Summary Report of Near Miss Incident

California Department of Forestry and Fire Protection

CDF FIRE CREW
WASHINGTON RIDGE CREW 4
NEAR MISS INCIDENT

August 19, 2001

PONDEROSA FIRE

CA-NEU-14446
CDF – NEVADA YUBA PLACER UNIT

NORTHERN REGION

Lookouts Communications Escape Routes Safety Zones

A Board of Review has not approved this Summary Report. It is intended as a safety and training tool, an aid to preventing future occurrences, and to inform interested parties. Because it is published on a short time frame, the information contained herein is subject to revision as further investigation is conducted and additional information is developed.

SUMMARY

On August 19, 2001 at approximately 1315 hours, Washington Ridge Crew 4 was involved in a near miss incident while constructing fireline downhill into the American River Canyon. The crew was assigned to Division F on the Ponderosa Fire (CA-NEU-14446) and was cutting direct line downhill to tie in the last remaining open fireline. The handline was started by the previous operational shift and extended 1500 – 1700 feet downhill from a structure on top of the ridge near drop point 7, a hoselay was in position on the handline. During line construction terrain and heavy fuel loading required the crew to cut indirect fireline for a short distance. The indirect line was within 30 feet of the active fireline and the planned escape route for the crew was into the burn in the event of a flareup. Washington Ridge Crew 4 was in the lead of 4 fire crews and had 2 CDF Engine Strike Teams extending a hoselay down the handline. A type 1 helicopter was supporting the operation with bucket drops. A safety officer and the Division/ Group Supervisor trainee were with crews just above Washington Ridge Crew 4. The fire flared into the canopy during an increase in wind and the fire made a run up the slope between Washington Ridge Crew 4, and Washington Ridge Crew 5 with the assistant division group supervisor. The Fire Captain on Washington Ridge Crew 4 blew a whistle to alert the crew and initiate an escape into the planned safety area in the burn. The crew was unable to escape into the burn due to the fire intensity on the indirect fireline. The Fire Captain was immediately adjacent to the flareup and covered his face to prevent serious injury to his airway. With escape into the burn cutoff by active fire, the Fire Captain and Crew retreated further into the green. In the green behind the crew was an extremely steep chimney, where in the heat and smoke the Fire Captain fell approximately 20 feet into the chute. The Captain injured his knee and was momentarily disabled by the fall and was separated from the crew. The crew retreated into the green and eventually downhill along and in the chimney. Without contact and direction from the Captain the crew swamper received direction from a Fire Captain on a Washington Ridge Crew above the location, to gather the crew together and to proceed downhill to the American River. As soon as he was able, the Fire Captain from Crew 4 contacted the Division Supervisor to advise of the situation including his injuries and the separation from his crew. The Captain could

not climb out of the chimney due to the steepness and was forced to escape downhill in the chimney.

The Captain was able to rejoin his crew at the canyon bottom where the crew was treating injuries received during the escape down to the river. The Captain and the crew were transported by helicopter with the injured being taken to a local hospital for treatment. The Safety Officer and the Division/Group Supervisor trainee also were flown from the canyon bottom where they had walked while trying to locate and account for all of Washington Ridge Crew 4. All other crews and engine company personnel retreated into safety zones and then out the top of the canyon. Fire shelters were pulled from cases to prepare for deployment, but no fire shelters were deployed by either the Fire Captain or the Crew.

CONDITIONS

The fire location is in Placer County, 10 miles northeast of Auburn. The accident occurred on Division F in the North Fork of the American River Canyon east of Black Bear Trail off Gillis Hill.

FUEL: Wildland fuel was pine with medium brush at the upper elevation changing to oaks with sparse pine and grass at lower elevations. The accident site was at a point where the fuels were transitioning to more open brush and lighter fuels. Canopy closure is approximately 80 percent.

TOPOGRAPHY: The canyon slope is an east facing aspect with the average slope from ridge top to river being 86 percent. The accident site was estimated at exceeding 100 percent. Adjacent to the accident site is a steep drainage (chimney) with the sides of the drainage estimated at 300 to 400 percent, and approximately 15-20 feet deep. Ridge top to river is approximately 2600 feet on the horizontal map or 4000 feet along the slope (calculated).

WEATHER:	Temperature:	94 – 97 F
	Relative Humidity:	10%
	Wind:	6 mph gusts to 21 at ridgetop
	Fuel Moisture:	5% 10 hour

FIRE BEHAVIOR:

Predicted:	Midflame Wind Speed Mi/h	ROS (max) ch/h	Flame Length ft	Probability of Ignition %
	2.0	16.7	4.3	87
	4.0	21.8	4.9	87
	6.0	29.2	5.6	87

OBSERVED: Backing ground fire with up to 1 foot flame lengths and intermittent brush flare-ups. During fire run, 4-6 Foot flame lengths and some individual tree torching.

SEQUENCE OF EVENTS: (Times are approximate based on personnel recollections)

At 1030 hours Copters working the area advise the safety officer that they estimate the amount of line required to be constructed may be approximately 1000' (original estimate given to division was 500'). The FOBS at Windy Point advises things are looking good and that the fire did not appear to be progressing up canyon.

At 1100 hours after a Division F safety briefing with the crews and engine strike teams, the crews started down the existing handline, a safety officer was present on the line below them.

At 1130 hours Safety Officer and Division Trainee F meet at the top of what is reported as a slop over across the existing handline. The crew placement along the line was Washington Ridge 4 (WAR4) at the bottom, next was Washington Ridge 5 (WAR5), then Midnight Sun Hotshots, and Washington Ridge Crew 1(WAR1) on top. Water drops by Copter C-90CH (Type 1) continue supporting the crews.

At 1200 hours C-90CH leaves Division F for fuel, no other air support is available to work with the crews. The hoselay is progressing slowly behind the crews due to excessive head pressure and blowing hoses.

At 1250 hours Safety Officer meets with Division Trainee F on the overlook where WAR Crew 4 Fire Captain and the Div. Trainee F met. The Safety Officer realizes that the slopover extends beyond the bottom of the previous days handline and that WAR4 is below on the line working direct but not anchored to handline and expects following crews to tie the line in to where WAR4 had walked across the burn from the lower end of the handline.

At 1310 hours the Safety Officer makes access to the rocky overlook and realizes that the line required to be constructed has been significantly underestimated and the handline goals need re-evaluated.

At 1315 hours the Safety Officer observes the fire below near WR4 intensify and hears the Fire Captain's whistle blowing. Crews above WR4 move into the burn and then out to the ridge top.

At 1320 hours the Safety Officer makes contact with WR4 FC and is advised of his injuries and the loss of accountability of his crew due to disorganized escape route into green.

At 1400 hours Div Trainee F and the Safety Officer wait for the short duration fire run to die down and then started down to locate and provide assistance to WR4 members.

At 1415 hours the Safety Officer is advised of a medical problem requiring copter short haul on one of the crews retreating to the top of the ridge.

At 1430 hours all WR4 crewmembers and the Captain are accounted for at the river and first aid treatment is provided. Medical evacuation by copter is requested.

At 1530 hours Safety and Div Trainee F arrive at river and copter evacuation is started. Evacuation had been delayed by copter short haul at the top of the division.

At 1630 hours the last personnel are flown out of the canyon bottom.

Injuries

Fire Captain: Sustained minor first and second degree burns to the left upper cheek and on left ear, and a twisted right knee. Treated and released.

Crew Member: Broken right wrist, sprained left ankle. Treated and released. Wrist will require orthopedic surgery.

Crew Member: Laceration to left side of head. Treated and released.

Crew Member: Deep Laceration to bone of left knee. Treated and released.

Crew Member: Sprained right ankle. Treated and released.

Crew Member: Bruised back. Treated and released.

Crew Member: Sprained right ankle. Treated and released.

FINDINGS

- Division safety briefing was performed between Division Supervisor and all resource supervisors.
- Safety briefing was performed by all resource supervisors and assigned resource personnel.
- A lookout was posted to observe downhill attack strategy.
- Safety Officer was present to observe operation.
- Handline construction was supported by hoselay.
- Aircraft was available to support operation
- An escape route was identified and communicated to the crews.

- A pre-determined audible signal was used to notify crews of escape route use.
- A safety zone was established and communicated to all personnel.
- Strategies and Tactics were developed by information from past operational assignments.

Safety Issues for Review

Several findings have been brought forward to show that multiple safety factors were in place to support a downhill attack operation. Ultimately, many of these factors eroded away from the operation to the point that a safe downhill operation was compromised, and a near miss incident occurred that resulted in injuries to several personnel from WAR Crew 4.

In order to learn from this event it is important to recognize that the loss of individual safety factors will eventually have a cumulative effect. In such a dynamic process as the tactical application of a downhill direct attack, a continuos evaluation of operational progress and status of critical safety factors must be made. Once it is recognized that one or more safety factors have eroded from the operation, a secession of operations is appropriate in order to re-evaluate the continued success of the operation. In this case several factors, or loss of factors, ultimately resulted in the conditions that caused the near miss incident. Some of these factors include:

- Progressive hoselay is unable to keep up with lead crews due to problems associated with excessive pressure conditions resulting from long downhill hoselays, and lead crews push ahead of hoselay support.

- Existing information about the length of intended line to be constructed is found to be grossly incorrect.

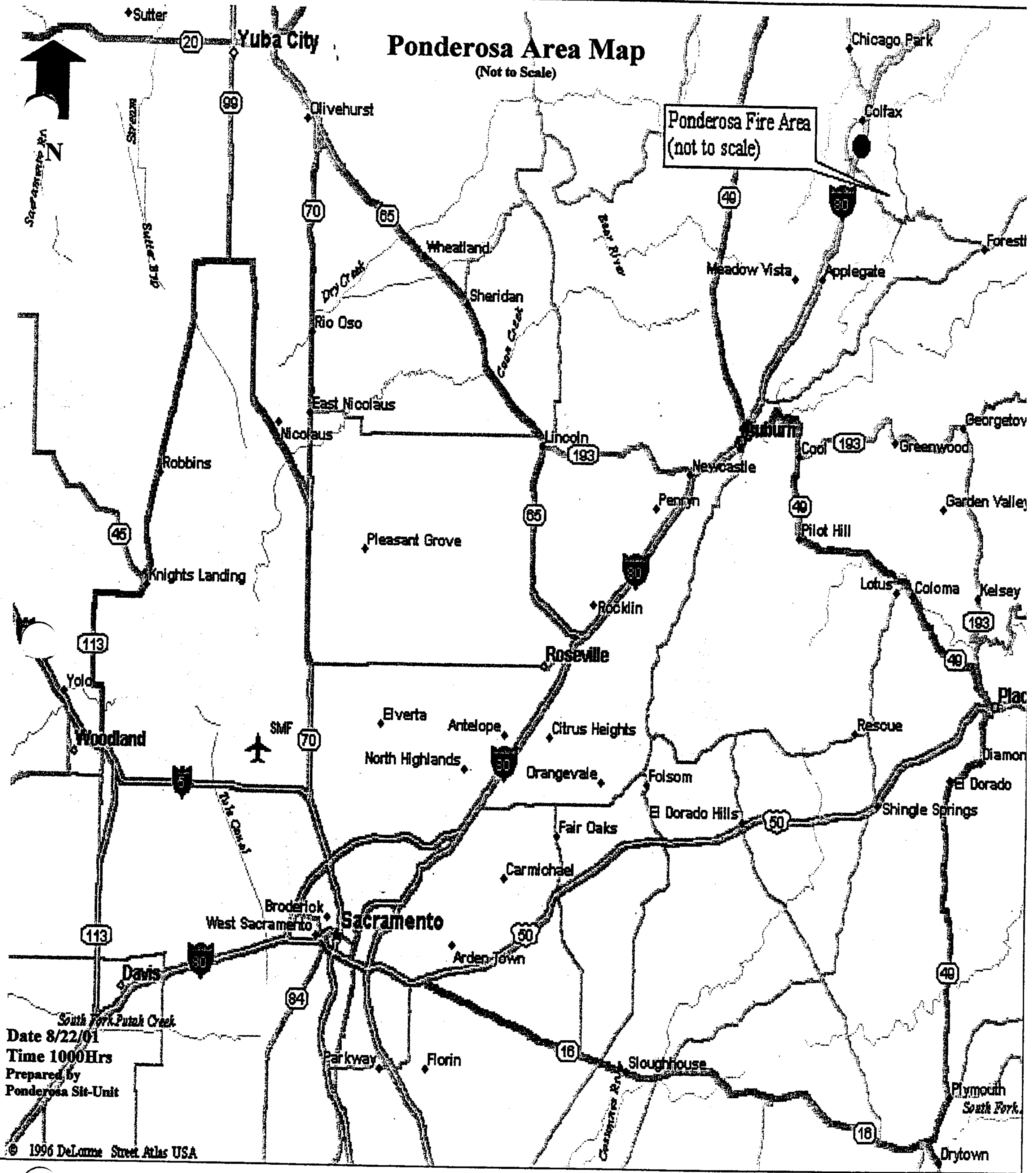
- Start time of operation will place crews in mid slope position during peak burning period

- Loss of aircraft support.

- Established lookout view is obscured by smoky conditions.

- Alternative escape routes were not identified to crew personnel in the event the primary escape route becomes unattainable.
- Whistle commands communicate a limited amount of information (Danger, Caution, etc.) and could not communicate a necessary change in the established escape route.
- As line progresses effective use of established safety zone becomes minimal to lead crews.

It is important to note that no single person, action, or event was responsible for the conditions that ultimately led up to the near miss incident. What must be learned from this incident is that all assigned line personnel are responsible for notifying line supervisors of changes in status relating to current fire conditions, safety factors, and operational progress. Line supervisors need to realize that when notification of changes to any of these categories is received, that operations may need to be suspended pending re-evaluation of operational objectives.



Ponderosa Area Map
(Not to Scale)
N
Ponderosa Fire Area
(not to scale)
Sutter
Yuba City
Chicago Park
Colfax
Olivehurst
Wheatland
Sheridan
Rio Oso
East Nicolaus
Nicolaus
Lincoln
Meadow Vista
Applegate
Newcastle
Penryn
Rocklin
Roseville
Robbins
Knights Landing
Pleasant Grove
Yolo
Woodland
SMF
Elverta
Antelope
Citrus Heights
North Highlands
Orangevale
Folsom
El Dorado Hills
Fair Oaks
Carmichael
Broderick
West Sacramento
Sacramento
Arden-Town
Davis
Parkway
Florin
Sloughhouse
Cool
Greenwood
Pilot Hill
Garden Valley
Lotus
Coloma
Kelsey
Rescue
El Dorado
Shingle Springs
Plymouth
Drytown
Dry Creek
Coon Creek
Bear River
South Fork Putah Creek
Date 8/22/01
Time 1000Hrs
Prepared by
Ponderosa Sit-Unit
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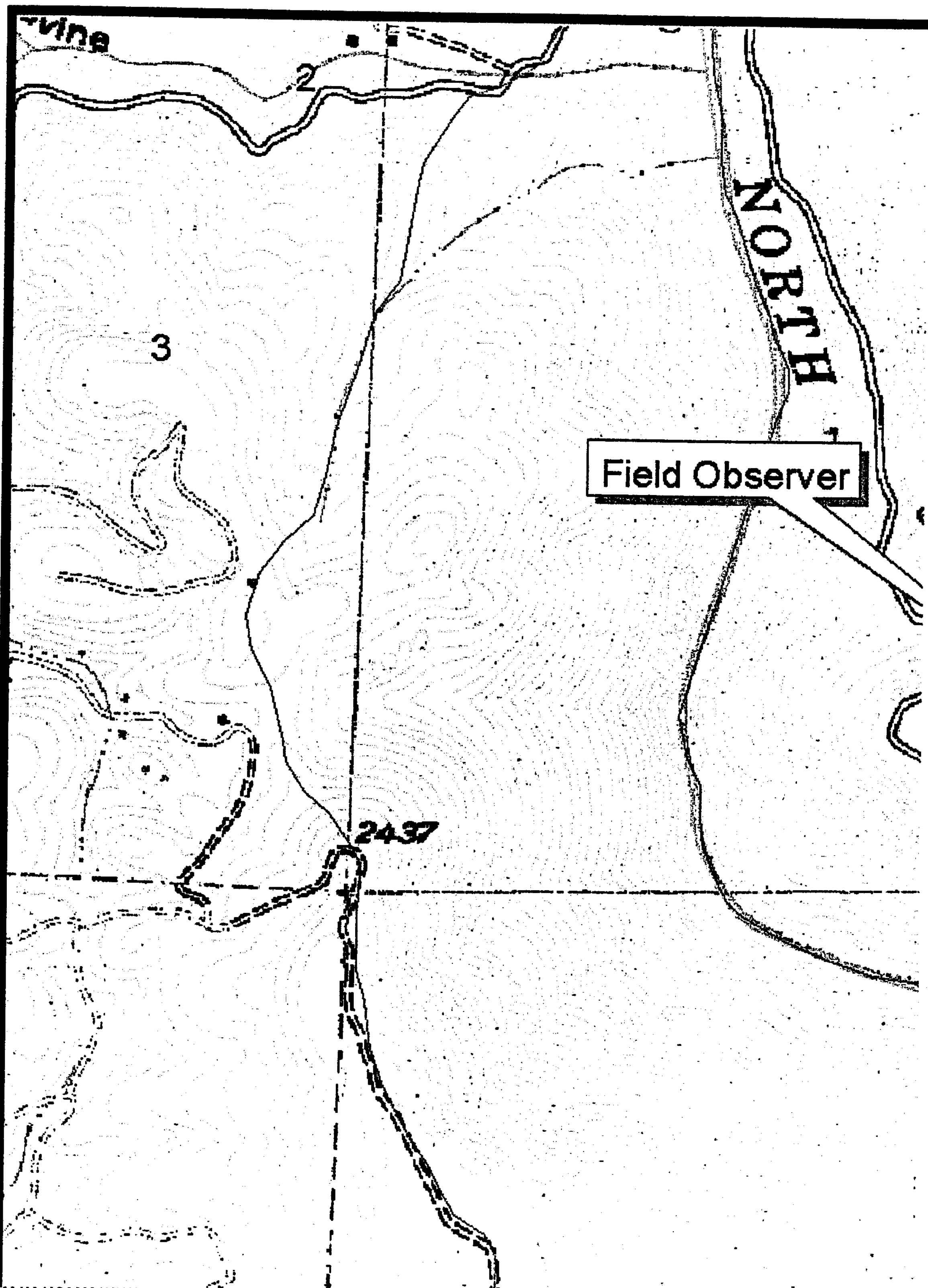
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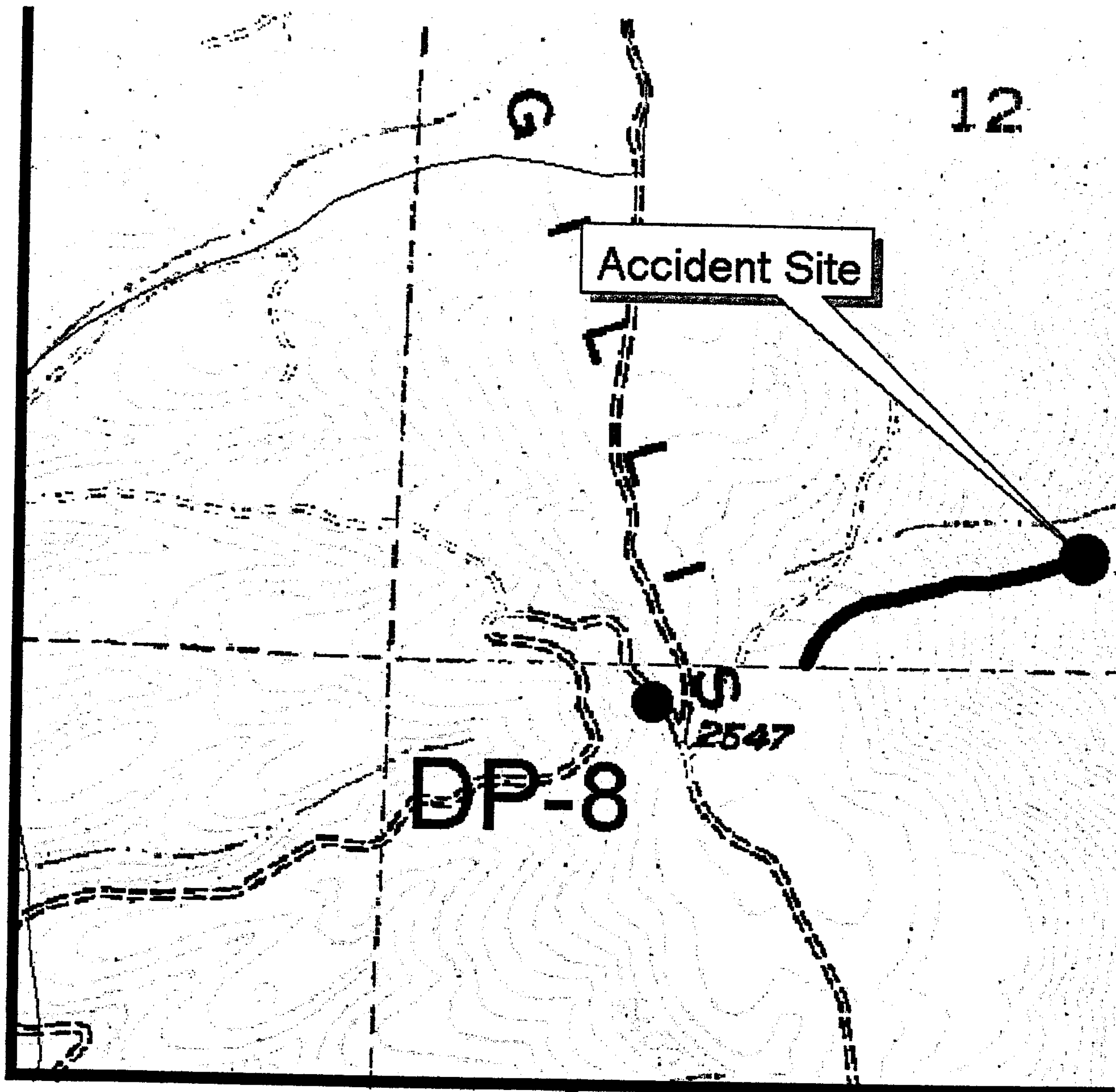
3
NORTH
Field Observer
2437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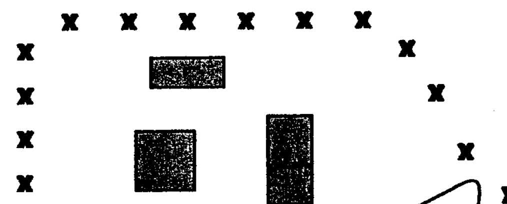
DP-8



S/T 9210 C
S/T 9213 C

Safety Zone

WR CREW 1

BURN

GREEN

BLM MIDNIGHT SUN HOTSHOTS

1500' → TO HOUSE

WR CREW 5

OBSERVATION ROCK

ABANDON HAND LINE

BURN

WR CREW 4

ESCAPE ROUTE TO RIVER 2000'