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FINAL REPORT
BASELINE METEOROLOGY AND AIR QUALITY
IN THE SUSANVILLE DISTRICT

APPENDICES

Submitted to:

Bureau of Land Management
Sacramento, California

Prepared by:

D. Rykaczewski

May 30, 1980

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ENVIRONMENTAL SCIENCE AND TECHNOLOGY

APPENDIX A
ISOPLUVIAL OR RAINFALL INTENSITY ANALYSES
FOR CALIFORNIA

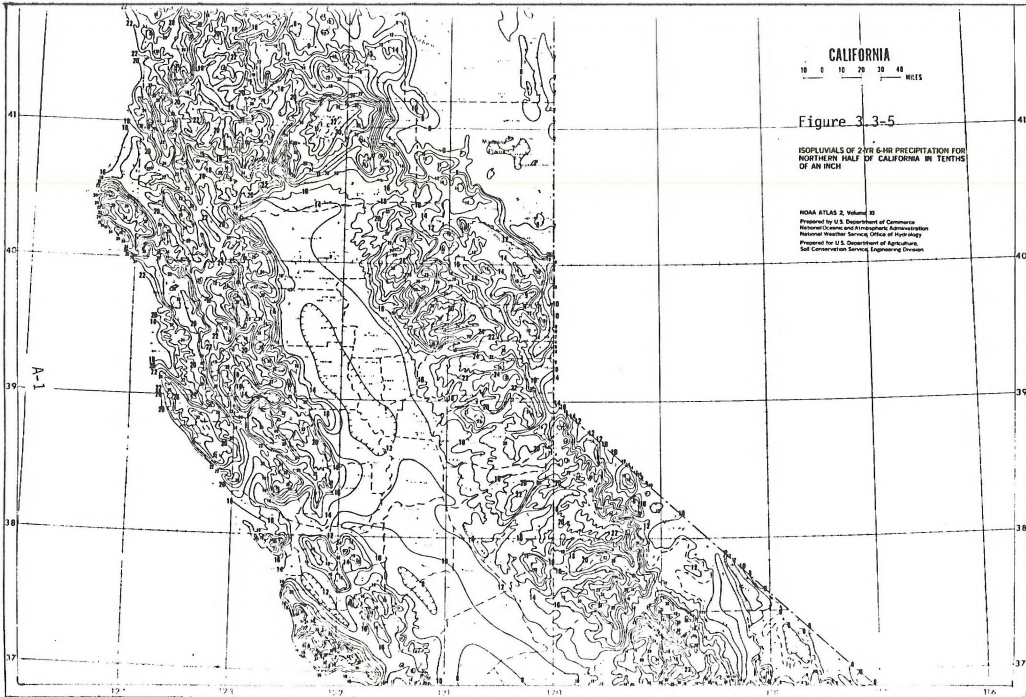
CALIFORNIA

10 0 10 20 30 40
MILES

Figure 3-3-5

ISOPLETHS OF 2.00 6-HR PRECIPITATION FOR
NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

NOAA ATLAS 2, Volume III
Prepared by U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Department of Agriculture,
Soil Conservation Service, Engineering Division



A-1

124 123 122 121 120 119 118 117 116

CALIFORNIA

10 0 10 20 30 40
MILES

A-2

Figure 3.3-6

ISOLPIVALS OF 2-YR 6-HR PRECIPITATION FOR
SOUTHERN HALF OF CALIFORNIA IN TENTHS OF
AN INCH

NOAA ATLAS 2, Volume II
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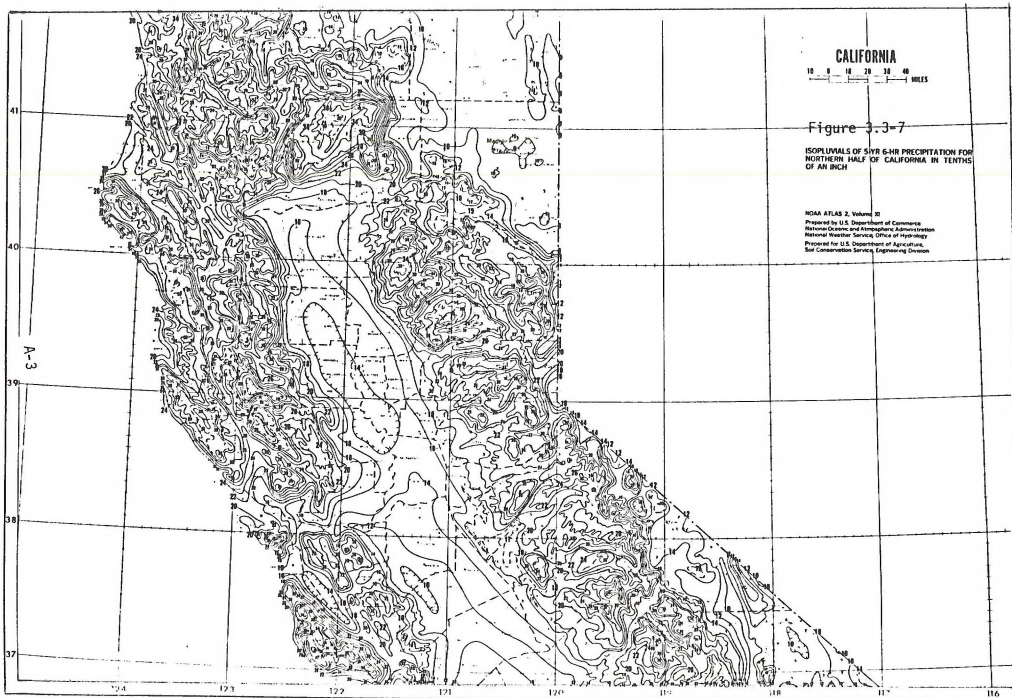
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CALIFORNIA

0 10 20 30 40
MILES

Figure 3-3-7

ISOPLUVIALS OF 5-HR 6-HR PRECIPITATION FOR
NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

NOAA ATLAS 2, Volume 25
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A-3

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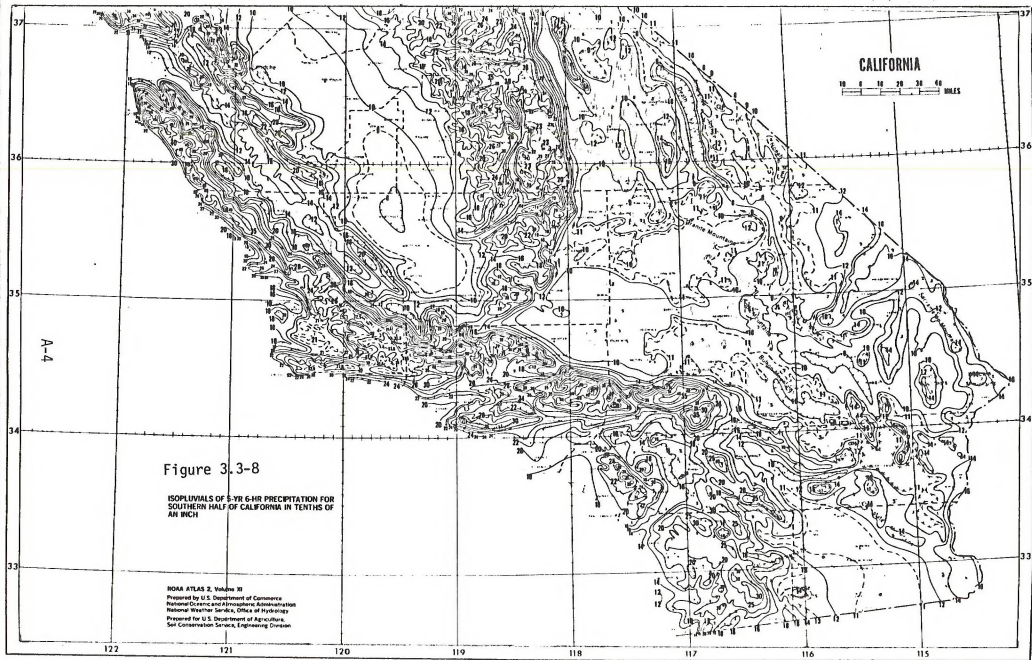
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A-4

Figure 3.3-8

ISOPLUVALS OF 5-YR 6-HR PRECIPITATION FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS OF AN INCH

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CALIFORNIA

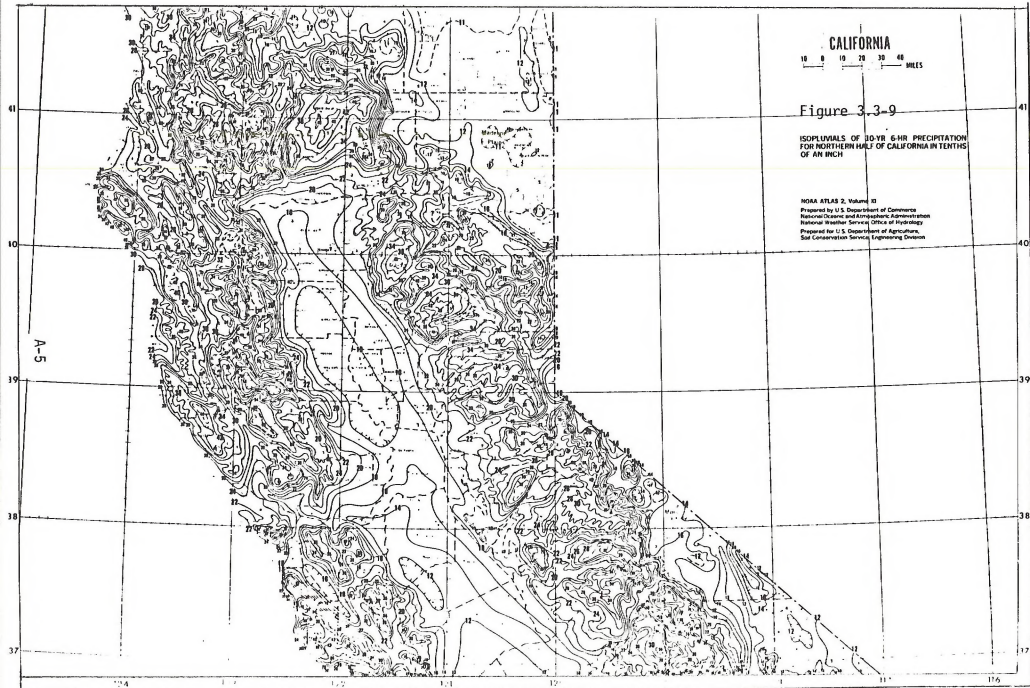
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MILES

Figure 3-3-9

ISOPLUVIALS OF 30-YR 6-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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A-5



A-6

Figure 3.3-10

ISOLUNALS OF 20-YR 6-HR PRECIPITATION
FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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CALIFORNIA

0 10 20 30 40 MILES

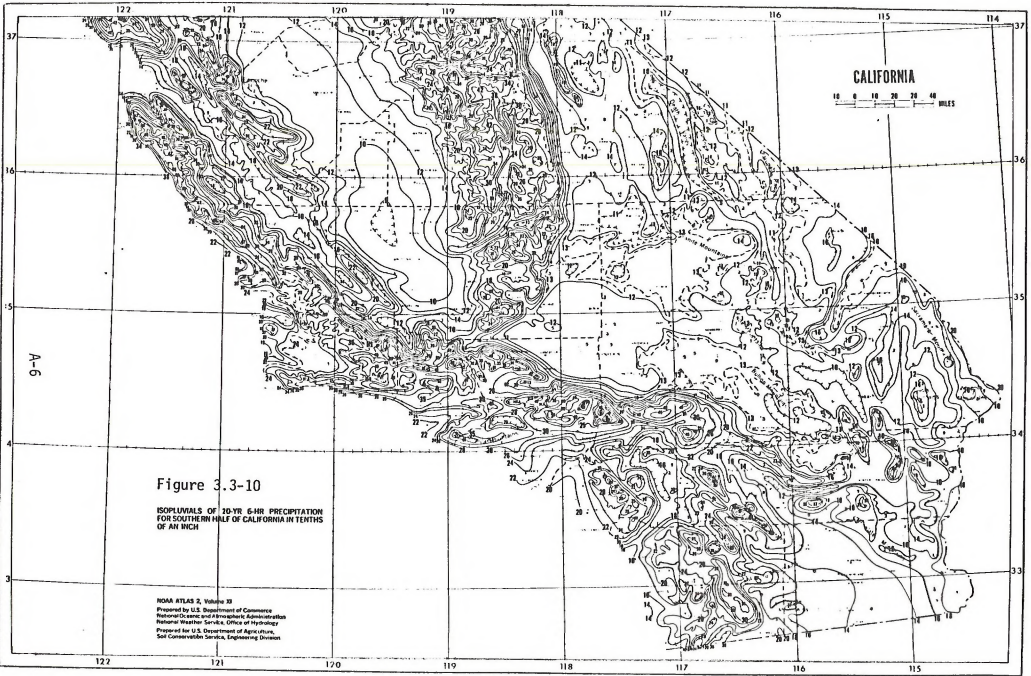
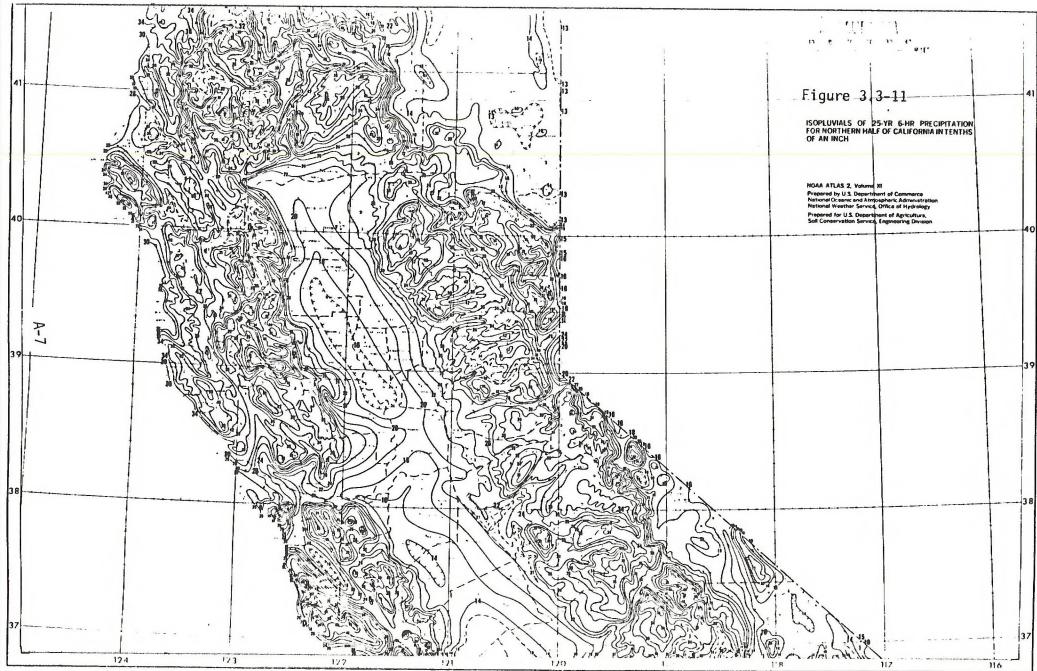


Figure 3.3-11

ISOPLUMIALS OF 25-YR 6-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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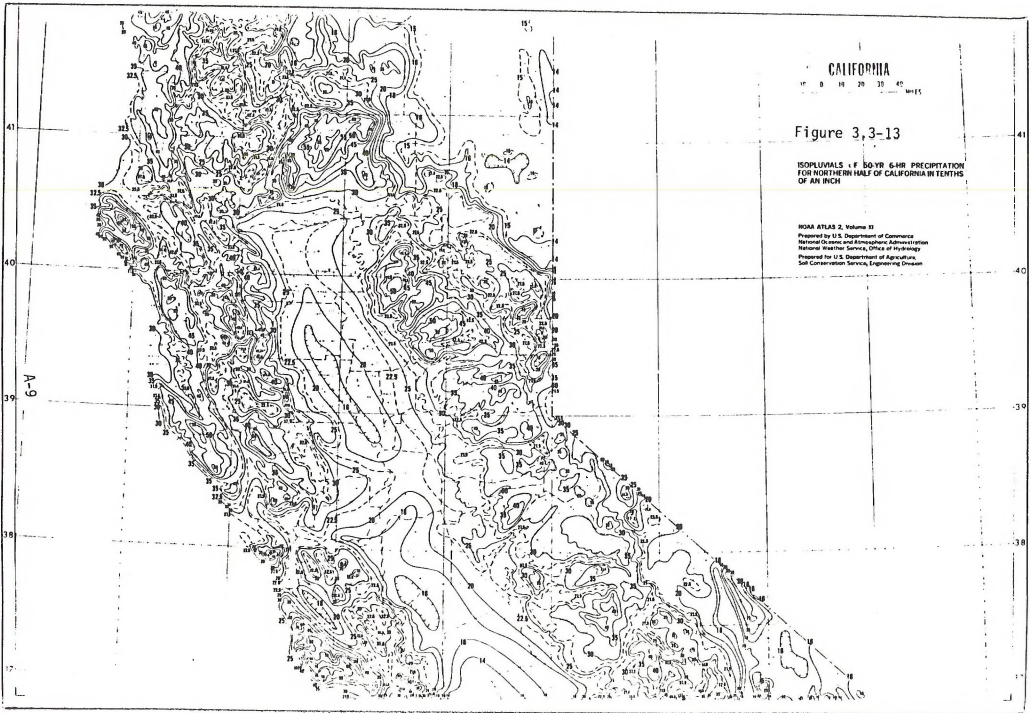
A-7



Figure 3.3-12

ISOPLUVIALS OF 25-YR 6-HR PRECIPITATION
FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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CALIFORNIA

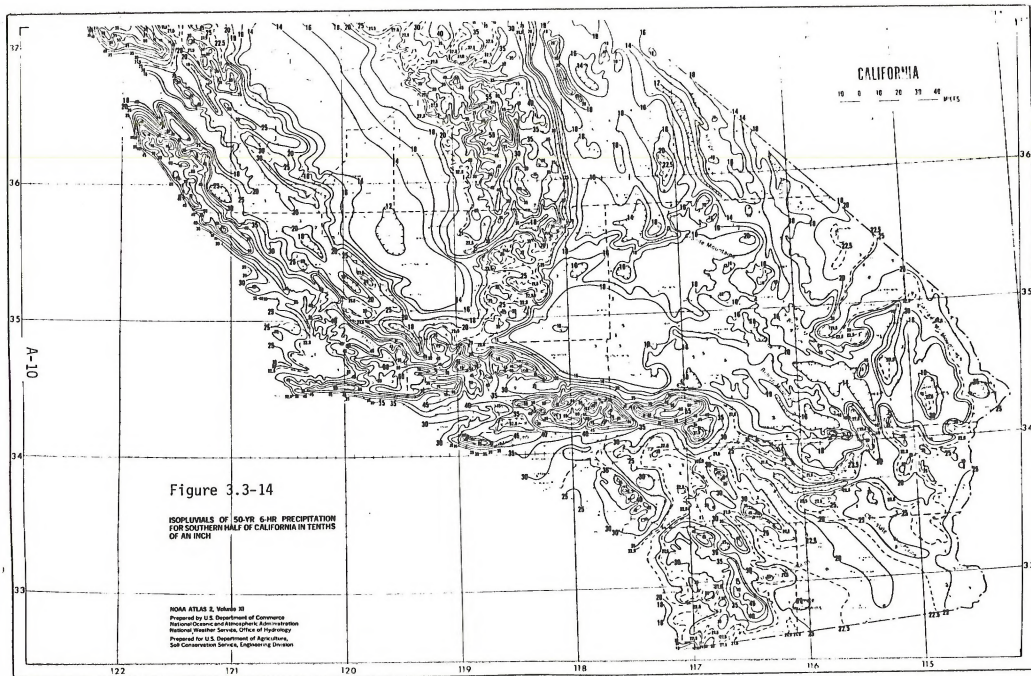
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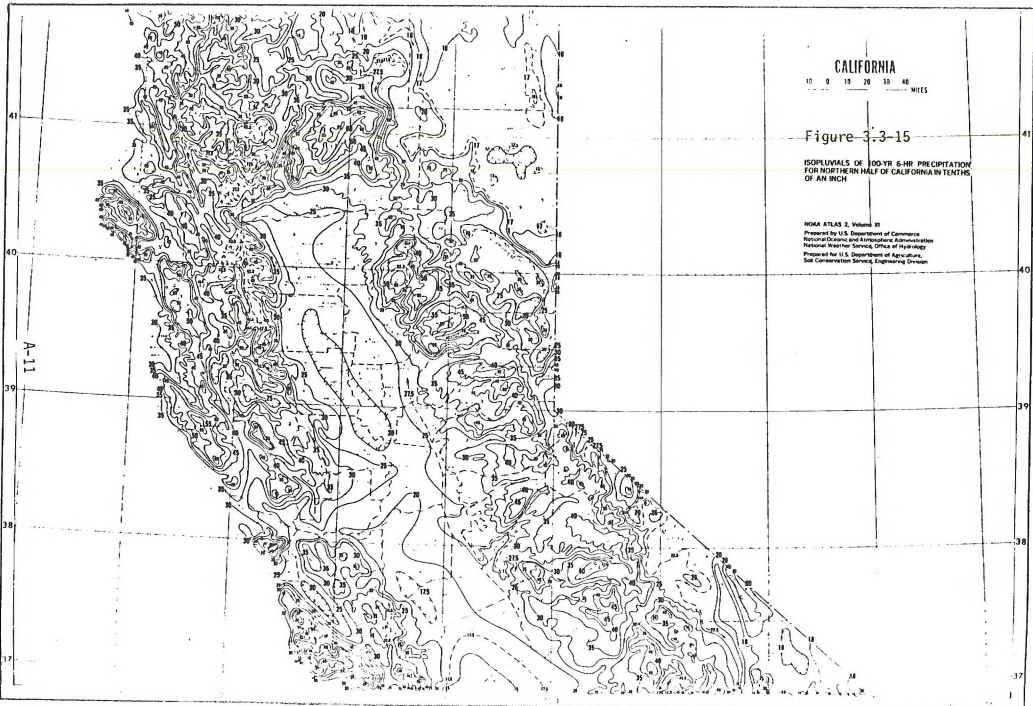
Figure 3,3-13

ISOPLETHS OF 6-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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Prepared for U.S. Department of Agriculture,
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A-9





CALIFORNIA

10 0 10 20 30 40
MILES

Figure 3.3-15

ISOPLUVIALS OF 100-YR 6-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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A-11

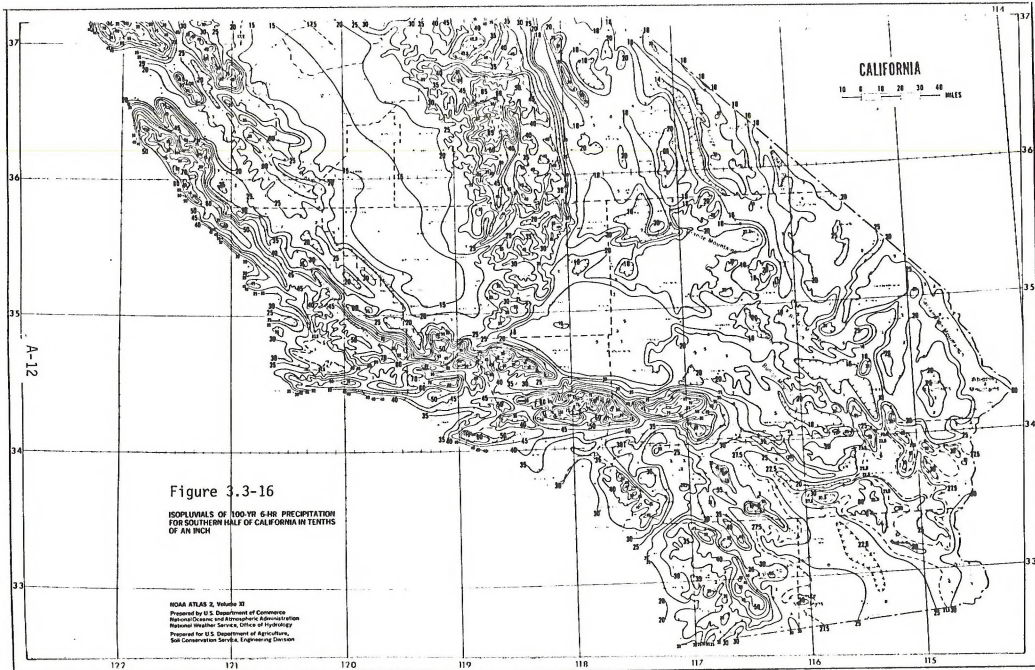


Figure 3.3-16

ISOHYALS OF 100-YR 6-HR PRECIPITATION
FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

NOAA ATLAS 3, Volume 22
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National Weather Service, Office of Hydrology
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CALIFORNIA

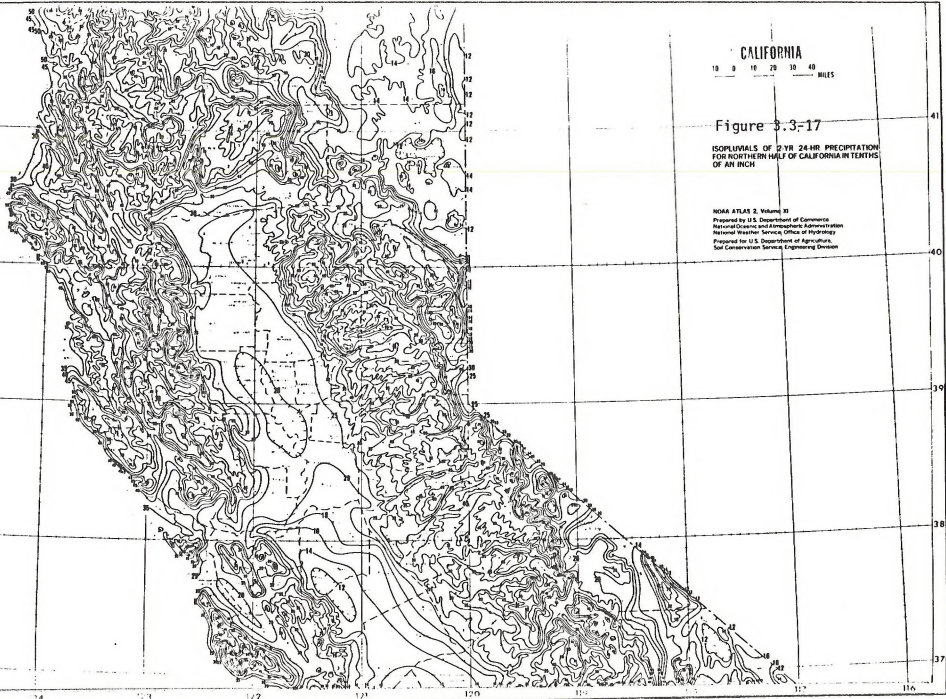
10 20 30 40
MILES

Figure 3.3-17

ISOPLUVIALS OF 2 YR 24-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

NOAA ATLAS 2, Volume 33
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A-13



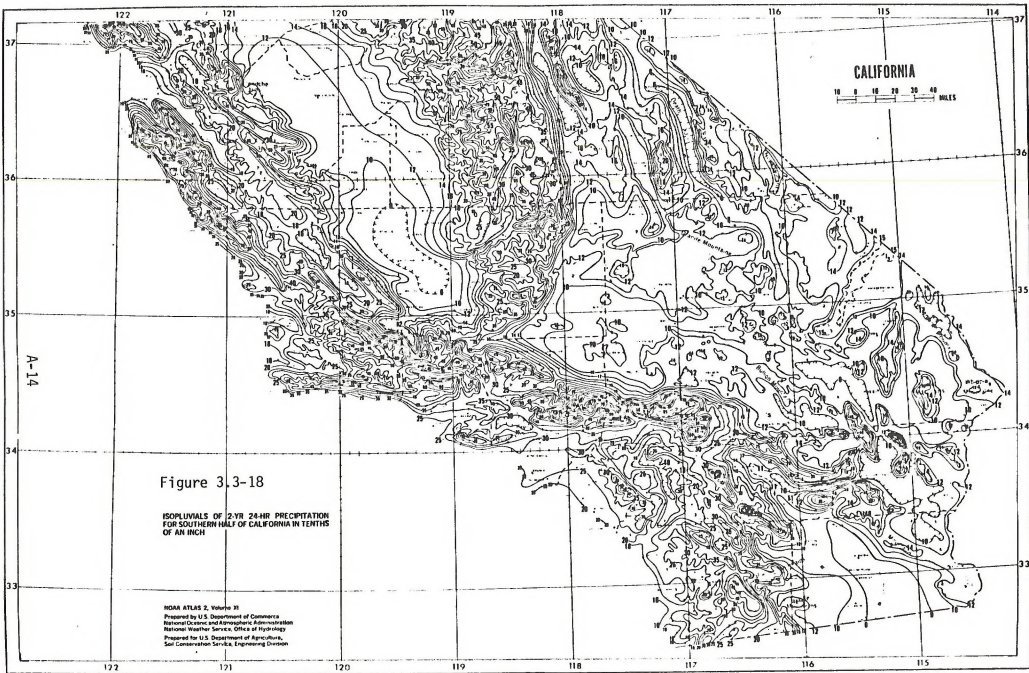
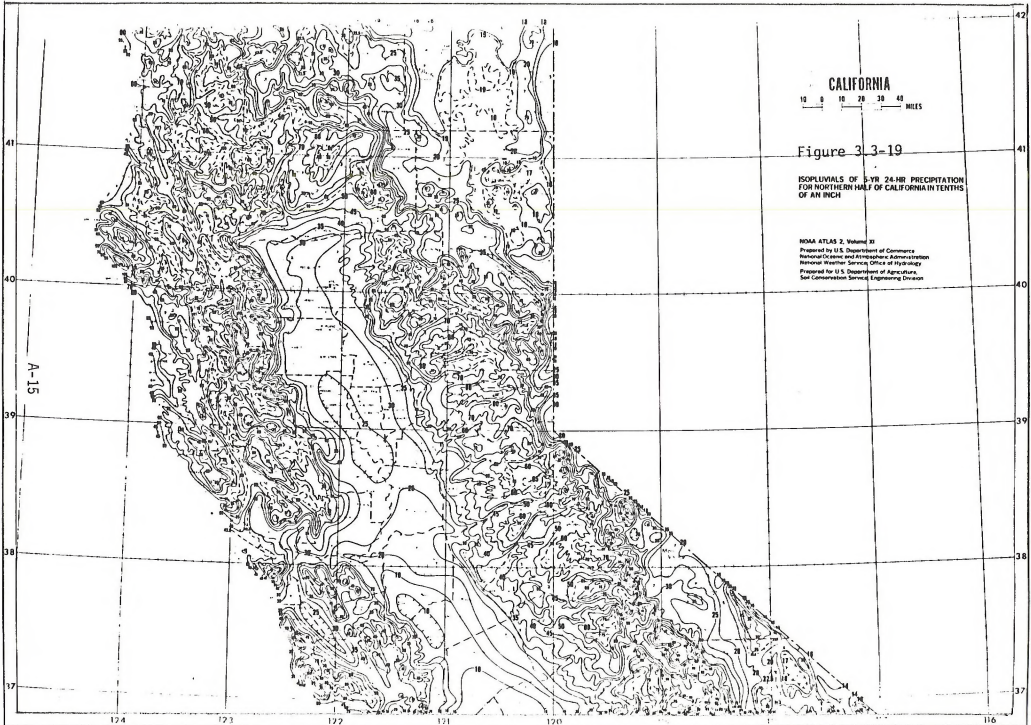


Figure 3.3-18

ISOPLUVIALS OF 2-YR 24-HR PRECIPITATION
FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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National Weather Service, Office of Hydrology
Prepared for U.S. Department of Agriculture,
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CALIFORNIA

10 0 10 20 30 40 MILES

Figure 3.3-19

ISOPLETHS OF 5-YR 24-HR PRECIPITATION FOR NORTHERN HALF OF CALIFORNIA IN TENTHS OF AN INCH

NOAA ATLAS 2, Volume 21
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A-15

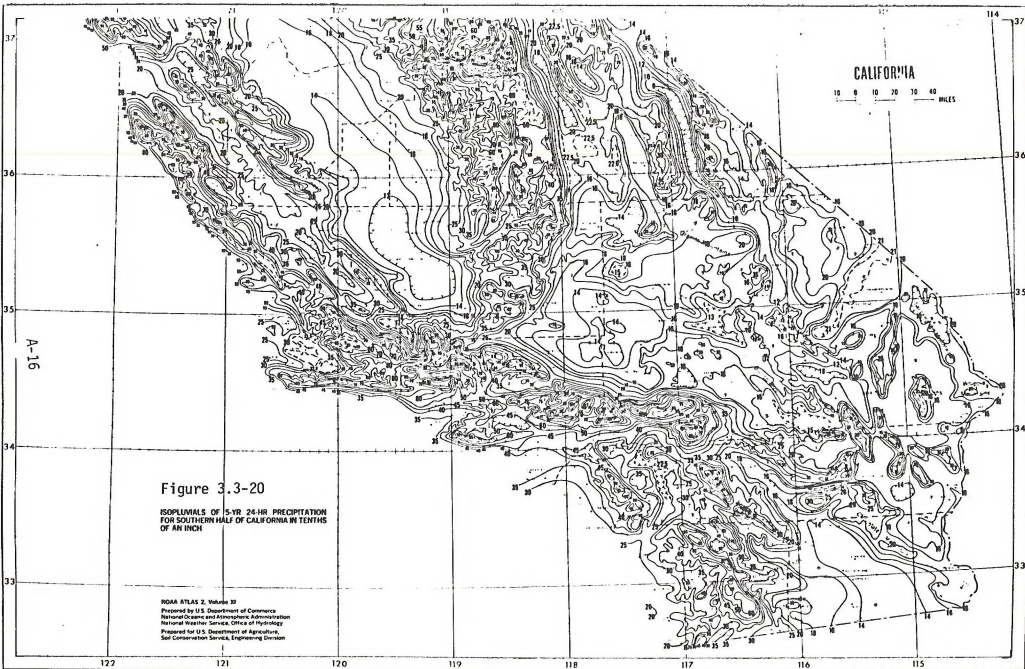


Figure 3.3-20

ISOPLETHS OF 5-YR 24-HR PRECIPITATION
FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

NOAA ATLAS 2, Volume 2B
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A-16

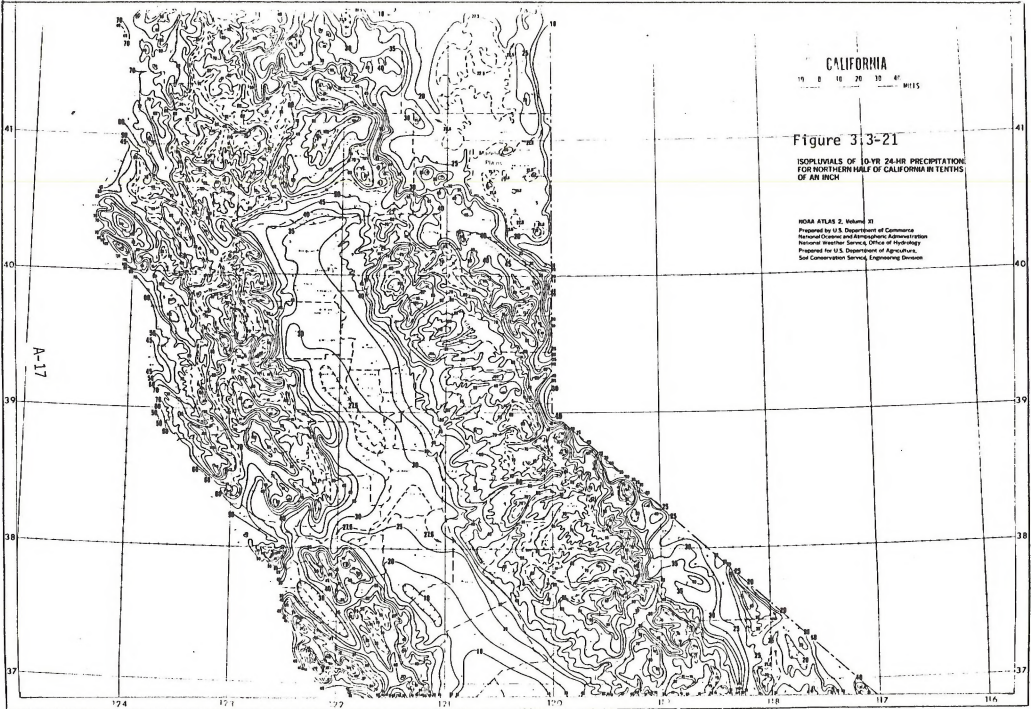
CALIFORNIA

0 10 20 30 40 MILES

Figure 3:3-21

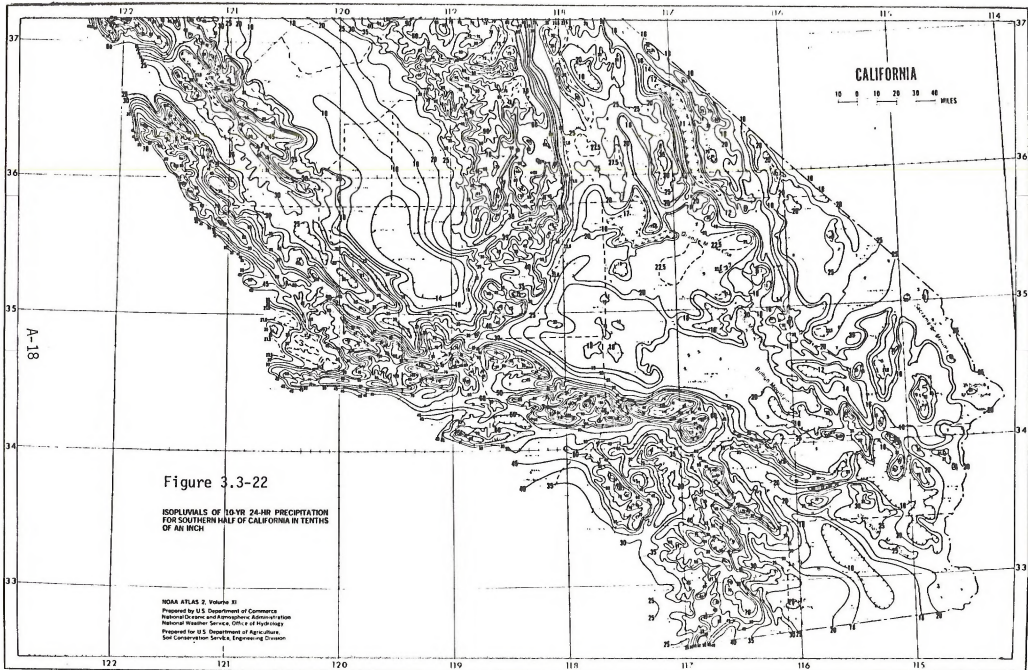
ISOPLETHALS OF 10-YR 24-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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A-17

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CALIFORNIA

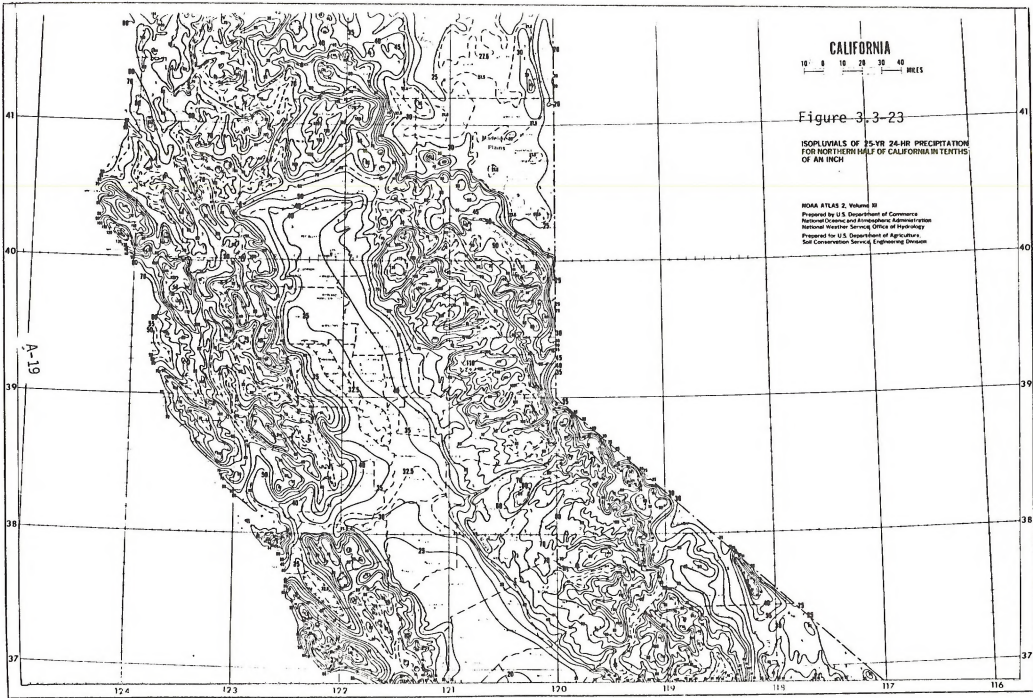
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Figure 3.3-22

ISOPLUVIALS OF 10-YR 24-HR PRECIPITATION
FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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CALIFORNIA

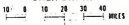


Figure 3-3-23

ISOPLYSALS OF 25-YR 24-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

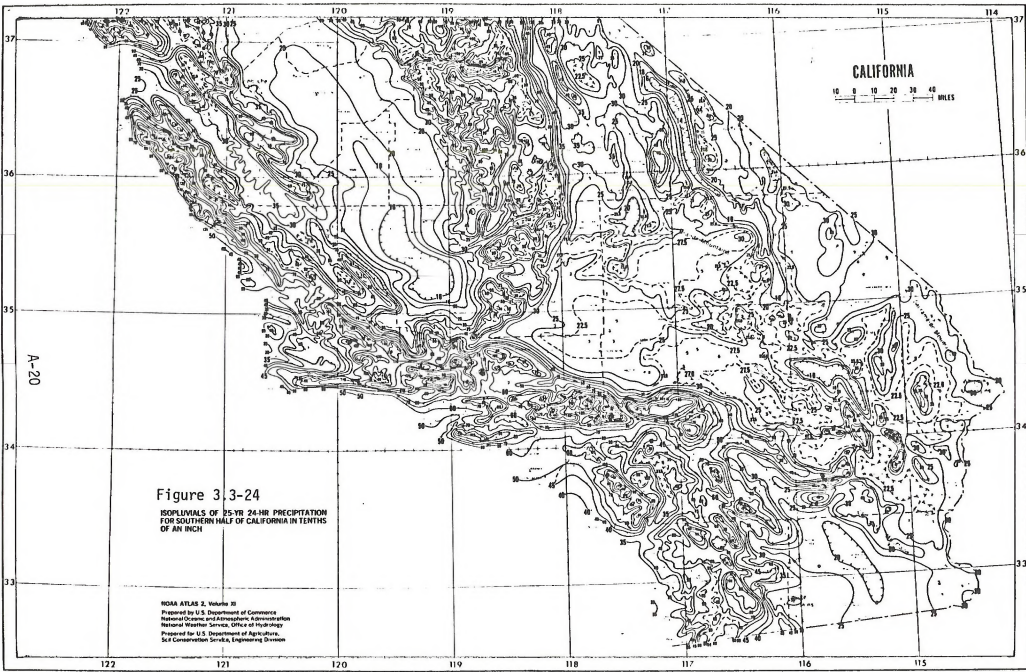
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A-19

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CALIFORNIA

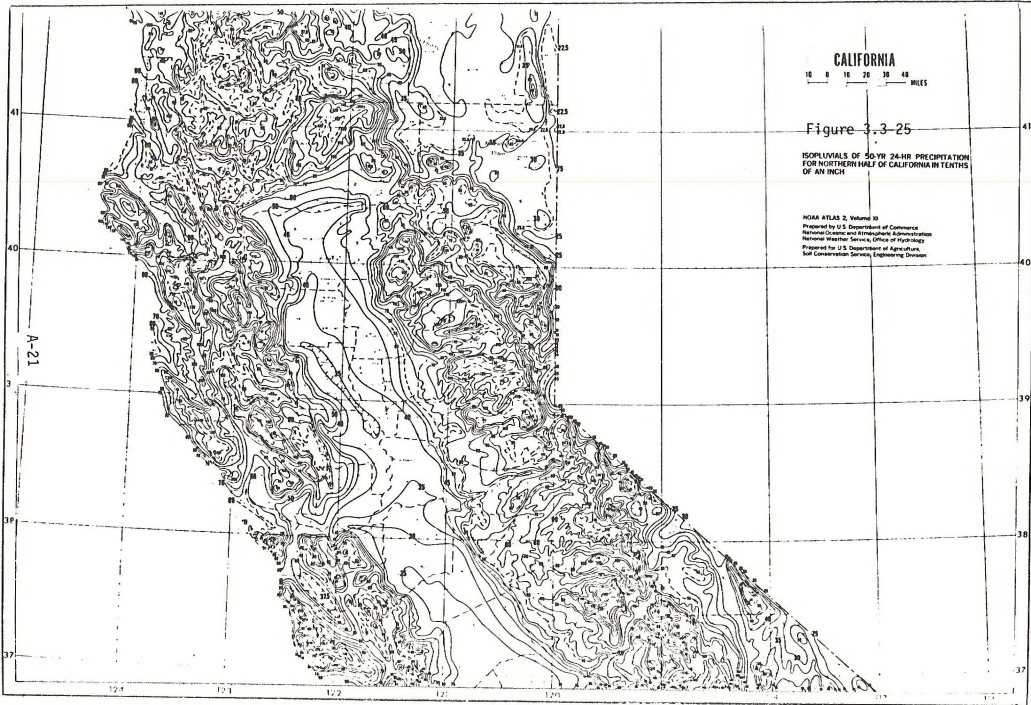
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A-20

Figure 3.3-24

ISOPLUVIALS OF 25-YR 24-HR PRECIPITATION
FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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CALIFORNIA

10 0 10 20 30 40
MILES

Figure 3.3-25

ISOPLUVIALS OF 50-YR 24-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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A-21

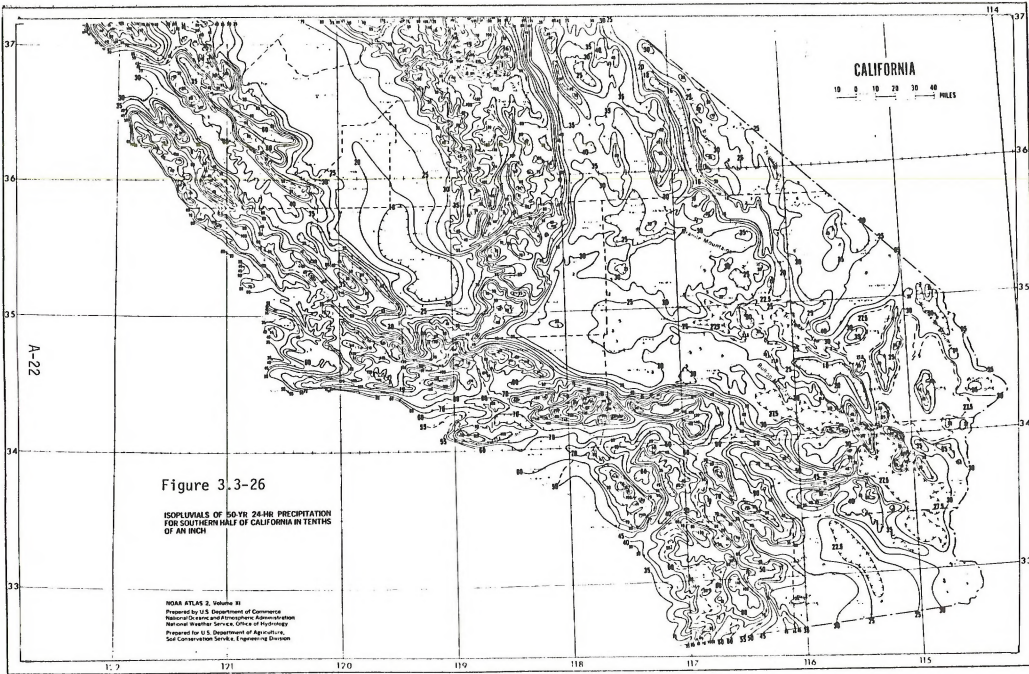
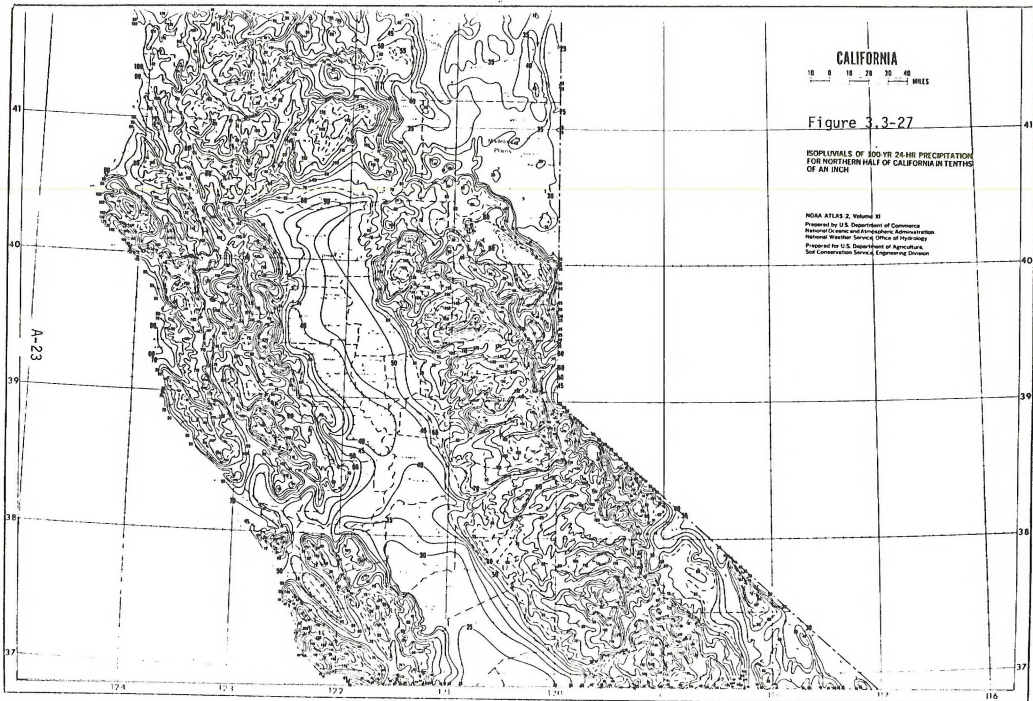


Figure 3.3-26

ISOPLETHS OF 50-YR 24-HR PRECIPITATION
FOR SOUTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH

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National Weather Service, Office of Hydrology
Prepared for U.S. Department of Agriculture,
Soil Conservation Service, Engineering Division

A-22



CALIFORNIA

10 0 10 20 30 40
MILES

Figure 3.3-27

**ISOPLUVIALS OF 100-YR 24-HR PRECIPITATION
FOR NORTHERN HALF OF CALIFORNIA IN TENTHS
OF AN INCH**

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National Weather Service, Office of Hydrology
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Soil Conservation Service, Engineering Division

A-23

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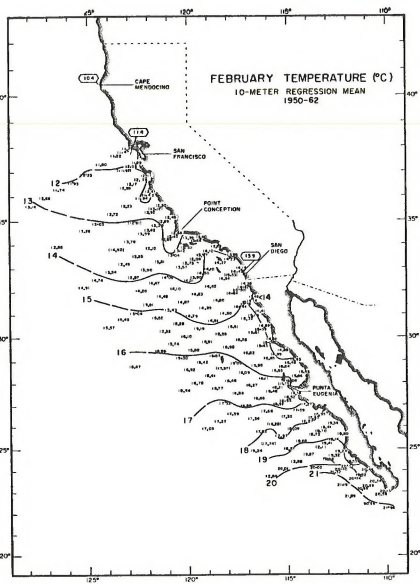
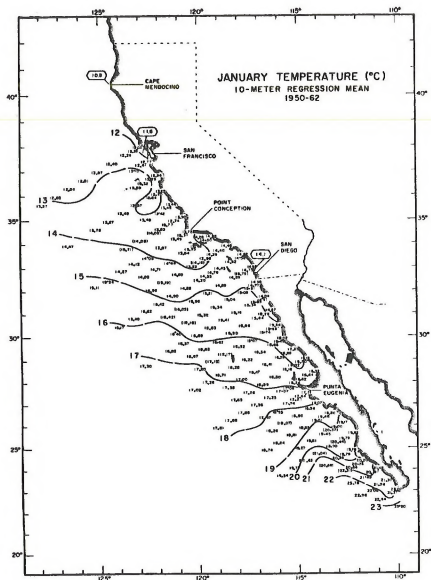
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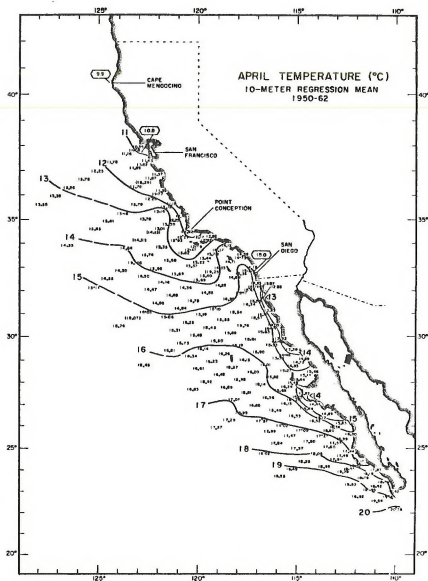
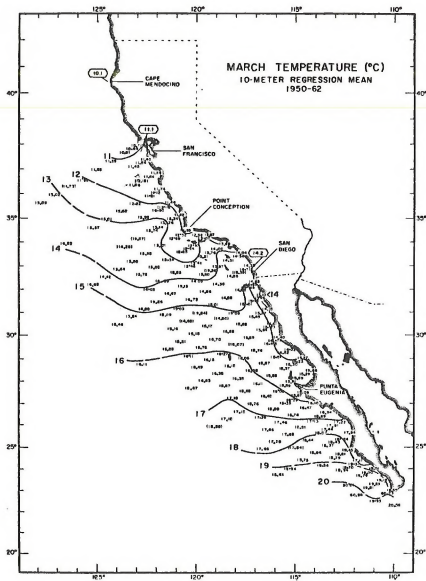
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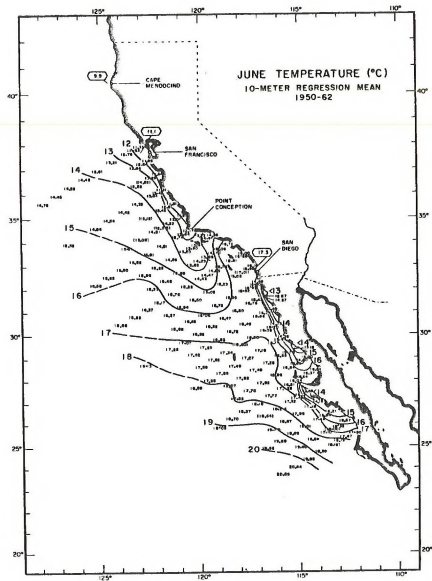
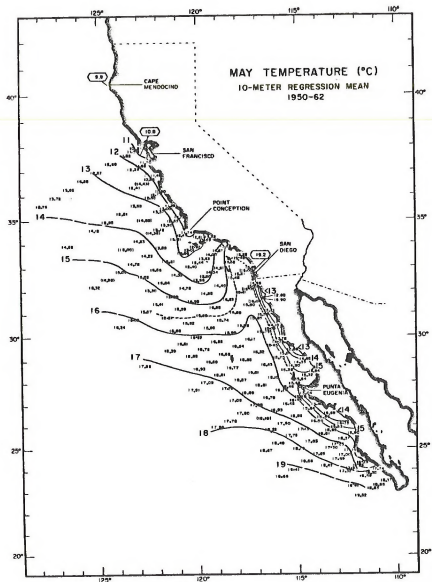
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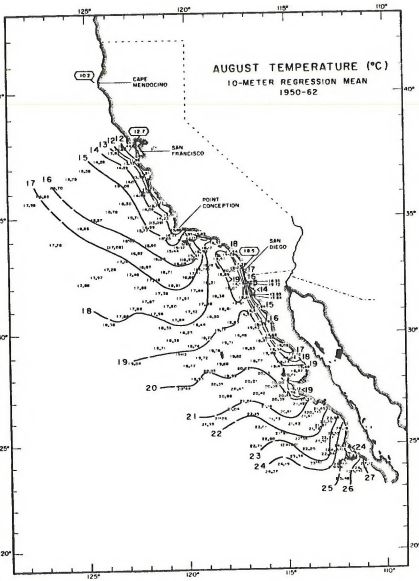
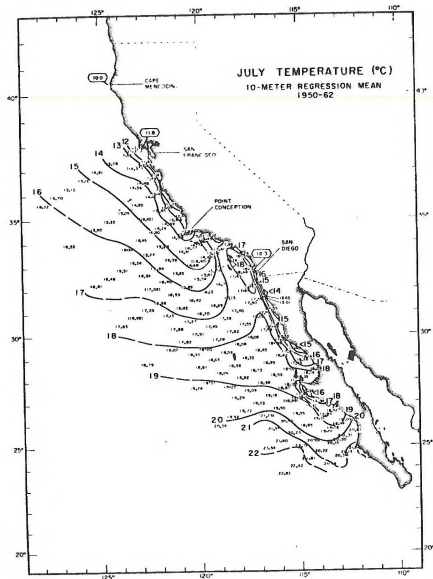


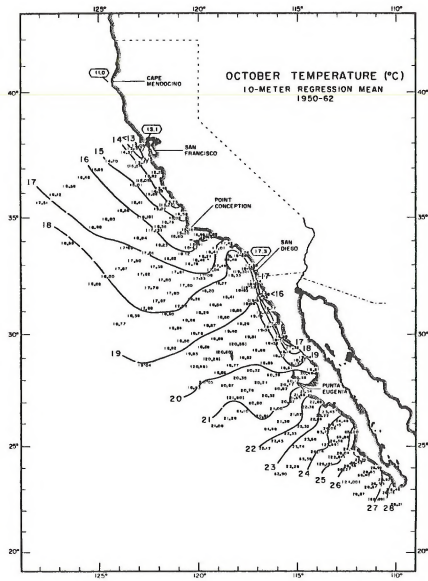
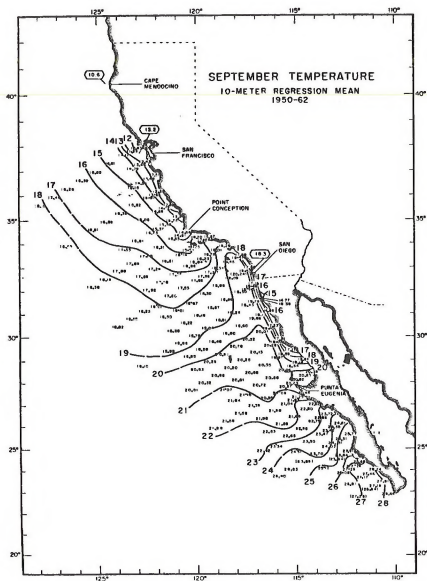
APPENDIX B
MONTHLY SEA SURFACE TEMPERATURES OFF
COASTAL CALIFORNIA

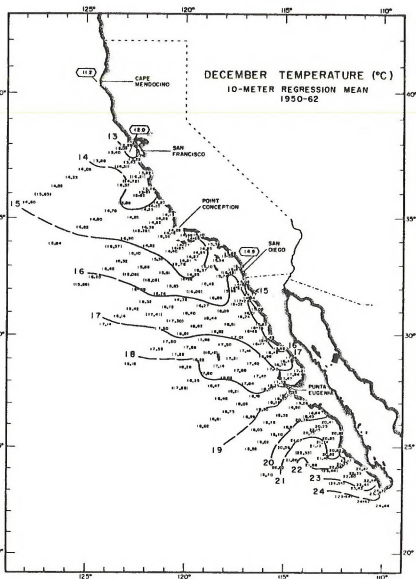
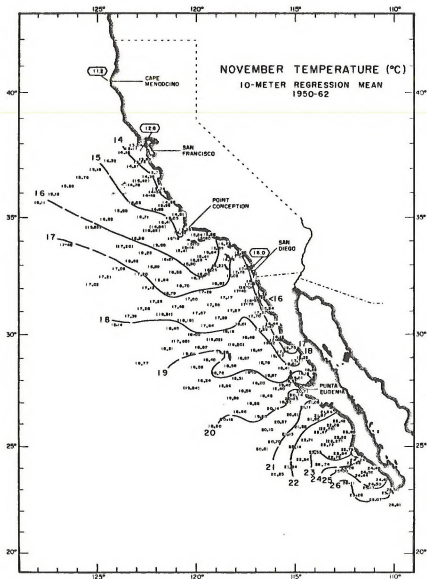






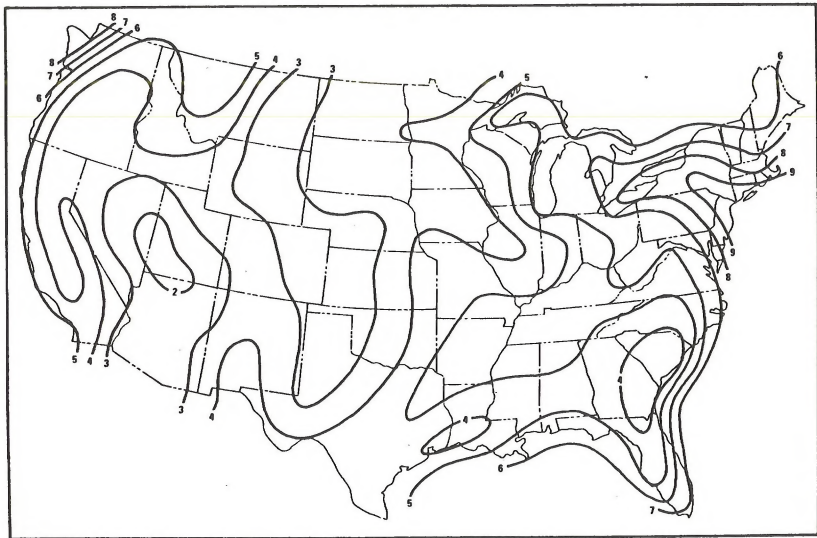




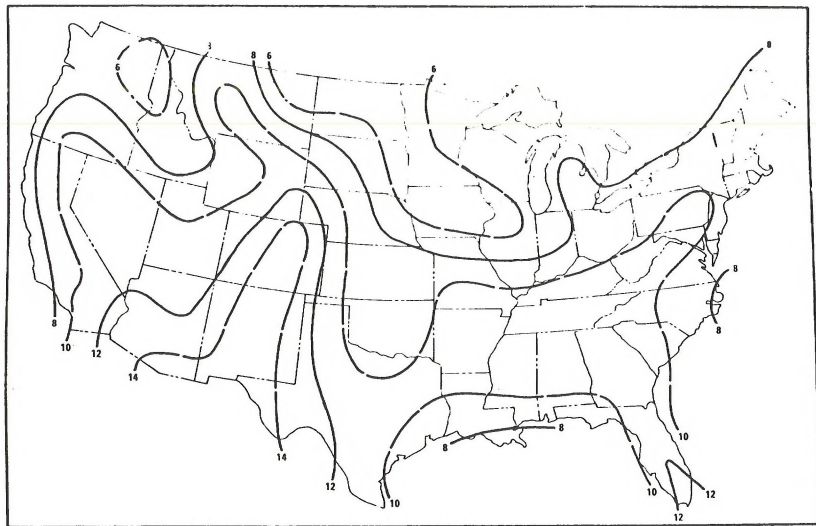


APPENDIX C
SEASONAL AND ANNUAL MIXING HEIGHTS DURING
THE MORNING AND AFTERNOON HOURS IN THE
CONTIGUOUS UNITED STATES

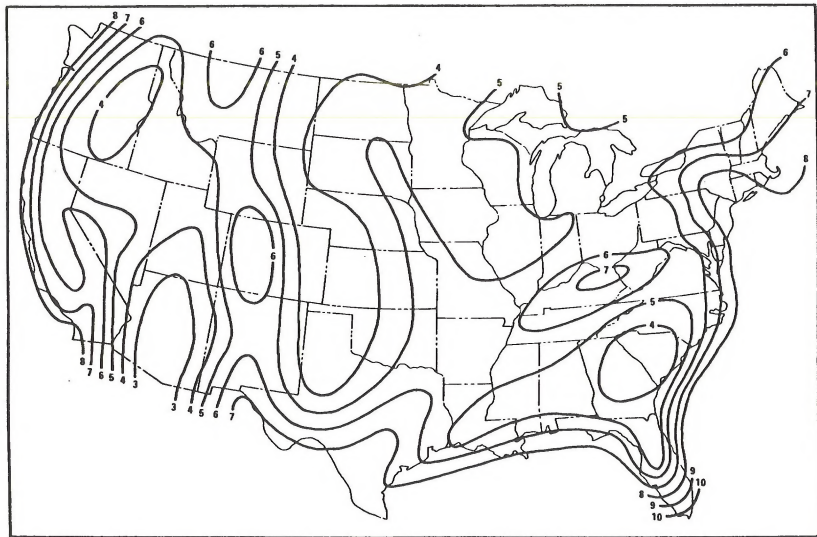
C-1



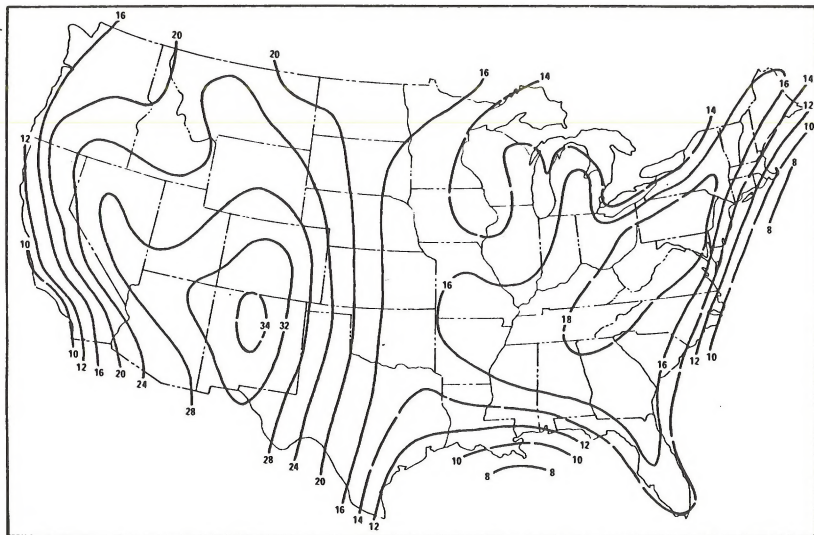
Isopleths ($m \times 10^2$) of Mean Winter Morning Mixing Heights



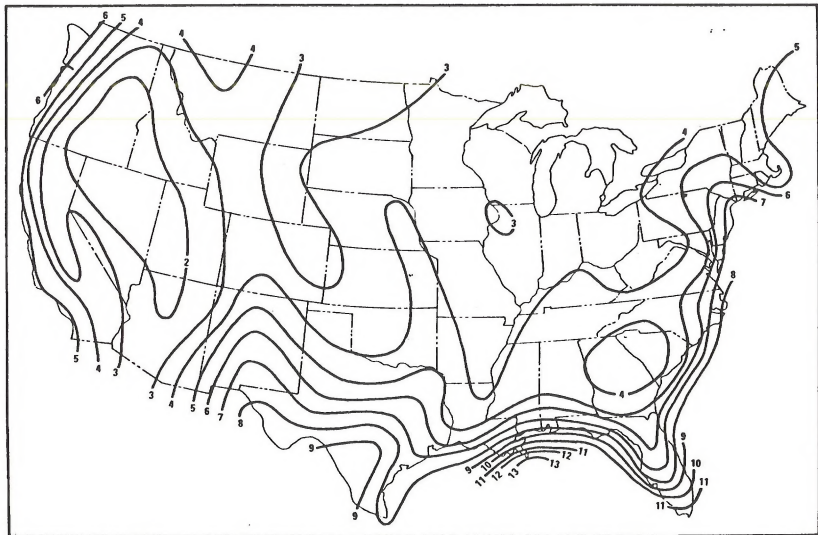
Isopleths ($m \times 10^2$) of Mean Winter Afternoon Mixing Heights



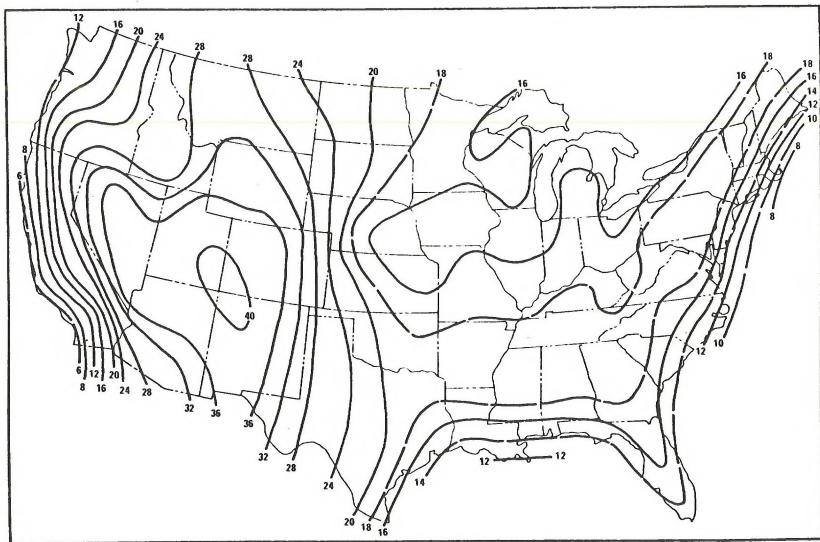
Isopleths ($m \times 10^2$) of Mean Spring Morning Mixing Heights



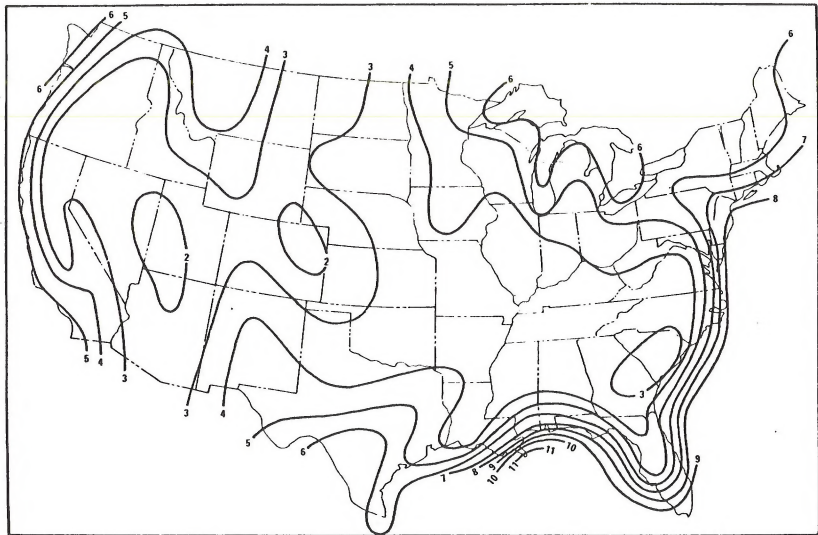
Isopleths ($m \times 10^2$) of Mean Spring Afternoon Mixing Heights



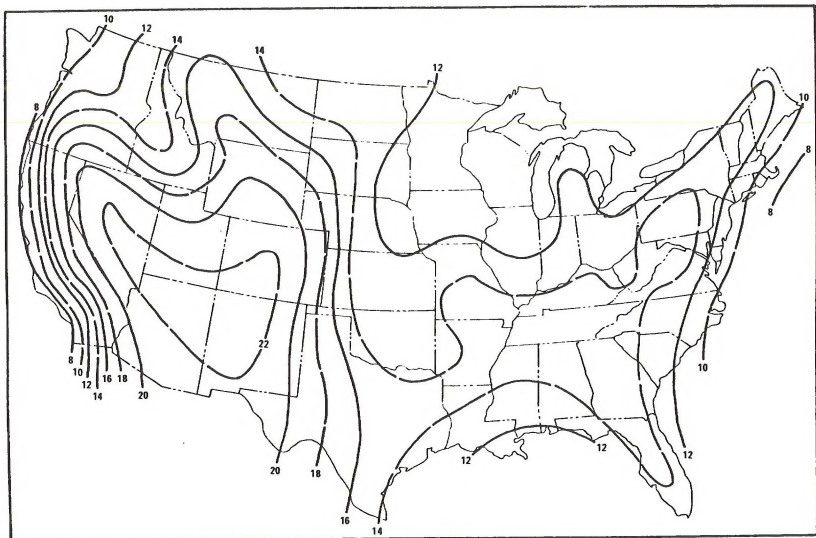
Isopleths ($m \times 10^2$) of Mean Summer Morning Mixing Heights



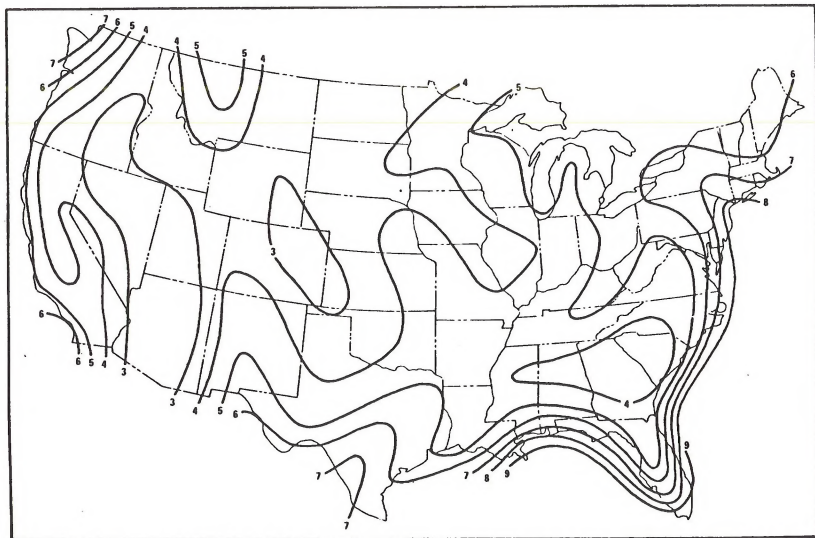
Isopleths ($m \times 10^2$) of Mean Summer Afternoon Mixing Heights



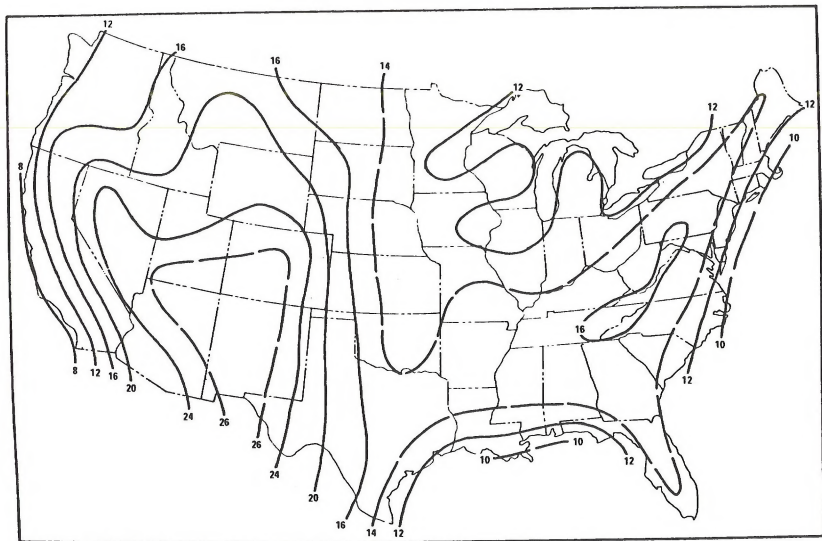
Isopleths ($m \times 10^2$) of Mean Autumn Morning Mixing Heights



Isopleths ($m \times 10^2$) of Mean Autumn Afternoon Mixing Heights



Isopleths ($m \times 10^2$) of Mean Annual Morning Mixing Heights



Isopleths ($m \times 10^2$) of Mean Annual Afternoon Mixing Heights

APPENDIX D
BASELINE AIR QUALITY
IN THE SUSANVILLE DISTRICT

BLM DISTRICT 5

POLLUTANT:

Suspended Particulates by the HI-VOL Method
Micrograms per Cubic Meter

STATION	YEAR	NO. OF CBS.	HIGH	ANNUAL				CONC. EQUALED OR EXCEEDED BY STATED % OF OBSERVATIONS			QUARTERLY								
				ARITHMETIC		GEOMETRIC		10%	50%	80%	JAN. - MAR.		APR. - JUN.		JUL. - SEPT.		OCT. - DEC.		
				MEAN	STD. DEV.	MEAN	STD. DEV.				ARITH. MEAN	HIGH	ARITH. MEAN	HIGH	ARITH. MEAN	HIGH	ARITH. MEAN	HIGH	
D-1	Alturas	1975	16	213	86.8	53.9	72.4	1.9	169	80	50	-	-	-	-	-	-	-	-
	Downieville	1975	2	31	29.0	2.8	28.9	1.1	31	31	27	-	-	-	-	-	-	-	-
	Quincy - Hospital	1975	25	83	23.6	18.5	17.5	2.3	54	20	12	-	-	-	-	-	-	-	-
	Susanville	1975	55	175	73.7	32.5	66.9	1.6	116	68	47	-	-	-	-	-	-	-	-

Some data prior to July 1, 1975 reflect an 0.8 factor applied to average hourly concentrations.

APPENDIX E
LONG-TERM BASELINE AIR QUALITY
IN THE SUSANVILLE DISTRICT

BLM DISTRICT 5
 POLLUTION:

Suspended Particulates by the HI-VOL Method
 Micrograms per Cubic Meter

ANNUAL											QUARTERLY							
STATION	YEAR	NO. OF CBS.	HIGH	ARITHMETIC		GEOMETRIC		CONC. EQUALED OR EXCEEDED BY STATED % OF OBSERVATIONS			JAN. - MAR.		APR. - JUN.		JUL. - SEPT.		OCT. - DEC.	
				MEAN	STD. DEV.	MEAN	STD. DEV.	10%	50%	80%	ARITH. MEAN	HIGH	ARITH. MEAN	HIGH	ARITH. MEAN	HIGH	ARITH. MEAN	HIGH
I - F Alturas	1975	16	213	86.8	53.9	72.4	1.9	169	80	50	-	-	-	-	-	-	-	-
	1974	32	249	82.1	50.8	69.8	1.8	133	77	50	-	-	-	-	-	-	-	-
	1973	29	661	101.9	116.2	73.8	2.2	158	81	38	-	-	-	-	-	-	-	-
	1972	31	137	62.1	25.3	56.9	1.6	85	59	44	-	-	-	-	-	-	-	-
Downieville	1975	2	31	29.0	2.8	28.9	1.1	31	31	27	-	-	-	-	-	-	-	-
	1974	32	47	25.9	8.6	24.6	1.4	40	24	18	-	-	-	-	-	-	-	-
Quincy - Hospital	1975	25	83	23.6	18.5	17.5	2.3	54	20	12	-	-	-	-	-	-	-	-
	1974	12	95	51.9	32.4	40.7	2.2	90	63	17	-	-	-	-	-	-	-	-
Susanville	1975	55	175	73.7	32.5	66.9	1.6	116	68	47	-	-	-	-	-	-	-	-
	1974	45	186	75.5	29.6	69.9	1.5	103	74	51	-	-	-	-	-	-	-	-
	1973	31	127	58.6	28.5	52.5	1.6	102	52	38	-	-	-	-	-	-	-	-
	1972	17	92	57.9	20.7	54.2	1.5	86	55	36	-	-	-	-	-	-	-	-

Some data prior to July 1, 1975 reflect an 0.8 factor applied to average hourly concentrations.

APPENDIX F
1976 - EMISSIONS DATA FOR
THE SUSANVILLE DISTRICT POINT SOURCES

COUNTY: LASSEN
 AQCR: NORTHEAST PLATEAU (027)

SOURCE	Stack Height	Inside Stack Diameter	Exit Temp.	Exit Velocity	Vol. Flow Rate	Annual Tonnage Emission				
	Ft.	Ft.	F ^o	FPS	ACFM	TSP	SO _x	NO _x	HC	CO
CLEAR PINE PRODUCTS, INC. NUBIEBER	-	-	800	-	-	14	0	3	30	345
COIN LUMBER CO. SUSANVILLE	-	-	400	-	-	60	0	6	39	390
EAGLE LAKE LUMBER COMPANY PLANT 1, SUSANVILLE	-	-	-	-	-	384	0	68	136	2056
EAGLE LAKE LUMBER COMPANY PLANT 2, SUSANVILLE	-	-	200	-	-	855	0	342	137	68
MAIN INDUSTRIES BEIBER	-	-	800	-	-	51	0	8	82	975
STATE BOX CO. LITTLE VALLEY	-	-	400	-	-	140	0	14	91	910
SUSANVILLE CITY OPEN BURN DUMP SUSANVILLE	-	-	-	-	-	35	2	13	92	186

COUNTY: MODOC
 AQCR: NORTHEAST PLATEAU (027)

CALANDOR PINE CORP. ALTURAS	01	200	4.0	-	-	-	-	-	-	-	
	02	175	4.0	-	-	-	135	0	26	57	815
EDGERTON LUMBER ADIN	-	-	-	400	-	-	153	0	15	99	990
GLASS MTN BLOCK INC. TALELAKE	01	-	-	-	-	-	-	-	-	-	
	02	-	-	20	-	-	206	0	0	0	0
LAXAGUE BROG. LUMBER CEDARVILLE	-	-	-	400	-	-	122	0	12	75	747
MODOC CTY RD DEPT. ALTURAS	-	-	-	-	-	-	350	0	0	0	0

COUNTY: PLUMAS

AQCR: SACRAMENTO VALLEY (028)

SOURCE	Stack Height	Inside Stack Diameter	Exit Temp.	Exit Velocity	Vol. Flow Rate	Annual Tonnage Emission				
	Ft.	Ft.	F ^o	FPS	ACFM	TSP	SO _x	NO _x	HC	CO
ESSEX LUMBER CO. QUINCY	-	-	-	-	-	150	0	15	98	975
TWAIN LUMBER CO. CRESCENT MILLS	-	-	-	-	-	108	1	11	70	130
COLLINS PINE CO. CHESTER	-	-	-	-	-	46	28	52	30	418
QUINCY OPEN BURNING DUMP, QUINCY	-	-	-	-	-	23	2	9	61	124
CHENEY CALIF. LUMBER GREENVILLE	40	30	400	-	-	293	1	29	190	1900
FEATHER RIVER LUMBER CO. QUINCY	01 40 02	35 -	400 400	- -	- -	298	1	68	213	2640
FEATHER RIVER LUMBER CO. SLOAT	33	25	400	-	-	511	0	51	332	3320
PLUMAS LUMBER GREENVILLE	40	30	700	-	-	140	0	14	91	910
PLUMAS LUMBER CRESCENT MILLS	40	30	400	-	-	45	2	9	32	375

COUNTY: SIERRA CO.

AQCR. SACRAMENTO VALLEY (028)

FEATHER RIVER LUMBER LOYALTON	-	-	-	-	-	114	0	46	91	1370
HOLSTROM LUMBER SATLEY	-	-	400	-	-	96	0	10	63	626

APPENDIX G
1976 - EMISSIONS DATA FOR
THE SUSANVILLE DISTRICT AREA SOURCES

COUNTY: LASSEN					
SOURCE:	TONS/YR				
	TSP	SO _x	NO _x	HC	CO
FUEL COMBUSTION (EXTERNAL) - TOTAL	87	38	76	63	70
Residential Fuel - Total	81	28	55	62	69
Bituminous Coal	1	3	0	1	4
Distillate Oil	7	20	8	2	3
Natural Gas	2	0	18	2	5
Wood	71	4	29	57	57
Industrial Fuel - Total	2	4	11	0	1
Residual Oil	2	4	5	0	0
Natural Gas	0	0	5	0	1
Comm-Institutional Fuel - Total	3	5	10	0	1
Residual Oil	2	4	4	0	0
Distillate Oil	1	2	4	0	0
Natural Gas	0	0	1	0	0
SOLID WASTE DISPOSAL - TOTAL	34	1	6	84	248
Residential - Total	32	1	5	81	239
On Site Incineration	21	0	1	60	180
Open Burning	11	1	4	21	60
Commercial-Institutional - Total	1	0	0	2	5
On Site Incineration	0	0	0	0	1
Open Burning	1	0	0	2	4
Industrial - Total	1	0	0	2	4
Open Burning	1	0	0	2	4
TRANSPORTATION - TOTAL	136	65	1337	2280	11981
Land Vehicles					
Gasoline - Total	113	33	1053	1498	9945
Light Vehicles	101	28	914	1238	7667
Heavy Vehicles	10	3	108	174	1302
Off Highway	3	1	31	86	977
Diesel - Total	22	28	265	38	110
Heavy Vehicles	7	9	81	9	54
Off Highway	11	10	127	14	36
Rail	4	9	57	15	20

COUNTY: LASSEN

SOURCE:	TONS/YR				
	TSP	SO _x	NO _x	HIC	CO
Aircraft - Total	1	0	0	2	2
Military	1	0	0	2	2
Vessels	0	4	18	605	1923
Gasoline	0	4	18	605	1923
Gas Handling Evap. Loss	0	0	0	137	0
MISCELLANEOUS - TOTAL	79	0	19	503	648
Forest Fires	79	0	19	111	648
Solvent Evaporation Loss	0	0	0	392	0
GRAND TOTAL FOR LASSEN COUNTY	336	104	1437	2930	12947

COUNTY: MODOC

SOURCE:	TONS/YR				
	TSP	SO _x	NO _x	HC	CO
FUEL COMBUSTION (EXTERNAL) - TOTAL	42	19	34	30	32
Residential Fuel - Total	40	15	26	30	32
Distillate Oil	4	13	5	1	2
Natural Gas	1	0	6	1	2
Wood	35	2	14	28	28
Industrial Fuel - Total	1	1	4	0	0
Residual Oil	1	1	2	0	0
Natural Gas	0	0	2	0	0
Comm-Institutional Fuel - Total	1	3	4	0	0
Residual Oil	1	2	2	0	0
Distillate Oil	0	1	2	0	0
Natural Gas	0	0	1	0	0
SOLID WASTE DISPOSAL - TOTAL	17	1	3	42	123
Residential - Total	16	1	2	40	119
On Site Incineration	11	0	0	30	89
Open Burning	6	0	2	11	30
Comm-Institutional - Total	1	0	0	2	4
Open Burning	1	0	0	2	4
TRANSPORTATION - TOTAL	84	42	822	1412	6886
Land Vehicles					
Gasoline - Total	63	18	597	804	5126
Light Vehicles	56	16	520	667	3941
Heavy Vehicles	5	2	62	93	680
Off Highway	1	1	16	45	505
Diesel - Total	18	20	207	26	73
Heavy Vehicles	3	4	41	4	24
Off Highway	13	11	140	15	40
Rail	2	4	26	7	9
Aircraft - Total	3	1	3	15	84
Civil	3	1	3	15	84

COUNTY: MODOC

SOURCE:	TONS/YR				
	TSP	SO _x	NO _x	HC	CO
Vessels - Total	0	3	15	504	1603
Gasoline	0	3	15	504	1603
Gas Handling Evap. Loss	0	0	0	63	0
MISCELLANEOUS - TOTAL	97	0	23	296	801
Forest Fires	97	0	23	137	801
Solvent Evaporation Loss	0	0	0	159	0
GRAND TOTAL FOR MODOC COUNTY	241	61	882	1780	7843

COUNTY: PLUMAS					
SOURCE:	TONS/YR				
	TSP	SO _x	NO _x	HC	CO
FUEL COMBUSTION (EXTERNAL) - TOTAL	124	26	77	95	99
Residential Fuel - Total	121	19	63	95	98
Bituminous Coal	0	1	0	0	1
Distillate Oil	4	11	5	1	2
Natural Gas	1	0	12	1	3
Wood	115	7	46	92	92
Industrial Fuel - Total	2	4	9	0	1
Residual Oil	2	4	4	0	0
Natural Gas	0	0	4	0	0
Comm-Institutional Fuel - Total	2	3	5	0	0
Residual Oil	1	2	3	0	0
Distillate Oil	1	1	2	0	0
Natural Gas	0	0	1	0	0
SOLID WASTE DISPOSAL - TOTAL	27	1	4	65	192
Residential - Total	25	1	4	63	187
On Site Incineration	17	0	1	47	140
Open Burning	9	1	3	17	47
Comm-Institutional	1	0	0	2	5
On Site Incineration	0	0	0	0	1
Open Burning	1	0	0	2	4
TRANSPORTATION - TOTAL	100	45	978	1354	7069
Land Vehicles					
Gasoline - Total	82	24	788	1008	6182
Light Vehicles	73	20	685	830	4656
Heavy Vehicles	7	2	81	115	818
Off Highway	2	1	22	62	708
Diesel - Total	15	19	180	25	68
Heavy Vehicles	5	7	66	6	33
Off Highway	6	6	72	8	20
Rail	3	7	43	11	15

COUNTY: PLUMAS

SOURCE:	TONS/YR				
	TSP	SO _x	NO _x	HC	CO
Aircraft - Total	3	1	3	14	79
Civil	3	1	3	14	79
Vessels - Total	0	2	7	233	740
Gasoline	0	2	7	233	740
Gas Handling Evap. Loss	0	0	0	75	0
MISCELLANEOUS - TOTAL	1580	0	294	2422	9904
Forest Fires	920	0	216	1298	7573
Slash Burning	660	0	78	777	2331
Solbent Evaporation Loss	0	0	0	347	0
GRAND TOTAL FOR PLUMAS COUNTY	1831	72	1353	3937	17264

COUNTY: SIERRA					
SOURCE:	TONS/YR				
	TSP	SO _x	NO _x	HC	CO
FUEL COMBUSTION (EXTERNAL) - TOTAL	38	18	21	29	29
Residential Fuel - Total	37	7	16	29	29
Distillate Oil	2	4	2	0	1
Wood	35	2	14	28	28
Industrial Fuel - Total	0	3	1	0	0
Residual Oil	0	3	1	0	0
Comm-Institutional Fuel - Total	1	9	4	0	0
Residual Oil	1	9	2	0	0
Distillate Oil	0	0	1	0	0
Natural Gas	0	0	2	0	0
SOLID WASTE DISPOSAL - TOTAL	6	0	1	14	41
Residential - Total	6	0	1	14	41
On Site Incineration	3	0	0	9	28
Open Burning	2	0	1	5	13
TRANSPORTATION - TOTAL	27	11	279	307	1495
Land Vehicles					
Gasoline - Total	25	7	243	267	1375
Light Vehicles	22	6	215	233	1145
Heavy Vehicles	2	1	27	33	223
Off Highway	0	0	0	1	8
Diesel - Total	3	4	35	5	11
Heavy Vehicles	1	1	13	1	4
Off Highway	1	1	15	2	4
Rail	1	1	7	2	3
Vessels	0	0	1	34	108
Gasoline	0	0	1	34	108
Gas Handling Evap. Loss	0	0	0	1	0
MISCELLANEOUS - TOTAL	0	0	0	6	0
Solvent Evaporation Loss	0	0	0	6	0
GRAND TOTAL FOR SIERRA COUNTY	71	30	301	355	1565

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