Appendix B

INSTRUCTIONS USED FOR EDITING ARB BOAT SURVEYS

EDITING ARB BOAT SURVEYS
#9212 TASK 5

COVER: Boxes are to be numbered 1-4 top to bottom.

If one of boxes are checked, rest of survey should be blank.

A 5th box can be added, which is for the category "Inappropriate". (For instance, if a person says that the boat is used for commercial purposes as a demo only, then a number 5 should be written)

If person is deceased, check 1st box.

Q1 1 box should be checked.

If they write in a different boat type, general rule is:

- o A sailboat is just that, a sailboat.
- o A powerboat is **any kind of boat** with an engine. It could be a rowboat with a small engine, or even an inflatable boat that has a small engine.

Q2 1 box should be checked.

Q3 1 box should be checked. If more than 1 are checked, pull aside for supervisor to review.

Q4 1 box should be checked.

Q5 Given response is okay. A decimal is okay. If person wrote in a different number other than horsepower, then pull aside for supervisor to review.

Q6 2 digit year will be written in, or 1 box should be checked.

Q7 2 digit month, day and year should be filled out.

- o If there is **no date** take 1 week prior to the date stamp.
- o If date is incorrect (date is sometime in the future, not yet actual), pull aside for supervisor to review.
- o If date is not within 1-2 weeks of date received stamp, then pull aside for supervisor to review.

Q8 Given response is okay. Decimal is okay. If person wrote in a different measurement than gallons, pull aside for supervisor to review.

Q9 Same as Q8

Q10 1 box should be checked.

Q11 is Table. If you see something that seems abnormal see supervisor.

If Am or Pm is not checked, pull aside for supervisor to review.

Q12 County code should be written in or 1 box should be checked.

If county code is not written in, pull aside for supervisor.

If county code is written as name, see map to convert to number, and then write number in red.

Q13 put a single diagonal line through.

Appendix C

SURVEY DATABASE CODES

The following describes the survey database. The field identifiers in the database can be cross-referenced to the original survey form that follows. For example, question 1 of the survey is coded as Q1 in the database. For the table contained on page 6 of the survey, two tables are included that show the database coding scheme. Valid responses in the database are listed following the coded survey instrument.

Freeman, Sullivan & Co.

REGARDING YOUR REGISTERED BOAT

Sailboats with Engines • Power Boats • Other Boats with Engines • Personal Water Craft

- If you own the boat listed above and this boat is powered by an engine:

  You should complete this form today and return it in the enclosed postage-paid envelope. Please begin on the next page.

  In this study, you represent hundreds of other boat owners like yourself!

S1

- If you no longer own the boat listed above

  or

  the boat is not powered by either a primary or auxiliary engine:

  You only need to complete this cover page.

  Please check the appropriate box below and return the blank form in the enclosed postage-paid envelope. Thank you!

  ☐ I no longer own the boat

  ☐ I own a sailboat with no auxiliary engine

  ☐ I own a boat that is not powered by an engine

  ☐ I have never owned this boat

All questions refer ONLY to the boat with the registration number printed on the front page next to your name.

Q1

1. Check the <u>one</u> category which describes your registered boat.

- ☐ 1.1 Sailboat with engine
- ☐ 1.2 Personal Water Craft (Jetski, Waverunner, etc.)
- ☐ 1.3 Power Boat (cruiser, speedboat, houseboat, etc.)

Q2

2. Which category below describes your primary propulsion engine?

(Do not describe any secondary propulsion used for low speed trolling and fishing.)

- ☐ 2.1 Two-Stroke Gasoline Engine (requires gasoline and oil fuel mixture)
- ☐ 2.2 Four-Stroke Gasoline Engine (has an oil sump and dipstick)
- ☐ 2.3 Diesel Engine (either 2 or 4 Stroke, requires diesel fuel)

Q3

3. Which one of the following is the primary propulsion type for your boat?

(Include auxiliary motors for sailboats, but do not include secondary motors for low speed trolling or fishing. Please read all choices.)

- ☐ 3.1 Outboard
- ☐ 3.2 Sterndrive (Inboard/Outboard)
- ☐ 3.3 Inboard Propeller
- ☐ 3.4 Inboard Jet
- ☐ 3.5 Personal Water Craft Jet (Jetski engine, Waverunner engine, etc.)
- ☐ 3.6 Other (please specify):_____

Q4

4. How many primary propulsion engines are on this boat?

(Include auxiliary motors for sailboats, but do not include secondary motors for low speed trolling or fishing.)

- ☐ 4.1 One
- ☐ 4.2 Two
- ☐ 4.3 More than two. Please specify number: _____

Q5

5. What is the horsepower for <u>each</u> primary engine?

(If unsure, you might check the specifications in the owner's manual, otherwise give your best estimate.)

_____ hp 5.1-4

Q6

6. What year was your engine manufactured?

(If unsure, you might find the model year in the owner's manual.)

19___ 6.1-2

Q6_NS

- ☐ 6.a.1 Not sure, but probably <u>before 1990</u>
- ☐ 6.a.2 Not sure; but probably 1990 or later
- ☐ 6.a.3 Don't Know

Important

The following questions refer to the TWO WEEK period ending LAST SUNDAY evening. Please keep in mind that you are answering for those two weeks only.

ALSO, your answers must only be for the boat whose registration number is printed on the front page of this survey next to your name.

Q7

7. Please enter today's date: _____/_____/_____ 7.1-6

month day year

Q8

8. During the two weeks ending last Sunday, how many gallons of fuel did you buy for your boat, personal watercraft, or sailboat engine(s)?

(If unsure of the exact amount, make your best estimate; if you bought no fuel, even if you used your boat, enter "0".)

_____ gallons bought in the past two weeks 8.1-3

Q9

9. Whether you bought fuel or not, how many gallons do you estimate you used in the two weeks ending last Sunday?

_____ gallons <u>used</u> in the two weeks $_{9.1\text{-}3}$

Q10

10. Did you <u>use</u> your boat *(went out under power)* during the two weeks ending last Sunday?

☐ $_{10.1}$ Yes <u>If yes, go to question 11 below</u>

☐ $_{10.1}$ No. <u>If no, skip to question 12 on Page 7</u>

11. If you used your boat in the two weeks <u>ending last Sunday,</u> please read the instructions on the following page and complete the boating log as thoroughly as possible for any boating you did in California, on the Colorado River, or along the California coast.

A correct county location is important to this study. Use the enclosed Waterways Map -- Northern California (side 1) and Southern California (side 2) -- to locate the counties where you used your boat.

Step 1. Read this example. **Step 2.** Fill out the log on the next page

For the days you used your boat, fill in the county codes for those counties where you boated or boated offshore. Enter up to three counties where you did most of your boating on that day. **USE ENCLOSED WATERWAYS MAP FOR COUNTY CODES.**

Enter the time you started out on the water and the time you returned to the dock or landing at the end of your boating day.

Enter the approximate percentage of this time during which you used your boat's primary (or sailboat auxiliary) engine.

If you used your boat on any day in one or more of the five specific locations listed on the right, check the appropriate box or boxes. Leave the boxes blank if you did not boat in these places on a given day. (Note: Lake Perris is in Riverside County)

EXAMPLE: Last Sunday you used your boat in Lake Berryessa in Napa County (code # 21) between 11:30 am and 4:00 pm, operating the engine for about half the time (50%). You also used your boat the previous day, Saturday, in San Francisco Bay off Alameda County (code # 1) and Contra Costa County (code # 7) from 12:00 pm to 2:15 pm when you operated the engine for about a quarter of the time (25%).

Your Boat and Engine Use Over the Two Weeks Ending Last Sunday

Day of Week	Counties Where You Boated or Boated Offshore (Use Map Code Numbers)			Time On The Water Each Day		Percent Of Time On The Water You Used Your Boat Engine	Check Boxes Only If You Boated Here				
	County Code	County Code	County Code	Time Started	Time Finished	Percent	Pacific Ocean	San Francisco Bay San Pablo Bay	Sacramento Delta Suisun Bay	Mission or San Diego Bays	Lake Perris (Riverside Co.)
Example from Previous Page:											
Last Sunday	# 21	#	#	11:30 am/pm	4:00 am / pm	50 %					
Saturday	# 1	# 7	#	12:00 am/pm	2:15 am / pm	25 %		X			
Friday	#	#	#	: am / pm	: am / pm	%					
Last Sunday	#	#	#	: am / pm	: am / pm	%					
Saturday	#	#	#	: am / pm	: am / pm	%					
Friday	#	#	#	: am / pm	: am / pm	%					
Thursday	#	#	#	: am / pm	: am / pm	%					
Wednesday	#	#	#	: am / pm	: am / pm	%					
Tuesday	#	#	#	: am / pm	: am / pm	%					
Monday	#	#	#	: am / pm	: am / pm	%					
Sunday	#	#	#	: am / pm	: am / pm	%					
Saturday	#	#	#	: am / pm	: am / pm	%					
Friday	#	#	#	: am / pm	: am / pm	%					
Thursday	#	#	#	: am / pm	: am / pm	%					
Wednesday	#	#	#	: am / pm	: am / pm	%					
Tuesday	#	#	#	: am / pm	: am / pm	%					
Monday	#	#	#	: am / pm	: am / pm	%					

SEE ITEM CODING ON FOLLOWING PAGES

Day of Week	County Code	County Code	County Code	Start Hour	Start Min.	Start am/pm	Finish Hour	Finish Min.	Finish am/pm	Percent
Last Sunday	S01 1	S01 2	S01 3	STHR O1	STMN O1	S APO1	FNHR O1	FNMN O1	F APO1	WAT O1
Saturday	S02 1	S02 2	S02 3	STHR O2	STMN O2	S APO2	FNHR O2	FNMN O2	F APO2	WAT O2
Friday	F03 1	F03 2	F03 3	STHR O3	STMN O3	S APO3	FNHR O3	FNMN O3	F APO3	WAT O3
Thursday	T04 1	T04 2	T04 3	STHR O4	STMN O4	S APO4	FNHR O4	FNMN O4	F APO4	WAT O4
Wednesday	W05 1	W05 2	W05 3	STHR O5	STMN O5	S APO5	FNHR O5	FNMN O5	F APO5	WAT O5
Tuesday	T06 1	T06 2	T06 3	STHR O6	STMN O6	S APO6	FNHR O6	FNMN O6	F APO6	WAT O6
Monday	M07 1	M07 2	M07 3	STHR O7	STMN O7	S APO7	FNHR O7	FNMN O7	F APO7	WAT O7
Sunday	S08 1	S08 2	S08 3	STHR O8	STMN O8	S APO8	FNHR O8	FNMN O8	F APO8	WAT O8
Saturday	S09 1	S09 2	S09 3	STHR O9	STMN O9	S APO9	FNHR O9	FNMN O9	F APO9	WAT O9
Friday	F10 1	F10 2	F10 3	STHR 10	STMN 10	S AP10	FNHR 10	FNMN 10	F AP10	WAT 10
Thursday	T11 1	T11 2	T11 3	STHR 11	STMN 11	S AP11	FNHR 11	FNMN 11	F AP11	WAT 11
Wednesday	W12 1	W12 2	W12 3	STHR 12	STMN 12	S AP12	FNHR 12	FNMN 12	F AP12	WAT 12
Tuesday	T13 1	T13 2	T13 3	STHR 13	STMN 13	S AP13	FNHR 13	FNMN 13	F AP13	WAT 13
Monday	T14 1	T14 2	T14 3	STHR 14	STMN 14	S AP14	FNHR 14	FNMN 14	F AP14	WAT 14

Pacific Ocean	San Francisco/San Pablo Bay	Sacramento Delta/Sulsun Bay	Mission or San Diego Bays	Lake Perris (Riverside Co.)
OCEAN O1	BAY O1	DELTA O1	SD O1	PERRISO1
OCEAN O2	BAY O2	DELTA O2	SD O2	PERRISO2
OCEAN O3	BAY O3	DELTA O3	SD O3	PERRISO3
OCEAN O4	BAY O4	DELTA O4	SD O4	PERRISO4
OCEAN O5	BAY O5	DELTA O5	SD O5	PERRISO5
OCEAN O6	BAY O6	DELTA O6	SD O6	PERRISO6
OCEAN O7	BAY O7	DELTA O7	SD O7	PERRISO7
OCEAN O8	BAY O8	DELTA O8	SD O8	PERRISO8
OCEAN O9	BAY O9	DELTA O9	SD O9	PERRISO9
OCEAN 10	BAY 10	DELTA 10	SD 10	PERRIS10
OCEAN 11	BAY 11	DELTA 11	SD 11	PERRIS11
OCEAN 12	BAY 12	DELTA 12	SD 12	PERRIS12
OCEAN 13	BAY 13	DELTA 13	SD 13	PERRIS13
OCEAN 14	BAY 14	DELTA 14	SD 14	PERRIS14

Q12

12. In which county is your primary residence located? *(Use the county code printed on the enclosed Waterways Map.)*

County Code: _____ 12.1-2

Q12_OUT

☐ 12a.1 Primary residence is outside California

13. (Optional) Please use the following space for any comments you have about this study.

Thank you for your cooperation!

Mail this back today in the enclosed postage-paid envelope to:

List of variables on the working file

Name			Position
FSCID			1
	Print Format: F8		
	Write Format: F8		
REGCODE	Region		2
	Print Format: F1		
	Write Format: F1		

Value	Label
1	South
2	Central
3	North

REGDATE2	Vessel Registration Date	(DMV database)	3
	Print Format: F16		
	Write Format: F16		
VESTYPE	Vessel Type	(DMV database)	4
	Print Format: A1		
	Write Format: A1		

Value	Label
A	Amphibious
B	Barge
C	Cruise
H	Houseboat
I	Inflatable
K	Kayak-Canoe
O	Rowboat
R	Runabout
S	Sailboat
X	Other

PROPTYPE Propulsion Type (DMV database) 5
Print Format: A1
Write Format: A1

Value	Label
A	Auxiliary-Sail
H	Hand (Oar)
I	Inboard
J	Jet
N	In-Outboard
O	Outboard
S	Sail Only
X	Other

LENGTHFT Vessel Length (Feet) (DMV database) 6
Print Format: A3
Write Format: A3

LENGTHIN Vessel Length (Inches) (DMV database) 7
Print Format: A2
Write Format: A2

S1 No Longer Own Boat 8
Print Format: F1
Write Format: F1

Value	Label
1	No longer own
2	Sail, no engine
3	Boat, no engine
4	Never owned

Q1 Describe Boat 9
Print Format: F1
Write Format: F1

Value	Label
1	Sail & engine
2	Per water craft
3	Power boat

Q2_NEW Describe Engine 10
Print Format: F1
Write Format: F1

Value	Label
1	2-stroke
2	4-stroke
3	Diesel

Q3_NEW Type of Engine 11
Print Format: F1
Write Format: F1

Value	Label
1	Outboard
2	In-Outboard
3	Inboard
4	Jet
6	Other
8	Auxiliary-Sail

Q3_SPEC Other, Specify 12
Print Format: A20
Write Format: A20

Q4 Number of Engines 15
Print Format: F1
Write Format: F1

Value	Label
1	One
2	Two
3	More than 2

Q4_SPEC Number of Engines > 2 16
Print Format: F1
Write Format: F1

Q5 Horsepower 17
Print Format: F6.2
Write Format: F6.2

Q6 Manufacture Year 18
Print Format: F2
Write Format: F2

Q6_NS Not Sure of Manufacture Year 19
Print Format: F1
Write Format: F1

Value	Label
1	Before 1990
2	1990 or later
3	Don't know

Q7 Filing Date 20
Print Format: F6
Write Format: F5

Q8 Number of Gallons Bought in 2 Weeks 21
Print Format: F6.2
Write Format: F6.2

Q9 Number of Gallons Used in 2 Weeks 22
Print Format: F6.2
Write Format: F6.2

Q10 Used Boat in last 2 Weeks 23
Print Format: F1
Write Format: F1

Value	Label
1	Yes
2	No

S01_1 1st Sunday Column 1 County Codes 24
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin

16 Mariposa
17 Mendocino
18 Merced
19 Modoc
20 Mono
21 Napa
22 Nevada
23 Placer
24 Plumas
25 Sacramento
26 San Francisco
27 San Joaquin
28 San Mateo
29 Santa Clara
30 Santa Cruz
31 Shasta
32 Sierra
33 Siskiyou
34 Solano
35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

S01_2 1st Sunday Column 2 County Codes 25
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

S01_3 1st Sunday Column 3 County Codes 26
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano

35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_01 1st Sunday Start Hour 27
Print Format: F2
Write Format: F2

STMN_01 1st Sunday Start Minute 28
Print Format: F2
Write Format: F2

S_AP01 1st Sunday Start AM/PM 29
Print Format: A1
Write Format: A1

FNHR_01 1st Sunday Finish Hour 30
Print Format: F2
Write Format: F2

FNMN_01 1st Sunday Finish Minute 31
Print Format: F2
Write Format: F2

F_AP01 1st Sunday Finish AM/PM 32
Print Format: A1
Write Format: A1

WAT_01 1st Sunday Percent Used Engine 33
Print Format: F3
Write Format: F3

OCEAN_01 1st Sunday Pacific Ocean 34
Print Format: F1
Write Format: F1

BAY_01 1st Sunday SF/SP Bay 35
Print Format: F1
Write Format: F1

DELTA_01 1st Sunday Delta/Suisun Bay 36
Print Format: F1
Write Format: F1

SD_01 1st Sunday San Diego/Mission Bay 37
Print Format: F1
Write Format: F1

PERRIS01 1st Sunday Lake Perris 38
Print Format: F1
Write Format: F1

S02_1 1st Saturday Column 1 County Codes 39
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco

27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

S02_2 1st Saturday Column 2 County Codes 40
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

S02_3 1st Saturday Column 3 County Codes 41
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_02 1st Saturday Start Hour 42
Print Format: F2
Write Format: F2

STMN_02 1st Saturday Start Minute 43
Print Format: F2
Write Format: F2

S_AP02 1st Saturday Start AM/PM 44
Print Format: A1
Write Format: A1

FNHR_02 1st Saturday Finish Hour 45
Print Format: F2
Write Format: F2

FNMN_02 1st Saturday Finish Minute 46
Print Format: F2
Write Format: F2

F_AP02 1st Saturday Finish AM/PM 47
Print Format: A1
Write Format: A1

WAT_02 1st Saturday Percent Used Engine 48
Print Format: F3
Write Format: F3

OCEAN_02 1st Saturday Pacific Ocean 49
Print Format: F1
Write Format: F1

BAY_02 1st Saturday SF/SP Bay 50
Print Format: F1
Write Format: F1

DELTA_02 1st Saturday Delta/Suisun Bay 51
Print Format: F1
Write Format: F1

SD_02 1st Saturday San Diego/Mission Bay 52
Print Format: F1
Write Format: F1

PERRIS02 1st Saturday Lake Perris 53
Print Format: F1
Write Format: F1

F03_1 1st Friday Column 1 County Codes 54
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama

39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

F03_2 1st Friday Column 2 County Codes 55
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco

27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

F03_3 1st Friday Column 3 County Codes 56
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

STHR_03 1st Friday Start Hour 57
Print Format: F2
Write Format: F2

STMN_03 1st Friday Start Minute 58
Print Format: F2
Write Format: F2

S_AP03	1st Friday Start AM/PM Print Format: A1 Write Format: A1	59
FNHR_03	1st Friday Finish Hour Print Format: F2 Write Format: F2	60
FNMN_03	1st Friday Finish Minute Print Format: F2 Write Format: F2	61
F_AP03	1st Friday Finish AM/PM Print Format: A1 Write Format: A1	62
WAT_03	1st Friday Percent Used Engine Print Format: F3 Write Format: F3	63
OCEAN_03	1st Friday Pacific Ocean Print Format: F1 Write Format: F1	64
BAY_03	1st Friday SF/SP Bay Print Format: F1 Write Format: F1	65
DELTA_03	1st Friday Delta/Suisun Bay Print Format: F1 Write Format: F1	66
SD_03	1st Friday San Diego/Mission Bay Print Format: F1 Write Format: F1	67
PERRIS03	1st Friday Lake Perris Print Format: F1 Write Format: F1	68

T04_1 1st Thursday Column 1 County Codes 69
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

T04_2 1st Thursday Column 2 County Codes 70
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano

35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

T04_3 1st Thursday Column 3 County Codes 71
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada

23 Placer
24 Plumas
25 Sacramento
26 San Francisco
27 San Joaquin
28 San Mateo
29 Santa Clara
30 Santa Cruz
31 Shasta
32 Sierra
33 Siskiyou
34 Solano
35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_04 1st Thursday Start Hour 72
Print Format: F2
Write Format: F2

STMN_04 1st Thursday Start Minute 73
Print Format: F2
Write Format: F2

S_AP04 1st Thursday Start AM/PM 74
Print Format: A1
Write Format: A1

FNHR_04 1st Thursday Finish Hour 75
Print Format: F2
Write Format: F2

FNMN_04 1st Thursday Finish Minute 76
Print Format: F2
Write Format: F2

F_AP04 1st Thursday Finish AM/PM 77
Print Format: A1
Write Format: A1

WAT_04 1st Thursday Percent Used Engine 78
Print Format: F3
Write Format: F3

OCEAN_04 1st Thursday Pacific Ocean 79
Print Format: F1
Write Format: F1

BAY_04 1st Thursday SF/SP Bay 80
Print Format: F1
Write Format: F1

DELTA_04 1st Thursday Delta/Suisun Bay 81
Print Format: F1
Write Format: F1

SD_04 1st Thursday San Diego/Mission Bay 82
Print Format: F1
Write Format: F1

PERRIS04 1st Thursday Lake Perris 83
Print Format: F1
Write Format: F1

W05_1 1st Wednesday Column 1 County Codes 84
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

85

W05_2 1st Wednesday Column 2 County Codes
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

W05_3 1st Wednesday Column 3 County Codes 85
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano

35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_05 1st Wednesday Start Hour 87
Print Format: F2
Write Format: F2

STMN_05 1st Wednesday Start Minute 88
Print Format: F2
Write Format: F2

S_AP05 1st Wednesday Start AM/PM 89
Print Format: A1
Write Format: A1

FNHR_05 1st Wednesday Finish Hour 90
Print Format: F2
Write Format: F2

FNMN_05 1st Wednesday Finish Minute 91
Print Format: F2
Write Format: F2

F_AP05 1st Wednesday Finish AM/PM 92
Print Format: A1
Write Format: A1

WAT_05 1st Wednesday Percent Used Engine 93
Print Format: F3
Write Format: F3

OCEAN_05 1st Wednesday Pacific Ocean 94
Print Format: F1
Write Format: F1

BAY_05 1st Wednesday SF/SP Bay 95
Print Format: F1
Write Format: F1

DELTA_05 1st Wednesday Delta/Suisun Bay 96
Print Format: F1
Write Format: F1

SD_05 1st Wednesday San Diego/Mission Bay 97
Print Format: F1
Write Format: F1

PERRIS05 1st Wednesday Lake Perris 98
Print Format: F1
Write Format: F1

T06_1 1st Tuesday Column 1 County Codes 99
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco

27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

T06_2 1st Tuesday Column 2 County Codes 100
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

T06_3 1st Tuesday Column 3 County Codes 101
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

STHR_06	1st Tuesday Start Hour Print Format: F2 Write Format: F2	102
STMN_06	1st Tuesday Start Minute Print Format: F2 Write Format: F2	103
S_AP06	1st Tuesday Start AM/PM Print Format: A1 Write Format: A1	104
FNHR_06	1st Tuesday Finish Hour Print Format: F2 Write Format: F2	105
FNMN_06	1st Tuesday Finish Minute Print Format: F2 Write Format: F2	106
F_AP06	1st Tuesday Finish AM/PM Print Format: A1 Write Format: A1	107
WAT_06	1st Tuesday Percent Used Engine Print Format: F3 Write Format: F3	108
OCEAN_06	1st Tuesday Pacific Ocean Print Format: F1 Write Format: F1	109
BAY_06	1st Tuesday SF/SP Bay Print Format: F1 Write Format: F1	110
DELTA_06	1st Tuesday Delta/Suisun Bay Print Format: F1 Write Format: F1	111

SD_06 1st Tuesday San Diego/Mission Bay 112
Print Format: F1
Write Format: F1

PERRIS06 1st Tuesday Lake Perris 113
Print Format: F1
Write Format: F1

M07_1 1st Monday Column 1 County Codes 114
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama

39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

M07_2 1st Monday Column 2 County Codes 115
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco

27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

M07_3 1st Monday Column 3 County Codes 116
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15 Marin
16 Mariposa
17 Mendocino
18 Merced
19 Modoc
20 Mono
21 Napa
22 Nevada
23 Placer
24 Plumas
25 Sacramento
26 San Francisco
27 San Joaquin
28 San Mateo
29 Santa Clara
30 Santa Cruz
31 Shasta
32 Sierra
33 Siskiyou
34 Solano
35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_07 1st Monday Start Hour 117
Print Format: F2
Write Format: F2

STMN_07 1st Monday Start Minute 118
Print Format: F2
Write Format: F2

S_AP07	1st Monday Start AM/PM Print Format: A1 Write Format: A1	119
FNHR_07	 Print Format: F2 Write Format: F2	120
FNMN_07	 Print Format: F2 Write Format: F2	121
F_AP07	1st Monday Finish AM/PM Print Format: A1 Write Format: A1	122
WAT_07	1st Monday Percent Used Engine Print Format: F3 Write Format: F3	123
OCEAN_07	1st Monday Pacific Ocean Print Format: F1 Write Format: F1	124
BAY_07	1st Monday SF/SP Bay Print Format: F1 Write Format: F1	125
DELTA_07	1st Monday Delta/Suisun Bay Print Format: F1 Write Format: F1	126
SD_07	1st Monday San Diego/Mission Bay Print Format: F1 Write Format: F1	127
PERRIS07	1st Monday Lake Perris Print Format: F1 Write Format: F1	128

S08_1 2nd Sunday Column 1 County Codes 129
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

S08_2 2nd Sunday Column 2 County Codes 130
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano

35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

S08_3 2nd Sunday Column 3 County Codes 131
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada

23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

STHR_08 2st Sunday Start Hour 132
Print Format: F2
Write Format: F2

STMN_08 2st Sunday Start Minute 133
Print Format: F2
Write Format: F2

S_AP08 2nd Sunday Start AM/PM 134
Print Format: A1
Write Format: A1

FNHR_08 2st Sunday Finish Hour 135
Print Format: F2
Write Format: F2

FNMN_08	2st Sunday Finish Minute Print Format: F2 Write Format: F2	136
F_AP08	2nd Sunday Finish AM/PM Print Format: A1 Write Format: A1	137
WAT_08	2nd Sunday Percent Used Engine Print Format: F3 Write Format: F3	138
OCEAN_08	2nd Sunday Pacific Ocean Print Format: F1 Write Format: F1	139
BAY_08	2nd Sunday SF/SP Bay Print Format: F1 Write Format: F1	140
DELTA_08	2nd Sunday Delta/Suisun Bay Print Format: F1 Write Format: F1	141
SD_08	2nd Sunday San Diego/Mission Bay Print Format: F1 Write Format: F1	142
PERRIS08	2nd Sunday Lake Perris Print Format: F1 Write Format: F1	143
S09_1	2nd Saturday Column 1 County Codes Print Format: F2 Write Format: F2	144

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15 Marin
16 Mariposa
17 Mendocino
18 Merced
19 Modoc
20 Mono
21 Napa
22 Nevada
23 Placer
24 Plumas
25 Sacramento
26 San Francisco
27 San Joaquin
28 San Mateo
29 Santa Clara
30 Santa Cruz
31 Shasta
32 Sierra
33 Siskiyou
34 Solano
35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

S09_2 2nd Saturday Column 2 County Codes 145
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

S09_3 2nd Saturday Column 3 County Codes 146
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano

35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_09 2st Saturday Start Hour 147
Print Format: F2
Write Format: F2

STMN_09 2st Saturday Start Minute 148
Print Format: F2
Write Format: F2

S_AP09 2nd Saturday Start AM/PM 149
Print Format: A1
Write Format: A1

FNHR_09 2st Saturday Finish Hour 150
Print Format: F2
Write Format: F2

FNMN_09 2st Saturday Finish Minute 151
Print Format: F2
Write Format: F2

F_AP09 2nd Saturday Finish AM/PM 152
Print Format: A1
Write Format: A1

WAT_09 2nd Saturday Percent Used Engine 153
Print Format: F3
Write Format: F3

OCEAN_09 2nd Saturday Pacific Ocean 154
Print Format: F1
Write Format: F1

BAY_09 2nd Saturday SF/SP Bay 155
Print Format: F1
Write Format: F1

DELTA_09 2nd Saturday Delta/Suisun Bay 156
Print Format: F1
Write Format: F1

SD_09 2nd Saturday San Diego/Mission Bay 157
Print Format: F1
Write Format: F1

PERRIS09 2nd Saturday Lake Perris 158
Print Format: F1
Write Format: F1

F10_1 2nd Friday Column 1 County Codes 159
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco

27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

F10_2 2nd Friday Column 2 County Codes 160
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

F10_3 2nd Friday Column 3 County Codes 161
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

STHR_10 2st Friday Start Hour 162
Print Format: F2
Write Format: F2

STMN_10 2st Friday Start Minute 163
Print Format: F2
Write Format: F2

S_AP10 2nd Friday Start AM/PM 164
Print Format: A1
Write Format: A1

FNHR_10 2st Friday Finish Hour 165
Print Format: F2
Write Format: F2

FNMN_10 2st Friday Finish Minute 166
Print Format: F2
Write Format: F2

F_AP10 2nd Friday Finish AM/PM 167
Print Format: A1
Write Format: A1

WAT_10 2nd Friday Percent Used Engine 168
Print Format: F3
Write Format: F3

OCEAN_10 2nd Friday Pacific Ocean 169
Print Format: F1
Write Format: F1

BAY_10 2nd Friday SF/SP Bay 170
Print Format: F1
Write Format: F1

DELTA_10 2nd Friday Delta/Suisun Bay 171
Print Format: F1
Write Format: F1

SD_10 2nd Friday San Diego/Mission Bay 172
Print Format: F1
Write Format: F1

PERRIS10 2nd Friday Lake Perris 173
Print Format: F1
Write Format: F1

T11_1 2nd Thursday Column 1 County Codes 174
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama

39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

T11_2 2nd Thursday Column 2 County Codes 175
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco

27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

T11_3 2nd Thursday Column 3 County Codes 176
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15 Marin
16 Mariposa
17 Mendocino
18 Merced
19 Modoc
20 Mono
21 Napa
22 Nevada
23 Placer
24 Plumas
25 Sacramento
26 San Francisco
27 San Joaquin
28 San Mateo
29 Santa Clara
30 Santa Cruz
31 Shasta
32 Sierra
33 Siskiyou
34 Solano
35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_11 2st Thrusday Start Hour 177
Print Format: F2
Write Format: F2

STMN_11 2st Thursday Start Minute 178
Print Format: F2
Write Format: F2

S_AP11	2nd Thursday Start AM/PM Print Format: A1 Write Format: A1	179
FNHR_11	2st Thrusday Finish Hour Print Format: F2 Write Format: F2	180
FNMN_11	2st Thursday Finish Minute Print Format: F2 Write Format: F2	181
F_AP11	2nd Thursday Finish AM/PM Print Format: A1 Write Format: A1	182
WAT_11	2nd Thursday Percent Used Engine Print Format: F3 Write Format: F3	183
OCEAN_11	2nd Thursday Pacific Ocean Print Format: F1 Write Format: F1	184
BAY_11	2nd Thursday SF/SP Bay Print Format: F1 Write Format: F1	185
DELTA_11	2nd Thursday Delta/Suisun Bay Print Format: F1 Write Format: F1	186
SD_11	2nd Thursday San Diego/Mission Bay Print Format: F1 Write Format: F1	187
PERRIS11	2nd Thursday Lake Perris Print Format: F1 Write Format: F1	188

W12_1 2nd Wednesday Column 1 County Codes 189
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

W12_2 2nd Wednesday Column 2 County Codes 190
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano

35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

W12_3 2nd Wednesday Column 3 County Codes 191
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada

23 Placer
24 Plumas
25 Sacramento
26 San Francisco
27 San Joaquin
28 San Mateo
29 Santa Clara
30 Santa Cruz
31 Shasta
32 Sierra
33 Siskiyou
34 Solano
35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_12 2st Wednesday Start Hour 192
Print Format: F2
Write Format: F2

STMN_12 2st Wednesday Start Minute 193
Print Format: F2
Write Format: F2

S_AP12 2nd Wednesday Start AM/PM 194
Print Format: A1
Write Format: A1

FNHR_12 2st Wednesday Finish Hour 195
Print Format: F2
Write Format: F2

FNMN_12 2st Wednesday Finish Minute 196
Print Format: F2
Write Format: F2

F_AP12 2nd Wednesday Finish AM/PM 197
Print Format: A1
Write Format: A1

WAT_12 2nd Wednesday Percent Used Engine 198
Print Format: F3
Write Format: F3

OCEAN_12 2nd Wednesday Pacific Ocean 199
Print Format: F1
Write Format: F1

BAY_12 2nd Wednesday SF/SP Bay 200
Print Format: F1
Write Format: F1

DELTA_12 2nd Wednesday Delta/Suisun Bay 201
Print Format: F1
Write Format: F1

SD_12 2nd Wednesday San Diego/Mission Bay 202
Print Format: F1
Write Format: F1

PERRIS12 2nd Wednesday Lake Perris 203
Print Format: F1
Write Format: F1

T13_1 2nd Tuesday Column 1 County Codes 204
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

T13_2 2nd Tuesday Column 2 County Codes 205
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

T13_3 2nd Tuesday Column 3 County Codes 206
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano

35 Sonoma
36 Stanislaus
37 Sutter
38 Tehama
39 Trinity
40 Tuolumne
41 Yolo
42 Yuba
43 Fresno
44 Imperial
45 Inyo
46 Kern
47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_13 2st Tuesday Start Hour 207
Print Format: F2
Write Format: F2

STMN_13 2st Tuesday Start Minute 208
Print Format: F2
Write Format: F2

S_AP13 2nd Tuesday Start AM/PM 209
Print Format: A1
Write Format: A1

FNHR_13 2st Tuesday Finish Hour 210
Print Format: F2
Write Format: F2

FNMN_13 2st Tuesday Finish Minute 211
Print Format: F2
Write Format: F2

F_AP13 2nd Tuesday Finish AM/PM 212
Print Format: A1
Write Format: A1

WAT_13 2nd Tuesday Percent Used Engine 213
Print Format: F3
Write Format: F3

OCEAN_13 2nd Tuesday Pacific Ocean 214
Print Format: F1
Write Format: F1

BAY_13 2nd Tuesday SF/SP Bay 215
Print Format: F1
Write Format: F1

DELTA_13 2nd Tuesday Delta/Suisun Bay 216
Print Format: F1
Write Format: F1

SD_13 2nd Tuesday San Diego/Mission Bay 217
Print Format: F1
Write Format: F1

PERRIS13 2nd Tuesday Lake Perris 218
Print Format: F1
Write Format: F1

M14_1 2nd Monday Column 1 County Codes 219
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco

27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

M14_2 2nd Monday Column 2 County Codes 220
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera

15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

M14_3 2nd Monday Column 3 County Codes 221
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama
39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern

47 Kings
48 Los Angeles
49 Monterey
50 Orange
51 Riverside
52 San Benito
53 San Bernardino
54 San Diego
55 San Luis Obispo
56 Santa Barbara
57 Tulare
58 Ventura

STHR_14 2st Monday Start Hour 222
Print Format: F2
Write Format: F2

STMN_14 2st Monday Start Minute 223
Print Format: F2
Write Format: F2

S_AP14 2nd Monday Start AM/PM 224
Print Format: A1
Write Format: A1

FNHR_14 2st Monday Finish Hour 225
Print Format: F2
Write Format: F2

FNMN_14 2st Monday Finish Minute 226
Print Format: F2
Write Format: F2

F_AP14 2nd Monday Finish AM/PM 227
Print Format: A1
Write Format: A1

WAT_14 2nd Monday Percent Used Engine 228
Print Format: F3
Write Format: F3

OCEAN_14 2nd Monday Pacific Ocean 229
Print Format: F1
Write Format: F1

BAY_14 2nd Monday SF/SP Bay 230
Print Format: F1
Write Format: F1

DELTA_14 2nd Monday Delta/Suisun Bay 231
Print Format: F1
Write Format: F1

SD_14 2nd Monday San Diego/Mission Bay 232
Print Format: F1
Write Format: F1

PERRIS14 2nd Monday Lake Perris 233
Print Format: F1
Write Format: F1

Q12 County of Residence 234
Print Format: F2
Write Format: F2

Value	Label
1	Alameda
2	Alpine
3	Amador
4	Butte
5	Calaveras
6	Colusa
7	Contra Costa
8	Del Norte
9	El Dorado
10	Glenn
11	Humboldt
12	Lake
13	Lassen
14	Madera
15	Marin
16	Mariposa
17	Mendocino
18	Merced
19	Modoc
20	Mono
21	Napa
22	Nevada
23	Placer
24	Plumas
25	Sacramento
26	San Francisco
27	San Joaquin
28	San Mateo
29	Santa Clara
30	Santa Cruz
31	Shasta
32	Sierra
33	Siskiyou
34	Solano
35	Sonoma
36	Stanislaus
37	Sutter
38	Tehama

39	Trinity
40	Tuolumne
41	Yolo
42	Yuba
43	Fresno
44	Imperial
45	Inyo
46	Kern
47	Kings
48	Los Angeles
49	Monterey
50	Orange
51	Riverside
52	San Benito
53	San Bernardino
54	San Diego
55	San Luis Obispo
56	Santa Barbara
57	Tulare
58	Ventura

Q12_OUT Residence Out of CA 235
Print Format: F1
Write Format: F1

Q7_DATE Today's Date 236
Print Format: DATE9
Write Format: DATE9

INT8 8 day interval 237
Print Format: DATE11
Write Format: DATE11

SEASON 238
Print Format: F8
Write Format: F8

Value	Label
1	Ozone
2	Winter

PEAK Peak Season 239
Print Format: F8
Write Format: F8

Value	Label
1	Yes
2	No

Q7MON 240
Print Format: F2
Write Format: F2

INT8MON 241
Print Format: F2
Write Format: F2

FUEL (DMV database) 242
Print Format: F1
Write Format: F1

Value	Label
1	Gas
2	Diesel
3	U
4	Other

PROPR 243
Print Format: F1
Write Format: F1

WTVAR Weight Variable 244
Print Format: F8.2
Write Format: F8.2

Q2_ORG Describe Engine 245
Print Format: F1
Write Format: F1

Value	Label
1	2-Stroke
2	4-Stroke
3	Diesel

Q3_ORG Type of Engine 246
Print Format: F1
Write Format: F1

Value	Label
1	Otuboard
2	In-Outboard
3	Inboard
4	Inboard Jet
5	PWC
6	Other

Appendix D

NON-RESPONDER STUDY QUESTIONNAIRE

ARB NON-RESPONSE SURVEY

INTRO

Hello, may I speak with _____ ?

(PRESS "1" TO CONTINUE)

Q1

My name is _____. I'm part of a team of researchers doing a study for the State of California Air Resources Board and a national association of boat manufacturers. We are not selling anything, this is a research study about boat use in California which we are doing to help plan for the next generation of marine engines.

1. OWNER REACHED AT THIS NUMBER - AVAILABLE NOW
2. OWNER AT THIS NUMBER - NOT AVAILABLE NOW - SET CALLBACK
3. NO SUCH PERSON AT THIS NUMBER
4. PERSON IS DECEASED

Q3

Your name was randomly selected from among registered boat owners. Do you remember receiving a questionnaire sent to you in the mail this past summer? It was about your registered boat or watercraft and it included a color map of California?

1. YES, I REMEMBER
2. NO, DO NOT REMEMBER
3. NO, NEVER RECEIVED IT
4. YES, I SENT IT BACK! - TERM
8. DON'T REMEMBER
9. REFUSES TO ANSWER

Q4

I am calling the boat owners who, for whatever reason, either did not return their questionnaire or perhaps did not receive it. I need to ask you a few very quick questions about your registered boat or watercraft. This will allow your answers to be included in the final results and make the findings more representative of California boat owners.

1. OK, PROCEED
2. REFUSES - TERMINATE INTERVIEW

Q5

The boat or watercraft I am referring to is registered with the Dept. of Motor Vehicles, it is a:

FOOT

(VESSEL TYPE)

(TYPE MOTOR)

with the registration number:

1 OK, CONTINUE
2 WRONG BOAT - TERM
3 BOAT NO LONGER HAS AN ENGINE - TERM

Q6

Did you own this boat during the:

***** two weeks of ****** of this year?

1 YES, CONTINUE
2 NO, TERMINATE

Q7

To the best of your recollection, did you use your boat at any time during the

***** two weeks of ****** of this year.

Please take a moment to try and remember if you used your boat then.

1. YES
2. NO
8. DON'T REMEMBER
9. REFUSES TO ANSWER

Q8

(ASK ONLY IF FUEL TYPE IS GASOLINE)
Is the primary engine on this boat a 2-stroke or 4-stroke engine?

1. 2-STROKE
2. 4-STROKE
8. DON'T KNOW
9. REFUSED

Q9

To the best of your knowledge, what is the horsepower of your primary engine? (BEST ESTIMATE IS OKAY)

(INTERVIEWER: HP USUALLY RANGES FROM 3 TO 220 HP)

1. ENTER HORSEPOWER: HP
8. DON'T KNOW
9. REFUSED

q: Later

Those are all questions I have. Thank you very much for time this evening. Good bye.

PRESS ANY KEY TO END

Appendix E

SUMMARY OF THE DATA WEIGHTS

Population Weights (We)

The population constant is a multiplier to be applied to the weighted data. This results in a number representing the number of registered pleasure craft in California for a specific propulsion type and fuel type. It is the proportion of diesel and gasoline boats of a given propulsion type within a specific region.

This weight is applied after the sample weights are used. Each case is first multiplied by its sample weights and then is multiplied by the population weights.

Example for North, Peak Season, Outboard, Gasoline boats:

Raw sample number : 579

Sample weight: 0.995896

Weighted number = 579 x 0.995896 = 576.62

DMV Frame / population number of outboard gasoline boats: 42,202

To obtain population weight divide the frame population by the weighted case:

42,202 / 576.62 = 73.188

To weight the cases up to the population multiply the weighted case by the population weight:

576.62 * 73.188 = 42,201.7

WINTER SEASON

	Frame Counts			Population Weights		Results of Weighting *		
	North			North (We)		North		
	Diesel	Gasoline		Diesel	Gasoline	Diesel	Gasoline	
Outboard	0	42,202	42,202	0.000	866.059	0	42,202	42,202
In/Out	0	14,134	14,134	0.000	822.341	0	14,134	14,134
Inboard	67	2,779	2,846	0.000	758.772	**67**	2,779	2,846
Jet	0	5,252	5,252	0.000	769.852	0	5,252	5,252
Other	0	1,896	1,896	0.000	2502.390	0	1,896	1,896
Aux/Sail	174	554	728	0.000	0.000	**174**	**554**	728
Total	**242**	**66,816**	**67,058**					
						241	66,817	67,058
	Central			Central		Central		
	Diesel	Gasoline		Diesel	Gasoline	Diesel	Gasoline	
Outboard	0	153,773	153,773	0.000	4076.412	0	153,773	153,773
In/Out	167	85,927	86,094	0.000	3798.220	**167**	85,927	86,094
Inboard	2,060	21,333	23,393	0.000	3627.087	**2,060**	21,333	23,393
Jet	0	37,120	37,120	0.000	3660.175	0	37,120	37,120
Other	0	8,434	8,434	0.000	0.000	0	8,434	8,434
Aux/Sail	4,472	5,346	9,818	4409.699	4409.699	4,472	5,346	9,818
Total	**6,699**	**311,933**	**318,632**					
						6,699	311,933	318,632
	South			South		South		
	Diesel	Gasoline		Diesel	Gasoline	Diesel	Gasoline	
Outboard	102	142,042	142,144	457.437	457.437	102	142,042	142,144
In/Out	452	77,979	78,431	447.379	447.379	452	77,979	78,431
Inboard	3,582	21,444	25,026	451.887	451.887	3,582	21,444	25,026
Jet	0	94,544	94,544	0.000	416.617	0	94,544	94,544
Other	399	6,911	7,310	992.527	992.527	399	6,911	7,310
Aux/Sail	7,649	7,803	15,452	527.931	527.931	7,649	7,803	15,452
Total	**12,185**	**350,722**	**362,907**					
						12,185	350,722	362,907

* No Data for the cells printed in Center Bold

ARB Boat Survey Data Weights *

PEAK SEASON

Weights sample data to DMV sample frame by region

				Population
	North Region	(Wp)		Constant
		Fuel = 1	Fuel = 2	
Q3		*Gasoline*	*Diesel*	56.21343
1	*Outboard*	0.995896		
2	*In/Out*	0.924480		
3	*Inboard*	1.140390	0.524786	
4	*Jet*	1.368272		
6	*Other*	2.988609		
8	*Aux/Sail*	0.398691	0.426944	
	Central Region			Population
		Fuel = 1	Fuel = 2	Constant
Q3		*Gasoline*	*Diesel*	283.4168
1	*Outboard*	0.974642		
2	*In/Out*	0.922048		
3	*Inboard*	1.389386	1.095559	
4	*Jet*	1.397487		
6	*Other*	1.529549		
8	*Aux/Sail*	0.467744	0.617836	
	South Region			Population
		Fuel = 1	Fuel = 2	Constant
Q3		*Gasoline*	*Diesel*	433.6463
1	*Outboard*	1.094893		
2	*In/Out*	0.863750	0.927023	
3	*Inboard*	1.359547	0.519021	
4	*Jet*	1.106623		
6	*Other*	3.191541		
8	*Aux/Sail*	0.467249	0.491952	

* Weights were not estimated in the darkened areas above since survey data were not received for these categories.

ARB Boat Survey Data Weights *

OZONE SEASON

Weights sample data to DMV sample frame by region

					Population
	North Region	(Wp)			Constant
		Fuel = 1		Fuel = 2	
Q3		*Gasoline*		*Diesel*	44.72845
1	*Outboard*	0.995445			
2	*In/Out*	0.932880			
3	*Inboard*	1.183956		0.659536	
4	*Jet*	1.268209			
6	*Other*	3.755999			
8	*Aux/Sail*	0.387185		0.536571	
	Central Region				Population
		Fuel = 1		Fuel = 2	Constant
Q3		*Gasoline*		*Diesel*	227.2242
1	*Outboard*	0.979533			
2	*In/Out*	0.920057		0.633735	
3	*Inboard*	1.369615		0.819895	
4	*Jet*	1.368404			
6	*Other*	1.907807			
8	*Aux/Sail*	0.500072		0.636605	
	South Region				Population
		Fuel = 1		Fuel = 2	Constant
Q3		*Gasoline*		*Diesel*	290.146
1	*Outboard*	1.122599			
2	*In/Out*	0.835051		0.692755	
3	*Inboard*	1.250432		0.434402	
4	*Jet*	1.186794			
6	*Other*	4.770013			
8	*Aux/Sail*	0.397096		0.451184	

* Weights were not estimated in the darkened areas above since survey data were not received for these categories.

ARB Boat Survey Data Weights *

WINTER SEASON

Weights sample data to DMV sample frame by region

					Population
	North Region		(Wp)		Constant
			Fuel = 1	Fuel = 2	
Q3			*Gasoline*	*Diesel*	665.1923
1	*Outboard*		1.188506		
2	*In/Out*		0.747283		
3	*Inboard*		3.662099		
4	*Jet*		0.568507		
6	*Other*		0.757676		
8	*Aux/Sail*				
	Central Region				Population
			Fuel = 1	Fuel = 2	Constant
Q3			*Gasoline*	*Diesel*	3280.55
1	*Outboard*		1.077790		
2	*In/Out*		0.942626		
3	*Inboard*		1.176327		
4	*Jet*		0.921963		
6	*Other*				
8	*Aux/Sail*		0.303074	1.014159	
	South Region				Population
			Fuel = 1	Fuel = 2	Constant
Q3			*Gasoline*	*Diesel*	397.554
1	*Outboard*		1.112962	0.223869	
2	*In/Out*		0.893850	0.505592	
3	*Inboard*		1.103609	0.792597	
4	*Jet*		1.026845		
6	*Other*		1.740644	0.402461	
8	*Aux/Sail*		0.527871	0.689933	

* Weights were not estimated in the darkened areas above since survey data were not received for these categories.

Appendix F

EMISSION FACTORS

MERCURY MARINE
A BRUNSWICK COMPANY

W6250 WEST PIONEER ROAD
P.O. BOX 1939
FOND DU LAC, WI 54936-1939 U.S.A.

PHONE (414) 929-5000 • FAX (414) 929-5060

September 13, 1991

FAX TO: Ken Zerafa, EPA

FAX NO: (313) 668-4368

FAX FROM: Ted Morgan, Mercury Marine

FAX NO: (414) 929-5842

SUBJECT: Emission Data for Recreational Marine Engines

PAGE 1 OF 3 PAGES

Dear Ken,

Please find enclosed the emission data which I promised to send you at our meeting last week.

As I pointed out in the meeting, the industry initially collected only specific emissions on a power basis. Unfortunately, it has not always been easy to go back to the original data and obtain specific emissions on a fuel basis, and in some cases more recent data had to be used. The following table is my best attempt to summarize the data. In some cases there are some minor discrepancies between the power based and fuel based numbers, but where the discrepancies are significant, an attempt has been made to identify the discrepancies by separating the data. Despite the discrepancies, we think the data is by far the most accurate data available for recreational marine engines. Data was provided by Honda, Mercury Marine, Outboard Marine Corporation, Volvo, and Yamaha.

I would be grateful if you would give copies of the tables to John German, Kevin Green and whoever else would like a copy.

Regards,

MERCURY MARINE

E.J. Morgan
Director, Advanced Engineering

cs/9MKZ

NMMA EMISSION FACTORS

FOUR-STROKE GASOLINE ENGINES

HORSEPOWER	POWER BASED EMISSIONS (g/kWh)			FUEL BASED EMISSIONS (pounds/gal)		
	HC	CO	NOx	HC	CO	NOx
10	18.5	291	4.4	0.220	3.47	0.052
35	14.0	241	10.2	0.199	3.43	0.145
45	11.1	171	10.9	0.181	2.79	0.178
115				0.095	3.39	0.079
120	8.6	200	4.3	0.140	3.26	0.070
150				0.102	3.41	0.090
165	15.4	184	6.8	0.253	3.03	0.112
200	5.7	123	6.7	0.094	2.03	0.111
220				0.077	4.29	0.068

DIESEL ENGINES

HORSEPOWER	POWER BASED EMISSIONS (g/kWh)			FUEL BASED EMISSIONS (pounds/gal)		
	HC	CO	NOx	HC	CO	NOx
27.5	7.2	15.0	14.4			
27.5				0.27	0.48	0.36
143	3.0	4.6	17.5			
143				0.22	0.33	0.36
177	1.1	1.4	12.2			
177				0.06	0.07	0.41
197	2.5	4.0	16.4			
197				0.20	0.29	0.38

NMMA EMISSION FACTORS

TWO-STROKE GASOLINE ENGINES

HORSEPOWER	POWER BASED EMISSIONS (g/kWh)			FUEL BASED EMISSIONS (pounds/gal)		
	HC	CO	NOx	HC	CO	NOx
3	384	494	1.0	2.16	2.77	0.006
4	455	618	0.4	2.02	2.89	0.008
8	255	392	1.0	1.90	3.50	0.010
8	310	388	2.0	2.03	2.55	0.013
10	196	413	1.0	1.47	3.11	0.008
10	322	369	1.4			
10	293	442	1.3	2.00	3.02	0.009
15	225	482	0.7	1.32	4.14	0.015
25	197	232	4.4	1.98	2.33	0.044
25	174	282	1.8	1.90	3.08	0.019
30	161	260	1.3	1.51	3.96	0.018
50	186	282	0.9	1.36	2.84	0.025
50	141	263	2.2	1.67	3.11	0.026
70	137	206	4.9	1.58	2.81	0.029
75	135	189	2.8	1.64	2.30	0.034
90	150	346	2.5	1.54	3.55	0.026
115	139	363	0.3	1.43	3.70	0.014
130	141	313	3.8	1.49	3.31	0.040
135	161	307	0.6	1.71	3.27	0.006
140	175	403	0.8	1.83	3.40	0.013
150	140	358	1.1	1.59	4.30	0.011
150	145	249	2.2	1.60	2.74	0.024
175				1.45	4.19	0.013
200	143	270	2.0	1.61	3.05	0.023
220	125	318	1.8	1.33	3.37	0.019
225	190	258	0.6	1.65	3.67	0.012

SAMPLE CALCULATION: EMISSION FACTORS

Let us consider 2-stroke engines – CO & engine size range 4-9 hp.

There are 3 data points available to estimate the average emission factor for this range. They are:

Emission Factors

hp	g/kWh	lb/gal
4	618	2.89
8	392	3.50
8	388	2.55

Taking a simple arithmetic mean yields the average emission factors:

$$\textit{Emission factor } (g/kWh) = \frac{(618 + 392 + 388)}{3} = 466$$

$$\textit{Emission factor } (lb/gal) = \frac{(2.89 + 3.50 + 2.55)}{3} = 2.98$$

Estimation of Diesel Emission Factors for ARB PC Study

HP	TOG g/kWh	TOG lb/1000 gal	NOx g/kWh	NOx lb/1000 gal	CO g/kWh	CO lb/1000 gal	PM g/kWh	PM lb/1000 gal	SOx g/kWh	SOx lb/1000 gal	BSFC g/kWh
27.5	7.2	270	14.4	360.0	15.0	480	0.45	24.0	0.13	7.1	160
143	3.0	220	17.5	360.0	4.6	830	0.45	24.0	0.13	7.1	160
177	1.1	60	12.2	410.0	1.4	70	0.45	24.0	0.13	7.1	160
197	2.5	200	16.4	380.0	4.0	290	0.45	24.0	0.13	7.1	160
average	3.5	187.5	15.1	377.5	6.3	417.5	0.5	24.0	0.1	7.1	160
g/hph	2.6		11.3		4.7		0.34		0.10		

Crank, Evap, Refueling, and PM Emission Factors – NEVES Diesel vessel with inboard, outboard, and sterndrive engine
HC, NOx, CO, BSFC NMMA data
SOx estimated from sulfur content of fuel (500 ppm wt – R. Grant)

Estimation of PWC Emission Factors for the ARB PC Study

HP	TOG g/kWh	TOG lb/1000 gal	NOx g/kWh	NOx lb/1000 gal	CO g/kWh	CO lb/1000 gal	PM g/kWh	PM lb/1000 gal	SOx g/Kwh	SOx lb/1000 gal	BSFC g/Kwh
36.6	186.6	2,132	0.9	10.3	381.2	4,356	9.3	106	0.17	1.9	540
46.7	196.9	2,250	1	6.9	412.1	4,709	9.3	106	0.17	1.9	540
49.4	146.8	1,677	1	8.0	330.0	3,771	9.3	106	0.17	1.9	540
49.6	215.5	2,463	2	18.3	338.8	3,871	9.3	106	0.17	1.9	540
54.4	189.7	2,168	1	12.6	336.8	3,849	9.3	106	0.17	1.9	540
56.3	190.7	2,179	1.7	19.4	286.2	3,270	9.3	106	0.17	1.9	540
58.1	236.4	2,701	1	6.9	416.8	4,763	9.3	106	0.17	1.9	540
62.1	163.2	1,865	0.9	10.3	382.0	4,365	9.3	106	0.17	1.9	540
69.7	215.9	2,467	2	22.9	290.9	3,324	9.3	106	0.17	1.9	540
Average	193.5	2,211	1.1	12.8	352.8	4,031	9.3	106	0.17	1.9	540
g/hph	144.4		0.84		263.3		6.9		0.12		

Crank, Evap, Refueling, and PM Emission Factors – NEVES 2–stroke Vessel with Outboard data
TOG, NOx, CO, BSFC NMMA data
SOx estimated from sulfur content of fuel (151 ppm wt – R. Grant)

Estimation of Average 2–Stroke Emission Factors by HP for ARB PC Study

HP	# of Pts	TOG g/kWh	TOG lb/1000 gal	NOx g/kWh	NOx lb/1000 gal	CO g/kWh	CO lb/1000 gal	PM g/kWh	PM lb/1000 gal	SOx g/kWh	SOx lb/1000 gal	BSFC g/kWh
< 4	1	384	2,160	1.0	6.0	494.0	2,770	9.5	106	0.17	1.9	1100
4–9	3	340	1,983	1.1	10.3	466.0	2,980	9.5	106	0.17	1.9	983
10–29	5	181	1,640	2.1	19.0	370.2	3,136	9.5	106	0.17	1.9	724
30–49	1	161	1,510	1.3	18.0	260.0	3,960	9.5	106	0.17	1.9	405
50–74	3	155	1,537	2.7	26.7	250.3	2,765	9.5	106	0.17	1.9	529
75–99	2	143	1,590	2.7	30.0	267.5	2,925	9.5	106	0.17	1.9	554
100–14	4	154	1,615	1.4	18.3	346.5	3,420	9.5	106	0.17	1.9	625
150–19	2	143	1,595	1.7	17.5	303.5	3,520	9.5	106	0.17	1.9	538
≥ 200	3	153	1,530	1.5	18.0	282.0	3,363	9.5	106	0.17	1.9	521
Total	24										Average	664

Crank, Evap, Refueling, and PM Emission Factors – NEVES 2–stroke Vessel with Outboard data
TOG, NOx, CO, BSFC NMMA data
SOx estimated from sulfur content of fuel (151 ppm wt – R. Grant)

PM and SOx factors converted from lb/1000 gal to g/kWh using average BSFC

The engine horsepower ranges listed above are defined by NMMA as "NMMA Power Categories." These categories are defined based on the types of engine being sold and have been used historically to track 2-stoke engine sales.

Estimation of 4–Stroke Emission Factors for ARB PC Study

HP	TOG g/kWh	TOG lb/1000 gal	NOx g/kWh	NOx lb/1000 gal	CO g/kWh	CO lb/1000 gal	PM g/kWh	PM lb/1000 gal	SOx g/kWh	SOx lb/1000 gal	BSFC g/kWh
10	18.5	220	4.4	52	291	3470	0.09	1.6	0.11	1.9	517
35	14.0	199	10.2	145	241	3430	0.09	1.6	0.11	1.9	434
34	11.1	181	10.9	178	171	2790	0.09	1.6	0.11	1.9	378
115	–	95	–	79	–	3390	–	–	–	–	–
120	8.6	140	4.3	70	200	3260	0.09	1.6	0.11	1.9	379
150	–	102	–	90	–	3410	–	–	–	–	–
165	15.4	253	6.8	112	184	3030	0.09	1.6	0.11	1.9	375
200	5.7	94	6.7	111	123	2030	0.09	1.6	0.11	1.9	374
220	–	77	–	68	–	4290	–	–	–	–	–
Avg	12.2	151.2	7.2	100.6	201.7	3233	0.09	1.6	0.11	1.9	410
g/hph	9.1		5.4		150.5		0.07		0.08		

Crank, Evap, Refueling, and PM Emission Factors – NEVES 4–stroke stern and inboard data
TOG, NOx, CO, BSFC NMMA data
SOx estimated from sulfur content of fuel (151 ppm wt – R. Grant)

PM and SOx converted from lb/1000 gal to g/kWh with average BSFC

Appendix G

DESCRIPTION OF PCEM (PLEASURE CRAFT EMISSION MODEL)

The Pleasure Craft Emissions Model (PCEM) produces a county-level emissions inventory for California pleasure craft. The state is divided into geographical regions, and annual fuel consumption in each region is supplied for various propulsion/engine types. For each propulsion/engine type, an emission factor is applied to generate a region-wide emissions level. The region-wide emission rate is then resolved to the county level based on a region to county allocation factor. The result is an annual emissions inventory for pleasure craft vessels at the county level. PCEM will also apply an adjustment factor to the annual average day emissions to produce an average daily inventory for the ozone season.

The input data to PCEM are provided in a set of files which incorporate a packet data file structure. Distinct data items are contained in data packets, which are identified by a packet keyword and terminated by the END keyword. Packet keywords are surrounded by forward slashes (/) and can appear in upper, lower, or mixed case. Any number of lines of text or comments can appear between packets in a data file, but only valid data must appear between the packet identifier and the END keyword. A packet may be inactivated by putting any non-blank character at the beginning of the line containing the packet identifier. For example, the following line would not be treated by PCEM as indicating the beginning of a packet:

; /ALLOCATION/

Therefore, this line, as well as all succeeding lines, would be treated as comments or notes. This allows the user to easily incorporate different model scenarios without requiring a multitude of different input files.

The main data structure in PCEM is a matrix of propulsion/engine types. Each propulsion/engine type represents a class of pleasure craft vessels. Table G-1 shows the valid propulsion and engine types. PCEM processes data supplied in any combination of these propulsion and engine types. The propulsion and engine names can appear on the data records in upper, lower, or mixed case.

TABLE G-1. Valid propulsion and engine types.

Propulsion Type	
OUTBOARD	Vessels with Outboard Engines
INBOARD/OUTBOARD	Vessels with Inboard/Outboard Engines
INBOARD	Vessels with Inboard Engines
INBOARD JET	Vessels with Inboard Jet Engines
OTHER	Unspecified Vessels
AUXILIARY SAIL	Sailboats with Auxiliary Engines
PWC	Personal Water Craft

Continued

TABLE G-1. Concluded.

Engine Type	
G2	2-stroke gasoline
G4	4-stroke gasoline
D	diesel
PWC	2-stroke gasoline in personal water craft

The output reports produced by **PCEM** show county level emissions in each of the propulsion/engine types for eight pollutant categories: NO_x, CO, SO_x, PM, Exhaust TOG, Crankcase TOG, Evaporative TOG, and Refueling TOG. The county names are supplied by the user in the /ALLOCATION/ packet in the county allocation file. This open-ended structure allows the user the flexibility of producing an inventory by region or air basin. For example, to generate a regional inventory, the user can simply allocate all fuel consumption in the North region to a county called "Northern Region". **PCEM** also produces a table of average emission factors per 1000 gallons of fuel usage for each of the exhaust pollutants. A fourth file, provided for use as model input or for post-processing, is an ASCII file containing emissions levels by county and propulsion/engine type.

The syntax for the **PCEM** command is **PCEM** [*filename*], where *filename* is the name of the optional control file. If provided, this file should contain names of the input and output files to be used. If the control file is not listed, the user is prompted for the input and output filenames. The format for the control file is given in Table G-2.

TABLE G-2. Control file.

Line	Variable	Column	Type	Description
1	(not used)	1-20		file description
1	FULFL	21-110	C	filename for fuel consumption file
2	(not used)	1-20		file description
2	ALOFL	21-110	C	filename for allocation file
3	(not used)	1-20		file description
3	FACFL	21-110	C	filename for emission factors file
4	(not used)	1-20		file description
4	ANNFL	21-110	C	output filename for annual average day emissions report
5	(not used)	1-20		file description
5	OZNFL	21-110	C	output filename for ozone average day emissions report
6	(not used)	1-20		file description
6	AVGFL	21-110	C	output filename for average emission factor report
7	(not used)	1-20		
7	ASCFL	21-110	C	output filename for raw ASCII output

Input files to PCEM.

PCEM requires three input files: the fuel consumption file, the county allocation file, and the emission factors file.

Fuel Consumption File.

The fuel consumption file contains the following nine packets: /NORTH-FUEL/, /CENTRAL-FUEL/, /SOUTH-FUEL/, /NORTH-POP/, /CENTRAL-POP/, /SOUTH-POP/, /RENTAL/, /DOCUMENTED/, and /OZONE/.

Fuel consumption packets: /NORTH-FUEL/, /CENTRAL-FUEL/, /SOUTH-FUEL/

These packets contain the annual fuel usage, in 1000 gallons, for the region specified in the packet identifier. The fuel consumption values, which are expected to be regional totals, are given by propulsion/engine type and are broken down by horsepower category. For purposes of applying emission factors, the horsepower of each vessel in the group is assumed to be the average of the beginning and ending horsepower supplied on the record. If a propulsion/engine type is not listed in the packet, the fuel consumption is assumed to be zero and the propulsion/engine type is not included in the reports. This allows the user to generate an inventory for a selected subset of propulsion/engine types. For example, to generate an inventory for gasoline engines only, the user can merely exclude all diesel vessels from the packet. Table G-3 lists the data items found in these packets and Exhibit G-1 shows some sample packets.

TABLE G-3. Annual fuel consumption packets:

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /NORTH-FUEL/, /CENTRAL-FUEL/ or /SOUTH-FUEL/
2+	PROP	1-20	C	propulsion type
	FUEL	21-23	C	engine type
	BEGHPC	26-30	R	beginning horsepower
	ENDHPC	31-35	R	ending horsepower
	FULVAL	35-50	R	annual fuel consumption (1000 gallons)
3	KEYEND	1-20		packet terminator - /END/

Vessel population packets: /NORTH-POP/, /CENTRAL-POP/, /SOUTH-POP/

These packets contain the vessel population for each propulsion/engine type in the region as specified by the packet identifier. These data are used to report the number of vessels boating in each region. Data need not be supplied for each propulsion/engine type but should be included for each type specified in the fuel consumption packets. Table G-4 shows the variables included in this packet. Exhibit G-2 shows a sample of the population packets.

TABLE G-4. Vessel population packets.

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /NORTH-POP/, /CENTRAL-POP/ or /SOUTH-POP/
2+	PROP	1-20	C	propulsion type
	FUEL	21-23	C	engine type
	POPVAL	35-50	R	vessel population boating in region
3	KEYEND	1-20		packet terminator - /END/

Rental packet: /RENTAL/

This packet contains the fraction of the vessel population attributed to rental boats. This value is used to adjust the fuel consumption to account for rental boats. For example, a value of 0.04 indicates that rental boats account for 4% of the state total recreational vessel use. PCEM will then multiply the fuel consumption in the fuel consumption packets by 1.0 + (0.04/0.96). Thus, a fuel consumption value of 96 will be increased to 100, yielding a rental boat contribution of 4%. Notice that supplying a value of zero will produce an inventory that does not include rental boats. Table G-5 shows the format of this packet and Exhibit G-3 shows a sample packet.

TABLE G-5. Rental boat packet.

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /RENTAL/
2	RNTADJ	1-10	R	fraction of rental boats in state total
3	KEYEND	1-20		packet terminator - /END/

Documented Vessels packet: /DOCUMENTED/

This packet contains the fractions of the vessel population attributed to vessels documented with the Coast Guard. These data are used to adjust the fuel consumption to account documented vessels. Since these vessels are usually large, there is a disproportionate number of boats with 4-stroke gasoline and diesel engines. Therefore, factors are supplied for each engine type. The application of these factors is similar to that of the /RENTAL/ packet. If an engine type is not listed, the factor is assumed to be zero and no adjustment is made to fuel consumption for boats of that engine type. As with the /RENTAL/ packet the user may produce an inventory without documented vessels by supplying a value of zero for all engine types. Table G-6 gives the format of the /DOCUMENTED/ packet while a sample packet can be seen in Exhibit G-3.

TABLE G-6. Documented vessel packet.

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /DOCUMENTED/
2+	ENGINE	1-3	C	engine type
	DOCADJ	6-16	R	fraction of documented vessels in state total
3	KEYEND	1-20		packet terminator - /END/

Ozone Season Adjustment packet: /OZONE/

This packet contains the factor to adjust annual average activity to ozone season average activity. This should reflect the increase in boating activity during the warmer months of the ozone season when most boating takes place. The factor is applied to fuel consumption to generate an average day inventory for the ozone season. Table G-7 lists the format of this packet. A sample packet can be found in Exhibit G-3.

TABLE G-7. Ozone season adjustment packet.

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /OZONE/
2	OZNADJ	1-10	R	Ozone adjustment factor
3	KEYEND	1-20		packet terminator - /END/

Allocation File.

The county allocation file contains only one packet: /ALLOCATION/

Allocation packet: /ALLOCATION/

This packet contains the fraction of regional fuel consumption that is consumed in each county. Note that these fractions represent where boating actually occurs, rather than where boaters reside. For each county, both the region and the fraction are specified. This allows the user to create regions that may not correspond to the current specifications. The acceptable region names are North, Central and South, but can occur in upper, lower or mixed case. Table G-7 gives the format for the /ALLOCATION/ packet. A sample packet can be seen in Exhibit G-4.

TABLE G-8. /ALLOCATION/

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /ALLOCATION/
2+	CTYNAM	1-20	C	county name
	REGNAM	21-30	C	region name - NORTH, CENTRAL, or SOUTH
	ALOGS2	31-40	R	fraction of regional total consumed by 2-stroke (G2 and PWC) vessels in the county
	ALOOTH	41-50	R	fraction of regional total consumed by other vessels (G4 and D) in county
3	KEYEND	1-20		packet terminator - /END/

Emission Factors File.

The emission factors file contains seven packets: /GAS2/, /GAS4/, /DIESEL/, /PWC/, /EVAP/, and /DETERIORATION/. These packets contain the emission factors data for the various propulsion types and engine types. The exhaust emission factor packets contain emission factors by horsepower category while the evaporative emission factors are supplied by propulsion/engine type.

Exhaust emission factor packets. /GAS2/, /GAS4/, /DIESEL/, and /PWC/

These packets contain the exhaust emission factors for the engine type specified in the packet identifier. Although each packet allows for emission factors to be supplied for a number of horsepower categories, current data only warrants stratification by horsepower for the 2-stroke gasoline (GAS2) vessels. Emission factors must be supplied for NO_x, CO, SO_x, PM and Exhaust TOG. Table G-9 lists the format of the exhaust emission factor packets. An example packet is shown in Exhibit G-5.

TABLE G-9. Exhaust emission factor packets:

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /GAS2/, /GAS4/, /DIESEL/ or /SOUTH-FUEL/
2+	BEGHPC	1-5	R	beginning horsepower
	ENDHPC	6-10	R	ending horsepower
	FACNOX	11-20	R	NO_x exhaust emission factor (lb./1000 gal.)
	FACCO	21-30	R	CO exhaust emission factor (lb./1000 gal.)
	FACSOX	31-40	R	SO_x exhaust emission factor (lb./1000 gal.)
	FACTOG	41-50	R	TOG exhaust emission factor (lb./1000 gal.)
	FACPM	51-60	R	PM exhaust emission factor (lb./1000 gal.)
3	KEYEND	1-20		packet terminator - /END/

Evaporative emission factor packet. /EVAP/

This packet contains evaporative emission factors for all engine types. Since propulsion types have much different evaporative emission rates (for example, Inboard v. Outboard) the evaporative emissions factors are supplied by propulsion/engine type. The evaporative pollutant categories are TOG crankcase, TOG evaporative, and TOG refueling. Table G-10 shows the data supplied in this packet. A sample packet can be seen in Exhibit G-6.

TABLE G-10. Evaporative emission factor packet:

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /EVAP/
2+	PROP	1-20	C	propulsion type
	FUEL	21-23	C	engine type
	FACCRN	26-35	R	TOG crankcase emission factor (lb./1000 gal.)
	FACEVP	21-30	R	TOG evaporative emission factor (lb./hour)
	FACREF	31-40	R	TOG refueling emission factor (lb./1000 gal.)
3	KEYEND	1-20		packet terminator - /END/

In-use deterioration packet. /DETERIORATION/

The data in this packet are used to adjust exhaust emission factors for in-use, or deterioration effects. Each record lists a pollutant name, an engine type and a deterioration factor. Not all pollutant/engine types must be provided. If any are missing the deterioration rate is assumed to be 1.0 and no adjustment is made. Valid pollutant names are NO_x, CO, SO_x, PM, and TOG and can be listed in upper, lower, or mixed case. The format for this packet can be found in Table G-11. Exhibit G-6 includes a sample packet.

TABLE G-11. In-use adjustment factor packet:

Line	Variable	Column	Type	Description
1	KEYWRD	1-20		packet identifier - /DETERIORATION/
2+	FUEL	1-3	C	engine type
	FUEL	4-8	C	pollutant name - NOX, CO, SOX, PM, or TOG
	DETRAT	9-18	R	deterioration factor
3	KEYEND	1-20		packet terminator - /END/

Output Files.

PCEM generates four output files. Three contain formatted reports of emissions and emission rates. The fourth is a straight ASCII file suitable for post-processing. The first output file, the annual average day emissions file, contains a report of fuel consumption, vessel population and annual average day emissions by county. Data is reported by propulsion/engine type. The second output file, the ozone average day emissions file, contains the same information as the annual average day file, except data is reported for the ozone season. The average emission factors file contains emission totals for each county as well as a county average emission factor for each of the exhaust pollutant categories. The last output file is a raw data file containing emissions for each county. This file is supplied for use in post-processing or as model input. Table G-12 gives the format for this file. The propulsion codes are specified in Table G-13.

TABLE G-12. Raw ASCII output file.

Line	Variable	Column	Type	Description
1+	COUNTY	1-20	C	County Name
	PROPCD	21-22	C	propulsion code (see Table G-13)
	FUELCD	23-24	C	engine type - G2, G4, or D
	FULVAL	25-34	R	annual fuel consumption (gallons/year)
	EMSNOX	35-44	R	annual NO_x exhaust emissions (tons/year)
	EMSCO	45-54	R	annual CO exhaust emissions (tons/year)
	EMSSOX	55-64	R	annual SO_x exhaust emissions (tons/year)
	EMSPM	65-74	R	annual PM exhaust emissions (tons/year)
	EMSTOG	75-84	R	annual TOG exhaust emissions (tons/year)
	EMSCRN	85-94	R	annual TOG crankcase emissions (tons/year)
	EMSEVP	95-104	R	annual TOG evaporative emissions (tons/year)
	EMSREF	105-114		annual TOG refueling emissions (tons/year)

TABLE G-13. Propulsion and engine Codes.

Code		Type
		Propulsion
O	OUTBOARD	Vessels with Outboard Engines
I	INBOARD/OUTBOARD	Vessels with Inboard/Outboard Engines
B	INBOARD	Vessels with Inboard Engines
J	INBOARD JET	Vessels with Inboard Jet Engines
O	OTHER	Unspecified Vessels
A	AUXILIARY SAIL	Sailboats with Auxiliary Engines
P	PWC	Personal Water Craft
		Engine
G2	G2	2-stroke gasoline (includes PWC)
G4	G4	4-stroke gasoline
D	D	diesel

```
-----------------------------------------------------------------------------
This packet contains the annual fuel consumption (in 1000 gal) for the North
region.

  Propulsion type  |  |   HP | HP |    Fuel Use  |
/NORTH-FUEL/
Auxiliary Sail      D        0   50        0.256262
Inboard             D       50  150         0.20250
Outboard            G2       0    4         33.6888
Auxiliary Sail      G2       0    4        0.219277
      .
      .
      .
Inboard             G4     250  500         171.639
Inboard/Outboard    G4     250  500         219.404
Inboard Jet         G4     500 9999         3.15837
PWC                 PWC      0 9999         136.392
/END/

-----------------------------------------------------------------------------
This packet contains the annual fuel consumption (in 1000 gal) for the Central
region.

  Propulsion type  |  |   HP | HP |    Fuel Use  |
/CENTRAL-FUEL/
Auxiliary Sail      D        0   50         155.298
Inboard             D      150  250         78.6493
Outboard            G2       0    4         30.2514
Auxiliary Sail      G2       0    4         44.9964
      .
      .
      .
Inboard             G4     250  500         1392.28
Inboard Jet         G4     250  500         2290.44
Inboard/Outboard    G4     250  500         3302.51
Outboard            G4     250  500         444.521
PWC                 PWC      0 9999         1273.69
/END/

-----------------------------------------------------------------------------
This packet contains the annual fuel consumption (in 1000 gal) for the South
region.

  Propulsion type  |  |   HP | HP |    Fuel Use  |
/SOUTH-FUEL/
Auxiliary Sail      D        0   50          355.19
Auxiliary Sail      D       50  150          140.57
Inboard             D       50  150         125.748
Inboard             D      150  250           440.8
Auxiliary Sail      G2       0    4         2.11048
Outboard            G2       0    4         743.107
      .
      .
      .
Inboard Jet         G4     250  500         1099.79
Inboard/Outboard    G4     250  500         5963.05
Inboard Jet         G4     500 9999         471.148
Inboard             G4     500 9999         72.2594
PWC                 PWC      0 9999         2387.94
/END/
```

EXHIBIT G-1

This packet contains the number of boats in each propulsion/fuel category for the North region.

Propulsion type		Population
/NORTH-POP/		
Inboard	D	67
Auxiliary Sail	D	174
Outboard	G2	40143
Other	G2	1896
Auxiliary Sail	G2	366
Outboard	G4	2059
Inboard/Outboard	G4	14134
Inboard	G4	2779
Inboard Jet	G4	3479
Auxiliary Sail	G4	188
PWC	PWC	1773
/END/		

This packet contains the number of boats in each propulsion/fuel category for the Central region.

Propulsion type		Population
/CENTRAL-POP/		
Inboard	D	2227
Auxiliary Sail	D	4472
Outboard	G2	146269
Other	G2	4554
Auxiliary Sail	G2	2887
Outboard	G4	7504
Inboard/Outboard	G4	85927
Inboard	G4	21333
Inboard Jet	G4	14917
Other	G4	3880
Auxiliary Sail	G4	2459
PWC	PWC	22203
/END/		

This packet contains the number of boats in each propulsion/fuel category for the South region.

Propulsion type		Population
/SOUTH-POP/		
Outboard	D	102
Inboard	D	4034
Other	D	399
Auxiliary Sail	D	7649
Outboard	G2	135110
Other	G2	6911
Auxiliary Sail	G2	4370
Outboard	G4	6931
Inboard/Outboard	G4	77979
Inboard	G4	21444
Inboard Jet	G4	28147
Auxiliary Sail	G4	3433
PWC	PWC	66397
/END/		

EXHIBIT G-2

```
-----------------------------------------------------------------------------
This packet contains the fraction of total state fuel usage attributed to
rental boats.  This fraction is used to adjust fuel usage to include rental
boats in the final inventory.

/RENTAL/
0.04
/END/


-----------------------------------------------------------------------------
This packet contains the fraction of total state 4-stroke gasoline fuel
usage attributed to undocumented vessels.  This fraction is used to adjust
fuel usage to include undocumented vessels in the final inventory.
Fractions are supplied by engine type.  No adjustment will be made to
engine types that are not listed in the packet.

Acceptable fuel engine are (in upper, lower or mixed case):
G2        - gasoline 2-stroke
G4        - gasoline 4-stroke
D         - diesel
PWC       - personal water craft engines

Fuel¦ Fraction ¦
/DOCUMENTED/
G2   0.09
G4   0.16
D    0.16
/END/


-----------------------------------------------------------------------------
This packet is used to adjust annual fuel usage to average ozone day usage.
/OZONE/
1.4
/END/
```

EXHIBIT G-3

```
------------------------------------------------------------------------------
This packet contains the data for the allocation of region emissions
to county level.  The fractions are ratios of total county emissions
to total regional emissions based on fuel consumption.  One factor is
supplied for 2-stroke gasoline engines and another for other types of
engines.

Acceptable region names are (in upper, lower or mixed case)
North
Central
North

/ALLOCATION/
Alameda          Central    0.024298  0.022880
Alpine           Central    0.003113  0.003138
Amador           Central    0.019981  0.007201
Butte            North      0.110010  0.100333
Calaveras        Central    0.082418  0.015128
Colusa           Central    0.007055  0.000709
Contra Costa     Central    0.038166  0.067818
Del Norte        North      0.005275  0.016408
El Dorado        Central    0.021740  0.053086
Fresno           Central    0.038301  0.021122
Glenn            North      0.022178  0.002515
Humboldt         North      0.028438  0.008527
    .
    .
    .
Trinity          North      0.105756  0.029417
Tulare           Central    0.010511  0.026088
Tuolumne         Central    0.037546  0.092095
Ventura          South      0.026179  0.044545
Yolo             Central    0.014323  0.018372
Yuba             North      0.113494  0.182950
/END/

------------------------------------------------------------------------------
This packet is an example of packet which could be used to generate a
regional inventory.  The ; in the first column indicates that it is
commented out and is inactive.

; /ALLOCATION/
Northern Region  North      1.0       1.0
Central Region   Central    1.0       1.0
South Region     South      1.0       1.0
/END/
```

EXHIBIT G-4

This packet contains the exhaust emission factors for the 2-Stroke gasoline engines.
The factors are specied by horsepower category. The factors will apply to any engine with HP falling between the beginning and ending HP supplied. That is, greater than the lower bound but less than or equal to the upper bound.
All factors are lbs/1000 gallons.

/GAS2/

HP	HP	NOx	CO	SOx	PM	TOG
0	4	6.0	2770	1.9	106	2160
4	9	10.3	2980	1.9	106	1983
9	29	19.0	3136	1.9	106	1640
29	49	18.0	3960	1.9	106	1510
49	74	26.7	2765	1.9	106	1537
74	99	30.0	2925	1.9	106	1590
99	149	18.3	3420	1.9	106	1615
149	199	17.5	3520	1.9	106	1595
199	9999	18.0	3363	1.9	106	1530

/END/

This packet contains the exhaust emission factors for the 4-Stroke gasoline engines.

/GAS4/

HP	HP	NOx	CO	SOx	PM	TOG
0	9999	101	3233	1.9	1.6	151

/END/

This packet contains the exhaust emission factors for the Diesel gasoline engines.

/DIESEL/

HP	HP	NOx	CO	SOx	PM	TOG
0	9999	388	418	7.1	24.0	188

/END/

This packet contains the exhaust emission factors for the 2-Stroke gasoline engines in Personal Water Craft.

/PWC/

HP	HP	NOx	CO	SOx	PM	TOG
0	9999	12.8	4030	1.9	106	2210

/END/

EXHIBIT G-5

This packet contains the evaporative emission factors for the each propulsion type/fuel type pair. If a propulsion type/fuel type is not listed the factors are assumed to be zero (e.g., diesels).
Crank and regfueling factors are in lb/1000 gal while evaporative is in lb/hr.

Acceptable propulsion types are (in upper, lower or mixed case):
Inboard
Outboard
Inboard/Outboard
Inboard Jet
PWC
Other
Auxiliary Sail

Acceptable fuel types are (in upper, lower or mixed case):
G2 - gasoline 2-stroke
G4 - gasoline 4-stroke
D - diesel
PWC - personal water craft engines

Prop Type				
/EVAP/				
Inboard	G2	0.0	0.57	11.3
Outboard	G2	63.8	0.0	19.3
Inboard/Outboard	G2	0.0	0.14	11.7
Auxiliary Sail	G2	0.0	0.04	19.3
Inboard	G4	0.0	0.57	11.3
Outboard	G4	63.8	0.0	19.3
Inboard/Outboard	G4	0.0	0.14	11.7
Auxiliary Sail	G4	63.8	0.0	19.3
Inboard	D	0.0	0.0	0.09
Outboard	D	1.1	0.0	0.0
Inboard/Outboard	D	0.0	0.0	0.0
Auxiliary Sail	D	5.4	0.0	0.0
/END/				

This packet contains the emission factor deterioration factors. These are designed to adjust emission factors to account for in-use effects.

Acceptable species names are (in upper, lower or mixed case):
NOx
CO
SOx
PM
TOG

	Spec	Factor
/DETERIORATION/		
G2	NOx	1.0
G2	TOG	1.2
G2	CO	1.2
G4	NOx	1.0
G4	TOG	1.5
G4	CO	1.3
/END/		

EXHIBIT G-6

Appendix H

TABULATED TEMPORAL PROFILES

Activity Profiles by Month and Region

	North	Central	South
January	3.00	2.86	3.24
February	3.00	2.86	3.24
March	3.00	2.86	3.24
April	12.77	12.79	11.84
May	12.77	12.79	11.84
June	14.56	14.82	15.00
July	14.56	14.82	15.00
August	14.56	14.82	15.00
September	12.77	12.79	11.84
October	3.00	2.86	3.24
November	3.00	2.86	3.24
December	3.00	2.86	3.24

Annual Average Diurnal Profiles

Hour	All	North	Central	South
1	0.0042743	0.0084108	0.0039096	0.0040123
2	0.0040657	0.0090704	0.0046261	0.0024969
3	0.0056290	0.0098448	0.0050174	0.0056619
4	0.0062301	0.0099753	0.0051924	0.0068772
5	0.0076703	0.0145005	0.0077145	0.0064298
6	0.0183307	0.0273715	0.0170637	0.0183455
7	0.0329913	0.0341337	0.0239043	0.0441499
8	0.0451024	0.0430612	0.0326412	0.0610303
9	0.0691204	0.0510713	0.0696542	0.0715850
10	0.0887363	0.0726966	0.0897422	0.0902622
11	0.0973587	0.0810962	0.1053992	0.0901317
12	0.0997068	0.0839477	0.1024182	0.0990526
13	0.1027981	0.0890173	0.1062118	0.1009230
14	0.0959342	0.0876746	0.0976704	0.0951976
15	0.0908425	0.0858097	0.0935776	0.0882976
16	0.0764319	0.0735918	0.0818947	0.0700973
17	0.0534649	0.0591924	0.0531451	0.0528709
18	0.0341229	0.0475320	0.0340573	0.0318781
19	0.0243772	0.0342286	0.0266741	0.0197972
20	0.0143051	0.0240180	0.0160278	0.0104666
21	0.0086262	0.0163571	0.0086527	0.0072516
22	0.0059695	0.0128118	0.0050358	0.0059491
23	0.0054404	0.0117787	0.0045498	0.0054536
24	0.0044110	0.0103925	0.0038275	0.0041024

Ozone Season Diurnal Profiles

Hour	All	North	Central	South
1	0.0039609	0.0085348	0.0045872	0.0024412
2	0.0045295	0.0093065	0.0055977	0.0024734
3	0.0049249	0.0103764	0.0060858	0.0026442
4	0.0057347	0.0105212	0.0063964	0.0041373
5	0.0090141	0.0155104	0.0102170	0.0065008
6	0.0199254	0.0282780	0.0195185	0.0189064
7	0.0344606	0.0348790	0.0242078	0.0459975
8	0.0466230	0.0442978	0.0342161	0.0610853
9	0.0657588	0.0540409	0.0633237	0.0705925
10	0.0840363	0.0667800	0.0810519	0.0904734
11	0.0911050	0.0768836	0.0967624	0.0872178
12	0.0982756	0.0821477	0.1015737	0.0973980
13	0.1007000	0.0844009	0.1029788	0.1010071
14	0.0944599	0.0828114	0.0967264	0.0939571
15	0.0884097	0.0797701	0.0914155	0.0865366
16	0.0761761	0.0734822	0.0808221	0.0713920
17	0.0568744	0.0622267	0.0565242	0.0563226
18	0.0398992	0.0509454	0.0418483	0.0357347
19	0.0273563	0.0387481	0.0299259	0.0224281
20	0.0165327	0.0268891	0.0194776	0.0113627
21	0.0096498	0.0181087	0.0101997	0.0075283
22	0.0064566	0.0141977	0.0056237	0.0060283
23	0.0058790	0.0130521	0.0050138	0.0055878
24	0.0046485	0.0111328	0.0040742	0.0041499

4	0.004170
5	0.004170
6	0.018946
7	0.037991
8	0.063342
9	0.077264
10	0.084674
11	0.121882
12	0.120682
13	0.115388
14	0.116680
15	0.108024
16	0.064747
17	0.026099
18	0.009764
19	0.002871
20	0.001687
21	0.001337
22	0.001266
23	0.000796
24	0.000759

Annual Average Weekly Profile

Monday	0.0527578
Tuesday	0.0621816
Wednesday	0.0702681
Thursday	0.0723208
Friday	0.1043395
Saturday	0.3039638
Sunday	0.3341683

Winter Average Weekly Profile

Monday	0.0418362
Tuesday	0.0386139
Wednesday	0.0594307
Thursday	0.0362996
Friday	0.1080057
Saturday	0.4048443
Sunday	0.3109697

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