DRAFT

U.S. EPA LARGE ENGINE AND EVAPORATIVE CERTIFICATION GUIDANCE

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PREFACE

This document describes suggested procedures and formats for compiling an application to obtain a certificate of conformity (hereafter referred to as the application for certification or application). The guidance provided herein is applicable to engines regulated by 40 CFR Part 86 and 40 CFR Part 89 (jointly referred to as Large Engines or Heavy Duty Engines). Examples of engines covered under this document are heavy duty diesel-cycle and gasoline-cycle engines for on-highway use[2] and heavy duty nonroad compression ignition engines. Marine engines are not included in this guidance. This guidance also covers evaporative certification for vehicles containing engines which were certified under heavy duty engine protocol[3].

Under the authority of the Clean Air Act and Federal regulations, manufacturers must submit applications for certification to EPA. This document describes the information that will be generally required by EPA in an application, but this in no way suggests that EPA will not require additional information, testing or engines for EPA confirmatory testing prior to issuance of a certificate of conformity.

The application format described here is new and describes a reduced level of reporting. Although the information regularly submitted to EPA is reduced, manufacturers are reminded that information described in applicable regulations must still be retained at the manufacturer's facility and be available on a timely basis upon request by EPA. In conjunction with adopting this application format EPA plans to implement periodic enhanced reviews to verify that manufacturers are following regulatory procedures and may at those times ask for additional information. Based on experiences with this reduced format, periodic enhanced reviews and/or other program needs, EPA anticipates that this application format and information requested may change during the upcoming model years. EPA will make efforts to provide adequate notice of any changes in necessary reporting, but manufacturers should anticipate that some changes may occur.

In the near future, EPA plans to implement a system for electronic submittal of applications at the manufacturer's option. Although the option to submit applications electronically is not currently available, EPA anticipates that the electronic application format will resemble the format and content described in this guidance. Manufacturers choosing to submit applications electronically will likely have to use a specific format; consequently it will be helpful for manufacturers to become accustomed to submitting information in the format described herein.

Additionally, EPA has historically provided periodic guidance to manufacturers in the form of "Dear Manufacturer" letters and "Advisory Circulars" (A/Cs). EPA will continue this practice and will mail applicable new guidance to manufacturers at the address of the primary contact listed in the application for certification. Copies of old guidance are available upon request from EPA and are also available at Office of Mobile Sources INTERNET home page (http://www.epa.gov/OMSWWW).

A few points of clarification are necessary in response to issues brought forward by engine manufacturers. First, for the 97 model year, the engine naming convention described in this document does not apply. For assistance in naming 97 model year engine families, follow previous EPA guidance or contact your EPA reviewer. For the 98 model year and beyond, use the engine family naming convention described in this document.

Next, in the past, two copies of the application were sent to the EPA for use in different departments. There has since been a reorganization at EPA and MOD has been incorporated into the Engine Programs & Compliance Division, and the MOD copy is no longer required to be sent. Finally, EPA has tried to listen to concerns of the groups affected by this guidance document. This document has been prepared with input from CARB, EMA, AAMA, and other concerned manufacturers.

[1] Large engines regulated by 40 CFR Part 86 typically include engines used in on-highway applications such as heavy-duty gasoline fueled engines (HDGEs), heavy-duty diesel fueled engines (HDDEs), and heavy-duty engines using alternate fuels (CNG, LPG and LNG). Large engines regulated by 40 CFR Part 89 include compression-ignition engines used in nonroad vehicles. This guidance also applies to evaporative emission certification required by 40 CFR Part 86 for vehicles employing Heavy Duty Engines.

[2] Otto cycle heavy duty engines which are optionally certified using the light duty protocol are certified by the Vehicle Programs and Compliance Division of EPA. Contact Mr. David Good at EPA, National Vehicle and Fuel Emission Laboratory, 2565 Plymouth Road, Ann Arbor, MI 48105 for certification procedures for those engines.

[3] Evaporative systems in vehicles containing heavy duty engines which were optionally certified using the light duty protocol are certified by the Vehicle Programs and Compliance Division of EPA. Contact Mr. David Good at EPA, National Vehicle and Fuel Emission Laboratory, 2565 Plymouth Road, Ann Arbor, MI 48105 for certification procedures.

This information collection has been approved by OMB (Control No. 2060-0104). Public reporting burden for this collection of information is estimated to average 800 hours per engine family, including time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Management and Budget, Washington, DC 20503.

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This document provides guidance for preparing, submitting, and revising large engine certification applications for on highway and nonroad engines regulated by 40 CFR parts 86 and 89.

I. OVERVIEW OF THE CERTIFICATION PROCESS

A. Timing

When to submit request for certification

Certification is required on a model year basis. EPA asks that certification requests be submitted no earlier than one year prior to the start of production. For example, for the 1999 model year, certification could be effective as early as January 2, 1998. Therefore, EPA would accept applications for 1999 model year certification in January 1997. Bear in mind that the certificate does not become "effective" until the "effective date" show on it. Due to resource limitations, priority will be given to earlier model year applications already received.

B. Initiating Certification

1. Obtaining Manufacturer Status (One Time Only):

Before doing anything, notify EPA in writing of your intent to manufacture engines covered by these regulations. If you have not previously worked with EPA, EPA will complete a Manufacturer Code Entry Form. This action will assign a permanent code to the manufacturer and give EPA information to allow the acceptance of data into the database. If your company already has status as a highway engine or vehicle manufacturer, your codes will not change. However, you should notify EPA to amend your current status to include nonroad engines. Obtaining manufacturer status does not obligate you to certify.

2. EPA Team Contact (One Time Only):

EPA will assign a primary EPA contact person for each manufacturer. Information for the EPA primary contact person may be mailed to:

Anne Fredo
Certification Team Leader
Engine Compliance Programs Group
U.S. Environmental Protection Agency

401 M Street SW, Mail Code 6403-J
Washington, DC 20460
Phone: 202-233-9263
FAX: 202-233-9596

For Express Mail Deliveries Only(regular U.S. mail delivered to this address will be returned to sender) and for office visits:

Anne Fredo
Certification Team Leader
Engine Compliance Programs Group
U.S. Environmental Protection Agency
501 3rd St NW, Mail Code 6403-J
Washington DC 20001

3. Certification Preview (Once Every Model Year):

A manufacturer wishing to certify large engines should provide EPA with a preview of its plans for that model year. The plan should include an estimate of the number of engine families to be certified that model year, whether any special testing procedures are anticipated, and any other unusual or special features which may impact certification. This is the best time to notify EPA of any issues where advance Administrator approval may be needed. Failure to obtain needed EPA approvals in a timely manner may result in delays or potential noncertification. Suggested preview topics are contained in Appendix G.

4. Application for Certification (Every Model Year, Every Engine Family):

Manufacturers must apply for certification on an annual basis. While a production period greater than one year is permitted (a model year means a production period which includes January 1 of the calendar year for which the model year is named, ends no later than December 31 of the calender year and does not begin sooner that January 2 of the previous calendar year), a manufacturer may not use the production period definition to skip certification of a model year. (See A.2. above for when to submit an application.) To expedite EPA review of the application for certification, it is requested that the information be

submitted using a consistent format. This format can be found in Appendix A. Directions for completing the application are also found in Appendix A. The following elements comprise a complete EPA application:

- Signed Statement of Compliance
- Manufacturer Communications and mailing information
- Large Engine Family Information Form
- Large Engine Test Information Form
- Large Engine Model Summary Form
- Large Engine Part Number Summary Form
- Techinal Description*

* Submitted once every 5 years or when a change occurs.

C. EPA Review Process

1. The Process

Upon receipt of a complete application, the assigned EPA representative will make every effort to review it within 30 days. (Note: The first few applications may take longer to process in order to "debug" the process). When a review may be delayed due to unforeseen circumstances, the reviewer will contact you. The reviewer will call you with any questions arising from the review. If the reviewer cannot reach you by telephone in a reasonable amount of time, the question will be submitted in writing. While the reviewer may accommodate an occasional request to expedite a review, he/she is under no obligation to do so. Chronic requests for expedited review cannot be honored. Manufacturers should anticipate and allow 30 days for EPA review in their production/manufacturing plans. Additionally, if EPA decides to conduct confirmatory testing, certification may be delayed.

2. EPA Confirmatory Testing:

EPA plans to conduct confirmatory testing of engines in the near future. While reviewing the application, EPA will determine whether it chooses to perform confirmatory testing. Manufacturers should plan to keep the emission data engine in its certification test configuration until EPA issues the Certificate. Should EPA request to perform such

testing, adequate advance notice will be given to allow time for shipping, etc.

D. The Certificate

Once the review is completed and all questions are answered to the satisfaction of the reviewer, a certificate of conformity is generated. (Sample is in Appendix C). Certificate language will vary depending on the certification type. Families certified under Averaging, Banking and Trading require special certificate language. The "Effective Date" is the date that manufacturers may start to introduce engines into commerce. If the certificate was issued unusually early, the effective date may be January 2 of the year prior to the model year. Otherwise, the effective date is usually the date that the certificate was signed.

The Certificate is signed by the Administrator or a designated authority; currently, it is the Director of the Engine Programs and Compliance Division. A certificate is not authentic without this signature.

The signed certificate is copied for internal use, and the original will be sent to the address provided in the application for certification for that engine family. IT IS VERY IMPORTANT THAT THIS ADDRESS IS KEPT CURRENT -- NOTIFY YOUR REPRESENTATIVE IF THERE IS AN ADDRESS CHANGE.

II. EPA GUIDANCE ON SPECIFIC TOPICS

A. Engine Family Name

1. Naming Convention

EPA has developed a standard engine family naming convention which is required for inputting data. (The official format can be found in Appendix D). This name will appear on the certificate, and must also be on the engine label. Although many manufacturers may have separate naming conventions, the EPA engine family name must be referred to in the application for certification, and any other documents or

correspondence concerning that family. Failure to refer to the EPA engine family name will cause delays.

2. Engine Family Selection

Engine families are selected using the criteria found in the CFR. EPA can approve further division or consolidation of families. Requests for further division or consolidation will be handled on a case by case basis.

B. EPA/MFR Contacts

Each manufacturer designates one or two people who are authorized to discuss certification matters with EPA personnel. This information is submitted as part of the application format, but for manufacturers who have not previously certified nonroad engines, EPA should be informed of designated certification contacts prior to application for certification.

C. Confidential Business Information

The Freedom of Information Reform Act (FOIA) of 1986 is described in 5 USC §522. EPA codification of this Act's requirements can be found in 40 CFR Part 2. Because of the FOIA, individuals may request information contained in certification applications, as well as other documents, and EPA may be required to provide requested information except as described below. Each Administration since this Act has made clear that the intent of the FOIA process is to release as much information as practical. Each manufacturer should be familiar with the FOIA summary found in Appendix B.

There are nine exemptions to releasing information under the FOIA process. The one most applicable to information submitted by engine manufacturers to the Office of Mobile Sources is Exemption 4, Trade Secrets, Commercial, or Financial Information (Confidential Business Information). In dealing with this exemption, EPA's Office of General Counsel (OGC) has made a number of "Class Determinations" relative to printed material routinely submitted to EPA.

With regard to Class Determination, a manufacturer can choose whether or not to classify any information as

Confidential Business Information (CBI). Materials that EPA's OGC rules meet the criteria for Exemption 4 are such things as projected sales, catalyst loading, and blueprints. A manufacturer may classify other materials as CBI. However, this may increase the burden for the requestor of the materials, the submitter of the materials, and the EPA. This burden is as follows: once a request is received for material which the submitter has classified as CBI, EPA will inform the submitter that the material is currently classified as CBI and that EPA will contact the third party for clarification. Concurrently, EPA will notify the submitter of the CBI material that they have 15 working to respond to seven (7) specific questions as to why EPA should concur that the material is CBI. If no response is received in 15 working days, EPA will release the information. If a submitter responds, the response is forwarded to EPA's OGC for a determination.

Please mark all applicable items as confidential on the application forms and specify in your cover letter the length of time for which confidentiality is required. The EPA contact for CBI questions related to certification is Robert Doyle, (202) 233-9258.

D. Audits of Manufacturer Records or Facility

EPA will, from time to time, request additional information from manufacturers on an audit basis. Subjects of possible certification audits include but are not limited to fuel specifications, test engines, test equipment, test records, maintenance instructions, durability methods, warranty statements, tamper resistance methods, adjustable parameters, and averaging, banking and trading. Manufacturers are required to maintain records listed in the CFR.

E. Carryover

The manufacturer may request to use test data from a previous model year to represent the new model year. To obtain EPA approval, the differences between the previous and current model year engines must be shown to not cause emission changes that would result in failure of the standards.

F. Test Fuel for Nonroad engines

Nonroad engine manufacturers must conduct certification testing using test fuel as described at 40 CFR 89.330-96. The test fuel meeting the specifications of 89.330-96 (b)(1) and Table 4 or Table 5 of Appendix A to Subpart D do not require approval prior to conducting certification testing. Fuels other that those specified above may be used for testing and service accumulation provided: 1) They are commercially available, 2) information, acceptable to the Administrator, is provided to show that only the designated fuel would be used in customer service, 3) use of fuel listed above would have a detrimental effect on emissions or durability, and 4) written approval from the Administrator of the fuel specifications must be provided prior to the start of testing.

Manufacturers using the fuel specified in Table 4 and adjusting PM emission test results according to the equation in 40 CFR 89.425-96 should indicate in the statement of compliance that such an adjustment has been made.

The fuel used for certification testing must be indicated on the engine family information form and the test engine information form shown in Appendix A of this guidance. Manufacturers using other fuels or fuels meeting substantially equivalent specifications must describe, in the statement of compliance, the fuel used and indicate that EPA approved the fuel for use in certification testing.

G. Test Fuel for On Highway engines

For certification testing gasoline having the specifications listed in 40 CFR 86.1313-94 or substantially equivalent specifications approved by the EPA may be used by the manufacturer in emission testing, except that the octane specification does not apply. Additionally, diesel, methanol, mixtures of petroleum and methanol, and natural gas fuels having the specifications listed in 40 CFR 86.1313-94 may be used for emission testing. Diesel, methanol, mixtures of petroleum and methanol fuels, and natural gas fuels other than those specified above may be used for testing and service accumulation provided: 1) They

are commercially available, 2) information, acceptable to the Administrator, is provided to show that only the designated fuel would be used in customer service, 3) use of fuel listed above would have a detrimental effect on emissions or durability, and 4) written approval from the Administrator of the fuel specifications must be provided prior to the start of testing.

The fuel used for certification testing must be indicated on the engine family information form and the test engine information form shown in Appendix A of this guidance. Manufacturers using other fuels or fuels meeting substantially equivalent specifications must describe, in the statement of compliance, the fuel used and indicate that EPA approved the fuel for use in certification testing.

H. Special and Alternate Test Procedures

Special and alternate test procedures may be used instead of prescribed test procedures in 40 CFR Parts 86 and 89 upon EPA approval. In the past, on-highway manufacturers may have requested the use of special and alternate test procedures, and reported their use differently from the procedure described here. Because EPA must monitor deviations from prescribed procedures, the certification format specified in this document requires that manufacturers attest that the prescribed regulatory procedures have been followed, or that the manufacturer must briefly describe any deviations from the prescribed regulatory procedures in the statement of compliance section of the application.

Regulations specify that special and alternate test procedures be approved by EPA. Special or alternate test procedures may include but are not limited to procedures such as the ISO 8178-D2 cycle, alternate mapping procedures, or unique test equipment needs. Manufacturers should propose special and alternate test procedures during the certification preview as described above. The next step following clarification and an initial indication of approval from EPA is to submit a written request for the special and alternate procedures. If EPA approves, an approval letter will be sent to the manufacturer. When the manufacturer submits an application for an engine family which was tested using special or alternate procedures, a

description of the procedures must be included in the statement of compliance. The description should identify the engine families for which the procedure applies, include a brief explanation of the procedure(s) and provide adequate reference to more detailed documentation on the procedure and indication of EPA approval.

The requirements to seek EPA approval of special and alternate procedures and to report the procedures in the compliance statement apply to each applicable engine family for each model year regardless of carryover status.

I. Special Power Features

Configurations utilizing such features as "power enrichment", "power boost", or similar options should be rated and tested at the highest power, regardless of operation time of these features, or the advertised power.

J. Modification by Equipment Manufacturers (Nonroad Only)

Questions have been asked about allowable modifications to engines made by the equipment manufacturers (such as adding governors, resetting fuel and idle specs, etc). The potential exists for an equipment manufacturer to become an engine producer with obligations to certify the new engine configuration or for tampering on the part of the equipment manufacturer. Because of the differences between the highway and nonroad industries regarding engine/equipment manufacturer relationships, EPA is now reviewing its highway tampering policies and may issue an updated guidance document for the nonroad sector in the future. Until that time nonroad Manufacturers should rely on existing on-highway documents for guidance.

K. Alternate Useful Life Periods (Nonroad only)

Based on comments received during the Nonroad rule making, EPA recognizes that it may be appropriate to approve a shorter useful life period for engines used in a severe-use application. Prior to certification, manufacturers can petition EPA to approve shorter useful life periods.

Engines that may be approved for a shorter useful life would be those subject to severe service such as those used in equipment with a short useful life.

L. Amending an Application (Running Changes)

After the application has been submitted and the certificate has been issued, the manufacturer may need to amend the application. EPA requires written submission of amendments, also referred to as running changes, in order to have documentation that production engines are built in accordance with the certificate and to monitor potential changes in emissions from production engines. The material which needs to be submitted depends upon whether or not a revision involves a product line change that may have an effect on emissions and/or corrects information reported in the application. As described in the regulations, manufacturers may report amendments to an application either in advance or concurrently with making a change in production.

A manufacturer need only submit a brief description and revised application pages if an amendment merely corrects an error or omission in an application and does not involve a change which may affect emissions.

If an amendment adds an engine model to a family or has a potential effect on emissions or test engine selection, the manufacturer must submit a description of the amendment, revised application pages, and test data (if applicable). Changes that may affect the durability of the emission control system, including but not limited to changes that may affect catalyst durability, must also be reported. EPA considers running changes to be amendments which add an engine model, potentially affect emissions or durability, or affect emission-related components.

If the running change is expected to increase emissions or would change the test engine selection, the manufacturer is required to either submit test data showing compliance after incorporating the running change, or to submit an engineering evaluation as to why engines will remain in compliance with all applicable standards and regulations. If the change is not expected to increase emissions, the manufacturer should submit the reason for that conclusion.

EPA may require the manufacturer to perform tests on an engine representing the engine to be changed or added.

Many on-highway applicants have followed a practice of identifying successive amendments with a number which includes the family designation and model year of the engines being affected. (For example, the number of the first running change in the 1998 model year for family WXY145R1DARA might be 98-145R1DARA-01.) This practice has proved to be quite useful and is highly recommended. Each page of an application may include a revision block which provides space for the date of issue as well as the effective date of each revision.

Running changes which would result in the need for issuance of a new certificate of conformity, such as a change in the family emission limit (FEL), cannot be initiated prior to receipt of a new certificate.

M. Certification Fees

As discussed in the Preamble to the Final Rule for Over 50 hp Nonroad Compression Ignition Engines, EPA is not at this time charging a fee for nonroad over 50 hp certification, but has the authority to do so and will do so once program costs can be accurately assessed.

For the on highway manufacturers, fees will continue as before. They are required to be paid prior to any processing of the certification application. EPA will not start the review process until confirmation is received that all required fees have been paid. The fee payment procedure is described in Appendix E.

N. Adjustable Parameters

If the manufacturer intends to seal parameters to prevent adjustment, the methods of sealing must be described in the application. The method of sealing must provide both a visual and a physical deterrence to tampering. If parameters are adjustable, the manufacturer is responsible for assuring emission compliance within the full range of adjustability of those parameters. Manufacturers should

report all adjustable parameters in their application whether sealed or not.

O. Evaporative Emission Certification (On highway only)

Evaporative Emission certification is required for all new gasoline-fueled, Natural gas-fueled, Liquefied Petroleum gas-fueled, and Methanol-fueled on highway heavy duty vehicles. Vehicles similar in evaporative emission control system characteristics may be grouped in the same evaporative emission family. Evaporative emission family naming conventions are described in Appendix D on pages D1-D2 and D15..

As a reminder, the phase-in schedule for the enhanced evaporative standards for Otto Cycle vehicles is:

1996 MY	20%
1997 MY	40%
1998 MY	90%
1999+ MY	100%

The Evaporative Certification Application forms and a table listing evaporative standards are found in Appendix E. The following elements comprise an evaporative certification application form:

- Manufacturer Contact Sheet (Appendix A1.)
- Statement of Compliance
- Large Engine Evaporative Emission Form
- Technical Description (Appendix A19)*

* Submitted every 5 years or when a change occurs.

P. Averaging, Banking and Trading

Manufacturers with engine families participating in averaging, banking and trading (ABT) programs are subject additional reporting, record keeping and compliance requirements as well as additional oversight by EPA. Regulations for ABT programs are at 40 CFR 86.094-15, 86.094-23 (h) and 40 CFR Part 89 Subpart C. As part of the precertification process, manufacturers planning to participate in ABT should be prepared to describe all aspects of how the manufacturer will comply with requirements of these regulations.

Nc credits may be generated by engines that are exported or subject to state engine emission standards (e.g. are regulated by California). Manufacturers are responsible for tracking engines which are generating credits to the point of first retail sale. As part of the certification process EPA does not typically require information related to engine tracking; however, EPA may require such information either during certification or as part of a follow-up review of records related to ABT.

This guidance does not require submission to EPA the projected number of credits generated/needed, quarterly projected sales, or other information required at 40 CFR 89.209-96 (a)(6) or 86.094-15 (b)(1)(iv) as a part of the application. However, manufacturers are required to generate and retain this information, and EPA may periodically request submission of this information as part of the review process.

EPA issues conditional certificates of conformity for engine families participating in ABT. These certificates specify the applicable family emission limit (FEL). If a manufacturer desires to change an FEL (via running change), a new certificate must be issued by EPA. Manufacturers must calculate emission credits based on the FEL on the certificate that is in effect at the time applicable engines are introduced into commerce. Consequently, if an FEL change is made during production, the manufacturer is responsible for ensuring that upon the effective date of the new certificate, adequate production information is or will be available to calculate credits with the old and new FEL. The effective date of the FEL change is the effective date of the applicable certificate issued for the new FEL.

As noted in the attached example statements of compliance, manufacturers must state in the application that the engines for which a certificate is requested will not, to the best of the manufacturer's belief, when included in any part of the ABT program cause the applicable standard(s) to be exceeded.

The guidance here in no way changes end-of-year reporting requirements or record keeping requirements.

Q. Production Part Numbers

Supply a list of all emission control related component part numbers. See Appendix A for form.

III. COMMON APPLICATION (EPA and CARB for Heavy Duty Engines)

The appendices in this document provide necessary forms and information for a common application format which will satisfy minimum application requirements for both EPA and the California Air Resources Board (CARB).

The EPA application for a certificate of conformity and other necessary information can be found in Appendix A. In the near future, the application will be available in an electronic form to assist manufacturers in providing information in an easy to follow standard format. Upon completion, the application should be sent to the EPA certification team leader. [Address is on p.2] Applications for CARB executive orders will require additional submissions as specified by CARB listed in Appendix G.

EPA will continue using a standardized engine family naming convention. The engine family name will appear on the engine information label and in the certificate of conformity. The engine family name should be used in all correspondence to EPA concerning that family. Information explaining the naming convention is included in Appendix D. Regulations state certificate-related information is required to be maintained by manufacturers. EPA is not specifying a particular format for the maintenance of that information; however, as required by regulation it should be adequately organized and readily accessible to facilitate further review by EPA if requested.

IV. LABELING

The EPA's streamlined application does not require sample labels, however we may request copies of labels as part of the review process. CARB requires a label durability statement. Details for the CARB application can be found in Appendix G.

V. ADDITIONAL REQUIREMENTS FROM CARB (The requirements found in this section are not required by EPA.)

The documents found in Appendix G are currently required by CARB. EPA requests that these documents, if optionally submitted to EPA, be placed in a separate section of the application in order to simplify the EPA review process. EPA may choose to review these additional documents if submitted. Additionally, EPA may request these documents should further information on a family be necessary for a review.

APPENDIX A

EPA APPLICATION FORMAT

A1 Communications and Mailing Information

A2 Sample Statement of Compliance for Nonroad

A3 Sample Statement of Compliance for On Eighway

A4 Large Engine Family Information Form and Instructions

A9 Large Engine Test Information Form and Instructions

A15 Large Engine Model Summary

A18 Large Engine Model Part Number Summary

A19 Technical Description

A1

COMMUNICATIONS AND MAILING INFORMATION

MAILING INFORMATION - CERTIFICATES

CORPORATE NAME TO APPEAR ON CERTIFICATES OF CONFORMITY

CERTIFICATES OF CONFORMITY ARE TO BE SENT TO THE (Manufacturers Name) COGNIZANT TECHNICAL REPRESENTATIVE

Overseas Contact:
Overseas Manufacturers Name
Overseas Contact Name
Overseas Contact Address
Overseas Contact Telephone and Fax

Primary Contact:
US Contact Name
US Contact Company
US Contact Address
US Contact Telephone and FAX

SAMPLE Nonroad
STATEMENT OF COMPLIANCE

Manufacturer Primary Contact
XY Engine Company
4567 Industrial Highway
El Monte, CA 91731

March 1, 1996

Anne Fredo, Certification Team Leader
Engine Compliance Programs Group
U. S. Environmental Protection Agency
Mail Code 6403-J
Washington, DC 20460

Dear Ms. Fredo:

Please find enclosed the model year 1997 application for engine family VXY14.RZDBRA. On behalf of the XY Engine Company, I hereby certify that the test engine(s), as described in this application for certification, has been tested in accordance with the applicable test procedures, utilizing the fuels and equipment required under subparts D and E of 40 CFR 89 and subpart I of 40 CFR 86, and that on the basis of such tests the engine(s) conforms to the requirements of 40 CFR 89. I further certify that all engines in this engine family are in all material respects as described in the Application for Certification and comply with all requirements of 40 CFR 89 and the Clean Air Act.
Sincerely,

[MANUFACTURER PRIMARY CONTACT]

*Footnote: Modify this letter as necessary (i.e., alternative fuels (Subpart P), alternate or special test procedures (Subpart B), etc.)

** For families participating in ABT an additional statement as described in 89.209-96 (a)(2) is required.

A3

SAMPLE On Highway
STATEMENT OF COMPLIANCE

Manufacturer Primary Contact
XY Engine Company
4567 Industrial Highway
El Monte, CA 91731

March 1, 1996

Anne Fredo, Certification Team Leader
Engine Compliance Programs Group
U. S. Environmental Protection Agency
Mail Code 6403-J
Washington, DC 20460

Dear Ms. Fredo:

Please find enclosed the model year 1997 application for engine family VXY14.RZDBRA. On behalf of the XY Engine Company, I hereby certify that the test engine(s), as described in this application for certification, has been tested in accordance with the applicable test procedures, utilizing the fuels and equipment required under subparts D, I, and N of 40 CFR 86, and that on the basis of such tests the engine(s) conforms to the requirements of 40 CFR 86. I further certify that all engines in this engine family are in all material respects as described in the Application for Certification and comply with all requirements of 40 CFR 86 and the Clean Air Act.

Sincerely,

[MANUFACTURER PRIMARY CONTACT]

*Footnote: Modify this letter as necessary (i.e., alternative fuels (Subpart P), evaporative procedures (Subpart M), alternate or special test procedures(Subpart A), etc.)

** For families participating in ABT an additional statement as described in 86.091-15 is required.

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A4

LARGE ENGINE FAMILY INFORMATION FORM

Manufacturer: _____

1. Model Year: _____
   a. Date Received: _____
   b. Date Cert Issued: _____

2. Carryover: _____
   If yes, list the previous family: _____

3. Process Code: _____
   Date EPA Fee Paid: _____

4. EPA Standard Engine Family Name: _____

5. Mfr's Family Name: _____

Engine Family Characteristics

6. Engine Cycle _____
7. Displacement(s) (cid Or Liters) _____
8. Engine Configuration _____
9. Emission Control System:

- ☐ Catalyst
- ☐ Engine Modification
- ☐ Electronic Control
- ☐ Smoke Puff Limiter
- ☐ EGR
- ☐ None
- ☐ Other (Enter in the comment box below.)

10. Fuel Type _____
11. Fuel System Type _____
12. Method Of Aspiration _____
13. Useful Life Period _____
14. Deterioration Factor Types
    A. Gaseous Exhaust: _____
    B. Smoke: _____
15. Intended Service Class

- ☐ CA Medium Duty
- ☐ Light Heavy Duty Diesel
- ☐ Medium Heavy Duty Diesel
- ☐ Heavy Heavy Duty Diesel
- ☐ Heavy Duty Gas (<14k lbs)
- ☐ Heavy Duty Gas (>14k lbs)
- ☐ Heavy Duty Gas (>14k lbs using <14k stds)
- ☐ Heavy Duty Gas (<14k lbs using >14k st
- ☐ Urban Bus
- ☐ Clean Fuel Fleet/Low Emission Vehicle
- ☐ Clean Fuel Fleet/Ultra Low Emission Veh
- ☐ Nonroad
- ☐ Other

Sales Information

16. Projected Sales USA _____
    CA _____
17. Estimated Production Period: Start _____
    End _____
18. Sales Area _____
19. Plant Contact: _____
20. Plant Location: _____

21. Program Information:

NCPs	AVE	B&T
☐ PM	☐ PM	☐ PM
☐ NOx	☐ NOx	☐ NOx
☐ None	☐ None	☐ None
☐ NA	☐ NA	☐ NA

23. Nonroad Engine Equipment Types:

- ☐ Crane
- ☐ Loaders
- ☐ Tractor
- ☐ Dozer
- ☐ Pump
- ☐ Compressor
- ☐ Generator Set
- ☐ Other
- ☐ NA

22. Family Emission Limits: PM _____ NOx _____

24. Auxiliary Emission Control Devices:

AECD	Sensed PARAMETER	Controlled	Does AECD result in reducing effectivness of emission control device(s):
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

25. Adjustable Parameters:

Parameter	Adjustable Range (or N/a)	Tamper Resistance Method (or N/a)

Comment

DRAFT

Instructions for Large Engine Family Form

The engine manufacturer completes these forms, which describe the engine family. The layout of the form is set up to assist the EPA with data input into an electronic data base. Please be sure to include units, or in cases where units are present on the forms, verify the validity of the preset units.

The new Family form has been created directly in the EPA's engine database. The following instructions are provided to assist filling out the forms for both the paper and electronic versions. Presently, only the paper version is available. The electronic version is being developed. The electronic version will employ "pull-down" menus for some questions which will identify all acceptable responses. Where a response is limited by a pull down menu, those responses are described below. These responses are considered the acceptable responses for the paper version. Only these responses should be used.

Large Engine Family Information Form

1. Model Year *(pull-down menu)*
   The engine model year for which certification is sought (4 digits, ex. 1996).

   a. Date Received
   Manufacturers leave this blank. The entry will be filled in by the EPA reviewer.

   b. Time Received
   Same as date received.

2. Carryover *(pull-down menu)*
   Enter either a "Yes" or "No". If the application is a carryover, then list which engine family the application is carried over from.

3. Process Code *(pull-down menu)*
   Enter either "New Submission", "Correction", "Running Change", or "FEL change". Only enter "Running Change" or "FEL Change" if the engine family is already certified and you are submitting data to support a running change or an FEL change. Directly beneath the process code is a blank line for the date the EPA fees were paid. As a reminder, an on-highway application should not be filed nor will it be

processed until fees have been paid. There is a fee application form with instructions in Appendix F. Fees are currently assessed for on-highway certifications only. For nonroad certifications, please enter N/A.

4. EPA Standard Engine Family Name
See Appendix D for details on the engine family naming convention. [Engine family names consist of 12 digits.]

5. Manufacturer's Family Name
If a manufacturer has identified an engine family by a name which is different from the EPA engine family name, enter the manufacturers engine family name here; otherwise, enter N/A.

6. Engine Cycle *(pull-down menu)*
Regardless of fuel utlized, if the engine is derived from a diesel engine enter "Diesel"; if the engine is derived from an otto cycle engine enter "Otto".

7. Displacement
Enter displacement and units employed. Either CID or liters are acceptable. Please be careful to note all units properly.

8. Engine Configuration
Note the configuration of the engine, for example I6, V6, etc.

9. Emission Control System
Mark all emission control system components that apply. If the emission control system used by the engine is not included in the provided list, enter the system in the comment box below using abbreviations contained in SAE J1930. Alternatively, manufacturers may use the draft SAE document "Medium/Heavy Duty E/E Systems Diagnostic Nomenclature" if this document is available to them. Separate entries in the comment field by commas.

10. Fuel Type *(pull-down menu)*
Enter type of fuel for which engine family will be certified, choosing from the following list: Diesel, Methanol, Natural Gas, Propane, Ethanol, Gasoline, Oxygenated, Bi-fuel 1(CNG and Gasoline), Bi-fuel 2(CNG and Diesel), Dual Fuel 1(CNG or Gasoline), Dual Fuel 2 (CNG or Diesel), LPG (Specs need EPA approval), and Other (specify what fuel is going to be used in compliance statement).

11. Fuel System Type *(pull-down menu)*
Enter type of fuel system for which engine family will be certified, choosing from the following list: Throttle body Injection, Multi-port Injection, Direct Injection, Central-port Injection, Carburetor, Sequential Fuel Injection, Indirect Diesel Injection, and Other (if "Other" is checked, specify what fuel system is going to be used in comment field at bottom of form.)

12. Method of Aspiration *(pull-down menu)*
Enter type of aspiration method for which engine family will be certified, choosing from the following list: Naturally, Turbo Charged, Turbo Air to Water (TAW), Turbo Air to Air (TAA), Supercharged Air to Water (SAW), and Supercharged Air to Air (SAA).

13. Useful Life Period
Useful Life should be entered in both years and hours or the number of miles.

14. Exhaust Deterioration Factor Types *(pull-down menu)*
On-highway only, select either "Additive" when no catalyst is present or "Multiplicative" when a catalyst is present in the space provided. List for both exhaust emission and smoke emissions if applicable. If not applicable, enter NA. (Nonroad, please select NA.)

15. Intended Service Class
Mark boxes which apply. If you choose other, please explain which service class the engine could/will be used for in the comment box at the end of the form.

16. Projected Sales
Enter projected sales numbers for both 50-State and for CA.

17. Estimated Production Period
Enter the start and end dates of the production period. Date format is mm/dd/yy. This information may be used to determine expiration of CBI claims which were made until introduction into commerce.

18. Sales Area *(pull-down menu)*
Enter either: Fed, Cal, or 50 state.

19. Plant Contact
List name(s), title, and phone number(s) of contacts at production plants who are assigned to assist EPA during a Selective Enforcement Audit.

20. Plant Location
List all plants at which production of this engine family is anticipated. If not enough space is provided in this box, please put additional information in the comment box below.

21. Program Information
Non-Conforming Penalties (NCP) - mark all boxes which apply; NCPs for PM and NOx are available for on highway engines only. Nonroad manufacturers check none.
Averaging (Ave) - mark all boxes which apply.
Banking and Trading (B&T) - mark all boxes which apply.

22. Family Emission Limits
Enter the Family Emission Limits for which the engine family is being certified in the appropriate blanks for PM or NOx only when engine family is a participant in the ABT program. If not applicable, enter N/A.

23. Nonroad Engine Types
Mark boxes which apply. If "other" is checked, please explain the equipment type in which the engine could/will be used in the comment box at the bottom of the form. On-highway manufacturers mark the NA box.

24. Auxiliary Emission Control Devices (AECDs) [See sections 86.082-2 for on highway and 89.2 for nonroad definitions of AECDs.]
List all AECDs and those parameters which are sensed and controlled in the proper columns. If an AECD results in reducing the effectiveness of emission control devices, check "yes". If "yes" is checked, a detailed justification of why the AECD should be approved must appear in the Technical Description section of either the current application or a reference made to the appropriate Technical Description document describing the device [86.094-21(b) describes Emission Control System and AECD Technical Description reporting guidelines]. EPA does not consider a "yes" response to mean that the AECD is a defeat device. A "yes" response to this question indicates only that a justification must be present in the Technical Description section of the application.

25. Adjustable Parameters
List all adjustable parameters, the adjustable range, and the tamper resistance methods in their proper columns. If not applicable, enter N/A. Please note that an adjustable parameter should be listed even when it is sealed.

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A9

LARGE ENGINE TEST ENGINE INFORMATION FORM

Manufacturer: _____ DATE CREATED _____ TIME CREATED _____

1. EPA Standardize Engine Family Name: _____ **2. Process Code:** _____ **3. Test Data Set:** _____

4. Engine Code: _____
5. Engine Model: _____
6. Displacement(s) (cid Or Liters): _____
7. Engine I.d. Number: _____
8. Rated HP _____ @ @ Rated RPM: _____
9. Torque (ft-lb) @ _____ @ Engine RPM: _____

10. WAIVERs:

CO	PM	Smoke	Idle Co
____	____	____	____

11. COLD START: _____
12. Certification Fuel: _____
13. Special Test Device ☐ Yes ☐ No
14 Test Procedure: _____

15. OFFICAL TEST RESULTS

Date: _____ _____ _____

	Test 1	Test 2	Test 3
HC/OMHCE			
NMHC/OMNMHCE			
CARBON MONOXIDE			
OXIDE OF NITROGEN			
PARTICULATE			
FORMALDEHYDE			
ACCELERATION SMOKE %opacity			
LUGGING (Gen) SMOKE %opacity			
PEAK SMOKE %opacity			
IDLE CO %			
CO2			

16 DETERIORATION FACTORS

17. CERTIFICATION LEVELS (ROUNDED TEST RESULTS)

Units– _____ –Units

HC/OMHCE			
NMHC/OMNMHCE			
CARBON MONOXIDE			
OXIDE OF NITROGEN			
PARTICULATE			
FORMALDEHYDE			
ACCELERATION SMOKE %opacity			
LUGGING SMOKE %opacity			
PEAK SMOKE %opacity			
IDLE CO%			

Instructions for Large Engine Test Information Form

The engine manufacturer completes these forms, in which are recorded test engine information and test data for the engine(s) tested to demonstrate emission compliance of an engine family. The form is designed to assist the EPA to input data to an electronic data base. If more than one test is performed on the same engine, report each set of test results on the same page, placing each set of test results in its own column (labeled Test 1, Test 2, and Test 3) found on the Test Information Form. Space is provided for up to three tests. If more than one engine is tested please place the test information for each engine on its own page and mark the page for the first test engine "Test Data Set 1", the page for the second test engine "Test Data Set 2", etc. (See instructions below for item number 3). Please be sure to include units, or in cases where units are present on the forms, verify the validity of the preset units.

The new Test Engine Information form has been created using the EPA's engine database. The following instructions are provided to assist filling out the forms for both the paper and electronic versions. Presently, only the paper version is available. The electronic version is being developed. The electronic version will employ "pull-down" menus for some questions to aid in data input. For those questions employing pull-down menus, only the responses contained in the pull-down menu are acceptable even if the application is submitted in a paper version. The instructions below will identify the questions which employ pull-down menus and will list the acceptable responses.

Large Engine Test Engine Information Form

1. EPA Standardized Engine Family Name [12 digits only]
   See Appendix D for details on naming 1998 Model Year and later families. For 1997 MY engine family naming, refer to previous EPA guidance or contact your certification reviewer.

2. Process Code *(Pull-down menu)*
   Enter either "New submission", "Correction", "Running Change", or "FEL Change" in the space provided. Only enter "Running Change" or "FEL Change" if the engine family is already certified and you are submitting data to support a running change or an FEL change.

3. Test Data Set
Enter "1" for the first test engine, "2" for the second test engine, etc.

4. Engine Code Enter Engine code of the test engine or N/A if no code is assigned.

5. Engine Model Enter the model name of the test engine or N/A if no model name is assigned.

6. Displacement(s) (CID or Liters)
Enter displacement of the test engine and units employed. Either CID or Liters are acceptable. Please be careful to note all units properly.

7. Engine I.D. Number Enter ID number of the test engine.

8. Rated HP @ Rated RPM
Enter test engine rated power and the speed at which the rated power occurs.

9. Torque(ft-lb) @ Engine RPM
Enter test engine maximum rated torque in foot pounds and the maximum rated torque speed for on-highway engines; enter test engine torque @ intermediate speed for nonroad engines.

10. Waivers
For each of the spaces under waivers, please enter either a "Yes", "No", or "NA". Nonroad engine manufacturers should respond NA to all waivers. Waivers are available upon EPA approval for the following combinations of engine category and pollutant:

Engine Category	Idle CO	CO	PM	Smoke
Petroleum Diesel		x		x[1]
Methanol Diesel Cycle	x	x	x	x

11. Cold Start *(Pull-down menu)*

---

[1]Some restrictions apply to the use of this waiver. Please refer to 40CFR86.095-23(c)(2).

Enter either a "Yes", "No", or "NA" in the space provided to indicate use of the cold start waiver. The waiver of the cold start portion of the test is available only for petroleum fueled and methanol fueled diesel engines. No EPA approval is required. Where the waiver does not apply to the engine being certified, enter NA.

12. Certification Fuel *(Pull-down menu)*
Enter type of fuel for which engine family will be certified, choosing from the following list: Diesel (Part 89,Sub D,Appdx A,Table 4), Diesel (Part 89,Sub D,Appdx A,Table 5), Diesel (Part 86.1313-49(b)-Table N94-2), Methanol, Natural Gas (Part 86.1313-94(e)(1)), Propane, Ethanol, Gasoline (Part 86.1313-94(a),Table N94-1), Oxygenated, Bi-fuel 1(CNG or Gasoline), Bi-fuel 2(CNG or Diesel), Dual Fuel 1(CNG or Gasoline), Dual Fuel 2 (CNG or Diesel), LPG (Specs need EPA approval), or Other (if response is "other", specify the certification fuel in the compliance statement).

13. Special Test Device Check either "yes" or "no". A special test device is any piece of equipment, hardware or input which is not described in the regulations but which is employed in emission-testing. A special test device would include any engine or vehicle part (except as specifically documented by EPA) used while operating the engine on the dynamometer but which is not installed in-use.

Items that are special test devices include but are not limited to: emission monitoring equipment or sensors not described in applicable regulations but used during testing; engine or vehicle parts modified from the configuration or calibration described in the application; or simulated or adjusted inputs or signals to the engine computer.

Examples of items that are not considered special test devices are slave catalysts used only while mapping the engine or equipment used to simulate an intercooler.

14. Test Procedure *(Pull-down menu)*
Enter the test procedure used from the list below. If any deviations from the regulatory procedures were used or an alternate or special test procedure was used but is not described in this menu, the manufacturer must specify "Other" in response to this item, and provide a description of the procedure(s) in the statement of compliance. See Section H of this guidance document for the procedure to

obtain approval of and how to report alternate and special test procedures.

Pull-down menu options:
- On-Hwy Diesel (40CFR86 diesel test proc.)
- On-Hwy Otto (40CFR86 Otto-cycle test proc.)
- Nonroad, 8-Mode & smoke (40CFR89 test proc.)
- Nonroad, D2 (Special Procedure)
- Other (Describe in Statement of Compliance)

15. Official Test Results

Record test information from the first test in the column marked "Test 1". Record the date of that test above the column marked "Test 1". If there is a second or third test on the same test engine, record the test date and test results in columns marked "Test 2" and "Test 3" respectively. Record the test results to the number of significant digits listed below. The results are to be recorded in "g/bhp-hr" if the application is for both EPA and CARB. If only applying to the EPA, the reported units can be either "g/bhp-hr" or "g/kW-hr". The units are to be reported in the units box at the bottom of the table. If an emission level is not required to be reported for the engine being tested, enter "N/A".

OFFICIAL TEST RESULTS DIGITS TABLE	
HC/OMHCE gm/bhp-hr	X.XX
NMHC/OMNMHCE gm/bhp-hr	X.XX
CARBON MONOXIDE gm/bhp-hr	X.XX
OXIDE OF NITROGEN gm/bhp-hr	X.XX
PARTICULATE gm/bhp-hr	X.XXX
FORMALDEHYDE	X.XXXX
ACCELERATION SMOKE %opacity	XX.X
LUGGING SMOKE %opacity	XX.X
PEAK SMOKE %opacity	XX.X
IDLE CARBON MONOXIDE %	X.XXX
CO_2	XXX

16. Deterioration Factors
Record all deterioration factors except smoke to the nearest thousandth. Record smoke dfs to the nearest whole number. If a deterioration level is not required to be reported for the engine being tested, enter "N/A".

17. Certification Levels (Rounded Test Results with df applied)
Apply the deterioration factors recorded in item 14 to the emission levels reported in item 13, and report the resulting certification results, rounded in accordance with ASTM E29-90, to the number of digits indicated below. If a standard does not apply for the engine being tested, enter "N/A".

CERTIFICATION LEVELS DIGITS TABLE

HC/OMHCE gm/bhp-hr	X.X
NMHC/OMNMHCE gm/bhp-hr	X.X
CARBON MONOXIDE gm/bhp-hr	XX.X
OXIDE OF NITROGEN gm/bhp-hr	X.X
PARTICULATE gm/bhp-hr	X.XX
FORMALDEHYDE	X.XXX
ACCELERATION SMOKE %opacity	XX
LUGGING SMOKE %opacity	XX
PEAK SMOKE %opacity	XX
IDLE CARBON MONOXIDE %	X.XX

A15

LARGE ENGINE MODEL SUMMARY

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Manufacturer:

EPA Engine Family: _____ Manufacturer Family Name: _____

Engine Code	Engine Model	BHP@RPM (SAE Gross)	Fuel Rate: mm/stroke @ rated speed (for diesel only)	Fuel Rate: (lbs/hr) @ rated speed (for diesels only)	Torque @ RPM (SEA Gross)	Fuel Rate: mm/stroke@ max rated torque	Fuel Rate: (lbs/hr)@max rated torque	Emission Control Device Per SAE J1930
A. 50 State Codes								
B. Federal Codes								

C. California Codes

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LARGE ENGINE MODEL SUMMARY INSTRUCTIONS

Enter EPA engine family name and (if applicable) Manufacturers engine family name in spaces provided in the table above. After entering a line of data (in the table when using the electronic version), press the enter key to move to the next line.

Table entry instructions:

Col 1: List All Engines Codes In Each Sales Area In the section labeled Federal Codes, list all engine codes which will be sold exclusively in the 49 state area which excludes CA. In the California Codes section, list all engine codes which will be sold exclusively in CA. For the column section labeled 50 State Codes, list all engine codes which will be sold in all 50 States.

Col 2: List all models in each engine code Additionally, identify models for each engine code next to their respective Federal, California, and 50 State code.

Col 3: List the horsepower @ rated speed for each model

Col 4: List the Fuel Rate (mm^3 per stroke) @ Rated Speed for each model for diesel-cycle engines only. Enter N/A for Otto-cycle engines.

Col 5: List the Fuel Rate (lbs/hr) @ rated speed for each model for diesel-cycle engines only. Enter N/A for Otto-cycle engines.

Col 6: List Maximum Rated Torque @ RPM for each model

Col 7: List the Fuel Rate (mm^3 per stroke) @ maximum rated torque for each model

Col 8: List the Fuel Rate per stroke (lbs/hr) @ maximum rated torque for each model

Col 9: List all Emission Control Devices for each model using acceptable abbreviations and acronyms. Provide enough detail to adequately describe the major emission control system components, including especially those components which may differ from model to model. Acceptable acronyms and abbreviations may be found in the SAE J1930 Recommended Practice "Electrical/ Electronic Systems Diagnostic Terms, Definitions,

Abbreviations, and Acronyms", June 1993 or the draft SAE "Medium/Heavy Duty E/E Systems Diagnostic Nomenclature".

A18

Large Engine Part Number Summary

Manufacturer:

EPA Engine Family: _____ Manufacturer Family Name: _____

Engine Code:*					
Engine Model:*					
Injection Pump					
Injector					
Turbocharger					
Electronic Control Module					
Sensor Assemblies: Timing - Synchronization Reference Temperature - Oil - Fuel - Coolant - Air Intake Manifold Press Other Sensors					
After Treatment Device (Specify)					
Smoke Puff Limiter					

* If ratings are within codes/models, use different parts and specify numbers for each rating (add another row for rating).

* If part(s) is (are) not listed, space is provided at the end for additional information.

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Large Engine Technical Description

Manufacturer:

EPA Engine Family: _____ Manufacturer Family Name: _____

INSTRUCTIONS FOR THE LARGE ENGINE TECHNICAL DESCRIPTION FORM

Manufacturers must generate and maintain adequate technical descriptions of certification and production engines to demonstrate compliance with applicable regulations and the Clean Air Act. As described below, a General Technical Section must be submitted to EPA, and a more detailed record including calibrations and a description control system logic must be maintained and provided to EPA upon request.

General Technical Description: The first application using this new format must include a full General Technical Description for each family. After the first year, manufacturers may reference (in the statement of compliance) the model year application containing the full description. Every five years, a new description will be necessary to update records. This section must also be updated when new technology is introduced between the normal five year submission interval.

In accordance with the format presented below, the general technical description must include, but not be limited to:

1) A summary table identifying sensed and controlled parameters. (reference the example below)
2) A description of all fuel and ignition system components.
3) A description of all emission control components. (Complete calibrations may not be required but must be maintained as described below.)
4) A description of all AECDs (including control system logic, and/or calibrations, and/or hardware). If an AECD reduces the effectiveness of the emission control system, a justification must be provided. (Complete calibrations may not be required but must be maintained as described below.)
5) For evaporative certification, a description of all Evaporative Control System Components.

Calibrations and Control System Logic: Manufacturers must maintain calibration information and a description of control system logic for each engine family. Like other information submitted to EPA as part of the application, this information must remain up-to-date as changes are made in production, and records must document each calibration produced. Records must include but not be limited to; calibrations, calibration curves, drawings, flow rates, schematics of hose routing, timing strategies and switch points. Additionally, a complete description of strategies contained in control system logic

including but not limited to; all modes of operation (or deactivation) for all sensed and controlled parameters, all values of inputs and outputs, timer strategies, and flow charts. This information must be maintained by the manufacturer with certification records and provided to EPA upon request. Small volume manufacturers shall maintain and provide upon request drawings, calibration curves and schematics of hoses routing.

General Technical Description Format

Section No.	Title
01.00.00	Summary Table of Parameters Sensed and Controlled
02.00.00	Engine Systems
02.01.00	Fuel Systems
02.01.01	Fuel Injection
02.01.02	Carburetor
02.02.00	Ignition Systems
02.03.00	Turbochargers and Intercoolers
02.04.00	Emission Control Systems
02.04.01	Crankcase
02.04.02	Engine Modifications
02.04.03	Air Injection
02.04.04	Exhaust Gas Recirculation
02.04.05	Catalyst
02.04.06	Smoke-Puff-Limiter
02.04.07	Other
03.01.00	Auxiliary Emission Control Devices
04.01.00	Emission Control Warning Devices
05.01.00	Evaporative Emission Control System
05.01.01	Fuel Storage Method
05.02.01	Fuel Lines
05.03.01	Canister
05.04.01	Valves
06.01.00	Other

Example Summary Table of Sensed and Controlled Parameters

Parameters Controlled	Parameters Sensed									
	RPM	EGR	AIR Inj.	Manif. Air Temp	MAP	Exh. O2	TPS	A/C Request	Time	Veh. Spd.
FI	X			X	X	X	X		X	X
RPM		X	X							
EGR	X					X			X	
Idle Speed	X			X			X	X	X	
Air Inj.	X					X	X		X	

APPENDIX B

Confidential Business Information in the Certification Application

CONFIDENTIAL BUSINESS INFORMATION

As a general principle, information provided to EPA by individuals or companies will be considered public information and will be provided to those who request it unless the information falls under one of the exemptions listed in the Freedom of Information Act (the Federal statute which governs disclosure of information to the public). One of these exemptions is information which the submitting individual or company asserts is confidential or proprietary information (e.g., trade secrets).

Manufacturers are entitled to assert a claim of confidential business information (CBI) on the information which they are required to submit in a certification application. EPA will not release any information that qualifies as CBI before the effective date of the certificate. If the manufacturer wishes this information to remain confidential until the engine family is introduced into commerce (when this date is after the effective date of the certificate), the manufacturer must inform EPA of this actual date of introduction into commerce when it submits its certification application, and specifically request that the information remain confidential until the introduction date.

For example, consider this time line for a 1997 model year engine:

Date certificate issued:	December 1, 1996
Date certificate is effective:	January 2, 1997
Date of introduction into commerce:	April 1, 1997

Under this time line, EPA would not release any CBI from the certificate application until April 1, 1997 or later, provided the manufacturer informs EPA of the date of introduction into commerce and makes such a request when it submits its certification package.

Manufacturers should be aware that certain information in the certification application can retain CBI status even after the actual date the engines are introduced into commerce. For example, projected sales figures could retain CBI status until

the end of the model year of the engine. If a manufacturer desires that certain information retain CBI status after the date the engines are introduced into commerce, it must make this request when it submits its application package.

Under EPA regulations at 40 CFR 89 and 40 CFR 86, manufacturers must indicate clearly what information submitted is confidential. Manufacturers may state in the application cover letter which sections of the application are CBI, or/and otherwise mark or stamp the CBI. Whenever a manufacturer submits an application which contains information asserted to be confidential, EPA urges the manufacturers to submit an additional application with all CBI deleted to accompany the original application.

Based on EPA's historical experience with certification applications in the on-highway program, EPA notes that certain information in the application should not be considered eligible to fall under a CBI claim under any circumstances. This information is generally available to the public or competitors and disclosure of this information would not be likely to cause any harm to the competitive position of any manufacturer. The Engine Compliance Programs Group (ECPG) staff believes that the information provided in response to the following questions on the Large Engine Certification Application Form should not be considered confidential under any circumstances:

1. Manufacturer Name
2. Contact Person, Address, Telephone, Facsimile
3. Engine Family Name
5. CARB E.O. Number, If Any
6. Model Year
8. Production Plant Location
18. Carryover of Test Results
24. Test Date
25. Test Location
26. Emission Sampling Method
27. Test Cycle
28. Certification Fuel
29. Certification Test Results

Finally, manufacturers should remember that, if EPA receives a request under the Freedom of Information Act for release of a certification application, EPA will inform the requestor (in

writing) that all information asserted to be CBI by the manufacturer cannot be released until the Agency (which in this instance means the Office of General Counsel (OGC)) makes a "final determination of confidentiality." The EPCG staff will then write to the manufacturer to offer the opportunity to substantiate its claim about the business confidentiality of the information by answering some questions about the information (the questions can be found in regulations at 40 CFR 2.204(e)). The EPCG staff will review the manufacturer's responses to these questions and forward them with comments to the OGC for the final determination of confidentiality.

Any questions about this process should be addressed to:

Robert M. Doyle, Attorney-Advisor
Engine Compliance Programs Group
U.S. Environmental Protection Agency
401 M Street, S.W. (6403J)
Washington, DC 20460
Telephone (202) 233-9258
Facsimile (202) 233-9596

APPENDIX C

CERTIFICATE OF CONFORMITY

C1 Sample Nonroad Certificate of Conformity without Banking & Trading

C2 Sample Nonroad Certificate of Conformity with Banking & Trading

C3 Sample On Highway Certificate of Conformity without Banking & Trading

C4 Sample On Highway Certificate of Conformity with Banking & Trading

SAMPLE OF NONROAD CI CERTIFICATE OF CONFORMITY WITHOUT BANKING AND TRADING

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

SAMPLE

~~____ MODEL YEAR~~
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 19~~__~~ AS AMENDED IN 1990
ISSUED TO:

~~_____~~ ~~_____~~
MANUFACTURER CERTIFICATE NUMBER

~~_____~~ ~~_____~~
Chester J. France EFFECTIVE DATE
Director, Engine Programs & Compliance
OFFICE OF MOBILE SOURCES

DATE ISSUED: ~~_____~~

Pursuant to Section ~~213~~ of the Clean Air Act (42 U.S.C. § 7547) and 40 CFR 89, and ~~subject to the terms and conditions~~ prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 89 and produced in the stated model year:

NONROAD COMPRESSION-IGNITION ENGINE FAMILY:

This certificate of conformity covers only ~~those~~ new nonroad compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 89 and which are produced ~~during~~ the model year stated ~~in~~ this certificate of the said manufacturer, as defined in 40 CFR Part 89. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 89.129-96 and 89.506-96 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 89. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR ~~Part~~ 89.

This certificate ~~does not cover nonroad engines sold~~, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

SAMPLE OF NONROAD CI CERTIFICATE OF CONFORMITY WITH BANKING AND TRADING

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

_____ MODEL YEAR

CERTIFICATE OF CONFORMITY

WITH THE CLEAN AIR ACT OF 1970 AS AMENDED IN 1990

ISSUED TO:

_____ _____
MANUFACTURER CERTIFICATE NUMBER

_____ _____
Chester J. France EFFECTIVE DATE
Director, Engine Programs & Compliance
OFFICE OF MOBILE SOURCES

DATE ISSUED: _____

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. § 7547) and 40 CFR 89, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 89 and produced in the stated model year:

NONROAD COMPRESSION-IGNITION ENGINE FAMILY:

This certificate of conformity covers only those new nonroad compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 89 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 89. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

This certificate of conformity is conditional upon compliance of said manufacturer with the averaging, banking and trading provisions of 40 CFR Part 89, Subpart C. Failure to comply with these provisions may render this certificate void *ab initio*. The family NOx emission limit (FEL) is ___ g/kW-hr.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 89.129-96 and 89.506-96 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 89. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 89.

This certificate does not cover nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

SAMPLE OF ON HIGHWAY CERTIFICATE OF CONFORMITY WITHOUT BANKING AND TRADING

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

SAMPLE

1996 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1970 ISSUED TO:

MANUFACTURER

CERTIFICATE NUMBER

Chester J. France, Director, EPCD
OFFICE OF MOBILE SOURCES

EFFECTIVE DATE

DATE ISSUED:

Pursuant to Section 206 of the Clean Air Act (42 U.S.C. 7525) and 40 CFR Part 86, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following motor vehicle engines, by engine family, more fully described in the documentation required by 40 CFR Part 86 and produced in the stated model year:

HEAVY DUTY (HEAVY-HEAVY) DIESEL FAMILY:

This certificate of conformity covers only those new motor vehicle heavy heavy-duty diesel engines which conform, in all material respects, to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 86 and which are produced during the model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Part 86. This certificate of conformity does not cover vehicles imported prior to the effective date of the certificate.

SAMPLE

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 86.096-7, 86.606, and 86.1006 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR part 86 including 40 CFR 86.096-30 or render the certificate void ab initio as specified in 86.096-7. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void ab initio for reasons specified in 40 CFR part 86, including 40 CFR 86.096-30, 86.612, 86.096-7, and 86.1012.

This certificate does not cover vehicles or engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

SAMPLE

SAMPLE OF ON HIGHWAY CERTIFICATE OF CONFORMITY WITH BANKING AND TRADING

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ANN ARBOR, MICHIGAN 48105

SAMPLE

1996 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1970 ISSUED TO:

MANUFACTURER _____ CERTIFICATE NUMBER _____

OFFICE OF MOBILE SOURCES _____ EFFECTIVE DATE _____

DATE ISSUED:

Pursuant to Section 206 of the Clean Air Act (42 U.S.C. 7525) and 40 CFR Part 86, and subject to the terms and conditions prescribed in these provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following motor vehicle engines, by engine family, more fully described in the documentation required by 40 CFR Part 86 and produced in the stated model year:

HEAVY-DUTY (MEDIUM-HEAVY) DIESEL ENGINE FAMILY:

This certificate of conformity covers only those new motor vehicle medium heavy-duty diesel engines which conform, in all material respects, to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 86 and which are produced during the model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Part 86. This certificate of conformity does not cover vehicles imported prior to the effective date of the certificate.

This certificate of conformity is conditional upon compliance of said manufacturer with the provisions of 40 CFR 86.090-15, 86.091-15, 86.094-15 and other banking, averaging and trading provisions of 40 CFR Part 86 including those applicable after model year production. Failure to comply with applicable sections of 40 CFR Part 86 including 40 CFR 86.090-15, 86.091-15 and 86.094-15 may render this certificate void ab initio. The family NOx emission limit is _____ g/BHP-hr.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 86.096-7, 86.606, and 86.1006 and authorized in a warrant or court order. Failure to comply with requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 86 including 40 CFR 86.095-30, or render the certificate void ab initio as specified in 86.096-7. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void ab initio for other reasons specified in 40 CFR Part 86, including 40 CFR 86.095-30, 86.612, 86.096-7, and 86.1012.

This certificate does not cover vehicles or engines sold, offered for sale, or introduced, or delivered for introduction into commerce in the U.S. prior to the effective date of the certificate.

APPENDIX D

EPA STANDARD ENGINE AND EVAPORATIVE FAMILY NAMES

EPA Standardized Engine and Evaporative Family Names for 1998 and Later Model Year Light-Duty Vehicles, Trucks, Motorcycles and Nonroad Engines

The following document is a final document prepared for distribution. It has been peer reviewed and EPA has made a decision to adopt this design.

Manufacturers must use a standardized system for identifying their individual engine families. The system described below was developed by EPA in 1995 to meet new regulatory requirements for 1998 and later model years.

The engine family name consists of 12 characters. For the displacement field, zero is used as a space character in the leading position when a value does not apply. To avoid confusion with numeric characters '0' and '1', characters 'I' and 'O' are not used. It is considered desirable to minimize use of characters 'Q', 'L', 'Z', 'S' 'G', which can be confused with '0', '1', '2', '5', and '6'; however, this has not always been possible. The following method is to be used to name engine families when data is submitted. The format of the standardized engine family name is:

Family information for all families

Number Characters	Columns	Description
1	1	Model Year (Table 1)
3	2-4	Letter code identifying manufacturer (Table 2)
1	5	Family type

N - Nonstandard family type
V - Light-duty vehicle family
T - Light-duty truck family
C - Motorcycle family
E - Evaporative family
H - Heavy heavy-duty engine family
S - Small nonroad family
L - Large nonroad family
M - Marine engine family
A - California only medium duty family
R - Evaporative/Refueling family

Light-duty vehicles, trucks and motorcycles

Number Characters	Columns	Description
4	6-9	Displacement in liters (e.g. 05.7-the decimal point counts as a digit and the leading zero is a space) or cubic inches (e.g., 0350, 0097). For dual or variable displacement families enter the maximum displacement. For large displacement engines, the displacement may be entered as XX.X format (e.g., 12.1). Small engines may be entered as a .XXX format (e.g., .072, 0.07, 00.7). In all cases the displacement will be read in liters if a decimal point is entered and it will be read in cubic inches if there is no decimal point.
3	10-12	Sequence characters. Enter any combination of valid characters to provide a unique identification for the family name. It is recommended that numbers and letters be selected that minimize possible confusion.[2]

TABLE 1. LETTER CODES FOR MODEL YEAR (Column 1)

Code	Year	Code	Year	Code	Year
A	1980	L	1990	Y	2000
B	1981	M	1991	1	2001
C	1982	N	1992	2	2002
D	1983	P	1993	3	2003
E	1984	R	1994	4	2004
F	1985	S	1995	5	2005
G	1986	T	1996	6	2006
H	1987	V	1997	7	2007
J	1988	W	1998	8	2008
K	1989	X	1999	9	2009

TABLE 2. LETTER CODES FOR MANUFACTURERS (Columns 2-4)

Until 1991, independent letter codes were assigned for light-duty and heavy-duty manufacturers. In several instances different codes were either used for a single manufacturer that sold both light and heavy-duty vehicles and engines or the same letter code was used for different light and heavy-duty manufacturers. This did not

[2]At a minimum, the sequence characters, in combination with the other characters in the family name, must provide a unique identifier for the family. It is recommended, but not required, that the sequence characters themselves be unique for all families for a manufacturer and model year. These sequence characters may be used to codify information to meet California's requirements, but they will be treated as simple sequence characters by EPA's computer software.

cause a significant problem for EPA because completely independent computer systems were used for light-duty and heavy-duty/motorcycle; however, this may have caused difficulty for non-EPA users.

In 1991, EPA combined the letter codes for light-duty and heavy-duty manufacturers and added letter codes for independent commercial testing laboratories (needed to allow EPA to identify the source of test data) and utility engine manufacturers. The combined codes went into effect for 1994 and later model years. Whenever a letter code was used by more than one manufacturer and both manufacturers were expected to certify vehicles and engines for 1994 and later model years, it was necessary to assign a new letter code to one of the manufacturers. For this reason, several manufacturers have different letter codes for model years before and after 1994. In 1993 EPA began to define letter codes for marine engine manufacturers and government laboratories. Utility engine manufacturers were split into two categories: large off road engines and small off road engines. Manufacturers identified previously as utility engine manufacturers are still identified as utility engine manufacturers in this document; however, EPA will eventually respecify these manufacturers as large off road or small off road engine manufacturers.

Table 2 provides a list of Vehicle Information manufacturer codes and engine/evaporative family letter codes for manufacturers and laboratories that are currently certifying or testing vehicles, engines, and motorcycles. The table identifies the type of product or service provided by each organization:

Engine/Evaporative Family Manufacturer Subcodes and Vehicle Information Manufacturer Codes

LD - Light-duty vehicles
HD - Heavy heavy-duty vehicles/engines
MC - Motorcycles
IL - Independent testing lab.
ME - Marine engines
UE - Utility engines
SN - Small nonroad engines
LN - Large nonroad engines
GL - Government laboratory

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
10	LD	CHRYSLER (AMC) AMX	AM	same
20	LD	CHRYSLER CRX	CR	same
	HD	CHRYSLER CRX	CC[3]	CR
30	LD	FORD FMX	FM	same
	HD	FORD FMX	FM	same
40		GENERAL MOTORS GCX	GC	G C , G M [4]
	LD	CPC (Chevrolet, Pontiac) GMX	1G	1 G , G M
	LD	BUICK-OLDSMOBILE-CADILLAC GMX	2G	2 G , G M
	HD	TRUCK & BUS GMX	3G	3 G , G M
	LD	SATURN GMX	4G	4 G , G M
	HD	GENERAL MOTORS GMX	GM	GM
52	LD, UE, HD, SN, MC, LN, IL, GL, ME			

[3]Also used by obsolete light-duty manufacturer CCC Engineering, manufacturer 139, for model years before 1994.

[4]The 1994 Application Format Data Supplement stated that code 'GC' would be used for 1994 and later model years; however, this code was never actually used--the division codes were used instead for 1994 and 1995. For 1996 and later, code 'GM' is used exclusively by General Motors for all engine and evaporative families.

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
		TASMANIA MOTOR WORKS[5] TWX	TW	same
55	HD	DETROIT DIESEL DDX	DD	same
60	LD	AC CARS LIMITED ZZX	ZZ	same
67	LD	AMERICAN LIMOUSINE MFR. INC Z6X	Z6	same
68	LD	AMERICAN MUSCEL LTD A4X	A4	same
69	HD	AMERICAN TECHNOLOGY GROUP A9X	A9	same
70	LD	ASTON MARTIN ASX	AS	same
90	LD	FIAT AUTO S.P.A. ARX	AR	same
95	HD	AM GENERAL AZX	AZ	same
98	LD	AURORA CARS AAX	AA	same
101	LD	AUTOKRAFT LIMITED AK	AK	same
103	LD	ASC INC. A3X	A3	same
106	LD	ALLCO EURO MOTORS A6X	A6	same
108	LD	ROVER GROUP LTD. (AR) AWX	AW	same
112	HD	BLUE BIRD BODY BBX	BB	same
118	MC	BAJAJ AUTO LIMITED BJX	BJ	same
119	MC	BUELL MOTORCYCLE BL	BL	same
120	LD	BMW BMX	BM	same
	MC	BMW AG BMX	BM	same
123	MC	BIMOTA S.P.A. Z8X	Z8	same
126	LD	BONAIR USA B3X	B3	same
133	LN	BAKER EQUIPMENT ENGINEERING CO. X3X	X3	same
134	LD	BUGATTI AUTOMOBILI SPA BAX	BA	same
141	LD	CHAMPAGNE IMPORTS INC. Z5X	Z5	same

[5]Manufacturer Tasmania Motor Works was defined to provide a manufacturer code that can be used to test EPA computer systems. It is identified here because the codes used by Tasmania Motor Works are now reserved and because users of EPA computer systems may encounter references to this manufacturer.

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
143	LD	CALLAWAY C6X	C6	same
144	MC	CAGIVA NORTH AMERICA CGX	CG	same
146	LD	CHICAGO ARMOR&LIMOUSINE MFR CORP Z7X	Z7	same
147	LD	CCE, INC C7X	C7	same
150	LD	CITROEN CTX	CT[6]	same
156	MC	CLASSIC MOTORCYCLES LIMITED CMX	CM	same
157	MC	CLIFFORD GUN TRADERS & SUPPLIES CLX	CL	same
162	LD	CONSULIER INDUSTRIES INC. C3X	C3	same
163	LD	COLLINS PROFESSIONAL CARS. INC. Y4X	Y4	same
168	MC	CUSHMAN CUX	CU	C H
169	LD	CX AUTOMOTIVE CXX	CX	same
175	LD	DACIA (ARO) DAX	DA	same
178	LD	DAEWOO DWX	DW	same
180	HD	DAF DTX	DT[7]	D F
185	LD	DABRYAN COACH BUILDERS INC. Y2X	Y2	same
190	LD	DAIHATSU MOTOR COMPANY LTD. DHX	DH	same
196	LD	MITSUBISHI MOTOR MANUF OF AMERICA DSX	DS	same
197	LD	DUTCHER MOTORS INC DTX	DT[8]	same
200	LD	MERCEDES BENZ MBX	MB	same
	HD	MERCEDES-BENZ AKTIENGELLSCHAFT MBX	MB	same
201	LD	EMPIRE COACH E6X	E6	same
204	LD,HD	US ELECTRICAR ELX	EL	same
206	LD	DNIEPER U.S.A. DPX	DP	same

[6]Also used by heavy-duty manufacturer Caterpillar, manufacturer 730, for model years before 1994.

[7]Also used by light-duty manufacturer Dutcher Motors Inc, manufacturer 197, for all years.

[8]Also used by heavy-duty manufacturer DAF, manufacturer 180, for model years before 1994.

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
207	LD	EXECUTIVE COACH BUILDERS V3X	V3	same
208	LD	ECS/ROUSH E5X	E5	same
212	LD	EUROPEAN AUTO WERKS, INC. E2X	E2	same
220	LD	FERRARI FEX	FE	same
222	LD	EVANS AUTOMOBILES E1X	E1	same
227	LD	FEDERAL COACH F2X	F2	same
230	LD	FIAT FTX	FT[9]	same
241	HD	FREIGHTLINER FRX	FR	same
242	LD	GREEN WHEELS ELECTRIC G4X	G4	same
243	MC	ALEX GREENSPAN T/A FIN GAX	GA	same
244	LD	GREENWOOD AUTOMOTIVE PERFORMANCE GWX	GW	same
246	LD	GRUMMAN ALLIED INDUSTRIES GRX	GR	same
250	HD	HINO MOTORS HMX	HM	same
251	LD	G & K AUTOMOTIVE CONVERSION INC G1X	G1	same
253	LD	VECTOR AEROMOTIVE CORPORATION G2X	G2	same
254	LD	GOLDACRE LTD. G3X	G3	same
255	MC	HARLEY DAVIDSON HDX	HD	same
258	SN	HATZ GMBH & CO KG HZX	HZ	same
260	LD	HONDA HNX	HN	same
	MC	HONDA HNX	HN	same
	UE	HONDA HNX	HN	same
265	LD	HYUNDAI HYX	HY	same
266	LD	ICI-INTERNATIONAL X1X	X1	same
271	LD	IMPCO Z9X	Z9	same
272	LD	IMPORT TRADE SERVICES T1X	T1	same
285	LD	ISIS IMPORTS LTD Z3X	Z3	same
290	LD	ISUZU SZX	SZ	same

[9]Also used by heavy-duty manufacturer Oshkosh Truck, manufacturer 767, for model years before 1994.

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
	HD	ISUZU MOTORS SZX	SZ	same
305	LD	JAGUAR CARS INC JCX	JR (WAS JC)	JC
308	LD	JBA MOTORCARS INC J1X	J1	same
314	LD	J.K. MOTORS J3X	J3	same
329	LD	KINGS ENVIRONMENTAL HYDROGEN SYS K4X	K4	same
331	MC	KAVULICH INTERNATIONAL MNX	MN[10]	M 5
332	LD	KRYSTAL COACH INC. KKX	KK	same
333	MC	KTM MOTOR KTX	KT	same
335	MC	KAWASAKI KAX	KA	same
338	LD	KIA MOTORS CORPORATION KMX	KM	same
339	LD	KSK DISTRIBUTING K2X	K2	same
344	LD	LIMOUSINE WERKS L6X	L6	same
347	LD	LIPHARDT & ASSOCIATES INC LPX	LP	same
350	LD	LOTUS LTX	LT	same
352	LD	LAREDO COACHWORKS, INC L7X	L7	same
355	HD	STEELBRO MANUFACTURING, LTD SBX	SB	same
357	SN	MAKITA USA INC M6X	M6	same
358	MC	MATCHLESS MOTOR CYCLES M2X	MA[11]	M 2
360	LD	MASERATI MAX	MA[12]	same
366	MC	MILLER SPECIALTIES MSX	MS	same
369	MC	MOTO AMERICA MGX	MG	same
371	MC	MUZ, MOTORRAD UND ZWEIRADWERK MZX	MZ	same
373	LD	NORTH AMERICAL MVS N3X	N3	same

[10]Also used by heavy-duty manufacturer MAN NutzPahrzeuge, manufacturer 762, for all years.

[11]Also used by light-duty manufacturer Maserati, manufacturer 360, for all years.

[12]Also used by motorcycle manufacturer Matchless Motor Cycles, manufacturer 358, for model years before 1994.

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
374	MC	NATIVE AMERICAN MOTORCYCLE CO. N6X	N6	same
376	LD	NEOAX NXX	NX	same
378	MC	NEVAL MOTORCYCLES NYX	NL[13]	N Y
380	LD	NISSAN NSX	NS	same
381	HD	NISSAN DIESEL MOTOR CO. NDX	ND	same
394	MC	OMC LINCOLN MCX	MC	same
404	LD	PRODUCTION AUTOMOTIVE SYSTEMS PSX	PS	same
407	LD	PANOZ AUTO-DEVELOPMENT CORP P3X	P3	same
410	LD	PEUGEOT PEX	PE[14]	same
416	LD	PIERRE ENTERPRISES SOUTHEAST, INC PSX	PS	same
420	LD	PORSCHE PRX	PR	same
426	LD	PYRAMID COACHBUILDERS P4X	P4	same
430	LD	RENAULT REX	RE	same
431	LD	PAS INC. F2X	P2	same
432	LD	RENNTECH INC. R2X	R2	same
433	HD	RENAULT VEHICULES INDUSTRIELS R3X	R3	same
439	LD	RAYTON-FISSORE NORTH AMERICA R1X	R1	same
440	LD	ROLLS-ROYCE MOTORCARS LTD. RRX	RR	same
453	MC	RCSCETTI RCX	RC[15]	same
454	LD	RUF AUTOMOBILE GMBH RAX	RA	same
457	LD	ROYALE LIMOUSINE MANUFACTURERS RLX	RL	same
460	LD	ROVER GROUP LTD. LRX	LR	same
470	LD	SAAB SAX	SA	same

[13]Also used by light-duty manufacturer Lamborghini, manufacturer 691, for all years.

[14]Also used for heavy-duty manufacturer Perkins Engine Company, manufacturer 770, for model years before 1994.

[15]Also used by obsolete light-duty manufactuer Replicar, manufacturer 435, for model years before 1994.

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
	HD	SAAB SCANIA SAX	SS[16]	S A
471	LD	SAAC CAR COMPANY INC. S6X	S6	same
472	LD	SALEEN AUTOSPORT S3X	S3	same
473	LD	SALEEN PERFORMANCE PARTS, INC. S8X	S8	same
475	LD	SEGUELS SERVICE INC S2X	S2	same
481	LD	SHELBY AUTOMOBILES INC SYX	SY	same
487	LD	SLP ENGINEERING S5X	S5	same
490	LD	MITSUBISHI MTX	MT[17]	same
	HD	MITSUBISHI MMX	MM[18]	M T
491	LD	MITSUBISHI MOTOR SALES AMERICA M3X	M3	same
492	LD	MITSUBISHI MOTORS AUSTRALIA LTD MLX	ML	same
515	LD	SUPERIOR OF OHIO INC V1X	V1	same
520	LD	EXCALIBUR AUTOMOBILE EXX	EX	same
526	LD	TDM TECHNOLOGIES, INC. T4X	T4	same
527	LD	THOMAS PUGH AND LINDA MCKNIGHT T3X	T3	same
529	HD	TRANSI-CORP T5X	T5	same
530	MC	TRIUMPH DESIGNS LTD TDX	TD	same
534	LD	SPORTS CAR AMERICA PUMA DIVISION Z4X	Z4	same
540	LD	SUZUKI MOTOR CORPORATION SKX	SK	same
	MC	SUZUKI SKX	SK	same
560	LD	MAZDA MOTOR CORP. TKX	TK	same
570	LD	TOYOTA TYX	TY	same
576	LD	NEW UNITED MOTOR MFG INC NTX	NT	same

[16]Also used by obsolete light-duty manufacturer Sun Country Imports, manufacturer 541, for model years before 1994.

[17]Also used by heavy-duty manufacturer Mack Truck, manufacturer 760, for model years before 1994.

[18]Also used by obsolete light-duty manufacturer Metric Motors, manufacturer 202, for model years before 1994.

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
579	LD	UTILIMASTER CORP. OF AMERICA Z1X	Z1	same
581	MC	URALMOTO JSC YPX	YP	same
582	LD	UNITED STATES COACHWORKS Y6X	Y6	same
583	LD	US TRADE CORP. Z2X	Z2	same
590	LD	VOLKSWAGEN VWX	VW	same
600	LD	VOLVO VVX	VV	same
603	LD	WALLACE ENVIR.TESTING LAGS. INC WAX	WA	same
605	HD	VOLVO WHITE TRUCK DIVISION VTX	VT	same
608	LD	WISCONSIN LIFT TRUCK CORP. WLX	WL	same
611	MC	WESTWARD INDUSTRIES WWX	WW	same
614	LD	YUGO AMERICA, INC. YAX	YA[19]	same
615	MC	YAMAHA YMX	YA[20]	Y M
640	LD	AUDI ADX	AD	same
645	LD	AMPHI-RANGER OF AMERICA Y1X	Y1	same
660	LD	FUJI HEAVY IND FJX	FJ	same
661	SN	FUJI ROBIN INDUSTRIES LTD. FNX	FN	same
691	LD	LAMBORGHINI NLX	NL[21]	same
720	HD	WINNEBAGO INDUSTRIALS WBX	WB	same
728	HD	ASQUITH MOTOR CARRIAGE CO. LTD A7X	A7	same
730	HD	CATERPILLER CPX	CT[22]	C P
735	HD	CLARION MOTORS CAX	CA	same

[19]Also used by motorcycle manufacturer Yamaha, manufacturer 615, for model years before 1994.

[20]Also used by light-duty manufacturer Yugo America, manufacturer 614, for all years.

[21]Also used by motorcycle manufacturer Neval Motorcycles, manufacturer 378, for model years before 1994.

[22]Also used by light-duty manufacturer Citroen, manufacturer 150, for all years.

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
	MC	CLARION MOTORS CAX	CA	same
740	HD	CUMMINS CEX	CE	same
743	HD	DEERE & COMPANY JDX	JD	same
745	HD	KLOCKNER-HUMBOLT-DEUTZ AG DZX	DZ	same
747	HD	FLEETWOOD ENTERPRISES FWX	FW	same
748	HD	GILLIG GLX	GL	same
750	HD	HERCULES ENGINES HEX	HE	same
755	HD	IVECO B.V. VEX	VE[23]	same
760	HD	MACK TRUCKS MKX	MT[24]	M K
762	HD	MAN NUTZPAHRZEUGE MNX	MN[25]	same
765	HD	NAVISTAR INTERNATIONAL TRANS. NVX	NV	same
767	HD	OSHKOSH TRUCK S7X	FT[26]	S 7
770	HD	PERKINS ENGINE COMPANY PKX	PE[27]	P K
775	HD	ROADMASTER RMX	RM	same
777	LD,UE,HD,SN,MC,LN,IL,GL,ME	JURASSIC PASSENGER CARS[29] JPX	JP	same

[23]Also used by obsolete light-duty manufacturer Village Emission Research Inc, manufacturer 594, model years before 1994.

[24]Also used by light-duty manufacturer Mitsubishi, manufacturer 490, for all years.

[25]Also used by motorcycle manufacturer Kavaulich International, manufacturer 331, for model years before 1994.

[26]Also used by light-duty manufacturer Fiat, manufacturer 230, for all years.

[27]Also used by light-duty manufacturer Peugeot, manufacturer 410, for all years.

[29]Manufacturer Jurassic Passenger Cars was defined to provide a manufacturer code that can be used to test EPA computer systems. It is identified here because the codes used by Jurassic Passenger Cars are now reserved and because users of EPA computer systems may encounter references to this manufacturer.

V.I. MFR Code	Product Code	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
793	HD	TRANSPORTATION MANUFACTURING COR T6X	T6	same
795	HD	VIRONEX VXX	VX	same
802	UE	ANDREAS STIHL ASX	AS	same
805	UE	BRIGGS & STRATTON BSX	BS	same
815	LN	DAE HUNG DEX	DE	same
825	UE	KIORITZ EHX	EH	same
828	UE	GENERAC CORP GNX	GN	same
835	UE	HOMELITE TEXTRON H2X	H2	same
838	UE	HUSQVARNA AB HVX	HV	same
840	UE	INERTIA DYNAMICS CORP. N4X	N4	same
845	UE	KOHLER COMPANY KHX	KH	same
847	UE	KOMATSU ZENOAH AMERICA KZX	KZ	same
848	LN	KOMATSU LTD. KLX	KL	same
849	UE	KUBOTA KBX	KB	same
850	UE	LAWN-BOY L4X	L4	same
852	UE	LISTER PETTER, INC. L5X	L5	same
854	SN	MARUYAMA U.S. INC M4X	M4	same
855	UE	MCCULLOCH CORP. MHX	MH	same
860	UE	NELSON NEX	NE	same
865	UE	ONAN CORP N5X	N5	same
867	SN	SOLO INC S9X	S9	same
868	UE	POULAN/WEED EATER PWX	PW	same
869	UE	SHINDAIWA INC SWX	SW	same
870	UE	TECUMSEH PRODUCTS TPX	TP	same
871	SN	TANAKA KOGYO CO LTD T7X	T7	same
872	UE	TELEDYNE TOTAL POWER T2X	T2	same
885	UE	YANMAR DIESEL ENGINE USA YDX	YD	same
890	UE	WACKER CORP. W1X	W1	same
893	SN	WIS-CON TOTAL POWER CORP WPX	WP	same
901	IL	AUTOMOTIVE TESTING LABS, INC. 01X	01	same

V.I. MFR Code	Product	Manufacturer or laboratory ≥1998	Manufacturer/lab Subcodes <1994	1994-1997
902	IL	ECS LABORATORIES INC. 02X	02	same
903	IL	ENVIRONMENTAL TESTING CORP. 03X	03	same
904	IL	LUCAS ENGINE MANAGEMENT SYSTEMS 04X	04	same
905	IL	ENVIRONMENTAL RESEARCH & DEV. CO 05X	05	same
906	IL	NORTHERN CAL.EMISSIONS LAB. 06X	06	same
907	IL	TESTING SERVICES INC. 07X	07	same
908	IL	COMPLIANCE & RESEARCH SERVICES 08X	08	same
909	IL	AUTOMATED CUSTOM SYSTEMS, INC. 09X	09	same
910	IL	CALIFORNIA ENVIRONMANTAL ENG. 10X	10	same
911	IL	EAGLE PITCHER AUTOMOTIVE GROUP 11X	11	same
912	IL	TICKFORD LIMITED K3X	K3	same
920	GL	COUNTRY OF SWEDEN SGX	SG	same
980	GL	CALIFORNIA AIR RESOURCES BOARD 80X	80	same
991	GL	EPA CD 91X	91	same
992	GL	EPA EOD 92X	92	same
993	GL	EPA MOD 93X	93	same
994	GL	EPA FOSD 94X	94	same
995	GL	EPA ECTD (obsolete) 95X	95	same
996	GL	EPA RDSD 96X	96	same
997	GL	EPA EPSD 97X	97	same

Evaporative family names

Columns 1-5 are the same as engine family names.

Number Characters	Columns	Description
4	6-9	Canister work capacity: Total grams in all canisters
3	10-12	Sequence characters. Enter any combination of valid characters to provide a unique identification for the family name. It is recommended that numbers and letters be selected that minimize possible confusion.[29]

Other engine and evaporative family descriptive information that would be required to identify emission standards will be described in a separate document.

[29]At a minimum, the sequence characters, in combination with the other characters in the family name, must provide a unique identifier for the family. It is recommended, but not required, that the sequence characters themselves be unique for all families for a manufacturer and model year. These sequence characters may be used to codify information to meet California's requirements, but they will be treated as simple sequence characters by EPA's computer software..

APPENDIX E

EPA EVAPORATIVE SECTION (On Highway Vehicle Certification Only)

E1 Large Engine Evaporative Emission Form and Instructions

E4 Sample Evaporative Statement of Compliance

E5 Table of Evaporative Standards

E7 Sample On Highway Evaporative Certificate

E1

LARGE ENGINE EVAPORATIVE EMISSION FORM

1. Model Year _____
2. Date _____
3. Process Code _____
4. Test Data Set Number _____
5. EPA Standardized Evaporative Family name _____
6. Fuel _____

7. A.) Evaporative Certification Standard _____ B.) Weight Catagory _____

8. Evaporative Results

	Test 1	Test 2	Test 3
Date of Test			
3 Diurnal g/test			
2 Diurnal g/test			
Running Loss g/test			
Spit Back g/test			
Pre 1996 Evap Test g/test			

9. Evaporative Family/Engine Comparison Information

Evaporative Family Code	Engine Manufacturer	Engine Family	Evaporative Control System

Comments: _____

DRAFT

Instructions for Large Engine Evaporative Emission Certification Form (For On Highway Vehicle Certification Only)

The On Highway Vehicle manufacturer completes the Large Engine Evaporative Emission Certification Form, which contains the information and data used to demonstrate compliance with evaporative emission requirements. The form is designed to assist the EPA data input into an electronic data base. If more than one test is run on one vehicle configuration, each set of test results should be placed in its own column (labeled Test 1, Test 2, etc.) found on the Large Engine Vehicle Certification Evaporative Form. Please be sure to include units, or in cases where units are present on the forms, verify the validity of the preset units. The on- highway vehicle manufacturer is not required to submit a copy of the engine certification application forms.

For some classes of vehicles, engineering judgement may be used in place of the performance of standard test procedures (see Appendix E Tables). In these instances, data generated through the use of engineering judgement must still be entered in the Evaporative Results section (form E1, item #8).

The new Large Engine Evaporative Emission Certification Form has been created directly in the EPAs engine database. The following instructions are provided to assist filling out the forms for both the paper and electronic versions. Presently, only the paper version is available. The electronic version is bing developed. The electronic version will employ "pull-down" menus for some questions to aid in data input. For those questions, employing pull-down menus, only the responses contained in the pull-down menu are acceptable, even if the application is submitted in a paper version. The instructions below will identify the questions which employ pull-down menus and will list the acceptable responses.

Large Engine Vehicle Certification Evaporative Form

1. *Model Year (Pull-down menu)*
   The model year for which certification is sought (4 digits, ex 1996).

2. Data
   EPA will enter the date form received.

3. *Process Code (Pull-down menu)*
   Enter either a "New submission", "Correction", or "Running Change" in the space provided.

4. Test Data Set Number
   Enter a "1" for the first test combination. If additional combinations are tested, submit a separate form for each test combination and label the subsequent combinations "2", "3", etc.

5. EPA Standardized Evaporative Family Name
   See Appendix D for more details on evaporative family naming conventions.

6. *Fuel (Pull-down menu)*
   Enter type of fuel used in test from the following list: Gasoline, LPG, Methanol, CNG, or Other (If "other" is chosen, in the comment box at the end of the form).

7. A) Evaporative Certification Standard *(Pull-down menu)*

Enter the standard used to certify the evaporative system from the following list: 86.091-10(b)- Otto Cycle, 86.091-11(b) - Diesel Cycle, 86.096-10(b)- Otto Cycle, 86.096-11(b) - Diesel Cycle, or 86.098-11 - Diesel Cycle.

B) Weight Category *(Pull-down menu)*
Enter one of the following weight categories: GVWR <= 14K, 14K < GVWR < 26K, or GVWR > 26K.

8. Test Results
Enter date test was run in the corresponding column (MM-DD-YY). [If only one test was run this test combination, enter the results in the column labeled "Test 1".]

Enter the applicable test results, with the deterioration factor applied, into the chart. When a test result is not required, enter NA.

9. Evaporative Family/Engine Family Comparison Information
Enter information as the table dictates.

Sample Evaporative Statement of Compliance

Manufacturer Primary Contact
XY Motor Company
4567 Industrial Highway
El Monte, CA 91731

March 1, 1996

Anne Fredo, Certification Team Leader
Engine Compliance Programs Group
U. S. Environmental Protection Agency
Mail Code 6403-J
Washington, DC 20460

Dear Ms. Fredo:

Please find enclosed the model year 1998 application for evaporative family WXYXR0098ABC. On behalf of the XY Motor Company, I hereby certify that the test procedure used to derive the deterioration factors includes, but is not necessarily limited to, a consideration of the ambient effects of ozone and temperature fluctuations and the service accumulation effects of vibration, time, vapor saturation and purge cycling. The test vehicle(s), as described in this application for certification, has been tested in accordance with the applicable test procedures, utilizing the fuels and equipment required under subparts D, M and P of 40 CFR 86, and that on the basis of such tests the vehicle(s) conforms to the requirements of 40 CFR 86. I further certify that all vehicles in this evaporative family are in all material respects as described in the Application for Certification and comply with all requirements of 40 CFR 86 and the Clean Air Act.

Sincerely,

[MANUFACTURER PRIMARY CONTACT]

*Footnote: Modify this letter as necessary (i.e., alternative fuels (Subpart P), alternate or special test procedures(Subpart B), etc.)

TABLE OF EVAPORATIVE STANDARDS

For Otto Cycle engines 1996 MY+ phased-in to 1996 Standards:

OTTO CYCLE 86.096-10(b)	GVWR≤ 14K Gasoline	14K<GVWR* Gasoline	GVWR≤14K Methanol	14K<GVWR Methanol	GVWR≤14K CNG&LPG	14K<GVWR* CNG&LPG
3 Diurnal +hot soak	3.0g THC/test	4.0g THC/test	3.0g C/test	4.0g C/test	3.0g THC/test	4.0g THC/test
2 Diurnal +hot soak	3.5g THC/test	4.5g THC/test	3.5g C/test	4.5g C/test	NR	NR
Running Loss	0.05g THC/test	0.05g THC/test	0.05g C/test	0.05g C/test	NR	NR
Spit Back	1.0g THC/test	NR	1.0 g C/test	NR	NR	NR

For engines 1996 MY+:

Diesel Cycle 86.096-11(b)	GVWR≤14K CNG&LPG	14K<GVWR* CNG&LPG
3 Diurnal +hot soak	3.0g THC/test	4.0 g THC/test

NR = Not Required
THC = Total Hydro Carbon
C = Carbon

* Engineering judgement may be used to demonstrate compliance with these standards for vehicles with GVWR > 26,000 lbs.

TABLE OF EVAPORATIVE STANDARDS

For Diesel Cycle, Methanol, CNG, and LPG engines subject to standards in subpart P:

Diesel Cycle 86.098-11	Methanol 1998 MY+ GVWR≤ 14K NOH+Methanol	Methanol * 1998 MY+ 14K<GVWR NOH+Methanol	CNG&LPG 1996 MY+ GVWR≤ 14K THC	CNG&LPG* 1996 MY+ GVWR> 14K THC
3 Diurnal+ hot soak	3.0 g/test	4.0 g/test	3.0 g/test	4.0 g/test
2 Diurnal+ hot soak	3.5 g/test	4.5 g/test	NR	NR
Running Loss	0.05 g/test	0.05 g/test	NR	NR
Spit Back	1.0 g/test	NR	NR	NR

For Otto Cycle engines through 1999 MY (not to be used for engines phasing-in with the 1996 MY + standards):

Otto Cycle 86.091-10	GVWR≤ 14K Gasoline (Opt. CNG&LPG)	14K<GVWR* Gasoline (Opt. CNG&LPG)	Methanol thru 1997 MY GVWR≤ 14K	Methanol* thru 1997 MY 14K<GVWR
Pre 1996 Evap Test	3.0g THC/test	4.0g THC/test	3.0g NOH+Meth/test	4.0g NOH+Meth/test

NR = Not Required
THC = Total Hydrocarbon
C = Carbon
NOH = Non Oxygenated Hydrocarbons
Meth = Methanol
Opt. = Optional Standard

* Engineering judgement may be used to demonstrate compliance with these standards for vehicles with GVWR > 26,000 lbs.

E3

Sample On Highway Evaporative Certificate

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1970 AS AMENDED IN 1990
ISSUED TO:

MANUFACTURER — CERTIFICATE NUMBER

Chester J. France
Director, Engine Programs & Compliance
OFFICE OF MOBILE SOURCES — EFFECTIVE DATE

DATE ISSUED:

SAMPLE

Pursuant to Section 206 of the Clean Air Act (42 U.S.C. 7525) and 40 CFR Part 86, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test vehicles which have been found to conform to applicable requirements and which represent the following motor vehicles, by engine and/or evaporative family, more fully described in the documentation required by 40 CFR Part 86 and produced in the stated model year:

HEAVY-DUTY EVAPORATIVE FAMILY:

This certificate of conformity covers only those new motor vehicles which conform in all material respects, to the design specifications that applied to those vehicles described in the documentation required by 40 CFR Part 86 and which are produced during the model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Part 86. This certificate of conformity does not cover vehicles imported prior to the effective date of the certificate.

SAMPLE

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 86.095-7, 86.906, and 86.1006 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR part 86 including 40 CFR 86.095-30 or render the certificate void ab initio as specified in 86.096-7. It is also a term of this certificate that this certificate may be revoked or suspended, or rendered void ab initio for other reasons specified in 40 CFR part 86, including 40 CFR 86.095-30, 86.612, 86.096-7, and 86.1012.

This certificate does not cover vehicles or engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

SAMPLE

APPENDIX F
EPA MVECP FEES PROGRAM

F1 EPA MVECP Fees Filing Form

F2 EPA MVECP Fees Filing Form Instructions

EPA MVECP Fee Filing Form — OMB Num. 2060-0104, expires 08/31/98

U.S. ENVIRONMENTAL PROTECTION AGENCY
MOTOR VEHICLE AND ENGINE COMPLIANCE PROGRAM
FEE FILING FORM
(Please type or print)

Applicant's Corporate Name _____

Address _____

City/State/Zip Code/Country _____

Certification Request Type (check one):

LDT/LDV	☐	LDT/LDV California only	☐
HDE/HDV	☐	HDE/HDV California only	☐
HDV Evaporative-only	☐	Motorcycle	☐

EPA standard engine family name: ☐☐☐☐☐☐☐☐☐☐☐☐

Exhaust emission control system number: ☐ of ☐

Amount paid (U.S. Funds Only): $

Enter check number, "EFT/WIRE" or "EFT/ACH":

[Indicate on the check: std. engine family name and control system number]

[Indicate in the EFT message field:
Location Code# "68-01-0099", "EPA MVECP Fee",
std. engine family name, control system number, and corporate name]

Waiver (only if applicable and with prior EPA approval):

Waiver approval number _____ Projected sales volume _____

Aggregate projected retail sales price: $_____

Authorized Company Representative Date: _____

Typed Name: _____ Signature: _____

Title: _____ Telephone: _____

Send all Fee Filing Forms and all Checks and EFT/ACH payments to:

Environmental Protection Agency
Motor Vehicle and Engine Compliance Program
P.O. Box 954472
St. Louis, MO 63195-4472

Transmit EFT/Wire payments only to the New York Federal Reserve Bank and send the Fee Filing Form for the wire to the above address.

Fee Filing Form Instructions

Corporate Name and Address

List the applicant's corporate name and corporate address which will appear on the Certificate of Conformity.

Certification Request Type

Check the box which specifies the certification request type.

EPA Standard Engine Family Name

Enter the appropriate EPA standardized engine family name that will appear on the Certificate of Conformity.

Exhaust Emission Control System Number

Enter the exhaust emission control system number that identifies the unique engine-system combination.

Amount Paid

Enter the appropriate fee amount for the designated certification request type. The full fee, payable in U.S. dollars, is to accompany the filing form.

Check Number, EFT/ACH, or EFT/WIRE

Enter the number of the corporate check, money order, bank draft, certified check, or enter the letters "EFT/ACH" or "EFT/WIRE" if sending an electronic funds transfer. Indicate the standard engine family name and exhaust emission control system number on the check or EFT. Please contact your certification representative for EFT/ACH payment procedures.

Waiver (only if applicable)

All fee waiver requests must be submitted in writing and approved by EPA prior to filing this form. EPA will assign a waiver approval number. Enter the waiver approval number, projected sales volume and aggregate projected retail sales price on the fee filing form. Submit the fee waiver payment.

Authorized Company Representative

Enter the representative's name (typed), signature, title, telephone number, and date.

Shipment by Private Mail Service (other than U.S. Postal Service)

If the remitter chooses to ship by a private mail service such as Federal Express, Airborne Express, or another shipping service other than the U.S. Postal Service, then the remitter should send the fee payment and fee filing form to:

Mercantile Bank N.A.
Government Lock Box Division
TRAM#41-2, Operations Center
1005 Convention Plaza
St. Louis, MO. 63101-1200

APPENDIX G

CERTIFICATION PREVIEW TOPICS

Certification Preview Topics

The certification preview meeting, which should occur annually, is designed to address outstanding issues prior to the application for certification, to answer a manufacturers questions about the certification process and to help the EPA reviewer schedule the workload so as to avoid any production delays for the manufacturer. It is not necessary to meet in person, but it is recommended. A preview meeting could be handled through a series of letters, especially when an engine is carried over and there are not as many issues to discuss.

CERTIFICATION PREVIEW CHECKLIST:

1. Verify manufacturer contact. For first year of certification only: verify manufacturer has a two-digit manufacturer code and has notified EPA of all categories of engines that they intend to certify.

2. Which engine families will also be certified in California?

3. Will fees be paid prior to application for certification of on-highway engine families? (Applications will not be processed until fees are paid)

4. Respond to questions about application format, review any changes in application procedure. (Refer to application format in Appendix A.) For now, manufacturers should submit EPA application on hard copy. The following comprise a complete application:
   - A. Cover letter addressed to the EPA certification team leader, requesting certification for specified engine families.
   - B. Communications and Mailing Information sheet
   - C. Signed statement of compliance specific to the engine family(s) being certified and referencing any applicable pre-approved alternate or special test procedures or alternate fuels.
   - D. Large Engine Family Information Form (one per engine family)
   - E. Large Engine Test Information Form (one per test engine)
   - F. Large Engine Model Summary (one per engine family)
   - G. Large Engine Model Part Number Summary (one per engine family)
   - H. General Technical Description (may not be required every year)
   - I. Evaporative Family/Engine Family Comparison Form (On-Highway Evaporative Certification only) (one per evaporative engine family)

5. Test engine selection: was selection in accordance with regulations?

6. Adjustable parameters:
   Description of tamper resistance
   All adjustable parameters should be listed in application, including those that the manufacturer considers to be sealed.

7. Correlation Testing:
   We strongly encourage your participation in the correlation testing program.

8. Product Line:
   Discuss any new technology.
   How do you intend to meet the emission standards?
   List engine applications.
   List sales volumes.

9. Engine Family Determination:
   Are engines appropriately grouped by engine family?
   Are engine families named correctly?

10. Test Protocols:
    Service accumulation.
    Fuels.
    Maintenance of certification engine.
    In the future: provide test date/location in case we want to observe the testing.

11. Voluntary In-Use Testing:
    Participation encouraged.

12. Information for SEA:
    Preferred locations and contacts for SEA testing.
    List of ports of entry for nonroad engines.
    Assembly Line Testing Data or California Quality Audit data (submission voluntary).

13. Concept of Defeat Device:
    Manufacturer understands concept of defeat device and verifies that no defeat devices have been employed in this model years certification.

APPENDIX H

EXECUTIVE ORDER INFORMATION (CARB ONLY)
To be completed in addition to Appendix A for California Submissions.

H1 Sample Off-Road Engine Certification Statement of Compliance

H2 Sample On-Road Engine Certification Statement of Compliance

H3 Emission Warranty

H4 Label Durability Statement

H5 Engine/Vehicle Emission Labels

H6 Tamper-Resistance

H7 Deterioration Factors Form

H1

SAMPLE OFF ROAD ENGINE CERTIFICATION STATEMENT OF COMPLIANCE

March 1, 1996

Manufacturer Primary Contact
XY Engine Company
4567 Industrial Highway
El Monte, CA 91731

Mr. Rod Summerfield, Chief
Mobile Source Operation Division
California Air Resources Board
9480 Telstar Avenue
Suite #4
El Monte, CA 91731

Subject: 1997 Model-Year Heavy-Duty Off-Road Diesel Cycle Engine Certification for Engine Family, VXY14.RZDBRA.

Dear Mr. Summerfield:

Please find enclosed the 1997 model-year application for engine family VXY14.RZDBRA. On behalf of the XY Engine Company, I hereby certify that the test engine(s), as described in this application for certification, has been tested in accordance with the "California Exhaust Emission Standards and Test Procedures for New 1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines"(Test Procedure), and that on the basis of such tests the engine(s) conforms to the requirements of the Test Procedures. I further certify that all engines in this engine family comply with all requirements of the Test Procedures, the Clean Air Act, and the applicable California Code of Regulations.

Sincerely,

[Manufacturer Primary Contact]

DRAFT

H2

SAMPLE ON-ROAD ENGINE CERTIFICATION STATEMENT OF COMPLIANCE

March 1, 1996

Manufacturer Primary Contact
XY Engine Company
4567 Industrial Highway
El Monte, CA 91731

Mr. Rod Summerfield, Chief
Mobile Source Operation Division
California Air Resources Board
9480 Telstar Avenue
Suite #4
El Monte, CA 91731

Subject: 1997 Model-Year Heavy-Duty Diesel Cycle (or Otto Cycle) Engine Certification for Engine Family, VXY8.5DZDAAA/VXY7.0C5GAAA.

Dear Mr. Summerfield:

Please find enclosed the 1997 model-year application for engine family VXY8.5DZDAAA/VXY7.0C5GAAA. On behalf of the XY Engine Company, I hereby certify that the test engine(s), as described in this application for certification, has been tested in accordance with the "California Exhaust Emission Standards and Test Procedures for New 1995 and Later Heavy-Duty Diesel Cycle Engines"(Test Procedures) and the Code of Federal Regulations, Title 40, Part 86, Subparts A, I and N (40 CFR 86 (A), (L), (N)) incorporated by reference and as amended by the Air Resources Board (or "California Exhaust Emission Standards and Test Procedures for 1987 and Later Heavy-Duty Otto Cycle Engines and Vehicles"(Test Procedures) and the 40 CFR 86 (A), (L), (N), and (P) incorporated by reference and as amended by the Air Resources Board) and that incorporated/amended 40 CFR 86. I further certify that all engines in this engine family comply with all requirements of the Test Procedures and the incorporated/amended 40 CFR 86, the Clean Air Act, and the applicable California Code of Regulations.

Sincerely,

[Manufacturer Primary Contact]

DRAFT

SAMPLE EMISSION WARRENTY

Emission warranty requirements are specified in Title 13, California Code of Regulation, Section 2035 et seq. (13 CCR 2035) for on-road heavy-duty. Manufacturers are required to furnish with each new vehicle or engine a warranty statement which generally describes the obligations and rights of the vehicle or engine manufacturers and the owners. A list of warranted parts must be included in the warranty for all heavy-duty engine and vehicles. A list of high-cost warranted parts must be included in the warranty for all incomplete or diesel medium-duty vehicles and engines certified under the optional heavy-duty engine test procedures. The Air Resources Boards California Emission Control Warranty Statement (13 CCR 2039 or 13 CCR 2426) must be repeated verbatim, and is required in addition to the manufacturers own emission warranty statement under 13 CCR 2035 et seq. Or 13 CCR 2425. Approval by the Air Resources Board of a manufacturers warranty statement is a condition for certification (13 CCR 2038(m)/2039(c) or 13 CCR 2425(f)/2426 (c)). The Air Resources Board recommend that manufacturers submit and receive the required warranty approval before sending the certification application.

ENGINE/VEHICLE EMISSION LABELS

The California Code of Regulations, Title 13, Section 1965 (13 CCR 1965) requires manufacturers to conform to the "California Motor Vehicle Emission Control Label Specifications" for on-road products and conform to California Code of Regulations, Title 13, Section 2424 (13 CCR 2424) for off-road products. Section 7 of 13 CCR 1965 and Section g of 13 CCR 2424 require manufacturers to obtain approval from the Air Resources Board for all label formats and locations prior to use. The Air Resources Board recommend that manufacturers submit a photograph or a photocopy of the applicable label(s) for approval prior to production. Samples of all actual production labels used within an engine family are required to be submitted to the Air Resources Board within thirty(30) days after the start of production (13 CCR 1965(g) or 13 CCR 2424(h)).

H5

LABEL DURABILITY STATEMENT

A manufacturer is required to submit with its application for certification a statement attesting that the label and adhesives used shall be designed to withstand, for the vehicles or engines total expected life, typical vehicle or engine environmental conditions in the area where the label is attached (13 CCR 1963(6) or 13 CCR 2424 (f)).

DRAFT

TAMPER RESISTANCE

Manufacturers are required to provide in the application for certification the following information for engine/vehicle that have emission related adjustable parameters:

(1) identify individual adjustment;
(2) provide detailed descriptions of the component either by submitting drawing(s) or the actual component;
(3) the physical range(s) of the adjustment;
(4) the effects of such adjustments;
(5) the emission effects by such adjustment; and
(6) the tamper-resistance measures employed on the adjustment to deter tampering.

The ARB suggest that manufacturers submit the tamper-resistance information in advance of sending the application for certification. If the specific engine family does not have any adjustable parameter, then the manufacturer may provide a statement to such effect.

DETERIORATION FACTOR FORM

DETERIORATION FACTOR for Engine Family: _____

Engine Code: _____

Engine Serial Number (ESN): _____

Tested for Model Year: _____

Advertised hp _____ @ _____ rpm w/Fuel Rate _____ mm^3/S

		Smoke (% Opacity)			Gaseous Emissions (gm/bhp-hr)			
Hours	Equivalent Miles	Accel.	Lug-Down	Peak	HC	Nox	Part.	CO

DF

	Useful Life Projected Value	Initial Stabilized Value
Accel. :		
Lug-Down :		
Peak :		
HC :		
NOx :		
CO :		
PM :		
Formaldehyde :		

Describe here or an a separate form:
1) Durability Test Procedure

2) Maintenance Log