

# Production Line Testing

OMB Control No: 2060

## Manufacturer Data Submission Template -- INSTRUCTIONS

Expiration Date: XX-XX-XX

### I. About

This template allows engine manufacturers to submit production line testing data in a simple, consistent format. Based on the information entered by the submitter, the template performs the required CumSum and sample size calculations and displays the current status of the test.

It is intended that a copy of this template be created for each engine family for which you are required to submit testing results. Please include the engine family name in the submission file name. 40 CFR Part 1048.301 information must be submitted on a quarterly basis. It is intended that one copy of a template be mailed to you each year. For instance, the file submitted for the second quarter will contain all test results previously submitted plus the results from the second quarter added on. The template provides a field to indicate the associate level.

Please note that the instructions in this document are specific to the Large SI template.

### II. General

- The primary worksheet for entering production line testing data is the worksheet labeled 'Submission Template'. Only modify values in cells that are white. All other cells contain either labels or calculated values.
- The 'Notes' worksheet provides space for a manufacturer to provide any additional notes or relevant information about the family's production line testing information.
- The resulting calculations, including an indication of whether the test results yield a status of Pass, Fail, or Marginal, are shown on the 'Calculations' worksheet.

### III. Entering PLT Test Information

At the top of the 'Submission Template' worksheet, there are spaces to enter general information about the engine family you are reporting. Please provide as much information as possible. These fields include:

- Manufacturer contact information;
- Engine family identifier;
- Projected annual production volume;
- Indication of whether CO testing is required;
- Indication of whether the test data apply to a carry-over engine family (and thus, eligible to submit test results with a reduced sample size); and
- Pre-approved reduced required sample size (if carry-over engine family).

If you certify an engine family with carry-over emissions data and the equivalent engine families consistently meet the requirements over the preceding two-year period, you may be eligible for a reduced testing rate for subsequent testing for that engine family, [see 40 CFR, Part 1048.301 (e)]. If this condition applies, indicate that you are submitting data for a carry-over engine family and enter the pre-approved number of tests required in the field labeled 'Pre-approved sample size.' The first row of data entered in this case should be the last test results from the previous year. If the engine family is a carry-over engine family, the first row in the calculations worksheet will appear in pink.

#### IV. Entering PLT Engine Test Results

Each PLT test is comprised of multiple tests of individual engines within the engine family being tested. The first row (beginning in cell D24) of the 'Submission Template' worksheet. Be sure to enter specific information which they occurred, as the template's CumSum calculations depend on the correct order. In addition, you enter your results.

The following data fields are available for each engine test. Fields that are required by federal regulatory calculations are indicated. The official reporting requirements can be found in 40 CFR Part 1048.345

- Test Number (required); this should be numeric and sequential
- Test Date (required)
- Test Time
- Test Quarter (required, Large SI only)
- Engine ID (required)
- Build Date (required)
- Service Hours Accumulation (required)
- Service Hours Location (required)
- Include in CumSum? Indicator (required)
- HC+NOx Initial Result (required)
- HC+NOx Final Result (required)
- HC+NOx Emission Limit or FEL (required)
- HC+NOx Unit of measure (g/bhp-hr or g/kW-hr)
- HC+NOx Deterioration Factor
- CO Initial Result
- CO Final Result
- CO Emission Limit or FEL
- CO Unit of measure (g/bhp-hr or g/kW-hr)
- CO Deterioration Factor
- Test Location
- Test Contact
- Invalid Test Indicator (required -- must be yes if test is declared invalid)
- Invalid Reason
- Failure Reason
- Remedy
- Repairs
- Test Comments

#### V. The Calculations Worksheet

The 'Calculations' worksheet checks the data that you enter and attempts to determine the current status. The test will appear to be in exactly one of three possible statuses -- FAIL, PASS, or OPEN.

● FAIL: Your PLT Test will be in a failing status if, for one or more pollutants, you had consecutive engines tested and the calculated CumSum statistic exceeds the calculated Action Limit value. Once a test has reached a failing status, you cannot change it.

● PASS: Your PLT Test will be a passing status if, for all required pollutants, the actual number of engines tested is greater than or equal to the required test sample size (N), and for all required pollutants, the mean result is less than or equal to the provided emission limit or FEL. For large SI engines, a minimum of two engines per quarter must be tested, (40 CFR, Part 1048.310 (b)).

● OPEN: Your PLT Test will remain in an open status if it has not yet reached a fail or pass status.

#### VI. Troubleshooting

If you are experiencing odd or unexpected results in the 'Calculations' worksheet, please check the fo

- Have you entered all engine tests sequentially without skipping rows?
- For each engine test, have you entered the Final Result and Emission Limit, and have you indicated CumSum?
- Have you inadvertently marked an included test as Invalid?
- Remember that if CO testing is required, you must continue to test both pollutants until both have met requirement (N).
- If the required sample size does not appear to be calculating correctly, verify that you have not entered Production or an alternative required sample size for a carry-over engine family.

EPA Form No.: 5900-130

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# Production Line Testing

## Calculated Results Data

### Current PLT Test Status:

Engine Family:

0

HC+NOx (passing status?):

#N/A

CO (passing status?):

#N/A

Current PLT Test Status:

#N/A

#N/A

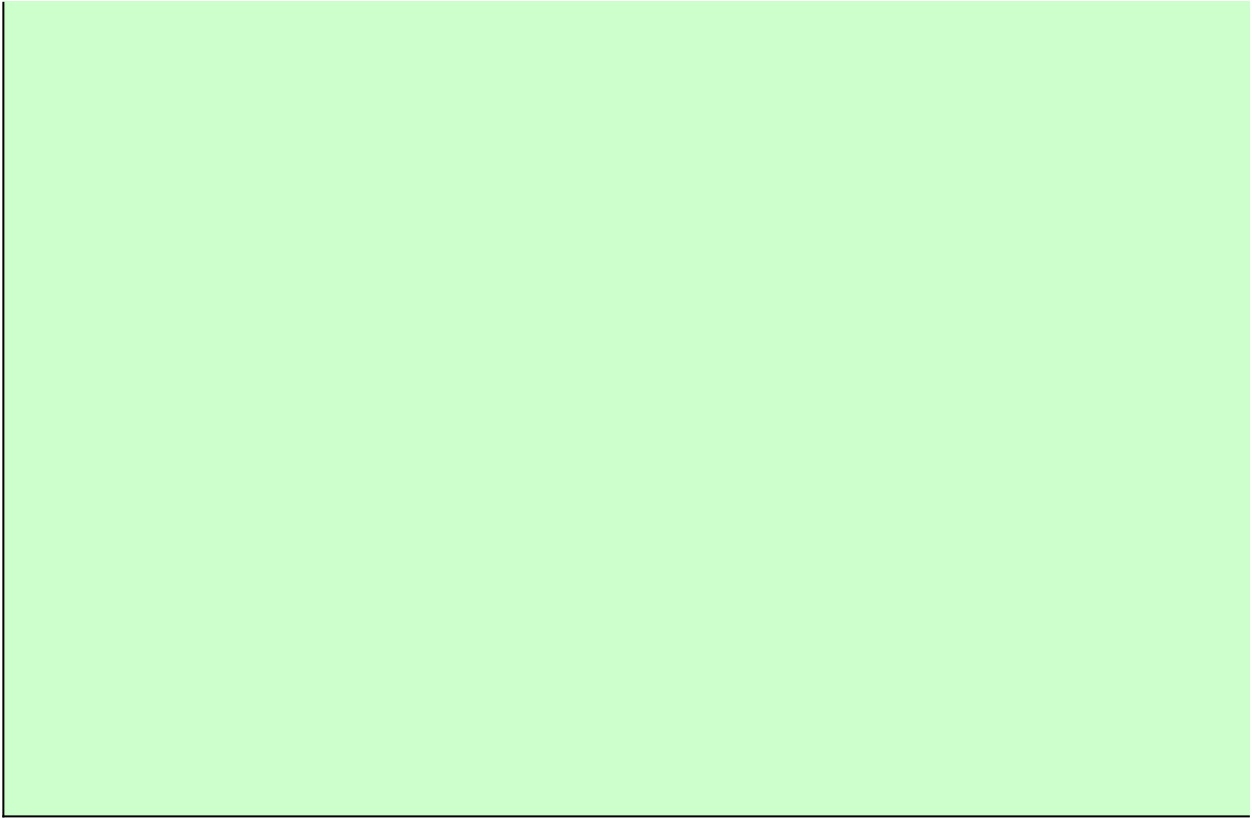
#### Notes:

- \* Number of included HC+Nox tests (n) is less than the required number (N).
- \* Number of included CO tests (n) is less than the required number (N).
- \* Production Line Test is not complete until at least 2 engines per quarter have been tested.

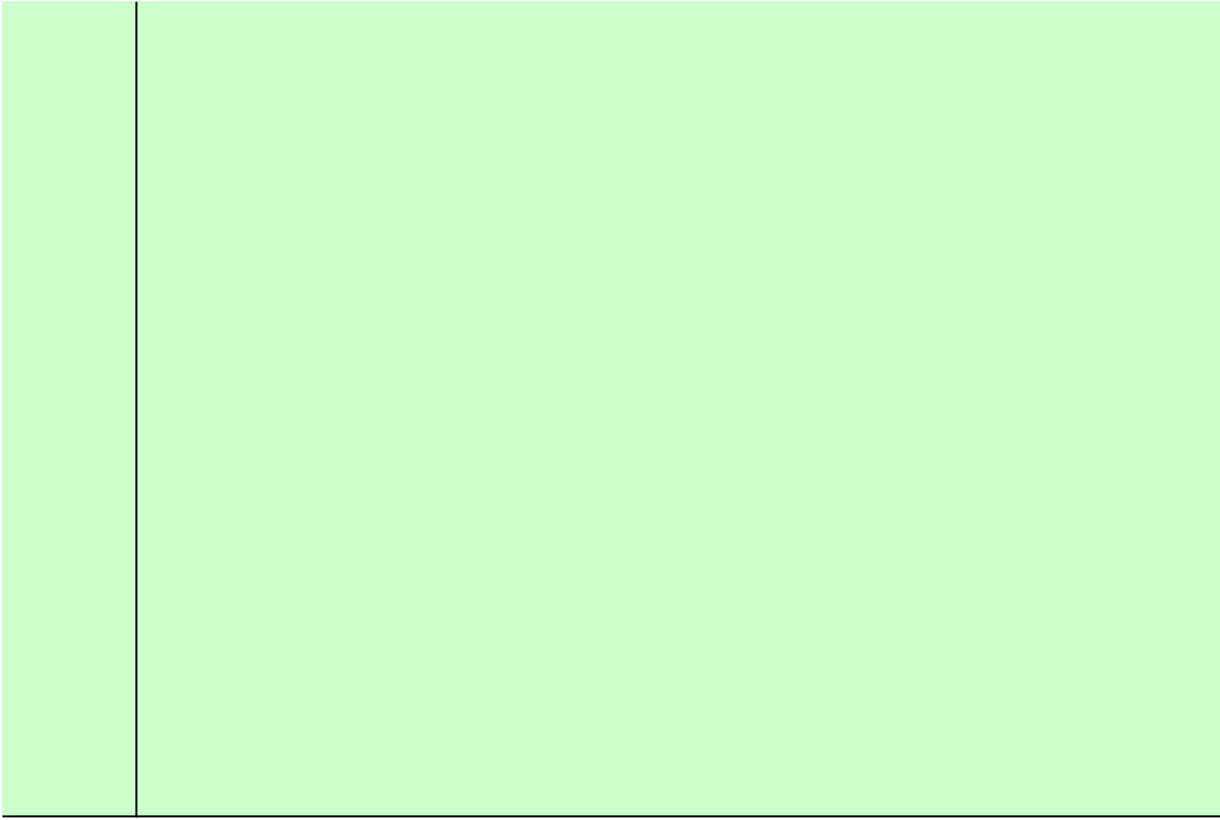
### HC+NOx - Calculations

Actual Sample Size (n)	Required Sample Size (N)	Mean Result	Standard Deviation	Prior CumSum	CumSum	Action Limit	Sample Requirement Met?	HC+NOx Fail?





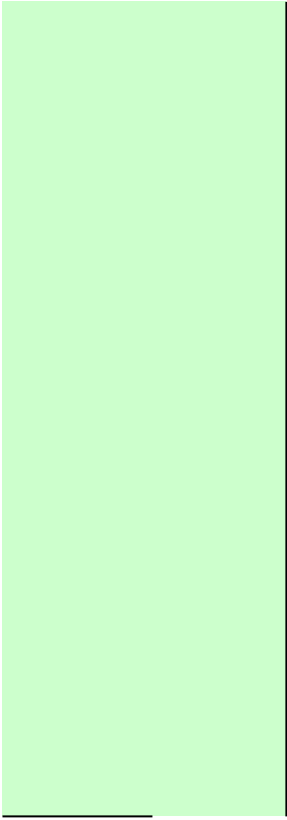






CO Fail?	CO Pass?

Warnings







## **Production Line Testing**

*Manufacturer Notes (Large SI)*

Please provide any additional notes here









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