

APPENDIX V

VEHICLE AND FUEL SPECIFICATIONS

Vehicle Specifications

The vehicles chosen for the Petrol Volatility Project project were sourced from the NISE study. Table A-V.1 shows the vehicles and the data used in their selection.

Table A-V.1 - NISE study data used for vehicle selection

Petrol Volatility Testing													
Vehicle	Rep	Man Date	Date		Type	Model	Evap (g)		Purge (l)		Cap 'sniff' (ppm)		Engine size
A	F/C	85	19/07/94	21/07/94	Toyota	Corolla (hat)	4.42	7.36	33.85	33.35	20.00	15.50	1.6L
B	F/C	85	05/07/94	07/07/94	Ford	Falcon (sed)	7.20	8.62	0.00	0.00	8.60	9.10	4.1L
C	F/C	87	27/06/94	29/06/94	Mits	Sigma (sed)	4.90	2.10	48.90	48.20	1000.00	12.30	2.6L
D	-	89	12/07/94	14/07/94	Ford	Laser (s/w)	0.39	0.69	0.00	0.07	5.60	6.60	1.6L
C/C carbon canister, F/C fuel cap, Rep replacement made, Man Date date of manufacture													

Canister Testing													
Owner	Rep	Man Date	Date		Type	Model	Evap (g)		Purge (l)		Cap 'sniff' (ppm)		Engine size
1	F/C	80	22/11/94	24/11/94	Ford	Cortina (sed)	13.09	10.70	11.85	10.10	2173.30	64.30	2.0 L
2	-	82	16/08/94	18/08/94	Nissan	Pulsar (sed)	4.24	5.10	29.79	29.02	18.00	22.50	1.5 L
3	-	83	9/08/94	11/08/94	Toyota	Corolla (sed)	15.10	7.44	0.00	0.00	13.00	13.30	1.3 L
4	F/C	85	7/05/95	9/05/95	Mits	Colt (sed)	18.90	12.10	2.64	3.90	>1000	18.00	1.4 L
5	-	85	29/11/94	1/12/94	GMH	Com (sed)	22.13	18.88	18.00	17.90	8.10	8.40	3.3 L
6	C/C	87	28/06/94	30/06/94	Mits	Magna (sed)	13.70	1.00	0.00	0.03	3.30	3.30	2.6 L
7	F/C	89	13/09/94	15/09/94	GMH	Com (sed)	7.20	2.23	0.00	0.00	1353.00	2.00	3.8 L
8	-	90	20/09/94	23/09/94	Nissan	Pintara (sed)	4.06	4.10	0.00	0.00	5.60	6.30	2.0 L
9	-	91	13/12/94	15/12/94	Toyota	Camry (sed)	3.07	0.64	>27.2	>28.9	0.00	0.02	2.0 L
C/C carbon canister, F/C fuel cap, Rep replacement made, Man Date date of manufacture													

Since the NISE study some of the vehicles have been serviced. A brief survey of the vehicle owners revealed the following information:

Table A-V.2 Vehicle Servicing Trends

Vehicle	Number of Services or Tunes
vehicle 1 1980	Twice
vehicle 2 1982	N/A
vehicle 3 1983	Every 10,000 km
vehicle 4 1985	Every 10,000 km
vehicle 5 1985	Once
vehicle 6 1987	Scheduled as Specified
vehicle 7 1989	Every 6-9 month
vehicle 8 1990	Scheduled as Specified
vehicle 9 1991	Every 10,000 km
vehicle A 1985	Once
vehicle C 1987	N/A
vehicle D 1989	Twice a year
vehicle B 1985	Scheduled as Specified

Fuel Specifications Summary

NISE Unleaded (baseline fuel)	Unleaded:	RVP/FVI	76.5 / 102.8	Certificate No.	3/3456
		RVP/FVI	69.5/94	Certificate No.	RDF058A amended
		RVP/FVI	67.2/91	Certificate No.	RDF057A amended
		RVP/FVI	61.7/84	Certificate No.	RDF056A amended
NISE leaded (baseline fuel)	Leaded	RVP/FVI	73.5 / 99.7	Certificate No.	3/3409
		RVP/FVI	69.5/95	Certificate No.	RDF062A amended
		RVP/FVI	66.0/91	Certificate No.	RDF063A amended
		RVP/FVI	62.5/85	Certificate No.	RDF061A amended

RVP Reid Vapour Pressure
FVI Flexible Volatility Index

Copies of the 8 test reports for the fuels follow.

MOBIL OIL AUSTRALIA LIMITED

A.C.N. 004 052 984

Melbourne Laboratory Report

MOBIL OIL AUSTRALIA LIMITED

(Incorporated in Victoria)

REGISTRATION No. 485

Grade: DoT Emission Test Fuel – Petrol (Unleaded) Test Report No.: 3/3456
 Specification: AS 1876–1990 & DoT Tender 647 Batch No.: AM00030D94
 Location: Yarraville Source: Y'ville Tanks 304 & 305 Date Drawn: 13/05/94
 Quantity: 33,000 litres Composition: Unleaded Gasoline

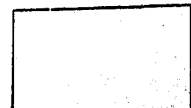
Test	Method	Specification Limits	Test Result
Benzene Content, vol%	ASTM D3606	5% max.	4.1
Copper Corrosion 3 Hrs @ 50 C	ASTM D130	Class 1 max.	1A
Existent Gum	ASTM D381	4 mg/100ml max.	NIL
Oxidation Stability, mins	ASTM D525	240 minimum	Greater than 1260 min.
Lead content, g/l	IP 352	0.003 max.	0.002
Phosphorus, mg/l	ASTM D3231	1.3 max.	Less than 0.2
Sulphur, mass%	IP336	0.10 max.	0.02
Motor Octane No.	ASTM D2700	82.0 min.	82.9
Research Octane No.	ASTM D2699	91.0 – 93.0	91.3
Colour	Visual	Purple	PURPLE
Density @ 15 C, g/ml	ASTM D4052	Report	0.7343
Reid Vapour Pressure	ASTM D323	Report (kPa)	76.5
Distillation Vol% Evap @ 70 C	ASTM D86	Report	37.5
Flexible Volatility Index		97 – 103	102.8

This report relates specifically to the sample tested. The test methods used are the latest issues available unless otherwise stated.

Tests marked ** were performed by:

For and on behalf of Mobil Oil Aust. Ltd.

Paul Kruger



R & D Laboratory Report

Test Report No : RDF058A - Ammended

Grade : Unleaded Petrol

Batch Number : Drum No 135

Specification : DOT647 Unleaded

Date Drawn : 30 May 1996

Composition : _____

Source : Yarraville Terminal

Quantity : approx. 200 Litres

Location : Yarraville

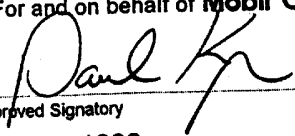
Test	Method	Specification Limits	Test Result
Distillation Evaporated @ 70 C	ASTM D86	Report, vol%	34.7
Reid Vapour Pressure	ASTM D323	Report, kPa	69.5
Flexible Volatility Index		94 - 96	94
Distillation IBP	ASTM D86	Report	33.1
10% Evaporated, °C		Report	49.8
50% Evaporated, °C		Report	88.9
90% Evaporated, °C		Report	154.9
FBP		Report	214.4

This ammended test report replaces the report issued on 31-May-1996. All copies of the previous report should be destroyed.

This report relates specifically to the sample tested. The test methods used are the latest issues available unless otherwise stated.

Tests marked * were performed by: _____

For and on behalf of **Mobil Oil Aust. Ltd**



Approved Signatory
27-June-1996

Date

R & D Laboratory Report

Test Report No : RDF057A - Ammended
 Grade : Unleaded Petrol Batch Number : Drum No 134
 Specification : DOT647 Unleaded Date Drawn : 29 May 1996
 Composition : _____ Source : Yarraville Terminal
 Quantity : approx. 200 Litres Location : Yarraville

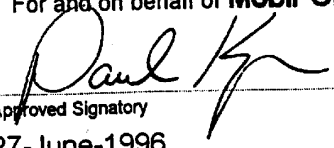
Test	Method	Specification Limits	Test Result
Distillation Evaporated @ 70 C	ASTM D86	Report, vol%	34.1
Reid Vapour Pressure	ASTM D323	Report, kPa	67.2
Flexible Volatility Index		89 - 91	91
Distillation IBP	ASTM D86	Report	34.3
10% Evaporated, °C		Report	50.1
50% Evaporated, °C		Report	89.5
90% Evaporated, °C		Report	154.1
FBP		Report	214.8

This ammended test report replaces the report issued on 31-May-1996. All copies of the previous report should be destroyed.

This report relates specifically to the sample tested. The test methods used are the latest issues available unless otherwise stated.

Tests marked * were performed by: _____

For and on behalf of **Mobil Oil Aust. Ltd**


 Approved Signatory
 27-June-1996

Date

R & D Laboratory Report

Test Report No : RDF056A - Ammended
 Grade : Unleaded Petrol Batch Number : Drum No 133
 Specification : DOT647 Unleaded Date Drawn : 28 May 1996
 Composition : _____ Source : Yarraville Terminal
 Quantity : approx. 200 Litres Location : Yarraville

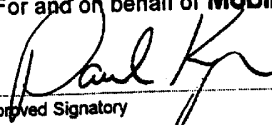
Test	Method	Specification Limits	Test Result
Distillation Evaporated @ 70 C	ASTM D86	Report, vol%	31.5
Reid Vapour Pressure	ASTM D323	Report, kPa	61.7
Flexible Volatiltiy Index		84 - 86	84
Research Octane Number	ASTM D2699	91 - 93	91.4
Density @ 15°C, g/mL	ASTM D4052	Report	0.7447
Distillation IBP	ASTM D86	Report	36.8
10% Evaporated, °C		Report	53.7
50% Evaporated, °C		Report	92.3
90% Evaporated, °C		Report	155.3
FBP		Report	215.2

This ammended test report replaces the report issued on 31-May-1996. All copies of the previous report should be destroyed.

This report relates specifically to the sample tested. The test methods used are the latest issues available unless otherwise stated.

Tests marked * were performed by: _____

For and on behalf of **Mobil Oil Aust. Ltd**



 Approved Signatory
 27-JUN-1996

 Date

MOBIL OIL AUSTRALIA LIMITED

A.C.N. 004 052 984

Melbourne Laboratory Report

MOBIL OIL AUSTRALIA LIMITED

(Incorporated in Victoria)

REGISTRATION No. 488

Grade: **DoT Emission Test Fuel - Petrol LL** Test Report No.: **3/3409**
 Specification: **AS 1876 - 1990** Batch No.: **AM00019D94**
 Location: **Yarraville** Source: **Yarraville Tank 304** Date Drawn: **22/04/94**
 Quantity: **15,000 litres** Composition: **Leaded Gasoline**

Test	Method	Specification Limits	Test Result
Benzene Content, vol%	ASTM D3606	5% max.	4.2
Copper Corrosion 3 Hrs @ 50 C	ASTM D130	Class 1 max.	1A
Existent Gum	ASTM D381	40 mg/l max.	NIL
Oxidation Stability, mins.	ASTM D525	240 minimum	Greater than 1440 min.
Lead content, g/l	IP 352	0.25 max.	0.201
Sulphur, mass%	IP336	0.2 max.	0.032
Research Octane No.	ASTM D2699	96 min.	96.0
Colour	Visual	Red	RED
Density @ 15 C, g/ml	ASTM D4052	Report	0.7373
Reid Vapour Pressure	ASTM D323	Report (kPa)	73.5
Distillation Vol% Evap @ 70 C	ASTM D86	Report (Deg. C)	37.4
Flexible Volatility Index		97 - 103	99.7

This report relates specifically to the sample tested. The test methods used are the latest issues available unless otherwise stated.

Tests marked ** were performed by:

For and on behalf of Mobil Oil Aust. Ltd.

Approved Signatory

Date

Paul Kruger
 22 APRIL 1994



Stamp

R & D Laboratory Report

Test Report No : RDF062A - Ammended

Grade : Leaded Petrol

Batch Number : Drum No 74

Specification : DOT647 Leaded

Date Drawn : 13 June 1996

Composition : _____

Source : Yarraville Terminal

Quantity : approx. 200 Litres

Location : Yarraville

Test	Method	Specification Limits	Test Result
Distillation Evaporated @ 70 C	ASTM D86	Report, vol%	36.2
Reid Vapour Pressure	ASTM D323	Report, kPa	69.5
Flexible Volatilty Index		94 - 96	95
Distillation IBP	ASTM D86	Report	32.9
10% Evaporated, °C		Report	48.8
50% Evaporated, °C		Report	87.7
90% Evaporated, °C		Report	154.0
FBP		Report	210.9

This ammended test report replaces the report issued on 17-Jun-1996. All copies of the previous test report should be destroyed.

This report relates specifically to the sample tested. The test methods used are the latest issues available unless otherwise stated.

Tests marked * were performed by: _____

For and on behalf of Mobil Oil Aust. Ltd

Paul K...

Approved Signatory

27-June-1996

Date

R & D Laboratory ReportTest Report No : RDF063A - AmmendedGrade : Leaded PetrolBatch Number : Drum No 76Specification : DOT647 LeadedDate Drawn : 14 June 1996

Composition : _____

Source : Yarraville TerminalQuantity : approx. 200 LitresLocation : Yarraville

Test	Method	Specification Limits	Test Result
Distillation Evaporated @ 70 C	ASTM D86	Report, vol%	35.4
Reid Vapour Pressure	ASTM D323	Report, kPa	66.0
Flexible Volatility Index		89 - 91	91
Distillation IBP	ASTM D86	Report	33.5
10% Evaporated, °C		Report	49.5
50% Evaporated, °C		Report	88.7
90% Evaporated, °C		Report	154.4
FBP		Report	208.8
<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> This ammended test report replaces the report issued on 17-Jun-1996. All copies of the previous test report should be destroyed. </div>			

This report relates specifically to the sample tested. The test methods used are the latest issues available unless otherwise stated.

Tests marked * were performed by: _____

For and on behalf of **Mobil Oil Aust. Ltd**

 Approved Signatory

27-June-1996

Date

R & D Laboratory Report

Test Report No : RDF061A - Ammended
 Grade : Leaded Petrol Batch Number : Drum No 73
 Specification : DOT647 Leaded . Date Drawn : 12 June 1996
 Composition : _____ Source : Yarraville Terminal
 Quantity : approx. 200 Litres Location : Yarraville

Test	Method	Specification Limits	Test Result
Distillation Evaporated @ 70 C	ASTM D86	Report, vol%	32.5
Reid Vapour Pressure	ASTM D323	Report, kPa	62.5
Flexible Volatility Index		84 - 86	85
Research Octane Number	ASTM D2699	96 min.	97.1
Density @ 15°C, g/mL	ASTM D4052	Report	0.7465
Distillation IBP	ASTM D86	Report	34.7
10% Evaporated, °C		Report	52.2
50% Evaporated, °C		Report	91.9
90% Evaporated, °C		Report	155.5
FBP		Report	211.9

This ammended test report replaces the report issued on 17-Jun-1996. All copies of the previous test report should be destroyed.

This report relates specifically to the sample tested. The test methods used are the latest issues available unless otherwise stated.

Tests marked * were performed by: _____

For and on behalf of **Mobil Oil Aust. Ltd**

Paul Kyr

Approved Signatory

27-Jun-96

Date

