Informational Summary Report of Serious or Near Serious CAL FIRE Injuries, Illnesses and Accidents

GREEN SHEET

Bulldozer Rollover

May 13, 2026

Joses Incident

26-CA-TCU-006848

26-CA-CDF-000077

Sacramento Headquarters – Training Program

SUMMARY

On May 13, 2026, at approximately 0500 hours, a CAL FIRE Bulldozer was assigned to the Heavy Fire Equipment Operator (HFEO) Academy, working in the area of Mountain Ranch, California. During nighttime training operations, a CAL FIRE Bulldozer (D1) was involved in a rollover and sustained major damage. The student self-extricated and was transported to a local trauma center with minor injuries. The student was evaluated, treated, and released.

CONDITIONS

The accident site is located within the Joses Vegetation Management Project (VMP) site. The Joses VMP is located within the CAL FIRE Tuolumne – Calaveras Unit (TCU) between San Andreas and Mountain Ranch, California.

Location:

- Joses VMP
- Latitude/Longitude: 38.2124166667, -120.6077166667

Figure 1: Accident Site Overview

Weather:

- Location: Murray Creek Road PG&E Weather Monitoring Station (ID 267PG)
- Temperature: 51° Fahrenheit
- Elevation: 2,540’ MSL
- Relative Humidity: 80%
- Winds: 7 to 9 MPH north-northwest
- Visibility: 10 Miles, Clear at KCPU (Calaveras County airport, 5 miles southwest of accident site)

Fuel Type:

- Project area characterized as California interior chapparal and oak woodland.
- Scattered shrubs generally three to six feet tall with one-foot-tall grass throughout.

Topography:

- Soils in the immediate vicinity of the accident location were 30-60 percent slopes, consisting of loam to clay loam, with a recorded minimum depth to bedrock of approximately 30 inches.
- Numerous large shale shelves were observed in the accident vicinity, with a single large boulder (24” diameter) noted to be dislodged near the top of the rollover sequence.

Fire Behavior:

- During the training evolution, the instructor identified that the simulated fire was located in a drainage with the objective of creating direct fire line on the ridge above.

Make/Model of Equipment:

- 2023 Caterpillar D5 Bulldozer

SEQUENCE OF EVENTS

On May 13, 2026, the CAL FIRE Training Center Heavy Fire Equipment Operator (HFEO) Academy 26-01 was conducting night operations training at the Joses VMP located in the CAL FIRE Tuolumne – Calaveras Unit (TCU). The project is located between San Andreas and Mountain Ranch, California.

HFEO Academy 26-01 was in week 9 of their 11-week course. The objective for the week was to conduct nighttime operations during which the students would participate in constructing and improving fire lines, simulated fire attack, and utilizing a bulldozer as a refuge. During week 9, students are placed on a work/rest cycle that allows them to have the proper rest before arriving at the training location. Training is scheduled to be conducted Tuesday through Thursday between 0300 hours and 1000 hours.

An operational briefing was conducted by the HFEO Cadre on May 12, 2026, at the Ione Training Center. During this briefing, students received instructions to arrive at the Joses VMP by 0300 hours for briefing and were given their division assignments for the following morning.

Figure 2: View looking towards Division Charlie (C) immediately prior to the rollover. Photo taken from ridge where BC1 was located.

On the morning of May 13, 2026, Student 1 (S1) and Student 2 (S2) left the Ione Training Center at approximately 0130 hours and arrived at the site at approximately 0245 hours. Upon arrival at the predetermined meeting location, S1 and S2 met with HFEO1, a cadre member who was functioning as Division Charlie (C).

S1 was instructed that his assigned bulldozer was out of service and that they would need to utilize a reserve bulldozer, D1, located in Division Papa (P). S1 was transported to D1 by a cadre member and upon arrival found that another student had already begun checking out the equipment. A quick pass down of the equipment inspection was conducted before S1 did their walk around. Upon

completion of S1's checkout, they began moving D1 back to Division C to meet with S2 and begin their first assignment for the morning.

S1 arrived at Division C at approximately 0300 hours and joined S2, operating another CAL FIRE Bulldozer (D2), who had already begun constructing uphill fire line. HFEO1 instructed S1 to communicate with S2 and find out what was needed to complete the assignment. The assignment was to construct fire line parallel to an existing line on the spur ridge where the simulated fire was located in a drainage below them. Upon completion of the briefing, HFEO1 met with HFEO2, another cadre member functioning as Division Mike (M), and they began walking up to the top of the ridge to observe the line construction of both Division C and Division M where the student's first assignment would end.

S2 was operating the lead bulldozer for the first assignment and S1 was improving the line behind. For the first assignment, the students completed 884 feet of fire line on slope varying between 35% to 55% and 12% to 22% side slope. Average width of completed fire line was between 20-24 feet.

At approximately 0415 hours, S1 and S2 completed their first assignment, parked their equipment, and met with HFEO1 and HFEO2 to discuss how it went and what improvements were needed. HFEO1 then briefed the students on their next assignment to construct downhill fire line next to an existing fire line where the simulated fire was still in the drainage below them. S1 was instructed that they would be the lead bulldozer during the next assignment. HFEO1 instructed the students to push the material uphill and create a windrow, or a narrow pile of material, along the existing bulldozer line located on the ridge.

S1 began their operation at the top of the ridge when HFEO1 advised that they were beginning in the incorrect location and cutting into Division M where additional bulldozers were working. HFEO1 stopped S1, asked for a face-to-face for additional clarification, and showed S1 exactly where the line was to be placed. HFEO1 and HFEO2 ensured the assignment was understood and S1 began the assignment again.

Figure 3: Location where S1 began to create downhill fire line.

At 0400 hours, S1 anchored in at the top of the hill and began progressing down the ridge to the desired location while S2 staged at the anchor point at the top of the cut

until there was enough area for both bulldozers to operate. HFEO1 moved to the bottom of the hill to observe the progress while HFEO2 returned to their division to check on the progress of other students.

S1 constructed approximately 100 feet of line before encountering some rocks in the fire line. S1 asked S2 to bring soil down with him as they were improving the line in an effort to cover the rocks. Continuing further downhill, S1 faced increasingly difficult terrain, including more rocks and a steeper side hill. At one point, S1 began to experience sliding. To regain control, S1 attempted to turn the bulldozer uphill. S1 made three or four more passes continuing to face the bulldozer uphill.

In these attempts, S1 stated that left track was not moving and that the right track was trying to turn the bulldozer, but it would not turn. S1 tried to regain control by pushing up the side hill but reported that the bulldozer nosed down into a hole. S1 put the bulldozer in reverse and noted that the right track was turning, however they could not turn the tractor. The result of these attempts to regain control positioned the right side of the bulldozer downhill. While attempting to adjust their bulldozer, S1 experienced an unexpected shift, causing the bulldozer to roll onto its right side.

Figure 4: Terrain at point of rollover

At around the same time, HFEO1 and HFEO2 stated that they heard what sounded like a bulldozer on rocks, getting their attention and causing them to pause. Immediately following this sound, HFEO1, who was at the bottom of the hill at the Division C/M break, stated that they could hear the roll and see the lights of the bulldozer rolling.

As D1 began to roll, S1's head and hands contacted the right-side glass then the left side glass. S1 was not wearing a helmet at the time of the rollover. S1 did have the seat belt and shoulder restraint system buckled, however stated the shoulder restraint system came loose during the rollover event.

S1 and S2 had constructed 359 feet of fire line when the roll sequence initiated. The area where the bulldozer began to roll was found to have a general slope of 58% and a side slope of 23%. D1 rolled six and a quarter times, traveling 221 feet before coming to rest.

Figure 5: Top of bulldozer after rollover.

At approximately 0455 hours, Battalion Chief 1 (BC1), positioned on the adjacent ridge, observed the rollover incident as it occurred and immediately contacted the San Andreas Emergency Command Center (ECC) to initiate an Incident Within an Incident (IWI). BC1 requested an emergency response, including an Air Ambulance, and subsequently assumed command of the IWI.

When D1 came to rest, S1 was able to shut off the engine of the bulldozer, release the four-point harness, and contact HFEO1. S1 was initially on the wrong tactical (radio) channel and had to switch over to the appropriate channel. S1 gave a mayday call over the radio stating “Mayday, mayday, mayday. Dozer rollover. I don’t know where I am. I need help.”

Figure 6: Bottom of bulldozer after rollover.

Once HFEO1 made access to the site, they were able to establish communication with S1, who reported that they could not open the bulldozer door because it was contacting the sweeps or roof. HFEO1 requested assistance from HFEO2 and informed S1 that they would attempt to climb onto the bulldozer and open the side screen while S1 worked from the inside. Following this plan, S1 attempted to kick out the glass of the right-side door window, which was now positioned beneath them due to the bulldozer’s orientation. S1 successfully broke the glass, allowing them to crawl out from underneath the bulldozer and exit to the uphill side. HFEO1 and HFEO2 assessed S1 for injuries and provided an update to BC1. HFEO1 and HFEO2 reported that they were walking S1 down the hill to the bottom of the division.

HFEO Cadre members and Training Program Staff in attendance provided medical care to S1 until patient care was formally transferred to arriving resources. The student was then transported by air to a local trauma center, where they were evaluated, treated, and released.

INJURIES/DAMAGES

- S1 suffered a fractured rib, contusions to their arms and head, and minor lacerations.
- D1 sustained major damage.

SAFETY ISSUES FOR REVIEW

- Ensure appropriate personal protective clothing and equipment (PPE) is worn at all times, per Safety Handbook 1721-1728.
    - Safety Handbook 1722 (Head, Neck, and Ear Protection) states HFEOs shall wear the Department issued HFEO helmet where there is a risk of head injury from impact or from falling or flying objects. All HFEO helmets shall be approved to the CAL FIRE HFEO Helmet Specification.
- Conduct a risk assessment before implementing a plan, and ensure all risks align with intended objectives.
    - Continual evaluation is required as operations continue.
- Recognize the hazards of operating heavy equipment at night.
- Know the limitations of equipment operating in steep terrain and understand the risk versus gain.
- Understanding soil type (e.g., clay, sand, rock) helps operators anticipate equipment performance.
- Ensure all loose items stored in the cab are secured.

INCIDENTAL ISSUES/LESSONS LEARNED

- The use of the four-point shoulder harness helped stabilize the student during the rollover and limited the potential for further injury.
- Modern equipment can exceed the limits of safe fire ground operations and may cause personnel to push too far.
- All firefighters need to continually weigh risk versus benefit in their strategy and tactics.
- HFEOs should exit the cab to assess when terrain, soil conditions, or operational hazards cannot be adequately evaluated from the cab or when conditions warrant.

PHOTOS/SITE DIAGRAMS/MAPS

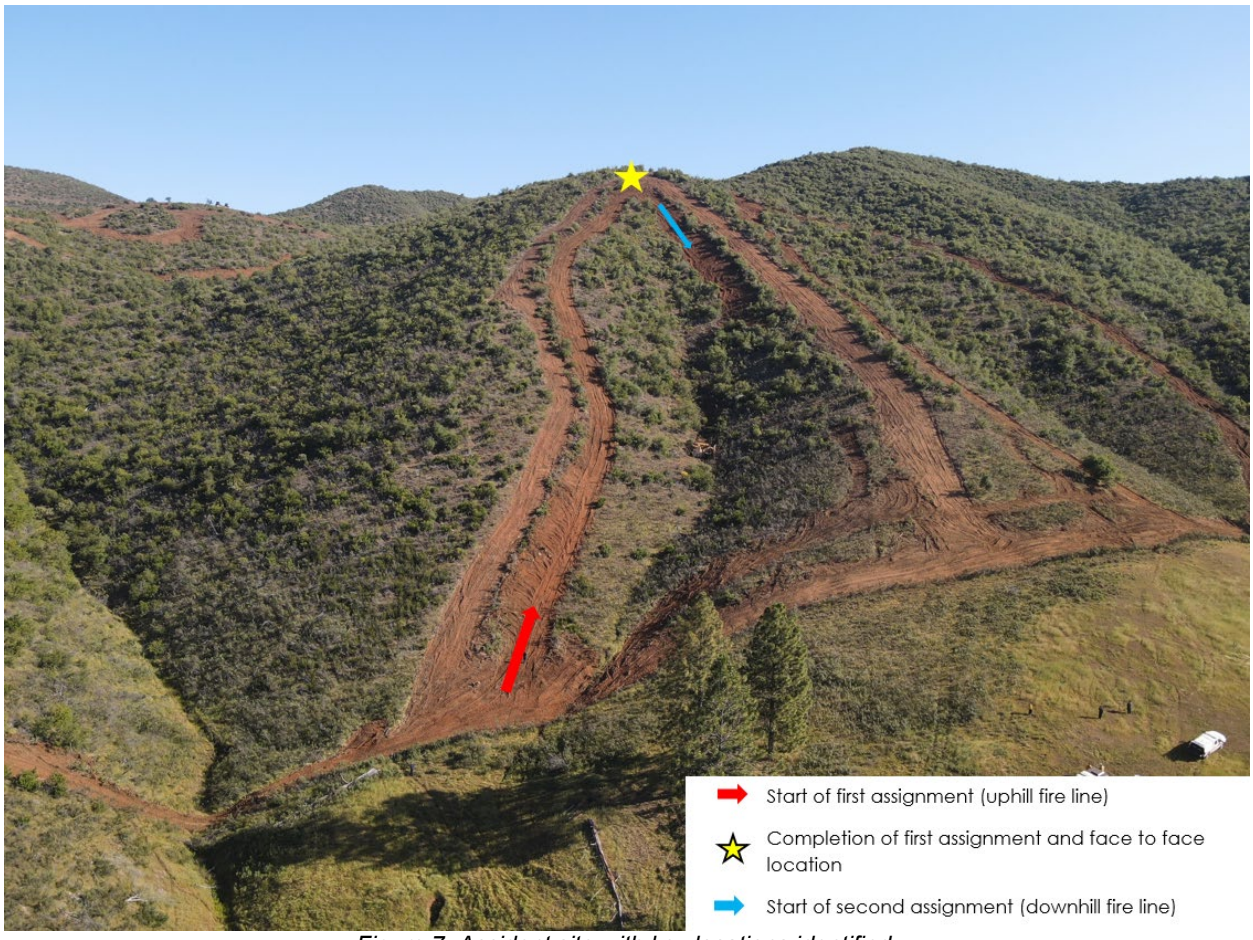

Figure 7: Accident site with key locations identified.

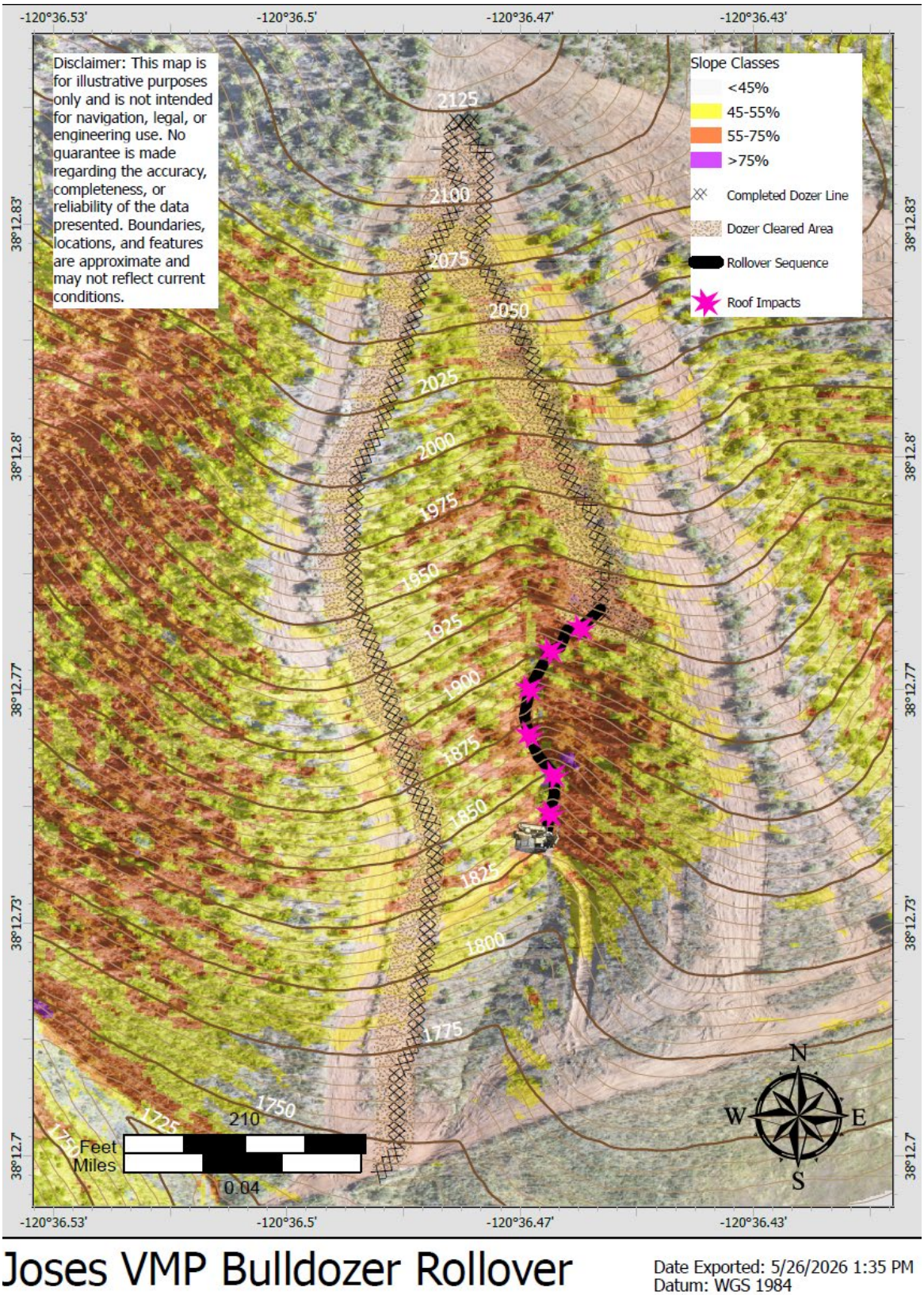

Figure 8: Accident site with slope and rollover path identified.