



United States Department of the Interior

FISH AND WILDLIFE SERVICE

P.O. Box 1306

Albuquerque, New Mexico 87103

In Reply Refer To:
R2/FM

JUN 15 1994

Memorandum

To: Director, FWS, Washington, D.C.
Attention: Chief, Branch of Fire Management, Boise, Idaho

Through: Regional Director, Region 2 *6/16/94*

Through: Assistant Regional Director - Refuges and Wildlife, Region 2 *6/15/94*

From: ~~Acting~~ Regional Fire Management Coordinator, Region 2 *6/14/94*

Subject: Fire Entrapment and Fire Shelter Deployment

On April 1, 1994, a wildfire started on Wichita Mountains Wildlife Refuge (Refuge) and was named the Sunset Fire. Eventually, a Type I Incident Command Team was ordered to manage the growing fire. The Type I Team returned the fire to the Refuge's responsibility the afternoon of April 4, 1994. The Refuge Fire Management Officer became the new Incident Commander (IC). Suppression activities continued, and, on April 13, 1994, a burnout operation was initiated to secure a portion of the perimeter. During this burnout operation, the fire escaped and was initial attacked. The fire shelter deployment occurred during this initial attack.

The Regional Fire Management Coordinator was notified on April 14, and an investigation occurred on April 15. A narrative of events involved with the Sunset Fire and subsequent burnout operation is attached. It is suggested the narrative be read prior to reading beyond the opening few paragraphs of this report because the narrative may clarify statements and situations referred to here. Also attached are statements from individuals, photographs of the postburn scene, and a copy of the fire report. The following paragraph is taken from the Sunset Fire narrative and summarizes the fire shelter deployment incident:

... the burn-out operation was nearing completion. ... The spot fire was detected within seconds by the IC and the holding crew and was initial attacked at 1420 hours. Ignition on the burn-out operation ceased and the four engines and water tender went directly into initial attack. At 1423 hours additional refuge resources were ordered because the wind driven fire was moving faster than any resources on hand could catch it. At about the

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same time Unit # 47 (had an extra fuel container that for some reason had been spilling fuel out off [sic] the back of the vehicle) was overrun by the fire when the vehicle stalled after crossing a gully. The operator deployed his shelter inside the cab of the vehicle and used it as a heat shield to exit the fire perimeter after the flaming front had passed.

The need to review fire entrapments is outlined in the Fire Management Handbook. Review of these situations is also requested by the National Wildfire Coordinating Group (NWCG). NWCG utilizes information provided from State and Federal agencies to determine common problems that occur. The information gathered is also used to determine if training and what kind of training are needed to solve the problem.

The NWCG provides a suggested format in their July 27, 1993, memorandum to member agencies titled Fire Entrapment Investigation and Review Guidelines. Methodology used for the Refuge review follows this format. The Entrapment Investigation Team (EIT) consisted of Mike Phillips (Regional Fire Management Coordinator) and John Morton (Assistant Fire Coordinator). Requests were made for other participants (management, Branch of Safety, and three refuge managers) to be members of the team, but they were unavailable or could not respond due to the short notice.

Initially, the Entrapment Investigation Element Matrix, as provided in the NWCG memorandum, was used to identify "influencing" and "significantly contributing" factors. An analysis of these factors was used to develop conclusions and subsequent recommendations.

First, an explanation of how an entrapment can be defined by the wildland fire fighting community. Four actions can be identified:

- Precautionary shelter opening,
- Nonentry shelter deployment,
- Noninjury shelter entry, and
- Injury/fatality shelter entry.

A shelter deployment is caused by something that makes the firefighter feel uneasy. It may or may not result in an entrapment situation. Although it is difficult to provide an all-encompassing definition, an entrapment can be said to occur when a person is unexpectedly caught in a fire behavior-related, life threatening, or perceived threatening position where escape routes or safety zones are no longer available. An entrapment may or may not include deployment of a fire shelter for its intended purpose.

There are numerous reasons why these situations can occur. Several factors contributed to the situation at the Refuge. Most of these were preventable.

It is important to point out that the purpose of the EIT is not to provide the basis for punitive or disciplinary actions. Rather, its purpose is to gather information, make recommendations which may alleviate problems, and, finally, distribute this information so others can also learn from the situation.

INFLUENCING AND SIGNIFICANTLY CONTRIBUTING FACTORS

The following were found to be areas where problems or shortcomings were identified; these are listed in the order listed in the Entrapment Investigation Element Matrix:

Incident Management

Tactics

The Water Tender Operator was attacking the fire from outside the fire's perimeter. This typically will put suppression at risk when winds are erratic or unpredictable. In this situation, where winds and humidity were less than forecasted, attack should have been from "inside the black" (i.e., operate the engines and fight the fire from inside the area already burned). Typically, in tall grass fuels (fuel model 3 or N), an initial flaming front will move through an area and burn off the top two-thirds of the fuel. Residual burning of the bottom one-third continues after the passage of the flaming front. Most of the time this causes problems in robust stands of tall grass fuels by making it too hot to work from the "black" due to residual heat and flame. In this case, unburned fuels (unburnt grass under the water tender), observed in the immediate fire area by the EIT, indicated somewhat lower fuel loadings than one would expect in this type of fuel. A fuel model 3 would normally have approximately 3 tons of vegetation per acre. This may make attack from the "black" a viable option.

The tactic typically used at the Refuge is to use two engines in tandem. The first engine, depending on fuel loading, uses a combination of techniques from straight streaming to fogging to knock down flames. The second engine knocks down any remaining flame and ensures that fire does not reignite and burn behind the first engine.

In this instance, the water tender was being used as an engine and no second unit was behind to ensure the fire was not reigniting.

Control Mechanisms

Ten Standard Fire Orders

After discussing the progression of the escaped fire from the burnout operation, preburn briefing, sequence of events, and interviewing individuals, it became apparent the primary

fire fighting order of, "Fight Fire Aggressively but Provide for Safety First" was violated. In this incident, the Water Tender Operator was more aggressive than safety dictated. The minor injuries involved could have been extremely serious given the burning conditions.

The above aggressive behavior, combined with not changing the protective gloves he was wearing while refilling drip-torches just prior to the spot-fire being reported, resulted in minor burns on the Water Tender Operator's hand. This could have resulted in much more serious burns on his hands. Clearly, another set of gloves should have been available and used.

Personnel Profiles

Training/Qualifications/Physical Fitness

It should be pointed out that there was a total of four engines (with two people on each engine) and one water tender assigned to the burnout operation. Only one of the engines had a qualified Engine Boss assigned. The Water Tender Operator is a qualified Engine Operator and not a qualified Engine Boss. Of the four engines assigned to the burnout and initial attack portion of the spot fire, only one had a fully qualified Engine Boss, all others were Engine Operator qualified. This means that while Engine Operator qualified personnel have the ability to operate a vehicle, they are not qualified to make tactical or equipment operation kinds of decisions. This is particularly apparent by the operator's direction to the firefighter to climb on top of the tender to apply water down on the fire. The top of the tender is 8 to 9 feet off of the ground and there are no hand-holds or other ways of securing oneself to the top of the vehicle. A qualified Engine Boss would have readily recognized this safety problem and disregarded this utilization of people as an option.

As part of the burnout operation, the tender was placed at a strategic location at or near the intersection of Highway 49 and the Sunset Picnic Area entry road. The purpose of placing the tender here was first, ease of access and second, a location where all participants knew where they could get additional water if or when they ran out. When the tender was moved to initial attack the spot fire, the ability to refill other engines was negated. This unauthorized movement could easily have jeopardized the safety of other individuals.

Equipment

Used for the Intended Purpose

The unit being used was a 1,500 gallon, military surplus fuel truck. The conversion process from fuel truck to water tender was not fully complete at the time the Sunset Fire occurred. The fuel container tie-down was not completed at the time. Further, a plastic

fuel container was being used instead of a metal can with a flame arrestor and spring loaded filling valve. Remains of the melted plastic container seemed to indicate it had fallen on its side, let fuel spill out, and caught fire. The fire in it was extinguished by the first engine on the scene after being notified the tender was on fire. Because of the short duration of the fire in the back of the tender, only minor blistering of the paint occurred. The tender was to be repainted so this appears to be of little impact. The potential impact was much larger.

CONCLUSIONS AND RECOMMENDATIONS

The EIT concluded there was an overly aggressive attitude combined with a lack of training and utilization of unqualified staff in positions where they should not have been placed. An Engine Operator should not be placed into situations where safety can be compromised nor should they be given the opportunity to get into unsupervised situations. The lack of training and qualifications prompted the Water Tender Operator to react to a situation rather than size it up and respond appropriately. The EIT feels additional training for those Engine Operators needs to be taken and additional fireline experience gained to upgrade skills from Engine Operator to Engine Foreman. Clearly, this experience cannot be gained with on-station fires. These individuals need to be allowed to obtain further experience in off-station situations. This is probably a broad-based problem throughout the Region given the level of fire activity on a typical field station and lack of fire experience indicated on recently submitted fire qualification forms. An example of this need may be this incident. As stated above, the fuel did not appear to be the robust tall grass fuel normally encountered on this field station. However, the utilization of water on this fire (i.e., the tactic used) was the same as the firefighters use on a typical fire. The ability to differentiate between situations and the proper use of various tactics comes from a breadth of experiences.

In no case should a firefighter ride on top of or in front of an engine without a safety device to keep them from falling off of the unit.

All employees should have a second pair of gloves available if they are dealing with drip torch fuel. The pair used while filling torches, should be thrown away if they get so saturated with fuel that they will burn.

The tactic of using a straight stream of water must be reviewed as an acceptable method of attack. Also, both engines being used on a fire probably do not need to use the same water utilization techniques. The lead unit may need to use one type of nozzle application and the second unit may use another. The increased use of fire fighting foams and associated specialized nozzles should be explored. The Region has purchased a heavy fire fighting engine with a compressed air foam system (CAFS) for the station. If this technology proves useful, additional CAFS may need to be purchased. Additionally, the possibility exists to increase engine sizes to carry more water.

The tender was pressed into service prior to being fully ready. The gas can being used was plastic and not secured. All cans being used on fires, with the exception of a sawyer's gas and oil, must be a metal container with spring loaded openings and flame arresters.

Lastly, the Regional Fire Management Coordinator was notified about this incident on April 14 in the morning by the IC (Station Fire Management Officer). He explained the incident and indicated that he was notified of the personal injuries on the day it occurred (April 13), but he did not know about the shelter deployment until the morning of April 14. One's supervisor, in this case the IC, should be notified immediately of any injury or action as severe as a shelter deployment or entrapment.

If there are further questions about the EIT or its involvement in this incident, please contact Mike Phillips at (505) 766-8035.

Kathleen Miller

Attachments:

Sunset Fire Narrative

Statements:

- Kevan Moore
- Mike Samborski
- Raul Garza

Individual Fire Report (Copy)

Entrapment Site Postburn Photographs

cc: Associate Manager, OK/TX NWRs
Refuge Manager, Wichita Mountains WR

Sunset Fire Narrative

Wichita Mountains Wildlife Refuge 04/01 to 04/19/94

On April 1, 1994 the fire danger was extreme under the NFDRS. Dry conditions and 20-25 mile per hour winds from the southeast were the key factors in this extreme rating. At about 1345 hours a smoke was reported by a refuge employee, Lawrence Ballou, near Caddo Lake. Refuge employee Mike McKenzie responded first from the refuge shop to check on the fire. The fire was approximately 5 acres in size when McKenzie arrived. McKenzie quickly requested additional engines and a nurse tanker. Other refuge employees were responding during this time.

At 1415 hours the fire was reported to be 100 acres in size with estimated rate of spread at 40+ chains per hour. Strong southerly winds were pushing the fire front toward scenic highway 49 requiring fire personnel to backfire off the paved road 49 to prevent the fire from crossing the road. During this time assistance in the form of crews and helicopter were requested through the Ouachita dispatcher.

At 1450 hours on April 1, 1994 the weather information received indicated winds out of the south at 24 miles per hour with stronger gusts and relative humidity at 27%. The effort to hold on highway 49 was effective despite three spot fires which were extinguished using refuge engines.

The affected road through the refuge was closed to all but emergency traffic. While other refuge personnel continued to respond a request was made to Ouachita Dispatch for U.S. Army at Fort Sill to supply helicopter with bucket. While this request was encountering difficulty, Ouachita Dispatch confirmed a Kiowa crew was being dispatched. By 1630 hrs Refuge personnel recognized the potential for spread and began to alert potential neighboring owners. By 2400 hours on 4/1/94 the fire had grown to about 300 acres and continued to be active through the night. The Ouachita-Ozark short team arrived 0030 hours on 4/2/94 by Forest Service aircraft. Refuge engines and personnel remained on duty through the night.

At about 0820 on 4/2/94 an airtanker was requested with about a one hour and thirty minute ETA. A helicopter was available on site for bucket use. Early weather forecasts were for strong southerly winds with gusts up to 45 mph by mid morning and a cold front passage by late afternoon.

The strong southerly winds pushed the fire through the grass and cedar fuels to the west destroying one picnic area restroom at Sunset Day Use Area. Three airtanker drops and 35,780 gallons of water from one helicopter were used to attempt to hold the fire south of highway 49. The fire area increased in size dramatically about 1600 hrs on 4/2 as the anticipated frontal passage pushed a wide fire front through parts of the Charons Garden Wilderness area toward the Treasure Lake Job Corps Center. Steep rocky terrain with discontinuous fuels slowed the fire progress some but made attack equally treacherous. By 1830 hours on 4/2 the fire had grown to about 2300 acres.

A regional overhead crew had been ordered with additional resources. On 4/3/94 Refuge personnel with Ouachita overhead team and 3 crews, and 3 helicopters continued to hold and patrol where possible. The light and variable winds allowed the fire fighting efforts to hold and contain much of the fire edge. The Southern Interagency (Blue Team) Incident Command Team arrived on Sunday and transitioned from the Ouachita team. On 4/3/94 the fire grew approximately 100 additional acres to a final size of 2370 acres.

Additional personnel continued to arrive on Sunday to hold the lines secured by the local refuge personnel and Ouachita personnel. Mopup continued throughout Sunday, Monday and into Tuesday. Demob began to release personnel and equipment on Monday with Team Demob anticipated for Wednesday morning following return of the fire to the refuge.

There were only two minor injuries (sprained ankles) and only one refuge structure lost.

The fire was returned to the Refuges responsibility at 1600 hours on 04/05/94. The overhead team and all non-refuge personnel were demobed by noon on 04/06/94 except for one light helicopter and a helitac crew. After a reconnaissance flight the morning of the 6th the helicopter and crew were released since no active fire was located. The fire rekindled as soon as the temperatures began to rise and the winds picked up on wednesday afternoon, 04/06/94. The fire made active runs on the interior of the unit on the afternoons of both 04/06 and 04/07/94. The run on wednesday 40/06/94 was on the north east side of Sunset Peak about 1430 hours 1/4 mile from the control line (Highway 49) to the north.

The burning that occurred on 04/07/94 was on the south east perimeter of the fire adjacent to the black line that was thought to be controlled near Fawn Creek camping area. This active burning required the refuge staff to make direct attack efforts late in the afternoon (about 1600 hours) on two areas on the east side of Elk Mountain. The burning was contained by 1830 hours and scouting continued for any additional smokes.

The Sunset fire burned primarily in the Charons Garden Wilderness Area. There is over seven miles of containment line on the Sunset fire perimeter. More than five miles of this line was never really secured by cold trailing, or actual mineral soil line construction primarily because of the light hand tactics employed in this wilderness area and the primarily 1 hour fuels in the area. Because of the still active burning on the perimeter, the lack of established control line, the forecasted dry hot weather, and the lack of additional available resources for line patrol the refuge FMO Bob Rebarchik made a formal request to the Regional Fire Coordinator Mike Phillips for additional assistance from within the region if it was available. The refuge received assistance in the form of four fire fighters from the Lower Rio Grande Refuge in southwest Texas. This assistance arrived on 04/09/94 about 1900 hours. This crew was placed on initial attack duties and continued to assist in fire suppression, and fire tool and equipment rehab from the fire.

The refuge received .89" of moisture on 04/11/94 after the additional assistance arrived. But, because of the continued active smokes on the interior of the burned area especially in the area of Headquarters Creek (even after the rain) it was decided to preform a burn-out operation to secure the black line north of the Headquarters Creek to Highway 49 and from Caddo Lake inlet east to the Sunset Picnic area road. After consultation with the Refuge manager and the National Weather Service the burn-out was conducted on 04/13/94. Forecasted weather called for temperatures in the low to mid 80's, with winds 10-20 mph, and low relative humidities between 30 and 40%. The burnout test-fire was initiated at 1250 hours near the Caddo Lake parking area. Everything looked good so the operation continued.

At about 1400 hours the burn-out operation was nearing completion. The winds S-SW had increased with gusts up to 36 mph and the RH's had dropped to 23%, much below the predicted 30- 40% minimum. As the fire backed into a stand of 6'-16' cedar trees (that torched out) the wind gusted and multiple fire brands carried

over 100 yards across the control line (Highway 49). The spot fire was detected within seconds by the IC and the holding crew and was initially attacked at 1420 hours. Ignition on the burn-out operation ceased and the four engines and water tender went directly into initial attack. At 1423 hours additional refuge resources were ordered because the wind driven fire was moving faster than any resources on hand could catch it. At about the same time Unit # 47 (had an extra fuel container that for some reason had been spilling fuel out off the back of the vehicle) was overrun by the fire when the vehicle stalled after crossing a gully. The operator deployed his shelter inside the cab of the vehicle and used it as a heat shield to exit the fire perimeter after the flaming front had passed. The escape was stopped twice. Once about 75 yards north of the highway and then again at Deer Creek about 1/3 mile north of the highway. Both times refuge resources ran out of water and the fire rekindled in the tall grass fuels. At 1455 hours additional assistance was requested from all of the refuge local cooperators.

At approximately 1540 additional resources arrived from Cache, Medicine Park Estates, Indianoma, and Meers VFD's. A dozer was positioned on the west flank of the fire to try to cut the fire off then get around the head near Kiowa Lake. Engine # 38 with refuge employees Lawrence Ballou and Bill Jones began a back firing operation off of the road going through the center of the West Research pasture. With line construction assistance from Edwin Drummond in the Dozer and the firing operation the fire was slowed long enough for the additional resources to catch the fire just north of Kiowa lake and west of West Cache Creek at about 1700 hours. The escape was called contained about 1730 hours and controlled at 2400 on 04/13/94. Crews continued working through 2000 the following day(04/14/94) because of a predicted frontal passage with strong winds. The front actually passed through the area at about 0430 hours on 04/15/94 and there were no problems with control even though there was still active fire on the interior of the burned area.

Refuge crews continued mop-up through 04/17/94, as there were still active smokes more than 100 yards interior to any control lines. Patrol and mop-up continued on 04/18/94. The Sunset fire was called out on 04/19/94 after no smokes were detected on 04/18/94.

DEPARTMENT OF INTERIOR
FISH & WILDLIFE SERVICE
INDIVIDUAL FIRE REPORT

REPORT DATE: 04/21/94
PAGE: 1

!UNIT DESCR: WICHITA MOUNTAINS WR - CACHE, O
!REPORT-ID: FWSOCR5090.R01
! SUB- CAL FIRE NET
!UNIT UNIT YR NO TYPE CAUSE PEOPLE CHANGE
!021 670 94 2659 11 930 0
!-----

AGENCY DATA

FIRE NAME AREA NAME LATITUDE LONGITUDE TOWNSHIP RANGE SECT MERID
SUNSET WWR 34 44 098 43 T03N R15W 13

COST-CODE 8 OWNER 4 FISCAL DATA PROBLEM CLASS
YR 4 00000230000 UTM: Z:1 E: .00 N: .00

SUPPRESSION DATA

DISCOVERY ! DATE ! TIME ! TYPE ! AMT ! ACRES
! 0401 ! 1345 ! A ! ! 5.0
INITIAL ! ! ! 1 2 3 ! 1 2 3!
ATTACK ! 0401 ! 1350 ! C C D ! 01 04 01 ! 20.0
CONTROLLED ! 0417 ! 1800 ! ! 2370.0
DECLARED OUT: 0419

SITE DATA

TOPOGRAPHY: 9 ASPECT: 8 SLOPE: 1 ELEVATION: 2 STATION MODEL
000000
BEHAVIOR: 4 BURNING INDEX: 000 ADJ CLASS: 0 R.V.C.:

PREVENTION DATA

FORM OF HEAT: 00 CERTAINTY: 4 EQUIP: 098 MATERIAL: 01 FACTOR: 00
CLASS PEOPLE: 4 AGE: 8 SEX: 3 ACTIVITY: 09 ESTIMATED DAMAGE: 6000

PRESCRIBED FIRE DATA

UNIT NO. PLOT NO: PLOT OBJECTIVE: 00 FIRING TYPE: COST/ACRE
FUEL ---TEMP--- ---RH--- ---WIND--- -FLAME-- ---ROS---
MODEL MAX MIN MAX MIN MAX MIN MAX MIN MAX MIN
00 000 00 00 00 00 00 000 00 000 00
00 000 00 00 00 00 00 000 00 000 00

STATISTICAL DATA

STATE OWNER VEGETATION ACRES BURNED
40 4 2 2370.0

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TITLE INFORMATION:

SUBMITTED BY: Bob Rebarchik
SUBMITTED DATE: FMO
SUBMITTED DATE: 04/20/1994

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SUBMITTED DATE: FMO
SUBMITTED DATE: 04/20/1994

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The affected road through the refuge was closed to all but emergency traffic. While other refuge personnel continued to respond, a request was made to the Ouachita dispatcher for U.S. Army helicopter bucket assistance. While the request was encountering difficulty, Ouachita dispatch confirmed a Kiowa crew was being dispatched. By 1630 hrs Refuge personnel recognized the potential for spread and began to alert neighboring land owners. By 2400 hours on 04/01/94 the fire had grown to about 300 acres and continued to burn actively through the night. The Ouachita-Ozark short team arrived at 0030 hours on 04/02/94 by US Forest Service aircraft. Refuge engines and personnel remained on duty through the night.

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OCCURRENCE REMARKS:

A regional overhead team had been ordered with additional resources. On 4/3/94 Refuge and Ouachita personnel and 3 crews, and 3 helicopters continued to hold and patrol where possible. The light and variable winds allowed fire fighting efforts to hold and contain much of the fire edge.

The Southern Interagency (Blue Team) Incident Command Team arrived on Sunday and transitioned command from the Ouachita team. On 4/3/94 the fire grew approximately 100 acres to a size of 2370 acres. Additional personnel continued to arrive on Sunday to hold the lines secured by the forces on hand. Mop up continued throughout Sunday, Monday, and Tuesday. Demob began to release personnel and equipment on Monday with the Team demob anticipated for Wednesday morning following return of the fire to the refuge.

There were only two minor injuries to date (sprained ankles) and only one refuge structure damaged.

The fire was returned to the refuges responsibility at 1600 hours on 4/5/94. The overhead team and all non-refuge personnel were demobed by noon on 4/6/94 except for one light helicopter and a helitac crew. After a reconnaissance flight the morning of the 6th the helicopter and crew were released since no active fire was located. The fire rekindled as soon as the temperatures began to rise and the winds picked up on Wednesday afternoon, 4/6/94. The fire made active runs on the interior of the unit on the afternoons of both 4/6 and 4/7/94. The run on 4/6 was on the northeast side of Sunset Peak about 1430 hours, 1/4 mile from the control line (highway 49) to the north.

The burning that occurred on 4/7/94 was on the southeast perimeter of the fire and had escaped the black line that was thought to be controlled near Fawn Creek camping area. This active burning required the refuge staff to make direct attack efforts late in the afternoon (about 1600) hours on two areas on the east side of Elk Mountain. The burning was contained by 1830 hours and scouting continued for any additional smokes.

The Sunset fire burned primarily in the Charons Garden Wilderness Area. There is over seven miles of containment line on the Sunset fire perimeter. More than five miles of this line was never really secured by cold trailing, or actual mineral soil line construction because of the light hand tactics used in this wilderness area and the primarily 1 hour fuels. Because of the still active burning on the perimeter, the lack of established control line, the forecasted dry hot weather, and the lack of additional available resources for line patrol the Refuge FMO Bob Rebarchik made a formal request to the Regional Fire Coordinator Mike Phillips for additional assistance from within the region if it was available. The refuge received assistance from the Lower Rio Grande Refuge (4 fire fighters) in southwest Texas. This help arrived on 4/9/94 about 1900 hours. The crew was placed on initial attack duties and continued to assist in fire suppression, and fire tool and equipment rehab from the fire.

The refuge received .89" of rain on 4/11/94 after the additional resources arrived. But, because of the continued active smokes on the interior of the burned area especially in the Headquarters Creek area (even after the rain) it was decided to perform a burn out operation to secure the unburned area between Headquarters Creek to the north and from Caddo Lake to the Sunset Picnic Area road to the east. After consultation with the refuge manager and the

DEPARTMENT OF INTERIOR
FISH & WILDLIFE SERVICE
INDIVIDUAL FIRE REPORT





REPORT DATE: 04/21/94
PAGE: 4

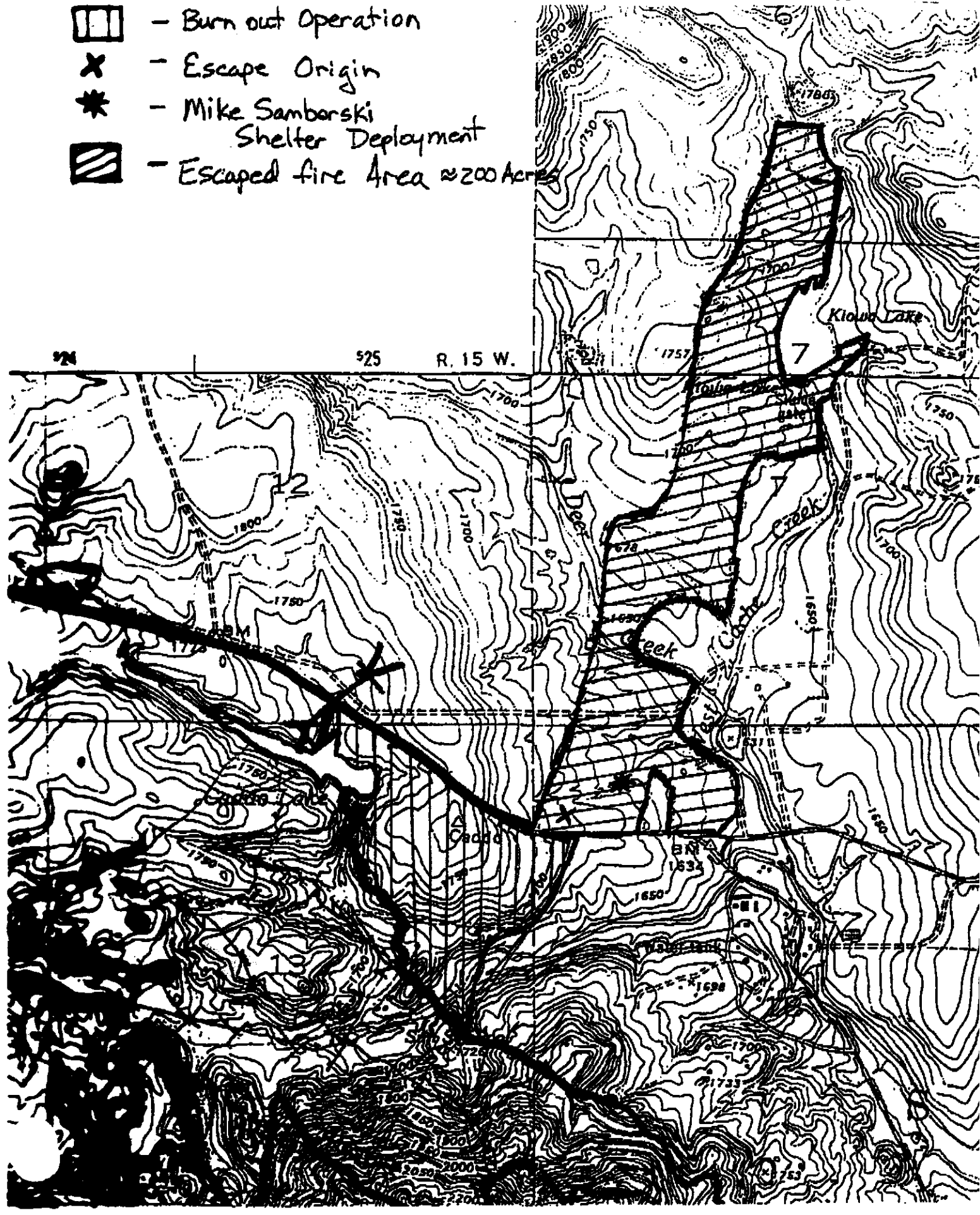
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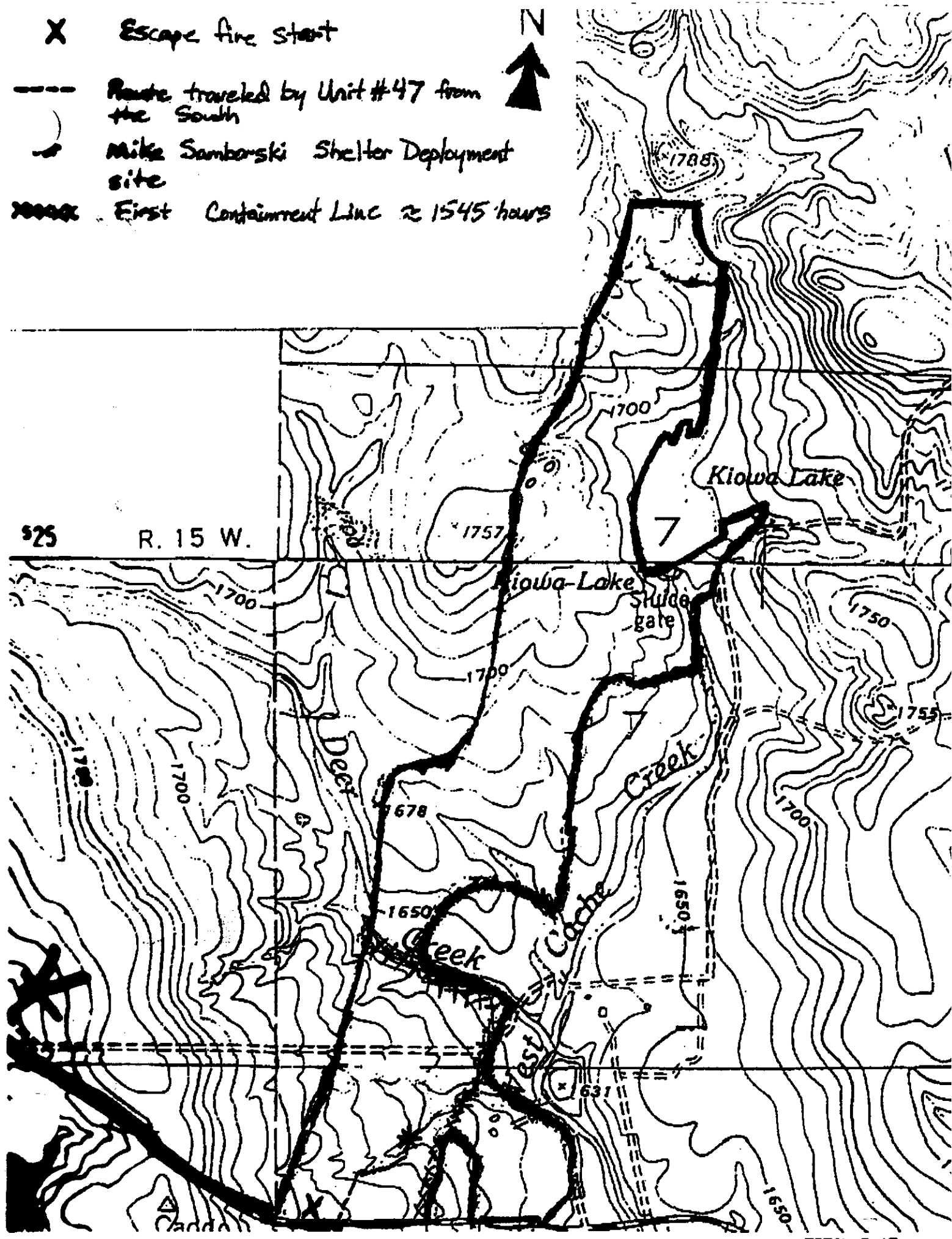
National Weather Service forecaster the burn out was conducted on 4/13/94. Forecasted weather called for temperatures in the low to mid 80's, with winds 10-20 mph, and low relative humidity of 30%. The burn out test-fire was initiated at 1250 hours near Caddo Lake parking area. Everything looked good so the operation continued.

The remainder of this report will not fit in the space provided by the FMIS. If a copy of the final report is needed please contact the FMO or Bob Rebarchik at 405-429-3007 or FAX 405-429-9323.

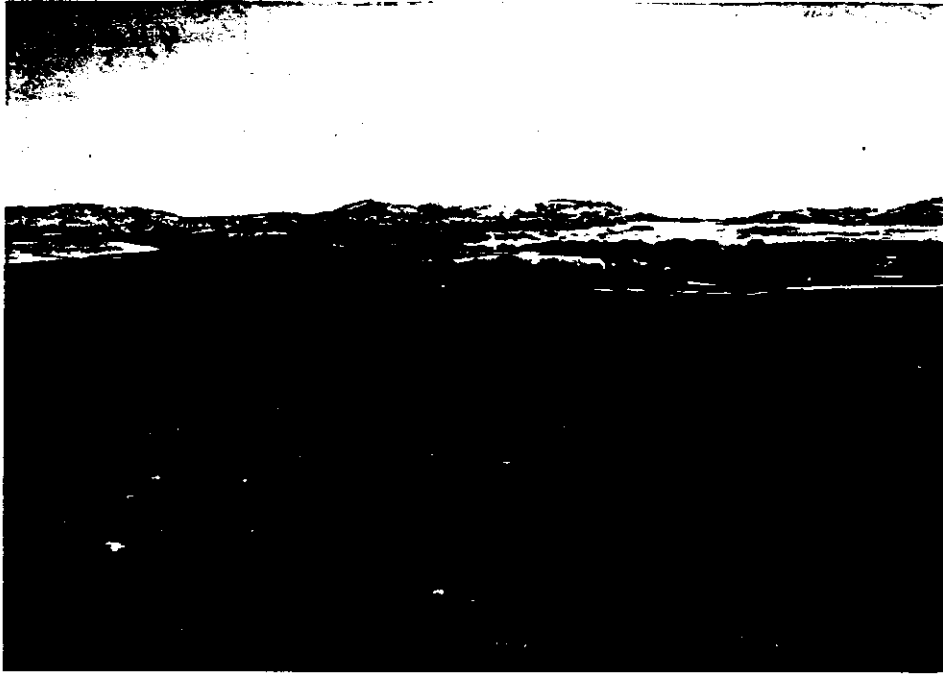
-  - Burn out Operation
-  - Escape Origin
-  - Mike Sambariski Shelter Deployment
-  - Escaped fire Area ≈ 200 Acres



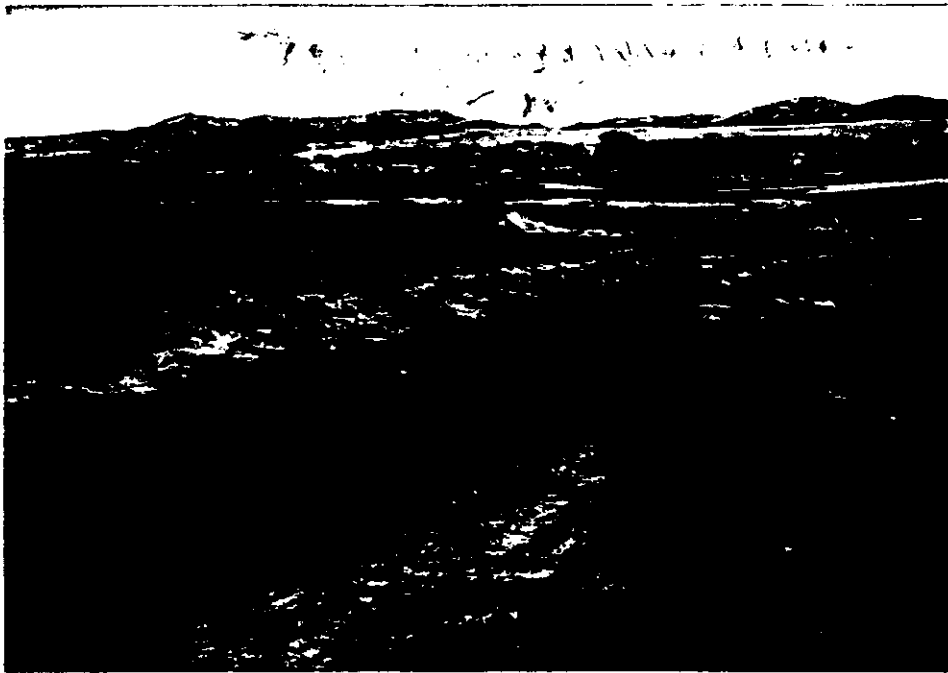
- X Escape fire start
- Route traveled by Unit #47 from the South
- ⌋ Mike Samborski Shelter Deployment site
- ⊞⊞⊞⊞ First Containment Line ≈ 1545 hours



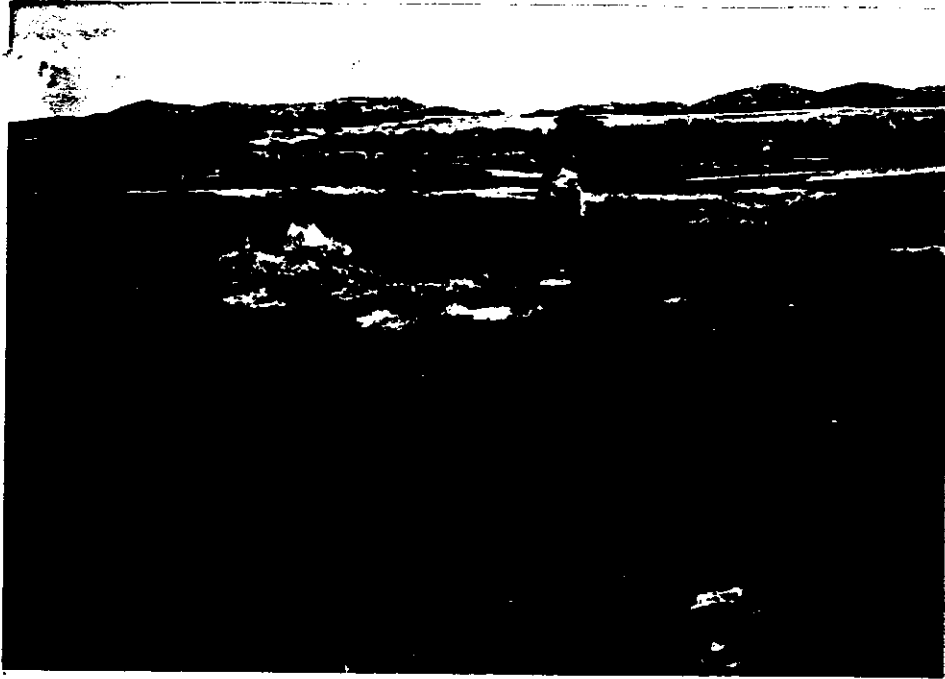
PHOTOGRAPHS OF INCIDENT SCENE - SUNSET FIRE BURN OUT



Approach to ditch the water tender wanted to go through. At this point, the fire was to the left of the picture and the tender was away from the flank of the fire seeking a ditch crossing.



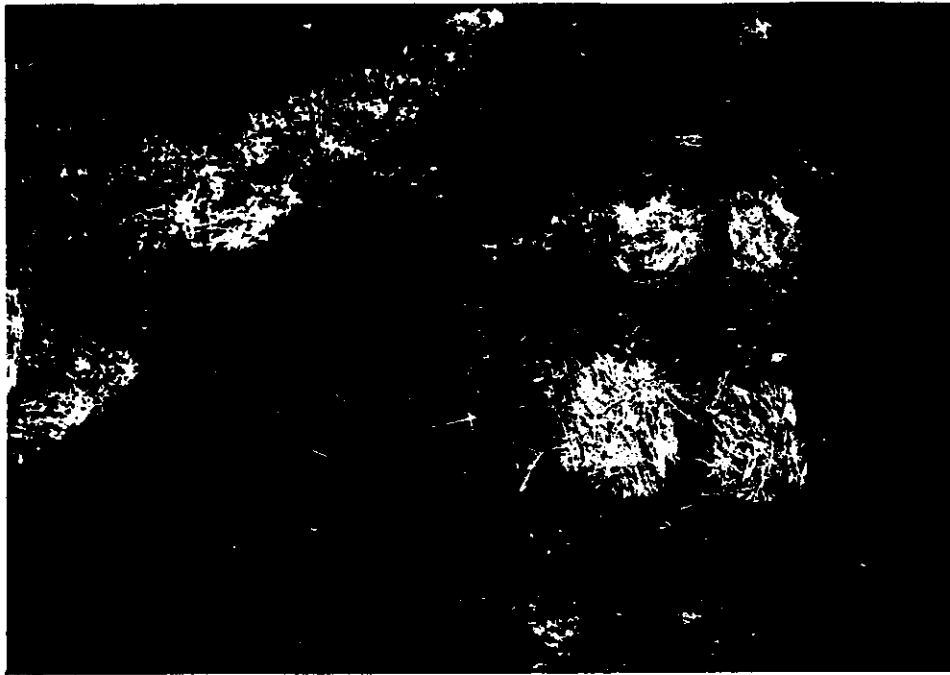
Photograph of crossing point selected. Fire at the rear of the water tender was first noticed.



The tender pulled through the low area, pulled forward approximately 50 feet and stalled. Fuel height and density can be seen in the area that was under the vehicle and did not burn. The gas container can be seen where it fell off the rear of the tender after the vehicle pulled through the ditch,



Close up photograph of the gas container.



Close up photograph of point where vehicle stalled. Shows fuel height and density of vegetation under tires.