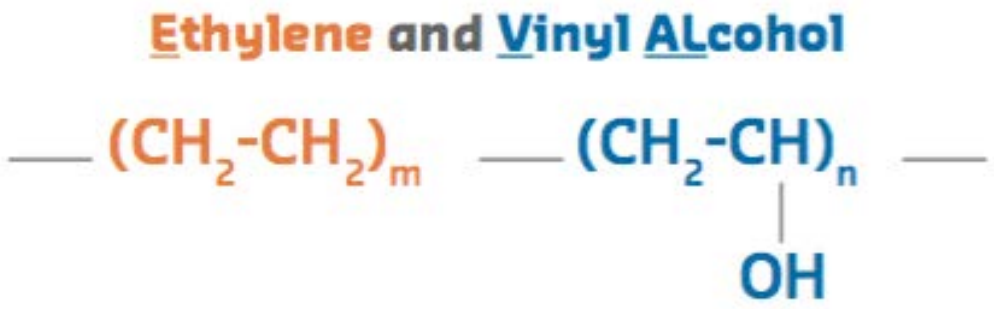
Ethylene and Vinyl ALcohol



EVAL™ is the Kuraray trademark for a plastic made from ethylene and vinyl alcohol.

EVAL's primary property is as a barrier

EVAL blocks oxygen, and is used as a packaging material for foods

EVAL blocks other gases as well. It is used in plastic storage containers and in the plastic automobile fuel tanks.

Manufacturing facilities:
- Japan
- Belgium
- Texas

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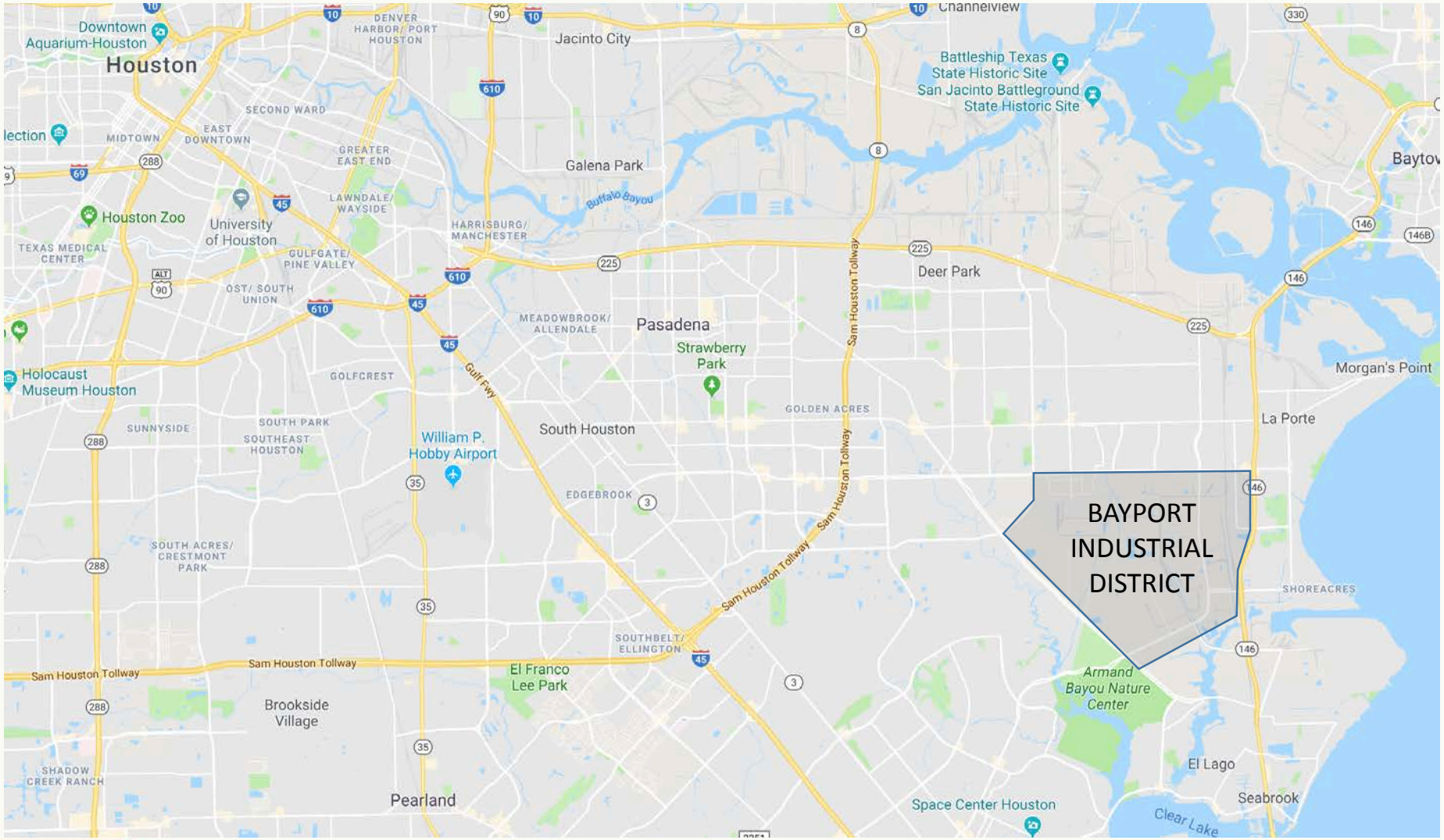

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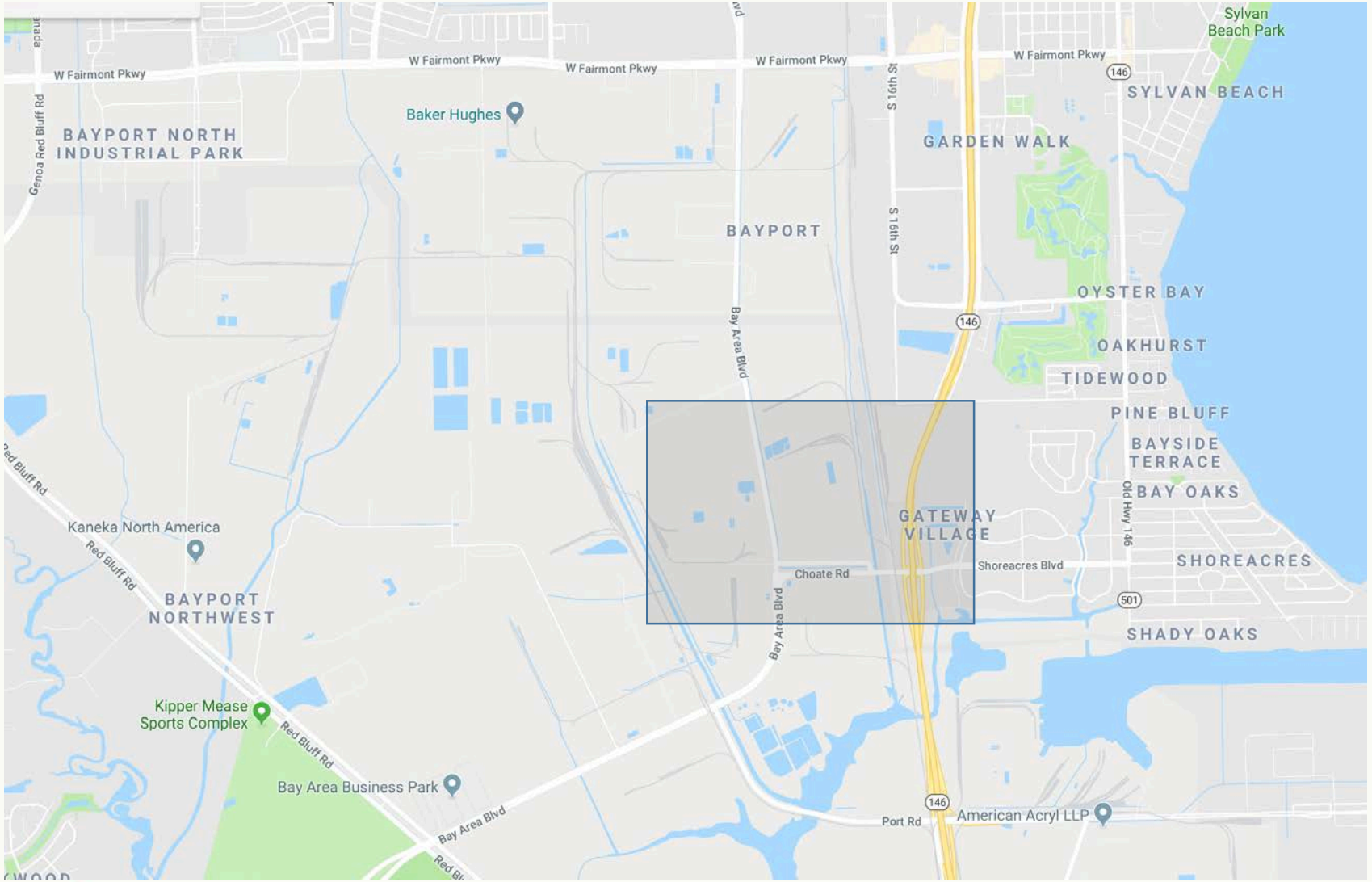

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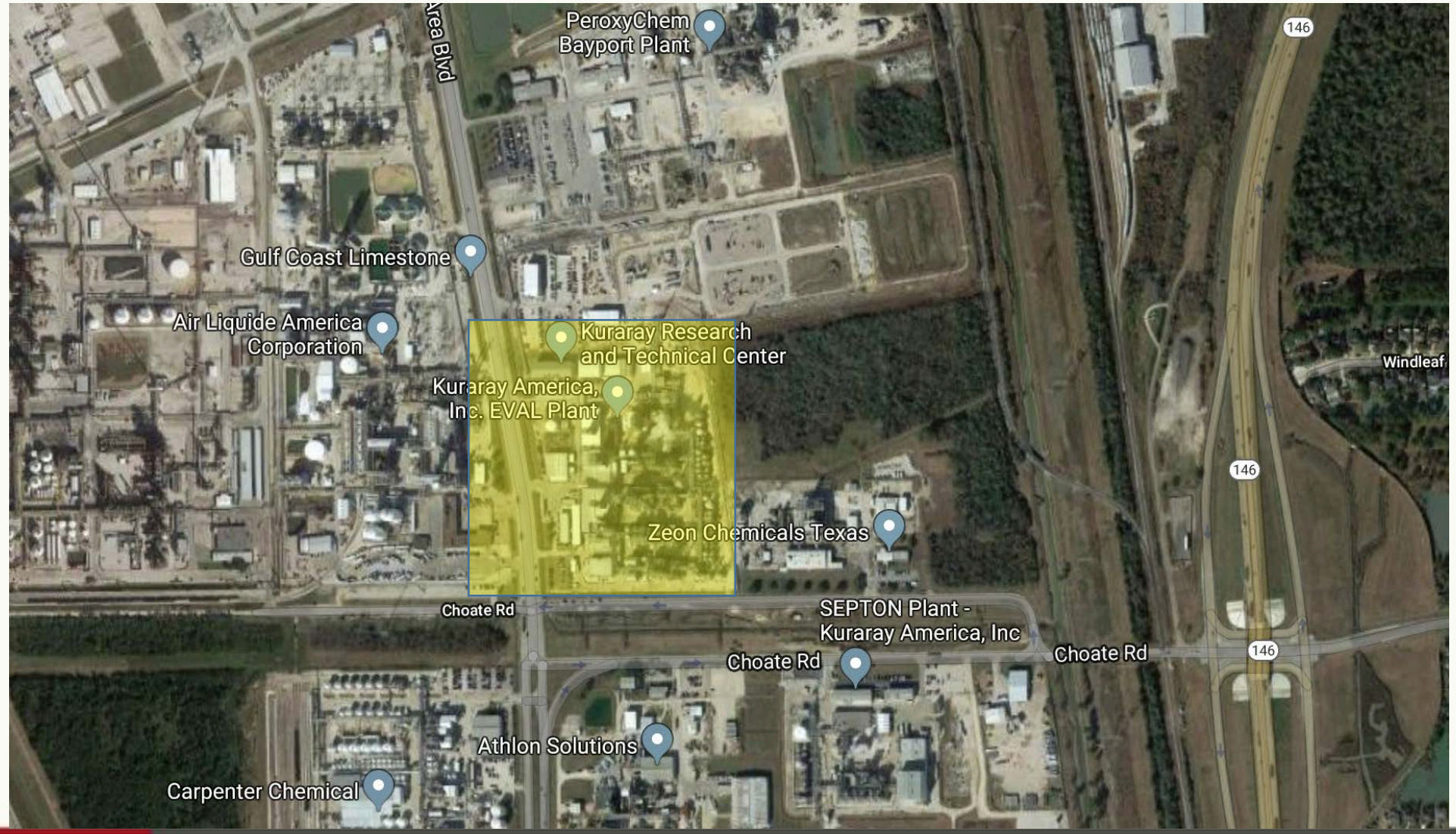

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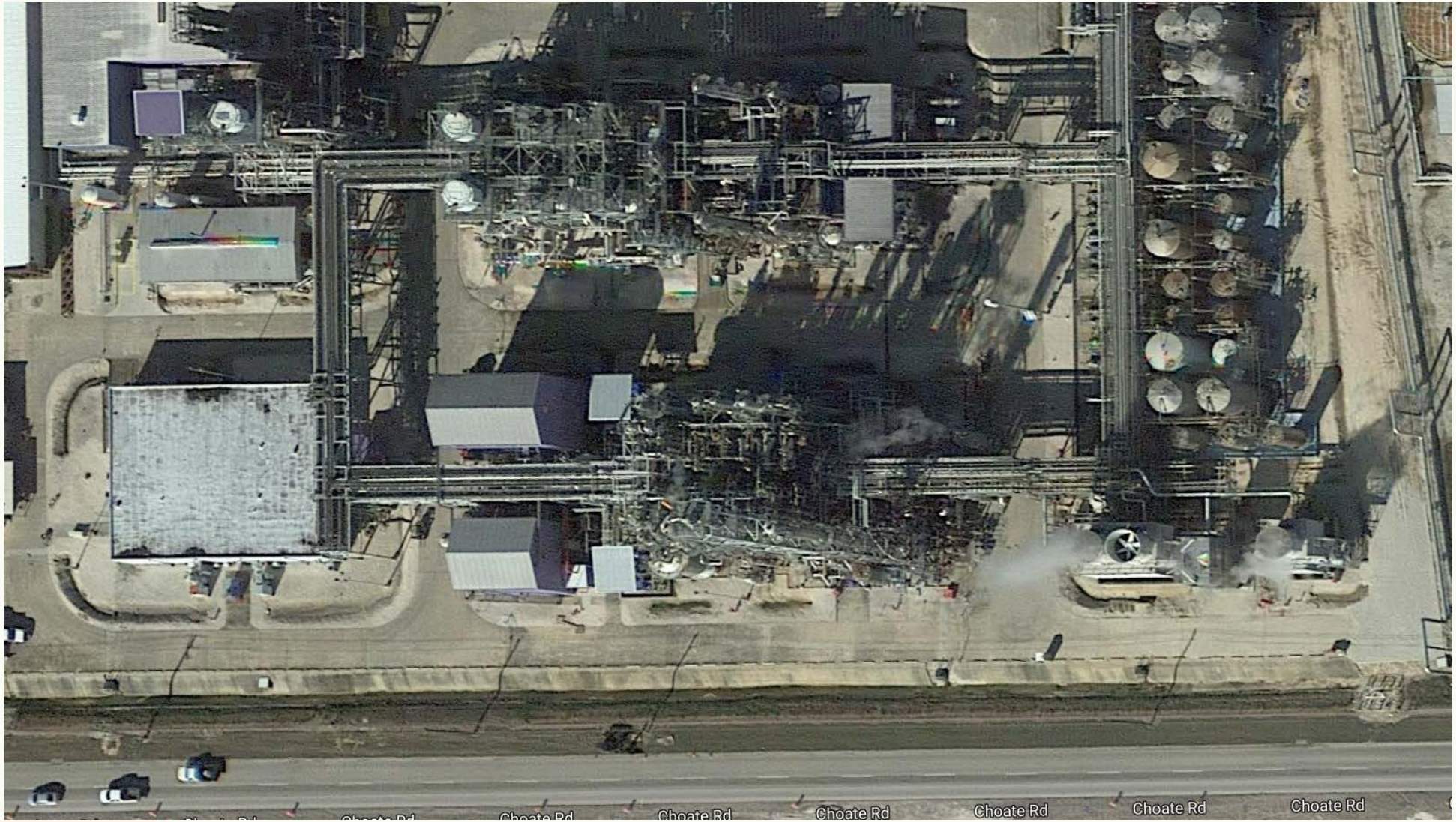

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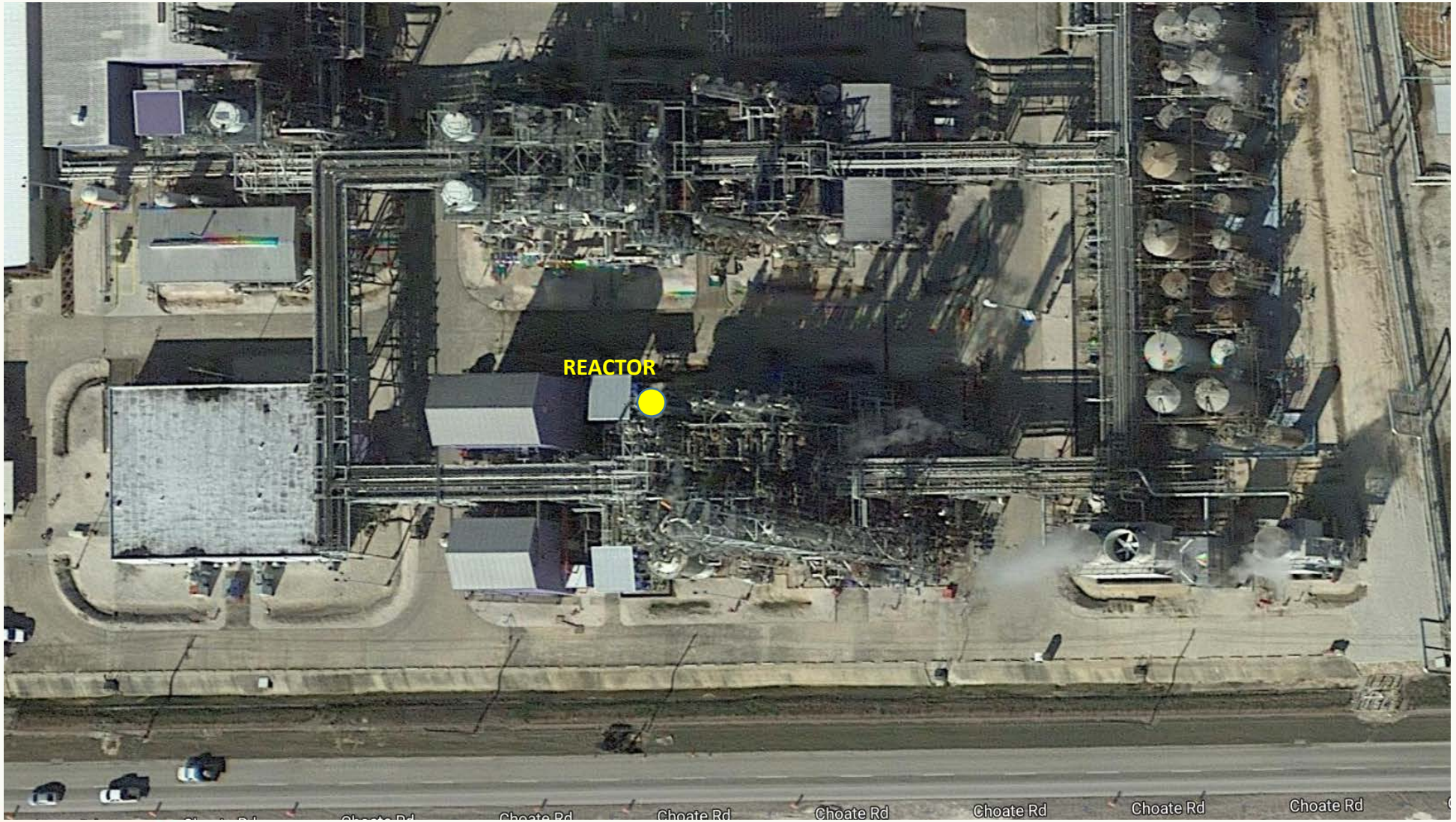

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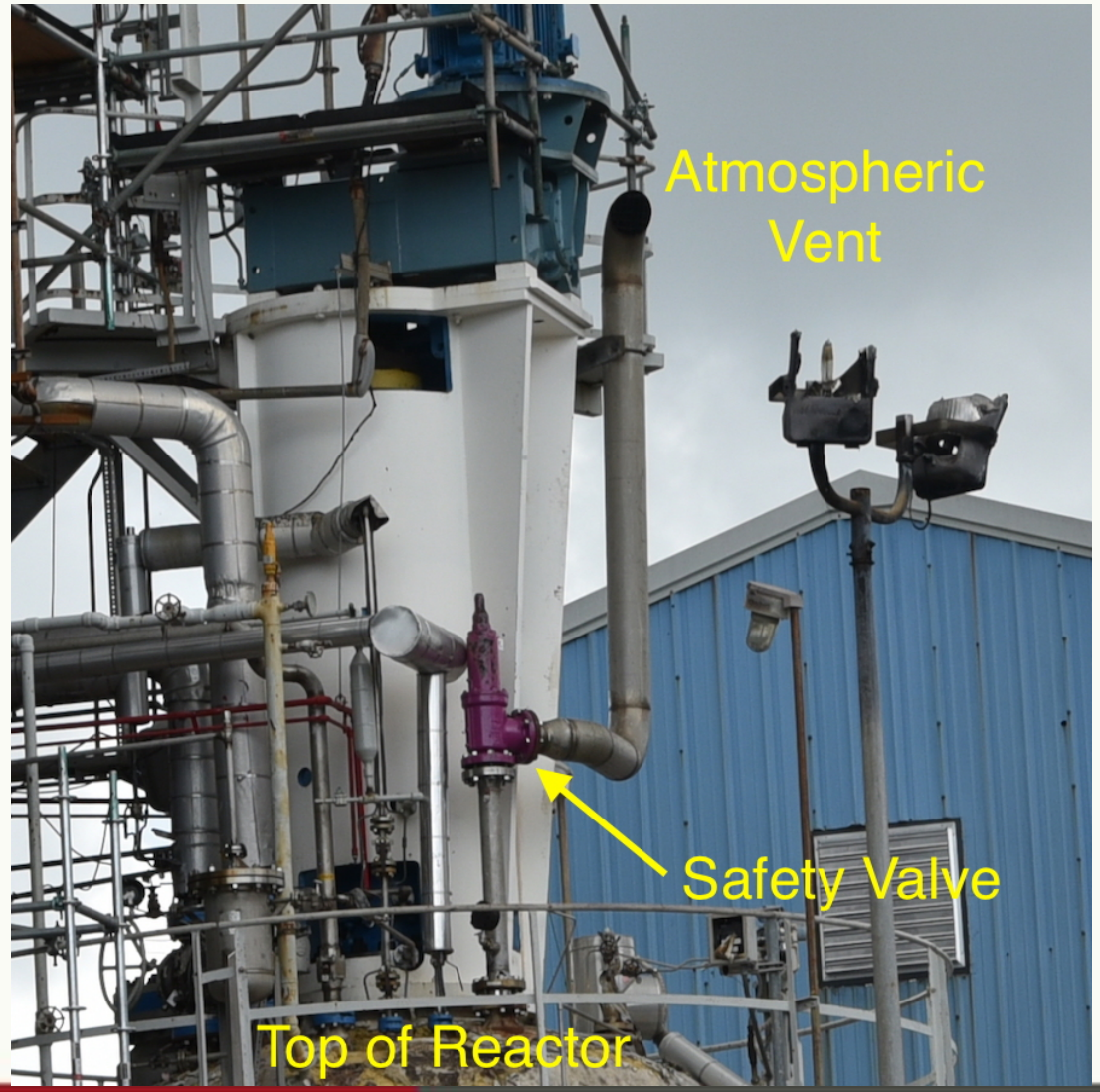

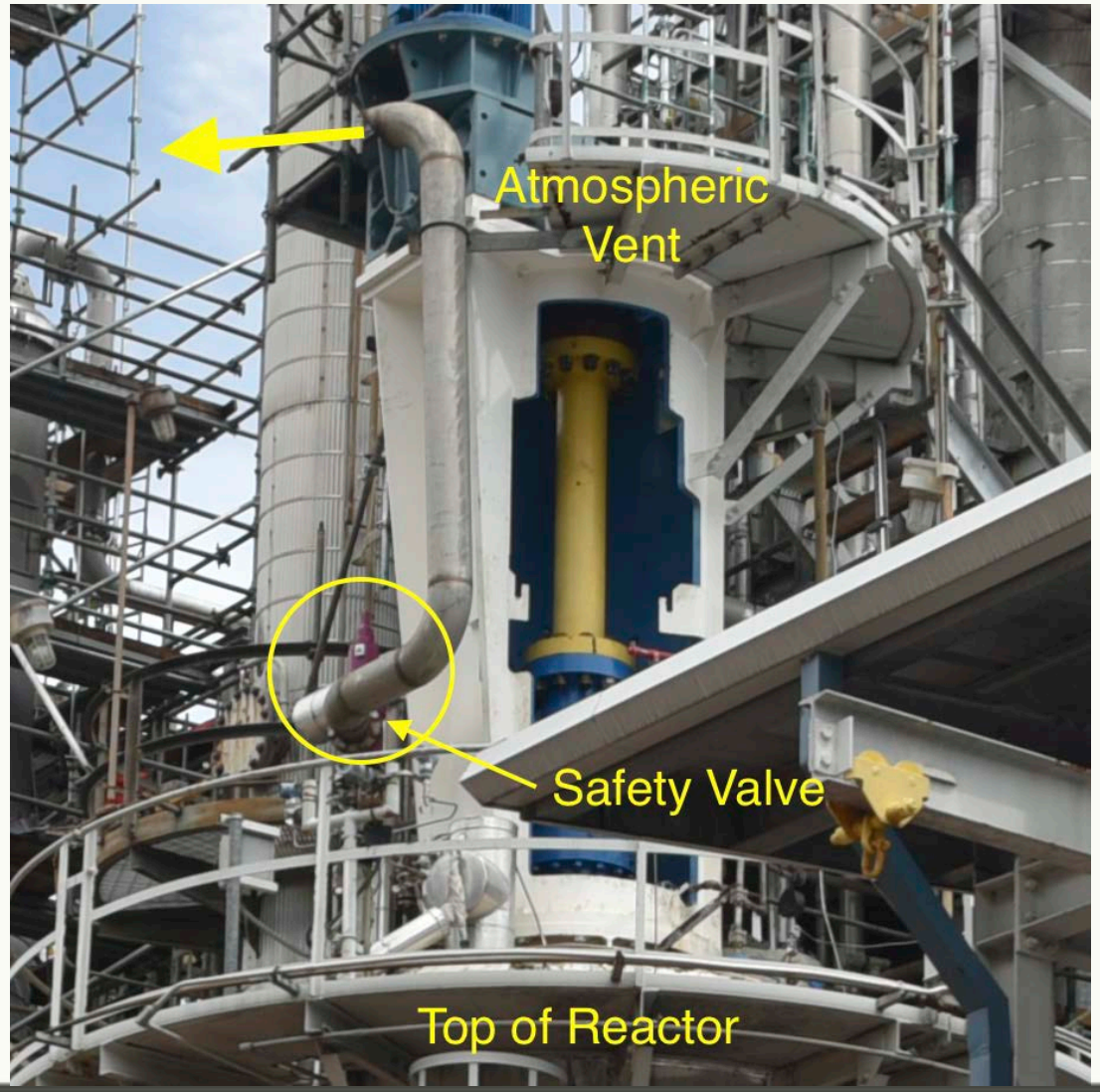

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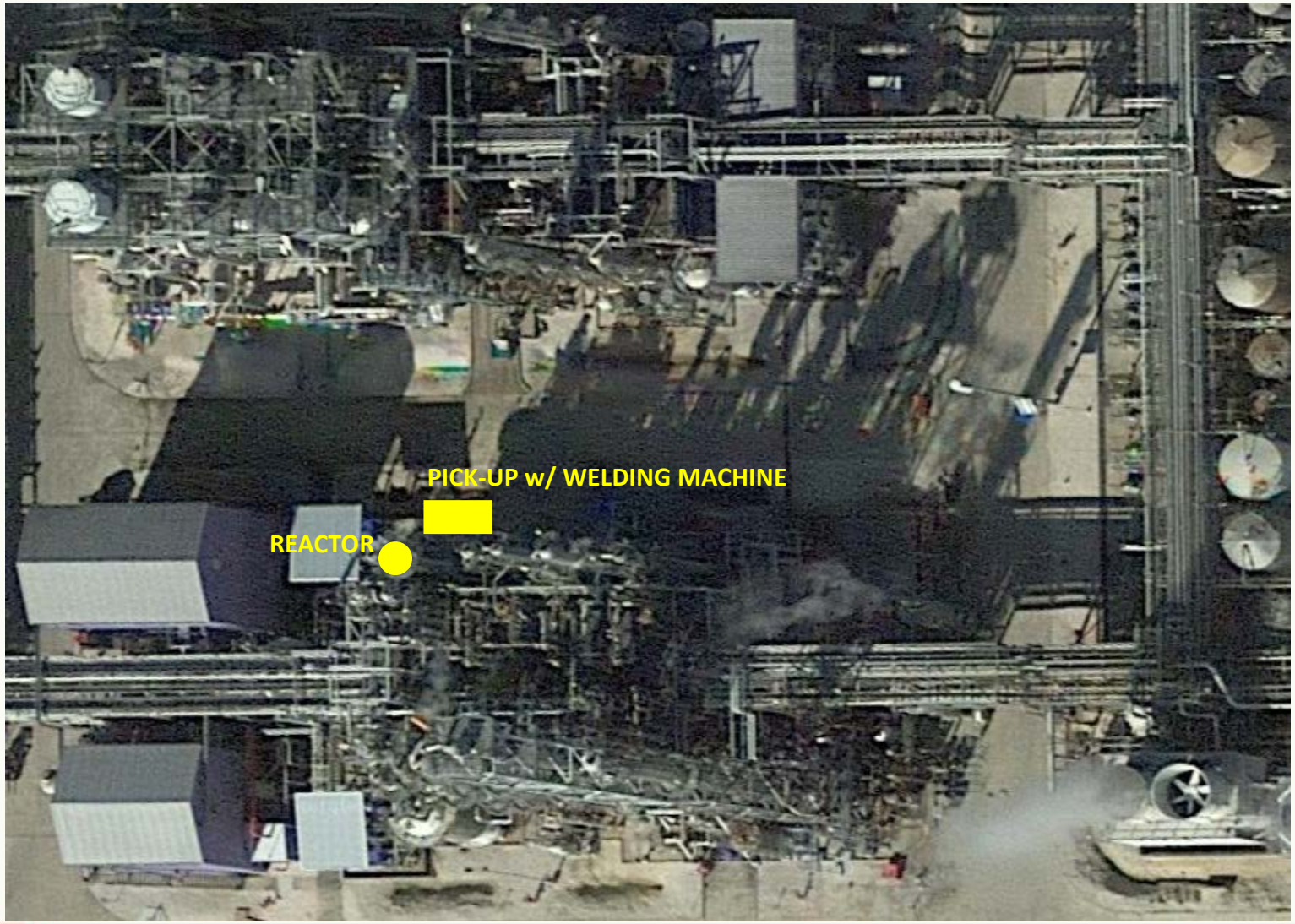

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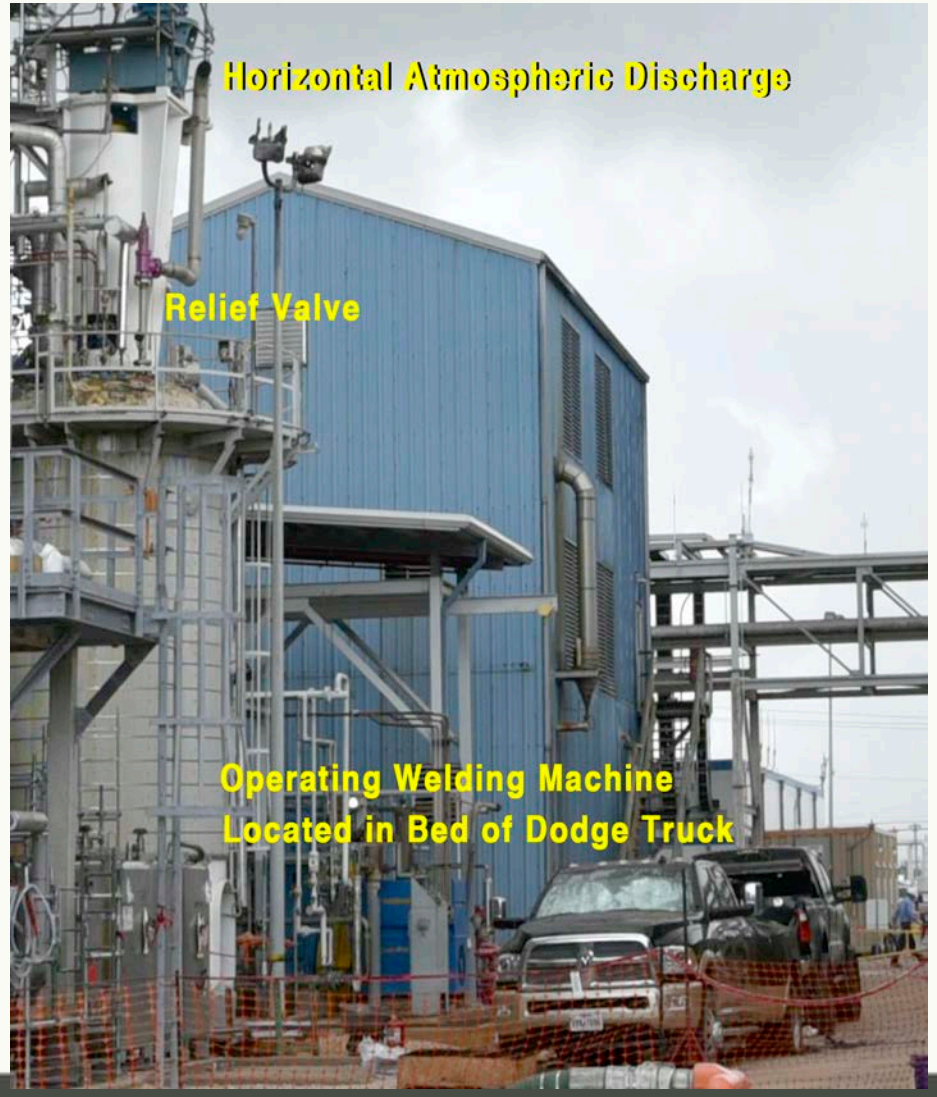

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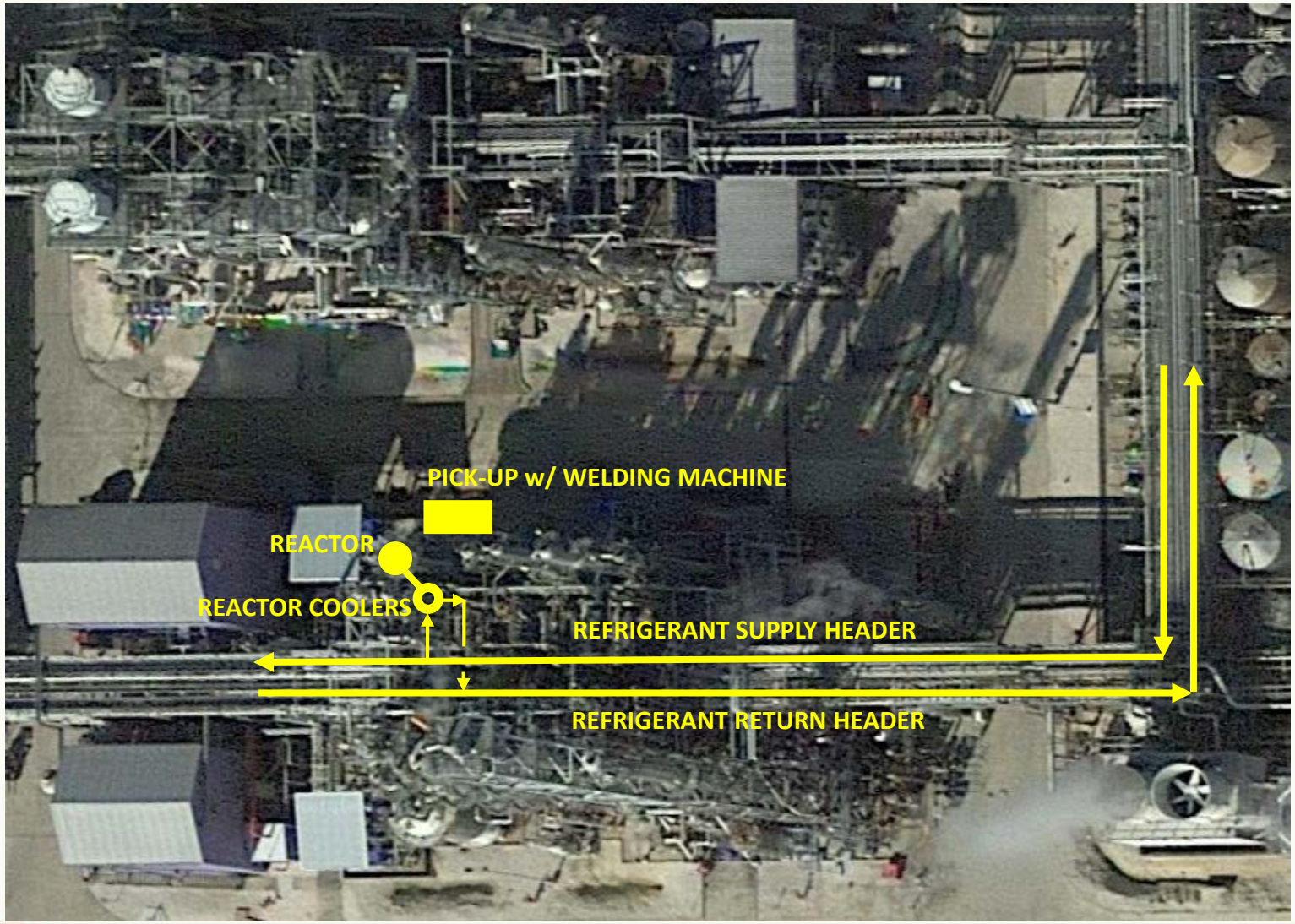

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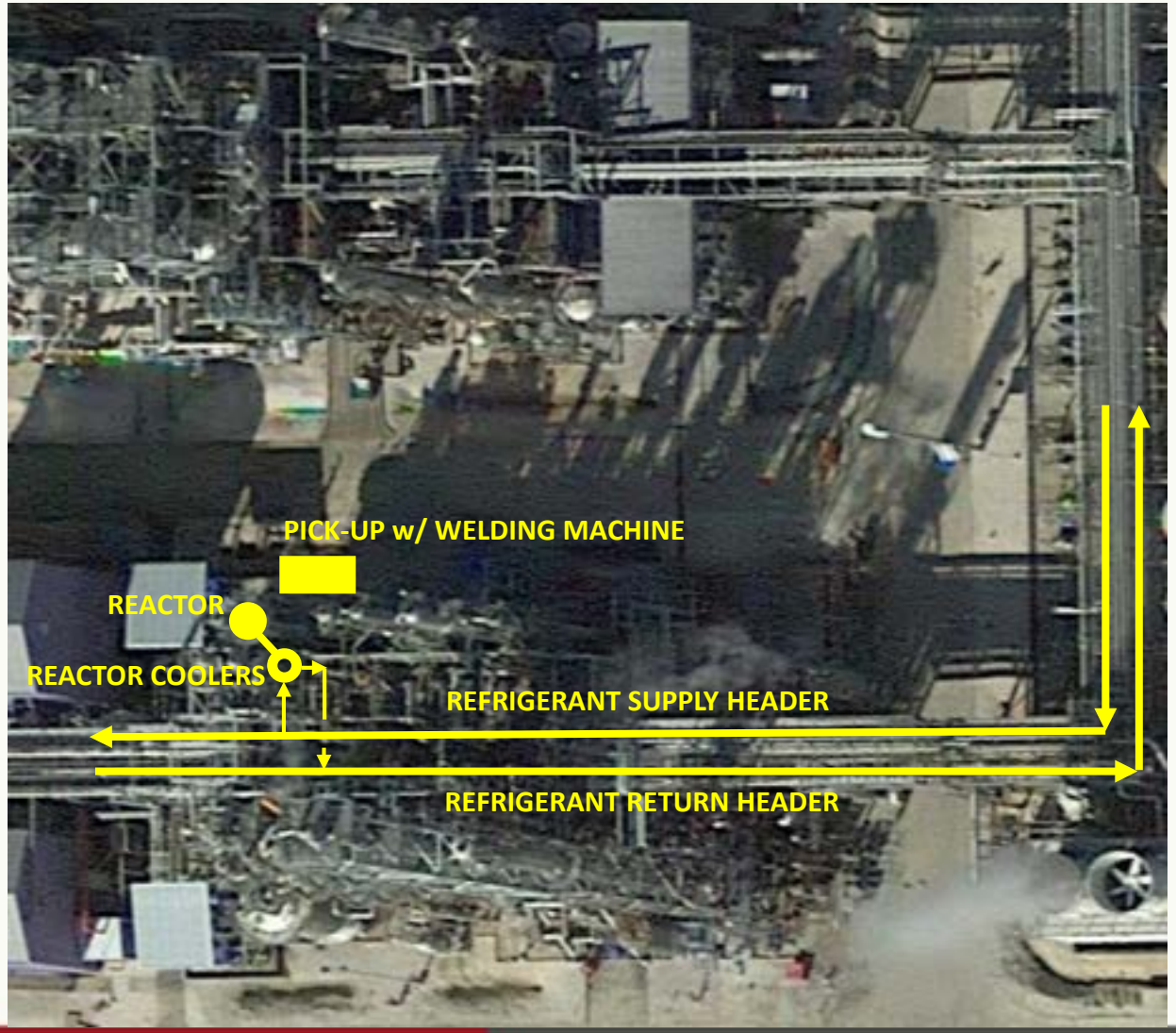

Sequence of Events

Wednesday, May 16 10:30
Refrigerant opened to Reactor Coolers.

Friday, May 18 15:00
Reactor Pressure Test begins using ethylene gas.

Friday, May 18 23:20
Ethylene begins condensing.
Reactor begins cooling.
Reactor pressure still being raised.

Saturday, May 19 07:00
Low Reactor temperature noticed.
Refrigerant blocked, Reactor heated.
Reactor pressure rising.

Saturday, May 19 10:28
Reactor overpressures.
Reactor vapor ejected horizontally from relief valve.
Vapor ignited by welding machine – Fire Marshal.

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Credit: Houston Chronicle

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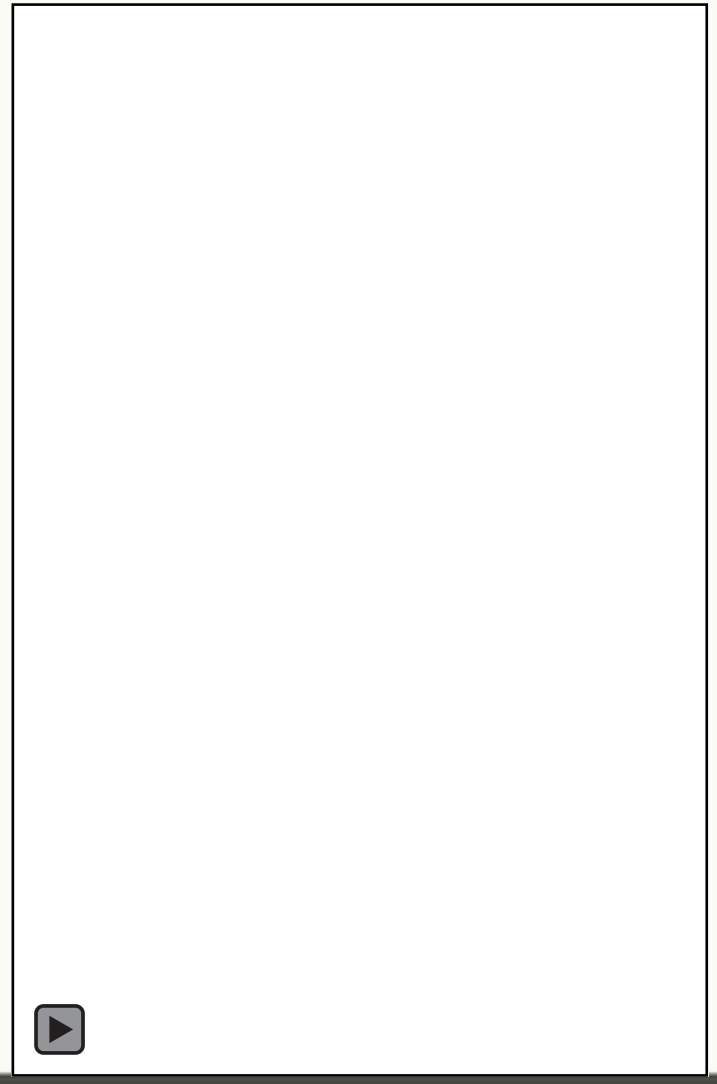

Credit: Tiffany Craig, KHOU TV, courtesy of Edward Ross

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Initially a Flash Fire, flames propagated back to relief valve, becoming a Jet Fire.

Fire burned for almost three minutes, until relief valve closed.

Contract workers in the vicinity were performing activities including welding, insulating, and painting. They immediately evacuated when the fire erupted.

Workers suffered burns, or were injured by jumping from heights, or falling while running to escape the fire.

Twenty-one injured workers were transported to medical facilities for treatment.

One contract worker remained in critical condition for several days from life-threatening burns.

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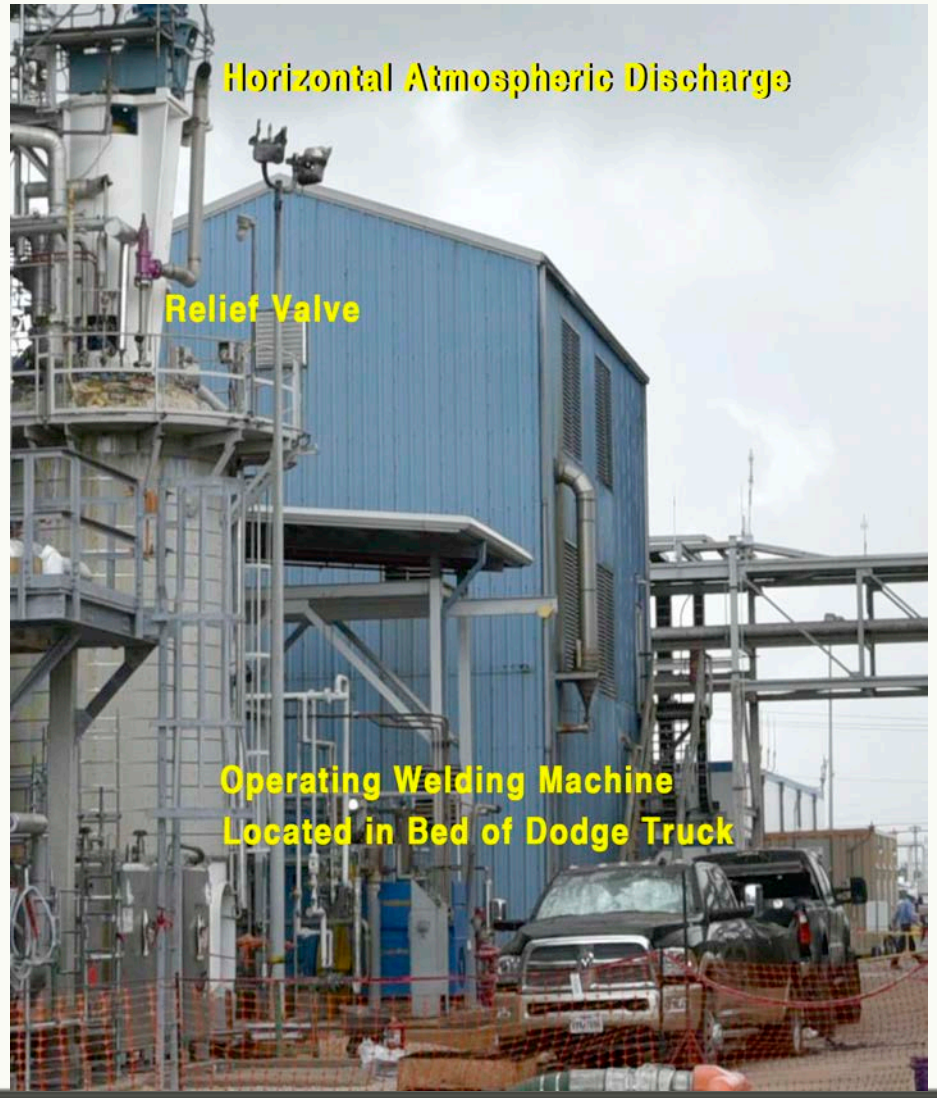

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The CSB investigation is ongoing.

Investigators continue to collect data and evidence from the site.

Investigators will conduct an analysis of this incident based upon evidence collected during the course of the investigation.

A final report, including facts, analysis, conclusions, and recommendations will be issued at the conclusion of the investigation.

This PowerPoint presentation is not a stand-alone document.

It is meant as a visual accompaniment to an oral update of
the May 19, 2018 fire at the Kuraray EVAL facility in Pasadena, TX.

It does not supplant the actual investigation analysis which will be located at

https://www.csb.gov/kuraray-america/