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# Air Resources Board

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TO: George Lew, Chief  
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FROM: Frances Cameron  
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Date: August 5, 2008

SUBJECT: UPDATED 2008 VEHICLE MATRICES FOR CERTIFICATION TESTING  
OF PHASE II VAPOR RECOVERY SYSTEMS, TO INCLUDE  
ABOVEGROUND STORAGE TANK PHASE II TESTING

The 2008 vehicle matrices used in certifying Phase II vapor recovery systems by the Air Resources Board (ARB) were originally provided in a memo on May 2, 2008. This update includes a 20 vehicle matrix for use in certifying Phase II systems for gasoline dispensing facilities with aboveground storage tanks (ASTs). The 20 vehicle matrix was prepared to meet ARB's recently adopted Vapor Recovery Certification Procedure 206, Section 14.6, for ASTs. The 200 vehicle, 100 vehicle and 50 vehicle matrices included below are unchanged from the May 2, 2008 memo. The vehicle matrices were prepared to be representative of the miles driven by each model year and make of vehicles on California roads in 2008. All of the vehicle matrices were prepared according to ARB Test Procedure 201.2A, Determination of Vehicle Matrix for Phase II Systems. The 2008 matrices are listed below as Tables 1, 2, 3 and 4:

Model Years	Chrysler	Ford	G.M.	Toyota	Honda	Niss/Dat	VW/Volvo	others	Totals
2005-2008	0	1	1	1	1	0	0	1	5
2002-2004	0	1	1	1	1	0	0	1	5
1998-2001	0	1	1	1	1	0	0	1	5
1991-1997	0	1	1	1	1	0	0	1	5
1961-1990	0	1	2	1	0	0	0	1	5
<b>Totals</b>	<b>0</b>	<b>5</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>25</b>

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

<b>Table 2: 200 Vehicle Matrix for 2008</b>									
<b>Model Years</b>	<b>Chrysler</b>	<b>Ford</b>	<b>G.M.</b>	<b>Toyota</b>	<b>Honda</b>	<b>Niss/Dat</b>	<b>VW/Volvo</b>	<b>others</b>	<b>Totals</b>
2005-2008	4	5	7	9	5	3	3	6	42
2002-2004	3	6	7	6	4	2	2	6	36
1998-2001	4	8	8	6	4	3	2	6	41
1991-1997	3	8	8	6	5	1	3	5	39
1961-1990	3	8	12	5	3	3	3	5	42
<b>Totals</b>	<b>17</b>	<b>35</b>	<b>42</b>	<b>32</b>	<b>21</b>	<b>12</b>	<b>13</b>	<b>28</b>	<b>200</b>

<b>Table 3: 100 Vehicle Matrix for 2008</b>									
<b>Model Years</b>	<b>Chrysler</b>	<b>Ford</b>	<b>G.M.</b>	<b>Toyota</b>	<b>Honda</b>	<b>Niss/Dat</b>	<b>VW/Volvo</b>	<b>others</b>	<b>Totals</b>
2005-2008	2	3	4	5	2	1	2	3	22
2002-2004	1	3	4	3	2	1	1	3	18
1998-2001	2	4	4	3	2	1	1	3	20
1991-1997	2	4	4	3	2	1	1	3	20
1961-1990	1	4	6	2	1	2	1	3	20
<b>Totals</b>	<b>8</b>	<b>18</b>	<b>22</b>	<b>16</b>	<b>9</b>	<b>6</b>	<b>6</b>	<b>15</b>	<b>100</b>

<b>Table 4: 50 Vehicle Matrix for 2008</b>									
<b>Model Years</b>	<b>Chrysler</b>	<b>Ford</b>	<b>G.M.</b>	<b>Toyota</b>	<b>Honda</b>	<b>Niss/Dat</b>	<b>VW/Volvo</b>	<b>others</b>	<b>Totals</b>
2005-2008	1	1	2	2	1	1	1	1	10
2002-2004	1	1	2	2	1	1	1	1	10
1998-2001	1	2	2	1	1	1	1	1	10
1991-1997	1	2	2	1	1	0	1	1	9
1961-1990	1	2	3	1	1	1	1	1	11
<b>Totals</b>	<b>5</b>	<b>8</b>	<b>11</b>	<b>7</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>50</b>

The above matrices were prepared from projections for on-road gasoline-powered light duty autos, light duty trucks, and medium duty vehicles (< 8500 lbs gross vehicle weight rating). It is estimated that light duty autos account for 53 percent of gasoline vehicle miles (VMT) driven on California roads, light duty trucks account for 36 percent, and medium duty vehicles account for 11 percent.

The matrices were calculated from the following two reports:

- (1) The report of the number of registered vehicles by model year and make as of the end of 2007 from the California Department of Motor Vehicles (DMV). Tuan Quan of the DMV's Information Systems Branch provided a printed copy of the report.
- (2) The statewide projected vehicle populations and miles traveled per day in 2008 by model year for the gasoline-powered vehicles listed above.

George Lew  
August 5, 2008  
Page 3

Tom Scheffelin of ARB's Planning and Technical Support Division provided the report from ARB's Emission Factors Model (EMFAC2007), Version 2.3.

If you have questions or need further information, please contact Frances Cameron via email at [fcameron@arb.ca.gov](mailto:fcameron@arb.ca.gov) or by phone at (916) 445-9314.

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