California Air Resources Board
Reporting Format for Production-Line Testing Results
For Small Off-Road Engines

The applicable regulations [California Code of Regulations (CCR) Section 2407, Subsections (b)(5) and (c)(4), amended March 23, 1999] require that manufacturers submit their reports quarterly in hard copy and in electronic format. The electronic format for each file is defined in Attachments 2, 3, 5 and 7. The format for the hard copy report is shown in Attachments 4, 6 and 8.

Small Off-Road Engine Production-Line Testing (PLT) Database Description

The PLT database is a relational database consisting of four data files. The following files and hardcopy formats are used with the PLT database:

1) Engine Family Information File (Attachment 2)

This file consists of a data record for each California-certified engine family and contains the information related to certification including the engine type and class, the standard or family emission level (FEL) the family is certified to, the applicable deterioration factors (DFs), and if the FEL has been changed. Attachment 2 also defines the content of each field to be reported electronically in this file. The hard copy format for this file is the top section of Attachment 6.

2) Engine Family Data Per Quarter File (Attachment 3)

This file consists of a data record for each engine family in production. The record provides the quarterly production numbers, the statistical summary of the emission test results of the raw data and with the deterioration factors if applicable, the cumulative sum calculations at the end of the quarter, the actual and required sample size, whether the engine family complies with standards or the action limits, and other engine family specific information. Attachment 3 also defines the fields used in this file. The data from this file are included in Attachment 4 (described below) and in Attachment 6 as the Engine Family Quarterly Data information portion of the hard copy report.

3) Hardcopy Format for the Manufacturer Quarterly Production and Testing Summary File (Attachment 4)

The hard copy format for Attachment 4 uses the data from the Engine Family Data Per Quarter File (Attachment 3) to provide a listing of the engine families produced during the quarter and the statistical analysis of the test data for each engine family. The file sequence numbers that identify each data field are shown in parentheses.

4) Individual Engine Test Data Per Quarter File (Attachment 5)

This file consists of the emission data record for each engine/equipment tested. In addition, each record provides engine specific test parameters, engine identification

codes, individual test results and the cum sum calculations for the regulated pollutants at the conclusion of each engine test. This file also allows manufacturers to report multiple tests on the same engine and the final average results for multiple tests on the same engine. Attachment 5 defines the fields used in this file and Attachment 6 includes the hard copy format for this file as the Individual Engine Test Data per Quarter portion of the report.

5) Hardcopy Format For Quarterly Engine Family Test Summary (Attachment 6)

This hard copy format is divided into three portions to summarize the data for each engine family from the Engine Family Information File, Engine Family Data per Quarter File, and Individual Engine Test Data per Quarter File. The top section entitled "Engine Family Information Data" summarizes data from the Engine Family Information File and provides the certification-related information for an engine family. The second section entitled "Engine Family Quarterly Data" summarizes data from the Engine Family Data per Quarter File and includes quarterly testing and production information for an engine family. The final section of the format summarizes data from the Individual Engine Test Data per Quarter File and provides individual engine test results and cum sum calculations for each engine tested in an engine family. The file sequence numbers shown in parentheses identify each corresponding field from the electronic data file.

6) Combined Quarters Engine Family File (Attachment 7)

This file is for low volume engine families using one percent quality audit testing and does not apply to manufacturers that use the cum sum sampling option. This file contains the combined quarter summaries for engine families with less than ten engines tested in a quarter. Each record provides the summary for any engine family with less than ten tests by combining the current quarter's data with all the data from the preceding quarter(s). Quarters are combined throughout the engine family model year starting with the most current quarter and adding less current quarters until the sample size contains at least ten engines per family. Attachment 7 also defines the content of each field in this file.

7) Hardcopy Format For Combined Quarters Engine Family File (Attachment 8)

Attachment 8 provides the hard copy report format for the Combined Quarters Engine Family File, along with identifying file sequence numbers in parentheses from the electronic data file.

8) Code Key File (Attachment 9)

This file describes the manufacturer-designated codes for all engine families and consists of a Key for Engine Identification Codes and a Key for Plant and Test Location Codes. The engine identification codes need only be reported during the first quarter of production or as changes occur. Manufacturers may also choose to use codes to explain engine failure and/or other reasons for test failures as were required for the "Repairs" and "Notes" fields in the Individual Engine Test Data File in Mail Out #95-39. However, these fields have now been expanded so that codes may no longer be needed.

Attachment 9 provides an example of a Code Key File by describing the codes used in the Individual Engine Test Data Per Quarter File (Attachment 5). The format for electronic and hard copy submittal of the Code Key File is at the discretion of the manufacturer.

9) SORE Manufacturer Code for Quality-Audit Report (Attachment 10)

This Table provides the four-digit manufacturer name code as previously used in Mail-Out # 95-39

Identification of Each Field in the Record

Each field in the record is identified by:

Sequence – Order of the data in the record

Data Name – Name of the data field

Type – Three types of data: C= Characters (i.e. alpha-numeric)
N= Numeric
D= Date (format: year/month/day)

Length – Specifies the maximum number of characters for each field. For numeric data, the number before and after the decimal point indicates the digits to be reported (example: 2.4 specifies that up to two digits are to be reported before the decimal point and 4 digits must be reported after the decimal point).

Range or Domain – Defines the possible inputs or provides the range and format of the input data.

Description – Explanation of the information to be reported in the specified field of the record.

Reference – Provides the applicable subsection of the California Regulations for 1995 and Later Small Off-Road Engines, amended March 23, 1999, as codified in the CCR, Title 13, Section 2407.

The first row of each file should contain the field headings using the given data name. The data for each record are entered in the rows below the corresponding field heading (i.e. columnar report format). For the hard copy, the column width may be adjusted to best fit the reported data; however, the specified length of the data field must not be exceeded. All characters should be entered in uppercase. Fields that do not apply to an engine family or a test engine, should be left blank.

Guidance for Electronic Submittal of QA data files

Each file should be named as follows: QYYMMMZF.XXX (ex. 100XYX1S.XLS)

Q = 1 for January through March quarter

2 for April through June quarter
3 for July through September quarter
4 for October through December quarter

YY   =   Last two digits of the calendar year

MMM =   Manufacturer code as specified in the second to fourth digits of the
                  engine family name

Z   =   Last digit of the model year

F   =   I for Engine Family Information File
                  S for Engine Family Data Per Quarter File
                  V for Individual Engine Test Data Per Quarter File
                  T for Combined Quarters Engine Family File
                  C for Code Key File

XXX =   file extension: MDB for Access file
                                              WK? for Lotus file
                                              XLS for Excel file
                                              TXT for comma delimited ASCII Text file