**Meets ASE Task:** (A8-B-5) P-1 Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool; determine needed action.

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_

Time on Task:\_\_\_\_\_\_\_\_\_\_\_\_\_

Make/Model/Year:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

VIN:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Evaluation (Enter number from 4, 3, 2, 1) :\_\_\_\_\_\_\_\_\_

**MAF Sensor Diagnosis**

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 A "**Mass Air Flow**" sensor produces a variable output depending on the mass of the air flow through the sensor. A faulty MAF can cause drivability problems and stalling. A good MAF sensor should produce a signal that increases with engine speed.

**[ ]  1.** Check service information for the specified procedure to follow to test the MAF

 sensor.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

******[ ]  2.** Use a meter or scope with a frequency counter to record

 frequency or voltage at idle and at WOT (short bursts).

 at idle = \_\_\_\_\_\_\_\_\_\_\_\_ at WOT = \_\_\_\_\_\_\_\_\_\_\_\_\_

**[ ]  3.** Use a scan tool and record grams per second.

 at idle = \_\_\_\_\_\_\_\_\_\_\_\_ at WOT = \_\_\_\_\_\_\_\_\_\_\_\_\_

 A good MAF should read:

* greater than 100 grams per second (scan tool diagnosis)
* higher than 7000 Hertz (7 KHz) (digital MAF)
* higher than 4 volts (analog MAF)

**[ ]  4.** If the MAF sensor reading does not exceed these values, the sensing wire may be

 contaminated or the sensor itself is defective.

**[ ]  5.** Based on the test results, what is the needed action? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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