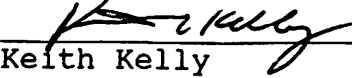


NATIONAL PARK SERVICE
JOSHUA TREE NATIONAL PARK
PRESCRIBED BURN UNIT PLAN

BURN UNIT NAME: BOUNDARY BUFFER


Prepared by:  Date 8/11/95
Keith Kelly
Prescribed Burn Boss Trainee

Reviewed by:  Date 8/11/95
Tom Gavin
Prescribed Fire Manager

Reviewed by:  Date 8/18/95
Tom Paterson
FMO

Reviewed by:  Date 8-11-95
Chief Ranger

Reviewed by:  Date 8/11/95
Chief, Resource Management

Approved by:  Date 8/11/95
Superintendent
Joshua Tree National Park

Complexity level: Normal with a complexity rating of 160

Copies of approved plan sent to:

Mojave Air Pollution Control District
NPS, Western Region Office

I. Burn Unit Description

Location:

T. 1S R. 5E Sec. 24,19
 Latitude: N 34 .4.3
 Longitude: W 116 .26.0

Size: 70 acres

Elevation: 3900 - 4200 ft.

Description of boundaries: Blackrock Campground and fire station is immediatly east of burn unit. Park boundary and access road is north and west of unit. The south boundary is the base of the slopes above Blackrock.

Slope(s): max.: 20% min.: 0% Avg.:5%

Aspect: N

<u>Vegetation Type</u>	<u>% of Burn Unit</u>	<u>Fuel Model</u>	
		<u>NFFL</u>	<u>NFDRS</u>
<u>Blackbrush Scrub</u>	<u>95</u>	<u>5</u>	<u>T</u>
<u>Pinyon-Juniper</u>	<u>5</u>	<u>2</u>	<u></u>

II. Fuel Loading and Dead Fuels (assess loadings pre and post burn by dead size classes, biomass, dead to live ratio, age classes, depth, etc., as applicable to fuel type)

Inferred from Western Region Fire Effects Monitoring Plot

0-1/4" = 200 lbs./acre
 1/4-1" = 2000 lbs./acre
 1"-3" =
 3+ sound =
 3+ rotten =
 3+= sum =
 Woody =
 Litter =
 And Duff =
 Total = 2,200 lbs./acre

III. Vicinity Map (attached)

VIII. Costs

Projected Person Hours

Projected Costs*

Unit Preparation:	<u>completed during '93 fire season</u>
Burning: 10	<u>\$120.00</u>
Holding: 24	<u>\$300.00</u>
Monitoring: 5	<u>\$ 60.00</u>
Mop-up/Evaluation: 3	<u>\$ 35.00</u>

Equipment:

Projected Costs*

Tools:	<u>on hand</u>
Engines:	<u>\$ 20.00 for fuel</u>
Fuel: 20 gal. drip torch fuel	<u>\$ 30.00</u>
Mileage:	<u>all programmed</u>
Aircraft:	<u>none</u>
Durafoam: 100 gal.	<u>\$ 18.00</u>

*Record required actual cost data on attached page.

IX. Scheduling

Proposed Ignition Date:	<u>Sept. 12, 1995</u>
Projected Burn Duration:	<u>Alternate Sept. 19, 1995</u> <u>three days</u>
Actual Ignition Date:	_____
Date Declared Out:	_____
Date DI-1202 Submitted:	_____

Note any dates when the burn may not be conducted during the proposed window: (out of weather prescription, emergency shut down, etc...)

Air Quality No Burn Day Regional Preparedness Level IV or V

X. Pre Burn Considerations

A. Preparation Needs:

1. On Site: Durafoam control lines and all joshua trees no sooner than 30 minutes prior to ignition of unit.
2. Submit news release to local media.

B. Special Precautions/Regulations (utility lines, historical sites, safety, etc.)

1. All burn personnel will wear the full compliment of Personal Protective Equipment.
2. All standard wildland fire fighter safety rules will be strictly enforced.
3. One EMT will be on site during the burn. The nearest ambulance service is located in Joshua Tree, 20 minute response time (JTA Ambulance, phone # 366-8474). Transportation/evacuation will be to High Desert Medical Center (phone # 362-4291).
4. There are no known historic, or cultural sites within burn unit.
5. There are no known Threatened or Endangered species within the unit except that the Desert Tortoise is known to be in the area.
6. All keys will be left in vehicles and vehicles will be parked facing in the proper direction.
7. A night patrol will be conducted the night following ignition of unit. Night patrols will continue on following nights if weather and fire behavior conditions dictate. Patrol assignments will be given out at the end of each day by the Crew Boss.
8. A safety briefing will be given by the Prescribed Burn IC.

XI. Burning Prescriptions and Observed Conditions

Fuel Model 5

Prescription Weather Elements

<u>Element</u>	<u>Prescription</u>		<u>Observed*</u>	
	<u>Acceptable</u>	<u>Optimum</u>	<u>Average</u>	<u>Range</u>
Temperature:	70-105	80		
Relative Humidity	Below 50%	10%		
Wind Direction:	No S Component w/o good loft			
Wind Speed:	2-10 mph	8mph		
Fuel Moisture:				
1 hour	5-20	6		
10 hour	Below 20	10		
100 hour				
1000 hour				
Woody (live)	Below 50%	30-40		
Herb. (live)	80-130	100		

Prescription Fire Characteristics

<u>Characteristic</u>	<u>Prescription</u>		<u>Observed*</u>	
	<u>Acceptable</u>	<u>Optimum</u>	<u>Average</u>	<u>Range</u>
Rate of Spread	3-35	30		
Heat/Unit Area	100-700	600		
Flame Length	4-16	12		

* At time of ignition and 1300 hr. (Ex. 65/80)

** Additional Fire Weather and Behavior Observations will be recorded on form FMH-1 & 2 throughout the burn on a schedule set up by the Burn Boss or the Lead FBWS.

Comments:

XII. Ignition Pattern\Holding Plan and Mop-up

Prior to ignition the holding crew will protect all vegetation identified in the objectives with a 3% solution of durable foam. A 2WD engine with a compressed air foam system will be used for application and holding actions. Maximum efficiency

of this apparatus is achieved by strategic position within 600' upwind of the burn unit. Access to some of the remote areas will be an existing heavily used horse trail and to drive within the perimeter of the unit wherever possible.

A test fire will be ignited at the NE corner of the burn unit to see if the burn should proceed. Following a successful test burn, ignition will proceed starting with the East block. Foam will be applied along the south and west perimeter and strip head firing with handheld drip torches will proceed from east to west across the blocks one at a time. Burning individual blocks will create a mosaic burn affect.

All necessary holding actions are approved to the point that they can be facilitated with forces on hand committed solely for the prescribed fire and to the point that they do not impact the integrity of the prescribed fire project. If additional forces are necessary to contain a spot or slopover or the progress of the project is impacted due to commitment of on site resources to holding the project, the project will be declared a wildfire and suppression efforts initiated.

The holding crew will consist of a NPS 5 person engine crew and 12-20 firefighters from local fire agencies. Two Type 3 NPS engines will be available from JTP, MNP and a Type 4 engine from DVP. BLM will supply a Type 3 4WD engine. A Type 2 watertender from 29 Palms Fire will also be on scene. Closest hydrant is located at the intersection of San Andreas Rd. and Warren Vista Ave and the Blackrock Campground.

A lookout will advise the Prescribed Burn IC directly in the case of spots across the line or other unusual fire behavior (fire whirls, etc.) If fire spots across the line, the holding crew will be dispatched and all further ignition will cease until the spot is extinguished. Suppression of spots will be the responsibility of the Holding Specialist until they are extinguished or become too large for existing control forces. At that time the burn will be declared a wildfire and appropriate actions taken to control the fire.

XIII. Contingency Plan

In the event of an escaped fire, all ignition will be ceased; the Prescribed Burn Incident Commander will become the Initial Attack Incident Commander of the escape.

The holding crew will become an initial attack resource under the direction of the Crew Boss. The ignition crew will hold the perimeter of the prescribed burn that is in progress; Fire Behavior Weather Specialist will become a field observer and continue to record weather and fire behavior data.

The identified contingency forces will be ordered as needed to contain the escape.

Available contingency forces at time of ignition:

ENGINES JTP-E-3632 MNP-E-3631 CDD-E-3636

XIV. Weather Information

A Fire Behavior Weather Specialist will be assigned to monitoring fire weather and fire behavior parameters every half hour during active ignition phase and every hour post ignition while active or smoldering. A spot weather forecast will be requested from the National Weather Service prior to ignition.

XV. Protection of Sensitive Features

Roadways - If smoke flow or holding force activity is predicted to impact the road, a road closure to vehicle traffic will be initiated. Foot traffic may be allowed to continue. Mitigation will be through early mop up of residual smoke to allow reopening of the road at the earliest possible time.

XVI. Smoke Management

Smoke observations will be recorded on form FMH-3 on a schedule set up by the Prescribed Burn IC.

The following air quality variables will be monitored:

1. Visibility
2. Total smoke production
3. Mixing height
4. Transport and surface wind speed and directions
5. Documented complaints

Smoke levels will be maintained to meet air quality regulations for particulate matter limits as prescribed for human health under Federal and California Clean Air Standards.

A burning permit will be requested, at least seven days prior to the planned ignition date, from the Mojave Air Pollution Control District, 15505 Civic Drive, Victorville, CA 93292. Waivers will be requested for no-burn days.

Residents will be notified of possible smoke concentrations prior to ignition. The Yucca Valley Fire Protection District and the California Division of Forestry will be notified of possible diurnal smoke concentrations in the Basin.

An observer will monitor concentrations of smoke on Joshua Ln. and San Andreas Road especially during diurnal conditions.

XVII. Coordination and Public Involvement

Coordination with local agencies will be through notification of the Federal Interagency Communications Center.

Public notification will be through press release to local media.

XVIII. Notification

Notification of Park Service personnel will be conducted on the day of the burn on the Park radio frequency and by contacting the Oasis and Black Rock Visitor Centers.

XIX. Public and Personal Safety

Mitigating reduced visibility situation:

The following steps are to mitigate for reduced visibility if Joshua Ln or San Andreas Road is affected by smoke. These actions are presented in order of decreasing visibility; implementation of step 3, for example, means that steps 1 and 2 have been taken.

1. Post "Smoke on Road" signs when visibility is twice the MAV (Minimum Acceptable Visibility) value or less. In this case the posted rate of speed is 25 mph so this is mandatory when the sight distance is reduced to 220 feet.
2. Reduce posted speed limit when visibility is at MAV or less.
3. Utilize a lead car or stop traffic by road closure if lead car is not available, when the ratio of actual visibility to MAV is 1/2 or less.
4. When the ratio of actual visibility to MAV is less than 1/5, close the road to all but administrative use.
5. Notify SBSO

Minimum Acceptable Visibility for 25 mph posted speed limit:

$$\begin{aligned} \text{MAV} &= (\text{EB} + \text{FB}) (\text{AF}) \\ 108' &= 27.0 + 34.7 \times 1.75 \end{aligned}$$

If visibility drops below 108' lower posted by sign speed limits will be requested:

76' = 20 mph

31' = 15 mph

28' = 10 mph

Less than 28' will require temporary road closure.

XX. Monitoring and Evaluation Procedures

Monitoring will be done in accordance with the procedures specified in the approved Fire Management Plan Appendix O.

XXI. Reports

Final total of all personnel, equipment,
and transportation:

\$ _____

Cost per acre:

\$ _____

Person days per acre:

\$ _____

XXII. Rehabilitation

Very little rehab needs are foreseen once the burn is declared out. Tracks from engines will be racked and all flagging utilized will be removed.

XXIII. Briefing guide and Go/No Go Checklist

Briefing guide

The objectives of the briefing are:

1. Identify specific responsibilities of the job for satisfactory performance within the function.
2. Identify co-workers within the function.
3. Define the functional work area.
4. Detail how and from what sources additional supplies, services and manpower are obtained.
5. Detail operational period work shifts.
6. Clarify any important points pertaining to assignments that may be questionable.
7. Provide for specific debriefing at the end of an operational period.

1. Orientation

A. Project Name: Boundary Buffer Size: 70 Acres

B. Maps (location of project, topography, fuels).
History of burn unit
Situation (expected fire behavior, weather, values at risk).

Plan of action, including alternatives.
Political and legislative considerations

- C. (1) Status of present resources.
(2) Anticipated control and holding concerns.
- D. What needs to be done
 - (1) General plan to accomplish
 - (2) Local problems and use of specialized equipment.
 - (3) Anticipated rehab and minimum impact concerns.
 - (4) Personnel
 - (5) Environmental protection considerations.
- 2. Job assignment
 - (1) Test Burn
 - (2) Size
 - (3) Location
 - (4) Starting point
 - (5) Firing patterns
 - (6) Timing
 - (7) Method of operation (strategy and general tactics)
- 3. Communications
 - (1) Radio channel/frequency 171.675
 - (2) Contact with dispatcher _____
 - (3) Radio assignments _____
- 4. Safety
 - (1) How safety is handled, emergency procedures
 - (2) General safety precautions
 - (3) Specific dangers to watch for:
Problems with heavy smoke, holding crew, engines,
spotting, snags etc.
 - (4) Escape routes and safety zones.
 - (5) Firing equipment
- 5. Resources assigned
 - (1) Overhead
 - (2) Personnel
 - (3) Equipment
 - (4) Reserves and contingency forces.
- 6. Logistics
 - (1) Transportation
 - (2) Communication schedules
 - (3) Medical
 - (4) Financial management concerns
- 7. Contingency plan
Spotting or slopovers should be reported to holding

supervisor and burn incident commander. Give location, size, other forces and equipment required for control.
(1) Location of secondary lines
(2) Escape contingency and initial attack ICS structure.

8. Questions regarding assignment.
9. Line officer, Fire Management Officer and Prescribed Fire Incident Commander concerns.

GO - NO GO CHECKLIST

- ___ Incorporated into annual prescribed burn plan approved by Superintendent
- ___ Funding appropriated
- ___ Prescribed burn plan completed and approved by Superintendent
- ___ Cultural Resource Survey
- ___ Dispatcher contact zone for contingency force availability.
- ___ Recon of unit and fire line implementation
- ___ County air pollution control district notified and approval received.
- ___ Preburn meeting with burn team and interested parties conducted.
- ___ Safety briefing held.
- ___ Prescription elements verified.
- ___ Federal Interagency Communications Center, Prescribed Fire Manager, District Ranger, Fire Management Officer, Management Assistant and Superintendent notified prior to ignition.
- ___ Regional and National preparedness level acceptable.
- ___ Test burn conducted and successful

XIV. Persons Contacted

1. CDF (619) 365-4411
2. BLM (909) 697-5355
3. Yucca Valley Fire (619) 365-3335
4. Federal Interagency Communications Center (909) 383-5652
5. Mojave Air Pollution Control District (619) 245-5402
6. KDHI-KQYN (619) 362-4264
7. KCDZ (619) 366-8471
8. KROR (619) 365-0891
9. Desert Trail
10. Hi-Desert Star
11. SBSO
12. CHP

The progressive heirarchy of positions and progressing towards qualification as prescribed fire manager (PFM) has been designed to utilize existing skills, and to supplement these skills with additional training and/or experience for qualification at the next higher position. For the normal prescribed fire operation, the vertical succession of positions as displayed (normal structure column), is the minimum acceptable organization. However, for complex burning operations (large acreage, difficult terrain, heavy smoke production, heavy fuels, etc.), prescribed fire speciality positions (FBWS I, PBB I, PFM) may be required (complex structure column). For larger parks, reservations/allotments, it may be desirable to maintain permanently trained persons in these positions.

Job certifiers (Prescribed Burn Facilitators):

Persons functioning in this role have to be currently qualified in the position and so certified by NPS/BLA at BIFC. Regions/Area will work with BIFC to ensure that an adequate number of qualified job certifiers are maintained per Region/Area, given each Agency's needs.

For initial certification as Prescribed Burn Boss II (PBB II), a minimum of two certification burns are required. Initial certification burns can be conducted in any NFFL fuel model, however, certification is by NFFL model. It is not necessary or desirable for a PBB to be certified in all 13 NFFL models, rather only those models present in his/her base unit. For certification by fuel model, at least 1/3 of a given burn block should be dominated by the fuel model in which certification is desired. Theoretically, a PBB could be certified in 3 models by conducting one certification burn with 3 fuel models present in a single burn block, each occupying 1/3 or 33% of the total acreage to be burned.

Prescribed Fire Complexity

To determine the requisite management level of a prescribed fire, determine the Burn Complexity, using the below factoring criteria, then refer to the Prescribed Fire Qualification System flowchart.

Rate each element on a scale of 1 to 10, then multiply by the weighting factor to determine the weighted subvalues to determine the total weighted value, and thence the required staffing structure.

PRESCRIBED BURNS:

COMPLEXITY ELEMENT/ (WEIGHTING FACTOR)	RATING VALUE	WEIGHT SUBVALUE	LOW BURN COMPLEXITY	HIGH BURN COMPLEXITY
1. Potential for escape. (10)	1	10	Very Low probability.	High probability.
2. Values at risk. (10)	9	90	Very little risk to people, property, resources.	Great risk to people, property, resources
3. Fuels/fire behavior. (5)	1	5	Mostly uniform & predictable.	Great variability & unpredictability. Prescription includes very low fuel moisture conditions.
4. Fire duration. (5)	3	15	Fires gen. of short duration & require little management.	Fires of long duration & require continuous management.
5. Smoke/air quality. (7)	3	21	Smoke impacts are low or insignificant.	Smoke sensitive are frequently affected.
6. Ignition methods. (3)	1	3	Simple & rarely hazardous.	Highly technical or freq. hazardous.
7. Management team size. (3)	3	9	Burn requires a few generalized positions.	Burn requires large team of separate, specialized positions.
8. Treatment objectives. (7)	1	7	Objectives simple & easy to achieve. Prescriptions are broad & encompass safe burning conditions.	Objectives are difficult to achieve. Prescriptions are restrictive or burning conditions are risky.
Total Weighted Value:		160		

***STAFFING STRUCTURE:**

NORMAL STRUCTURE: 50- 338 weighted value points.

COMPLEX STRUCTURE: 339 - 500 weighted value points.

PRESCRIBED NATURAL FIRE:

1. Potential for escape. (10)			Very Low probability.	High probability of escape.
2. Values at risk. (10)			Very little risk to people, property, resources.	Great risk to people, property, resources.
3. Fuels/fire behavior. (5)			Mostly uniform & predictable.	Great variability & unpredictability. Prescription includes very low fuel moisture conditions.
4. Fire duration. (5)			Fires gen. of short duration & require little management.	Fires of long duration & require continuous management.
5. Smoke/air quality. (7)			Smoke impacts are low or insignificant.	Smoke sensitive areas are frequently affected.
Total Weighted Value:				

***STAFFING STRUCTURE:**

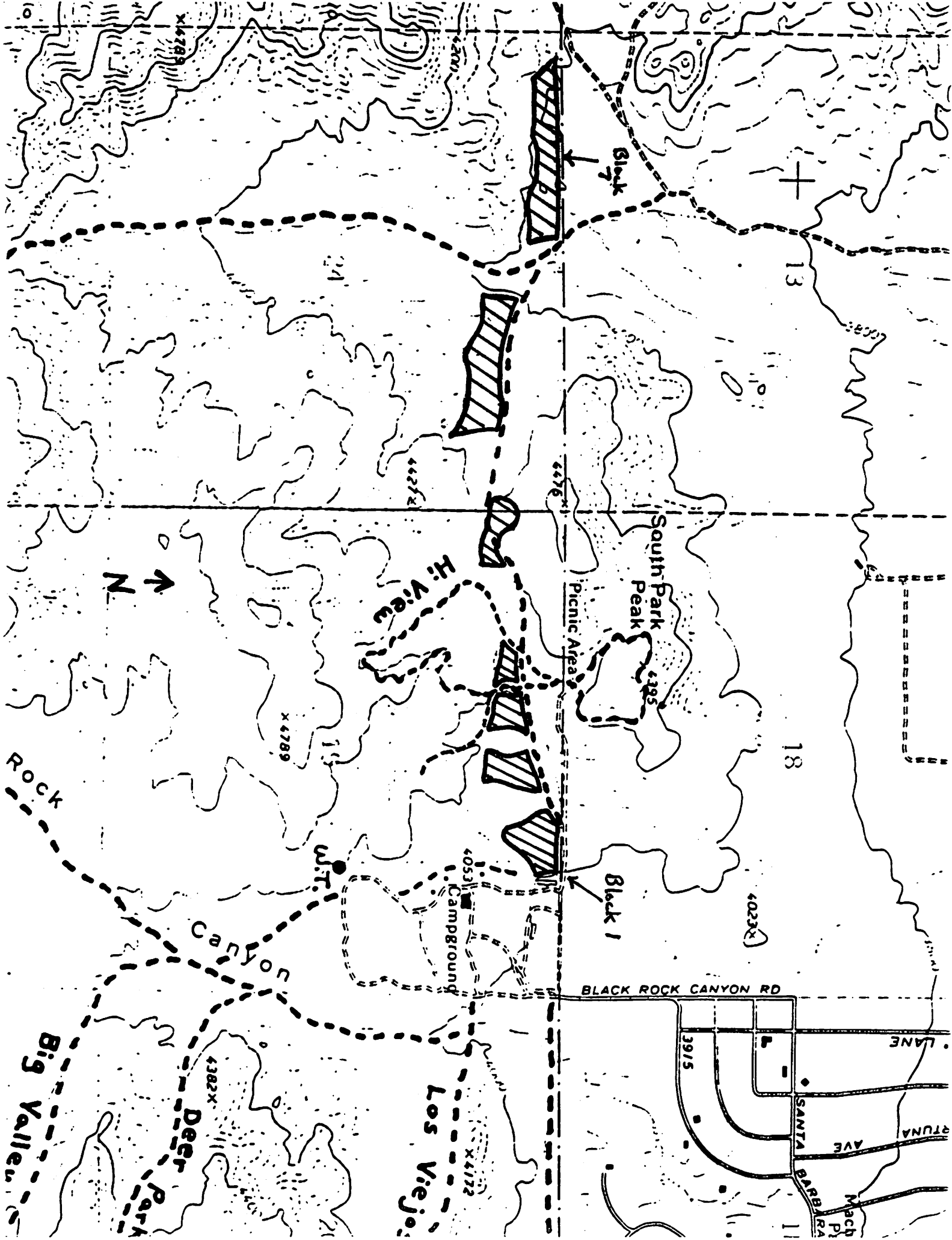
NORMAL STRUCTURE: 37 - 247 weighted value points.

COMPLEX STRUCTURE: 248 - 370 weighted value points.

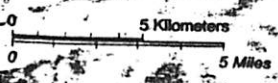
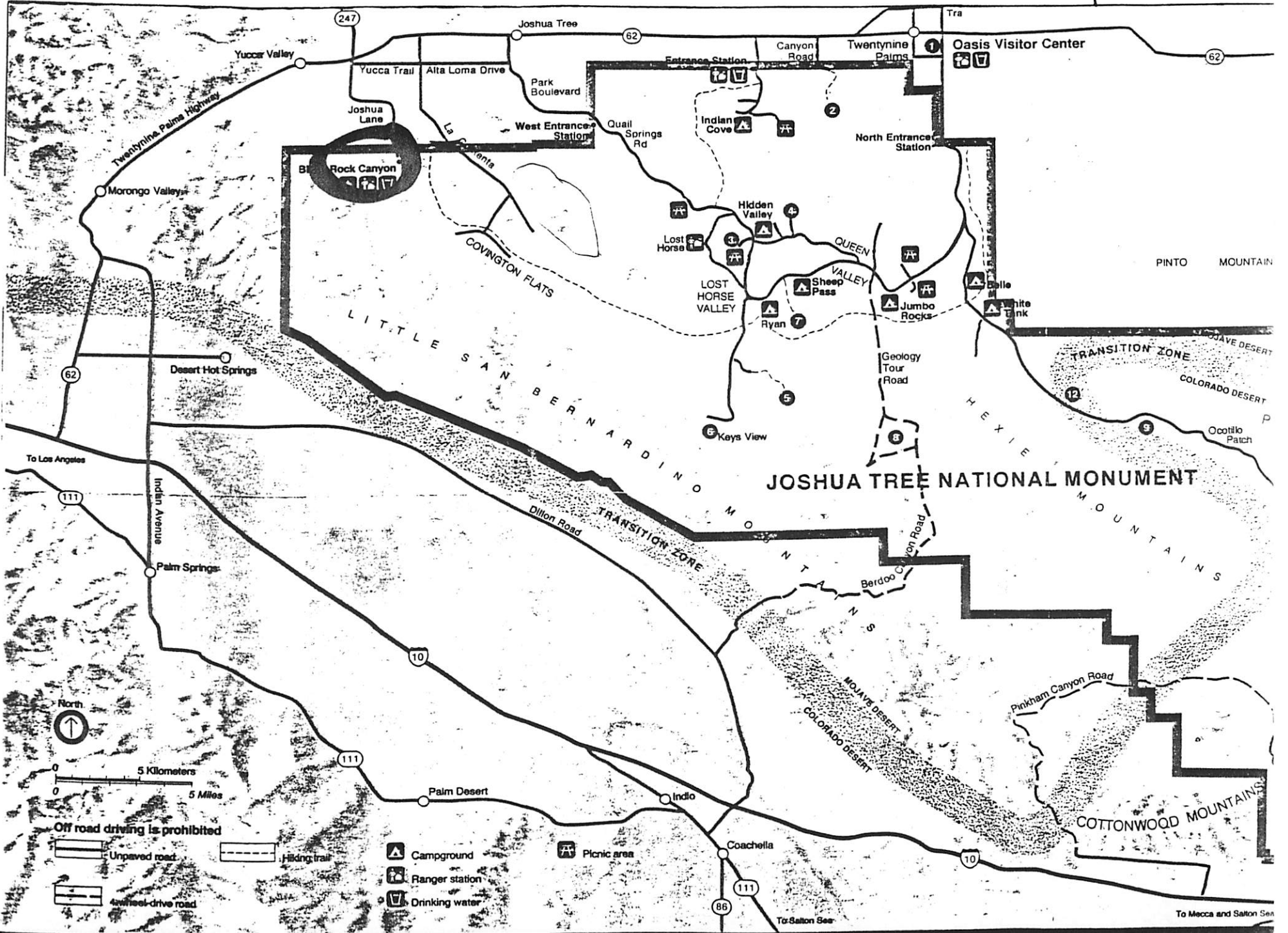
*A Prescribed Fire Manager (PFM) is required when agency administered lands are involved with 5 or more burns of low complexity, more than 1 burn of high complexity or any combination of the two.

Tom Patton
Prepared by (PBB/PFM/FOU)

2/1/95
Date



Vicinity map



Off road driving is prohibited

- Unpaved road
- Hiking trail
- 4-wheel drive road
- Campground
- Ranger station
- Drinking water
- Picnic area

To Mecca and Salton Sea

Your input values from SASEM are:

1. Fire/site name
2. Date of the burn
3. Burn type of the fire
4. Fuel type of the fire
5. Size of the fire
6. Fuel loading of the fire site
7. Fireline intensity
8. Burn duration
9. Meteorology type

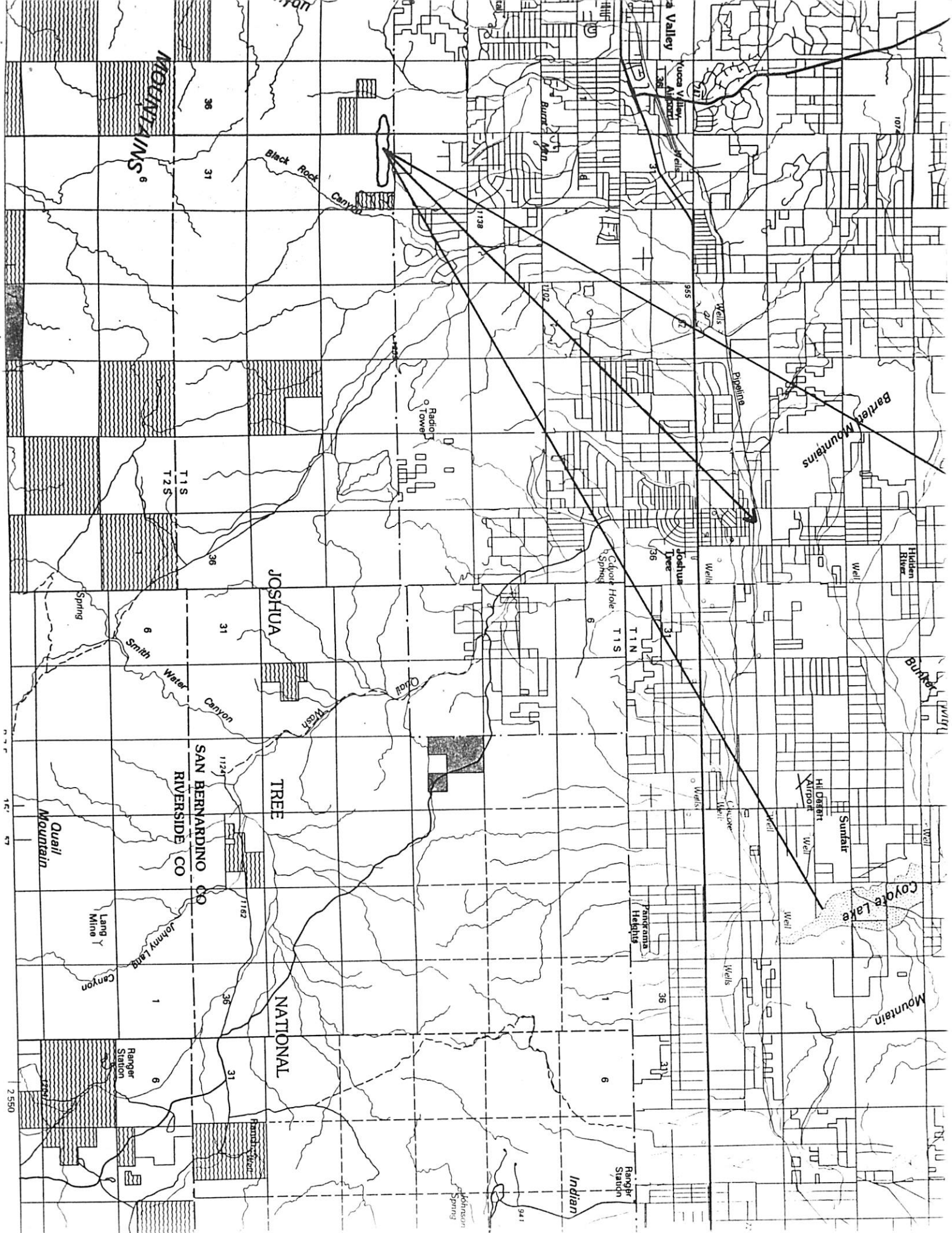
FIRE # 1 BOUNDARY BUFFER
~~NO date~~ SEPTEMBER, 1995
BROADCAST
SAGE
70.0 acres
1.0 tons/acre
145.0 Btu/ft/sec
1.00 hours
SASEM

The SASEM calculated emission statistics are:

Pollutant of interest	Particulates (TSP and PM10)
Emission factor	16.82 g/kg
Emission rate	0.39 g/s/m
Total particulates emitted	0.8 tons
Proportion of fuel consumed	70. %
Heat content of fuel specified	6300. Btu/lb
Residence time of fire front	480. s
Fire line rate of spread	0.15 m/s
Approximate fire line length	532.2 m
Depth of the fire line	71.0 m
Number of effective plumes in fire	7.5
Heat release rate for a plume	5762397. cal/s
Persistence factor for concentration	0.04
Proportion of smoke which rises	60. %
Proportion of total particulates in PM10	80. %

Disp Day	Wind Speed (MPH)	Maximum Concen (ug/m**3)	Distance to Maximum Concen (mi)	Exceedences of Standards				Plume Rise (m)
				TSP*		PM10*		
				Distance Downwind				
				From (mi)	To (mi)	From (mi)	To (mi)	
EXC	2.0	9.6	2.62	NO VIOLATION		NO VIOLATION		1079.
EXC	3.0	9.6	1.82	NO VIOLATION		NO VIOLATION		719.
EXC	4.0	9.6	1.41	NO VIOLATION		NO VIOLATION		539.
EXC	5.0	9.6	1.15	NO VIOLATION		NO VIOLATION		431.
EXC	6.0	9.6	0.98	NO VIOLATION		NO VIOLATION		360.
EXC	7.0	9.6	0.85	NO VIOLATION		NO VIOLATION		308.
EXC	8.0	9.6	0.76	NO VIOLATION		NO VIOLATION		270.
EXC	9.0	9.6	0.68	NO VIOLATION		NO VIOLATION		240.
EXC	10.0	9.6	0.62	NO VIOLATION		NO VIOLATION		216.
GOOD	5.0	9.6	2.43	NO VIOLATION		NO VIOLATION		431.
GOOD	6.0	9.6	4.25	NO VIOLATION		NO VIOLATION		360.
GOOD	7.0	9.6	3.59	NO VIOLATION		NO VIOLATION		308.
GOOD	8.0	9.6	3.10	NO VIOLATION		NO VIOLATION		270.
GOOD	9.0	9.6	2.72	NO VIOLATION		NO VIOLATION		240.
GOOD	10.0	9.6	2.43	NO VIOLATION		NO VIOLATION		216.
FAIR	7.0	10.3	14.89	NO VIOLATION		NO VIOLATION		308.
FAIR	8.0	10.3	11.75	NO VIOLATION		NO VIOLATION		270.
FAIR	9.0	10.3	9.54	NO VIOLATION		NO VIOLATION		240.
FAIR	10.0	9.6	4.28	NO VIOLATION		NO VIOLATION		216.
POOR	2.0	70.5	13.57	NO VIOLATION		NO VIOLATION		158.
POOR	3.0	38.2	8.74	NO VIOLATION		NO VIOLATION		181.
POOR	4.0	26.0	10.67	NO VIOLATION		NO VIOLATION		199.
POOR	5.0	19.3	12.45	NO VIOLATION		NO VIOLATION		215.
POOR	6.0	15.2	14.13	NO VIOLATION		NO VIOLATION		228.
POOR	7.0	12.3	15.73	NO VIOLATION		NO VIOLATION		240.
POOR	8.0	1.2	35.49	NO VIOLATION		NO VIOLATION		251.
POOR	9.0	0.9	38.52	NO VIOLATION		NO VIOLATION		261.
POOR	10.0	0.7	41.44	NO VIOLATION		NO VIOLATION		271.

* The primary TSP standard is 150. micrograms per cubic meter.
The primary PM10 standard is 150. micrograms per cubic meter.



MOJAVE MOUNTAINS

Barley Mountains

JOSHUA TREE NATIONAL MONUMENT

SAN BERNARDINO COUNTY RIVERSIDE COUNTY

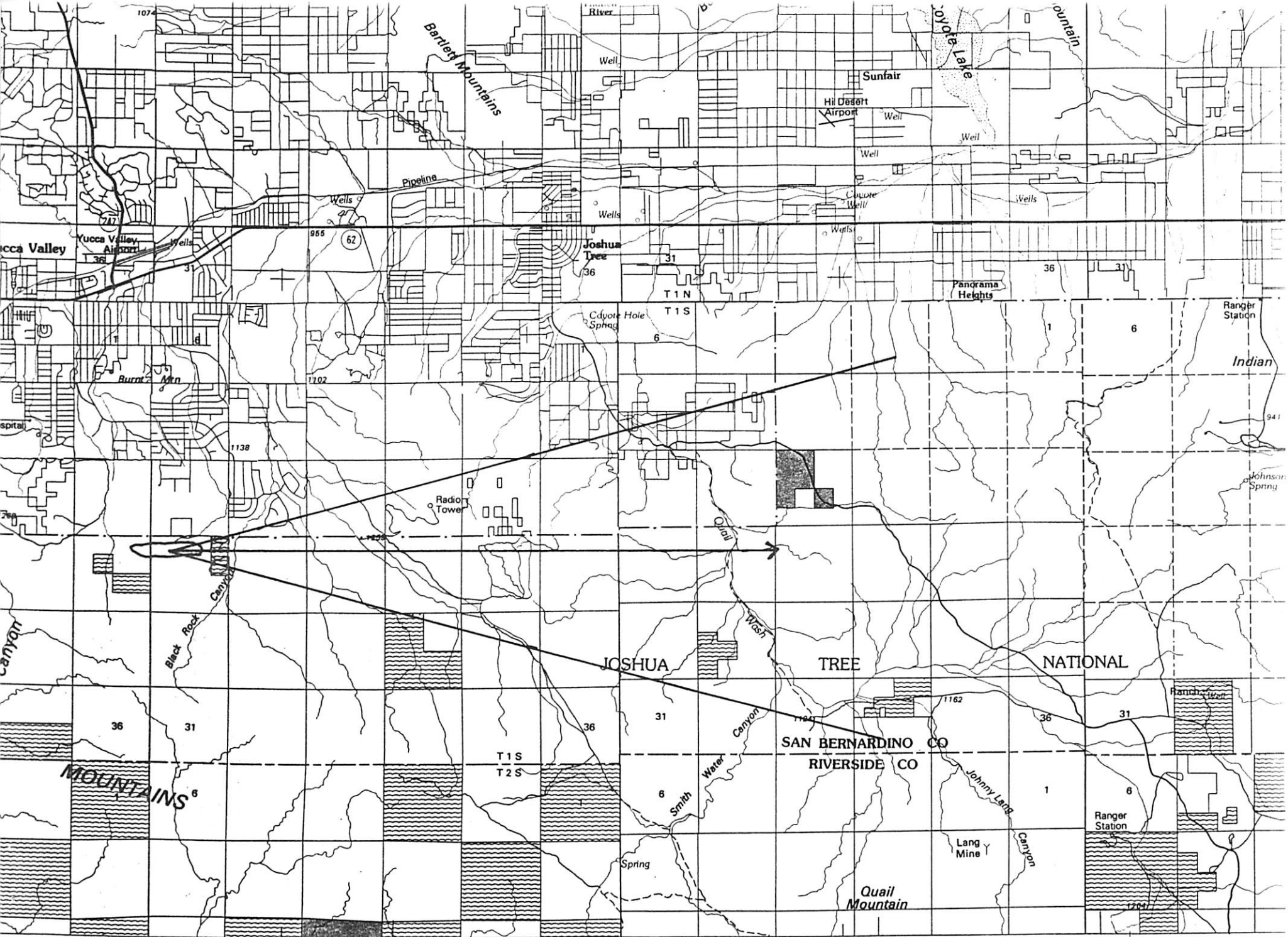
Coyote Lake

Indian Ranger Station

Ranger Station

15° 57' N 117° 15' W

1:2550



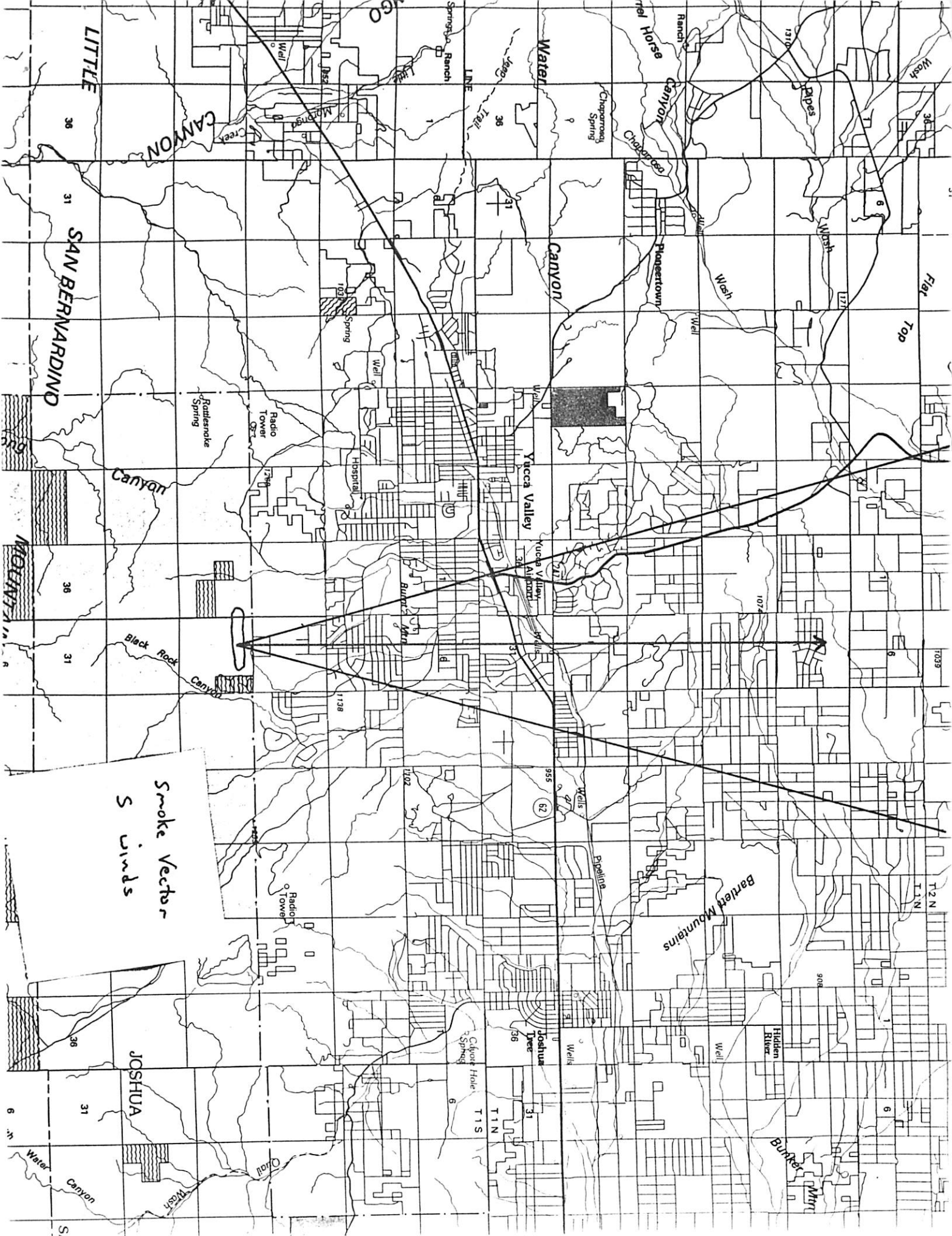
1950

R 6 E | 2500

R 7 E

15' 57

2550



Smoke Vector
S winds

JOSHUA

Bartlett Mountains

Hidden River

Burrhead Mtn

Joshua Tree

Clayton Howe

Radio Tower

Radio Tower

Radio Tower

Hospital

Yucca Valley

Yucca Valley Airport

Wells

Wells

Wells

Wells

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BOUNDARY BUFFER - SAFETY BRIEFING

September 1995

- **#1 BURN OBJECTIVE: PROVIDE FOR 100% VISITOR & EMPLOYEE SAFETY!**
- **FUELS: Blackbrush and Junipers can be an explosive fuel that burns quickly, especially when wind aided - stay alert when ignition commences.**
- **All team members will wear appropriate PPE (hardhat, boots, gloves, nomex, etc.); ALL TEAM MEMBERS WILL WEAR FIRE SHELTERS.**
- **Be aware of heavy smoke, spotting problems (primarily from junipers), and snags (Joshua Trees can kill as easily as "timber" trees.).**
- **Burn Boss and Holding Specialist will review escape routes and safety zones once the team is on-site - know how and where to move in the event you have to!**
- **Be sure to drink water or other fluid replacement liquids throughout the day!**
- **Be alert for the symptoms of carbon monoxide exposure: Holding Specialist should pay particular attention to rotating holding crew out of heavy smoke impacted areas and insure breaks are taken well outside of the smoke area.**
- **COMMUNICATIONS** between the ignition teams, monitoring teams, research teams, and burn boss is critical. There will be a lot of people working on the project.
- **There are snakes, insects, and plants that can stick, bite, and generally annoy - watch where you step or put your hands.**
- **Keys in vehicles.**

