Table of Contents

1. Correspondence and Communications

1.1 Mailing information

Corporate name and address to appear on Certificates of Conformity/Executive Orders

Toyota Motor Corporation
1, Toyota-cho, Toyota,
Aichi, 47l-8572
Japan

Person and address to whom the Certificates of Conformity should be mailed

Kevin Webber
General Manager
Carbon Neutrality & Regulatory Affairs
Toyota Motor North America, Inc.
1555 Woodridge Avenue
Ann Arbor, Michigan 48105
U.S.A.

Person and address to whom the Executive Orders should be mailed

Naomi Kruse
Carbon Neutrality & Regulatory Affairs
Toyota Motor North America, Inc.
1630 West 186th Street
Gardena, California 90248
U.S.A.

1.2 Responsible official

Names and title of persons authorized to communicate with EPA and CARB

Toyota Motor North America, Inc.

Jordan Choby --- Group Vice President, Powertrain Function
Tom Stricker --- Group Vice President, Carbon Neutrality & Regulatory Affairs
Brian Schneidewind --- Vice President, Powertrain Design
Kevin Webber --- General Manager, Carbon Neutrality & Regulatory Affairs
William Meschievitz --- Group Manager, Powertrain Certification & Compliance

Carbon Neutrality & Regulatory Affairs (Ann Arbor Office)

Main Phone No. (734) 995 - 2600
Fax No. (734) 995 - 9049

Name	Title	Phone No.	E-mail Address
Kevin Webber	General Manager	(734) 995-7132	kevin.webber@toyota.com
Lisa Florida	Sr. Manager	(734) 695-2697	lisa.florida@toyota.com
Ranjini Varadharajan	Engineer	(734) 223-0492	ranjini.varadharajan@toyota.com
Nicholas Kraft	Consultant	(734) 695-4477	nicholas.kraft@toyota.com

Carbon Neutrality & Regulatory Affairs (Los Angeles Office)

Main Phone No. (310) 787 - 5500
Fax No. (310) 787 - 5655

Name	Title	Phone No.	E-mail Address
Lizet Gutierrez*	Principal Engineer	(734) 263-9641	lizet.gutierrez@toyota.com
Naomi Kruse	Administrator	(310) 787-5510	naomi.kruse@toyota.com

Powertrain Certification & Compliance (Ann Arbor Office)

Main Phone No. (734) 995 - 2600
Fax No. (734) 995 - 5971

Name	Title	Phone No.	E-mail Address
William Meschievitz	Group Manager	(734) 995-6831	william.meschievitz@toyota.com
Mark Miyagawa**	Sr. Engineering Manager	(734) 695-4518	mark.miyagawa@toyota.com
Tim Korhumel	Sr. Engineer	(734) 995-0256	tim.korhumel@toyota.com
Brian Lovich	Engineer	(734) 695-4511	brian.lovich@toyota.com
Maya Ono	Analyst	(734) 695-2162	maya.ono@toyota.com
Julie Worster	Administrator	(734) 995-3715	julie.worster@toyota.com

Powertrain Certification & Compliance (Los Angeles Office)

Main Phone No. (310) 787 - 5500

Fax No. (310) 787 - 5655

Name	Title	Phone No.	E-mail Address
Mort Smith*	Sr. Principal Engineer	(310) 787-5647	mort.smith@toyota.com
Takuhito Suganuma	Executive Engineer	(310) 224-1821	takuhito.suganuma@toyota.com
Hyunsuk Kim	Sr. Principal Engineer	(310) 787-5639	hyunsuk.kim@toyota.com

(*: Primary Certification Contact & **: Primary Cert Test Contact)

2. Durability Group Description

2.1 Grouping statistics of durability groups

.01 Durability Group Name	TTYXHHGNNB22	TTYXHHGNNB2D TTKXT02.5CDC(Mazda)	TTYXHHGNNB26	TTYXGPGNN626	TTYXHHGNNB27
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Piston	Hybrid Electric (Piston)
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port & Chamber Injections	Port & Chamber Injections	Port Injection	Port & Chamber Injections	Port & Chamber Injections
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Confidential Information				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIr1+3-IIr2	3-IIZ50+3-IIr4	3-IIZ55+3-IIS44	3-IIp7+3-IIJ6	3-IIp6+3-IIr5

.01 Durability Group Name	TTYXHHGNNE28	TTYXHHGNNB2H	TTYXGPGNN621	TTYXGPGNN62Q	TTYXHHGNNB28
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Piston	Piston	Hybrid Electric (Piston)
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Confidential Information				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIp6+3-IIr5	3-IIZ59+3-IIJ7	3-IIS17+3-IIS17 +3-IIJ1+3-IIJ1	3-IIp7+3-IIJ6	3-IIp6+3-IIr5

.01 Durability Group Name	TTYXGPGNN62X	TTYXHHGNNB23	TTYXHHGNNB2B	TTYXHHGNNB2C	TTYXHHGNNE21
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Piston	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Hybrid Electric (Piston)
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Confidential Information				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIr7+3-IIr8	3-IIr7+3-IIr8	3-IIZ58+3-IIr10	3-IIZ58+3-IIJ7	3-IIZ54+3-IIq2

.01 Durability Group Name	TTYXHHGNNB2E	TTYXHHGNNB2J	TTYXHHGNNE22	TTYXGPGNN62F	TTYXGPGNN62G
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Piston	Piston
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections	Port & Chamber Injections
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Confidential Information				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIZ54+3-IIq2	3-IIr9+3-IIs1	3-IIZ52+3-IIZ52 3-IIr4+3-IIr4	3-IIZ53+3-IIZ53 3-IIh14+3-IIh14	3-IIr3+3-IIr3 3-IIh13+3-IIh13

.01 Durability Group Name	TTYXHHGNNB21
.02 Combustion Cycle	Otto Cycle 4 stroke
.03 Engine Type	Hybrid Electric (Piston)
.04 Fuel Used	Gasoline
.05 Basic Fuel Metering System	Port & Chamber Injections
.06 Catalyst Construction	Monolith
.07 Precious Metals in Catalyst	Confidential Information
.08 Range of Catalyst Grouping Statistics (g/l)	
.09 Catalyst Code	3-IIr3+3-IIr3 3-IIh13+3-IIh13

2.2 Catalytic converter/Adsorber information

Confidential Information

2.3 Structure of catalyst / adsorber code

Confidential Information

3. Evaporative/Refueling Family Description

Evap. Family	Test Group	Carline	Type of vapor storage device	Basic canister design									Vapor hose material
				Working capacity (gram)		Size (cc)		Number / Method of connection	Geometry	Construction	Material	Fuel system	
				Main	Sub	Main	Sub						
TTYXR0165J42	TTYXV02.4H3A	TOYOTA CROWN AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
	TTYXV02.5H3B	TOYOTA CROWN AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0130J42	TTYXV01.8H3A	COROLLA HYBRID	Canister	130	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port fuel injection	Plastic
		COROLLA HYBRID AWD	Canister	130	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port fuel injection	Plastic
TTYXR0130P42	TTYXV02.0E4A	COROLLA	Canister	128	2	2465	30	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		COROLLA HATCHBACK	Canister	128	2	2465	30	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		COROLLA HATCHBACK XSE	Canister	128	2	2465	30	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		COROLLA HATCHBACK FX	Canister	128	2	2465	30	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
	TTYXT02.0E4A	COROLLA CROSS	Canister	128	2	2465	30	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		COROLLA CROSS AWD	Canister	128	2	2465	30	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0130J42	TTYXV02.0H3B	PRIUS	Canister	130	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		PRIUS XLE/LTD	Canister	130	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		PRIUS AWD	Canister	130	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		PRIUS AWD XLE/LTD	Canister	130	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0120J42	TTYXV02.0H3W	PRIUS PHEV	Canister	120	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		PRIUS PHEV SE	Canister	120	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0165J42	TTYXV02.5V2A	CAMRY HEV AWD LE	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		CAMRY HEV AWD SE/XLE	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		CAMRY HEV AWD XSE	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		CAMRY HEV FF LE	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		CAMRY HEV FF SE/XLE/XSE	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0180A42	TTYXV05.0B5A	LC 500	Canister	178	2	2915	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		LC 500 CONVERTIBLE	Canister	178	2	2915	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0130J42	TTYXT02.0H3A	COROLLA CROSS HYBRID AWD	Canister	130	/	2670	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0130P42	TTYXJ02.4H3B	NX 350 AWD	Canister	128	2	2465	30	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		NX 350 AWD F SPORT	Canister	128	2	2465	30	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0165P52	TTYXJ02.4H3B	RX 350	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		RX 350 AWD	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		GRAND HIGHLANDER AWD LE/XLE	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		GRAND HIGHLANDER AWD LIMITED/PLATINUM	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		GRAND HIGHLANDER LE/XLE	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		GRAND HIGHLANDER LIMITED	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		TX 350	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		TX 350 AWD	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0165J52	TTYXT02.4H3L	RX 500h AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		GRAND HIGHLANDER HYBRID AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		TX 500h AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
	TTYXJ02.5H3A	GRAND HIGHLANDER HYBRID	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		GRAND HIGHLANDER HYBRID AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		GRAND HIGHLANDER HYBRID LIMITED	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		NX 350h	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		NX 350h AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		RX 350h AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic

3. Evaporative/Refueling Family Description

Evap. Family	Test Group	Carline	Fuel tank Material	Type of refueling emission control system	Vapor control system	Fill pipe seal mechanism	Purge control system	Carbon filter in the air cleaner box	Key-off monitor system
TTYXR0165J42	TTYXV02.4H3A	TOYOTA CROWN AWD	Plastic	Non-Integrated	Fuel vapor-containment valve	Liquid seal	Purge control valve	NO	YES*1
	TTYXV02.5H3B	TOYOTA CROWN AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0130J42	TTYXV01.8H3A	COROLLA HYBRID	Plastic	Non-Integrated	Fuel vapor-containment valve				
		COROLLA HYBRID AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0130P42	TTYXV02.0E4A	COROLLA	Plastic	Integrated	N/A				
		COROLLA HATCHBACK	Plastic	Integrated	N/A				
		COROLLA HATCHBACK XSE	Plastic	Integrated	N/A				
		COROLLA HATCHBACK FX	Plastic	Integrated	N/A				
	TTYXT02.0E4A	COROLLA CROSS	Plastic	Integrated	N/A				
		COROLLA CROSS AWD	Plastic	Integrated	N/A				
TTYXR0130J42	TTYXV02.0H3B	PRIUS	Plastic	Non-Integrated	Fuel vapor-containment valve				
		PRIUS XLE/LTD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		PRIUS AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		PRIUS AWD XLE/LTD	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0120J42	TTYXV02.0H3W	PRIUS PHEV	Plastic	Non-Integrated	Fuel vapor-containment valve				
		PRIUS PHEV SE	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0165J42	TTYXV02.5V2A	CAMRY HEV AWD LE	Plastic	Non-Integrated	Fuel vapor-containment valve				
		CAMRY HEV AWD SE/XLE	Plastic	Non-Integrated	Fuel vapor-containment valve				
		CAMRY HEV AWD XSE	Plastic	Non-Integrated	Fuel vapor-containment valve				
		CAMRY HEV FF LE	Plastic	Non-Integrated	Fuel vapor-containment valve				
		CAMRY HEV FF SE/XLE/XSE	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0180A42	TTYXV05.0B5A	LC 500	Steel	Integrated	N/A			YES	
		LC 500 CONVERTIBLE	Steel	Integrated	N/A				
TTYXR0130J42	TTYXT02.0H3A	COROLLA CROSS HYBRID AWD	Plastic	Non-Integrated	Fuel vapor-containment valve			NO	
TTYXR0130P42	TTYXJ02.4H3B	NX 350 AWD	Plastic	Integrated	N/A				
		NX 350 AWD F SPORT	Plastic	Integrated	N/A				
TTYXR0165P52	TTYXJ02.4H3B	RX 350	Plastic	Integrated	N/A				
		RX 350 AWD	Plastic	Integrated	N/A				
		GRAND HIGHLANDER AWD LE/XLE	Plastic	Integrated	N/A				
		GRAND HIGHLANDER AWD LIMITED/PLATINUM	Plastic	Integrated	N/A				
		GRAND HIGHLANDER LE/XLE	Plastic	Integrated	N/A				
		GRAND HIGHLANDER LIMITED	Plastic	Integrated	N/A				
		TX 350	Plastic	Integrated	N/A				
		TX 350 AWD	Plastic	Integrated	N/A				
TTYXR0165J52	TTYXT02.4H3L	RX 500h AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		GRAND HIGHLANDER HYBRID AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		TX 500h AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
	TTYXJ02.5H3A	GRAND HIGHLANDER HYBRID	Plastic	Non-Integrated	Fuel vapor-containment valve				
		GRAND HIGHLANDER HYBRID AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		GRAND HIGHLANDER HYBRID LIMITED	Plastic	Non-Integrated	Fuel vapor-containment valve				
		NX 350h	Plastic	Non-Integrated	Fuel vapor-containment valve				
		NX 350h AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		RX 350h AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				

*1) 2DBL/3DBL result calculation in case adopting key-off monitor system.
According to the agreement with EPA and CARB at the meeting in March 2003 for CPM/CPP, evaporative emissions by key-off monitor is added to the first day of diurnal test of both 2DBL and 3DBL. It is because that the key-off monitor may work out of DBL test.

3. Evaporative/Refueling Family Description

Evap. Family	Test Group	Carline	Type of vapor storage device	Basic canister design									Vapor hose material
				Working capacity (gram)		Size (cc)		Number / Method of connection	Geometry	Construction	Material	Fuel system	
				Main	Sub	Main	Sub						
TTYXR0165J52	TTYXT02.5H3C	RAV4 HYBRID	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		RAV4 HYBRID AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
	TTYXT02.5H3B	RAV4 HYBRID AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0165J52	TTYXT02.5H3Y	NX 450h+ AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		RX 450h+ AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0195J52	TTYXJ02.5H3A	SIENNA	Canister	195	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		SIENNA AWD	Canister	195	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0170J62	TTYXT02.4E4A	LAND CRUISER	Canister	170	/	2915	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0165J62	TTYXT03.5E4A	TX 550h+ AWD	Canister	165	/	3500	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0165P62	TTYXT03.4B5B	GX 550	Canister	163	2	2995	35	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0215P62	TTYXT03.4B5A	TUNDRA 2WD	Canister	211	4	3460	197	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		TUNDRA 4WD	Canister	211	4	3460	197	2/Series	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0325J62	TTYXT03.4B5C	TUNDRA 2WD	Canister	325	/	4980	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		TUNDRA 4WD	Canister	325	/	4980	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		TUNDRA 4WD PRO	Canister	325	/	4980	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
TTYXR0265J62		SEQUOIA 2WD	Canister	265	/	4980	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic
		SEQUOIA 4WD	Canister	265	/	4980	/	1/-	Box	Closed bottom	Charcoal	Port and Direct fuel injection	Plastic

3. Evaporative/Refueling Family Description

Evap. Family	Test Group	Carline	Fuel tank Material	Type of refueling emission control system	Vapor control system	Fill pipe seal mechanism	Purge control system	Carbon filter in the air cleaner box	Key-off monitor system
TTYXR0165J52	TTYXT02.5H3C	RAV4 HYBRID	Plastic	Non-Integrated	Fuel vapor-containment valve	Liquid seal	Purge control valve	NO	YES*1
		RAV4 HYBRID AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
	TTYXT02.5H3B	RAV4 HYBRID AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0165J52	TTYXT02.5H3Y	NX 450h+ AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		RX 450h+ AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0195J52	TTYXJ02.5H3A	SIENNA	Plastic	Non-Integrated	Fuel vapor-containment valve				
		SIENNA AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0170J62	TTYXT02.4E4A	LAND CRUISER	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0165J62	TTYXT03.5E4A	TX 550h+ AWD	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0165P62	TTYXT03.4B5B	GX 550	Plastic	Integrated	N/A				
TTYXR0215P62	TTYXT03.4B5A	TUNDRA 2WD	Plastic	Integrated	N/A				
		TUNDRA 4WD	Plastic	Integrated	N/A				
TTYXR0325J62	TTYXT03.4B5C	TUNDRA 2WD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		TUNDRA 4WD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		TUNDRA 4WD PRO	Plastic	Non-Integrated	Fuel vapor-containment valve				
TTYXR0265J62		SEQUOIA 2WD	Plastic	Non-Integrated	Fuel vapor-containment valve				
		SEQUOIA 4WD	Plastic	Non-Integrated	Fuel vapor-containment valve				

*1) 2DBL/3DBL result calculation in case adopting key-off monitor system.
According to the agreement with EPA and CARB at the meeting in March 2003 for CPM/CPP, evaporative emissions by key-off monitor is added to the first day of diurnal test of both 2DBL and 3DBL. It is because that the key-off monitor may work out of DBL test.

4. Durability Procedure Description

4.1 Exhaust durability test procedure

Confidential Information

4.2 Durability Showing

Confidential Information

4.3 Evap/refueling durability test procedure

Confidential Information

4.4 Exhaust emission deterioration factors

		FTP/SFTP					FTP	HWY		GHG									
Durability Group	Useful Life	NMOG	CO	NOx	NMOG +NOx	PM*	HCHO	NOx	NMOG +NOx	THC	CH4	N2O	CH3OH	C2H5OH	H3C2HO	CREE	DF Type	Veh. ID. NO.	Conf NO.	Note
TTYXHHGNNB2D	50K	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	23D-AA1H	00	
	120K	0.0050	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0063	0.08	0.0010	0.0073	0.0000	-	-	0.0073	0.009	0.0034	0.0000	-	-	-	0.089				
TTYXHHGNNB22	50K	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	23D-TL1H	00	
	120K	0.0019	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0023	0.01	0.0049	0.0072	0.0000	-	-	0.0072	0.007	0.0053	0.0014	-	-	-	0.017				
TTYXHHGNNB26	50K	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	25D-ZE1H	00	
	120K	0.0051	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0064	0.02	0.0002	0.0066	0.0000	-	-	0.0066	0.008	0.0022	0.0001	-	-	-	0.028				
TTYXGPGNN626	50K	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	23D-MA1C	00	
	120K	0.0038	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0047	0.07	0.0038	0.0085	0.0000	-	-	0.0085	0.017	0.0125	0.0008	-	-	-	0.087				
TTYXHHGNNE28	50k	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	23D-MG1H	00	
	120k	0.0011	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150k	0.0014	0.00	0.0004	0.0018	0.0004	-	-	0.0018	0.002	0.0012	0.0001	-	-	-	5				
TTYXHHGNNB27	50K	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	23D-MG1H	01	
	120K	0.0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0020	0.01	0.0004	0.0024	0.0002	-	-	0.0024	0.003	0.0021	0.0002	-	-	-	0.013				
TTYXHHGNNB2H	50K	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	26D-AV1H	00	
	120K	0.0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0018	0.02	0.0006	0.0024	0.0000	-	-	0.0024	0.003	0.0016	0.0003	-	-	-	0.023				
TTYXGPGNN621	50K	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	21D-UZ1A	00	
	120K	0.0000	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0006	0.01	0.0000	0.0006	0.0000	-	-	0.0006	0.002	0.0005	0.0001	-	-	-	0.012				
TTYXGPGNN62Q	50K	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	24D-MG1C	00	
	120K	0.0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0068	0.11	0.0015	0.0083	0.0000	-	-	0.0083	0.016	0.0105	0.0000	-	-	-	0.126				
TTYXHHGNNE21	50K	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	24-AS2H	01	
	120K	0.0025	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0032	0.05	0.0008	0.0040	0.0000	-	-	0.0040	0.007	0.0038	0.0004	-	-	-	0.057				
TTYXHHGNNB2E	50K	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	24-AS2H	01	
	120K	0.0025	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0032	0.05	0.0008	0.0040	0.0000	-	-	0.0040	0.007	0.0038	0.0004	-	-	-	0.057				
TTYXGPGNN62X	50K	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	24D-TS1A	00	
	120K	0.0029	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0036	0.00	0.0023	0.0059	0.0000	-	-	0.0059	0.015	0.0122	0.0008	-	-	-	0.015				
TTYXHHGNNB23	50K	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	25D-TS1H	00	
	120K	0.0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0038	0.02	0.0021	0.0059	0.0000	-	-	0.0059	0.009	0.0063	0.0009	-	-	-	0.029				

*: Since PM deterioration have not been seen in the actual vehicle durability evaluation of applicable or similar model, we consider the same bench durability procedure as the other pollutants to be appropriate.

4.4 Exhaust emission deterioration factors

Durability Group	Useful Life	FTP/SFTP					FTP	HWY		GHG							DF Type	Veh. ID. NO.	Conf NO.	Note
		NMOG	CO	NOx	NMOG +NOx	PM*	HCHO	NOx	NMOG +NOx	THC	CH4	N2O	CH3OH	C2H5OH	H3C2HO	CREE				
TTYXHHGNNB2J	50k	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	24D-TH1H	00	
	120k	0.0085	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150k	0.0107	0.02	0.0066	0.0173	0.0000	-	-	0.0173	0.021	0.0113	0.0008	-	-	-	0.041				
TTYXHHGNNE22	50k	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	24D-GU1H	00	
	120k	0.0028	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150k	0.0035	0.03	0.0000	0.0035	0.0002	-	-	0.0035	0.006	0.0034	0.0002	-	-	-	14				
TTYXGPGNN62F	50K	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	24D-VJ1A	00	
	120K	0.0062	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150K	0.0078	0.10	0.0059	0.0137	0.0000	-	-	0.0137	0.012	0.0061	0.0019	-	-	-	0.112				
TTYXGPGNN62G	50K	-	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	22D-VK1A	00	
	120K	0.0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150k	0.0161	0.25	0.0100	0.0261	0.0000	-	-	0.0261	0.028	0.0142	0.0024	-	-	-	0.278				
TTYXHHGNNB21	50K	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	22D-VK1H	00	
	120K	0.0069	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150k	0.0087	0.03	0.0051	0.0138	0.0000	-	-	0.0138	0.011	0.0033	0.0029	-	-	-	0.041				
TTYXHHGNNB28	50K	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	Additive	26D-MG1H	00	
	120K	0.0027	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	150k	0.0034	0.01	0.0003	0.0037	0.0000	-	-	0.0037	0.005	0.0017	0.0000	-	-	-	0.015				

*: Since PM deterioration have not been seen in the actual vehicle durability evaluation of applicable or similar model, we consider the same bench durability procedure as the other pollutants to be appropriate.

4.4 Exhaust emission deterioration factors
Durability data

Vehicle ID	Conf	Test Date	Test Point Mile	MFR Test ID#	Test Fuel	Test Type	THC	NMHC	NMOG	NOX	CO	HCHO	PM	CO2	CH4	N2O
23D-AA1H	00	2022/03/04	4000	23D-AA1H4KN1	GASOLINE-TIER3 E10	FTP	0.013	0.0098	0.0107	0.0016	0.08	-	0.0001	167	0.0032	0.0005
23D-AA1H	00	2022/03/09	4000	23D-AA1H4KN2	GASOLINE-TIER3 E10	FTP	0.014	0.0107	0.0118	0.0020	0.07	-	0.0002	168	0.0036	0.0004
23D-AA1H	00	2022/03/16	4000	23D-AA1H4KN3	GASOLINE-TIER3 E10	FTP	0.015	0.0110	0.0122	0.0025	0.08	-	0.0001	167	0.0039	0.0006
23D-AA1H	00	2022/06/07	150000	23D-AA1H150KN1	GASOLINE-TIER3 E10	FTP	0.021	0.0150	0.0165	0.0037	0.11	-	0.0001	160	0.0064	0.0003
23D-AA1H	00	2022/06/08	150000	23D-AA1H150KN2	GASOLINE-TIER3 E10	FTP	0.023	0.0165	0.0182	0.0030	0.18	-	0.0001	162	0.0073	0.0005
23D-AA1H	00	2022/06/09	150000	23D-AA1H150KN3	GASOLINE-TIER3 E10	FTP	0.024	0.0170	0.0187	0.0024	0.18	-	0.0001	165	0.0073	0.0007
23D-TL1H	00	2022/02/25	4000	23D-TL1H4KN1	GASOLINE-TIER3 E10 PREM	FTP	0.009	0.0050	0.0055	0.0071	0.13	-	0.0001	377	0.0042	0.0004
23D-TL1H	00	2022/03/02	4000	23D-TL1H4KN2	GASOLINE-TIER3 E10 PREM	FTP	0.009	0.0051	0.0056	0.0079	0.13	-	0.0000	375	0.0045	0.0007
23D-TL1H	00	2022/03/04	4000	23D-TL1H4KN3	GASOLINE-TIER3 E10 PREM	FTP	0.009	0.0052	0.0057	0.0087	0.13	-	0.0001	379	0.0048	0.0009
23D-TL1H	00	2022/05/18	150000	23D-TL1H150KN1	GASOLINE-TIER3 E10 PREM	FTP	0.015	0.0065	0.0072	0.0126	0.12	-	0.0001	376	0.0096	0.0023
23D-TL1H	00	2022/05/19	150000	23D-TL1H150KN2	GASOLINE-TIER3 E10 PREM	FTP	0.016	0.0075	0.0083	0.0143	0.14	-	0.0001	377	0.0097	0.0027
23D-TL1H	00	2022/05/20	150000	23D-TL1H150KN3	GASOLINE-TIER3 E10 PREM	FTP	0.017	0.0076	0.0083	0.0114	0.15	-	0.0001	376	0.0101	0.0013
25D-ZE1H	00	2024/02/14	4000	25D-ZE1H4KN1	GASOLINE-TIER3 E10	FTP	0.012	0.0102	0.0112	0.0013	0.05	-	0.0001	135.2	0.0019	0.0005
25D-ZE1H	00	2024/02/21	4000	25D-ZE1H4KN2	GASOLINE-TIER3 E10	FTP	0.014	0.0120	0.0133	0.001	0.05	-	0.0001	131.9	0.0022	0.0002
25D-ZE1H	00	2024/02/23	4000	25D-ZE1H4KN3	GASOLINE-TIER3 E10	FTP	0.012	0.0100	0.0110	0.0015	0.04	-	0.0001	132.7	0.0021	0.0004
25D-ZE1H	00	2024/02/29	150000	25D-ZE1H150KN1	GASOLINE-TIER3 E10	FTP	0.022	0.0180	0.0198	0.0015	0.07	-	0.0001	131.6	0.0039	0.0003
25D-ZE1H	00	2024/03/05	150000	25D-ZE1H150KN2	GASOLINE-TIER3 E10	FTP	0.019	0.0155	0.0171	0.0015	0.07	-	0.0001	131.1	0.0043	0.0006
25D-ZE1H	00	2024/03/06	150000	25D-ZE1H150KN3	GASOLINE-TIER3 E10	FTP	0.021	0.0162	0.0178	0.0016	0.07	-	0.0001	132.9	0.0047	0.0006
23D-MA1C	00	2022/9/21	4000	23D-MA1C4KN1	GASOLINE-TIER3 E10	FTP	0.004	0.0021	0.0023	0.0051	0.06	-	0.0003	265	0.0023	0.0006
23D-MA1C	00	2022/9/22	4000	23D-MA1C4KN2	GASOLINE-TIER3 E10	FTP	0.004	0.0019	0.0021	0.005	0.06	-	0.0003	265	0.0027	0.0003
23D-MA1C	00	2022/9/23	4000	23D-MA1C4KN3	GASOLINE-TIER3 E10	FTP	0.005	0.0024	0.0026	0.0055	0.07	-	0.0003	265	0.0035	0.0003
23D-MA1C	00	2022/9/14	150000	23D-MA1C150KN1	GASOLINE-TIER3 E10	FTP	0.020	0.0064	0.0070	0.0098	0.12	-	0.0003	265	0.0149	0.0011
23D-MA1C	00	2022/9/15	150000	23D-MA1C150KN2	GASOLINE-TIER3 E10	FTP	0.021	0.0066	0.0073	0.0086	0.13	-	0.0003	264	0.0154	0.0014
23D-MA1C	00	2022/9/20	150000	23D-MA1C150KN3	GASOLINE-TIER3 E10	FTP	0.021	0.0062	0.0068	0.0086	0.14	-	0.0003	263	0.0155	0.0011
23D-MG1H	00	2022/06/10	4000	23D-MG1H4KN1	GASOLINE-TIER3 E10	FTP	0.011	0.0083	0.0091	0.0008	0.08	-	0.0007	136	0.0028	0.0001
23D-MG1H	00	2022/06/14	4000	23D-MG1H4KN2	GASOLINE-TIER3 E10	FTP	0.012	0.0090	0.0099	0.0007	0.08	-	0.0010	134	0.0030	0.0000
23D-MG1H	00	2022/06/15	4000	23D-MG1H4KN3	GASOLINE-TIER3 E10	FTP	0.012	0.0083	0.0092	0.0008	0.08	-	0.0013	135	0.0036	0.0003
23D-MG1H	00	2022/06/24	150000	23D-MG1H150KN1	GASOLINE-TIER3 E10	FTP	0.014	0.0101	0.0111	0.0011	0.08	-	0.0011	136	0.0040	0.0002
23D-MG1H	00	2022/06/28	150000	23D-MG1H150KN2	GASOLINE-TIER3 E10	FTP	0.014	0.0099	0.0109	0.0012	0.08	-	0.0016	134	0.0043	0.0002
23D-MG1H	00	2022/06/29	150000	23D-MG1H150KN3	GASOLINE-TIER3 E10	FTP	0.014	0.0094	0.0104	0.0014	0.07	-	0.0016	136	0.0047	0.0002

4.4 Exhaust emission deterioration factors

Durability data

Vehicle ID	Conf	Test Date	Test Point Mile	MFR Test ID#	Test Fuel	Test Type	THC	NMHC	NMOG	NOX	CO	HCHO	PM	CO2	CH4	N2O
23D-MG1H	00	2022/06/10	4000	23D-MG1H4KN1	GASOLINE-TIER3 E10	FTP	0.011	0.0083	0.0091	0.0008	0.08	-	0.0007	136	0.0028	0.0001
23D-MG1H	00	2022/06/14	4000	23D-MG1H4KN2	GASOLINE-TIER3 E10	FTP	0.012	0.0090	0.0099	0.0007	0.08	-	0.0010	134	0.0030	0.0000
23D-MG1H	00	2022/06/15	4000	23D-MG1H4KN3	GASOLINE-TIER3 E10	FTP	0.012	0.0083	0.0092	0.0008	0.08	-	0.0013	135	0.0036	0.0003
23D-MG1H	01	2023/06/28	150000	23D-MG1H150KN1	GASOLINE-TIER3 E10	FTP	0.015	0.0102	0.0112	0.0012	0.09	-	0.0010	138	0.0049	0.0003
23D-MG1H	01	2023/06/29	150000	23D-MG1H150KN2	GASOLINE-TIER3 E10	FTP	0.015	0.0103	0.0114	0.0012	0.08	-	0.0013	138	0.0053	0.0004
23D-MG1H	01	2023/06/30	150000	23D-MG1H150KN3	GASOLINE-TIER3 E10	FTP	0.016	0.0105	0.0116	0.0013	0.09	-	0.0012	144	0.0054	0.0003
26D-AV1H	00	2025/02/25	4000	26D-AV1H4KN1	GASOLINE - TIER3 E10	FTP	0.010	0.0065	0.0072	0.0012	0.09	-	0.0000	144	0.0039	0.0002
26D-AV1H	00	2025/02/26	4000	26D-AV1H4KN2	GASOLINE - TIER3 E10	FTP	0.012	0.0084	0.0092	0.0008	0.08	-	0.0000	141.8	0.0036	0.0002
26D-AV1H	00	2025/02/27	4000	26D-AV1H4KN3	GASOLINE - TIER3 E10	FTP	0.011	0.0074	0.0082	0.0009	0.09	-	0.0000	141.3	0.0039	0.0003
26D-AV1H	00	2025/03/14	150000	26D-AV1H150KN1	GASOLINE - TIER3 E10	FTP	0.014	0.0086	0.0095	0.0014	0.11	-	0.0001	138.5	0.0053	0.0003
26D-AV1H	00	2025/03/19	150000	26D-AV1H150KN2	GASOLINE - TIER3 E10	FTP	0.014	0.0093	0.0102	0.0015	0.12	-	0.0000	136.5	0.0053	0.0005
26D-AV1H	00	2025/03/21	150000	26D-AV1H150KN3	GASOLINE - TIER3 E10	FTP	0.015	0.0093	0.0103	0.0018	0.09	-	0.0000	138.6	0.0057	0.0007
21D-UZ1A	00	2019/10/30	4000	21DUZ1A4K1	GASOLINE-TIER3 E10 PREM	FTP	0.016	0.0144	0.0158	0.0098	0.06	-	0.0012	492	0.0021	0.0007
21D-UZ1A	00	2019/10/31	4000	21DUZ1A4K2	GASOLINE-TIER3 E10 PREM	FTP	0.016	0.0145	0.0159	0.0102	0.06	-	0.0009	489	0.0020	0.0003
21D-UZ1A	00	2019/11/1	4000	21DUZ1A4K3	GASOLINE-TIER3 E10 PREM	FTP	0.020	0.0182	0.0200	0.0103	0.08	-	0.0009	489	0.0021	0.0004
21D-UZ1A	00	2019/11/6	150000	21DUZ1A150K1	GASOLINE-TIER3 E10 PREM	FTP	0.018	0.0153	0.0168	0.0096	0.07	-	0.0005	487	0.0027	0.0006
21D-UZ1A	00	2019/11/7	150000	21DUZ1A150K2	GASOLINE-TIER3 E10 PREM	FTP	0.021	0.0181	0.0199	0.0099	0.10	-	0.0004	491	0.0026	0.0006
21D-UZ1A	00	2019/11/8	150000	21DUZ1A150K3	GASOLINE-TIER3 E10 PREM	FTP	0.017	0.0151	0.0167	0.0098	0.08	-	0.0006	490	0.0024	0.0007
24D-MG1C	00	2023/07/11	4000	24D-MG1C4KN1	GASOLINE-TIER3 E10	FTP	0.006	0.0029	0.0032	0.0064	0.05	-	0.0002	222	0.0037	0.0005
24D-MG1C	00	2023/07/14	4000	24D-MG1C4KN2	GASOLINE-TIER3 E10	FTP	0.007	0.0033	0.0036	0.0075	0.05	-	0.0002	224	0.0039	0.0006
24D-MG1C	00	2023/07/19	4000	24D-MG1C4KN3	GASOLINE-TIER3 E10	FTP	0.007	0.0031	0.0034	0.0055	0.05	-	0.0002	222	0.0041	0.0006
24D-MG1C	00	2023/07/27	150000	24D-MG1C150KN1	GASOLINE-TIER3 E10	FTP	0.023	0.0089	0.0098	0.007	0.15	-	0.0002	222	0.0147	0.0006
24D-MG1C	00	2023/07/28	150000	24D-MG1C150KN2	GASOLINE-TIER3 E10	FTP	0.023	0.0098	0.0108	0.0087	0.17	-	0.0002	222	0.0141	0.0006
24D-MG1C	00	2023/08/01	150000	24D-MG1C150KN2	GASOLINE-TIER3 E10	FTP	0.023	0.009	0.0099	0.0084	0.15	-	0.0003	224	0.0144	0.0006

4.4 Exhaust emission deterioration factors
Durability data

Vehicle ID	Conf	Test Date	Test Point Mile	MFR Test ID#	Test Fuel	Test Type	THC	NMHC	NMOG	NOX	CO	HCHO	PM	CO2	CH4	N2O
24-AS2H	01	2025/02/04	4000	24D-AS2H4KN1	GASOLINE - TIER3 E10	FTP	0.011	0.0078	0.0086	0.0020	0.06	-	0.0001	178.4	0.0031	0.0002
24-AS2H	01	2025/02/05	4000	24D-AS2H4KN2	GASOLINE - TIER3 E10	FTP	0.012	0.0087	0.0095	0.0011	0.08	-	0.0001	179.2	0.0038	0.0002
24-AS2H	01	2025/02/06	4000	24D-AS2H4KN3	GASOLINE - TIER3 E10	FTP	0.017	0.0132	0.0145	0.0018	0.09	-	0.0001	175.8	0.0046	0.0002
24-AS2H	01	2025/02/18	150000	24D-AS2H150KN1	GASOLINE - TIER3 E10	FTP	0.018	0.0116	0.0127	0.0034	0.08	-	0.0001	184.2	0.007	0.0007
24-AS2H	01	2025/02/26	150000	24D-AS2H150KN2	GASOLINE - TIER3 E10	FTP	0.020	0.0130	0.0144	0.0021	0.13	-	0.0001	176.5	0.0076	0.0004
24-AS2H	01	2025/02/27	150000	24D-AS2H150KN3	GASOLINE - TIER3 E10	FTP	0.022	0.0139	0.0153	0.0018	0.17	-	0.0001	176.1	0.0083	0.0008
24D-TS1A	00	2022/12/01	4000	24D-TS1A4KN1	GASOLINE-TIER3 E10	FTP	0.008	0.0042	0.0046	0.0058	0.13	-	0.0002	371	0.0039	0.0006
24D-TS1A	00	2022/12/02	4000	24D-TS1A4KN2	GASOLINE-TIER3 E10	FTP	0.009	0.0056	0.0061	0.0053	0.13	-	0.0002	369	0.0042	0.0003
24D-TS1A	00	2022/12/06	4000	24D-TS1A4KN3	GASOLINE-TIER3 E10	FTP	0.008	0.0044	0.0048	0.0053	0.13	-	0.0003	369	0.0047	0.0003
24D-TS1A	00	2022/12/21	150000	24D-TS1A150KN1	GASOLINE-TIER3 E10	FTP	0.021	0.0070	0.0077	0.0082	0.11	-	0.0002	368	0.0155	0.0007
24D-TS1A	00	2022/12/22	150000	24D-TS1A150KN2	GASOLINE-TIER3 E10	FTP	0.024	0.0092	0.0102	0.0074	0.12	-	0.0003	365	0.0161	0.0008
24D-TS1A	00	2022/12/23	150000	24D-TS1A150KN3	GASOLINE-TIER3 E10	FTP	0.024	0.0079	0.0087	0.0078	0.11	-	0.0002	366	0.0178	0.0022
25D-TS1H	00	2023/11/17	4000	25D-TS1H4KN1	GASOLINE - TIER3 E10	FTP	0.008	0.0043	0.0048	0.0026	0.13	-	0.0001	386.3	0.0039	0.0002
25D-TS1H	00	2023/11/21	4000	25D-TS1H4KN2	GASOLINE - TIER3 E10	FTP	0.009	0.0047	0.0052	0.0027	0.13	-	0.0001	387.5	0.0044	0.0003
25D-TS1H	00	2023/11/22	4000	25D-TS1H4KN3	GASOLINE - TIER3 E10	FTP	0.009	0.0049	0.0054	0.0026	0.14	-	0.0001	389.6	0.0047	0.0002
25D-TS1H	00	2023/12/05	150000	25D-TS1H150KN1	GASOLINE - TIER3 E10	FTP	0.016	0.0068	0.0075	0.0039	0.15	-	0.0001	388.3	0.0096	0.0011
25D-TS1H	00	2023/12/06	150000	25D-TS1H150KN2	GASOLINE - TIER3 E10	FTP	0.017	0.0066	0.0073	0.0056	0.13	-	0.0001	387.3	0.0108	0.0012
25D-TS1H	00	2023/12/07	150000	25D-TS1H150KN3	GASOLINE - TIER3 E10	FTP	0.021	0.0107	0.0118	0.0045	0.17	-	0.0001	387.4	0.0113	0.0011
24D-TH1H	00	2023/06/16	4000	24D-TH1H4KN1	GASOLINE-TIER3 E10 PREM	FTP	0.013	0.0091	0.0100	0.0012	0.38	-	0.0006	391	0.0044	0.0003
24D-TH1H	00	2023/06/28	4000	24D-TH1H4KN2	GASOLINE-TIER3 E10 PREM	FTP	0.010	0.0071	0.0079	0.0022	0.33	-	0.0016	393	0.0037	0.0002
24D-TH1H	00	2023/06/30	4000	24D-TH1H4KN3	GASOLINE-TIER3 E10 PREM	FTP	0.013	0.0090	0.0099	0.0019	0.33	-	0.0006	395	0.0042	0.0004
24D-TH1H	00	2023/10/03	150000	24D-TH1H150KN1	GASOLINE-TIER3 E10 PREM	FTP	0.030	0.0168	0.0185	0.0066	0.37	-	0.0007	386	0.0140	0.0011
24D-TH1H	00	2023/10/04	150000	24D-TH1H150KN2	GASOLINE-TIER3 E10 PREM	FTP	0.036	0.0215	0.0237	0.0098	0.41	-	0.0006	388	0.0157	0.0011
24D-TH1H	00	2023/10/05	150000	24D-TH1H150KN3	GASOLINE-TIER3 E10 PREM	FTP	0.032	0.0162	0.0179	0.0087	0.33	-	0.0006	387	0.0164	0.0011

4.4 Exhaust emission deterioration factors
Durability data

Vehicle ID	Conf	Test Date	Test Point Mile	MFR Test ID#	Test Fuel	Test Type	THC	NMHC	NMOG	NOX	CO	HCHO	PM	CO2	CH4	N2O
24D-GU1H	00	2023/07/06	4000	24D-GU1H4KN1	GASOLINE-TIER3 E10 PREM	FTP	0.011	0.0066	0.0073	0.0029	0.06	-	0.0001	229	0.0042	0.0001
24D-GU1H	00	2023/07/13	4000	24D-GU1H4KN2	GASOLINE-TIER3 E10 PREM	FTP	0.016	0.0109	0.0120	0.0043	0.11	-	0.0001	225	0.0053	0.0001
24D-GU1H	00	2023/07/17	4000	24D-GU1H4KN3	GASOLINE-TIER3 E10 PREM	FTP	0.012	0.0078	0.0086	0.0020	0.09	-	0.0001	229	0.0048	0.0001
24D-GU1H	00	2023/07/22	150000	24D-GU1H150KN1	GASOLINE-TIER3 E10 PREM	FTP	0.020	0.0122	0.0134	0.0029	0.13	-	0.0003	230	0.0082	0.0004
24D-GU1H	00	2023/07/25	150000	24D-GU1H150KN2	GASOLINE-TIER3 E10 PREM	FTP	0.019	0.0111	0.0122	0.0021	0.12	-	0.0003	224	0.0082	0.0004
24D-GU1H	00	2023/07/28	150000	24D-GU1H150KN3	GASOLINE-TIER3 E10 PREM	FTP	0.019	0.0116	0.0128	0.0015	0.12	-	0.0002	228	0.0082	0.0002
24D-VJ1A	00	2023/06/09	4000	24D-VJ1A4KN1	GASOLINE-TIER3 E10 PREM	FTP	0.011	0.0078	0.0086	0.0125	0.08	-	0.0016	470	0.0044	0.0007
24D-VJ1A	00	2023/06/13	4000	24D-VJ1A4KN2	GASOLINE-TIER3 E10 PREM	FTP	0.011	0.0068	0.0075	0.0120	0.08	-	0.0014	466	0.0047	0.0010
24D-VJ1A	00	2023/06/14	4000	24D-VJ1A4KN3	GASOLINE-TIER3 E10 PREM	FTP	0.010	0.0064	0.0070	0.0124	0.09	-	0.0014	470	0.0047	0.0009
24D-VJ1A	00	2023/07/28	150000	24D-VJ1A150KN1	GASOLINE-TIER3 E10 PREM	FTP	0.022	0.0130	0.0143	0.0198	0.17	-	0.0013	465	0.0102	0.0043
24D-VJ1A	00	2023/08/04	150000	24D-VJ1A150KN2	GASOLINE-TIER3 E10 PREM	FTP	0.022	0.0126	0.0139	0.0162	0.17	-	0.0015	468	0.0109	0.0021
24D-VJ1A	00	2023/08/09	150000	24D-VJ1A150KN3	GASOLINE-TIER3 E10 PREM	FTP	0.026	0.0166	0.0183	0.0187	0.21	-	0.0016	473	0.0110	0.0021
22D-VK1A	00	2020/09/20	4000	22D-VK1A4K1	GASOLINE-TIER3 E10	FTP	0.015	0.0103	0.0113	0.0161	0.10	-	0.0019	438	0.0048	0.0012
22D-VK1A	00	2020/09/22	4000	22D-VK1A4K2	GASOLINE-TIER3 E10	FTP	0.016	0.0102	0.0112	0.0152	0.12	-	0.0020	438	0.0055	0.0013
22D-VK1A	00	2020/09/23	4000	22D-VK1A4K3	GASOLINE-TIER3 E10	FTP	0.016	0.0099	0.0109	0.0136	0.15	-	0.0021	435	0.0062	0.0010
22D-VK1A	00	2020/09/16	150000	22D-VK1A150K1	GASOLINE-TIER3 E10	FTP	0.041	0.0232	0.0255	0.0245	0.35	-	0.0015	436	0.0178	0.0036
22D-VK1A	00	2020/09/17	150000	22D-VK1A150K2	GASOLINE-TIER3 E10	FTP	0.047	0.0265	0.0292	0.0210	0.42	-	0.0018	447	0.0207	0.0029
22D-VK1A	00	2020/09/18	150000	22D-VK1A150K3	GASOLINE-TIER3 E10	FTP	0.045	0.0245	0.0270	0.0296	0.33	-	0.0018	447	0.0207	0.0042
22D-VK1H	00	2021/10/06	4000	22D-VK1H4KN1	GASOLINE-TIER3 E10	FTP	0.014	0.0100	0.0110	0.0044	0.16	-	0.0022	506	0.0040	0.0012
22D-VK1H	00	2021/10/14	4000	22D-VK1H4KN2	GASOLINE-TIER3 E10	FTP	0.014	0.0104	0.0115	0.0044	0.14	-	0.0025	496	0.0043	0.0010
22D-VK1H	00	2021/10/28	4000	22D-VK1H4KN3	GASOLINE-TIER3 E10	FTP	0.017	0.0123	0.0135	0.0043	0.21	-	0.0022	493	0.0055	0.0010
22D-VK1H	00	2021/11/02	150000	22D-VK1H150KN1	GASOLINE-TIER3 E10	FTP	0.026	0.0188	0.0207	0.0097	0.22	-	0.0017	494	0.0079	0.0047
22D-VK1H	00	2021/11/03	150000	22D-VK1H150KN2	GASOLINE-TIER3 E10	FTP	0.027	0.0198	0.0218	0.0098	0.20	-	0.0017	492	0.0076	0.0037
22D-VK1H	00	2021/11/04	150000	22D-VK1H150KN3	GASOLINE-TIER3 E10	FTP	0.025	0.0179	0.0197	0.0090	0.19	-	0.0020	490	0.0082	0.0036

4.4 Exhaust emission deterioration factors
Durability data

Vehicle ID	Conf	Test Date	Test Point Mile	MFR Test ID#	Test Fuel	Test Type	THC	NMHC	NMOG	NOX	CO	HCHO	PM	CO2	CH4	N2O
26D-MG1H	00	2025/01/15	4000	26D-MG1H150K4k	GASOLINE-TIER3 E10	FTP	0.010	0.0071	0.0078	0.0009	0.08	-	0.0001	137.6	0.0026	0.0002
26D-MG1H	00	2025/01/16	4000	26D-MG1H150K4k	GASOLINE-TIER3 E10	FTP	0.009	0.0065	0.0072	0.0010	0.06	-	0.0001	139.8	0.0027	0.0002
26D-MG1H	00	2025/01/17	4000	26D-MG1H150K4k	GASOLINE-TIER3 E10	FTP	0.009	0.0065	0.0072	0.0010	0.06	-	0.0001	138.3	0.003	0.0005
26D-MG1H	00	2025/01/23	150000	26D-MG1H150K0k	GASOLINE-TIER3 E10	FTP	0.013	0.0094	0.0104	0.0013	0.08	-	0.0001	139.6	0.0042	0.0000
26D-MG1H	00	2025/01/24	150000	26D-MG1H150K0k	GASOLINE-TIER3 E10	FTP	0.014	0.0098	0.0108	0.0012	0.08	-	0.0000	137.5	0.0044	0.0002
26D-MG1H	00	2025/01/30	150000	26D-MG1H150K0k	GASOLINE-TIER3 E10	FTP	0.015	0.0102	0.0112	0.0014	0.08	-	0.0001	137.7	0.0048	0.0001

4.5 Evap/refueling emission deterioration factors

Aged Components are adopted to EDV for all evaporative/refueling families.

4.6 Equivalency factor

Durability Group	Model	Test Group	Equivalency factor
TTYXHHGNNB22	TOYOTA CROWN AWD	TTYXV02.4H3A	1.28*2
TTYXHHGNNB2D	TOYOTA CROWN AWD	TTYXV02.5H3B	1.22*2
TTYXHHGNNB26	COROLLA HYBRID	TTYXV01.8H3A	1.13*2
TTYXGPGNN626	COROLLA, COROLLA HATCHBACK	TTYXV02.0E4A	0.60*1
TTYXHHGNNB27	PRIUS	TTYXV02.0H3B	0.86*2
TTYXHHGNNE28	PRIUS PHEV	TTYXV02.0H3W	0.86*2
TTYXHHGNNB2H	CAMRY HYBRID	TTYXV02.5V2A	1.20*2
TTYXGPGNN62Q	COROLLA CROSS	TTYXT02.0E4A	0.81*1
TTYXGPGNN621	LC 500, LC 500 CONVERTIBLE	TTYXV05.0B5A	0.84*1
TTYXHHGNNB28	COROLLA CROSS HYBRID	TTYXT02.0H3A	0.86*2
TTYXGPGNN62X	NX 350, RX 350, TX 350, GRAND HIGHLANDER	TTYXJ02.4H3B	0.95*1
TTYXHHGNNB23	GRAND HIGHLANDER HYBRID, RX 500h, TX 500h	TTYXT02.4H3L	1.07*2
TTYXHHGNNB2B	RAV4 HYBRID	TTYXT02.5H3C	TBD
TTYXHHGNNB2C	RAV4 HYBRID AWD	TTYXT02.5H3B	TBD
TTYXHHGNNE21	NX 450h+, RX 450h+	TTYXT02.5H3Y	1.09*2
TTYXHHGNNB2E	SIENNA, RX 350h AWD, GRAND HIGHLANDER HYBRID, NX 350h	TTYXJ02.5H3A	1.09*2
TTYXGPGNN62D	4RUNNER	TTYXT02.4H3C	1.36*1
TTYXHHGNNB2F	4RUNNER HYBRID	TTYXT02.4H3H	0.97*2
TTYXHHGNNB2J	LAND CRUISER	TTYXT02.4E4A	0.91*2
TTYXHHGNNE22	TX 550h+	TTYXT03.5E4A	1.07*2
TTYXGPGNN62F	GX 550	TTYXT03.4B5B	0.94*1
TTYXGPGNN62G	TUNDRA	TTYXT03.4B5A	1.07*1
TTYXHHGNNB21	TUNDRA HYBRID, SEQUOIA	TTYXT03.4B5C	1.45*2

Note *1: U02/SRC
Note *2: 9LAP/SRC

5. Test Group Description

Please refer to each test group file.

6. Test Vehicle Description

Please refer to each test group file.

7. Test Results

Please refer to each test group file.

8. Emission testing waiver statements

8.1 Statement of Compliance

TOYOTA MOTOR CORPORATION states that:

A Pursuant to 40CFR§86.1810-17(a)(1), Toyota states;
Any element of design, system or emission control device installed on or incorporated in our new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of our information and belief, cause the emission into the ambient air of pollutants in the operation of its motor vehicles or motor vehicle engines which cause or contribute to an unreasonable risk to public health or welfare except as specifically permitted by the standards prescribed under section 202 of the Clean Air Act. We further state that any element of design, system or emission control device installed on or incorporated in our new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of our information and belief, cause or contribute to an unreasonable risk to public safety.

"The term pollutant means:

a. Diesel particulates
b. Nickel
c. MMT combustion products
d. Ammonia
e. Sulfates
f. Hydrogen sulfide
g. Hydrogen cyanide
h. Ruthenium combustion products
i. Nitrosamines

or any other pollutant which we have identified which can reasonably be expected to be emitted from these vehicles."

B Pursuant to 40CFR§86.1810-17(a)(2), Toyota states;
Such system will not, in its operation, function or malfunction, result in any unsafe condition endangering the motor vehicle, its occupants, or persons or property in close proximity to the vehicle, except under the following reasonably foreseeable conditions of malfunction, abuse or misuse of the vehicle equipped with catalytic converter:

(1) Certain engine malfunctions caused by vehicle abuse, misuse, tampering or significant failure to perform essential maintenance, particularly involving the electrical (or electronic), fuel injection or ignition system, must result in large amounts of unburned fuel reaching the catalytic converter, which could cause the converter to overheat. Such malfunction will cause engine misfires, noticeable loss of performance or other unusual operating conditions.
In this event, occupants are cautioned in the Owner's Manual to discontinue operation of the vehicle and have the vehicle serviced.

(2) Parking or stopping the vehicle at the place where flammable materials, such as dry grass, waste paper or rags may come in contact with the exhaust system, may ignite such materials.
A caution against such parking and stopping is given in the Owner's Manual.

(3) Pushing or towing the vehicle to start the engine, running out of fuel so as to cause intermittent fuel supply to engine or coasting with the ignition key off could cause the catalytic converter to overheat.
Cautions against such events are contained in the Owner's Manual.
(4) Under the conditions described in B (1), (2) and (3) above, disregard of these cautions could result in damage to the converter, to the vehicle or to the property in close proximity to the vehicle.

C. Pursuant to 40CFR§86.1810-17(b), Toyota states;
Such system will provide safe vehicle driveability characteristics within the physically adjustable range of each adjustable parameter.
In our opinion, based on engineering tests and judgments, Toyota Vehicles meet the requirements of applicable emission regulations and will not represent a risk to motor vehicle safety.

D. Pursuant to 40CFR§86.1809-12(d)(2)(ii), Toyota states;
The applicable test group complies with CFR §86.1811-17 (g)(1) in regards to defeat devices for CO emissions at intermediate cold temperatures since the CO emissions at these intermediate points can be considered less than the line connecting the cold CO limit at 25°F and the FTP limit at 68°F. This is because the cold temperature CO emissions are determined by the temperature of the engine coolant when the engine is started and the amount of fuel enrichment. Generally, the colder the engine coolant temperature, the richer the air/fuel ratio and the greater the amount of fuel enrichment.
Therefore, the amount of CO emissions are greater for colder coolant temperatures since the amount of injected fuel is greater and the time between engine start and the activation of the air/fuel ratio feedback is longer;
The applicable test group complies with CFR §86.1811-17 (g)(2) in regards to defeat devices for NMHC emissions at intermediate cold temperatures since the NMHC emissions at these intermediate points can be considered less than the line connecting the NMHC FEL pass limit (e.g. 0.3499 g/mi for a 0.3 g/mi FEL) applicable at 20 °F and the Tier 3 NMOG standard to which the vehicle was certified at 68 °F. This is because the cold temperature NMHC emissions are determined by the temperature of the engine coolant when the engine is started and the amount of fuel enrichment. Generally, the colder the engine coolant temperature, the richer the air/fuel ratio and the greater the amount of fuel enrichment.
Therefore, the amount of NMHC emissions are greater for colder coolant temperatures since the amount of injected fuel is greater and the time between engine start and the activation of the air/fuel ratio feedback is longer.

E. Pursuant to 40CFR§86.1603(b), Toyota has determined that the vehicles within this test group are exempted from the requirements of submitting altitude performance adjustment instructions. All of vehicles within this test group have oxygen sensors which maintain a stoichiometric air-fuel ratio at all altitude conditions.

F. The vehicles and engines with respect to which data are being submitted, are in all material respects as described in the Application for Certification, have been tested in accordance with the applicable test procedures utilizing the fuels and equipment described in the Application; these vehicles and engines meet the requirements of such tests and on the basis of such tests, they conform to the requirements of the regulations.

G. Pursuant to 40CFR §86.1844-01 (d)(16),
Toyota has conducted an engineering analysis of the complete exhaust system to ensure that the exhaust system has been designed: (A) to facilitate leak-free assembly, installation and operation for the full useful life of the vehicles; and (B) to facilitate that such repairs as might be necessary on a properly maintained and used vehicle can be performed in such a manner as to maintain leak-free operation, using tools commonly available in a motor vehicle dealership or independent repair shop for the full useful life of the vehicle.

H. Based on Toyota's good engineering judgement, all the vehicle described in this Application for Certification comply with all applicable intermediate and full useful life standards.

I. Pursuant to 40CFR§86.1818-12(a)(2), and 86.1865-12(h)(3), for vehicles that comply with the cold temperature NMHC standards, and the CO2, N2O, and CH4 exhaust emission standards, Toyota states that common calibration approaches and auxiliary emission control device (AECD) at low altitude for all light-duty vehicles and light-duty trucks are utilized at high altitude.

J. Toyota has a responsibility to make sure that an emission control system will not cause or contribute to an unreasonable risk to public health, welfare or safety in its operation or function under sections 202(a)(4) and 206(a)(3) of the Clean Air Act.

K. Toyota states, based on Toyota's good engineering judgment and available information, that the emission control devices on our vehicles or engines are durable and are designed and will be manufactured to operate properly and in compliance with all applicable requirements for the full useful life (or allowable maintenance interval) of the vehicles or engines.

L. For LEVII compliant vehicles, pursuant to 40 CFR §86.1810-01(i)(6), Toyota states that the air to fuel ratio is not be richer at any time than the leanest air to fuel mixture required to obtain maximum torque (lean best torque), plus a tolerance of six percent, except the additional enrichment needed to protect the engine or emissions control hardware.

M. For previously certified or current carryover ORVR systems, pursuant to EPA Guidance CCD-05-03 Toyota states that no substantial changes have been made from the previously certified system.

N. For Tier 3/LEV IV compliant vehicles, pursuant to 40 CFR §86.1811-17(d)(1), Toyota states that the air to fuel ratio is not be richer at any time than the leanest air to fuel mixture required to obtain maximum torque (lean best torque), plus a tolerance of four percent over the US06 cycle, except the additional enrichment needed to protect the engine or emissions control hardware.

8.1 Statement of Compliance

O. For plug-in hybrid electric vehicles (PHEV), Toyota states that the vehicles remain in compliance with the emission standards during the charge depletion and charge sustaining transition modes.

P. Pursuant to 40 CFR §86.1844-01(d)(9)(iv), Toyota states that diagnostic system is adequate for the performance warranty test described in 40 CFR Part85, subpart W.

Q. For vehicle meeting the Tier 3/LEVIII evaporative leak standard, Toyota is using the OBD option for testing.

R. Based on CARB's questions, Toyota states as follows,
- The test and production vehicles have no defeat device.
- All AECDs have been declared and described in the application.
- The test and production vehicles do not have alternate maps.
- The transmission is the part of AECD for greenhouse gas, but, not for criteria pollutants. Criteria emission spikes that might occur due to different transmission shifting or control is converted by the warmed-up catalyst. Please refer to the Section 11.1 "AECD Descriptions" for detailed information about purpose, entry/exit conditions, actuations, and justifications.
- The transmission behaves and performs on a dynamometer the same as while on road, except for differences described in the Section 12.1.3.1 "Disabled control/features list".

S. Pursuant to 40CFR §86.129-94(d)(6), Toyota states that the fuel tank pressure of Toyota's non-integrated system, a kind of pressurized system, does not vent the vapor to the atmosphere upon fuel cap removal at least as same level as conventional fuel tank. Because the fuel cap cannot be removed until the tank pressure goes down enough less than the 10 inches based on Toyota design policy.

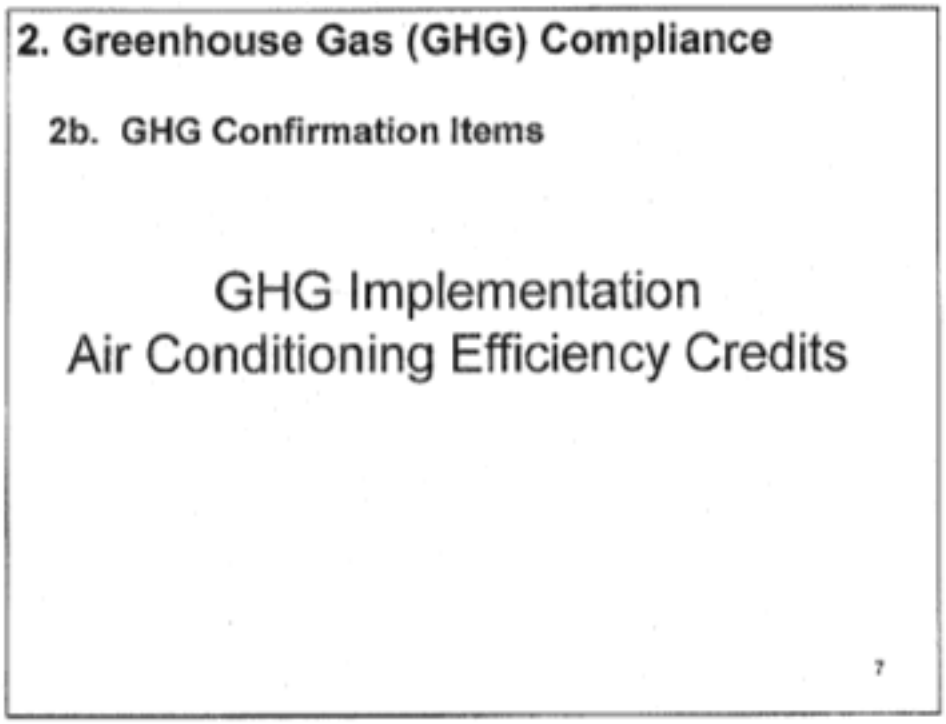
T. Using good engineering judgement, Toyota declares that we do not have adjustable parameters.

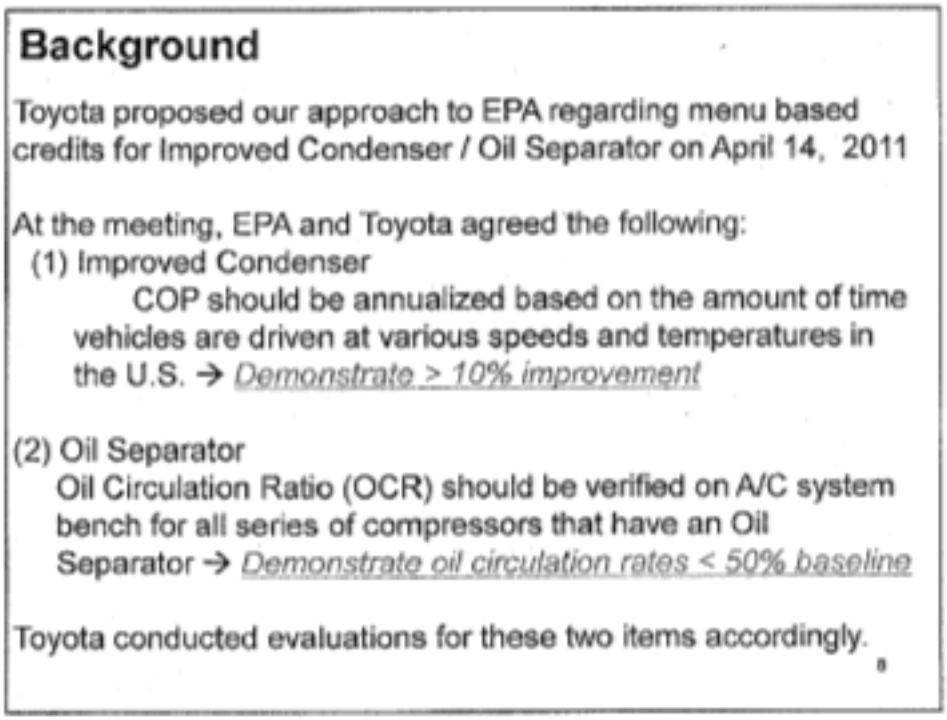
U. For LEV IV Partial Soak exhaust emission standards applicable vehicles, pursuant to 13 CCR § 1961.4(d)(2)(B)1, Toyota states that the vehicles meet the Partial Soak exhaust emission standards for the full useful life of the vehicle when operated at low altitude and tested in accordance with the "California 2026 and Subsequent Model Year Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."

V. Pursuant to 40CFR §86.1807-01, Toyota states that the label cannot be removed without destroying or defacing the label, and is not affixed to any equipment which is easily detached from such vehicle.

8.1 Statement of Compliance

AA. An engineering analysis for A/C system that use an improved condenser and oil separator





Results for (1) Improved Condenser

Vehicle Name	COP (annualized)			Remark
	present (Sub Cool)	previous (Baseline)	improvement	
Camry	2.54	2.14	+18.3%	The largest selling vehicle
Yaris	2.41	2.13	+13.5%	The smallest sized vehicle (worst case)

COP's of the present condenser systems are *improved by more than 10% compared with previous condenser systems.*

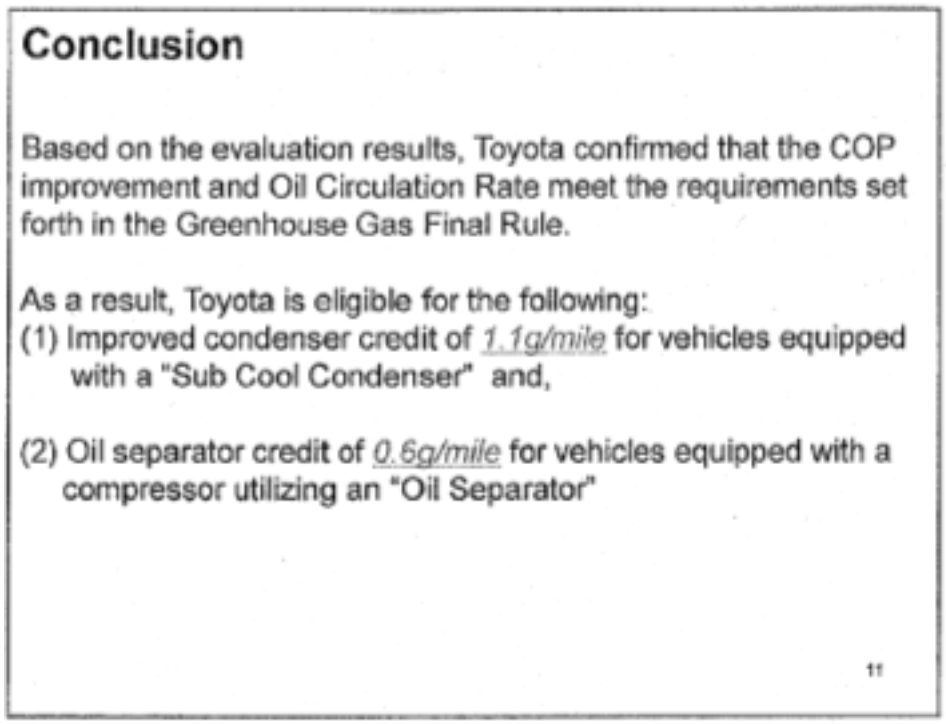
9

Results for (2) Oil Separator

Compressor		Oil Circulation Rate % (compared with Baseline)	
Specification	Type	I45 (900rpm)	M45 (2500rpm)
Without Oil Separator (Baseline)	10S17C	6.2	6.5
With Oil Separator	10SR series	2.1 (34%)	3.1 (48%)
	TS series	1.2 (19%)	2.6 (40%)
	SES series	0.2 (3%)	0.6 (9%)
	ES series	0.3 (5%)	1.2 (18%)

All types of Oil Circulation Rate for Compressor *with Oil Separator are less than 50% of Baseline Compressor.*

10



Conclusion

Based on the evaluation results, Toyota confirmed that the COP improvement and Oil Circulation Rate meet the requirements set forth in the Greenhouse Gas Final Rule.

As a result, Toyota is eligible for the following:

(1) Improved condenser credit of *1.1g/mile* for vehicles equipped with a "Sub Cool Condenser" and,

(2) Oil separator credit of *0.6g/mile* for vehicles equipped with a compressor utilizing an "Oil Separator"

11

8.2 Emission Testing Waiver Statement

TOYOTA MOTOR CORPORATION states that:

A. Pursuant to 40 CFR §86.1829-15(C), based on the engineering judgement, all vehicles in these test groups comply with applicable standards.

B. Pursuant to VPCD-97-01, we attest, based on the engineering evaluation, the city and highway fuel economy test result differences between comparing 91 RON operation and 96 RON operation is within 3%, and there are no emissions increases (beyond normal test variability) using 91 RON fuel when tested on the FTP (or SFTP as applicable).

C. Pursuant to 40 CFR §86.1829-15(d)(4), Toyota states that all gasoline vehicles comply with the applicable formaldehyde (HCHO) emissions standards based on our good engineering judgment.

D. Pursuant to 40 CFR §86.1829-15(e)(6), we have conducted 2DBL Evap testing and, based on the engineering evaluation, all vehicles in this Evap group comply with the emission standards at 2DBL Evap.

E. Pursuant to 40 CFR §86.1829-15(e)(5), Toyota states that, the vehicles certified to the refueling emission standards inherently comply with the fuel dispensing spitback standard based on our good engineering evaluation.

F. For electric vehicles and fuel cell vehicles, pursuant to 40 CFR §86.1829-15(f), the vehicles comply with all the testing requirements of Part 86, subpart S.

G. For Tier3 compliant vehicles and the vehicles complying with applicable PM standards after the minimum number of PM tests have been conducted, pursuant to 40 CFR §86.1829-15(d), Toyota states that all light-duty vehicles and light-duty trucks comply with the particulate emission standards based on our good engineering evaluation.

H. For Tier3/LEV IV evaporative emission compliant test groups not selected for demonstration of the OBD system pursuant to 40 CFR §86.1806-17(b)(1)(vi), Toyota states that the vehicle meet leak-detection requirements based on previous OBD tests, development tests or other appropriate information.

I. Pursuant to 40 CFR §86.1829-15(e)(4), Toyota states that, the vehicles meeting the Tier 3/LEV IV evaporative leak standard comply with the leak standard in §86.1813 based on our good engineering evaluation.

J. For LEV IV compliant vehicles and the vehicles complying with applicable PM standards after the minimum number of PM tests have been conducted, pursuant to Part I, section G.3.4 in California 2026 and Subsequent Model year Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, Toyota states that all Passenger Cars and light-duty trucks comply with the particulate emission standards based on our good engineering evaluation.

9. OBD System Description

Confidential Information

10. Description of Alternate-fueled Vehicles

Dedicated alternate fuel vehicles

In 2026MY Toyota introduces Electric vehicle and Fuel cell vehicle.

11. AECD Descriptions

11.1 AECD and EI-AECD Descriptions
Confidential Information

11.2 SFTP / Lean Best Torque (LBT) Air fuel Ratio Information

Confidential Information

12. Descriptions of Vehicles Covered by Certificate and Test Parameters

12.1 Vehicle parameters

(i) Preparation

Manual transmission
Shift into neutral and hold down the clutch pedal until the engine starts.
Automatic transmission
Depress the brake pedal until driving off.
Put the gear selector in "P" or "N" range.

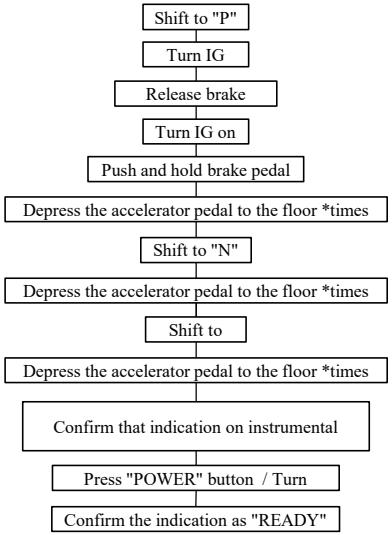
(ii) Engine start

In case of key type
Turn the “key” to start poison
In case of push button type
Be equipped with “key” and push the “START STOP BUTTON” (=engine switch)

12.1.1 Preparation for Toyota tests on the 2WD/4WD dynamo with customer's vehicle (for HEV and PHEV)

					2WD dynamo				4WD dynamo			
					for driving		for road load investigation and setting		for driving		for road load investigation and setting	
Drive	System start by	Engine start at cold start	Engine start at hot start	Indication when system ready	**How to set "Special Mode"**	Indication on instrumental panel	**(see *1) How to set "Special Mode"**	Indication on instrumental panel	**(see *1) How to set "Special Mode"**	Indication on instrumental panel	**(see *1) How to set "Special Mode"**	Indication on instrumental panel
FF,FR	Power Button or Rotary	No	No	READY	**See *1**	CDY-2	**See *1**	CDY-2E	**-**	**-**	**-**	**-**
4WD	Power Button or Rotary	No	No	READY	**See *1**	CDY-2	**See *1**	CDY-2E	**See *1**	CDY-4	**See *1**	CDY-4E

*1) How to set "Special Mode" on the dynamo.

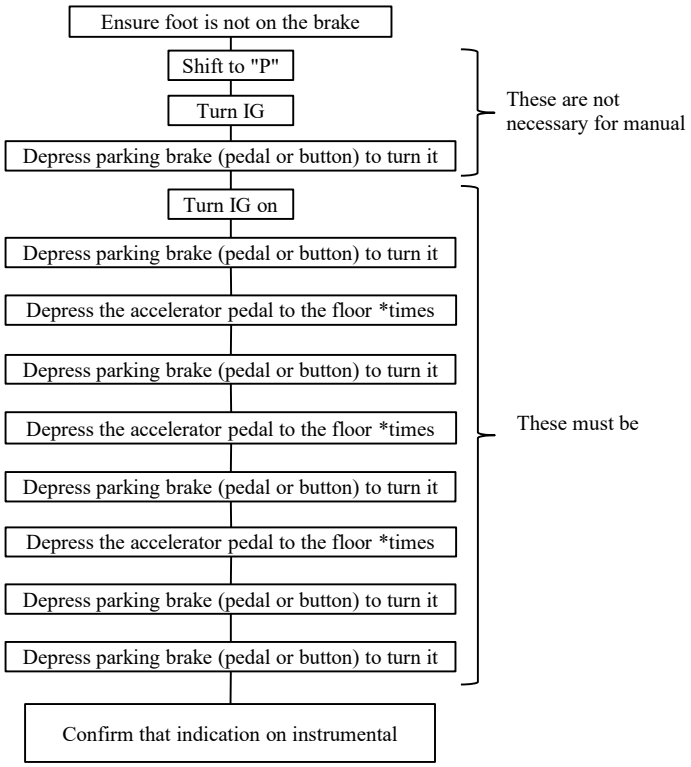


*2) 2times for road load investigation and setting for 2WD dynamo, 3times for driving for 2WD dynamo

12.1.2 Preparation for Toyota tests on the 2WD/4WD dynamo with customer's vehicle (for Gasoline fueled vehicle, BEV and FCEV)

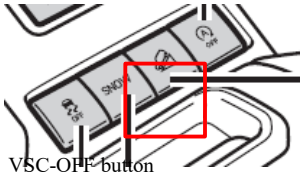
	2WD dynamo		4WD dynamo	
	for driving and road load investigation and setting		for driving and road load investigation and setting	
Drive	**How to set "Special Mode"**	Indication on instrumental panel	**How to set "Special Mode"**	Indication on instrumental panel
FF,FR	**See *1**	CDY-2 or VSC=OFF lamp is illuminated	**-**	-
4WD	**See *1**	CDY-2 or VSC=OFF lamp is illuminated	**See *1**	CDY-4 or VSC=OFF lamp is illuminated

*1) How to set "Special Mode" on the dynamo.



*2) 2times for 2WD dynamo, 4times for 4WD dynamo
*3) If instrumental panel changes cyclically before displaying the indication, please wait approximately 6 seconds.
*4) If below slip indicator in a display may not be illuminated though you activate CDY mode, please keep pressing the VSC-OFF button until the indicator is illuminated.


Slip indicator


VSC-OFF button

12.2 Test Parameters

1) Manual transmission

(a) Idling

Idle modes shall be run with transmission in gear and with clutch disengaged (except first idle).

(b) Acceleration

Acceleration modes shall be run in accordance with the upshift speeds on the Table in section 12.3.

(c) Deceleration

Deceleration modes shall be run with the clutch engaged and without shifting the gear from the previous mode.

For those modes which decelerate to zero, the clutch shall be depressed when the speed drops below 15 mph.

(d) Downshifting

The vehicle shall be shifted down during the transient from the speed less than the downshift speed on the Table in section 12.3 to the acceleration mode.

2) Automatic transmission

All test conditions shall be run with the transmission in "Drive".

Idle modes shall be run with the transmission in "Drive" and the wheels braked (except first idle).

1) Shift point for FTP

	Acceleration up-shift speed							Cruising up-shift speed							Special up-shift speed							Down shift time(sec.)-Gears								
No.	1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8									
FT5	15	25	40	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187; 3-2	840; 3-2							
FT6	15	25	40	45	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187; 3-2	840; 3-2							
0092	15	25	40	45	50	55	60	15	25	40	45	50	55	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187; 3-2	840; 3-2							
0095	13	22	31	40	48	N/A	N/A	7	14	25	34	41	N/A	N/A	15	25	40	45	50	N/A	N/A	43; 3-2	55; 3-2	81; 4-3	187; 3-2	592; 3-2	840; 5-2	919; 4-3	990; 4-3	1089; 4-3
0098	13	24	33	41	47	N/A	N/A	8	14	25	34	41	N/A	N/A	15	25	40	45	50	N/A	N/A	187; 3-2	840; 5-2	1089; 4-3						
0129	10*[1,2]	19*[2]	31*[2]	40*[2]	47*[2]	N/A	N/A	6	15	23	26	40	N/A	N/A	13,15	25	40	45	50	N/A	N/A	39; 3-2	54.1; 3-2	823.1 5-4	841 4-3					
0131	15	25	40	45	50	N/A	N/A	15	25	40	45	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187; 3-2	840; 3-2							
0135	15	25	40	45	50	N/A	N/A	15	25	40	45	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187; 3-2	840; 3-2							
0139	14.4	26.2	37.6	43	49.8	N/A	N/A	9	17	30	40	49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187; 3-2	840; 4-2	1556; 3-2						

*1: Under cold engine conditions (1st hill in FTP), up-shifts delay to match standard shift speed.
*2: During 2nd acceleration in 2nd hill of FTP, up-shifts delay to match speeds.
*3: Under cold engine conditions (1st and 2nd hill in FTP), up-shifts delay to match standard shift speed.

1) Shift point for FTP

No	Acceleration up-shift speed				Special up-shift time(sec.)-Gears						Down shift time(sec.)-Gears			
	1-2	2-3	3-4	4-5	time	shift	time	shift	time	shift	time	shift	time	shift
129	-	-	-	-	24.6	1-2	538.0	4-5	1111.5	2-3	39.0	3-2		
					28.4	2-3	571.1	1-2	1119.0	3-4	54.1	3-2		
					44.9	2-3	575.0	2-3	1171.5	1-2	120.2	5-0		
					56.6	2-3	649.0	1-2	1174.2	2-3	327.2	6-0		
					78.0	3-4	653.7	2-3	1201.2	1-2	391.9	5-0		
					86.7	4-5	659.0	3-4	1212.3	2-3	424.1	5-0		
					167.6	1-2	698.5	1-2	1268.7	1-2	499.5	6-0		
					171.5	2-3	702.0	2-3	1271.8	2-3	547.5	5-0		
					198.6	3-4	713.5	3-4	1277.0	3-4	615.4	3-0		
					202.0	4-5	731.3	1-2	1296.0	4-5	673.8	4-0		
					220.0	5-6	735.6	2-3	1340.7	1-2	720.0	4-0		
					349.8	1-2	742.0	3-4	1345.5	2-3	758.0	5-0		
					352.6	2-3	745.0	4-5	1398.6	1-2	823.1	5-4		
					360.5	3-4	769.2	1-2			841.0	4-3		
					365.0	4-5	773.5	2-3			951.6	5-0		
					405.3	1-2	780.0	3-4			1017.8	4-0		
					408.0	2-3	783.0	4-5			1081.0	4-0		
					414.0	3-4	851.0	3-4			1147.5	4-0		
					417.0	4-5	854.0	4-5			1181.6	3-0		
					450.1	1-2	962.5	1-2			1236.3	3-0		
					452.8	2-3	966.3	2-3			1308.0	5-0		
					457.9	3-4	974.0	3-4			1361.4	3-0		
					461.0	4-5	1055.9	1-2						
					516.7	1-2	1059.3	2-3						
					522.0	2-3	1068.0	3-4						
					528.0	3-4	1106.1	1-2						

2) Shift point for HWY

	Acceleration up-shift speed							Cruising up-shift speed							Down shift time(sec.)-Gears				
No.	1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8					
HW5	15	25	40	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
HW6	15	25	40	45	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
0093	15	25	40	45	50	55	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
0096	13	22	31	40	48	N/A	N/A	7	14	25	34	41	N/A	N/A	49; 5-4	142; 6-5	215; 6-5	296; 6-3	
0101	13	24	33	41	47	N/A	N/A	8	14	25	34	41	N/A	N/A	297; 6-3				
0130	10	19	31	40	47	N/A	N/A	6	15	23	26	40	N/A	N/A	297; 6-3				
0132	15	25	40	45	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
0136	15	25	40	45	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
0140	14.4	26.2	37.6	43	49.8	N/A	N/A	9	17	30	40	49	N/A	N/A	142; 6-5	297; 6-3	922; 6-5	1077; 6-3	

2) Shift point for HWY

No	Acceleration up-shift speed				Special up-shift time(sec.)-Gears		Down shift time(sec.)-Gears	
	1-2	2-3	3-4	4-5	time	shift	time	shift
0130	-	-	-	-	5.7	1-2	297.0	6-3
					8.7	2-3	756.8	6-0
					17.6	3-4		
					22.0	4-5		
					57.0	5-6		
					300.0	3-4		
					304.0	4-5		
					307.0	5-6		

3) Shift point for US06 mode

	Acceleration up-shift speed							Cruising up-shift speed							Down shift Gears						
No.	1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8							
0062	15	25	40	45	N/A	N/A	N/A	15	25	40	45	N/A	N/A	N/A	514;3-2	530;3-1	546;3-1				
0063	15	25	40	45	50	N/A	N/A	15	25	40	45	50	N/A	N/A	514;3-2	530;3-1	546;3-1				
0066	22	36	43	57	66	N/A	N/A	16	27	37	50	57	N/A	N/A	81;5-4	185;5-4	514;2-1	530;2-1	546;2-1		
0094	15	25	40	45	50	55	60	15	25	40	45	50	55	60	514;3-2	530;3-1	546;3-1				
0097	21	40	50	70	85	N/A	N/A	15	26	39	56	73	N/A	N/A	82;5-4	188;5-4	348;6-5	514;2-1	530;2-1	546;2-1	
0099	25	33	45	60	75	N/A	N/A	25	38	45	60	64.3	N/A	N/A	514;2-1	530;2-1	546;2-1				
0134	15	25	40	45	50	N/A	N/A	15	25	40	45	50	N/A	N/A	514;3-2	530;3-1	546;3-1				
0138	15	25	40	45	50	N/A	N/A	15	25	40	45	50	N/A	N/A	514;3-2	530;3-1	546;3-1				
0142	14.4	26.2	37.6	43	49.8	N/A	N/A	9	17	30	40	49	N/A	N/A	82;6-5	514;3-2	530;3-1	546;3-1			

3) Shift point for US06 mode

No	Acceleration up-shift speed				Special up-shift time(sec.)-Gears				Down shift time(sec.)-Gears	
	1-2	2-3	3-4	4-5	time	shift	time	shift	time	shift
0128	-	-	-	-	11.2	1-2	519.3	2-3	81.3	7-5
					14.2	2-3	533.7	1-2	280.4	7-6
					20.1	3-4	536.7	2-3		
					51.1	1-2	549.0	1-2		
					54.1	2-3	552.0	2-3		
					57.8	3-4	570.4	1-2		
					60.8	4-5	573.4	2-3		
					63.8	5-6	576.4	3-4		
					66.8	6-7				
					94.3	5-6				
					137.9	1-2				
					141.6	2-3				
					143.9	3-4				
					146.9	4-5				
					149.9	5-6				
					156.3	6-7				
					333.3	6-7				
					503.9	1-2				
					506.9	2-3				
					516.9	1-2				

4) Shift point for SC03 mode

	Acceleration up-shift speed					Cruising up-shift speed					Down shift time(sec.)-Gears		
No.	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6			
0052	15	25	40	45	N/A	N/A	N/A	N/A	N/A	N/A	121;3-2		
0054	15	25	40	45	50	15	25	40	45	N/A	121;3-2		
0056	15	25	40	45	N/A	15	25	40	45	N/A	121;3-2		
0100	15	25	40	45	50	15	25	40	45	50	121;3-2		
0133	15	25	40	45	50	15	25	40	45	50	121;3-2		
0137	15	25	40	45	50	15	25	40	45	50	121;3-2		
0141	14.4	26.2	37.6	43	49.8	9	17	30	40	49	432;4-3		

4) Shift point for SC03 mode

No	Acceleration up-shift speed				Special up-shift time(sec.)-Gears		Down shift time(sec.)-Gears	
	1-2	2-3	3-4	4-5	time	shift	time	shift
0127	-	-	-	-	42.2	1-2	-	-
					70.6	1-2	-	-
					88.7	1-2	-	-
					92.3	2-3	-	-
					124.5	1-2	-	-
					127.9	2-3	-	-
					209.8	1-2	-	-
					213.5	2-3	-	-
					221.9	3-4	-	-
					284.4	1-2	-	-
					287.4	2-3	-	-
					293.0	3-4	-	-
					302.7	4-5	-	-
					312.3	5-6	-	-
					373.6	1-2	-	-
					378.1	2-3	-	-
					550.5	1-2	-	-

12.3 Shift schedules

Applicable Test Group

Test Group	Model	TM	Low-altitude		High-altitude		Highway	SC03	US06
			FTP	Cold CO /NMHC	FTP	Cold CO			
TTYXV02.4H3A	TOYOTA CROWN AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
TTYXV02.0E4A	COROLLA	S10	0092	0092	0092	0092	0093	0127	0128
	COROLLA HATCHBACK	S10	0092	0092	0092	0092	0093	0127	0128
TTYXV02.5V2A	CAMRY HYBRID	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	CAMRY HYBRID AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
TTYXV05.0B5A	LC 500	S10	0092	0092	0092	0092	0093	0100	0094
	LC 500 CONVERTIBLE	S10	0092	0092	0092	0092	0093	0100	0094
TTYXT02.0E4A	COROLLA CROSS	S10	0092	0092	0092	0092	0093	0127	0128
	COROLLA CROSS AWD	S10	0092	0092	0092	0092	0093	0127	0128
TTYXT02.0H3A	COROLLA CROSS HYBRID AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
TTYXJ02.4H3B	NX 350 AWD	S8	0092	0092	0092	0092	0093	0054	0094
	RX 350	S8	0092	0092	0092	0092	0093	0054	0094
	RX 350 AWD	S8	0092	0092	0092	0092	0093	0054	0094
	GRAND HIGHLANDER	S8	0092	0092	0092	0092	0093	0054	0094
	GRAND HIGHLANDER AWD	S8	0092	0092	0092	0092	0093	0054	0094
	TX 350	S8	0092	0092	0092	0092	0093	0054	0094
	TX 350 AWD	S8	0092	0092	0092	0092	0093	0054	0094
TTYXT02.4H3L	RX 500h AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	GRAND HIGHLANDER HYBRID	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	TX 500h AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
TTYXT02.5H3C	RAV4 HYBRID	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	RAV4 HYBRID AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
TTYXT02.5H3B	RAV4 HYBRID AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
TTYXT02.5H3Y	NX 450h+ AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	RX 450h+ AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
TTYXJ02.5H3A	SIENNA	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	SIENNA AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	RX 350h AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	GRAND HIGHLANDER HYBRID	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	GRAND HIGHLANDER HYBRID AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	NX 350h	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	NX 350h AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063

12.3 Shift schedules

Applicable Test Group

Test Group	Model	TM	Low-altitude		High-altitude		Highway	SC03	US06
			FTP	Cold CO /NMHC	FTP	Cold CO			
TTYXT02.4E4A	LAND CRUISER	S8	0092	0092	0092	0092	0093	0054	0094
TTYXT03.4B5B	GX 550	S6	0092	0092	0092	0092	0093	0100	0094
TTYXT03.5E4A	TX 550h+ AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
TTYXT03.4B5A	TUNDRA 2WD	S10	0092	0092	0092	0092	0093	0100	0094
	TUNDRA 4WD	S10	0092	0092	0092	0092	0093	0100	0094
TTYXT03.4B5C	TUNDRA 2WD(Hybrid)	S10	0092	0092	0092	0092	0093	0100	0094
	TUNDRA 4WD(Hybrid)	S10	0092	0092	0092	0092	0093	0100	0094
	SEQUOIA 2WD	S10	0092	0092	0092	0092	0093	0100	0094
	SEQUOIA 4WD	S10	0092	0092	0092	0092	0093	0100	0094

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Carline	Vehicle Model	Eng. Code	Eng. Disp.	T/M Code	GVWR (lbs)	Curb Weight (lbs)	LVW (lbs)	ETW (lbs)	Axle Ratio	N/V	Tire *1	Tire Mfr.	CDT	RLHP at 50 mph	Target Coeff for FTP & SFTP F(lbf)=a+bv+cv^2 (v: mph)			Target Coeff for 20F F(lbf)=a+bv+cv^2 (v: mph)			Deter-mination Method
															a	b	c	a	b	c	
TOYOTA CROWN AWD	TZSH35L-AETATA	02	2.4	PC60-B	5285	4365	4665	4750	3.33	26.6	225/45R21 AS	ALL	23.96	12.2	33.901	0.21891	0.018740	37.291	0.24080	0.020614	*3
TOYOTA CROWN AWD	AZSH35L-AEXMBA	03	2.5	P710-F	5020	4065	4365	4250	3.61	21.8	225/45R21 AS	ALL	22.96	11.4	26.068	0.26163	0.018583	28.675	0.28779	0.020441	*3
TOYOTA CROWN AWD	AZSH35L-AEXMBA	03	2.5	P710-F	5020	4065	4365	4250	3.61	22.3	225/55R19 AS	ALL	22.99	11.4	26.936	0.26383	0.018147	29.630	0.29021	0.019962	*3
COROLLA HYBRID	ZWE219L-AEXLBA	02	1.8	PA10-A	4065	3080	3380	3375	2.83	25.9	205/55R16 AS	ALL	22.08	9.4	18.924	0.25989	0.015516	20.816	0.28588	0.017068	*3
COROLLA HYBRID	ZWE219L-AEXSBA	02	1.8	PA10-A	4065	3140	3440	3500	2.83	25.5	225/40R18 AS	ALL	20.57	10.5	24.250	0.27439	0.016290	26.675	0.30183	0.017919	*3
COROLLA HYBRID	ZWE219L-AEXXBA	02	1.8	PA10-A	4065	3140	3440	3500	2.83	25.9	205/55R16 AS	ALL	22.63	9.5	19.673	0.26246	0.015498	21.640	0.28871	0.017048	*3
COROLLA HYBRID AWD	ZWE215L-AEXLBA	01	1.8	PA10-B	4180	3200	3500	3500	2.83	25.9	205/55R16 AS	ALL	21.19	10.2	23.883	0.32724	0.014468	26.271	0.35996	0.015915	*3
COROLLA HYBRID AWD	ZWE215L-AEXSBA	01	1.8	PA10-B	4180	3265	3565	3625	2.83	25.5	225/40R18 AS	ALL	19.64	11.4	29.820	0.33343	0.015551	32.802	0.36677	0.017106	*3
COROLLA	MZEA12L-AEXSBA	02	2.0	K121-A	4065	3100	3400	3375	3.79	23.3	225/40R18 AS	ALL	19.43	10.7	24.989	0.19062	0.018321	27.488	0.20968	0.020153	*3
COROLLA	MZEA12L-AEXYBA	02	2.0	K121-A	4065	3155	3455	3500	3.79	23.3	225/40R18 AS	ALL	19.88	10.9	25.904	0.19174	0.018379	28.494	0.21091	0.020217	*3
COROLLA	MZEA12L-DEXSBA	02	2.0	K121-A	4065	3100	3400	3375	3.79	23.3	225/40R18 AS	ALL	19.43	10.7	24.989	0.19062	0.018321	27.488	0.20968	0.020153	*3
COROLLA	MZEA12L-DEXYBA	02	2.0	K121-A	4065	3155	3455	3500	3.79	23.3	225/40R18 AS	ALL	19.88	10.9	25.904	0.19174	0.018379	28.494	0.21091	0.020217	*3
COROLLA	MZEA18L-AEXLBA	02	2.0	K121-A	3925	2975	3275	3250	3.79	23.7	205/55R16 AS	ALL	20.77	9.6	19.823	0.18907	0.017233	21.805	0.20798	0.018956	*3
COROLLA	MZEA18L-DEXLBA	02	2.0	K121-A	3925	2975	3275	3250	3.79	23.7	205/55R16 AS	ALL	20.77	9.6	19.823	0.18907	0.017233	21.805	0.20798	0.018956	*3
COROLLA HATCHBACK	MZEA12L-AHXNBA	01	2.0	K121-B	4065	3080	3380	3375	3.79	23.7	195/65R15 AS	ALL	22.28	9.3	17.128	0.27226	0.015725	18.841	0.29949	0.017298	*3
COROLLA HATCHBACK	MZEA12L-AHXNBA	01	2.0	K121-B	4065	3080	3380	3375	3.79	23.7	205/55R16 AS	ALL	20.99	9.9	19.740	0.27812	0.016296	21.714	0.30593	0.017926	*3
COROLLA HATCHBACK	MZEA12L-AHXNBA	01	2.0	K121-B	4065	3080	3380	3375	3.79	23.3	225/40R18 AS	ALL	18.90	11.0	24.335	0.28832	0.017530	26.769	0.31715	0.019283	*3
COROLLA HATCHBACK FX	MZEA12L-AHXNBA	01	2.0	K121-B	4065	3080	3380	3375	3.79	23.3	225/40R18 AS	ALL	18.90	11.0	24.335	0.28832	0.017530	26.769	0.31715	0.019283	*3
COROLLA HATCHBACK XSE	MZEA12L-AHXNBA	01	2.0	K121-B	4065	3150	3450	3500	3.79	23.7	195/65R15 AS	ALL	23.23	9.3	17.836	0.27016	0.015341	19.620	0.29718	0.016875	*3
COROLLA HATCHBACK XSE	MZEA12L-AHXNBA	01	2.0	K121-B	4065	3150	3450	3500	3.79	23.7	205/55R16 AS	ALL	21.84	9.9	20.549	0.27609	0.015912	22.604	0.30370	0.017503	*3
COROLLA HATCHBACK XSE	MZEA12L-AHXNBA	01	2.0	K121-B	4065	3150	3450	3500	3.79	23.3	225/40R18 AS	ALL	19.63	11.0	25.318	0.28637	0.017140	27.850	0.31501	0.018854	*3
PRIUS	MXWH60L-AHXEBA	02	2.0	PB10-A	4145	3095	3395	3375	3.39	24.8	195/60R17 AS	ALL	24.35	8.5	18.506	0.15561	0.015126	20.357	0.17117	0.016639	*3
PRIUS AWD	MXWH65L-AHXEBA	01	2.0	PB10-B	4275	3225	3525	3500	3.39	24.8	195/60R17 AS	ALL	24.05	9.0	21.026	0.24130	0.013694	23.129	0.26543	0.015063	*3
PRIUS AWD XLE/LTD	MXWH65L-AHXGBA	01	2.0	PB10-B	4275	3310	3610	3625	3.39	24.1	195/50R19 AS	ALL	22.39	10.0	27.354	0.24709	0.014067	30.089	0.27180	0.015474	*3
PRIUS AWD XLE/LTD	MXWH65L-AHXHBA	01	2.0	PB10-B	4275	3360	3660	3625	3.39	24.1	195/50R19 AS	ALL	22.49	9.9	27.366	0.24633	0.013950	30.103	0.27096	0.015345	*3
PRIUS XLE/LTD	MXWH60L-AHXGBA	02	2.0	PB10-A	4145	3180	3480	3500	3.39	24.1	195/50R19 AS	ALL	22.48	9.6	21.748	0.28185	0.014468	23.923	0.31004	0.015915	*3
PRIUS XLE/LTD	MXWH60L-AHXHBA	02	2.0	PB10-A	4145	3230	3530	3500	3.39	24.1	195/50R19 AS	ALL	22.60	9.6	21.770	0.28109	0.014323	23.947	0.30920	0.015755	*3
PRIUS PHEV	MXWH61L-AHXGBA	01	2.0	PB12-A	4475	3545	3845	3875	3.61	21.7	195/50R19 AS	ALL	23.17	10.3	22.892	0.39705	0.013840	25.181	0.43676	0.015224	*3
PRIUS PHEV	MXWH61L-AHXHBA	01	2.0	PB12-A	4475	3595	3895	3875	3.61	21.7	195/50R19 AS	ALL	23.17	10.3	22.894	0.39705	0.013840	25.183	0.43676	0.015224	*3
PRIUS PHEV SE	MXWH61L-AHXEBA	01	2.0	PB12-A	4475	3465	3765	3750	3.61	22.4	195/60R17 AS	ALL	25.09	9.2	16.368	0.39918	0.013118	18.005	0.43910	0.014430	*3
LC 500	URZ100L-ACUBHA	03	5.0	AGA0E-A	5260	4340	4640	4750	2.94	21.3	275/35R21 SM	ALL	20.11	14.6	42.765	0.41228	0.018356	47.042	0.45351	0.020192	*3
LC 500 CONVERTIBLE	URZ100L-AKUBHA	04	5.0	AGA0E-C	5460	4540	4840	4750	2.94	21.3	275/35R21 SM	ALL	20.61	14.2	53.616	-0.06098	0.022407	58.978	-0.06708	0.024648	*3
SOLTERRA	XEAM11L-SWDLNA	02	0.0	QK10-C	5435	4190	4490	4500	13.82	-	235/60R18 AS	ALL	27.41	10.1	22.170	0.30319	0.015446	24.387	0.33351	0.016991	*3
bZ	XEAM11L-MWDMNA	01	0.0	QK10-C	5435	4190	4490	4500	13.82	-	235/60R18 AS	ALL	27.27	10.2	22.182	0.30225	0.015609	24.400	0.33248	0.017170	*3
bZ Limited	XEAM11L-MWDHNA	01	0.0	QK10-C	5435	4280	4580	4500	13.82	-	235/50R20 AS	ALL	25.76	10.8	23.784	0.29309	0.016948	26.162	0.32240	0.018643	*3
COROLLA CROSS	MXGA10L-AHXEHA	02	2.0	K121-C	4290	3170	3470	3500	4.01	22.6	225/55R18 AS	ALL	17.17	12.6	26.446	0.09766	0.025177	29.091	0.10743	0.027695	*3
COROLLA CROSS	MXGA10L-AHXGHA	02	2.0	K121-C	4290	3170	3470	3500	4.01	22.1	215/65R17 AS	ALL	17.92	12.0	24.256	0.09437	0.024543	26.682	0.10381	0.026997	*3
COROLLA CROSS	MXGA10L-AHXNHA	02	2.0	K121-C	4290	3180	3480	3500	4.01	22.1	215/65R17 AS	ALL	18.01	12.0	24.250	0.09509	0.024351	26.675	0.10460	0.026786	*3
COROLLA CROSS AWD	MXGA15L-AHXEHA	01	2.0	K121F-A	4455	3325	3625	3625	4.01	22.6	225/55R18 AS	ALL	16.56	13.5	27.316	0.29805	0.023611	30.048	0.32786	0.025972	*3
COROLLA CROSS AWD	MXGA15L-AHXGHA	01	2.0	K121F-A	4455	3285	3585	3625	4.01	22.1	215/65R17 AS	ALL	17.20	13.0	24.850	0.28510	0.023361	27.335	0.31361	0.025697	*3
COROLLA CROSS AWD	MXGA15L-AHXNHA	01	2.0	K121F-A	4455	3295	3595	3625	4.01	22.1	215/65R17 AS	ALL	17.40	12.8	24.852	0.28539	0.022890	27.337	0.31393	0.025179	*3

Note *1: AS/AS#2: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
F/D: F SPORT design
*2: Calculated
*3: Measured
*4: For Normal and Eco mode
*5: For Sport mode

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Carline	Vehicle Model	Eng. Code	Eng. Disp.	T/M Code	GVWR (lbs)	Curb Weight (lbs)	LVW (lbs)	ETW (lbs)	Axle Ratio	N/V	Tire *1	Tire Mfr.	CDT	RLHP at 50 mph	Target Coeff for FTP & SFTP F(lbf)=a+bv+cv^2 (v: mph)			Target Coeff for 20F F(lbf)=a+bv+cv^2 (v: mph)			Deter-mination Method
															a	b	c	a	b	c	
GRAND HIGHLANDER HYBRID	AASH10L-AWXMBA	08	2.5	P810-G	6195	4475	4775	4750	3.64	22.8	255/65R18 AS	ALL	20.36	14.4	33.817	-0.03780	0.030392	37.199	-0.04158	0.033431	*3
GRAND HIGHLANDER HYBRID	AASH10L-AWXNBA	08	2.5	P810-G	6030	4455	4755	4750	3.64	22.8	255/65R18 AS	ALL	20.42	14.3	33.813	-0.03755	0.030269	37.194	-0.04131	0.033296	*3
GRAND HIGHLANDER HYBRID AWD	AASH15L-AWXGBA	07	2.5	P810-H	6270	4730	5030	5000	3.64	23.5	255/55R20 AS	ALL	19.63	15.7	39.656	0.01389	0.030997	43.622	0.01528	0.034097	*3
GRAND HIGHLANDER HYBRID AWD	AASH15L-AWXMBA	07	2.5	P810-H	6230	4595	4895	5000	3.64	23.2	255/65R18 AS	ALL	20.00	15.4	38.037	0.01939	0.030654	41.841	0.02133	0.033719	*3
GRAND HIGHLANDER HYBRID AWD	AASH15L-AWXNBA	07	2.5	P810-H	6140	4595	4895	5000	3.64	23.2	255/65R18 AS	ALL	20.05	15.4	38.035	0.01939	0.030531	41.839	0.02133	0.033584	*3
GRAND HIGHLANDER HYBRID LIMITED	AASH10L-AWXGBA	08	2.5	P810-G	6195	4610	4910	5000	3.64	23.2	255/55R20 AS	ALL	20.72	14.9	37.261	-0.05505	0.030840	40.987	-0.06056	0.033924	*3
NX 350h	AAZH20L-AWXLBA	09	2.5	P810-N	5115	3945	4245	4250	3.41	23.9	235/50R20 RF-AS	ALL	19.12	13.7	31.151	0.14628	0.025742	34.266	0.16091	0.028316	*3
NX 350h	AAZH20L-AWXLBA	09	2.5	P810-N	5115	3945	4245	4250	3.41	24.2	235/60R18 AS	ALL	20.11	13.0	27.543	0.14939	0.025096	30.297	0.16433	0.027606	*3
NX 350h	AAZH20L-AWXLBA	09	2.5	P810-N	5115	3945	4245	4250	3.41	24.2	235/60R18 RF-AS	ALL	20.01	13.1	27.548	0.14899	0.025305	30.303	0.16389	0.027836	*3
NX 350h	AAZH20L-CWXLBA	09	2.5	P810-N	5115	3945	4245	4250	3.41	23.9	235/50R20 RF-AS	ALL	19.18	13.7	31.147	0.14653	0.025602	34.262	0.16118	0.028162	*3
NX 350h	AAZH20L-CWXLBA	09	2.5	P810-N	5115	3945	4245	4250	3.41	24.2	235/60R18 AS	ALL	20.11	13.0	27.543	0.14939	0.025096	30.297	0.16433	0.027606	*3
NX 350h	AAZH20L-CWXLBA	09	2.5	P810-N	5115	3945	4245	4250	3.41	24.2	235/60R18 RF-AS	ALL	20.01	13.1	27.548	0.14899	0.025305	30.303	0.16389	0.027836	*3
NX 350h AWD	AAZH25L-AWXLBA	05	2.5	P810-F	5245	4080	4380	4500	3.41	23.9	235/50R20 RF-AS	ALL	19.51	14.2	29.389	0.27425	0.025439	32.328	0.30168	0.027983	*3
NX 350h AWD	AAZH25L-AWXLBA	05	2.5	P810-F	5245	4080	4380	4500	3.41	24.2	235/60R18 AS	ALL	20.55	13.5	25.758	0.26759	0.024857	28.334	0.29435	0.027343	*3
NX 350h AWD	AAZH25L-AWXLBA	05	2.5	P810-F	5245	4080	4380	4500	3.41	24.2	235/60R18 RF-AS	ALL	20.44	13.6	25.756	0.26738	0.025072	28.332	0.29412	0.027579	*3
NX 350h AWD	AAZH25L-CWXLBA	05	2.5	P810-F	5245	4080	4380	4500	3.41	23.9	235/50R20 RF-AS	ALL	19.57	14.2	29.391	0.27439	0.025293	32.330	0.30183	0.027822	*3
NX 350h AWD	AAZH25L-CWXLBA	05	2.5	P810-F	5245	4080	4380	4500	3.41	24.2	235/60R18 AS	ALL	20.55	13.5	25.758	0.26759	0.024857	28.334	0.29435	0.027343	*3
NX 350h AWD	AAZH25L-CWXLBA	05	2.5	P810-F	5245	4080	4380	4500	3.41	24.2	235/60R18 RF-AS	ALL	20.44	13.6	25.756	0.26738	0.025072	28.332	0.29412	0.027579	*3
RX 350h AWD	AALH15L-CWXGBA	06	2.5	P810-K	5750	4480	4780	4750	3.64	23.9	235/50R21 AS	ALL	20.53	14.3	30.452	0.32670	0.024089	33.497	0.35937	0.026498	*3
RX 350h AWD	AALH15L-CWXGBA	06	2.5	P810-K	5750	4480	4780	4750	3.64	24.2	235/60R19 AS	ALL	20.55	14.3	30.097	0.32612	0.024211	33.107	0.35873	0.026632	*3
SIENNA	AXLH40L-PNXLHA	04	2.5	P810-D	6170	4725	5025	5000	3.64	25.3	P235/60R18 AS	ALL	22.10	14.0	31.345	0.35357	0.022244	34.480	0.38893	0.024468	*3
SIENNA	AXLH40L-PNXSHA	04	2.5	P810-D	6170	4625	4925	5000	3.64	25.0	235/50R20 AS	ALL	20.76	14.9	32.023	0.35455	0.024659	35.225	0.39001	0.027125	*3
SIENNA	AXLH40L-PNXXHA	04	2.5	P810-D	6170	4625	4925	5000	3.64	25.3	P235/60R18 AS	ALL	22.15	13.9	31.347	0.35343	0.022162	34.482	0.38877	0.024378	*3
SIENNA	AXLH40L-PNXXHA	04	2.5	P810-D	6170	4625	4925	5000	3.64	25.6	P235/65R17 AS	ALL	21.81	14.1	33.269	0.35907	0.021935	36.596	0.39498	0.024129	*3
SIENNA	AXLH40L-PPXEHA	04	2.5	P810-D	6170	4610	4910	5000	3.64	25.6	P235/65R17 AS	ALL	21.81	14.1	33.269	0.35907	0.021935	36.596	0.39498	0.024129	*3
SIENNA	AXLH40L-PPXXHA	04	2.5	P810-D	6170	4645	4945	5000	3.64	25.6	P235/65R17 AS	ALL	21.81	14.1	33.269	0.35907	0.021935	36.596	0.39498	0.024129	*3
SIENNA AWD	AXLH45L-PNXLHA	03	2.5	P810-E	6170	4860	5160	5250	3.64	25.3	P235/60R18 AS	ALL	22.23	14.6	38.772	0.27620	0.022657	42.649	0.30382	0.024923	*3
SIENNA AWD	AXLH45L-PNXSHA	03	2.5	P810-E	6170	4780	5080	5000	3.64	25.3	P235/60R18 AS	ALL	20.47	15.1	36.882	0.28539	0.024723	40.570	0.31393	0.027195	*3
SIENNA AWD	AXLH45L-PNXXHA	03	2.5	P810-E	6170	4775	5075	5000	3.64	25.3	P235/60R18 AS	ALL	21.25	14.5	36.922	0.28065	0.023152	40.614	0.30872	0.025467	*3
SIENNA AWD	AXLH45L-PNXXHA	03	2.5	P810-E	6170	4775	5075	5000	3.64	25.6	P235/65R17 AS	ALL	21.22	14.5	38.956	0.28554	0.022296	42.852	0.31409	0.024526	*3
SIENNA AWD	AXLH45L-PPXEHA	03	2.5	P810-E	6170	4740	5040	5000	3.64	25.6	P235/65R17 AS	ALL	21.22	14.5	38.956	0.28554	0.022296	42.852	0.31409	0.024526	*3

Note *1: AS/AS#2: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
F/D: F SPORT design
*2: Calculated
*3: Measured
*4: For Normal and Eco mode
*5: For Sport mode

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Carline	Vehicle Model	Eng. Code	Eng. Disp.	T/M Code	GVWR (lbs)	Curb Weight (lbs)	LVW (lbs)	ETW (lbs)	Axle Ratio	N/V	Tire *1	Tire Mfr.	CDT	RLHP at 50 mph	Target Coeff for FTP & SFTP F(lbf)=a+bv+cv^2 (v: mph)			Target Coeff for 20F F(lbf)=a+bv+cv^2 (v: mph)			Deter-mination Method
															a	b	c	a	b	c	
bZ	XEAM11L-MWDMRA	01	0.0	QK10-C	5435	4112	4412	4500	13.82	-	235/60R18 AS	ALL	27.75	10.0	27.312	0.03187	0.018438	30.043	0.03506	0.020282	*3
SOLTERRA 20 AWD	XEAM15L-SWDHNA	02	0.0	QK10/QM10-B	5645	4510	4810	4750	13.82	-	235/50R20 AS	ALL	25.93	11.3	20.549	0.71029	0.011471	22.604	0.78132	0.012618	*3
SOLTERRA 20 AWD	XEAM15L-SWDMNA	02	0.0	QK10/QM10-B	5645	4475	4775	4750	13.82	-	235/50R20 AS	ALL	25.93	11.3	20.549	0.71029	0.011471	22.604	0.78132	0.012618	*3
SOLTERRA 20 AWD	XEAM18L-SWDMNA	02	0.0	QK10/QM10-B	5645	4475	4775	4750	13.82	-	235/50R20 AS	ALL	25.93	11.3	20.549	0.71029	0.011471	22.604	0.78132	0.012618	*3
SOLTERRA AWD	XEAM15L-SWDMNA	02	0.0	QK10/QM10-B	5645	4475	4775	4750	13.82	-	235/60R18 AS	ALL	27.35	10.7	19.077	0.71152	0.010272	20.985	0.78267	0.011299	*3
SOLTERRA AWD	XEAM18L-SWDLNA	02	0.0	QK10/QM10-B	5645	4395	4695	4750	13.82	-	235/60R18 AS	ALL	27.37	10.7	19.077	0.71156	0.010249	20.985	0.78272	0.011274	*3
bZ AWD	XEAM15L-MWDMNA	01	0.0	QK10/QM10-B	5645	4410	4710	4750	13.82	-	235/60R18 AS	ALL	27.35	10.7	19.077	0.71152	0.010272	20.985	0.78267	0.011299	*3
bZ Limited AWD	XEAM15L-MWDHNA	01	0.0	QK10/QM10-B	5645	4495	4795	4750	13.82	-	235/50R20 AS	ALL	25.91	11.3	20.549	0.71026	0.011494	22.604	0.78129	0.012643	*3
SOLTERRA 20 AWD	XEAM15L-SWDHLA	02	0.0	QK10/QM10-B	5700	4610	4910	5000	13.82	-	235/50R20 AS	ALL	26.87	11.5	21.743	0.71615	0.011401	23.917	0.78777	0.012541	*3
SOLTERRA 20 AWD	XEAM15L-SWDMLA	02	0.0	QK10/QM10-B	5700	4597	4897	5000	13.82	-	235/50R20 AS	ALL	26.87	11.5	21.743	0.71615	0.011401	23.917	0.78777	0.012541	*3
SOLTERRA 20 AWD	XEAM18L-SWDMLA	02	0.0	QK10/QM10-B	5700	4597	4897	5000	13.82	-	235/50R20 AS	ALL	26.87	11.5	21.743	0.71615	0.011401	23.917	0.78777	0.012541	*3
SOLTERRA AWD	XEAM15L-SWDMLA	02	0.0	QK10/QM10-B	5700	4530	4830	4750	13.82	-	235/60R18 AS	ALL	27.37	10.7	19.077	0.71156	0.010249	20.985	0.78272	0.011274	*3
SOLTERRA AWD	XEAM18L-SWDLLA	02	0.0	QK10/QM10-B	5700	4485	4785	4750	13.82	-	235/60R18 AS	ALL	27.39	10.7	19.077	0.71163	0.010226	20.985	0.78279	0.011249	*3
bZ AWD	XEAM15L-MWDMLA	01	0.0	QK10/QM10-B	5700	4510	4810	4750	13.82	-	235/60R18 AS	ALL	27.37	10.7	19.077	0.71156	0.010249	20.985	0.78272	0.011274	*3
bZ Limited AWD	XEAM15L-MWDHLA	01	0.0	QK10/QM10-B	5700	4595	4895	5000	13.82	-	235/50R20 AS	ALL	26.86	11.5	21.743	0.71612	0.011425	23.917	0.78773	0.012568	*3
SOLTERRA	XEAM11L-SWDLLA	02	0.0	QK10-C	5555	4275	4575	4500	13.82	-	235/60R18 AS	ALL	27.43	10.1	22.170	0.30337	0.015417	24.387	0.33371	0.016959	*3
bZ	XEAM11L-MWDMLA	01	0.0	QK10-C	5555	4290	4590	4500	13.82	-	235/60R18 AS	ALL	27.30	10.2	22.179	0.30239	0.015580	24.397	0.33263	0.017138	*3
bZ Limited	XEAM11L-MWDHLA	01	0.0	QK10-C	5555	4375	4675	4750	13.82	-	235/50R20 AS	ALL	26.74	11.0	25.113	0.29472	0.016924	27.624	0.32419	0.018616	*3
COROLLA CROSS HYBRID AWD	MXGH15L-AHXQBA	03	2.0	PB10-C	4600	3395	3695	3750	3.61	24.8	215/65R17 AS	ALL	18.65	12.4	23.200	0.19869	0.023943	25.520	0.21856	0.026337	*3
COROLLA CROSS HYBRID AWD	MXGH15L-AHXSBA	03	2.0	PB10-C	4600	3400	3700	3750	3.61	24.8	215/65R17 AS	ALL	18.66	12.4	23.200	0.19876	0.023920	25.520	0.21864	0.026312	*3
COROLLA CROSS HYBRID AWD	MXGH15L-AHXWBA	03	2.0	PB10-C	4600	3430	3730	3750	3.61	25.3	225/55R18 AS	ALL	17.98	12.9	25.403	0.21384	0.024153	27.943	0.23522	0.026568	*3
GRAND HIGHLANDER AWD LE/XLE	TASA15L-AWZMTA	06	2.4	UA81F-D	6195	4475	4775	4750	3.33	25.0	255/65R18 AS	ALL	19.41	15.1	34.397	0.13908	0.028733	37.837	0.15299	0.031606	*3
GRAND HIGHLANDER AWD LE/XLE	TASA15L-AWZNTA	06	2.4	UA81F-D	6195	4455	4755	4750	3.33	25.0	255/65R18 AS	ALL	19.46	15.1	34.393	0.13951	0.028611	37.832	0.15346	0.031472	*3
GRAND HIGHLANDER AWD LIMITED/PLATINUM	TASA15L-AWZGTA	06	2.4	UA81F-D	6195	4595	4895	5000	3.33	25.4	255/55R20 AS	ALL	19.79	15.6	37.266	0.13991	0.029041	40.993	0.15390	0.031945	*3
GRAND HIGHLANDER AWD LIMITED/PLATINUM	TASA15L-AWZZTA	06	2.4	UA81F-D	6030	4595	4895	5000	3.33	25.4	255/55R20 AS	ALL	19.86	15.5	37.261	0.14049	0.028873	40.987	0.15454	0.031760	*3
GRAND HIGHLANDER LE/XLE	TASA10L-AWZMTA	07	2.4	UA81E-C	6040	4340	4640	4750	3.33	25.0	255/65R18 AS	ALL	20.11	14.6	30.520	0.11564	0.029187	33.572	0.12720	0.032106	*3
GRAND HIGHLANDER LE/XLE	TASA10L-AWZNTA	07	2.4	UA81E-C	6040	4340	4640	4750	3.33	25.0	255/65R18 AS	ALL	20.16	14.5	30.515	0.11618	0.029059	33.567	0.12780	0.031965	*3
GRAND HIGHLANDER LIMITED	TASA10L-AWZGTA	07	2.4	UA81E-C	6040	4440	4740	4750	3.33	25.4	255/55R20 AS	ALL	19.74	14.8	31.758	0.11694	0.029484	34.934	0.12863	0.032432	*3
NX 350 AWD	TAZA25L-AWZLTA	02	2.4	UA81F-A	5225	4035	4335	4250	3.33	26.7	235/50R20 RF-AS	ALL	17.53	15.0	34.460	0.33447	0.024391	37.906	0.36792	0.026830	*3
NX 350 AWD	TAZA25L-AWZLTA	02	2.4	UA81F-A	5225	4035	4335	4250	3.33	27.1	235/60R18 AS	ALL	18.47	14.2	30.594	0.34388	0.023449	33.653	0.37827	0.025794	*3
NX 350 AWD	TAZA25L-AWZLTA	02	2.4	UA81F-A	5225	4035	4335	4250	3.33	27.1	235/60R18 RF-AS	ALL	18.41	14.2	30.594	0.34388	0.023594	33.653	0.37827	0.025953	*3
NX 350 AWD	TAZA25L-CWZLTA	02	2.4	UA81F-A	5225	4035	4335	4250	3.33	26.7	235/50R20 RF-AS	ALL	17.53	15.0	34.460	0.33447	0.024391	37.906	0.36792	0.026830	*3
NX 350 AWD	TAZA25L-CWZLTA	02	2.4	UA81F-A	5225	4035	4335	4250	3.33	27.1	235/60R18 AS	ALL	18.47	14.2	30.594	0.34388	0.023449	33.653	0.37827	0.025794	*3
NX 350 AWD	TAZA25L-CWZLTA	02	2.4	UA81F-A	5225	4035	4335	4250	3.33	27.1	235/60R18 RF-AS	ALL	18.41	14.2	30.594	0.34388	0.023594	33.653	0.37827	0.025953	*3
NX 350 AWD F SPORT	TAZA25L-AWZLTA	01	2.4	UA81F-A	5225	4035	4335	4250	3.33	26.7	235/50R20 RF-AS	ALL	18.12	14.5	34.458	0.33440	0.022931	37.904	0.36784	0.025224	*3
NX 350 AWD F SPORT	TAZA25L-CWZLTA	01	2.4	UA81F-A	5225	4035	4335	4250	3.33	26.7	235/50R20 RF-AS	ALL	18.12	14.5	34.458	0.33440	0.022931	37.904	0.36784	0.025224	*3

Note *1: AS/AS#2: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
F/D: F SPORT design
*2: Calculated
*3: Measured
*4: For Normal and Eco mode
*5: For Sport mode

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Carline	Vehicle Model	Eng. Code	Eng. Disp.	T/M Code	GVWR (lbs)	Curb Weight (lbs)	LVW (lbs)	ETW (lbs)	Axle Ratio	N/V	Tire *1	Tire Mfr.	CDT	RLHP at 50 mph	Target Coeff for FTP & SFTP $F(lbf)=a+bv+cv^2$ (v: mph)			Target Coeff for 20F $F(lbf)=a+bv+cv^2$ (v: mph)			Deter-mination Method
															a	b	c	a	b	c	
RX 350	TALA10L-AWZGTA	05	2.4	UA81E-A	5465	4155	4455	4500	3.33	25.8	235/50R21 AS	ALL	20.46	13.6	28.908	0.27555	0.023617	31.799	0.30311	0.025979	*3
RX 350	TALA10L-AWZGTA	05	2.4	UA81E-A	5465	4155	4455	4500	3.33	26.1	235/60R19 AS	ALL	20.62	13.5	28.152	0.27649	0.023588	30.967	0.30414	0.025947	*3
RX 350	TALA10L-CWZGTA	05	2.4	UA81E-A	5465	4190	4490	4500	3.33	25.8	235/50R21 AS	ALL	20.55	13.5	28.517	0.27429	0.023623	31.369	0.30172	0.025985	*3
RX 350	TALA10L-CWZGTA	05	2.4	UA81E-A	5465	4190	4490	4500	3.33	26.1	235/60R19 AS	ALL	20.58	13.5	28.152	0.27638	0.023658	30.967	0.30402	0.026024	*3
RX 350 AWD	TALA15L-CWZGTA	04	2.4	UA81F-B	5620	4310	4610	4500	3.33	25.8	235/50R21 AS	ALL	19.43	14.3	37.853	0.08829	0.025939	41.638	0.09712	0.028533	*3
RX 350 AWD	TALA15L-CWZGTA	04	2.4	UA81F-B	5620	4310	4610	4500	3.33	26.1	235/60R19 AS	ALL	19.44	14.3	37.477	0.09401	0.025951	41.225	0.10341	0.028546	*3
TX 350	TAUA10L-BWZGTA	09	2.4	UA81E-D	6010	4595	4895	5000	3.33	25.0	255/45R22 AS	ALL	20.13	15.3	33.761	0.27581	0.026940	37.137	0.30339	0.029634	*3
TX 350	TAUA10L-BWZGTA	09	2.4	UA81E-D	6010	4595	4895	5000	3.33	25.4	255/55R20 AS	ALL	20.14	15.3	33.651	0.27562	0.026970	37.016	0.30318	0.029667	*3
TX 350	TAUA10L-BWZMTA	09	2.4	UA81E-D	6010	4520	4820	4750	3.33	25.4	255/55R20 AS	ALL	19.41	15.1	32.039	0.27316	0.026987	35.243	0.30048	0.029686	*3
TX 350	TAUA10L-BWZNTA	09	2.4	UA81E-D	6010	4420	4720	4750	3.33	25.4	255/55R20 AS	ALL	19.40	15.1	32.039	0.27316	0.027016	35.243	0.30048	0.029718	*3
TX 350 AWD	TAUA15L-BWZGTA	08	2.4	UA81F-E	6130	4730	5030	5000	3.33	25.0	255/45R22 AS	ALL	19.72	15.6	36.569	0.20527	0.028186	40.226	0.22580	0.031005	*3
TX 350 AWD	TAUA15L-BWZGTA	08	2.4	UA81F-E	6130	4730	5030	5000	3.33	25.4	255/55R20 AS	ALL	19.71	15.6	36.461	0.20505	0.028244	40.107	0.22556	0.031068	*3
TX 350 AWD	TAUA15L-BWZMTA	08	2.4	UA81F-E	6130	4670	4970	5000	3.33	25.4	255/55R20 AS	ALL	19.71	15.6	36.461	0.20505	0.028244	40.107	0.22556	0.031068	*3
TX 350 AWD	TAUA15L-BWZNTA	08	2.4	UA81F-E	6010	4625	4925	5000	3.33	25.4	255/55R20 AS	ALL	19.71	15.6	36.461	0.20505	0.028244	40.107	0.22556	0.031068	*3
TX 350 AWD	TAUA15L-BWZSTA	08	2.4	UA81F-E	6010	4720	5020	5000	3.33	25.0	255/45R22 AS	ALL	19.83	15.6	36.558	0.20621	0.027907	40.214	0.22683	0.030698	*3
NX 450h+ AWD	AAZH26L-AWXLBA	02	2.5	P810-F	5600	4475	4775	4750	3.41	24.3	235/50R20 RF-AS	ALL	19.74	14.8	31.028	0.31133	0.025881	34.131	0.34246	0.028469	*3
NX 450h+ AWD	AAZH26L-AWXLBA	02	2.5	P810-F	5600	4475	4775	4750	3.41	24.7	235/60R18 AS	ALL	21.01	13.9	27.361	0.30084	0.024869	30.097	0.33092	0.027356	*3
NX 450h+ AWD	AAZH26L-AWXLBA	02	2.5	P810-F	5600	4475	4775	4750	3.41	24.7	235/60R18 RF-AS	ALL	20.94	14.0	27.361	0.30065	0.025020	30.097	0.33072	0.027522	*3
RX 450h+ AWD	AALH16L-AWXGBA	03	2.5	P810-J	5995	4810	5110	5000	3.64	22.6	235/50R21 AS	ALL	21.20	14.5	32.140	0.33787	0.024025	35.354	0.37166	0.026428	*3
TX 550h+ AWD	GYU15L-BWXGBA	01	3.5	P810-I	6540	5400	5700	5500	3.64	21.6	255/45R22 AS	ALL	21.33	15.9	35.065	0.38974	0.025875	38.572	0.42871	0.028463	*3

Note *1: AS/AS#2: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
F/D: F SPORT design
*2: Calculated
*3: Measured
*4: For Normal and Eco mode
*5: For Sport mode

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Carline	Vehicle Model	Eng. Code	Eng. Disp.	T/M Code	GVWR (lbs)	Curb Weight (lbs)	LVW (lbs)	ETW (lbs)	Axle Ratio	N/V	Tire *1	Tire Mfr.	CDT	RLHP at 50 mph	Target Coeff for FTP & SFTP $F(lbf)=a+bv+cv^2$ (v: mph)			Target Coeff for 20F $F(lbf)=a+bv+cv^2$ (v: mph)			Deter-mination Method
															a	b	c	a	b	c	
TUNDRA 2WD	VXKA70L-CRUSZA	03	3.4	AJA0E-A	7035	5295	5595	5500	3.31	21.6	245/75R18 AS	ALL	17.44	19.5	35.456	0.49182	0.034338	39.002	0.54100	0.037772	*3
TUNDRA 2WD	VXKA70L-CRUSZA	03	3.4	AJA0E-A	7035	5295	5595	5500	3.31	21.6	265/60R20 AS	ALL	17.76	19.1	36.439	0.47822	0.033145	40.083	0.52604	0.036460	*3
TUNDRA 2WD	VXKA70L-CRUSZA	03	3.4	AJA0E-A	7035	5295	5595	5500	3.31	21.6	265/60R20 OFF	ALL	17.59	19.3	38.592	0.47717	0.032877	42.451	0.52489	0.036165	*3
TUNDRA 2WD	VXKA70L-CRUSZA	03	3.4	AJA0E-A	7035	5295	5595	5500	3.31	21.5	265/70R18 AS	ALL	17.91	18.9	36.448	0.47590	0.032708	40.093	0.52349	0.035979	*3
TUNDRA 2WD	VXKA70L-PSULZA	03	3.4	AJA0E-A	7010	5503	5803	6000	3.31	21.6	265/60R20 AS	ALL	19.28	19.2	39.784	0.47605	0.032149	43.762	0.52366	0.035364	*3
TUNDRA 2WD	VXKA70L-PSUSZA	03	3.4	AJA0E-A	6990	5385	5685	5500	3.31	21.6	245/75R18 AS	ALL	17.70	19.2	35.456	0.49160	0.033465	39.002	0.54076	0.036812	*3
TUNDRA 2WD	VXKA70L-PSUSZA	03	3.4	AJA0E-A	6990	5385	5685	5500	3.31	21.6	265/60R20 AS	ALL	18.05	18.8	36.459	0.47746	0.032237	40.105	0.52521	0.035461	*3
TUNDRA 2WD	VXKA70L-PSUSZA	03	3.4	AJA0E-A	6990	5385	5685	5500	3.31	21.6	265/60R20 OFF	ALL	17.87	19.0	38.613	0.47637	0.031963	42.474	0.52401	0.035159	*3
TUNDRA 2WD	VXKA70L-PSUSZA	03	3.4	AJA0E-A	6990	5385	5685	5500	3.31	21.5	265/70R18 AS	ALL	18.21	18.6	36.468	0.47511	0.031794	40.115	0.52262	0.034973	*3
TUNDRA 2WD	VXKA70L-PSUZZA	03	3.4	AJA0E-A	7010	5465	5765	6000	3.31	21.6	265/60R20 AS	ALL	19.37	19.1	39.788	0.47587	0.031876	43.767	0.52346	0.035064	*3
TUNDRA 2WD	VXKA71L-PRULZA	03	3.4	AJA0E-A	7165	5540	5840	6000	3.31	21.6	265/60R20 AS	ALL	19.22	19.3	39.782	0.47616	0.032336	43.760	0.52378	0.035570	*3
TUNDRA 2WD	VXKA71L-PRUSZA	03	3.4	AJA0E-A	7165	5510	5810	6000	3.31	21.6	265/60R20 OFF	ALL	19.03	19.4	42.131	0.47496	0.031975	46.344	0.52246	0.035173	*3
TUNDRA 2WD	VXKA71L-PRUSZA	03	3.4	AJA0E-A	7165	5510	5810	6000	3.31	21.5	265/70R18 AS	ALL	19.41	19.1	39.791	0.47377	0.031806	43.770	0.52115	0.034987	*3
TUNDRA 2WD	VXKA72L-CHUSZA	03	3.4	AJA0E-A	7165	5557	5857	6000	3.31	21.6	245/75R18 AS	ALL	18.70	19.8	38.779	0.49041	0.034058	42.657	0.53945	0.037464	*3
TUNDRA 2WD	VXKA72L-CHUSZA	03	3.4	AJA0E-A	7165	5557	5857	6000	3.31	21.6	265/60R20 OFF	ALL	18.71	19.8	42.104	0.47590	0.032964	46.314	0.52349	0.036260	*3
TUNDRA 2WD	VXKA72L-CHUSZA	03	3.4	AJA0E-A	7165	5557	5857	6000	3.31	21.5	265/70R18 AS	ALL	19.04	19.4	39.761	0.47478	0.032888	43.737	0.52226	0.036177	*3
TUNDRA 4WD	VXKA75L-CRUSZA	02	3.4	AJA0F-B	7265	5545	5845	6000	3.31	21.6	245/75R18 AS	ALL	17.48	21.0	42.661	0.54705	0.035094	46.927	0.60176	0.038603	*3
TUNDRA 4WD	VXKA75L-CRUSZA	02	3.4	AJA0F-B	7265	5545	5845	6000	3.31	21.6	265/60R20 AS	ALL	17.74	20.7	43.563	0.53562	0.034035	47.919	0.58918	0.037439	*3
TUNDRA 4WD	VXKA75L-CRUSZA	02	3.4	AJA0F-B	7265	5545	5845	6000	3.31	21.6	265/60R20 OFF	ALL	17.57	20.9	45.820	0.53465	0.033779	50.402	0.58812	0.037157	*3
TUNDRA 4WD	VXKA75L-CRUSZA	02	3.4	AJA0F-B	7265	5545	5845	6000	3.31	21.5	265/70R18 AS	ALL	17.88	20.6	43.549	0.53349	0.033599	47.904	0.58684	0.036959	*3
TUNDRA 4WD	VXKA75L-CRUSZA	02	3.4	AJA0F-B	7265	5545	5845	6000	3.31	21.5	265/70R18 OFF	ALL	18.08	20.3	42.980	0.53439	0.033133	47.278	0.58783	0.036446	*3
TUNDRA 4WD	VXKA75L-PSULZA	02	3.4	AJA0F-B	7230	5650	5950	6000	3.31	21.6	265/60R20 AS	ALL	18.00	20.4	43.560	0.53667	0.033127	47.916	0.59034	0.036440	*3
TUNDRA 4WD	VXKA75L-PSULZA	02	3.4	AJA0F-B	7230	5650	5950	6000	3.31	21.6	265/60R20 OFF	ALL	17.90	20.5	45.818	0.53606	0.032586	50.400	0.58967	0.035845	*3
TUNDRA 4WD	VXKA75L-PSULZA	02	3.4	AJA0F-B	7230	5650	5950	6000	3.31	21.5	265/70R18 OFF	ALL	18.38	20.0	42.980	0.53559	0.032126	47.278	0.58915	0.035339	*3
TUNDRA 4WD	VXKA75L-PSUSZA	02	3.4	AJA0F-B	7210	5615	5915	6000	3.31	21.6	245/75R18 AS	ALL	17.72	20.7	42.643	0.54854	0.034221	46.907	0.60339	0.037643	*3
TUNDRA 4WD	VXKA75L-PSUSZA	02	3.4	AJA0F-B	7210	5615	5915	6000	3.31	21.6	265/60R20 AS	ALL	18.00	20.4	43.560	0.53667	0.033127	47.916	0.59034	0.036440	*3
TUNDRA 4WD	VXKA75L-PSUSZA	02	3.4	AJA0F-B	7210	5615	5915	6000	3.31	21.6	265/60R20 OFF	ALL	17.82	20.6	45.820	0.53569	0.032865	50.402	0.58926	0.036152	*3
TUNDRA 4WD	VXKA75L-PSUSZA	02	3.4	AJA0F-B	7210	5615	5915	6000	3.31	21.5	265/70R18 AS	ALL	18.14	20.3	43.549	0.53454	0.032685	47.904	0.58799	0.035954	*3
TUNDRA 4WD	VXKA75L-PSUSZA	02	3.4	AJA0F-B	7210	5615	5915	6000	3.31	21.5	265/70R18 OFF	ALL	18.26	20.1	42.983	0.53512	0.032499	47.281	0.58863	0.035749	*3
TUNDRA 4WD	VXKA75L-PSUZZA	02	3.4	AJA0F-B	7275	5765	6065	6000	3.31	21.6	265/60R20 AS	ALL	18.13	20.3	43.558	0.53729	0.032661	47.914	0.59102	0.035927	*3
TUNDRA 4WD	VXKA75L-PSUZZA	02	3.4	AJA0F-B	7275	5765	6065	6000	3.31	21.6	265/60R20 OFF	ALL	17.92	20.5	45.818	0.53616	0.032499	50.400	0.58978	0.035749	*3
TUNDRA 4WD	VXKA75L-PSUZZA	02	3.4	AJA0F-B	7275	5765	6065	6000	3.31	21.5	265/70R18 OFF	ALL	18.40	20.0	42.978	0.53569	0.032033	47.276	0.58926	0.035236	*3
TUNDRA 4WD	VXKA76L-PRULZA	02	3.4	AJA0F-B	7365	5795	6095	6000	3.31	21.6	265/60R20 AS	ALL	17.95	20.5	43.563	0.53645	0.033308	47.919	0.59010	0.036639	*3
TUNDRA 4WD	VXKA76L-PRULZA	02	3.4	AJA0F-B	7365	5795	6095	6000	3.31	21.6	265/60R20 OFF	ALL	17.85	20.6	45.818	0.53580	0.032772	50.400	0.58938	0.036049	*3
TUNDRA 4WD	VXKA76L-PRULZA	02	3.4	AJA0F-B	7365	5795	6095	6000	3.31	21.5	265/70R18 OFF	ALL	18.35	20.0	42.980	0.53548	0.032219	47.278	0.58903	0.035441	*3
TUNDRA 4WD	VXKA76L-PRUSZA	02	3.4	AJA0F-B	7340	5765	6065	6000	3.31	21.6	265/60R20 OFF	ALL	17.77	20.7	45.820	0.53544	0.033051	50.402	0.58898	0.036356	*3
TUNDRA 4WD	VXKA76L-PRUSZA	02	3.4	AJA0F-B	7340	5765	6065	6000	3.31	21.5	265/70R18 AS	ALL	18.12	20.3	43.549	0.53443	0.032778	47.904	0.58787	0.036056	*3
TUNDRA 4WD	VXKA76L-PRUSZA	02	3.4	AJA0F-B	7340	5765	6065	6000	3.31	21.5	265/70R18 OFF	ALL	18.32	20.1	42.980	0.53533	0.032312	47.278	0.58886	0.035543	*3
TUNDRA 4WD	VXKA76L-PRUZZA	02	3.4	AJA0F-B	7375	5865	6165	6000	3.31	21.6	265/60R20 AS	ALL	18.16	20.2	43.558	0.53739	0.032568	47.914	0.59113	0.035825	*3
TUNDRA 4WD	VXKA76L-PRUZZA	02	3.4	AJA0F-B	7375	5865	6165	6000	3.31	21.6	265/60R20 OFF	ALL	17.98	20.5	45.815	0.53638	0.032312	50.397	0.59002	0.035543	*3
TUNDRA 4WD	VXKA76L-PRUZZA	02	3.4	AJA0F-B	7375	5865	6165	6000	3.31	21.5	265/70R18 OFF	ALL	18.41	20.0	42.978	0.53569	0.032033	47.276	0.58926	0.035236	*3
TUNDRA 4WD	VXKA77L-CHUSZA	02	3.4	AJA0F-B	7375	5645	5945	6000	3.31	21.6	245/75R18 AS	ALL	17.59	20.9	42.652	0.54770	0.034716	46.917	0.60247	0.038188	*3
TUNDRA 4WD	VXKA77L-CHUSZA	02	3.4	AJA0F-B	7375	5645	5945	6000	3.31	21.6	265/60R20 OFF	ALL	17.65	20.8	45.813	0.53512	0.033488	50.394	0.58863	0.036837	*3
TUNDRA 4WD	VXKA77L-CHUSZA	02	3.4	AJA0F-B	7375	5645	5945	6000	3.31	21.5	265/70R18 AS	ALL	17.99	20.4	43.540	0.53410	0.033220	47.894	0.58751	0.036542	*3

Note *1: AS/AS#2: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
F/D: F SPORT design
*2: Calculated
*3: Measured
*4: For Normal and Eco mode
*5: For Sport mode

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Carline	Vehicle Model	Eng. Code	Eng. Disp.	T/M Code	GVWR (lbs)	Curb Weight (lbs)	LVW (lbs)	ETW (lbs)	Axle Ratio	N/V	Tire *1	Tire Mfr.	CDT	RLHP at 50 mph	Target Coeff for FTP & SFTP $F(lbf)=a+bv+cv^2$ (v: mph)			Target Coeff for 20F $F(lbf)=a+bv+cv^2$ (v: mph)			Deter-mination Method
															a	b	c	a	b	c	
SEQUOIA 2WD	VXKH80L-GKVLZA	04	3.4	L4A0E-B	7420	5915	6215	6000	3.31	21.6	265/60R20 AS	ALL	19.63	18.8	38.930	0.30814	0.034815	42.823	0.33895	0.038297	*3
SEQUOIA 2WD	VXKH80L-GKVSZA	04	3.4	L4A0E-B	7350	5685	5985	6000	3.31	21.6	265/60R20 OFF	ALL	18.77	19.7	41.306	0.29957	0.036637	45.437	0.32953	0.040301	*3
SEQUOIA 2WD	VXKH80L-GKVSZA	04	3.4	L4A0E-B	7350	5685	5985	6000	3.31	21.5	265/70R18 AS	ALL	19.67	18.8	38.930	0.30651	0.034733	42.823	0.33716	0.038206	*3
SEQUOIA 4WD	VXKH85L-GKVLZA	03	3.4	L4A0F-B	7585	6205	6505	6500	3.31	21.6	265/60R20 AS	ALL	20.14	19.9	42.347	0.53609	0.032045	46.582	0.58970	0.035250	*3
SEQUOIA 4WD	VXKH85L-GKVLZA	03	3.4	L4A0F-B	7585	6205	6505	6500	3.31	21.6	265/60R20 OFF	ALL	19.22	20.9	44.781	0.53381	0.033977	49.259	0.58719	0.037375	*3
SEQUOIA 4WD	VXKH85L-GKVLZA	03	3.4	L4A0F-B	7585	6205	6505	6500	3.31	21.5	265/70R18 OFF	ALL	20.20	19.8	41.751	0.53269	0.032167	45.926	0.58596	0.035384	*3
SEQUOIA 4WD	VXKH85L-GKVLZA	03	3.4	L4A0F-B	7585	6205	6505	6500	3.31	21.6	285/65R18 OFF	ALL	17.97	22.3	45.858	0.53078	0.037963	50.444	0.58386	0.041759	*3
SEQUOIA 4WD	VXKH85L-GKVSZA	03	3.4	L4A0F-B	7585	6095	6395	6500	3.31	21.6	265/60R20 OFF	ALL	19.25	20.8	44.779	0.53407	0.033878	49.257	0.58748	0.037266	*3
SEQUOIA 4WD	VXKH85L-GKVSZA	03	3.4	L4A0F-B	7585	6095	6395	6500	3.31	21.5	265/70R18 AS	ALL	20.15	19.9	42.347	0.53360	0.032068	46.582	0.58696	0.035275	*3
SEQUOIA 4WD	VXKH85L-GKVSZA	03	3.4	L4A0F-B	7585	6095	6395	6500	3.31	21.5	265/70R18 OFF	ALL	20.17	19.9	41.753	0.53248	0.032266	45.928	0.58573	0.035493	*3
SEQUOIA 4WD	VXKH85L-GKVZZA	03	3.4	L4A0F-B	7595	6180	6480	6500	3.31	21.8	265/50R22 AS	ALL	19.65	20.4	44.325	0.53906	0.032696	48.758	0.59297	0.035966	*3
SEQUOIA 4WD	VXKH85L-GKVZZA	03	3.4	L4A0F-B	7595	6180	6480	6500	3.31	21.6	265/60R20 AS	ALL	20.14	19.9	42.347	0.53609	0.032045	46.582	0.58970	0.035250	*3
SEQUOIA 4WD	VXKH85L-GKVZZA	03	3.4	L4A0F-B	7595	6180	6480	6500	3.31	21.6	265/60R20 OFF	ALL	19.11	21.0	44.790	0.53284	0.034361	49.269	0.58612	0.037797	*3
SEQUOIA 4WD	VXKH85L-GKVZZA	03	3.4	L4A0F-B	7595	6180	6480	6500	3.31	21.5	265/70R18 OFF	ALL	20.08	20.0	41.760	0.53172	0.032557	45.936	0.58489	0.035813	*3
TUNDRA 2WD	VXKH70L-PSVLZA	02	3.4	L4A0E-A	7375	5810	6110	6000	3.31	21.6	265/60R20 AS	ALL	19.38	19.1	35.620	0.48006	0.033430	39.182	0.52807	0.036773	*3
TUNDRA 2WD	VXKH70L-PSVZZA	02	3.4	L4A0E-A	7430	5870	6170	6000	3.31	21.6	265/60R20 AS	ALL	19.70	18.8	35.090	0.48252	0.032661	38.599	0.53077	0.035927	*3
TUNDRA 2WD	VXKH71L-PRVLZA	02	3.4	L4A0E-A	7465	5870	6170	6000	3.31	21.6	265/60R20 AS	ALL	19.35	19.1	35.623	0.47963	0.033523	39.185	0.52759	0.036875	*3
TUNDRA 4WD	VXKH75L-PSVLZA	01	3.4	L4A0F-A	7630	6095	6395	6500	3.31	21.6	265/60R20 AS	ALL	19.62	20.4	49.131	0.38056	0.034029	54.044	0.41862	0.037432	*3
TUNDRA 4WD	VXKH75L-PSVLZA	01	3.4	L4A0F-A	7630	6095	6395	6500	3.31	21.6	265/60R20 OFF	ALL	19.49	20.6	51.737	0.37321	0.033558	56.911	0.41053	0.036914	*3
TUNDRA 4WD	VXKH75L-PSVLZA	01	3.4	L4A0F-A	7630	6095	6395	6500	3.31	21.5	265/70R18 OFF	ALL	19.97	20.1	48.443	0.38182	0.033197	53.287	0.42000	0.036517	*3
TUNDRA 4WD	VXKH75L-PSVUZA	01	3.4	L4A0F-A	7650	6255	6555	6500	3.31	21.8	265/50R22 AS	ALL	19.39	20.7	51.289	0.37651	0.033977	56.418	0.41416	0.037375	*3
TUNDRA 4WD	VXKH75L-PSVZZA	01	3.4	L4A0F-A	7630	6160	6460	6500	3.31	21.6	265/60R20 AS	ALL	19.93	20.1	48.452	0.38439	0.033261	53.297	0.42283	0.036587	*3
TUNDRA 4WD	VXKH75L-PSVZZA	01	3.4	L4A0F-A	7630	6160	6460	6500	3.31	21.6	265/60R20 OFF	ALL	19.49	20.6	51.737	0.37321	0.033558	56.911	0.41053	0.036914	*3
TUNDRA 4WD	VXKH75L-PSVZZA	01	3.4	L4A0F-A	7630	6160	6460	6500	3.31	21.5	265/70R18 OFF	ALL	20.00	20.0	48.441	0.38200	0.033104	53.285	0.42020	0.036414	*3
TUNDRA 4WD	VXKH76L-PRVLZA	01	3.4	L4A0F-A	7750	6175	6475	6500	3.31	21.6	265/60R20 AS	ALL	19.65	20.4	49.129	0.38077	0.033936	54.042	0.41885	0.037330	*3
TUNDRA 4WD	VXKH76L-PRVLZA	01	3.4	L4A0F-A	7750	6175	6475	6500	3.31	21.6	265/60R20 OFF	ALL	19.51	20.5	51.734	0.37339	0.033465	56.907	0.41073	0.036812	*3
TUNDRA 4WD	VXKH76L-PRVLZA	01	3.4	L4A0F-A	7750	6175	6475	6500	3.31	21.5	265/70R18 OFF	ALL	20.00	20.0	48.441	0.38200	0.033104	53.285	0.42020	0.036414	*3
TUNDRA 4WD	VXKH76L-PRVZZA	01	3.4	L4A0F-A	7780	6250	6550	6500	3.31	21.6	265/60R20 AS	ALL	19.96	20.1	48.450	0.38461	0.033168	53.295	0.42307	0.036485	*3
TUNDRA 4WD	VXKH76L-PRVZZA	01	3.4	L4A0F-A	7780	6250	6550	6500	3.31	21.6	265/60R20 OFF	ALL	19.51	20.5	51.734	0.37339	0.033465	56.907	0.41073	0.036812	*3
TUNDRA 4WD	VXKH76L-PRVZZA	01	3.4	L4A0F-A	7780	6250	6550	6500	3.31	21.5	265/70R18 OFF	ALL	19.94	20.1	48.446	0.38161	0.033290	53.291	0.41977	0.036619	*3
TUNDRA 4WD PRO	VXKH75L-PSVLZA	01	3.4	L4A0F-A	7630	6095	6395	6500	3.31	21.6	285/65R18 OFF	ALL	17.62	22.8	52.964	0.36359	0.039808	58.260	0.39995	0.043789	*3

Note *1: AS/AS#2: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
F/D: F SPORT design
*2: Calculated
*3: Measured
*4: For Normal and Eco mode
*5: For Sport mode

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Carline	Vehicle Model	Eng. Code	Eng. Disp.	T/M Code	GVWR (lbs)	Curb Weight (lbs)	LVW (lbs)	ETW (lbs)	Axle Ratio	N/V	Tire *1	Tire Mfr.	CDT	RLHP at 50 mph	Target Coeff for FTP & SFTP $F(lbf)=a+bv+cv^2$ (v: mph)			Target Coeff for 20F $F(lbf)=a+bv+cv^2$ (v: mph)			Deter-mination Method
															a	b	c	a	b	c	
RZ 350e FWD (18 inch Wheels)	XEBM20L-AWDCSA	01	0.0	QK10-A	5555	4385	4685	4750	12.36	-	235/60R18 AS	ALL	27.27	10.7	26.273	0.29064	0.015900	28.900	0.31970	0.017490	*3
RZ 350e FWD (20 inch Wheels)	XEBM20L-AWDCSA	01	0.0	QK10-A	5555	4415	4715	4750	12.36	-	235/50R20 AS	ALL	26.43	11.1	28.735	0.28054	0.016145	31.609	0.30859	0.017760	*3
RZ 350e FWD (18 inch Wheels)	XEBM20L-AWDCSA	01	0.0	QK10-A	5555	4325	4625	4500	12.36	-	235/60R18 AS	ALL	26.20	10.6	24.861	0.29447	0.015941	27.347	0.32392	0.017535	*3
RZ 350e FWD (20 inch Wheels)	XEBM20L-AWDCSA	01	0.0	QK10-A	5555	4345	4645	4750	12.36	-	235/50R20 AS	ALL	26.37	11.1	28.737	0.28051	0.016220	31.611	0.30856	0.017842	*3
RZ 450e AWD (18 inch Wheels)	XEBM25L-AWDCSA	01	0.0	QK10/QL10-A	5820	4645	4945	5000	12.36	-	235/60R18+255 AS	ALL	25.83	11.9	29.587	0.36801	0.016622	32.546	0.40481	0.018284	*3
RZ 450e AWD (18 inch Wheels)	XEBM25L-AWDLSA	01	0.0	QK10/QL10-A	5820	4640	4940	5000	12.36	-	235/60R18+255 AS	ALL	25.83	11.9	29.591	0.36801	0.016622	32.550	0.40481	0.018284	*3
RZ 450e AWD (20 inch Wheels - 235/50R20)	XEBM25L-AWDCSA	01	0.0	QK10/QL10-A	5820	4655	4955	5000	12.36	-	235/50R20 AS	ALL	25.70	12.0	30.198	0.36291	0.016662	33.218	0.39920	0.018328	*3
RZ 450e AWD (20 inch Wheels - 235/50R20)	XEBM25L-AWDLSA	01	0.0	QK10/QL10-A	5820	4655	4955	5000	12.36	-	235/50R20 AS	ALL	25.70	12.0	30.200	0.36291	0.016662	33.220	0.39920	0.018328	*3
RZ 450e AWD (20 inch Wheels - 235/50R20,255/45R20)	XEBM25L-AWDCSA	01	0.0	QK10/QL10-A	5820	4665	4965	5000	12.36	-	235/50R20+255 SM	ALL	22.82	13.5	39.561	0.35737	0.017559	43.517	0.39311	0.019315	*3
RZ 450e AWD (20 inch Wheels - 235/50R20,255/45R20)	XEBM25L-AWDLSA	01	0.0	QK10/QL10-A	5820	4665	4965	5000	12.36	-	235/50R20+255 SM	ALL	22.82	13.5	39.572	0.35733	0.017559	43.529	0.39306	0.019315	*3
RZ 550e AWD	XEBM25L-AWDSSA	01	0.0	QK10/QL10-A	5820	4685	4985	5000	12.36	-	235/50R20+255 SM	ALL	22.94	13.4	39.577	0.35690	0.017349	43.535	0.39259	0.019084	*3
RZ 450e AWD (18 inch Wheels)	XEBM25L-AWDCSA	01	0.0	QK10/QL10-A	5820	4555	4855	4750	12.36	-	235/60R18+255 AS	ALL	24.88	11.8	28.076	0.37003	0.016692	30.884	0.40703	0.018361	*3
RZ 450e AWD (18 inch Wheels)	XEBM25L-AWDLSA	01	0.0	QK10/QL10-A	5820	4565	4865	4750	12.36	-	235/60R18+255 AS	ALL	24.88	11.8	28.078	0.37003	0.016692	30.886	0.40703	0.018361	*3
RZ 450e AWD (20 inch Wheels - 235/50R20)	XEBM25L-AWDCSA	01	0.0	QK10/QL10-A	5820	4565	4865	4750	12.36	-	235/50R20 AS	ALL	24.76	11.8	28.656	0.36497	0.016727	31.522	0.40147	0.018400	*3
RZ 450e AWD (20 inch Wheels - 235/50R20)	XEBM25L-AWDLSA	01	0.0	QK10/QL10-A	5820	4575	4875	4750	12.36	-	235/50R20 AS	ALL	24.76	11.8	28.658	0.36497	0.016727	31.524	0.40147	0.018400	*3
RZ 450e AWD (20 inch Wheels - 235/50R20,255/45R20)	XEBM25L-AWDCSA	01	0.0	QK10/QL10-A	5820	4586	4886	5000	12.36	-	235/50R20+255 SM	ALL	22.78	13.5	39.554	0.35755	0.017634	43.509	0.39331	0.019397	*3
RZ 450e AWD (20 inch Wheels - 235/50R20,255/45R20)	XEBM25L-AWDLSA	01	0.0	QK10/QL10-A	5820	4585	4885	5000	12.36	-	235/50R20+255 SM	ALL	22.78	13.5	39.561	0.35752	0.017634	43.517	0.39327	0.019397	*3
CAMRY HEV AWD LE	AXVH85L-CEXNBA	01	2.5	PB11-B	4740	3595	3895	3875	3.19	21.9	205/65R16 AS	ALL	23.99	10.0	23.805	0.24336	0.015498	26.186	0.26770	0.017048	*3
CAMRY HEV AWD LE	AXVH85L-CEXNBA	01	2.5	PB11-B	4740	3595	3895	3875	3.19	21.5	235/45R18 AS	ALL	21.64	11.0	29.436	0.24321	0.016488	32.380	0.26753	0.018137	*3
CAMRY HEV AWD SE/XLE	AXVH85L-CEXGBA	01	2.5	PB11-B	4740	3675	3975	4000	3.19	21.9	205/65R16 AS	ALL	24.43	10.1	24.513	0.24307	0.015632	26.964	0.26738	0.017195	*3
CAMRY HEV AWD SE/XLE	AXVH85L-CEXGBA	01	2.5	PB11-B	4740	3675	3975	4000	3.19	21.5	235/40R19 AS	ALL	20.81	11.9	33.941	0.24115	0.017163	37.335	0.26527	0.018879	*3
CAMRY HEV AWD SE/XLE	AXVH85L-CEXGBA	01	2.5	PB11-B	4740	3675	3975	4000	3.19	21.5	235/45R18 AS	ALL	22.14	11.1	30.308	0.24423	0.016424	33.339	0.26865	0.018066	*3
CAMRY HEV AWD SE/XLE	AXVH85L-CEXSBA	01	2.5	PB11-B	4740	3645	3945	4000	3.19	21.9	205/65R16 AS	ALL	24.47	10.1	24.508	0.24347	0.015568	26.959	0.26782	0.017125	*3
CAMRY HEV AWD SE/XLE	AXVH85L-CEXSBA	01	2.5	PB11-B	4740	3645	3945	4000	3.19	21.5	235/40R19 AS	ALL	20.85	11.8	33.937	0.24155	0.017093	37.331	0.26571	0.018802	*3
CAMRY HEV AWD SE/XLE	AXVH85L-CEXSBA	01	2.5	PB11-B	4740	3645	3945	4000	3.19	21.5	235/45R18 AS	ALL	22.67	10.9	30.252	0.24936	0.015563	33.277	0.27430	0.017119	*3
CAMRY HEV AWD XSE	AXVH85L-CEXPBA	01	2.5	PB11-B	4740	3700	4000	4000	3.19	21.9	205/65R16 AS	ALL	24.47	10.1	24.508	0.24347	0.015568	26.959	0.26782	0.017125	*3
CAMRY HEV AWD XSE	AXVH85L-CEXPBA	01	2.5	PB11-B	4740	3700	4000	4000	3.19	21.5	235/40R19 AS	ALL	20.85	11.8	33.937	0.24155	0.017093	37.331	0.26571	0.018802	*3
CAMRY HEV FF LE	AXVH80L-CEXNBA	01	2.5	PB11-A	4625	3455	3755	3750	3.19	21.9	205/65R16 AS	ALL	24.36	9.5	21.055	0.18592	0.016342	23.161	0.20451	0.017976	*3
CAMRY HEV FF LE	AXVH80L-CEXNBA	01	2.5	PB11-A	4625	3455	3755	3750	3.19	21.5	235/45R18 AS	ALL	21.86	10.6	27.521	0.18227	0.017082	30.273	0.20050	0.018790	*3
CAMRY HEV FF SE/XLE/XSE	AXVH80L-CEXGBA	01	2.5	PB11-A	4625	3540	3840	3875	3.19	21.9	205/65R16 AS	ALL	24.60	9.7	22.647	0.18578	0.016366	24.912	0.20436	0.018003	*3
CAMRY HEV FF SE/XLE/XSE	AXVH80L-CEXGBA	01	2.5	PB11-A	4625	3540	3840	3875	3.19	21.5	235/40R19 AS	ALL	20.87	11.5	32.104	0.17463	0.018019	35.314	0.19209	0.019821	*3
CAMRY HEV FF SE/XLE/XSE	AXVH80L-CEXGBA	01	2.5	PB11-A	4625	3540	3840	3875	3.19	21.5	235/45R18 AS	ALL	22.24	10.7	28.451	0.18125	0.017233	31.296	0.19938	0.018956	*3
CAMRY HEV FF SE/XLE/XSE	AXVH80L-CEXPBA	01	2.5	PB11-A	4625	3565	3865	3875	3.19	21.9	205/65R16 AS	ALL	24.70	9.7	22.638	0.18668	0.016232	24.902	0.20535	0.017855	*3
CAMRY HEV FF SE/XLE/XSE	AXVH80L-CEXPBA	01	2.5	PB11-A	4625	3565	3865	3875	3.19	21.5	235/40R19 AS	ALL	20.91	11.4	32.098	0.17507	0.017949	35.308	0.19258	0.019744	*3
CAMRY HEV FF SE/XLE/XSE	AXVH80L-CEXSBA	01	2.5	PB11-A	4625	3520	3820	3875	3.19	21.9	205/65R16 AS	ALL	24.70	9.7	22.638	0.18668	0.016232	24.902	0.20535	0.017855	*3
CAMRY HEV FF SE/XLE/XSE	AXVH80L-CEXSBA	01	2.5	PB11-A	4625	3520	3820	3875	3.19	21.5	235/40R19 AS	ALL	20.95	11.4	32.093	0.17554	0.017879	35.302	0.19309	0.019667	*3
CAMRY HEV FF SE/XLE/XSE	AXVH80L-CEXSBA	01	2.5	PB11-A	4625	3520	3820	3875	3.19	21.5	235/45R18 AS	ALL	22.24	10.7	28.451	0.18125	0.017233	31.296	0.19938	0.018956	*3
GRAND HIGHLANDER HYBRID AWD	TASH15L-AWTVTA	01	2.4	PC60-C	6340	4920	5220	5250	3.74	28.4	255/55R20 AS	ALL	20.15	16.1	36.263	0.45525	0.024589	39.889	0.50078	0.027048	*3
GRAND HIGHLANDER HYBRID AWD	TASH15L-AWTZTA	01	2.4	PC60-C	6340	4920	5220	5250	3.74	28.4	255/55R20 AS	ALL	20.22	16.0	36.270	0.45478	0.024438	39.897	0.50026	0.026882	*3
RX 500h AWD	TALH17L-CWTGTA	01	2.4	PC60-A	5995	4750	5050	5000	3.74	28.9	235/50R21 AS	ALL	20.82	14.8	31.264	0.60793	0.019759	34.390	0.66872	0.021735	*3
TX 500h AWD	TAUH15L-BWTSTA	02	2.4	PC60-D	6315	4970	5270	5250	3.74	28.0	255/45R22 AS	ALL	21.18	15.3	35.360	0.29082	0.025899	38.896	0.31990	0.028489	*3

Note *1: AS/AS#2: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
F/D: F SPORT design
*2: Calculated
*3: Measured
*4: For Normal and Eco mode
*5: For Sport mode

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Carline	Vehicle Model	Eng. Code	Eng. Disp.	T/M Code	GVWR (lbs)	Curb Weight (lbs)	LVW (lbs)	ETW (lbs)	Axle Ratio	N/V	Tire *1	Tire Mfr.	CDT	RLHP at 50 mph	Target Coeff for FTP & SFTP $F(lbf)=a+bv+cv^2$ (v: mph)			Target Coeff for 20F $F(lbf)=a+bv+cv^2$ (v: mph)			Deter-mination Method
															a	b	c	a	b	c	
LAND CRUISER	TJH250L-GNZAZA	01	2.4	L580F-B	6835	5450	5750	5500	3.58	25.2	265/60R20 AS	ALL	18.05	18.8	38.862	0.51435	0.030549	42.748	0.56579	0.033604	*3
LAND CRUISER	TJH250L-GNZAZA	01	2.4	L580F-B	6835	5450	5750	5500	3.58	25.2	265/60R20 AS#2	ALL	18.05	18.8	38.862	0.51435	0.030549	42.748	0.56579	0.033604	*3
LAND CRUISER	TJH250L-GNZAZA	01	2.4	L580F-B	6835	5450	5750	5500	3.58	25.1	265/70R18 AS	ALL	18.28	18.6	37.495	0.50734	0.030526	41.245	0.55807	0.033579	*3
LAND CRUISER	TJH250L-GNZUZA	01	2.4	L580F-B	6725	5360	5660	5500	3.58	26.0	245/70R18 AS	ALL	18.36	18.5	38.988	0.54893	0.028849	42.887	0.60382	0.031734	*3
LAND CRUISER	TJH250L-GNZUZA	01	2.4	L580F-B	6725	5360	5660	5500	3.58	26.0	245/70R18 AS#2	ALL	18.36	18.5	38.988	0.54893	0.028849	42.887	0.60382	0.031734	*3
LAND CRUISER	TJH250L-GNZUZA	01	2.4	L580F-B	6725	5360	5660	5500	3.58	25.1	265/70R18 AS	ALL	18.27	18.6	37.498	0.50719	0.030549	41.248	0.55791	0.033604	*3

Note *1: AS/AS#2: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
F/D: F SPORT design
*2: Calculated
*3: Measured
*4: For Normal and Eco mode
*5: For Sport mode

12.5 Method used to determine the road load forces other than SAE procedure J2263

Confidential Information

13. Projected Sales and Compliance Plans

Confidential Information

14. Request for Certificate

Please refer to the each test group file.

15. Other Information

15.1 Fee filing form

Please refer to the each test group file.

16. Confidential Information

Confidential Information

17. California ARB Information

17.1 Statement of Compliance

General statement

The production vehicles which are subject to registration or sale in the state of California will be, in all material respects, substantially the same in construction as the test vehicles which are certified by the California Air Resources Board, and will meet all the applicable vehicle emission standards which are set forth by the California Air Resources Board in accordance with Section 43101 of the Health and Safety Code.

Driveability Statement

In accordance with "California Exhaust Emission Standards and Test Procedures for 1988 And Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles, 11.e." as amended August 5,1999, Toyota certifies that its production vehicles covered by the certificate for the applicable model year have driveability and performance characteristics which satisfy the manufacturer's specific driveability and performance requirements. This statement is based on driveability data and other evidence showing compliance with the manufacturer's in-house performance criteria which, we believe, assures elimination of one of the major causes of wide-spread tampering with the emission control systems.

Durability Warranty Statement

In accordance with “California Exhaust Emission Standards & Test Procedures for 2015 and Subsequent MY PC, LDT, and MDV” F.4.1, “California Evaporative Emission Standards & Test Procedures for 2001 & Subsequent Model Motor Vehicles” PART II.2 and “California Refueling Emission Standards & Test Procedures for 2001 & Subsequent Model Motor Vehicles” G, Toyota states, based on our good engineering judgment and available information, that the exhaust, evaporative and refueling emission control devices on our vehicles or engines are durable and are designed and will be manufactured to operate properly and in compliance with all applicable requirements for the full useful life (or allowable maintenance interval) of the vehicles or engines.

California Environmental Performance Labels

Toyota will use Federal Fuel Economy and Environment Labels in lieu of California Environmental Performance Labels.

PHEV canister purge capability requirement

Toyota plug-in hybrid vehicles (PHEV) and hybrid electric vehicles (HEV) equip non-integrated refueling canister-only system having enough purge by consumed 85% fuel according to CA Evap Test Procedures II A.5.4.2.1.

17.2 High-Altitude Test Requirements

Demonstration for fuel injected engines

Fuel injection system which consists of electronic fuel injection and closed loop are using an air flow sensor to sense the air mass flow. Therefore, they can control the air-fuel ratio stoichiometrically to comply with California and Federal emission standards and to ensure vehicle driveability at high altitude.

17.3 Compliance with fuel fill pipe specifications

Statement

The fill pipes and openings for the models covered by this application are in compliance with the requirements specified by the Air Resources Board's "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" amended May 31, 2019, and are not obstructed in any manner by bumpers, body parts, body trims or accessories that are either factory or dealer installed.

Bench Leak Rate Specification

The fill pipes for the models covered by this application are in compliance with the maximum allowable bench leak rate requirements specified by the Air Resources Board's “Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" amended May 31, 2019

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	30°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	6.01	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1	5.95	
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	350°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	301°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall: or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33mm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			TOYOTA CROWN AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			20MY RAV4	

[1] dimension should include adverse tolerance condition
[2] LS = Left side of reference plane, RS = Right side of reference plane
[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)
[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	42°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296	
		RS[2]	3.2/Fig 2 and 3	35	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thuru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		YES	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			GRAND HIGHLANDER	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY NX 250	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	42°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296	
		RS[2]	3.2/Fig 2 and 3	35	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thuru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		YES	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			TX 350	
				TX 350 AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY NX 250	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	42°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296	
		RS[2]	3.2/Fig 2 and 3	35	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thuru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		YES	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			GRAND HIGHLANDER HYBRID	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY NX 250	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	42°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4] 5.20 cm or 52.0 mm(MIN)	3.1/Fig 1 3.1/Fig 1	5.98±0.03	cm
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX) 5.20 cm or 52.0 mm(MIN)	3.1/Fig 1 CARB Fill Pipe Spec.	-	
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2] RS[2]	3.2/Fig 2 and 3 3.2/Fig 2 and 3	296 35	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thuru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		YES	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			TX 500h AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY NX 250	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-2	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	46°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	1	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	6.00±0.05	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	320	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	271	
		RS[2]	3.2/Fig 2 and 3	35	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.28	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thuru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.26cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	0.04cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	47.1	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		YES	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			TX 550h+ AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			23MY 4Runner	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-3.5°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	32.1°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threded	
15	Usage of Design (Models or Evaporative Family(s))			SIENNA	
				SIENNA AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY SIENNA	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	33°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			CAMRY HYBRID	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			'23MY RX	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	41°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296	
		RS[2]	3.2/Fig 2 and 3	35	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			NX 350 AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY NX 350 AWD	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	41°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296	
		RS[2]	3.2/Fig 2 and 3	35	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			NX 350h AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY NX 350h AWD	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	41°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296	
		RS[2]	3.2/Fig 2 and 3	35	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			NX 450h+ AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY NX 450h+ AWD	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	32°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall: or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			COROLLA CROSS	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY COROLLA	

[1] dimension should include adverse tolerance condition
[2] LS = Left side of reference plane, RS = Right side of reference plane
[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)
[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-3°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	34°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	1°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	6.00±0.05	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	320°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	271°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.28	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.29	
	Offset B	none	3.3.1/Fig 5 shown as "g"	0.04	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	47.1	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			COROLLA CROSS AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY COROLLA	

[1] dimension should include adverse tolerance condition
[2] LS = Left side of reference plane, RS = Right side of reference plane
[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)
[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	32°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			COROLLA CROSS HYBRID AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY COROLLA	

[1] dimension should include adverse tolerance condition
[2] LS = Left side of reference plane, RS = Right side of reference plane
[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)
[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	31°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			COROLLA HYBRID	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			23MY COROLLA	

[1] dimension should include adverse tolerance condition
[2] LS = Left side of reference plane, RS = Right side of reference plane
[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)
[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	31°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			COROLLA	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			19MY COROLLA	

[1] dimension should include adverse tolerance condition
[2] LS = Left side of reference plane, RS = Right side of reference plane
[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)
[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	31°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			COROLLA HATCHBACK	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			19MY COROLLA	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	40°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			PRIUS PRIUS AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			23MY PRIUS	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1.1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-2°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	42°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	1°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	6.00±0.05	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	320°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	271°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall: or	0.25 cm or 2.5 mm(MIN)	3.2	0.28	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.26cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	0.04cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	47.1	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			PRIUS PHEV	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			20MY LC 500	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-2°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	39°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	1°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025cm	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	6.00±0.05cm	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	320°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	271°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.28cm	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3cm	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.26cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	0.04cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	47.1mm	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			LC 500	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			25MY LC 500	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-2°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	41°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	1°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025cm	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	6.00±0.05cm	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	320°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	271°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.28cm	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3cm	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.26cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	0.04cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	47.1mm	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			LC 500 CONVERTIBLE	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			25MY LC 500 CONVERTIBLE	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	34°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) LS[2]	3.2/Fig 2 and 3	296°	
		each side RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	41.5	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			LAND CRUISER	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			23MY LX 600	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	34°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) LS [2]	3.2/Fig 2 and 3	296°	
		each side RS [2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33cm	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08cm	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	41.5	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			GX 550	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			23MY LX 600	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	50°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	35	
		RS[2]	3.2/Fig 2 and 3	296	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			TUNDRA 2WD (HYBRID)	
				TUNDRA 4WD (HYBRID)	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY TUNDRA	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	32°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	35	
		RS[2]	3.2/Fig 2 and 3	296	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			SEQUOIA 2WD	
				SEQUOIA 4WD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY TUNDRA	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	35°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	cm
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	cm
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			RX 350	
				RX 350 AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			25MY	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	35°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	cm
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	cm
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			RX 350h AWD	
				RX 500h AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			25MY	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor Vehicle Fuel Tanks", amended May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	35°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345°	
	degrees extending each side of ref. plane	35° (MIN) each side LS[2]	3.2/Fig 2 and 3	296°	
		RS[2]	3.2/Fig 2 and 3	35°	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	cm
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	cm
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			NIRCO	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			RX 450h+ AWD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			25MY	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA **Model Year** 2026

Terms and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Motor

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]	
1	Angle α in degrees	-10° < α < 20°	2.8 & 3.4/Fig 2a & 3a	-4°	
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	50°	
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	3.5	cm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-2°	
	Fill Pipe Specification				
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.025	cm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)[4]	3.1/Fig 1	5.98±0.03	cm
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1		
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	-	
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.		
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	345	
	degrees extending each side of ref. plane	35° (MIN) LS[2]	3.2/Fig 2 and 3	35	
		each side RS[2]	3.2/Fig 2 and 3	296	
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	0.26	cm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	N/A	
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	1.2 thru 1.3	cm
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	-	
	Offset				
	Offset A	none	3.3.1/Fig 5 shown as "f"	0.33	cm
	Offset B	none	3.3.1/Fig 5 shown as "g"	-0.08	cm
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 6b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	Yes	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	-	
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b below	≥ 40 mm	Fig 5 shown as "R40"	Yes	
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	-	
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.7	mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Yes	
10	Capped or Capless			Capped	
11	Seal (Mechanical or Liquid)			Liquid	
12	Disruption in the Fill Pipe Face			N	
13	ORVR Design (I / NI / NIRCO / NO)[3]			I	
14	Type (Threaded or Bayonet)		Fig 1	Threaded	
15	Usage of Design (Models or Evaporative Family(s))			TUNDRA 2WD	
				TUNDRA 4WD	
16	Total vehicle model year sales			Please refer section 17 phase-in page.	
17	New or C/O			C/O	
18	Reference number for C/O model			22MY TUNDRA	

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (**I**)/Non-Integrated(**NI**)/Non-Integrated Refueling Canister Only (**NIRCO**)/Non-ORVR(**NO**)

[4] Max value stated in J1114 of SAE standard

17.4 Compliance with the location requirement of the vent tube opening in the fill pipe

Not applicable

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

[Test vehicle]

Model name	:	TOYOTA CROWN AWD
Data is representative for	:	TOYOTA CROWN AWD

[Test procedure]	:	CARB method

[Test conditions]

Date	:	03/28/2022
Ambient air temperature (at initiation)	:	105.4 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	141.1 °F
Track surface temperature (at completion)	:	144.0° F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	03/29/2022
Ambient air temperature (at initiation)	:	105.1 °F
Ambient air temperature (at completion)	:	110.3 °F
Track surface temperature (at initiation)	:	142.2° F
Track surface temperature (at completion)	:	144.7 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

Measured temperature and pressure profiles

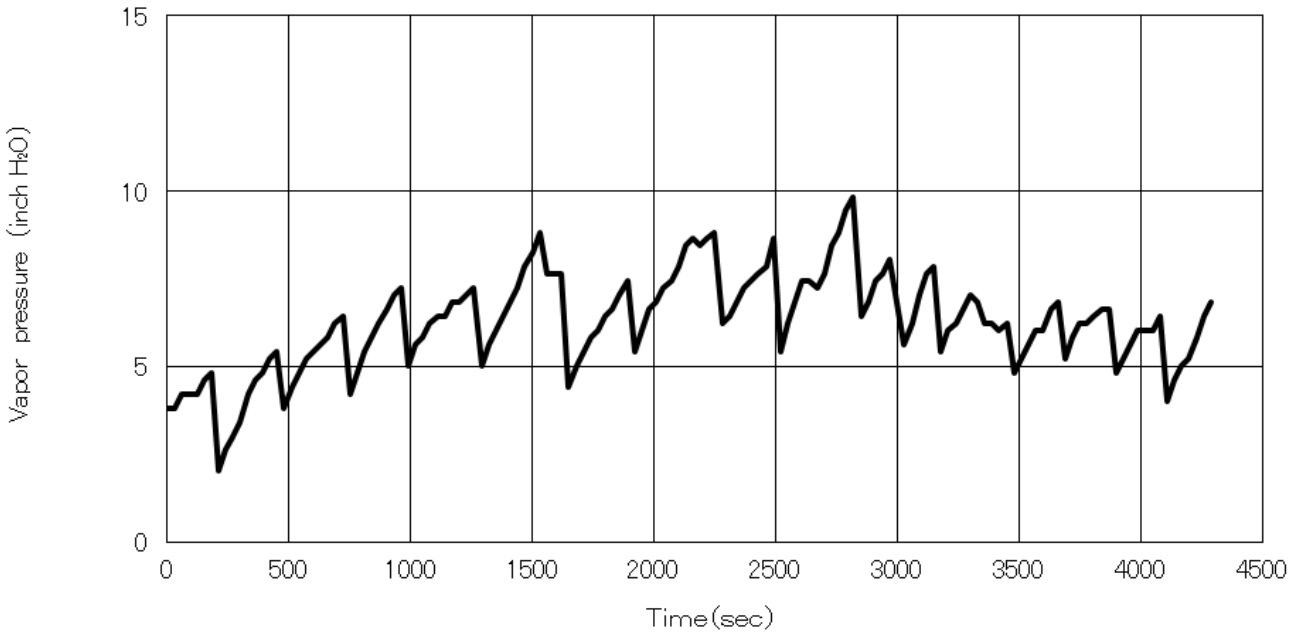
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.9	1200	109.6	2400	112.3	3600	115.3
30	107.1	1230	109.6	2430	112.3	3630	115.3
60	107.2	1260	109.8	2460	112.3	3660	115.5
90	107.4	1290	109.9	2490	112.3	3690	115.5
120	107.6	1320	109.8	2520	112.5	3720	115.5
150	107.8	1350	109.8	2550	112.5	3750	115.5
180	107.8	1380	109.9	2580	112.5	3780	115.7
210	108.0	1410	109.9	2610	112.5	3810	115.7
240	108.0	1440	109.9	2640	112.8	3840	115.7
270	108.0	1470	109.9	2670	112.8	3870	115.9
300	108.0	1500	110.1	2700	112.8	3900	115.9
330	108.1	1530	110.1	2730	113.0	3930	115.9
360	108.1	1560	110.3	2760	113.0	3960	115.9
390	108.3	1590	110.3	2790	113.0	3990	116.1
420	108.3	1620	110.5	2820	113.0	4020	116.1
450	108.5	1650	110.5	2850	113.2	4050	116.1
480	108.7	1680	110.7	2880	113.2	4080	116.4
510	108.7	1710	110.8	2910	113.4	4110	116.4
540	108.9	1740	110.7	2940	113.5	4140	116.4
570	108.9	1770	110.7	2970	113.5	4170	116.4
600	108.9	1800	110.8	3000	113.7	4200	116.6
630	108.9	1830	110.8	3030	113.7	4230	116.6
660	108.9	1860	110.8	3060	113.9	4260	116.6
690	108.9	1890	110.8	3090	113.9	4290	116.6
720	108.9	1920	111.0	3120	114.1		
750	108.9	1950	111.0	3150	114.1		
780	109.0	1980	111.2	3180	114.1		
810	109.0	2010	111.2	3210	114.3		
840	109.0	2040	111.4	3240	114.6		
870	109.2	2070	111.4	3270	114.4		
900	109.0	2100	111.4	3300	114.6		
930	109.0	2130	111.4	3330	114.4		
960	109.2	2160	111.6	3360	114.6		
990	109.2	2190	111.6	3390	114.6		
1020	109.2	2220	111.6	3420	114.8		
1050	109.4	2250	111.9	3450	115.0		
1080	109.6	2280	111.7	3480	115.2		
1110	109.4	2310	111.9	3510	115.0		
1140	109.6	2340	112.1	3540	115.2		
1170	109.6	2370	112.1	3570	115.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

[Test vehicle]

Model name	:	TOYOTA CROWN AWD
Data is representative for	:	TOYOTA CROWN AWD

[Test procedure]	:	EPA method

[Test conditions]

Date	:	03/28/2022
Ambient air temperature (at initiation)	:	99.5 °F
Ambient air temperature (at completion)	:	99.9 °F
Track surface temperature (at initiation)	:	128.7 °F
Track surface temperature (at completion)	:	132.8° F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	03/29/2022
Ambient air temperature (at initiation)	:	96.8 °F
Ambient air temperature (at completion)	:	100.0 °F
Track surface temperature (at initiation)	:	129.9° F
Track surface temperature (at completion)	:	132.8 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

Measured temperature and pressure profiles

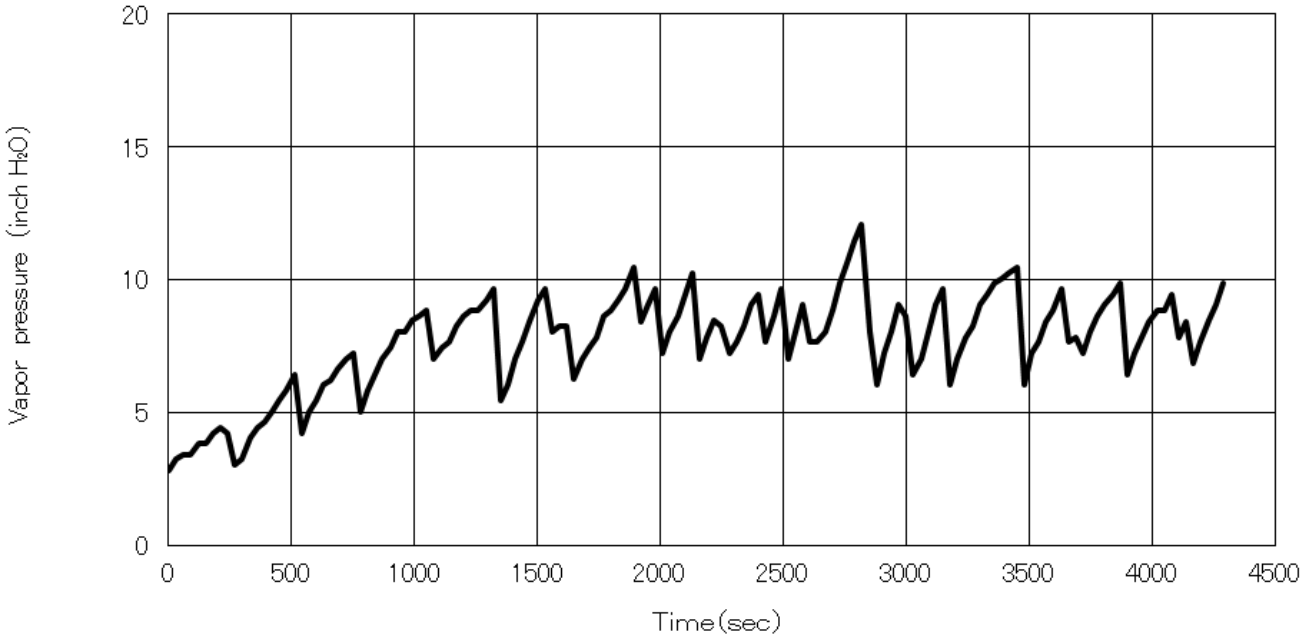
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.3	1200	99.9	2400	101.7	3600	104.2
30	96.3	1230	99.9	2430	101.8	3630	104.2
60	96.3	1260	99.9	2460	101.8	3660	104.4
90	96.3	1290	100.0	2490	101.8	3690	104.4
120	96.4	1320	100.0	2520	101.8	3720	104.5
150	96.4	1350	100.2	2550	102.0	3750	104.5
180	96.6	1380	100.2	2580	101.8	3780	104.5
210	96.6	1410	100.2	2610	102.0	3810	104.5
240	96.6	1440	100.4	2640	102.2	3840	104.5
270	96.8	1470	100.4	2670	102.2	3870	104.7
300	96.6	1500	100.2	2700	102.0	3900	104.7
330	96.8	1530	100.2	2730	102.2	3930	104.7
360	97.0	1560	100.4	2760	102.0	3960	104.9
390	97.2	1590	100.4	2790	102.0	3990	104.9
420	97.2	1620	100.4	2820	102.0	4020	104.9
450	97.5	1650	100.6	2850	102.2	4050	104.9
480	97.7	1680	100.8	2880	102.2	4080	105.1
510	97.7	1710	100.8	2910	102.4	4110	105.1
540	97.9	1740	100.8	2940	102.6	4140	105.3
570	98.1	1770	100.9	2970	102.6	4170	105.3
600	98.2	1800	100.8	3000	102.6	4200	105.3
630	98.4	1830	100.9	3030	102.7	4230	105.3
660	98.4	1860	100.9	3060	102.9	4260	105.4
690	98.6	1890	100.9	3090	102.9	4290	105.4
720	98.6	1920	100.8	3120	103.1		
750	98.8	1950	101.1	3150	103.1		
780	99.0	1980	101.1	3180	103.1		
810	99.0	2010	101.1	3210	103.3		
840	99.1	2040	100.9	3240	103.3		
870	99.3	2070	100.9	3270	103.3		
900	99.1	2100	101.1	3300	103.6		
930	99.1	2130	101.1	3330	103.5		
960	99.3	2160	101.3	3360	103.6		
990	99.3	2190	101.3	3390	103.6		
1020	99.3	2220	101.5	3420	103.6		
1050	99.5	2250	101.5	3450	103.8		
1080	99.5	2280	101.7	3480	104.0		
1110	99.5	2310	101.5	3510	103.8		
1140	99.7	2340	101.7	3540	103.8		
1170	99.9	2370	101.7	3570	104.0		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

[Test vehicle]

Model name	:	TOYOTA CROWN AWD
Data is representative for	:	TOYOTA CROWN AWD

[Test procedure]	:	CARB method

[Test conditions]

Date	:	03/15/2022
Ambient air temperature (at initiation)	:	106.3 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	138.2 °F
Track surface temperature (at completion)	:	140.5° F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	03/16/2022
Ambient air temperature (at initiation)	:	105.8 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	141.6° F
Track surface temperature (at completion)	:	144.7 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

Measured temperature and pressure profiles

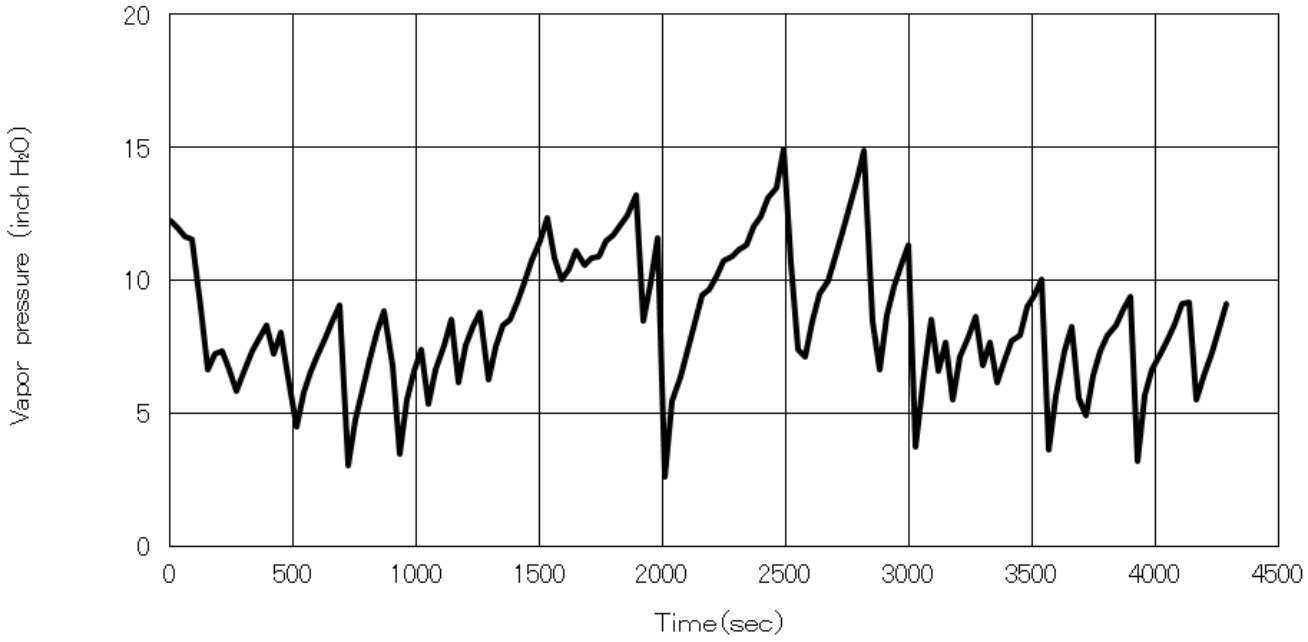
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.0	1200	109.8	2400	113.4	3600	117.1
30	106.0	1230	109.4	2430	113.7	3630	117.1
60	106.2	1260	109.8	2460	113.7	3660	117.9
90	106.2	1290	109.8	2490	113.9	3690	117.7
120	106.2	1320	109.8	2520	113.9	3720	117.3
150	106.3	1350	109.9	2550	113.7	3750	117.7
180	106.3	1380	110.1	2580	114.1	3780	117.9
210	106.3	1410	110.3	2610	113.7	3810	117.9
240	106.3	1440	110.5	2640	114.1	3840	118.2
270	106.3	1470	110.5	2670	114.3	3870	118.2
300	106.3	1500	110.7	2700	114.4	3900	118.2
330	106.5	1530	110.7	2730	114.6	3930	118.4
360	106.7	1560	110.7	2760	114.6	3960	118.2
390	106.5	1590	110.8	2790	114.6	3990	118.4
420	106.9	1620	111.0	2820	114.6	4020	118.6
450	107.1	1650	111.0	2850	114.6	4050	118.6
480	106.9	1680	111.2	2880	114.8	4080	118.8
510	106.9	1710	111.2	2910	115.0	4110	118.8
540	107.1	1740	111.4	2940	115.2	4140	118.9
570	107.2	1770	111.7	2970	115.3	4170	118.8
600	107.1	1800	111.6	3000	115.3	4200	119.1
630	107.2	1830	111.6	3030	115.0	4230	119.3
660	107.4	1860	111.9	3060	115.3	4260	119.3
690	107.4	1890	111.9	3090	115.3	4290	119.5
720	107.4	1920	111.9	3120	115.3		
750	107.6	1950	111.9	3150	115.9		
780	108.0	1980	112.3	3180	115.9		
810	107.8	2010	111.9	3210	115.7		
840	107.8	2040	112.3	3240	116.1		
870	108.0	2070	112.3	3270	116.4		
900	108.0	2100	112.5	3300	116.2		
930	108.1	2130	112.5	3330	116.6		
960	108.1	2160	112.5	3360	116.2		
990	108.5	2190	112.8	3390	116.6		
1020	108.5	2220	112.8	3420	116.6		
1050	108.7	2250	113.0	3450	117.0		
1080	108.7	2280	113.0	3480	117.0		
1110	109.2	2310	113.0	3510	117.1		
1140	109.0	2340	113.2	3540	117.1		
1170	109.4	2370	113.4	3570	117.0		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

[Test vehicle]

Model name	:	TOYOTA CROWN AWD
Data is representative for	:	TOYOTA CROWN AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	03/15/2022
Ambient air temperature (at initiation)	:	96.1 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	128.7 °F
Track surface temperature (at completion)	:	131.2° F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	03/16/2022
Ambient air temperature (at initiation)	:	97.0 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	131.5° F
Track surface temperature (at completion)	:	134.8 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

Measured temperature and pressure profiles

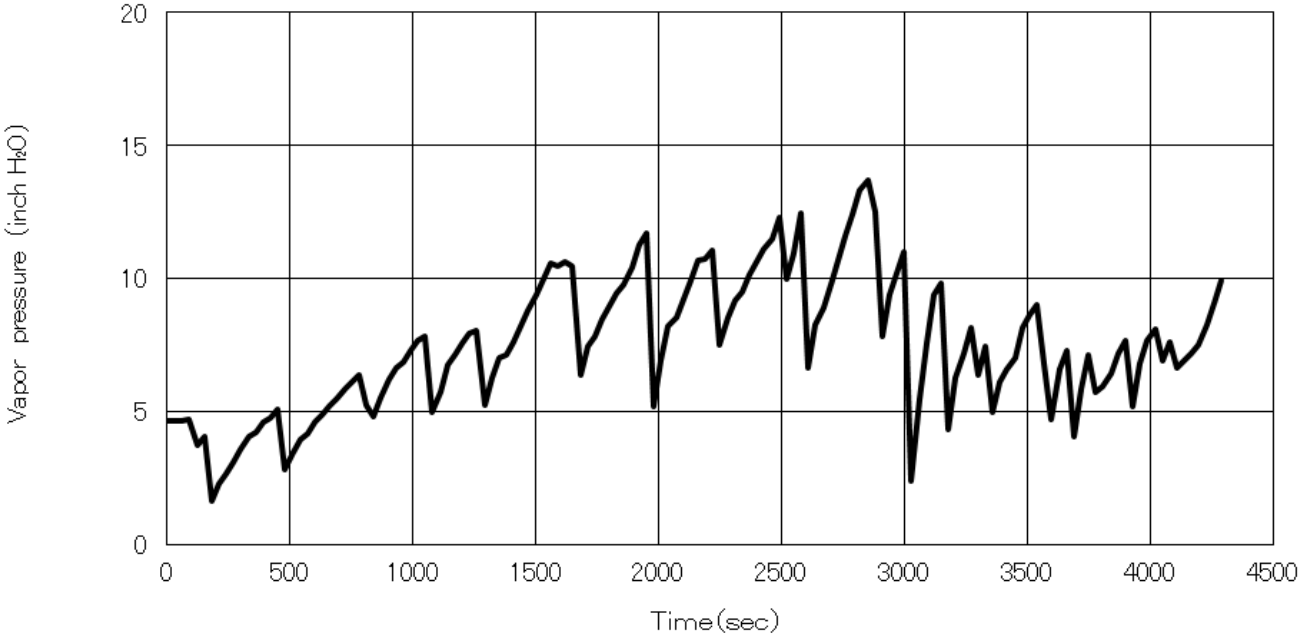
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.9	1200	98.2	2400	101.1	3600	104.5
30	95.9	1230	98.2	2430	101.1	3630	104.5
60	95.9	1260	98.4	2460	101.5	3660	104.7
90	96.1	1290	98.4	2490	101.3	3690	104.7
120	96.1	1320	98.6	2520	101.3	3720	104.7
150	96.1	1350	98.4	2550	101.3	3750	104.7
180	96.3	1380	98.6	2580	101.5	3780	105.1
210	96.1	1410	98.8	2610	101.5	3810	105.1
240	95.9	1440	98.8	2640	101.7	3840	105.3
270	95.9	1470	99.0	2670	101.7	3870	105.3
300	95.9	1500	99.0	2700	101.8	3900	105.3
330	96.1	1530	99.0	2730	101.8	3930	105.4
360	96.1	1560	98.8	2760	102.0	3960	105.4
390	96.3	1590	99.1	2790	102.0	3990	105.6
420	96.4	1620	99.1	2820	102.0	4020	105.8
450	96.6	1650	99.3	2850	102.0	4050	105.8
480	96.4	1680	99.1	2880	102.2	4080	106.0
510	96.6	1710	99.3	2910	102.4	4110	106.0
540	96.6	1740	99.5	2940	102.6	4140	106.2
570	96.8	1770	99.7	2970	102.6	4170	106.0
600	96.6	1800	99.5	3000	102.6	4200	106.2
630	96.6	1830	99.7	3030	102.2	4230	106.3
660	96.8	1860	100.0	3060	102.4	4260	106.5
690	96.8	1890	99.9	3090	102.6	4290	106.5
720	96.8	1920	99.9	3120	102.6		
750	97.0	1950	100.0	3150	102.7		
780	97.2	1980	100.0	3180	103.1		
810	97.0	2010	100.0	3210	103.1		
840	97.0	2040	100.0	3240	103.5		
870	97.2	2070	100.4	3270	103.6		
900	97.2	2100	100.4	3300	103.5		
930	97.2	2130	100.2	3330	103.6		
960	97.3	2160	100.4	3360	103.5		
990	97.5	2190	100.6	3390	103.8		
1020	97.5	2220	100.6	3420	104.0		
1050	97.9	2250	100.8	3450	104.4		
1080	97.9	2280	100.6	3480	104.2		
1110	98.1	2310	100.9	3510	104.4		
1140	97.9	2340	100.9	3540	104.4		
1170	98.2	2370	101.3	3570	104.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

[Test vehicle]

Model name	:	CAMRY HYBRID AWD
Data is representative for	:	CAMRY HYBRID, CAMRY HYBRID AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	06/06/2023
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	106.7 °F
Track surface temperature (at initiation)	:	180.5 °F
Track surface temperature (at completion)	:	181.0 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	06/06/2023
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	106.7°F
Track surface temperature (at initiation)	:	180.7 °F
Track surface temperature (at completion)	:	181.8 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

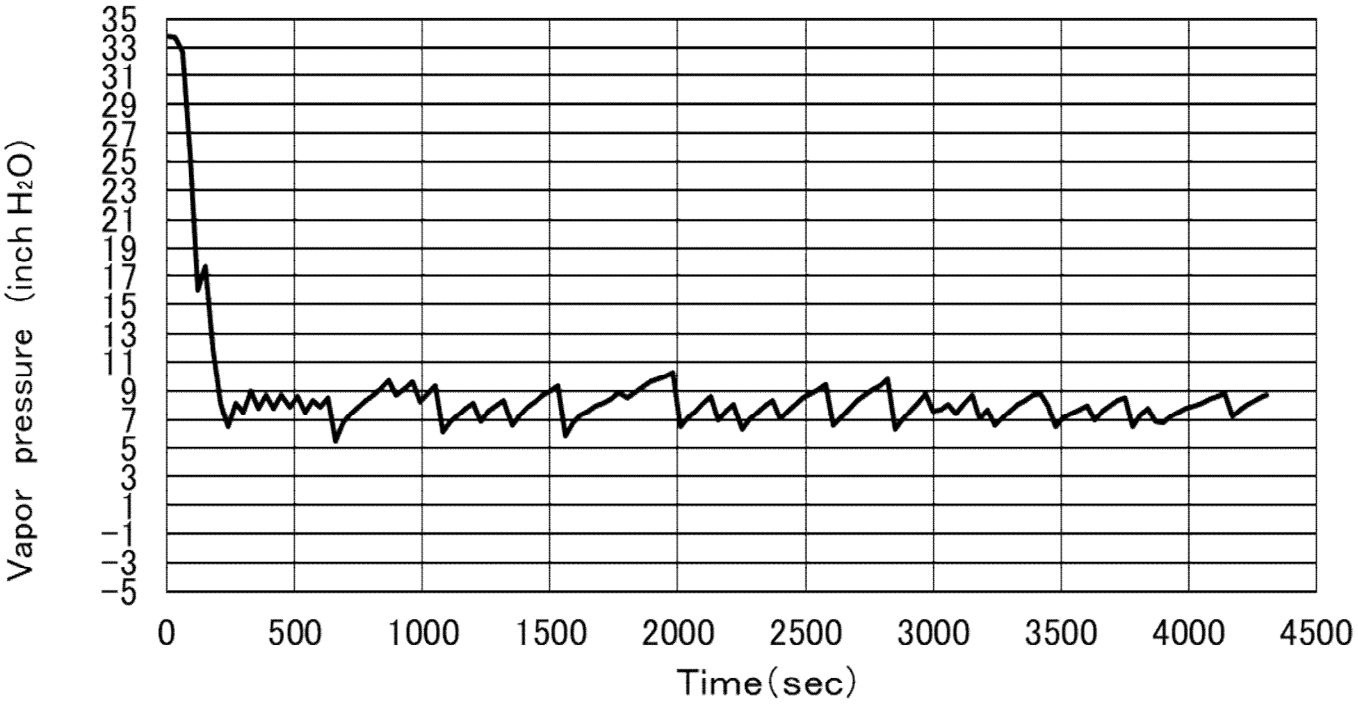
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.6	1200	107.1	2400	108.5	3600	110.3
30	105.6	1230	107.1	2430	108.5	3630	110.3
60	105.8	1260	107.1	2460	108.5	3660	110.5
90	106.0	1290	107.2	2490	108.5	3690	110.5
120	105.8	1320	107.2	2520	108.5	3720	110.5
150	106.0	1350	107.2	2550	108.7	3750	110.5
180	106.0	1380	107.2	2580	108.7	3780	110.5
210	106.0	1410	107.2	2610	108.7	3810	110.7
240	106.2	1440	107.2	2640	108.7	3840	110.7
270	106.2	1470	107.2	2670	108.7	3870	110.7
300	106.2	1500	107.2	2700	108.9	3900	110.7
330	106.3	1530	107.4	2730	108.9	3930	110.8
360	106.3	1560	107.2	2760	108.9	3960	110.8
390	106.3	1590	107.4	2790	108.9	3990	110.8
420	106.3	1620	107.4	2820	108.9	4020	110.8
450	106.3	1650	107.4	2850	108.9	4050	111.0
480	106.3	1680	107.6	2880	109.0	4080	110.8
510	106.3	1710	107.6	2910	109.2	4110	111.0
540	106.3	1740	107.6	2940	109.2	4140	111.0
570	106.3	1770	107.6	2970	109.2	4170	111.0
600	106.5	1800	107.8	3000	109.2	4200	111.0
630	106.5	1830	107.8	3030	109.4	4230	111.0
660	106.5	1860	107.8	3060	109.4	4260	111.0
690	106.5	1890	107.8	3090	109.6	4290	111.0
720	106.5	1920	107.8	3120	109.6	4303	111.0
750	106.7	1950	107.8	3150	109.8		
780	106.7	1980	108.0	3180	109.8		
810	106.7	2010	107.8	3210	109.8		
840	106.7	2040	108.0	3240	109.9		
870	106.7	2070	108.0	3270	109.8		
900	106.7	2100	108.0	3300	109.9		
930	106.9	2130	108.0	3330	109.9		
960	106.9	2160	108.0	3360	109.9		
990	106.9	2190	108.1	3390	109.9		
1020	106.9	2220	108.1	3420	110.1		
1050	106.9	2250	108.3	3450	110.1		
1080	107.1	2280	108.3	3480	110.1		
1110	107.1	2310	108.3	3510	110.1		
1140	107.1	2340	108.5	3540	110.3		
1170	107.1	2370	108.5	3570	110.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

[Test vehicle]

Model name	:	CAMRY HYBRID AWD
Data is representative for	:	CAMRY HYBRID, CAMRY HYBRID AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	06/05/2023
Ambient air temperature (at initiation)	:	95.7 °F
Ambient air temperature (at completion)	:	96.1 °F
Track surface temperature (at initiation)	:	162.0 °F
Track surface temperature (at completion)	:	165.4 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	06/05/2023
Ambient air temperature (at initiation)	:	95.7 °F
Ambient air temperature (at completion)	:	96.1 °F
Track surface temperature (at initiation)	:	162.7 °F
Track surface temperature (at completion)	:	163.2 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

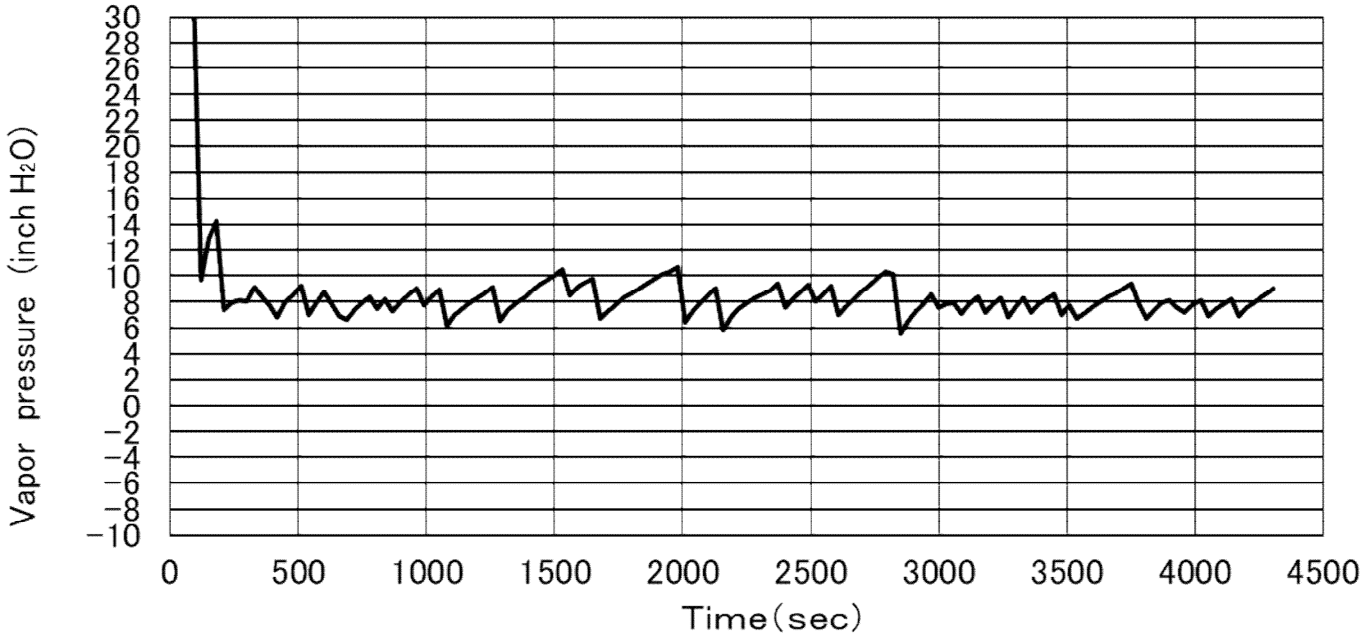
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.7	1200	97.2	2400	98.4	3600	100.4
30	95.9	1230	97.2	2430	98.4	3630	100.4
60	95.9	1260	97.2	2460	98.4	3660	100.6
90	95.9	1290	97.2	2490	98.6	3690	100.6
120	95.9	1320	97.2	2520	98.4	3720	100.6
150	96.1	1350	97.2	2550	98.6	3750	100.8
180	96.3	1380	97.3	2580	98.6	3780	100.8
210	96.3	1410	97.3	2610	98.6	3810	100.8
240	96.1	1440	97.3	2640	98.6	3840	100.9
270	96.3	1470	97.2	2670	98.8	3870	100.9
300	96.4	1500	97.2	2700	98.8	3900	100.9
330	96.3	1530	97.2	2730	98.8	3930	100.9
360	96.3	1560	97.3	2760	98.8	3960	100.9
390	96.4	1590	97.3	2790	98.8	3990	100.9
420	96.4	1620	97.3	2820	98.8	4020	100.9
450	96.4	1650	97.3	2850	99.0	4050	101.1
480	96.4	1680	97.5	2880	99.1	4080	101.1
510	96.4	1710	97.5	2910	99.1	4110	101.1
540	96.4	1740	97.7	2940	99.3	4140	101.1
570	96.4	1770	97.7	2970	99.3	4170	101.1
600	96.4	1800	97.7	3000	99.3	4200	101.3
630	96.6	1830	97.7	3030	99.5	4230	101.3
660	96.4	1860	97.7	3060	99.5	4260	101.3
690	96.6	1890	97.7	3090	99.7	4290	101.3
720	96.4	1920	97.7	3120	99.7	4303	101.3
750	96.6	1950	97.7	3150	99.9		
780	96.6	1980	97.9	3180	99.9		
810	96.8	2010	97.9	3210	99.9		
840	96.8	2040	97.9	3240	99.9		
870	96.8	2070	97.9	3270	99.9		
900	96.8	2100	97.9	3300	100.0		
930	96.8	2130	98.1	3330	100.0		
960	96.8	2160	98.1	3360	100.0		
990	96.8	2190	98.1	3390	100.2		
1020	97.0	2220	98.1	3420	100.2		
1050	97.0	2250	98.1	3450	100.2		
1080	97.0	2280	98.2	3480	100.2		
1110	97.0	2310	98.2	3510	100.2		
1140	97.0	2340	98.4	3540	100.4		
1170	97.0	2370	98.4	3570	100.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle
Test group	:	PTYXJ02.4P3L
Vehicle ID	:	23-TL1H
Rep. car/truck line	:	RX 500h AWD
Rep. vehicle model	:	TALH17L-CWTGTA
Displacement	:	146.0 CID
Transmission	:	PC60-A
Test weight	:	5,000 lbs.
Road load	:	15.4 HP
Evap. code	:	TL1G

		Refueling emission vehicle
Test group	:	LTYXT02.5P34
Vehicle ID	:	20-AU1H
Rep. car/truck line	:	HIGHLANDER HYBRID AWD
Rep. vehicle model	:	AXUH78L-ARXGHA
Displacement	:	151.8 CID
Transmission	:	P810-B
Test weight	:	5,000 lbs.
Road load	:	15.4 HP
Evap. code	:	AU1G

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.007	(g/mile)
Hot soak loss		:	0.0433	(g/test)
3DBL	1st day	:	0.1116*1	(g/test)
	2nd day	:	0.0695	(g/test)
	3rd day	:	0.0589	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0292	(g/mile)
2DBL	1st day	:	0.1048*1	(g/test)
	2nd day	:	0.0639	(g/test)

Refueling sequence test results

Refueling emission		:	0.003	(g/gal)

*1: DBL is added key off monitor loss (0.0002 gram).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J42.

Evaporative emission test log

Vehicle Description

	Evaporative emission vehicle	Refueling emission vehicle
Test group	: PTYXV02.5P33	JTYXV02.5P33
Vehicle ID	: 23-AZ1H	18-AV3H
Rep. car/truck line	: ES 300h	CAMRY HYBRID
Rep. vehicle model	: AXZH11L-BEXGBA	AXVH71L-CEXSBA
Displacement	: 151.8CID	151.8CID
Transmission	: P710-C	P710-A
Test weight	: 4,000 lbs.	3,875 lbs.
Road load	: 10.8 HP	10.2 HP
Evap. code	: AZ1W	AV1W

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.0328	(g/test)
3DBL	1st day	:	0.1014	(g/test)
	2nd day	:	0.0523	(g/test)
	3rd day	:	0.0356	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0258	(g/mile)
2DBL	1st day	:	0.1247*1	(g/test)
	2nd day	:	0.0626	(g/test)

Refueling sequence test results

Refueling emission		:	0.0005	(g/gal)

*1: DBL is added key off monitor loss (0.0003 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

[Test vehicle]

Model name	:	COROLLA HYBRID AWD
Data is representative for	:	COROLLA HYBRID, COROLLA HYBRID AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	02/23/2024
Ambient air temperature (at initiation)	:	106.2 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	175.8 °F
Track surface temperature (at completion)	:	179.6 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/24/2024
Ambient air temperature (at initiation)	:	105.1 °F
Ambient air temperature (at completion)	:	110.3 °F
Track surface temperature (at initiation)	:	173.7 °F
Track surface temperature (at completion)	:	179.4 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

Measured temperature and pressure profiles

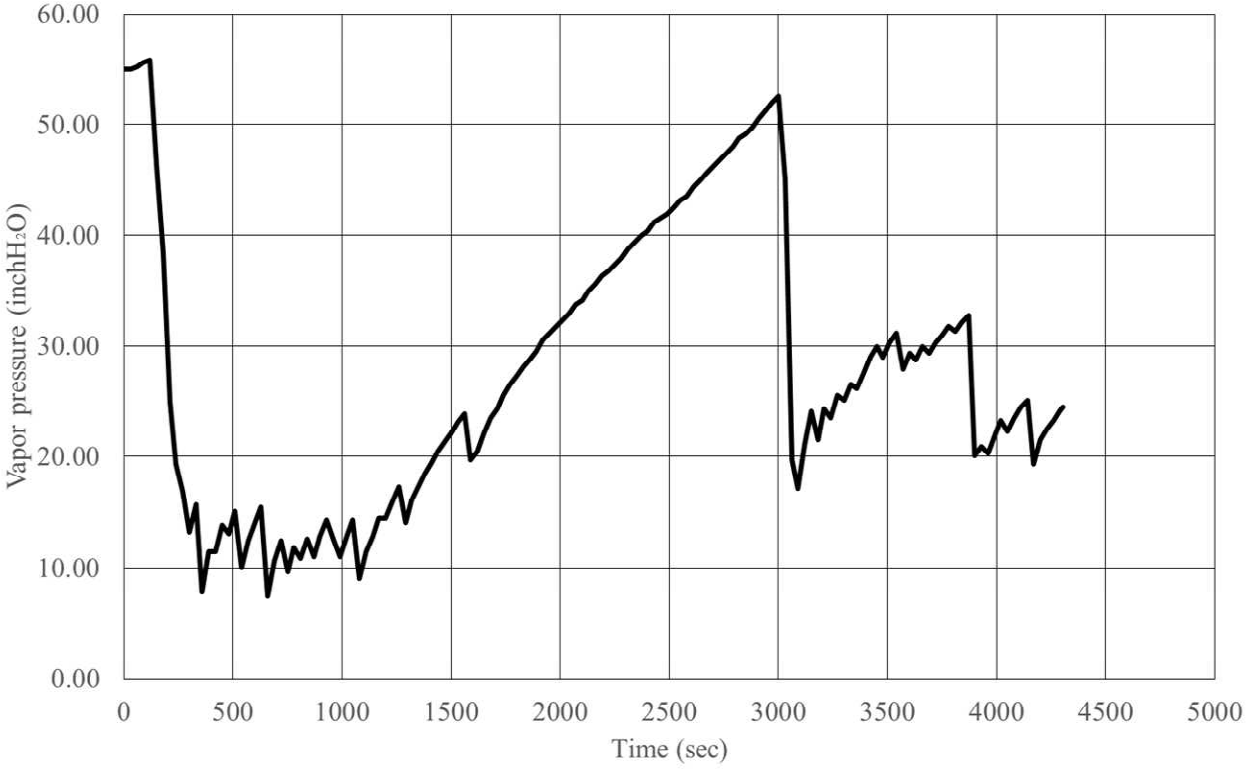
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	103.8	1200	110.5	2400	114.3	3600	118.4
30	103.9	1230	110.7	2430	114.4	3630	118.4
60	104.2	1260	110.7	2460	114.8	3660	118.4
90	104.6	1290	110.7	2490	114.8	3690	118.6
120	105.1	1320	110.8	2520	115.0	3720	118.6
150	105.1	1350	110.8	2550	115.0	3750	118.6
180	105.4	1380	111.0	2580	115.3	3780	118.9
210	105.8	1410	111.0	2610	115.2	3810	118.8
240	106.0	1440	111.2	2640	115.2	3840	118.9
270	106.2	1470	111.4	2670	115.5	3870	119.1
300	106.3	1500	111.4	2700	115.7	3900	119.1
330	106.7	1530	111.4	2730	115.9	3930	119.1
360	106.9	1560	111.4	2760	115.9	3960	119.1
390	107.1	1590	111.7	2790	115.9	3990	119.1
420	107.2	1620	111.7	2820	116.1	4020	119.3
450	107.6	1650	111.9	2850	115.9	4050	119.1
480	107.6	1680	111.9	2880	115.9	4080	119.3
510	107.8	1710	111.9	2910	115.5	4110	119.1
540	107.8	1740	112.1	2940	115.9	4140	119.3
570	108.0	1770	112.3	2970	116.4	4170	119.3
600	108.1	1800	112.3	3000	116.4	4200	119.5
630	108.3	1830	112.5	3030	116.1	4230	119.5
660	108.3	1860	112.6	3060	116.2	4260	119.7
690	108.5	1890	112.6	3090	116.6	4290	119.7
720	108.7	1920	112.6	3120	117.0	4304	119.7
750	108.7	1950	113.0	3150	117.3		
780	108.7	1980	113.2	3180	117.5		
810	108.9	2010	113.0	3210	117.7		
840	108.9	2040	113.2	3240	117.7		
870	109.0	2070	113.4	3270	117.9		
900	109.2	2100	113.5	3300	117.9		
930	109.4	2130	113.5	3330	117.9		
960	109.6	2160	113.5	3360	118.0		
990	109.8	2190	113.7	3390	118.2		
1020	109.9	2220	113.9	3420	118.2		
1050	110.1	2250	113.9	3450	118.2		
1080	110.1	2280	113.9	3480	118.2		
1110	110.3	2310	113.9	3510	118.2		
1140	110.1	2340	114.1	3540	118.2		
1170	110.3	2370	114.3	3570	118.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

[Test vehicle]

Model name	:	COROLLA HYBRID AWD
Data is representative for	:	COROLLA HYBRID, COROLLA HYBRID AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	02/23/2024
Ambient air temperature (at initiation)	:	95.5 °F
Ambient air temperature (at completion)	:	99.7 °F
Track surface temperature (at initiation)	:	153.0 °F
Track surface temperature (at completion)	:	158.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/24/2024
Ambient air temperature (at initiation)	:	96.6 °F
Ambient air temperature (at completion)	:	99.9 °F
Track surface temperature (at initiation)	:	153.3 °F
Track surface temperature (at completion)	:	157.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

Measured temperature and pressure profiles

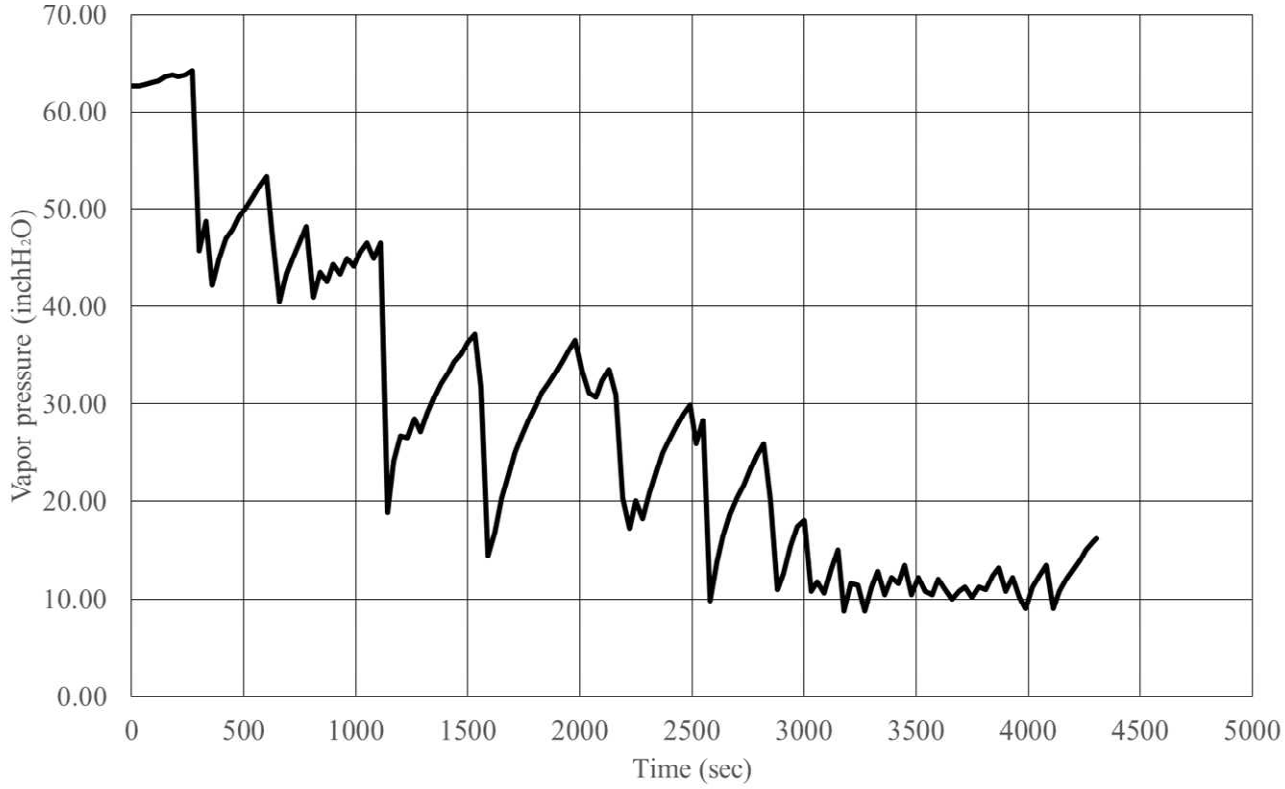
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.9	1200	101.3	2400	105.8	3600	110.1
30	95.9	1230	101.3	2430	106.0	3630	110.3
60	96.1	1260	101.5	2460	106.0	3660	110.5
90	96.3	1290	101.7	2490	106.2	3690	110.5
120	96.4	1320	101.5	2520	106.3	3720	110.5
150	96.6	1350	101.8	2550	106.3	3750	110.8
180	96.8	1380	101.8	2580	106.7	3780	110.8
210	97.0	1410	102.0	2610	106.7	3810	110.8
240	97.0	1440	102.2	2640	106.9	3840	111.0
270	97.3	1470	102.2	2670	106.9	3870	111.2
300	97.3	1500	102.4	2700	107.2	3900	111.0
330	97.7	1530	102.4	2730	107.2	3930	111.2
360	97.9	1560	102.4	2760	107.4	3960	111.2
390	98.1	1590	102.6	2790	107.4	3990	111.2
420	98.1	1620	102.9	2820	107.6	4020	111.4
450	98.2	1650	102.9	2850	107.4	4050	111.4
480	98.4	1680	102.9	2880	107.2	4080	111.6
510	98.4	1710	102.9	2910	107.2	4110	111.4
540	98.6	1740	103.1	2940	107.6	4140	111.7
570	98.8	1770	103.3	2970	108.1	4170	111.7
600	98.8	1800	103.5	3000	108.0	4200	111.7
630	99.0	1830	103.6	3030	107.6	4230	111.9
660	99.1	1860	103.6	3060	107.8	4260	111.9
690	99.1	1890	103.8	3090	108.1	4290	111.9
720	99.3	1920	104.0	3120	108.7	4304	111.9
750	99.3	1950	104.0	3150	108.9		
780	99.5	1980	104.2	3180	109.2		
810	99.5	2010	104.2	3210	109.4		
840	99.7	2040	104.4	3240	109.4		
870	99.9	2070	104.5	3270	109.6		
900	99.9	2100	104.7	3300	109.6		
930	100.0	2130	104.7	3330	109.8		
960	100.0	2160	104.9	3360	109.8		
990	100.2	2190	104.9	3390	109.9		
1020	100.6	2220	105.1	3420	109.9		
1050	100.8	2250	105.3	3450	110.1		
1080	100.8	2280	105.3	3480	109.9		
1110	100.8	2310	105.3	3510	110.1		
1140	100.9	2340	105.4	3540	110.1		
1170	101.1	2370	105.8	3570	110.1		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

[Test vehicle]

Model name	:	COROLLA CROSS HYBRID AWD
Data is representative for	:	COROLLA CROSS HYBRID AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	02/24/2022
Ambient air temperature (at initiation)	:	106.2 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	137.7 °F
Track surface temperature (at completion)	:	140.5 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/24/2022
Ambient air temperature (at initiation)	:	105.6°F
Ambient air temperature (at completion)	:	110.3°F
Track surface temperature (at initiation)	:	137.8 °F
Track surface temperature (at completion)	:	140.7 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

Measured temperature and pressure profiles

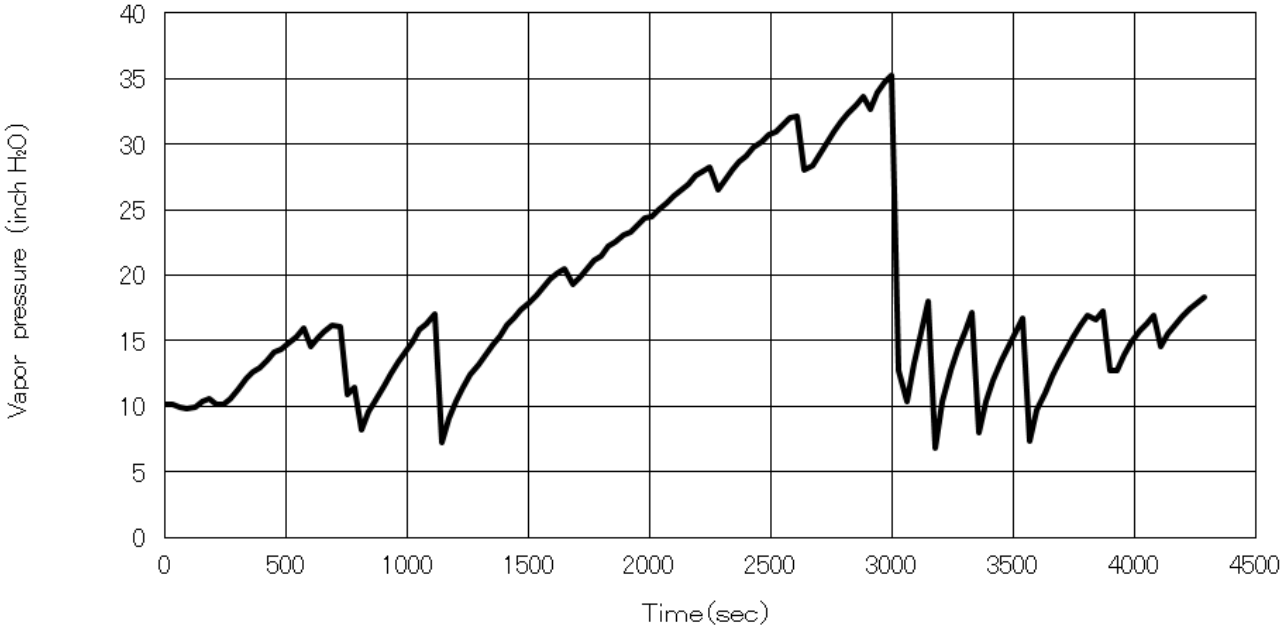
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.2	1200	110.3	2400	113.9	3600	117.9
30	106.2	1230	110.3	2430	114.1	3630	118.0
60	106.2	1260	110.5	2460	114.1	3660	118.0
90	106.2	1290	110.5	2490	114.3	3690	118.2
120	106.3	1320	110.7	2520	114.4	3720	118.2
150	106.5	1350	110.7	2550	114.4	3750	118.4
180	106.5	1380	110.8	2580	114.6	3780	118.4
210	106.5	1410	110.8	2610	114.6	3810	118.6
240	106.9	1440	111.2	2640	114.6	3840	118.6
270	107.1	1470	111.2	2670	114.8	3870	118.6
300	107.2	1500	111.2	2700	115.0	3900	118.6
330	107.4	1530	111.4	2730	115.2	3930	118.8
360	107.4	1560	111.4	2760	115.3	3960	118.8
390	107.4	1590	111.2	2790	115.5	3990	118.9
420	107.6	1620	111.4	2820	115.5	4020	118.9
450	107.8	1650	111.6	2850	115.7	4050	118.9
480	107.8	1680	111.6	2880	115.7	4080	119.1
510	108.0	1710	111.7	2910	115.9	4110	118.9
540	108.1	1740	111.9	2940	115.9	4140	119.1
570	108.1	1770	111.9	2970	115.9	4170	119.1
600	108.1	1800	111.9	3000	115.9	4200	119.3
630	108.3	1830	112.1	3030	116.1	4230	119.3
660	108.5	1860	112.1	3060	116.2	4260	119.5
690	108.5	1890	112.3	3090	116.4	4290	119.5
720	108.3	1920	112.5	3120	116.4		
750	108.5	1950	112.5	3150	116.6		
780	108.7	1980	112.6	3180	116.6		
810	108.9	2010	112.6	3210	116.8		
840	109.0	2040	112.6	3240	117.0		
870	109.2	2070	112.8	3270	117.0		
900	109.2	2100	113.0	3300	117.1		
930	109.4	2130	113.2	3330	117.3		
960	109.4	2160	113.2	3360	117.1		
990	109.6	2190	113.2	3390	117.3		
1020	109.6	2220	113.2	3420	117.3		
1050	109.8	2250	113.4	3450	117.5		
1080	109.8	2280	113.5	3480	117.5		
1110	109.9	2310	113.5	3510	117.7		
1140	109.9	2340	113.7	3540	117.7		
1170	110.3	2370	113.9	3570	117.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

[Test vehicle]

Model name	:	COROLLA CROSS HYBRID AWD
Data is representative for	:	COROLLA CROSS HYBRID AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	02/24/2022
Ambient air temperature (at initiation)	:	95.7 °F
Ambient air temperature (at completion)	:	100.0 °F
Track surface temperature (at initiation)	:	126.7 °F
Track surface temperature (at completion)	:	129.6 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/25/2022
Ambient air temperature (at initiation)	:	95.0 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	130.6 °F
Track surface temperature (at completion)	:	133.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

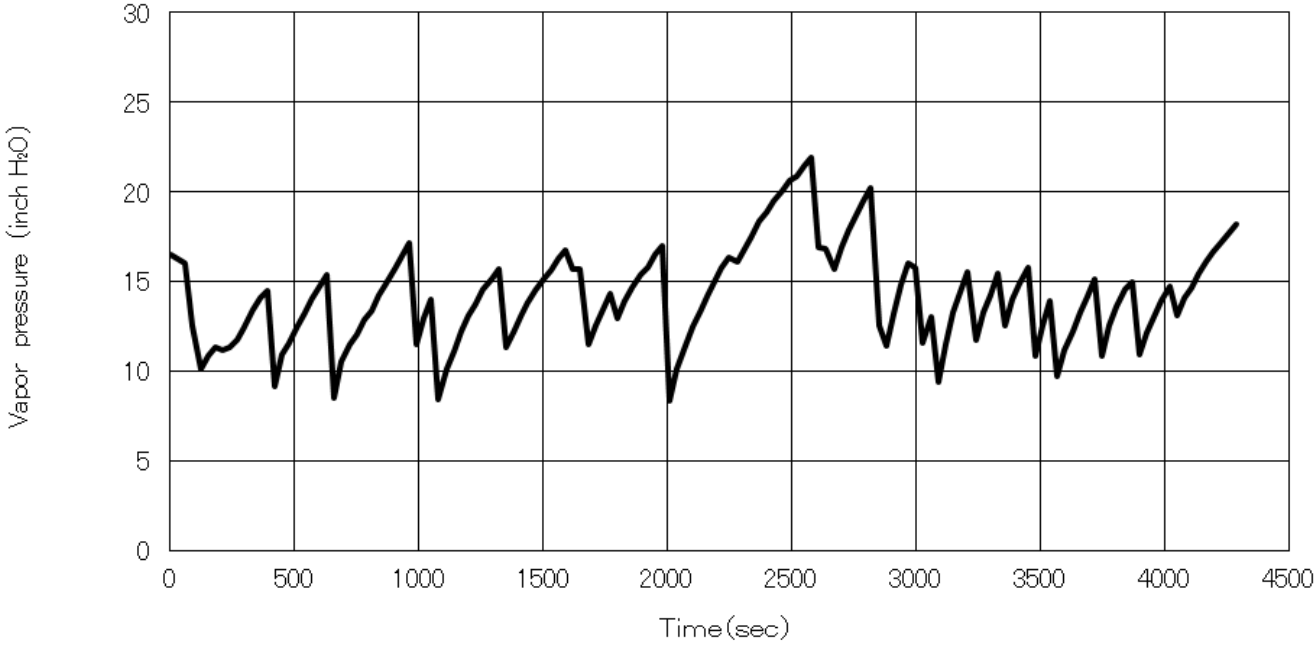
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.8	1200	100.6	2400	103.8	3600	107.6
30	96.8	1230	100.8	2430	104.0	3630	107.8
60	96.8	1260	100.8	2460	104.0	3660	108.0
90	96.8	1290	100.8	2490	104.0	3690	108.1
120	97.0	1320	100.9	2520	104.0	3720	108.3
150	97.2	1350	100.9	2550	104.2	3750	108.3
180	97.2	1380	101.1	2580	104.4	3780	108.3
210	97.2	1410	101.1	2610	104.4	3810	108.3
240	97.5	1440	101.1	2640	104.4	3840	108.5
270	97.7	1470	101.3	2670	104.7	3870	108.7
300	97.9	1500	101.3	2700	104.7	3900	108.5
330	98.1	1530	101.3	2730	104.9	3930	108.7
360	98.2	1560	101.3	2760	104.9	3960	108.7
390	98.2	1590	101.5	2790	104.9	3990	108.9
420	98.2	1620	101.5	2820	105.1	4020	108.9
450	98.4	1650	101.5	2850	105.1	4050	108.9
480	98.4	1680	101.7	2880	105.3	4080	109.0
510	98.6	1710	101.8	2910	105.4	4110	109.0
540	98.6	1740	101.8	2940	105.4	4140	109.2
570	98.8	1770	101.8	2970	105.4	4170	109.2
600	98.8	1800	102.0	3000	105.4	4200	109.4
630	98.8	1830	102.2	3030	105.8	4230	109.6
660	99.0	1860	102.2	3060	106.0	4260	109.4
690	99.0	1890	102.2	3090	106.2	4290	109.6
720	99.0	1920	102.2	3120	106.3		
750	99.1	1950	102.4	3150	106.3		
780	99.1	1980	102.6	3180	106.3		
810	99.3	2010	102.6	3210	106.5		
840	99.5	2040	102.6	3240	106.7		
870	99.5	2070	102.9	3270	106.7		
900	99.9	2100	102.9	3300	106.7		
930	99.9	2130	103.1	3330	107.1		
960	100.0	2160	103.1	3360	107.1		
990	100.0	2190	103.1	3390	107.2		
1020	100.0	2220	103.1	3420	107.2		
1050	100.2	2250	103.3	3450	107.4		
1080	100.0	2280	103.5	3480	107.2		
1110	100.4	2310	103.5	3510	107.6		
1140	100.4	2340	103.6	3540	107.4		
1170	100.4	2370	103.8	3570	107.6		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

[Test vehicle]

Model name	:	PRIUS
Data is representative for	:	PRIUS, PRIUS AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	05/24/2022
Ambient air temperature (at initiation)	:	105.3 °F
Ambient air temperature (at completion)	:	110.5 °F
Track surface temperature (at initiation)	:	142.0 °F
Track surface temperature (at completion)	:	145.6 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	05/25/2022
Ambient air temperature (at initiation)	:	105.3°F
Ambient air temperature (at completion)	:	110.3°F
Track surface temperature (at initiation)	:	139.6 °F
Track surface temperature (at completion)	:	145.4 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

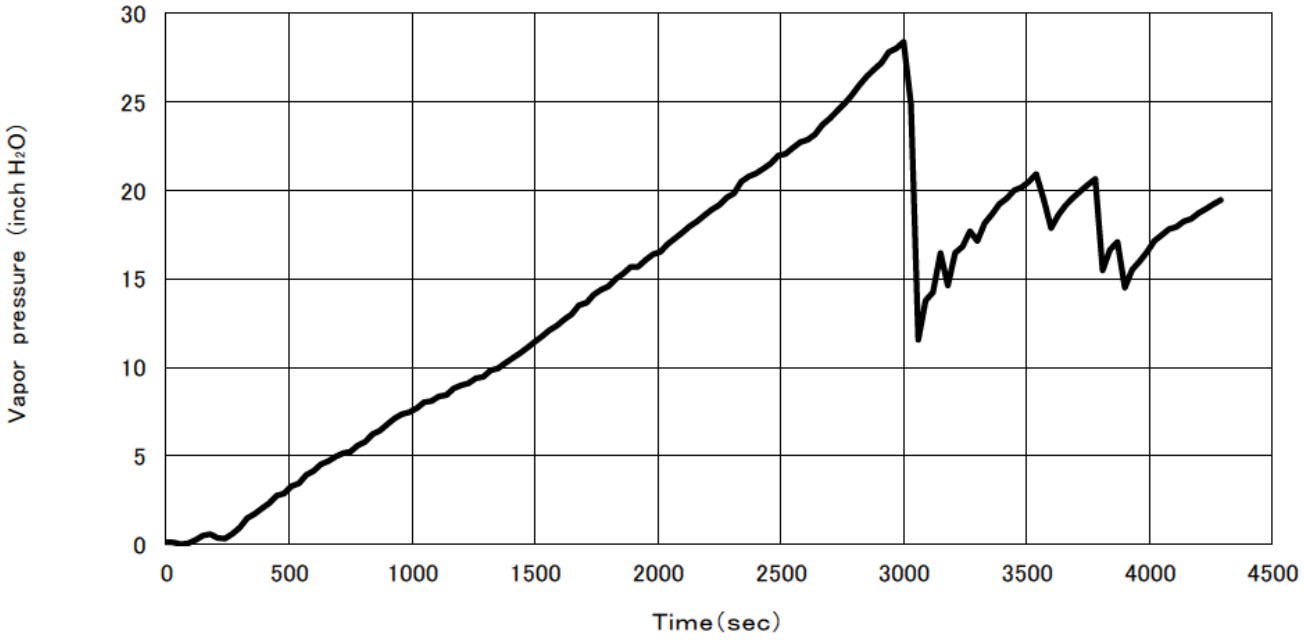
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.0	1200	111.0	2400	113.4	3600	116.1
30	106.2	1230	111.0	2430	113.5	3630	116.2
60	106.2	1260	111.0	2460	113.5	3660	116.2
90	106.3	1290	111.2	2490	113.5	3690	116.4
120	106.5	1320	111.2	2520	113.5	3720	116.4
150	106.9	1350	111.2	2550	113.7	3750	116.4
180	107.1	1380	111.2	2580	113.5	3780	116.4
210	107.2	1410	111.4	2610	113.7	3810	116.4
240	107.4	1440	111.4	2640	113.7	3840	116.6
270	107.6	1470	111.4	2670	113.9	3870	116.6
300	108.0	1500	111.4	2700	113.9	3900	116.6
330	108.1	1530	111.4	2730	114.1	3930	116.8
360	108.3	1560	111.4	2760	114.1	3960	116.8
390	108.5	1590	111.6	2790	114.1	3990	116.8
420	108.7	1620	111.6	2820	114.1	4020	116.8
450	108.9	1650	111.7	2850	114.1	4050	116.8
480	109.0	1680	111.7	2880	114.1	4080	116.8
510	109.2	1710	111.9	2910	114.3	4110	116.8
540	109.4	1740	111.9	2940	114.3	4140	116.8
570	109.4	1770	111.9	2970	114.4	4170	117.0
600	109.6	1800	111.9	3000	114.4	4200	117.0
630	109.8	1830	112.1	3030	114.6	4230	117.0
660	109.8	1860	112.1	3060	114.8	4260	117.0
690	109.9	1890	112.1	3090	115.0	4290	117.0
720	109.9	1920	112.3	3120	115.0		
750	110.1	1950	112.3	3150	115.2		
780	110.1	1980	112.3	3180	115.3		
810	110.3	2010	112.5	3210	115.3		
840	110.3	2040	112.5	3240	115.5		
870	110.3	2070	112.5	3270	115.5		
900	110.5	2100	112.6	3300	115.5		
930	110.7	2130	112.6	3330	115.7		
960	110.5	2160	112.6	3360	115.7		
990	110.7	2190	112.6	3390	115.7		
1020	110.8	2220	112.8	3420	115.7		
1050	110.8	2250	113.0	3450	115.9		
1080	111.0	2280	113.0	3480	115.9		
1110	110.8	2310	113.0	3510	116.1		
1140	111.0	2340	113.2	3540	116.1		
1170	111.0	2370	113.4	3570	116.1		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

[Test vehicle]

Model name	:	PRIUS
Data is representative for	:	PRIUS, PRIUS AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	05/24/2022
Ambient air temperature (at initiation)	:	95.7 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	134.2 °F
Track surface temperature (at completion)	:	134.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	05/25/2022
Ambient air temperature (at initiation)	:	95.4 °F
Ambient air temperature (at completion)	:	100.6 °F
Track surface temperature (at initiation)	:	135.0 °F
Track surface temperature (at completion)	:	136.8 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

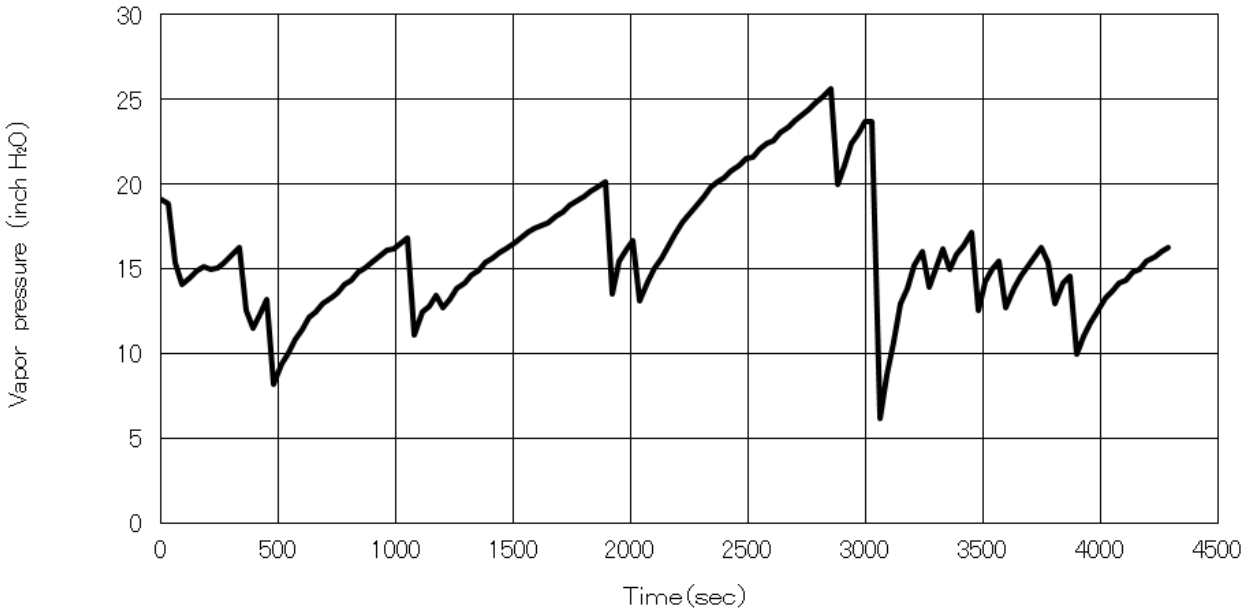
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	99.5	2400	102.2	3600	105.6
30	95.5	1230	99.5	2430	102.2	3630	105.6
60	95.7	1260	99.7	2460	102.4	3660	105.8
90	95.9	1290	99.7	2490	102.4	3690	105.8
120	96.1	1320	99.7	2520	102.4	3720	105.8
150	96.4	1350	99.9	2550	102.6	3750	106.0
180	96.4	1380	99.9	2580	102.6	3780	106.0
210	96.6	1410	100.0	2610	102.6	3810	106.0
240	96.8	1440	100.0	2640	102.6	3840	106.2
270	97.0	1470	100.0	2670	102.9	3870	106.2
300	97.3	1500	100.0	2700	102.7	3900	106.3
330	97.3	1530	100.2	2730	102.7	3930	106.3
360	97.5	1560	100.2	2760	102.7	3960	106.3
390	97.5	1590	100.2	2790	102.7	3990	106.3
420	97.7	1620	100.4	2820	102.7	4020	106.3
450	97.7	1650	100.4	2850	103.1	4050	106.3
480	97.9	1680	100.4	2880	103.1	4080	106.5
510	97.9	1710	100.6	2910	103.3	4110	106.5
540	97.9	1740	100.8	2940	103.5	4140	106.7
570	98.1	1770	100.8	2970	103.6	4170	106.7
600	98.1	1800	100.8	3000	103.6	4200	106.7
630	97.9	1830	100.9	3030	103.8	4230	106.7
660	98.1	1860	101.1	3060	104.0	4260	106.7
690	98.1	1890	101.1	3090	104.2	4290	106.7
720	98.2	1920	101.1	3120	104.4		
750	98.2	1950	101.1	3150	104.4		
780	98.2	1980	101.3	3180	104.4		
810	98.4	2010	101.1	3210	104.5		
840	98.4	2040	101.3	3240	104.7		
870	98.6	2070	101.3	3270	104.7		
900	98.8	2100	101.5	3300	104.7		
930	98.8	2130	101.3	3330	104.7		
960	98.8	2160	101.5	3360	104.9		
990	99.0	2190	101.7	3390	104.9		
1020	99.0	2220	101.7	3420	105.1		
1050	99.1	2250	101.8	3450	105.3		
1080	99.3	2280	101.8	3480	105.3		
1110	99.3	2310	101.8	3510	105.4		
1140	99.3	2340	102.0	3540	105.4		
1170	99.5	2370	102.0	3570	105.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130J42.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle	Refueling emission vehicle
Test group	:	PTYXV01.8P33	HTYXV01.8P35
Vehicle ID	:	23-ZE2H	17-ZW3H
Rep. car/truck line	:	COROLLA HYBRID AWD	PRIUS PRIME
Rep. vehicle model	:	ZWE215L-AEXSBA	ZVW52L-AHXEBA
Displacement	:	109.7 CID	109.7 CID
Transmission	:	PA10-B	P610
Test weight	:	3,625 lbs.	3,625 lbs.
Road load	:	11.4 HP	9.3 HP
Evap. code	:	ZE1F	ZW2F

Test results

Test procedure : CARB's procedure

3-day diurnal sequence test results

Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.0319	(g/test)
3DBL	1st day	:	0.1289*1	(g/test)
	2nd day	:	0.1066	(g/test)
	3rd day	:	0.0938	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0150	(g/mile)
2DBL	1st day	:	0.1617*1	(g/test)
	2nd day	:	0.1190	(g/test)

Refueling sequence test results

Refueling emission		:	0.001	(g/gal)

*1: DBL is added key off monitor loss (0.0018 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

[Test vehicle]

Model name	:	COROLLA
Data is representative for	:	COROLLA, COROLLA HATCHBACK

[Test procedure] : CARB method

[Test conditions]

Date	:	08/09/2017
Ambient air temperature (at initiation)	:	107.1 °F
Ambient air temperature (at completion)	:	107.2 °F
Track surface temperature (at initiation)	:	149.2 °F
Track surface temperature (at completion)	:	152.8 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	08/09/2017
Ambient air temperature (at initiation)	:	107.8 °F
Ambient air temperature (at completion)	:	108.5 °F
Track surface temperature (at initiation)	:	152.2 °F
Track surface temperature (at completion)	:	154.6 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

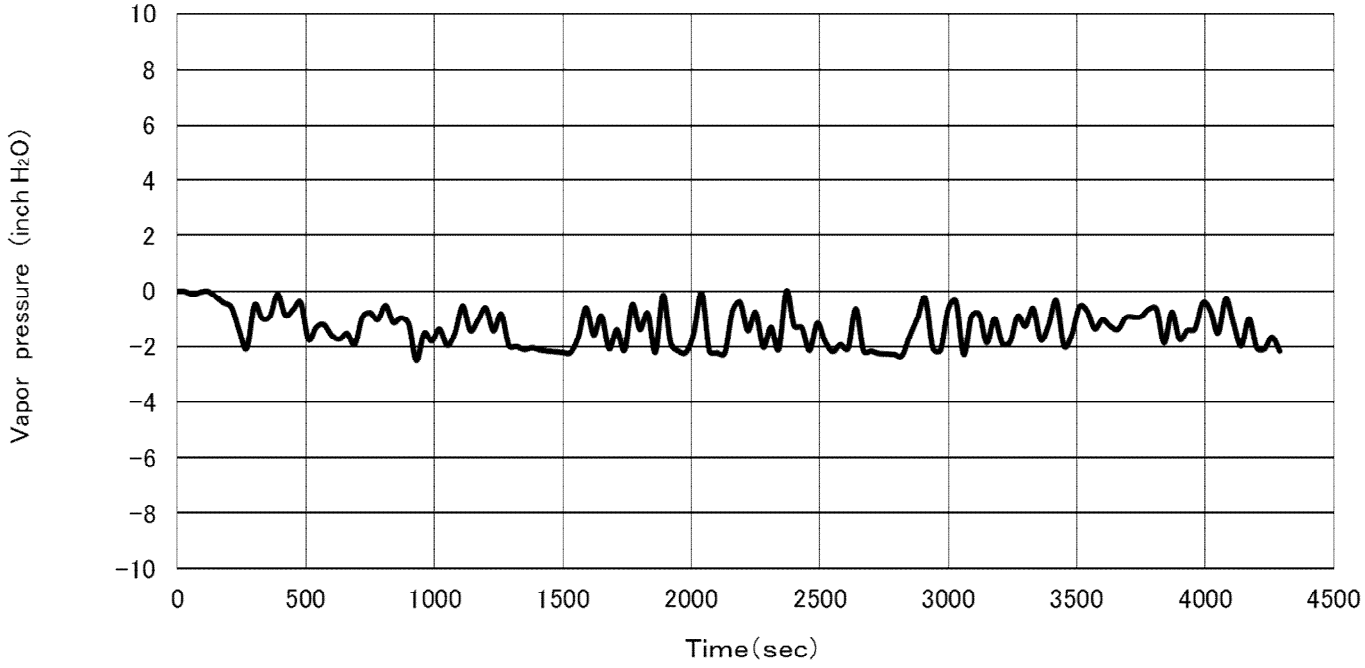
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	107.1	1200	112.3	2400	118.6	3600	125.4
30	107.2	1230	112.8	2430	118.6	3630	125.8
60	106.9	1260	112.5	2460	119.3	3660	126.0
90	107.4	1290	112.6	2490	119.1	3690	125.8
120	107.2	1320	113.0	2520	119.5	3720	126.5
150	107.8	1350	113.4	2550	119.3	3750	126.1
180	107.8	1380	113.0	2580	119.7	3780	126.1
210	107.8	1410	113.5	2610	120.0	3810	126.3
240	108.1	1440	113.4	2640	120.4	3840	126.3
270	108.1	1470	113.5	2670	120.2	3870	126.5
300	108.1	1500	114.1	2700	120.7	3900	126.7
330	108.7	1530	113.7	2730	120.9	3930	127.0
360	108.9	1560	114.3	2760	120.6	3960	126.5
390	108.9	1590	114.1	2790	121.3	3990	126.9
420	108.9	1620	114.4	2820	121.5	4020	127.4
450	109.2	1650	114.4	2850	121.5	4050	127.4
480	109.4	1680	114.6	2880	121.6	4080	127.0
510	109.6	1710	114.8	2910	122.2	4110	127.4
540	109.8	1740	115.0	2940	122.0	4140	127.8
570	109.6	1770	115.2	2970	122.0	4170	127.6
600	110.1	1800	115.2	3000	122.7	4200	127.6
630	109.8	1830	115.3	3030	122.5	4230	127.9
660	110.3	1860	115.7	3060	123.1	4260	127.6
690	110.5	1890	115.9	3090	123.3	4290	128.3
720	110.5	1920	115.7	3120	123.6		
750	110.5	1950	116.2	3150	123.4		
780	110.3	1980	116.2	3180	123.8		
810	110.8	2010	116.1	3210	124.0		
840	110.5	2040	116.8	3240	124.3		
870	111.0	2070	116.6	3270	124.0		
900	110.8	2100	117.0	3300	124.0		
930	111.2	2130	117.3	3330	124.2		
960	111.7	2160	117.3	3360	124.3		
990	111.4	2190	117.5	3390	125.1		
1020	112.1	2220	117.5	3420	124.9		
1050	111.9	2250	117.9	3450	125.1		
1080	111.7	2280	118.0	3480	125.1		
1110	112.1	2310	118.2	3510	125.1		
1140	112.1	2340	118.4	3540	125.2		
1170	112.1	2370	118.6	3570	125.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

[Test vehicle]

Model name	:	COROLLA
Data is representative for	:	COROLLA, COROLLA HATCHBACK

[Test procedure] : EPA method

[Test conditions]

Date	:	08/08/2017
Ambient air temperature (at initiation)	:	97.5 °F
Ambient air temperature (at completion)	:	98.4 °F
Track surface temperature (at initiation)	:	134.6 °F
Track surface temperature (at completion)	:	135.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	08/09/2017
Ambient air temperature (at initiation)	:	98.1 °F
Ambient air temperature (at completion)	:	99.0 °F
Track surface temperature (at initiation)	:	130.5 °F
Track surface temperature (at completion)	:	137.8 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

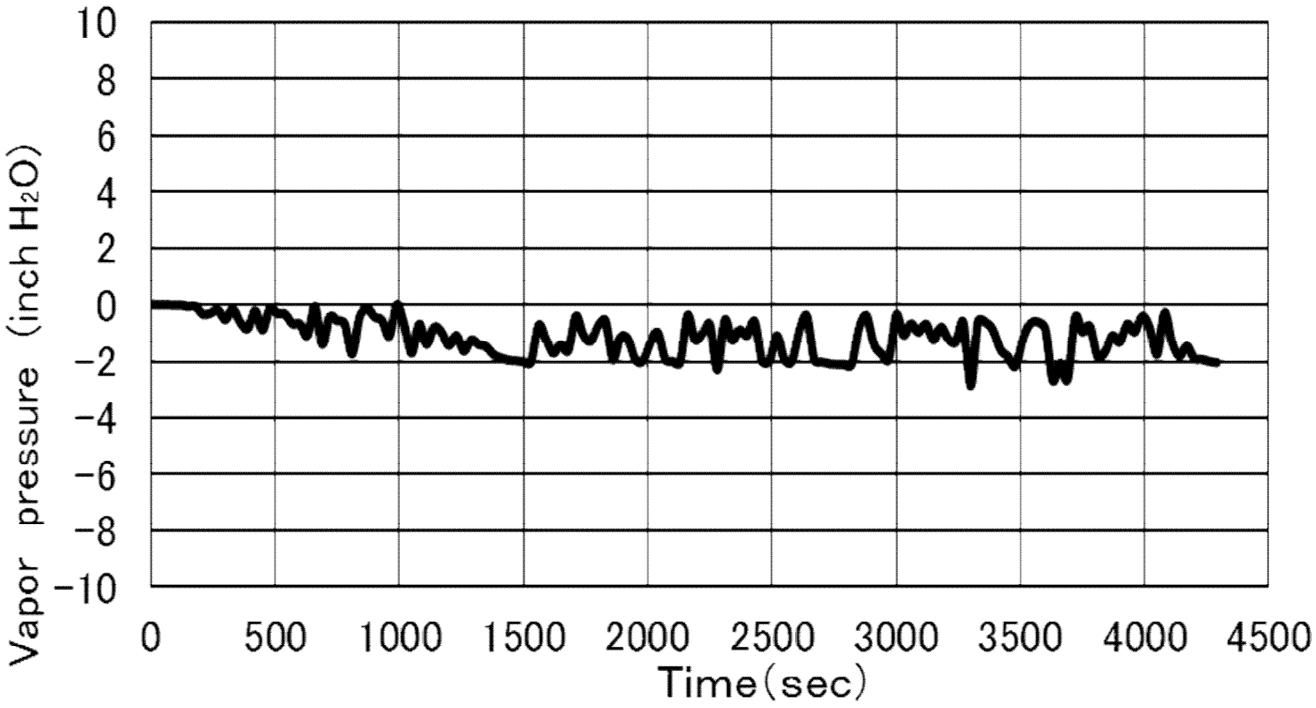
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	97.0	1200	101.7	2400	107.1	3600	113.7
30	96.6	1230	101.8	2430	107.2	3630	114.1
60	96.6	1260	102.0	2460	107.4	3660	113.7
90	96.8	1290	102.2	2490	107.2	3690	114.3
120	97.0	1320	102.2	2520	107.4	3720	114.3
150	97.2	1350	102.4	2550	107.8	3750	114.3
180	97.5	1380	102.0	2580	108.3	3780	114.4
210	97.7	1410	102.2	2610	108.5	3810	115.0
240	97.9	1440	102.4	2640	108.1	3840	114.6
270	98.2	1470	102.2	2670	108.3	3870	115.0
300	98.4	1500	102.4	2700	108.7	3900	115.2
330	98.4	1530	102.7	2730	108.9	3930	115.2
360	98.8	1560	102.6	2760	108.9	3960	115.3
390	99.1	1590	102.6	2790	109.4	3990	115.5
420	99.1	1620	103.1	2820	109.4	4020	115.7
450	99.0	1650	103.1	2850	109.6	4050	115.7
480	99.3	1680	102.9	2880	109.6	4080	115.7
510	99.7	1710	103.3	2910	110.1	4110	115.9
540	99.9	1740	103.3	2940	110.3	4140	116.1
570	99.9	1770	103.3	2970	110.8	4170	116.2
600	100.2	1800	103.5	3000	110.7	4200	116.2
630	99.9	1830	103.5	3030	111.0	4230	115.9
660	100.0	1860	104.0	3060	111.0	4260	116.2
690	100.4	1890	104.2	3090	111.4	4290	116.2
720	100.2	1920	104.2	3120	111.4		
750	100.4	1950	104.4	3150	111.6		
780	100.2	1980	104.5	3180	111.9		
810	100.6	2010	104.7	3210	112.1		
840	100.8	2040	104.5	3240	112.3		
870	100.4	2070	105.3	3270	112.3		
900	100.8	2100	105.3	3300	112.5		
930	100.8	2130	105.4	3330	112.3		
960	101.1	2160	105.6	3360	113.0		
990	101.1	2190	105.8	3390	113.2		
1020	101.3	2220	105.8	3420	112.8		
1050	101.3	2250	106.3	3450	113.2		
1080	101.3	2280	105.8	3480	113.2		
1110	101.7	2310	106.5	3510	113.5		
1140	101.5	2340	106.2	3540	113.4		
1170	101.7	2370	106.9	3570	113.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

[Test vehicle]

Model name	:	COROLLA CROSS
Data is representative for	:	COROLLA CROSS, COROLLA CROSS AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	05/27/2020
Ambient air temperature (at initiation)	:	110.1 °F
Ambient air temperature (at completion)	:	111.0 °F
Track surface temperature (at initiation)	:	144.1 °F
Track surface temperature (at completion)	:	148.5 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	05/28/2020
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	110.3°F
Track surface temperature (at initiation)	:	141.6 °F
Track surface temperature (at completion)	:	146.8 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

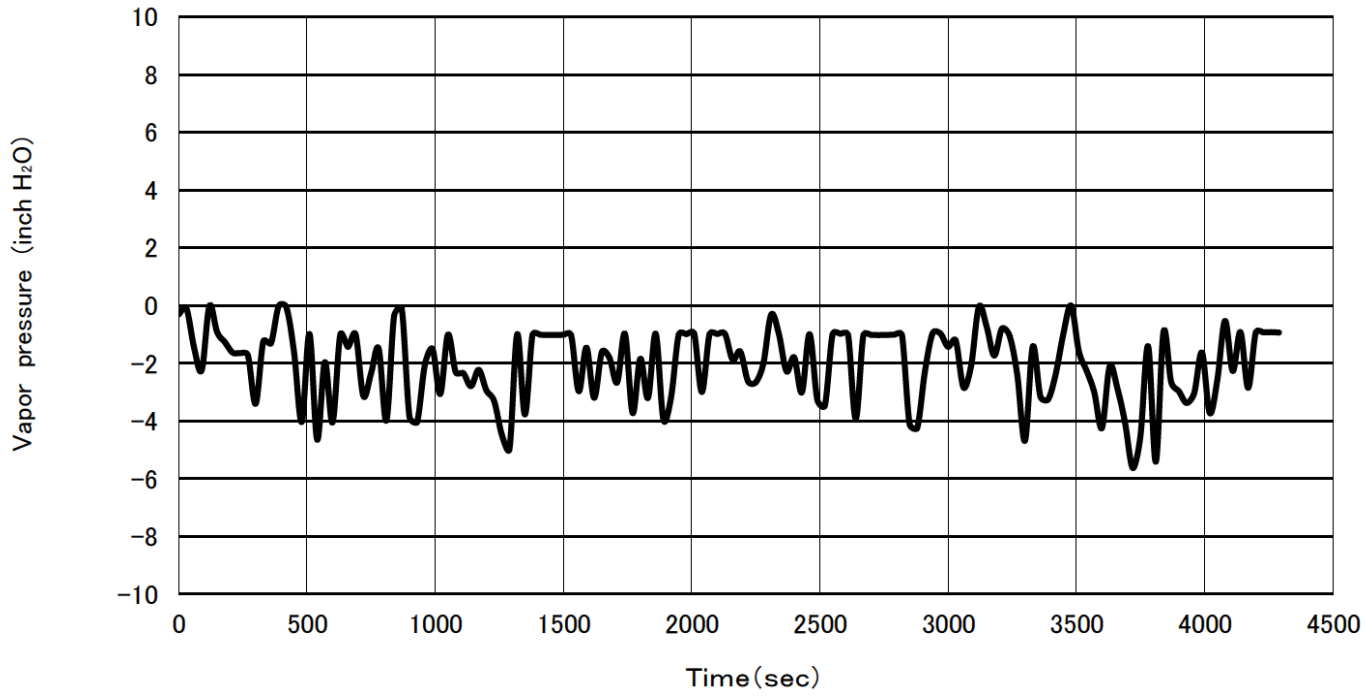
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	107.6	1200	112.8	2400	118.4	3600	124.3
30	107.6	1230	113.0	2430	118.6	3630	124.5
60	107.8	1260	113.0	2460	118.8	3660	124.5
90	108.0	1290	113.2	2490	118.9	3690	124.7
120	108.1	1320	113.4	2520	118.9	3720	124.7
150	108.1	1350	113.4	2550	119.1	3750	124.9
180	108.3	1380	113.5	2580	119.3	3780	125.1
210	108.5	1410	113.7	2610	119.5	3810	125.1
240	108.7	1440	113.7	2640	119.5	3840	125.1
270	108.9	1470	113.9	2670	119.8	3870	125.2
300	109.0	1500	114.1	2700	119.8	3900	125.2
330	109.2	1530	114.1	2730	120.0	3930	125.4
360	109.2	1560	114.3	2760	120.2	3960	125.4
390	109.4	1590	114.4	2790	120.4	3990	125.6
420	109.6	1620	114.6	2820	120.6	4020	125.6
450	109.6	1650	114.6	2850	120.7	4050	125.8
480	109.8	1680	114.8	2880	120.9	4080	125.8
510	109.9	1710	115.0	2910	121.1	4110	125.8
540	110.1	1740	115.2	2940	121.3	4140	126.0
570	110.1	1770	115.3	2970	121.5	4170	126.1
600	110.3	1800	115.5	3000	121.6	4200	126.1
630	110.5	1830	115.5	3030	121.8	4230	126.1
660	110.5	1860	115.7	3060	122.2	4260	126.3
690	110.7	1890	115.9	3090	122.4	4290	126.3
720	110.8	1920	115.9	3120	122.5		
750	111.0	1950	116.2	3150	122.7		
780	111.0	1980	116.2	3180	122.9		
810	111.2	2010	116.4	3210	122.9		
840	111.2	2040	116.6	3240	123.1		
870	111.4	2070	116.8	3270	123.1		
900	111.6	2100	117.0	3300	123.3		
930	111.7	2130	117.1	3330	123.4		
960	111.9	2160	117.1	3360	123.4		
990	111.9	2190	117.3	3390	123.6		
1020	112.1	2220	117.5	3420	123.6		
1050	112.1	2250	117.7	3450	123.8		
1080	112.3	2280	117.7	3480	123.8		
1110	112.5	2310	118.0	3510	124.0		
1140	112.6	2340	118.2	3540	124.0		
1170	112.6	2370	118.2	3570	124.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

[Test vehicle]

Model name	:	COROLLA CROSS
Data is representative for	:	COROLLA CROSS, COROLLA CROSS AWD

[Test procedure]	:	EPA method

[Test conditions]

Date	:	05/27/2020
Ambient air temperature (at initiation)	:	99.0 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	126.1 °F
Track surface temperature (at completion)	:	129.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	05/28/2020
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	126.0 °F
Track surface temperature (at completion)	:	131.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

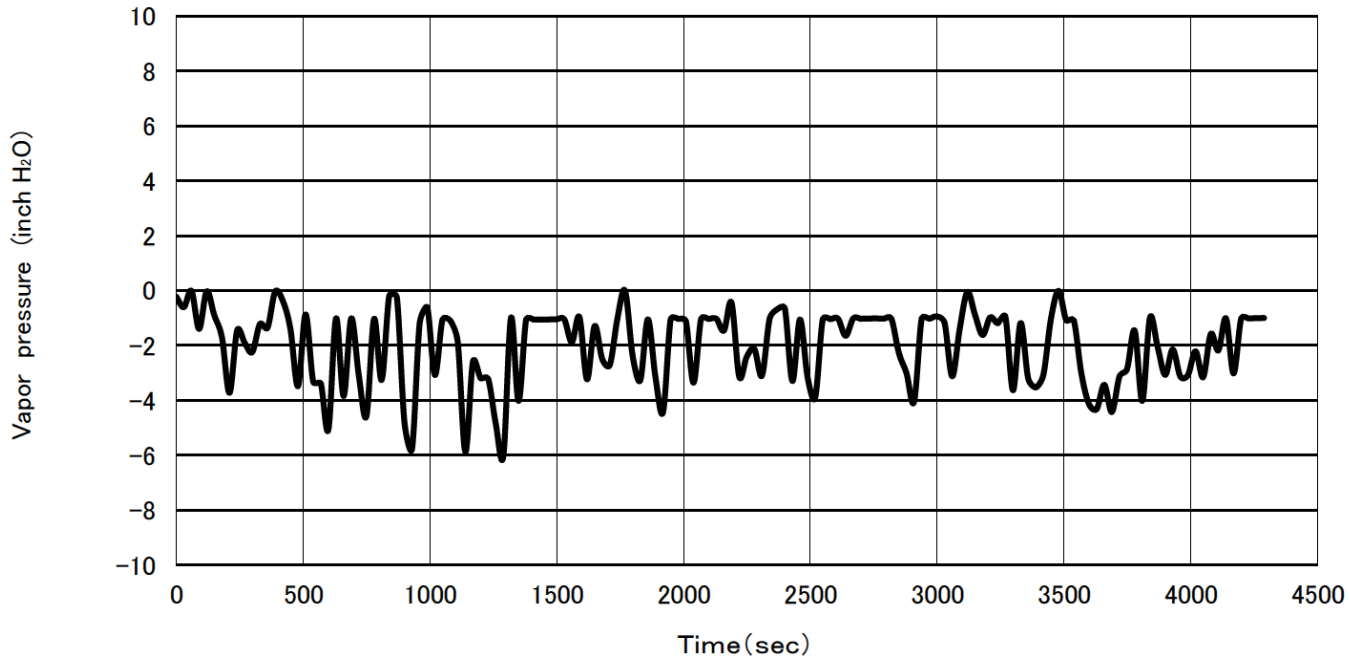
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.4	1200	101.5	2400	107.6	3600	114.4
30	96.4	1230	101.7	2430	107.8	3630	114.6
60	96.4	1260	101.8	2460	108.0	3660	114.6
90	96.6	1290	101.8	2490	108.1	3690	114.6
120	96.8	1320	102.0	2520	108.3	3720	114.8
150	96.8	1350	102.2	2550	108.5	3750	115.0
180	97.0	1380	102.4	2580	108.7	3780	115.0
210	97.0	1410	102.4	2610	108.9	3810	115.2
240	97.3	1440	102.6	2640	109.0	3840	115.2
270	97.3	1470	102.7	2670	109.2	3870	115.3
300	97.5	1500	102.9	2700	109.4	3900	115.5
330	97.7	1530	103.1	2730	109.6	3930	115.7
360	97.9	1560	103.3	2760	109.6	3960	115.7
390	97.9	1590	103.3	2790	109.9	3990	115.9
420	98.1	1620	103.5	2820	109.9	4020	116.1
450	98.2	1650	103.5	2850	110.1	4050	116.2
480	98.2	1680	103.6	2880	110.3	4080	116.2
510	98.6	1710	103.8	2910	110.7	4110	116.2
540	98.6	1740	104.0	2940	110.8	4140	116.2
570	98.8	1770	104.2	2970	111.0	4170	116.4
600	99.0	1800	104.4	3000	111.2	4200	116.6
630	99.0	1830	104.4	3030	111.4	4230	116.6
660	99.1	1860	104.5	3060	111.6	4260	116.8
690	99.1	1890	104.9	3090	111.7	4290	117.0
720	99.3	1920	104.9	3120	111.9		
750	99.5	1950	105.1	3150	112.1		
780	99.7	1980	105.3	3180	112.3		
810	99.7	2010	105.3	3210	112.5		
840	100.0	2040	105.4	3240	112.6		
870	100.0	2070	105.6	3270	113.0		
900	100.2	2100	105.8	3300	113.0		
930	100.4	2130	106.0	3330	113.2		
960	100.4	2160	106.2	3360	113.4		
990	100.6	2190	106.3	3390	113.4		
1020	100.8	2220	106.5	3420	113.7		
1050	100.9	2250	106.7	3450	113.7		
1080	101.1	2280	106.9	3480	113.9		
1110	101.1	2310	107.1	3510	114.1		
1140	101.3	2340	107.2	3540	114.3		
1170	101.5	2370	107.4	3570	114.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

[Test vehicle]

Model name	:	NX 350 AWD
Data is representative for	:	NX 350 AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	08/20/2024
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	110.8 °F
Track surface temperature (at initiation)	:	174.6 °F
Track surface temperature (at completion)	:	179.1 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	08/20/2024
Ambient air temperature (at initiation)	:	106.3 °F
Ambient air temperature (at completion)	:	110.3 °F
Track surface temperature (at initiation)	:	173.8 °F
Track surface temperature (at completion)	:	179.1 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

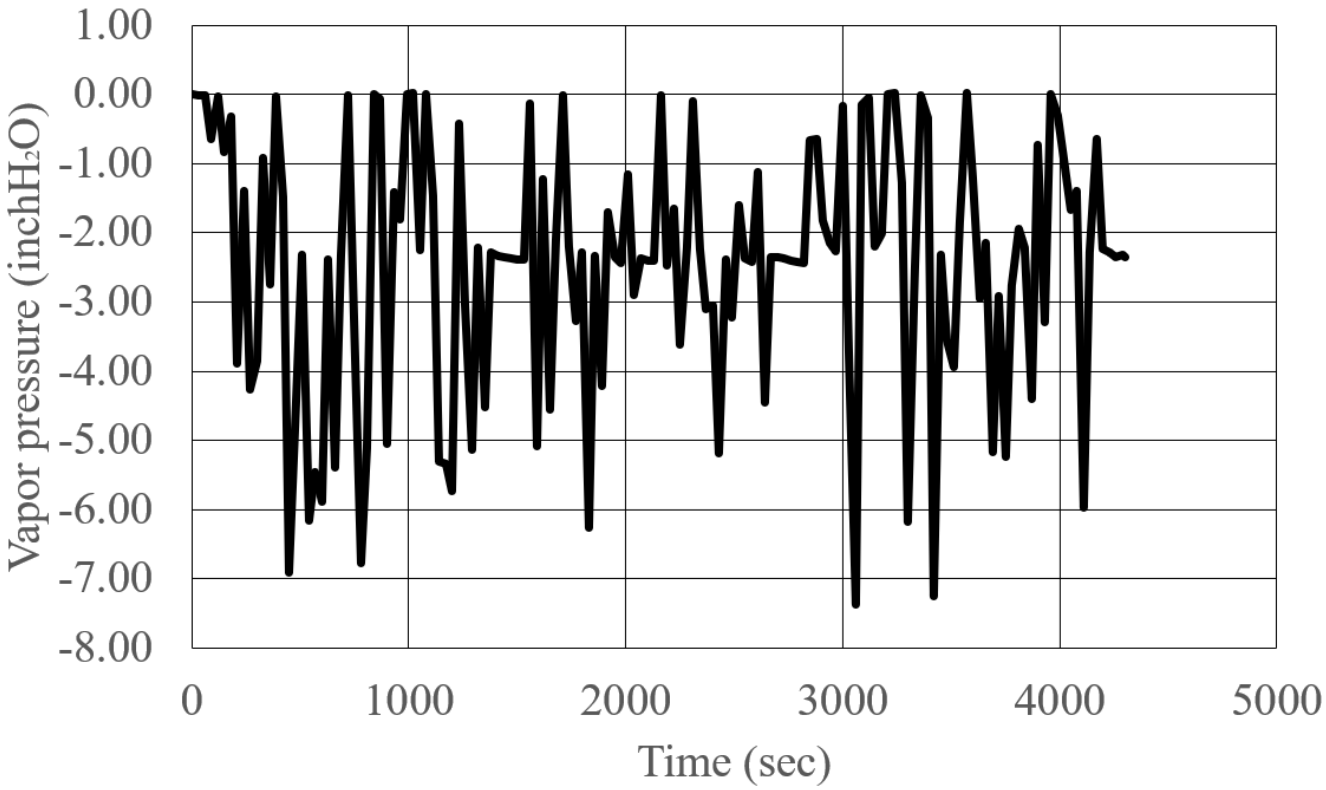
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	103.8	1200	108.9	2400	114.4	3600	121.1
30	103.6	1230	108.9	2430	114.6	3630	121.1
60	103.8	1260	109.0	2460	114.6	3660	121.3
90	104.0	1290	109.2	2490	114.6	3690	121.5
120	104.4	1320	109.2	2520	115.0	3720	121.6
150	104.5	1350	109.4	2550	115.2	3750	121.6
180	104.9	1380	109.6	2580	115.2	3780	121.8
210	105.1	1410	109.6	2610	115.5	3810	122.0
240	105.3	1440	109.6	2640	115.7	3840	122.2
270	105.6	1470	109.8	2670	115.9	3870	122.2
300	105.8	1500	109.9	2700	115.9	3900	122.4
330	106.0	1530	109.9	2730	116.1	3930	122.5
360	106.2	1560	110.1	2760	116.2	3960	122.5
390	106.3	1590	110.3	2790	116.4	3990	122.7
420	106.3	1620	110.5	2820	116.4	4020	122.9
450	106.7	1650	110.5	2850	116.8	4050	123.1
480	106.7	1680	110.7	2880	117.0	4080	123.1
510	106.9	1710	110.8	2910	117.1	4110	123.1
540	107.1	1740	111.0	2940	117.3	4140	123.3
570	107.1	1770	111.2	2970	117.5	4170	123.3
600	107.2	1800	111.2	3000	117.5	4200	123.4
630	107.4	1830	111.4	3030	117.9	4230	123.4
660	107.4	1860	111.6	3060	118.0	4260	123.6
690	107.4	1890	111.7	3090	118.2	4290	123.6
720	107.4	1920	111.7	3120	118.4	4304	123.8
750	107.6	1950	111.9	3150	118.6		
780	107.6	1980	111.9	3180	118.9		
810	107.6	2010	112.1	3210	119.1		
840	107.8	2040	112.3	3240	119.3		
870	107.8	2070	112.5	3270	119.5		
900	108.0	2100	112.6	3300	119.7		
930	108.0	2130	112.8	3330	119.7		
960	108.0	2160	113.0	3360	120.0		
990	108.1	2190	113.0	3390	120.0		
1020	108.3	2220	113.4	3420	120.2		
1050	108.5	2250	113.5	3450	120.6		
1080	108.5	2280	113.5	3480	120.6		
1110	108.7	2310	113.7	3510	120.7		
1140	108.7	2340	114.1	3540	120.9		
1170	108.7	2370	114.3	3570	120.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

[Test vehicle]

Model name	:	NX 350 AWD
Data is representative for	:	NX 350 AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	08/19/2024
Ambient air temperature (at initiation)	:	96.1 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	154.6 °F
Track surface temperature (at completion)	:	158.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	08/20/2024
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	153.3 °F
Track surface temperature (at completion)	:	158.2 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

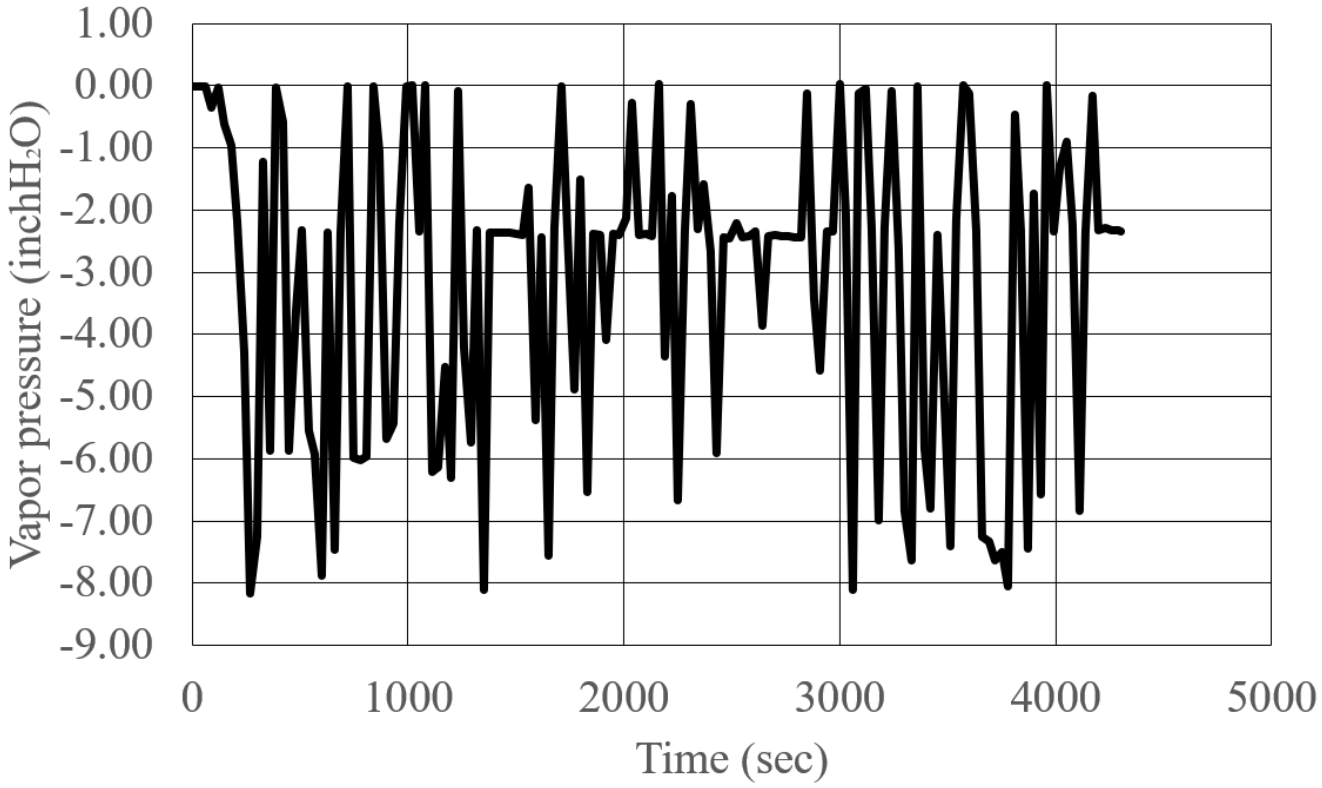
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	94.8	1200	99.1	2400	104.9	3600	112.1
30	94.7	1230	99.1	2430	105.1	3630	112.3
60	94.7	1260	99.3	2460	105.1	3660	112.5
90	94.9	1290	99.3	2490	105.3	3690	112.6
120	95.2	1320	99.5	2520	105.4	3720	112.6
150	95.2	1350	99.5	2550	105.8	3750	113.0
180	95.5	1380	99.7	2580	106.0	3780	113.0
210	95.7	1410	99.9	2610	106.0	3810	113.2
240	95.9	1440	99.9	2640	106.2	3840	113.2
270	95.9	1470	100.0	2670	106.3	3870	113.4
300	96.1	1500	100.2	2700	106.5	3900	113.5
330	96.3	1530	100.2	2730	106.7	3930	113.5
360	96.3	1560	100.4	2760	106.9	3960	113.7
390	96.4	1590	100.6	2790	107.1	3990	113.9
420	96.6	1620	100.8	2820	107.2	4020	113.9
450	96.8	1650	100.8	2850	107.2	4050	114.1
480	96.8	1680	101.1	2880	107.8	4080	114.3
510	97.0	1710	101.1	2910	107.8	4110	114.3
540	97.2	1740	101.3	2940	108.0	4140	114.4
570	97.2	1770	101.5	2970	108.3	4170	114.4
600	97.3	1800	101.7	3000	108.5	4200	114.6
630	97.3	1830	101.8	3030	108.7	4230	114.8
660	97.5	1860	101.8	3060	108.9	4260	114.8
690	97.5	1890	102.0	3090	109.0	4290	115.0
720	97.5	1920	102.2	3120	109.2	4304	115.0
750	97.7	1950	102.6	3150	109.6		
780	97.7	1980	102.6	3180	109.8		
810	97.9	2010	102.7	3210	109.9		
840	97.9	2040	102.9	3240	110.1		
870	98.1	2070	102.9	3270	110.3		
900	98.1	2100	103.1	3300	110.5		
930	98.1	2130	103.3	3330	110.7		
960	98.2	2160	103.5	3360	110.8		
990	98.4	2190	103.6	3390	111.2		
1020	98.4	2220	103.8	3420	111.2		
1050	98.6	2250	104.0	3450	111.4		
1080	98.8	2280	104.2	3480	111.6		
1110	98.8	2310	104.4	3510	111.6		
1140	99.0	2340	104.5	3540	111.7		
1170	99.0	2370	104.5	3570	111.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0130P42.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle	Refueling emission vehicle.
Test group	:	NTYXV02.5P3A	JTYXV02.5P3A
Vehicle ID	:	18-AV1A	18-AV1A
Rep. car/truck line	:	Camry	Camry
Rep. vehicle model	:	AXVA70L-CEZPBA	AXVA70L-CEZPBA
Displacement	:	151.8CID	151.8CID
Transmission	:	UB80E-A	UB80E-A
Test weight	:	3,750 lbs.	3,750 lbs.
Road load	:	11.3 HP	11.5 HP
Evap. code	:	AV1Z	AV1Z

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0071	(g/mile)
	CO	:	0.10	(g/mile)
	NOx	:	0.0065	(g/mile)
Running loss		:	0.008	(g/mile)
Hot soak loss		:	0.0514	(g/test)
3DBL	1st day	:	0.2175 *1	(g/test)
	2nd day	:	0.1459	(g/test)
	3rd day	:	0.1372	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/test)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0073	(g/mile)
	CO	:	0.10	(g/mile)
	NOx	:	0.0047	(g/mile)
Refueling emission		:	0.003	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0002 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0120J42.

[Test vehicle]

Model name	:	PRIUS PRIME
Data is representative for	:	PRIUS PHEV

[Test procedure] : CARB method

[Test conditions]

Date	:	10/11/2021
Ambient air temperature (at initiation)	:	109.9 °F
Ambient air temperature (at completion)	:	108.1 °F
Track surface temperature (at initiation)	:	151.7 °F
Track surface temperature (at completion)	:	150.4 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	10/12/2021
Ambient air temperature (at initiation)	:	112.1°F
Ambient air temperature (at completion)	:	110.3°F
Track surface temperature (at initiation)	:	148.6 °F
Track surface temperature (at completion)	:	150.4 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0120J42.

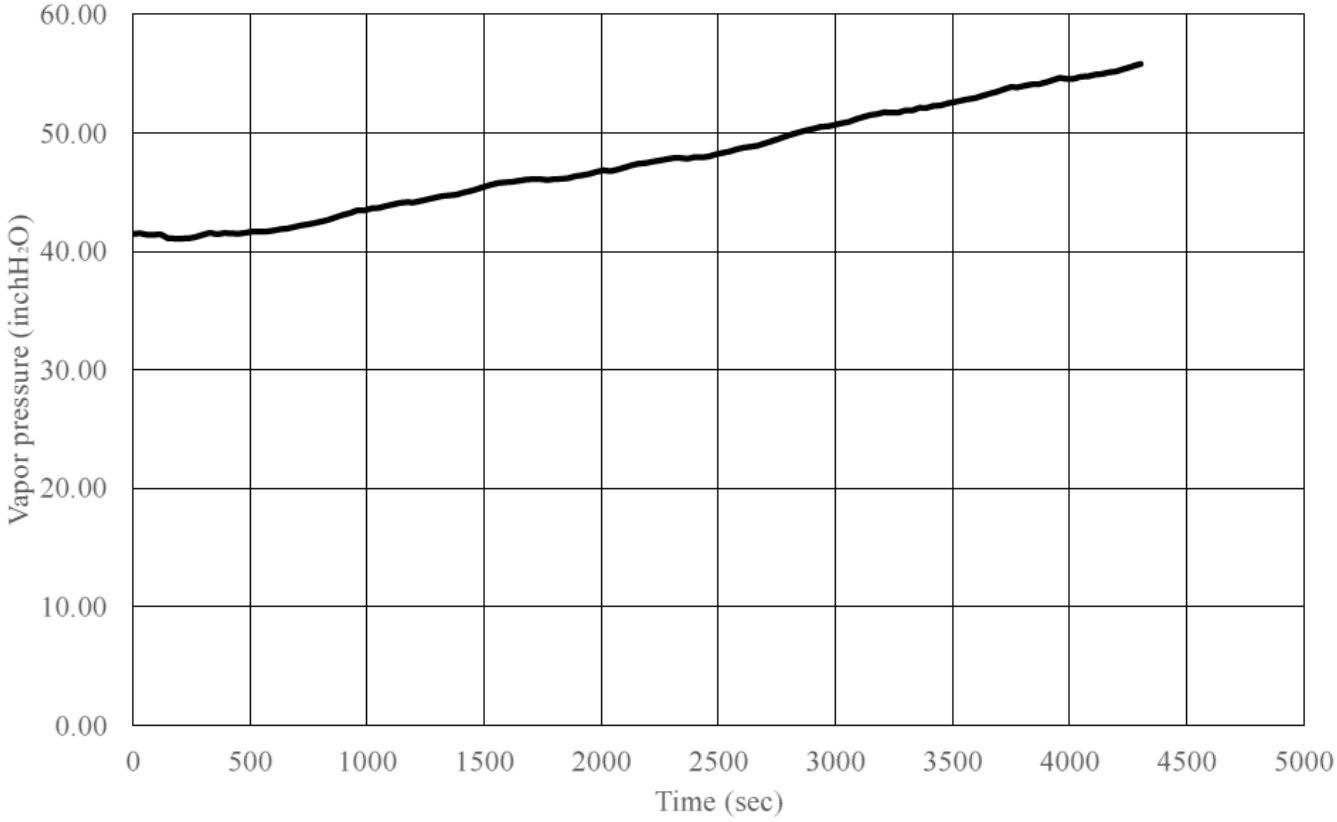
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	98.8	1200	100.0	2400	100.4	3600	101.7
30	98.6	1230	99.9	2430	100.6	3630	101.8
60	98.6	1260	99.9	2460	100.6	3660	101.7
90	98.9	1290	100.0	2490	100.6	3690	101.7
120	99.0	1320	99.9	2520	100.6	3720	101.8
150	98.8	1350	99.9	2550	100.4	3750	101.8
180	99.0	1380	100.0	2580	100.8	3780	102.0
210	99.0	1410	100.0	2610	100.6	3810	101.8
240	99.1	1440	100.0	2640	100.6	3840	102.0
270	99.3	1470	100.0	2670	100.6	3870	101.8
300	99.3	1500	100.0	2700	100.8	3900	101.8
330	99.1	1530	100.2	2730	100.9	3930	102.0
360	99.0	1560	100.0	2760	100.9	3960	101.8
390	99.3	1590	99.9	2790	100.9	3990	102.0
420	99.1	1620	99.9	2820	100.9	4020	102.0
450	99.3	1650	99.9	2850	100.8	4050	102.0
480	99.3	1680	99.9	2880	100.9	4080	102.0
510	99.3	1710	100.0	2910	100.9	4110	102.2
540	99.3	1740	100.4	2940	100.9	4140	102.2
570	99.5	1770	100.2	2970	100.9	4170	102.0
600	99.5	1800	100.0	3000	100.8	4200	102.0
630	99.7	1830	100.2	3030	100.9	4230	102.2
660	99.5	1860	100.2	3060	101.1	4260	102.4
690	99.5	1890	100.2	3090	101.1	4290	102.4
720	99.5	1920	100.2	3120	101.1	4304	102.4
750	99.5	1950	100.0	3150	101.1		
780	99.5	1980	100.4	3180	101.1		
810	99.7	2010	100.2	3210	101.1		
840	99.7	2040	100.0	3240	101.1		
870	99.7	2070	100.2	3270	101.1		
900	99.7	2100	100.4	3300	101.3		
930	99.9	2130	100.4	3330	101.5		
960	99.7	2160	100.4	3360	101.3		
990	99.7	2190	100.4	3390	101.1		
1020	99.9	2220	100.4	3420	101.5		
1050	99.7	2250	100.4	3450	101.5		
1080	99.9	2280	100.4	3480	101.5		
1110	99.7	2310	100.2	3510	101.5		
1140	100.0	2340	100.6	3540	101.5		
1170	100.0	2370	100.4	3570	101.7		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0120J42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0120J42.

[Test vehicle]		
Model name	:	PRIUS PRIME
Data is representative for	:	PRIUS PHEV
[Test procedure]	:	EPA method
[Test conditions]		
Date	:	10/11/2021
Ambient air temperature (at initiation)	:	99.3 °F
Ambient air temperature (at completion)	:	98.2 °F
Track surface temperature (at initiation)	:	132.6 °F
Track surface temperature (at completion)	:	132.3 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0120J42.

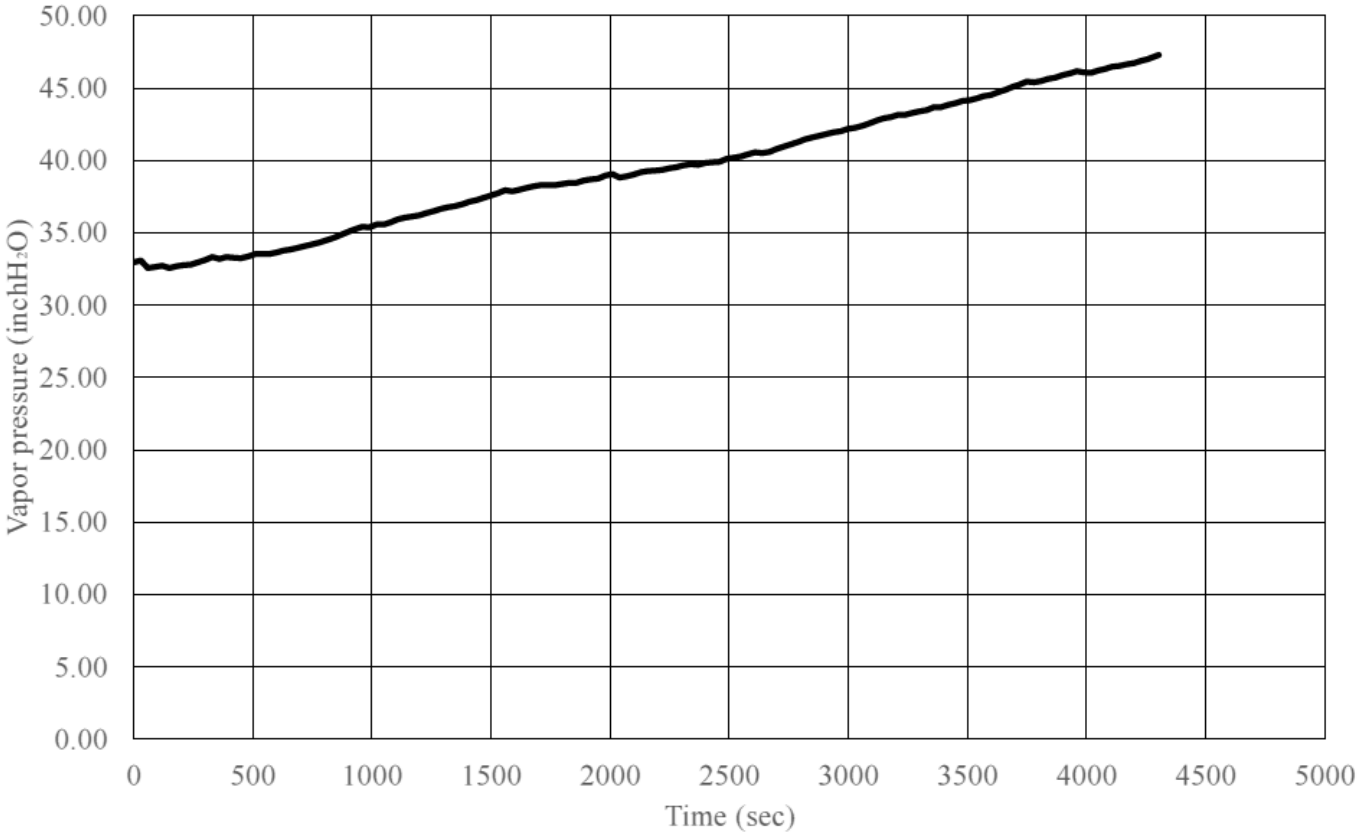
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	88.3	1200	89.4	2400	89.6	3600	90.5
30	88.3	1230	89.4	2430	89.6	3630	90.5
60	88.0	1260	89.2	2460	89.6	3660	90.3
90	88.2	1290	89.2	2490	89.6	3690	90.5
120	88.2	1320	89.4	2520	89.6	3720	90.7
150	88.0	1350	89.2	2550	89.6	3750	90.5
180	88.2	1380	89.4	2580	89.8	3780	90.9
210	88.2	1410	89.4	2610	89.6	3810	90.7
240	88.3	1440	89.6	2640	89.6	3840	90.7
270	88.3	1470	89.6	2670	90.0	3870	90.5
300	88.3	1500	89.6	2700	89.8	3900	90.5
330	88.2	1530	89.6	2730	89.8	3930	90.5
360	88.2	1560	89.4	2760	89.8	3960	90.7
390	88.3	1590	89.4	2790	89.8	3990	90.5
420	88.3	1620	89.4	2820	90.0	4020	90.9
450	88.5	1650	89.4	2850	89.8	4050	90.9
480	88.3	1680	89.4	2880	89.8	4080	90.9
510	88.3	1710	89.4	2910	90.0	4110	90.9
540	88.5	1740	90.0	2940	90.0	4140	91.2
570	88.7	1770	89.6	2970	89.8	4170	91.0
600	88.5	1800	89.6	3000	89.6	4200	91.0
630	88.7	1830	89.6	3030	90.0	4230	91.0
660	88.7	1860	89.6	3060	90.0	4260	91.0
690	88.9	1890	89.4	3090	90.0	4290	91.0
720	88.7	1920	89.6	3120	90.0	4304	91.0
750	88.9	1950	89.4	3150	90.1		
780	88.9	1980	89.6	3180	90.0		
810	88.9	2010	89.6	3210	90.0		
840	89.1	2040	89.6	3240	90.0		
870	89.1	2070	89.6	3270	90.0		
900	89.1	2100	89.6	3300	90.3		
930	89.1	2130	89.8	3330	90.5		
960	89.1	2160	89.6	3360	90.3		
990	88.7	2190	89.6	3390	90.1		
1020	89.1	2220	89.8	3420	90.3		
1050	89.1	2250	89.6	3450	90.3		
1080	89.1	2280	89.6	3480	90.3		
1110	89.1	2310	89.6	3510	90.5		
1140	89.2	2340	89.8	3540	90.3		
1170	89.4	2370	89.8	3570	90.1		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0120J42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0120J42.

Evaporative emission test log

Vehicle Description

Evaporative/ Refueling emission vehicle

Test group	:	PTYXR0120J72
Vehicle ID	:	23-MX2H
Rep. car/truck line	:	PRIUS PRIME
Rep. vehicle model	:	MXWH61L-AHXGBA
Displacement	:	121.3 CID
Transmission	:	PB12-A
Test weight	:	3,545 lbs.
Road load	:	10.3 HP
Evap. code	:	MW2F

Test results

Test procedure : CARB's procedure

3-day diurnal sequence test results

Running loss		:	0.002	(g/mile)
Hot soak loss		:	0.0265	(g/test)
3DBL	1st day	:	0.1528*1	(g/test)
	2nd day	:	0.1184	(g/test)
	3rd day	:	0.1126	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0110	(g/mile)
2DBL	1st day	:	0.1830 *1	(g/test)
	2nd day	:	0.1884	(g/test)

Refueling sequence test results

Refueling emission		:	0.007	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0222 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0180A42.

[Test vehicle]

Model name	:	LC 500
Data is representative for	:	LC 500, LC 500 CONVERTIBLE

[Test procedure] : CARB method

[Test conditions]

Date	:	09/04/2024
Ambient air temperature (at initiation)	:	105.8 °F
Ambient air temperature (at completion)	:	110.7 °F
Track surface temperature (at initiation)	:	173.8 °F
Track surface temperature (at completion)	:	178.9 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	09/05/2024
Ambient air temperature (at initiation)	:	105.6 °F
Ambient air temperature (at completion)	:	110.3°F
Track surface temperature (at initiation)	:	173.7 °F
Track surface temperature (at completion)	:	179.2 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0180A42.

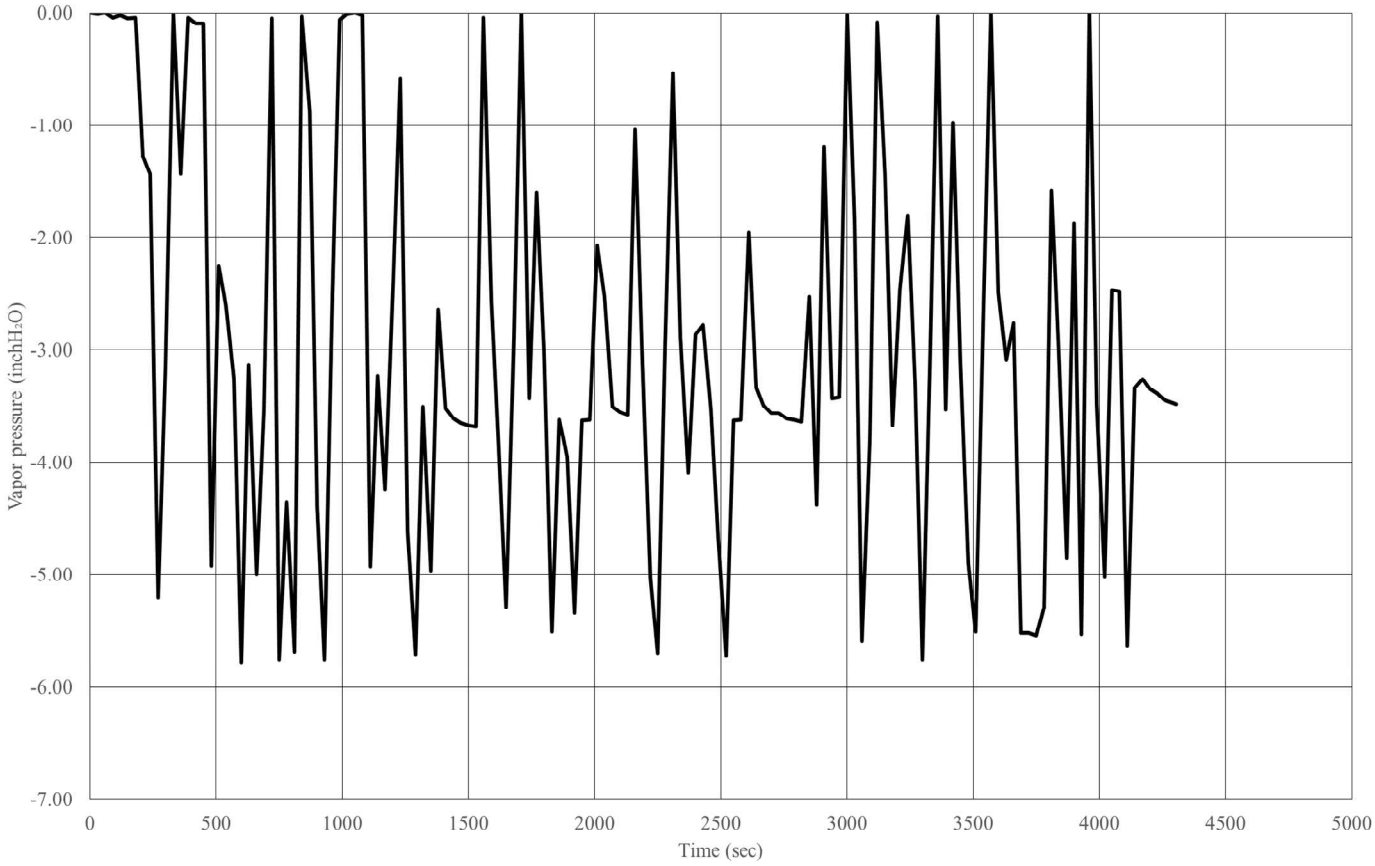
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	104.2	1200	109.6	2400	113.4	3600	118.4
30	104.5	1230	109.6	2430	113.7	3630	118.4
60	104.7	1260	109.6	2460	113.9	3660	118.8
90	104.8	1290	109.8	2490	114.1	3690	118.8
120	105.1	1320	109.8	2520	113.9	3720	118.9
150	105.4	1350	109.9	2550	114.1	3750	118.9
180	105.6	1380	110.1	2580	114.3	3780	119.3
210	105.8	1410	110.3	2610	114.3	3810	119.3
240	106.0	1440	110.5	2640	114.4	3840	119.5
270	106.0	1470	110.5	2670	114.6	3870	119.8
300	106.2	1500	110.5	2700	114.6	3900	119.8
330	106.5	1530	110.7	2730	114.8	3930	119.8
360	106.7	1560	110.5	2760	115.0	3960	119.8
390	106.7	1590	110.7	2790	115.2	3990	120.0
420	106.9	1620	110.8	2820	115.2	4020	120.2
450	107.2	1650	110.7	2850	115.0	4050	120.2
480	107.2	1680	110.7	2880	115.2	4080	120.6
510	107.2	1710	110.8	2910	115.2	4110	120.4
540	107.2	1740	110.8	2940	115.3	4140	120.6
570	107.6	1770	111.2	2970	115.7	4170	120.6
600	107.4	1800	111.2	3000	115.7	4200	120.7
630	107.8	1830	111.4	3030	115.7	4230	120.9
660	107.8	1860	111.6	3060	115.7	4260	121.1
690	107.8	1890	111.7	3090	115.9	4290	121.1
720	107.8	1920	111.6	3120	116.1	4304	121.1
750	107.8	1950	111.7	3150	116.6		
780	108.0	1980	111.9	3180	116.6		
810	108.0	2010	111.9	3210	116.8		
840	108.1	2040	112.1	3240	117.0		
870	108.1	2070	112.3	3270	117.1		
900	108.1	2100	112.3	3300	117.1		
930	108.3	2130	112.5	3330	117.5		
960	108.5	2160	112.5	3360	117.3		
990	108.7	2190	112.8	3390	117.7		
1020	108.9	2220	112.8	3420	117.7		
1050	109.0	2250	112.6	3450	118.0		
1080	108.9	2280	112.8	3480	118.0		
1110	109.2	2310	113.0	3510	118.2		
1140	109.0	2340	113.2	3540	118.4		
1170	109.4	2370	113.5	3570	118.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0180A42.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0180A42.

[Test vehicle]

Model name	:	LC 500
Data is representative for	:	LC 500 CONVERTIBLE

[Test procedure] : EPA method

[Test conditions]

Date	:	09/04/2024
Ambient air temperature (at initiation)	:	96.3 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	153.7 °F
Track surface temperature (at completion)	:	158.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	09/04/2024
Ambient air temperature (at initiation)	:	96.1 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	153.1 °F
Track surface temperature (at completion)	:	158.2 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0180A42.

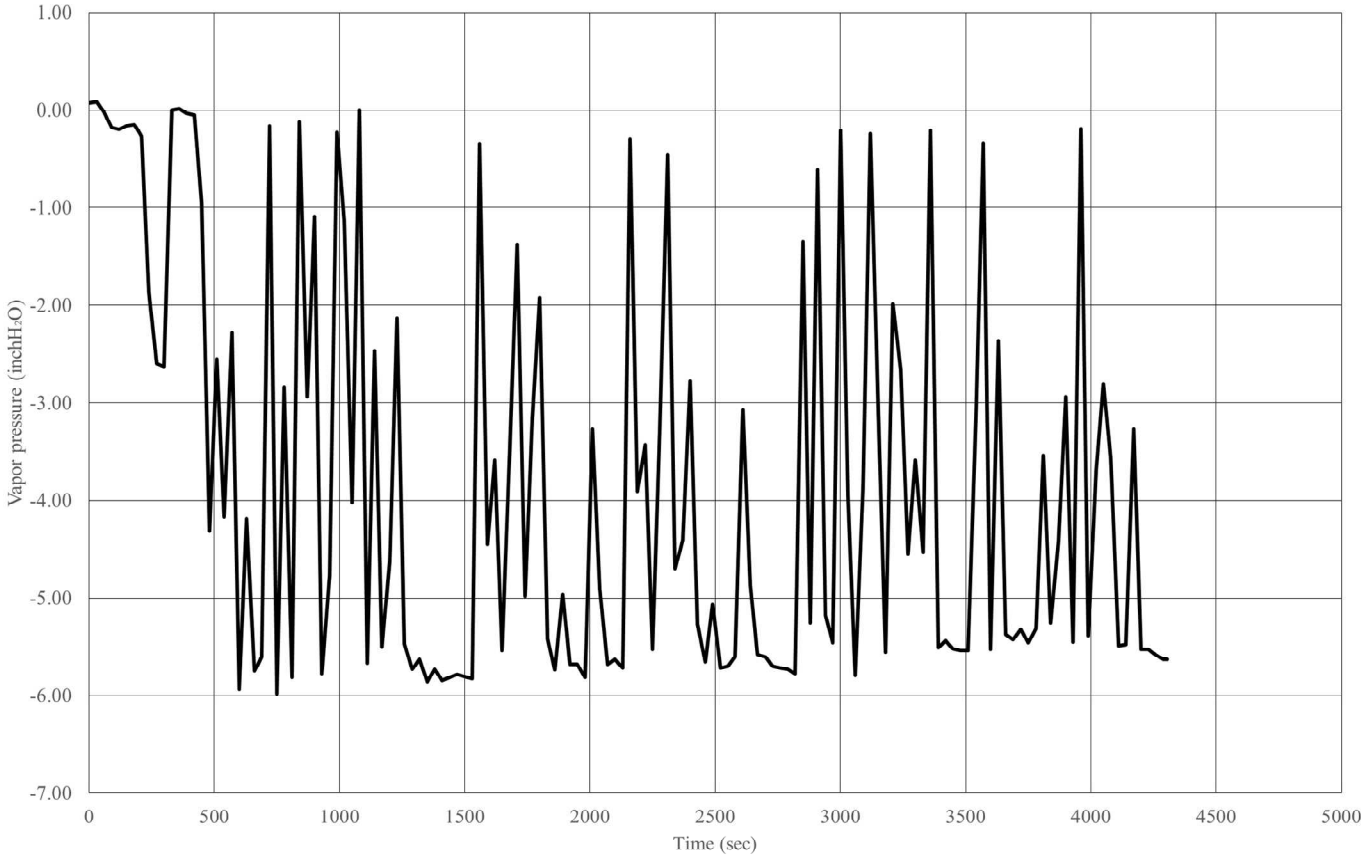
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.5	1200	100.9	2400	105.1	3600	110.5
30	95.5	1230	100.9	2430	105.3	3630	110.5
60	96.4	1260	101.1	2460	105.4	3660	110.7
90	97.0	1290	101.1	2490	105.6	3690	110.8
120	97.3	1320	101.1	2520	105.6	3720	110.8
150	97.5	1350	101.3	2550	105.6	3750	111.0
180	97.9	1380	101.3	2580	105.8	3780	111.2
210	98.1	1410	101.7	2610	105.8	3810	111.4
240	98.2	1440	101.5	2640	106.0	3840	111.6
270	98.2	1470	101.7	2670	106.2	3870	111.6
300	98.4	1500	101.7	2700	106.3	3900	111.6
330	98.4	1530	101.7	2730	106.5	3930	111.9
360	98.6	1560	101.7	2760	106.5	3960	111.7
390	98.8	1590	101.8	2790	106.7	3990	111.9
420	98.8	1620	102.0	2820	106.7	4020	112.1
450	99.0	1650	102.0	2850	106.7	4050	112.1
480	99.0	1680	102.0	2880	106.9	4080	112.3
510	99.0	1710	102.2	2910	107.1	4110	112.1
540	99.1	1740	102.4	2940	107.2	4140	112.3
570	99.1	1770	102.7	2970	107.6	4170	112.5
600	99.1	1800	102.6	3000	107.6	4200	112.5
630	99.3	1830	102.7	3030	107.8	4230	112.6
660	99.3	1860	102.9	3060	107.8	4260	112.6
690	99.5	1890	103.1	3090	108.0	4290	112.6
720	99.3	1920	103.1	3120	108.1	4304	112.6
750	99.5	1950	103.3	3150	108.3		
780	99.5	1980	103.3	3180	108.5		
810	99.7	2010	103.3	3210	108.7		
840	99.7	2040	103.6	3240	109.0		
870	99.9	2070	103.6	3270	109.0		
900	99.9	2100	103.8	3300	109.2		
930	100.0	2130	103.8	3330	109.4		
960	100.2	2160	104.0	3360	109.4		
990	100.2	2190	104.2	3390	109.6		
1020	100.4	2220	104.4	3420	109.6		
1050	100.4	2250	104.4	3450	109.9		
1080	100.6	2280	104.4	3480	109.9		
1110	100.6	2310	104.5	3510	110.1		
1140	100.6	2340	104.7	3540	110.1		
1170	100.8	2370	105.1	3570	110.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0180A42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0180A42.

Evaporative emission test log

Vehicle Description

	Evaporative / Refueling emission vehicle
Test group	: JTYXV05.0M5A
Vehicle ID	: 18-UZ2A
Rep. car/truck line	: LC 500
Rep. vehicle model	: URZ100L-ACUBHA
Displacement	: 303.2CID
Transmission	: AGA0E-A
Test weight	: 4,500 lbs.
Road load	: 14.1 HP
Evap. code	: UZ16

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0147	(g/mile)
	CO	:	0.06	(g/mile)
	NOx	:	0.0076	(g/mile)
Running loss		:	0.007	(g/mile)
Hot soak loss		:	0.0589	(g/test)
3DBL	1st day	:	0.1329*1	(g/test)
	2nd day	:	0.0906	(g/test)
	3rd day	:	0.0772	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/test)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0132	(g/mile)
	CO	:	0.05	(g/mile)
	NOx	:	0.0083	(g/mile)
Refueling emission		:	0.005	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0002 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

[Test vehicle]

Model name	:	RX 350
Data is representative for	:	RX 350, RX 350 AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	11/06/2021
Ambient air temperature (at initiation)	:	106.3°F
Ambient air temperature (at completion)	:	108.5°F
Track surface temperature (at initiation)	:	138.0°F
Track surface temperature (at completion)	:	144.9°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	11/06/2021
Ambient air temperature (at initiation)	:	106.5°F
Ambient air temperature (at completion)	:	108.5°F
Track surface temperature (at initiation)	:	136.6°F
Track surface temperature (at completion)	:	144.3°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

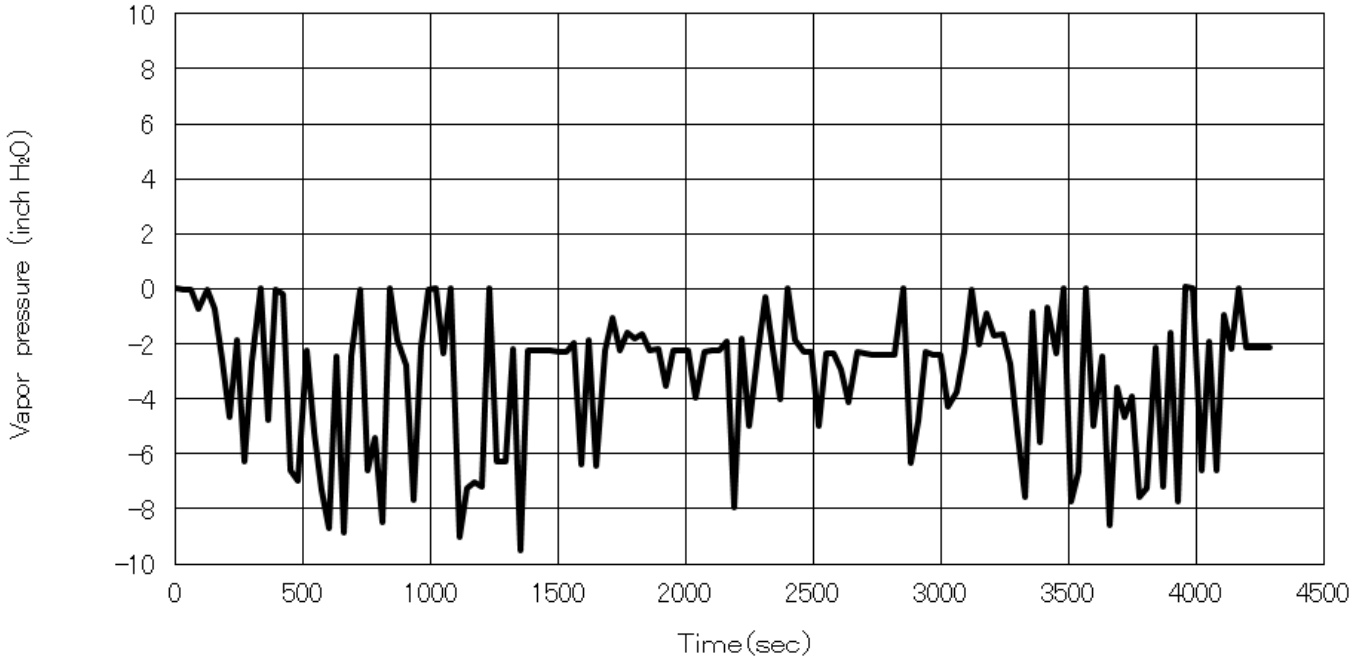
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.6	1200	111.4	2400	116.6	3600	123.1
30	105.6	1230	111.6	2430	116.8	3630	123.3
60	105.8	1260	111.6	2460	117.0	3660	123.4
90	105.8	1290	111.7	2490	117.1	3690	123.4
120	106.2	1320	111.9	2520	117.3	3720	123.8
150	106.3	1350	112.1	2550	117.5	3750	123.8
180	106.7	1380	112.1	2580	117.7	3780	124.0
210	106.9	1410	112.3	2610	117.7	3810	124.0
240	107.1	1440	112.5	2640	117.9	3840	124.0
270	107.2	1470	112.6	2670	118.0	3870	124.3
300	107.4	1500	112.8	2700	118.2	3900	124.5
330	107.6	1530	112.8	2730	118.4	3930	124.5
360	107.8	1560	112.8	2760	118.6	3960	124.7
390	108.1	1590	113.0	2790	118.8	3990	124.9
420	108.1	1620	113.2	2820	118.9	4020	124.9
450	108.3	1650	113.2	2850	118.9	4050	124.9
480	108.5	1680	113.4	2880	118.9	4080	125.2
510	108.5	1710	113.5	2910	119.1	4110	125.1
540	108.7	1740	113.5	2940	119.3	4140	125.2
570	108.9	1770	113.7	2970	119.7	4170	125.2
600	108.9	1800	113.9	3000	119.7	4200	125.6
630	109.0	1830	114.1	3030	119.8	4230	125.6
660	109.0	1860	114.1	3060	120.0	4260	125.6
690	109.2	1890	114.4	3090	120.2	4290	125.8
720	109.4	1920	114.4	3120	120.4		
750	109.4	1950	114.6	3150	120.7		
780	109.6	1980	114.8	3180	120.9		
810	109.6	2010	114.8	3210	121.1		
840	109.6	2040	115.0	3240	121.3		
870	109.9	2070	115.2	3270	121.5		
900	109.9	2100	115.3	3300	121.6		
930	110.1	2130	115.5	3330	121.8		
960	110.1	2160	115.3	3360	121.8		
990	110.3	2190	115.5	3390	122.0		
1020	110.5	2220	115.7	3420	122.2		
1050	110.7	2250	115.9	3450	122.7		
1080	110.8	2280	116.1	3480	122.5		
1110	111.0	2310	116.1	3510	122.7		
1140	111.0	2340	116.2	3540	122.9		
1170	111.2	2370	116.4	3570	122.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

[Test vehicle]

Model name	:	RX 350
Data is representative for	:	RX 350, RX 350 AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	11/08/2021
Ambient air temperature (at initiation)	:	96.4°F
Ambient air temperature (at completion)	:	98.2°F
Track surface temperature (at initiation)	:	134.1°F
Track surface temperature (at completion)	:	140.2°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	11/08/2021
Ambient air temperature (at initiation)	:	96.4°F
Ambient air temperature (at completion)	:	100.2°F
Track surface temperature (at initiation)	:	129.4°F
Track surface temperature (at completion)	:	128.8°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

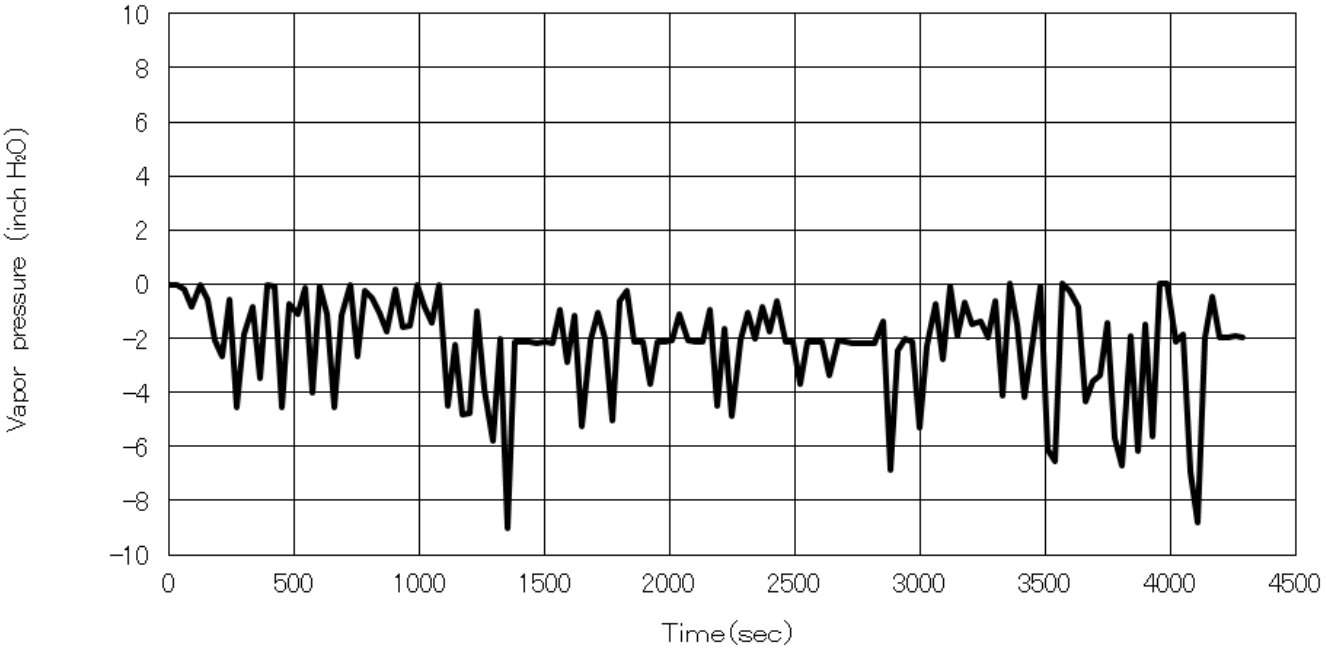
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	97.0	1200	102.4	2400	107.8	3600	114.3
30	97.0	1230	102.4	2430	107.8	3630	114.4
60	97.0	1260	102.6	2460	108.1	3660	114.6
90	97.2	1290	102.7	2490	108.3	3690	114.6
120	97.3	1320	102.7	2520	108.3	3720	114.8
150	97.5	1350	103.1	2550	108.5	3750	115.0
180	97.9	1380	103.1	2580	108.9	3780	115.0
210	97.9	1410	103.3	2610	108.7	3810	115.2
240	98.1	1440	103.6	2640	109.0	3840	115.2
270	98.2	1470	103.6	2670	109.2	3870	115.5
300	98.6	1500	103.8	2700	109.4	3900	115.5
330	98.8	1530	104.0	2730	109.6	3930	115.5
360	99.0	1560	104.0	2760	109.8	3960	115.5
390	99.1	1590	104.0	2790	109.8	3990	115.9
420	99.3	1620	104.4	2820	109.9	4020	115.9
450	99.5	1650	104.5	2850	109.9	4050	115.9
480	99.5	1680	104.5	2880	110.1	4080	116.2
510	99.7	1710	104.7	2910	110.3	4110	116.2
540	99.9	1740	104.9	2940	110.3	4140	116.4
570	99.9	1770	105.1	2970	110.5	4170	116.4
600	100.0	1800	105.3	3000	110.7	4200	116.6
630	100.2	1830	105.4	3030	111.0	4230	116.8
660	100.2	1860	105.6	3060	111.2	4260	116.8
690	100.2	1890	105.8	3090	111.4	4290	116.8
720	100.4	1920	105.8	3120	111.6		
750	100.4	1950	105.8	3150	111.9		
780	100.6	1980	106.2	3180	112.1		
810	100.6	2010	106.0	3210	112.3		
840	100.8	2040	106.3	3240	112.5		
870	100.9	2070	106.3	3270	112.6		
900	101.1	2100	106.5	3300	112.8		
930	101.1	2130	106.7	3330	113.0		
960	101.3	2160	106.7	3360	113.0		
990	101.5	2190	106.9	3390	113.2		
1020	101.7	2220	107.1	3420	113.5		
1050	101.8	2250	107.1	3450	113.7		
1080	101.8	2280	107.2	3480	113.7		
1110	102.0	2310	107.4	3510	113.9		
1140	102.0	2340	107.6	3540	114.1		
1170	102.2	2370	107.6	3570	114.1		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

[Test vehicle]		
Model name	:	GRAND HIGHLANDER
Data is representative for	:	GRAND HIGHLANDER, GRAND HIGHLANDER AWD, TX 350, TX 350 AWD
[Test procedure]	:	CARB method
[Test conditions]		
Date	:	03/09/2022
Ambient air temperature (at initiation)	:	108.5°F
Ambient air temperature (at completion)	:	110.3°F
Track surface temperature (at initiation)	:	138.2°F
Track surface temperature (at completion)	:	139.1°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]		
Date	:	3/16/2022
Ambient air temperature (at initiation)	:	105.4°F
Ambient air temperature (at completion)	:	107.6°F
Track surface temperature (at initiation)	:	149.0°F
Track surface temperature (at completion)	:	151.0°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

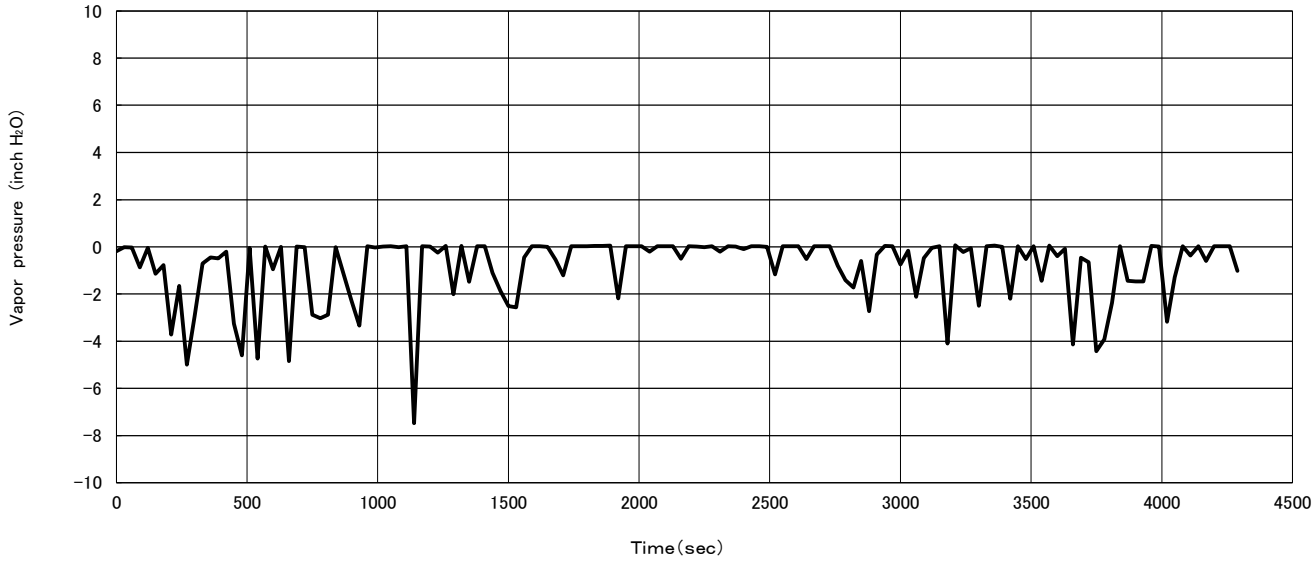
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.3	1200	111.2	2400	117.5	3600	124.2
30	106.3	1230	111.2	2430	117.9	3630	124.3
60	106.5	1260	111.4	2460	118.0	3660	124.5
90	106.5	1290	111.6	2490	118.2	3690	124.7
120	106.5	1320	111.7	2520	118.4	3720	124.9
150	106.5	1350	112.1	2550	118.4	3750	124.9
180	106.7	1380	112.1	2580	118.6	3780	125.1
210	106.7	1410	112.3	2610	118.8	3810	125.1
240	106.7	1440	112.6	2640	118.9	3840	125.4
270	106.7	1470	112.8	2670	118.9	3870	125.4
300	106.9	1500	113.0	2700	119.3	3900	125.6
330	106.9	1530	113.0	2730	119.7	3930	125.8
360	107.2	1560	113.2	2760	119.8	3960	125.8
390	107.2	1590	113.4	2790	120.0	3990	126.1
420	107.4	1620	113.4	2820	120.0	4020	126.1
450	107.4	1650	113.5	2850	120.0	4050	126.3
480	107.6	1680	113.5	2880	119.8	4080	126.5
510	107.8	1710	113.7	2910	120.0	4110	126.5
540	108.0	1740	114.1	2940	120.2	4140	126.7
570	108.0	1770	114.4	2970	120.6	4170	126.9
600	108.3	1800	114.4	3000	120.6	4200	127.0
630	108.3	1830	114.6	3030	120.6	4230	127.0
660	108.5	1860	114.8	3060	120.6	4260	127.2
690	108.5	1890	115.2	3090	120.9	4290	127.4
720	108.5	1920	115.2	3120	120.9		
750	108.7	1950	115.3	3150	121.6		
780	108.9	1980	115.5	3180	121.6		
810	108.9	2010	115.5	3210	122.0		
840	108.9	2040	115.7	3240	122.2		
870	109.0	2070	115.7	3270	122.5		
900	109.2	2100	116.1	3300	122.5		
930	109.4	2130	116.2	3330	122.9		
960	109.6	2160	116.2	3360	123.1		
990	109.8	2190	116.4	3390	123.3		
1020	110.1	2220	116.6	3420	123.4		
1050	110.3	2250	116.8	3450	123.4		
1080	110.3	2280	117.0	3480	123.6		
1110	110.7	2310	117.0	3510	123.8		
1140	110.8	2340	117.3	3540	124.0		
1170	111.0	2370	117.5	3570	124.0		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

[Test vehicle]		
Model name	:	GRAND HIGHLANDER
Data is representative for	:	GRAND HIGHLANDER, GRAND HIGHLANDER AWD, TX 350, TX 350 AWD
[Test procedure]	:	EPA method
[Test conditions]		
Date	:	3/9/2022
Ambient air temperature (at initiation)	:	95.9°F
Ambient air temperature (at completion)	:	100.2°F
Track surface temperature (at initiation)	:	126.3°F
Track surface temperature (at completion)	:	129.7°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]		
Date	:	3/16/2022
Ambient air temperature (at initiation)	:	96.1°F
Ambient air temperature (at completion)	:	97.3°F
Track surface temperature (at initiation)	:	131.5°F
Track surface temperature (at completion)	:	132.8°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

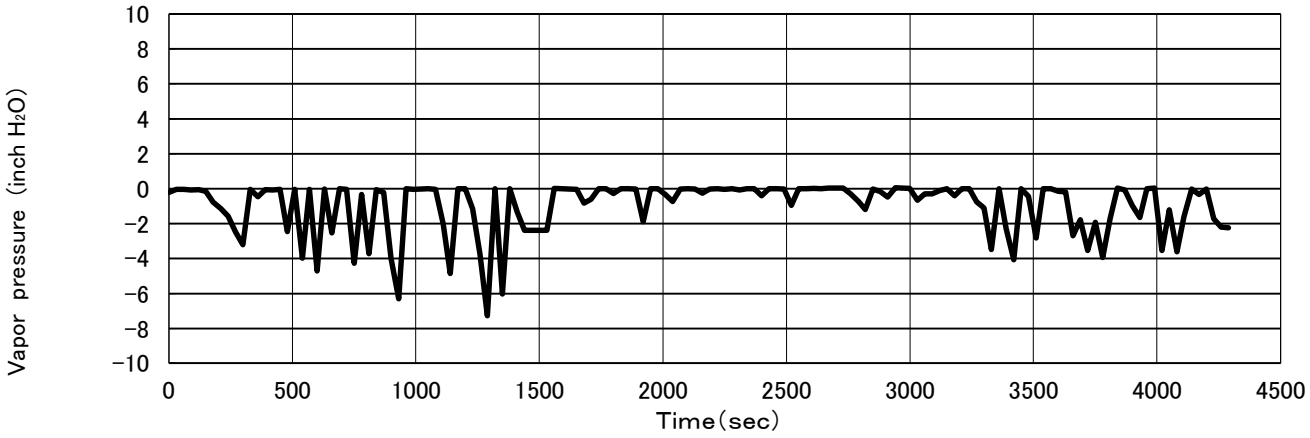
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.3	1200	99.7	2400	104.9	3600	111.7
30	96.4	1230	99.9	2430	105.4	3630	111.7
60	96.4	1260	99.9	2460	105.8	3660	111.7
90	96.4	1290	100.0	2490	106.0	3690	111.9
120	96.4	1320	100.2	2520	105.8	3720	112.3
150	96.4	1350	100.4	2550	106.0	3750	112.5
180	96.4	1380	100.6	2580	106.3	3780	112.8
210	96.4	1410	100.8	2610	106.2	3810	113.0
240	96.4	1440	100.9	2640	106.3	3840	113.2
270	96.4	1470	100.9	2670	106.3	3870	113.4
300	96.3	1500	101.3	2700	106.9	3900	113.2
330	96.4	1530	101.3	2730	107.1	3930	113.5
360	96.4	1560	101.5	2760	107.2	3960	113.5
390	96.6	1590	101.5	2790	107.4	3990	113.7
420	96.6	1620	101.7	2820	107.8	4020	114.1
450	96.8	1650	101.8	2850	107.4	4050	113.9
480	96.8	1680	101.8	2880	107.4	4080	114.4
510	97.0	1710	102.0	2910	107.4	4110	114.3
540	97.0	1740	102.4	2940	107.8	4140	114.4
570	97.2	1770	102.4	2970	108.0	4170	114.6
600	97.2	1800	102.6	3000	108.0	4200	114.6
630	97.5	1830	102.7	3030	108.1	4230	115.0
660	97.5	1860	102.9	3060	108.3	4260	115.0
690	97.7	1890	103.1	3090	108.5	4290	115.2
720	97.7	1920	103.1	3120	108.9		
750	97.7	1950	103.3	3150	109.0		
780	97.9	1980	103.5	3180	109.2		
810	97.9	2010	103.5	3210	109.6		
840	97.9	2040	103.6	3240	109.8		
870	98.1	2070	103.6	3270	110.1		
900	98.1	2100	104.0	3300	110.1		
930	98.2	2130	104.2	3330	110.5		
960	98.4	2160	104.2	3360	110.5		
990	98.4	2190	104.0	3390	110.8		
1020	98.6	2220	104.2	3420	111.0		
1050	98.8	2250	104.4	3450	111.2		
1080	99.0	2280	104.4	3480	111.2		
1110	99.1	2310	104.5	3510	111.4		
1140	99.3	2340	104.7	3540	111.4		
1170	99.5	2370	105.1	3570	111.6		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P52.

Evaporative emission test log

Vehicle Description

	Evaporative emission vehicle /	Refueling emission vehicle
Test group:	RTYXT02.4P3P	HTYXT03.5M5M
Vehicle ID:	24-TS1A	17-GL4A
Rep. car/truck line:	GRAND HIGHLANDER	SIENNA AWD
Rep. vehicle model:	TASA15L-AWZGTA	GSL35L-PFZQHA
Displacement:	146.0CID	210.9CID
Transmission:	UA81F-D	L8/UA80F-A
Test weight:	5,000 lbs.	5,000 lbs.
Road load:	15.6 HP	17.3 HP
Evap. code:	TS1L	GL2L

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0048	(g/mile)
	CO	:	0.11	(g/mile)
	NOx	:	0.0072	(g/mile)
Running loss		:	0.006	(g/mile)
Hot soak loss		:	0.0547	(g/test)
3DBL	1st day	:	0.1231 *1	(g/test)
	2nd day	:	0.0948	(g/test)
	3rd day	:	0.0850	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/test)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0108	(g/mile)
	CO	:	0.09	(g/mile)
	NOx	:	0.0158	(g/mile)
Refueling emission		:	0.005	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0008 gram).
*2: in lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	RX 500h AWD
Data is representative for	:	RX 500h AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	10/04/2021
Ambient air temperature (at initiation)	:	106.2°F
Ambient air temperature (at completion)	:	108.5°F
Track surface temperature (at initiation)	:	149.0°F
Track surface temperature (at completion)	:	150.8°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	10/04/2021
Ambient air temperature (at initiation)	:	107.2°F
Ambient air temperature (at completion)	:	109.0°F
Track surface temperature (at initiation)	:	148.8°F
Track surface temperature (at completion)	:	150.8°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

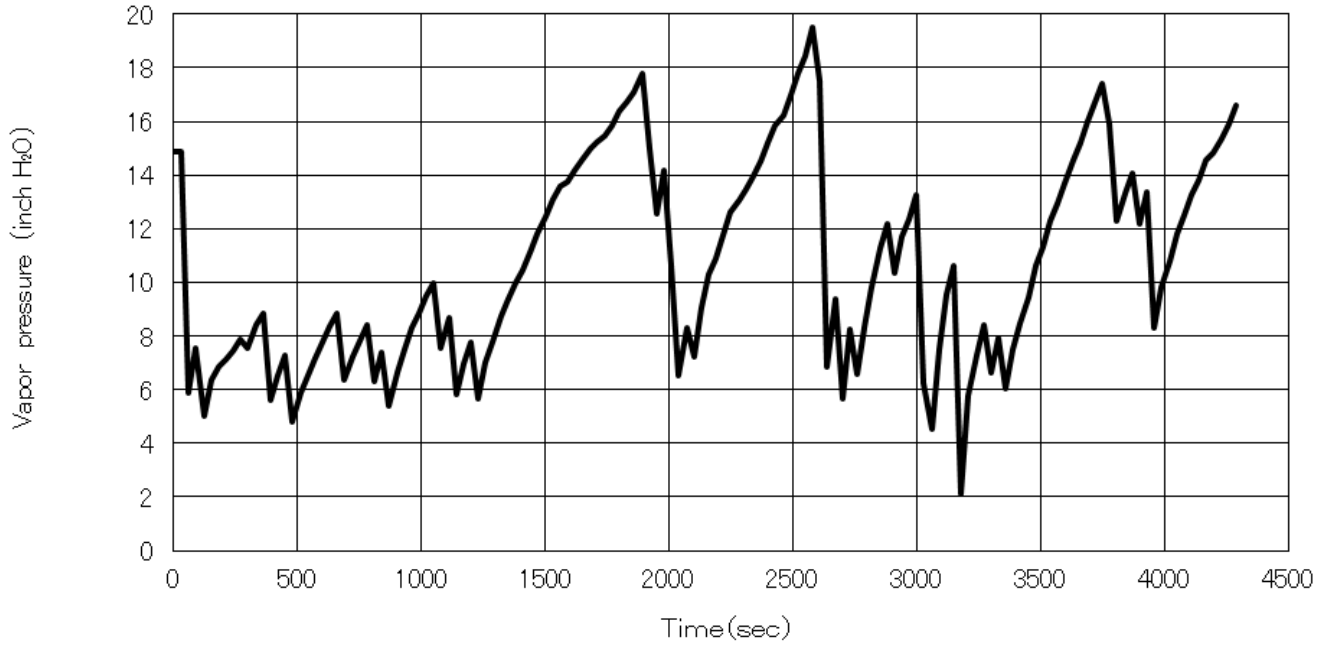
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	107.2	1200	110.1	2400	114.6	3600	120.0
30	107.4	1230	110.5	2430	115.2	3630	120.6
60	107.1	1260	110.5	2460	115.3	3660	120.0
90	107.1	1290	110.7	2490	115.5	3690	120.4
120	107.2	1320	110.8	2520	115.5	3720	120.6
150	107.1	1350	111.0	2550	115.7	3750	121.1
180	107.1	1380	110.8	2580	116.2	3780	120.4
210	107.2	1410	111.2	2610	116.2	3810	120.4
240	107.1	1440	111.2	2640	116.4	3840	120.4
270	107.1	1470	111.4	2670	116.2	3870	120.7
300	107.1	1500	111.6	2700	116.6	3900	120.7
330	107.1	1530	111.7	2730	117.0	3930	120.7
360	107.6	1560	111.9	2760	117.1	3960	120.7
390	107.4	1590	111.6	2790	117.0	3990	120.7
420	107.8	1620	111.7	2820	117.0	4020	120.9
450	107.8	1650	111.7	2850	117.9	4050	121.1
480	108.0	1680	111.9	2880	117.3	4080	121.1
510	107.8	1710	111.7	2910	117.5	4110	121.3
540	108.1	1740	111.9	2940	117.3	4140	121.3
570	108.1	1770	112.3	2970	117.5	4170	121.8
600	108.3	1800	112.5	3000	117.5	4200	121.6
630	108.3	1830	112.5	3030	117.9	4230	121.8
660	108.3	1860	112.8	3060	118.2	4260	122.0
690	108.5	1890	113.0	3090	118.4	4290	122.0
720	108.9	1920	112.8	3120	118.6		
750	108.7	1950	113.0	3150	118.0		
780	108.7	1980	113.5	3180	118.8		
810	109.0	2010	113.4	3210	118.6		
840	109.0	2040	113.5	3240	118.4		
870	109.2	2070	113.9	3270	118.4		
900	109.2	2100	114.1	3300	119.1		
930	109.6	2130	114.3	3330	118.6		
960	109.6	2160	114.1	3360	118.9		
990	109.6	2190	114.3	3390	118.9		
1020	109.8	2220	114.4	3420	119.1		
1050	109.9	2250	114.6	3450	119.3		
1080	109.9	2280	114.6	3480	119.7		
1110	109.9	2310	114.3	3510	119.7		
1140	110.1	2340	114.6	3540	119.5		
1170	110.3	2370	114.8	3570	119.7		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	RX 500h AWD
Data is representative for	:	RX 500h AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	10/06/2021
Ambient air temperature (at initiation)	:	97.2°F
Ambient air temperature (at completion)	:	98.6°F
Track surface temperature (at initiation)	:	130.8°F
Track surface temperature (at completion)	:	132.6°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	10/06/2022
Ambient air temperature (at initiation)	:	95.9°F
Ambient air temperature (at completion)	:	99.5°F
Track surface temperature (at initiation)	:	131.0°F
Track surface temperature (at completion)	:	132.6°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

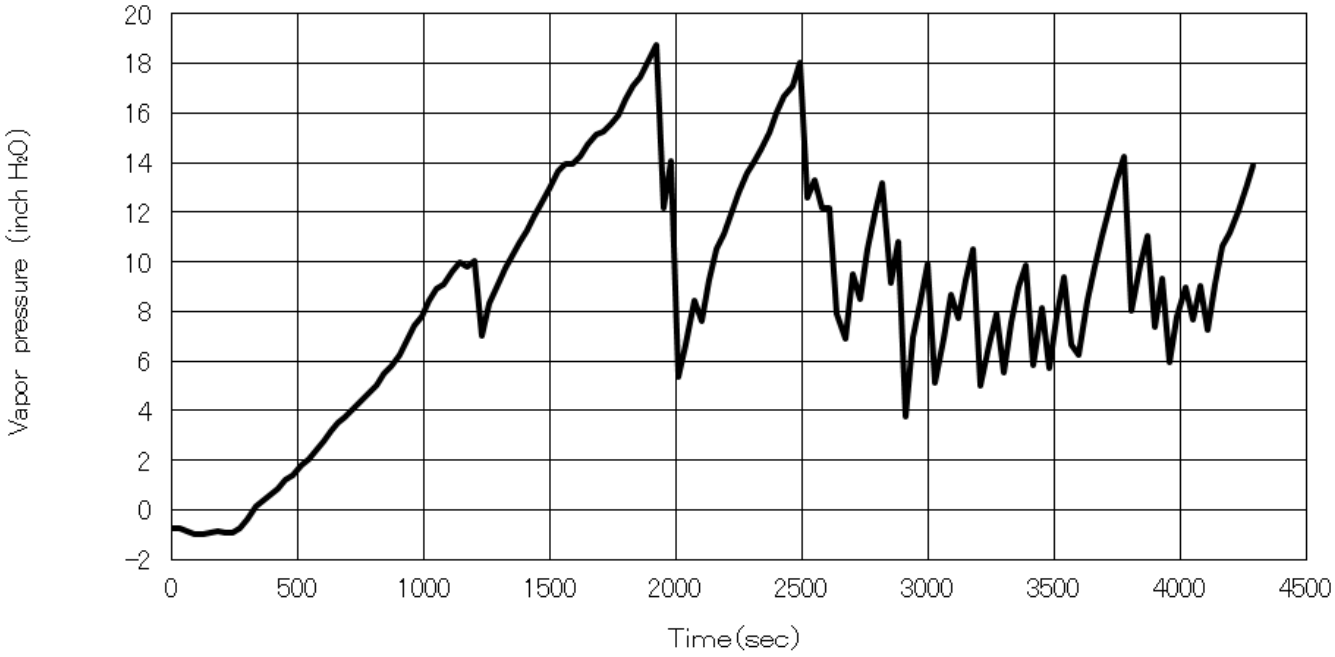
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.3	1200	99.3	2400	104.5	3600	109.4
30	96.3	1230	99.9	2430	104.5	3630	109.8
60	96.1	1260	99.7	2460	104.7	3660	109.6
90	96.1	1290	99.9	2490	105.3	3690	109.9
120	96.1	1320	100.0	2520	104.9	3720	110.1
150	96.1	1350	99.9	2550	105.3	3750	109.9
180	96.1	1380	99.9	2580	105.6	3780	109.9
210	96.1	1410	100.2	2610	105.6	3810	110.3
240	96.3	1440	100.6	2640	105.8	3840	109.9
270	95.9	1470	100.4	2670	105.6	3870	110.1
300	96.1	1500	100.6	2700	106.2	3900	110.3
330	96.4	1530	100.8	2730	105.8	3930	110.1
360	96.6	1560	100.8	2760	106.2	3960	110.3
390	96.4	1590	100.9	2790	106.3	3990	110.5
420	96.6	1620	100.8	2820	106.5	4020	110.5
450	96.6	1650	101.1	2850	107.1	4050	110.7
480	97.0	1680	101.3	2880	106.7	4080	110.8
510	96.8	1710	101.1	2910	106.9	4110	111.0
540	97.0	1740	101.3	2940	106.5	4140	111.0
570	97.0	1770	101.7	2970	106.5	4170	111.4
600	97.3	1800	101.8	3000	106.9	4200	111.2
630	97.2	1830	102.0	3030	107.1	4230	111.6
660	97.5	1860	102.0	3060	107.2	4260	111.6
690	97.5	1890	102.2	3090	107.4	4290	111.7
720	97.7	1920	102.4	3120	107.4		
750	97.7	1950	102.6	3150	107.2		
780	97.9	1980	102.7	3180	108.1		
810	98.1	2010	102.7	3210	107.8		
840	98.1	2040	103.1	3240	108.1		
870	98.2	2070	103.1	3270	108.1		
900	98.6	2100	103.5	3300	108.5		
930	98.4	2130	103.5	3330	108.1		
960	98.4	2160	103.3	3360	108.3		
990	98.6	2190	103.8	3390	108.5		
1020	98.8	2220	103.6	3420	108.7		
1050	98.8	2250	103.8	3450	108.9		
1080	99.3	2280	103.8	3480	108.9		
1110	99.1	2310	103.8	3510	108.9		
1140	99.5	2340	103.8	3540	108.9		
1170	99.3	2370	104.4	3570	109.0		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	GRAND HIGHLANDER HYBRID AWD
Data is representative for	:	GRAND HIGHLANDER HYBIRD AWD, TX 500h AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	04/19/2022
Ambient air temperature (at initiation)	:	105.3 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	141.3 °F
Track surface temperature (at completion)	:	143.4 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	04/20/2022
Ambient air temperature (at initiation)	:	105.3 °F
Ambient air temperature (at completion)	:	110.3 °F
Track surface temperature (at initiation)	:	139.1 °F
Track surface temperature (at completion)	:	143.6 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

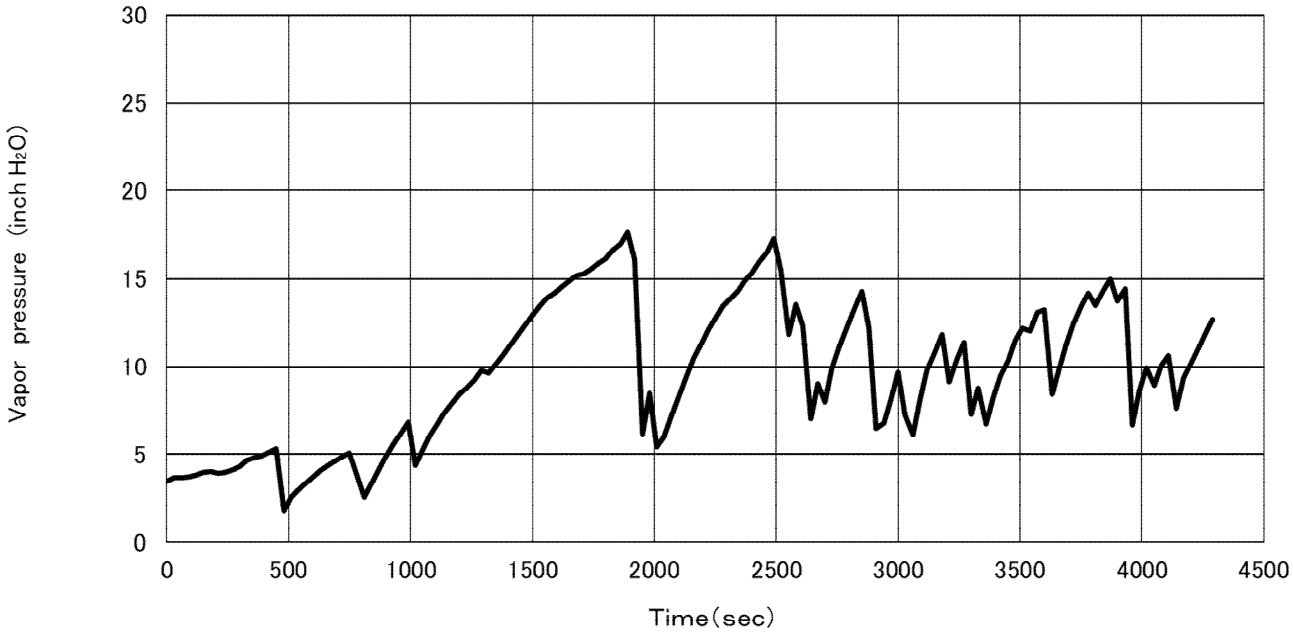
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.7	1200	111.9	2400	116.2	3600	121.5
30	106.9	1230	111.9	2430	116.6	3630	121.8
60	106.9	1260	112.3	2460	116.8	3660	121.6
90	107.1	1290	112.6	2490	117.1	3690	122.2
120	107.2	1320	112.6	2520	116.8	3720	122.5
150	107.6	1350	112.8	2550	117.0	3750	122.7
180	107.6	1380	113.0	2580	117.3	3780	122.4
210	108.0	1410	113.0	2610	117.3	3810	122.5
240	108.1	1440	113.2	2640	117.5	3840	122.4
270	108.1	1470	113.2	2670	117.7	3870	123.1
300	108.3	1500	113.2	2700	117.9	3900	122.9
330	108.5	1530	113.4	2730	118.0	3930	123.1
360	108.9	1560	113.5	2760	118.2	3960	122.9
390	109.0	1590	113.7	2790	118.2	3990	122.7
420	109.0	1620	113.7	2820	118.4	4020	122.7
450	109.0	1650	113.5	2850	118.4	4050	122.4
480	109.4	1680	113.5	2880	118.8	4080	122.5
510	109.4	1710	113.5	2910	119.1	4110	123.1
540	109.4	1740	113.5	2940	118.4	4140	122.7
570	109.8	1770	114.1	2970	118.4	4170	122.9
600	109.8	1800	113.9	3000	118.6	4200	122.7
630	109.9	1830	114.1	3030	119.3	4230	123.1
660	109.9	1860	114.4	3060	119.5	4260	123.4
690	110.1	1890	114.8	3090	119.7	4290	123.4
720	110.1	1920	114.3	3120	119.8		
750	110.1	1950	114.3	3150	119.5		
780	110.1	1980	114.8	3180	120.6		
810	110.7	2010	114.8	3210	120.0		
840	110.8	2040	115.2	3240	120.2		
870	111.0	2070	115.3	3270	120.4		
900	111.2	2100	115.3	3300	120.7		
930	111.2	2130	115.3	3330	120.2		
960	111.4	2160	115.9	3360	120.2		
990	111.4	2190	116.1	3390	120.6		
1020	111.6	2220	116.1	3420	120.7		
1050	111.6	2250	116.1	3450	120.9		
1080	111.9	2280	115.7	3480	121.6		
1110	111.6	2310	115.5	3510	121.1		
1140	111.9	2340	115.9	3540	121.3		
1170	111.6	2370	116.4	3570	121.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	GRAND HIGHLANDER HYBRID AWD
Data is representative for	:	GRAND HIGHLANDER HYBIRD AWD, TX 500h AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	04/19/2022
Ambient air temperature (at initiation)	:	95.5 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	126.7 °F
Track surface temperature (at completion)	:	132.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	04/20/2022
Ambient air temperature (at initiation)	:	95.4 °F
Ambient air temperature (at completion)	:	99.9 °F
Track surface temperature (at initiation)	:	135.7 °F
Track surface temperature (at completion)	:	134.8 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

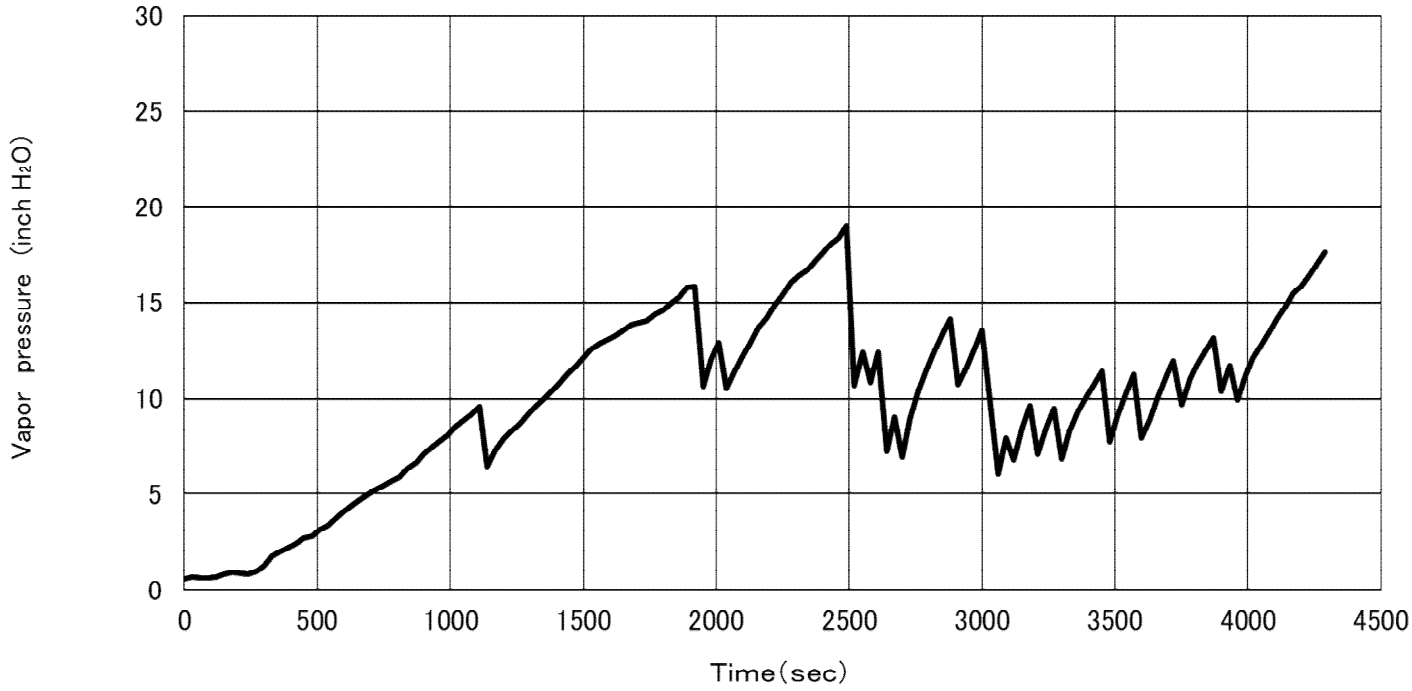
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.6	1200	100.9	2400	104.9	3600	109.8
30	96.8	1230	100.9	2430	105.3	3630	109.9
60	97.2	1260	101.3	2460	105.4	3660	109.9
90	97.2	1290	101.5	2490	105.6	3690	110.5
120	97.3	1320	101.7	2520	105.3	3720	110.5
150	97.3	1350	101.5	2550	105.4	3750	110.5
180	97.3	1380	101.8	2580	105.8	3780	110.3
210	97.9	1410	101.8	2610	105.8	3810	110.7
240	98.1	1440	102.0	2640	105.8	3840	110.5
270	98.1	1470	102.0	2670	106.2	3870	111.0
300	98.2	1500	102.2	2700	106.5	3900	110.7
330	98.2	1530	102.2	2730	106.3	3930	110.7
360	98.6	1560	102.2	2760	106.5	3960	110.8
390	98.6	1590	102.4	2790	106.7	3990	110.8
420	98.4	1620	102.4	2820	106.9	4020	110.8
450	98.6	1650	102.6	2850	107.1	4050	110.8
480	98.8	1680	102.4	2880	107.2	4080	111.0
510	98.8	1710	102.4	2910	107.6	4110	111.7
540	99.0	1740	102.4	2940	107.2	4140	111.7
570	99.1	1770	102.7	2970	107.1	4170	111.7
600	99.3	1800	102.7	3000	107.4	4200	111.9
630	99.3	1830	102.7	3030	108.0	4230	112.1
660	99.3	1860	103.1	3060	108.1	4260	112.3
690	99.5	1890	103.1	3090	108.0	4290	112.1
720	99.3	1920	103.1	3120	108.1		
750	99.3	1950	103.1	3150	107.8		
780	99.5	1980	103.6	3180	108.5		
810	99.9	2010	103.6	3210	108.5		
840	99.9	2040	103.8	3240	108.5		
870	100.0	2070	103.8	3270	108.7		
900	100.2	2100	104.0	3300	109.0		
930	100.0	2130	104.0	3330	108.7		
960	100.4	2160	104.4	3360	108.9		
990	100.6	2190	104.5	3390	108.5		
1020	100.8	2220	104.5	3420	108.9		
1050	100.8	2250	104.5	3450	109.4		
1080	100.9	2280	104.5	3480	109.2		
1110	100.9	2310	104.7	3510	109.4		
1140	101.1	2340	104.7	3540	109.2		
1170	101.1	2370	105.1	3570	109.6		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	RAV4 PRIME AWD
Data is representative for	:	NX 450h+ AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	10/02/2019
Ambient air temperature (at initiation)	:	108.7 °F
Ambient air temperature (at completion)	:	109.8 °F
Track surface temperature (at initiation)	:	144.0 °F
Track surface temperature (at completion)	:	147.9 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	10/02/2019
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	109.0 °F
Track surface temperature (at initiation)	:	139.3 °F
Track surface temperature (at completion)	:	144.7 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

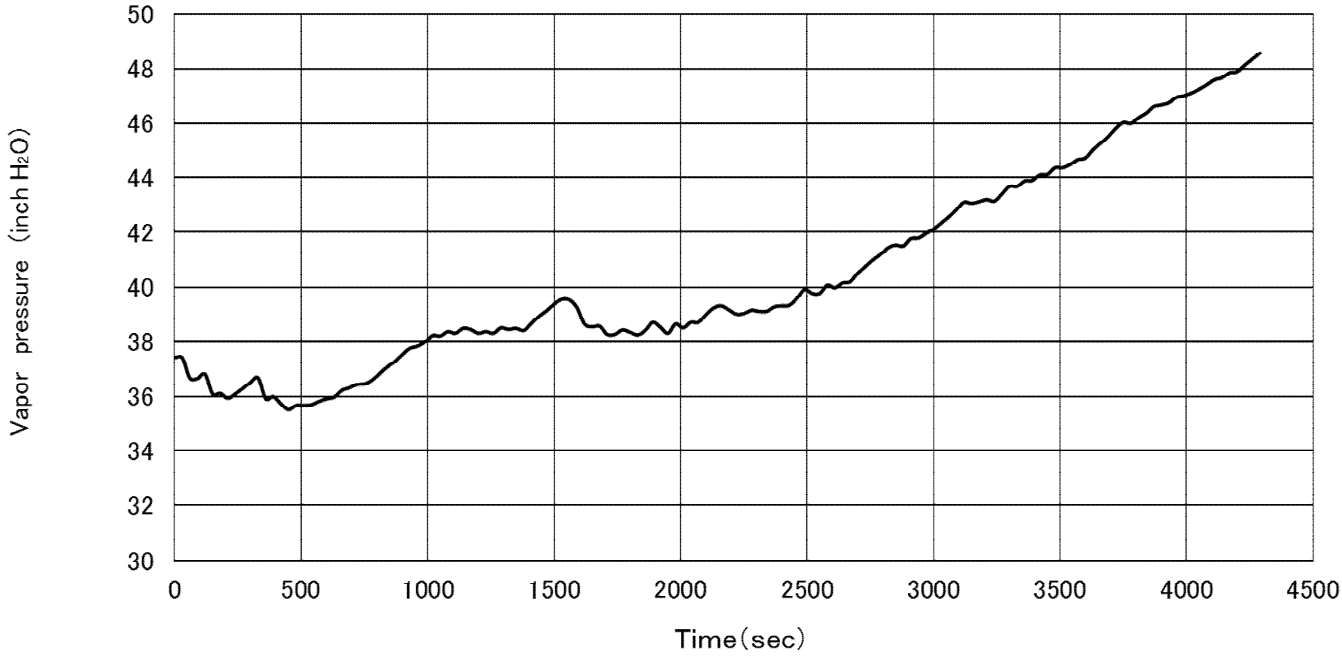
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	94.5	1200	97.7	2400	99.0	3600	100.2
30	94.5	1230	97.7	2430	99.0	3630	100.4
60	94.6	1260	97.7	2460	99.0	3660	100.4
90	94.8	1290	97.9	2490	99.0	3690	100.6
120	95.0	1320	97.9	2520	99.0	3720	100.6
150	95.2	1350	97.9	2550	99.0	3750	100.6
180	95.4	1380	97.9	2580	99.1	3780	100.6
210	95.5	1410	97.9	2610	99.0	3810	100.6
240	95.7	1440	98.1	2640	99.0	3840	100.6
270	95.7	1470	98.1	2670	99.1	3870	100.6
300	95.9	1500	98.1	2700	99.1	3900	100.8
330	96.1	1530	98.1	2730	99.1	3930	100.6
360	96.3	1560	97.9	2760	99.1	3960	100.6
390	96.4	1590	97.9	2790	99.1	3990	100.8
420	96.4	1620	97.9	2820	99.1	4020	100.8
450	96.6	1650	97.9	2850	99.1	4050	100.8
480	96.8	1680	97.9	2880	99.3	4080	100.8
510	96.8	1710	98.1	2910	99.3	4110	100.8
540	97.0	1740	97.9	2940	99.3	4140	100.8
570	97.0	1770	98.1	2970	99.5	4170	100.8
600	97.0	1800	98.1	3000	99.5	4200	100.8
630	97.2	1830	98.2	3030	99.5	4230	100.9
660	97.2	1860	98.2	3060	99.5	4260	100.9
690	97.2	1890	98.2	3090	99.5	4290	100.9
720	97.3	1920	98.2	3120	99.7		
750	97.3	1950	98.4	3150	99.7		
780	97.3	1980	98.4	3180	99.7		
810	97.3	2010	98.4	3210	99.9		
840	97.5	2040	98.4	3240	99.9		
870	97.5	2070	98.4	3270	100.0		
900	97.5	2100	98.4	3300	100.0		
930	97.5	2130	98.6	3330	100.0		
960	97.7	2160	98.6	3360	100.0		
990	97.7	2190	98.6	3390	100.2		
1020	97.7	2220	98.6	3420	100.2		
1050	97.9	2250	98.6	3450	100.2		
1080	97.7	2280	98.8	3480	100.2		
1110	97.9	2310	98.8	3510	100.2		
1140	97.7	2340	99.0	3540	100.2		
1170	97.9	2370	99.0	3570	100.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	RAV4 PRIME AWD
Data is representative for	:	NX 450h+ AWD

[Test procedure]	:	EPA method

[Test conditions]

Date	:	10/01/2019
Ambient air temperature (at initiation)	:	99.1 °F
Ambient air temperature (at completion)	:	99.7 °F
Track surface temperature (at initiation)	:	127.6 °F
Track surface temperature (at completion)	:	131.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	10/01/2019
Ambient air temperature (at initiation)	:	99.3 °F
Ambient air temperature (at completion)	:	99.7 °F
Track surface temperature (at initiation)	:	127.9 °F
Track surface temperature (at completion)	:	132.6 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

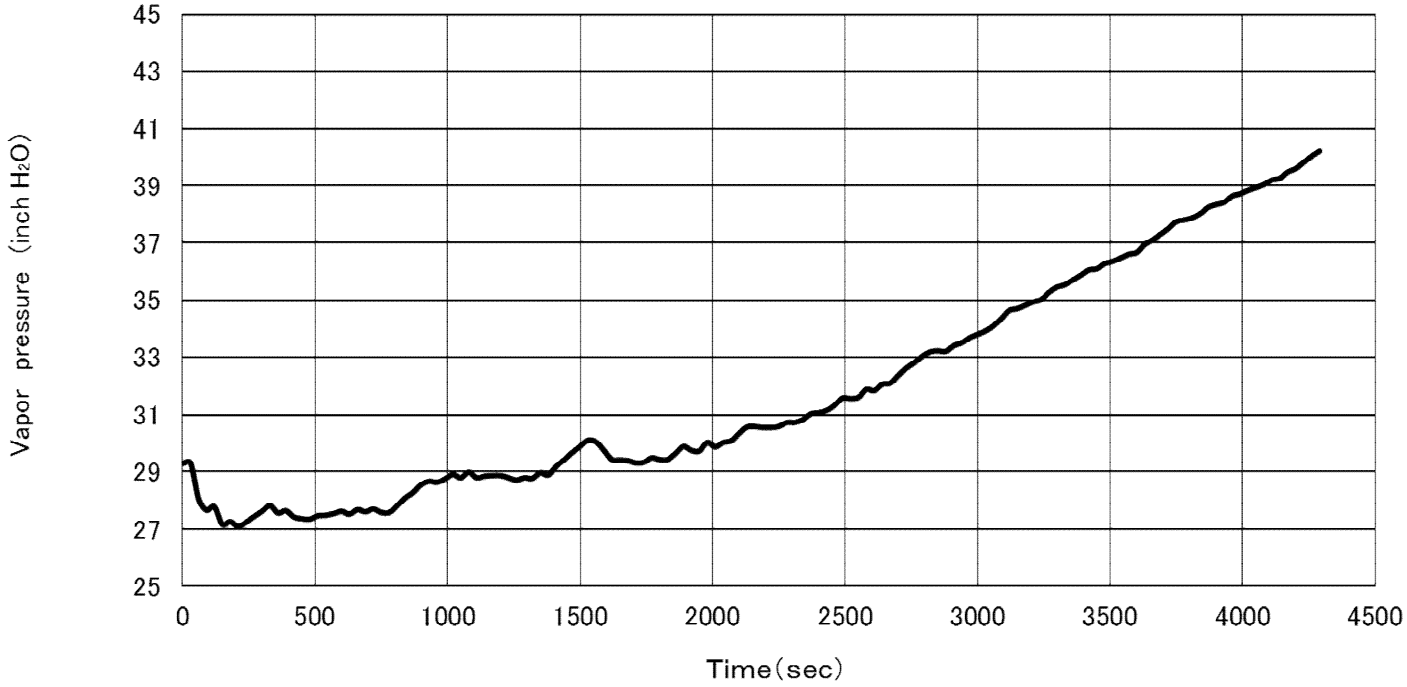
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	84.4	1200	87.1	2400	88.5	3600	89.8
30	84.4	1230	87.3	2430	88.7	3630	89.8
60	84.4	1260	87.3	2460	88.7	3660	89.8
90	84.6	1290	87.3	2490	88.7	3690	89.8
120	84.9	1320	87.3	2520	88.7	3720	90.0
150	85.1	1350	87.4	2550	88.7	3750	90.0
180	85.3	1380	87.4	2580	88.7	3780	90.0
210	85.3	1410	87.4	2610	88.9	3810	90.0
240	85.5	1440	87.4	2640	88.9	3840	90.0
270	85.5	1470	87.6	2670	88.9	3870	90.1
300	85.5	1500	87.4	2700	88.9	3900	90.1
330	85.6	1530	87.6	2730	88.9	3930	90.1
360	85.8	1560	87.6	2760	88.9	3960	90.1
390	86.0	1590	87.6	2790	88.9	3990	90.1
420	86.0	1620	87.6	2820	88.9	4020	90.1
450	86.2	1650	87.6	2850	88.9	4050	90.1
480	86.2	1680	87.6	2880	89.1	4080	90.3
510	86.2	1710	87.8	2910	89.1	4110	90.3
540	86.4	1740	87.8	2940	89.1	4140	90.3
570	86.4	1770	87.8	2970	89.1	4170	90.3
600	86.5	1800	87.8	3000	89.2	4200	90.3
630	86.5	1830	88.0	3030	89.1	4230	90.3
660	86.5	1860	88.0	3060	89.1	4260	90.5
690	86.5	1890	88.0	3090	89.1	4290	90.5
720	86.5	1920	88.0	3120	89.2		
750	86.7	1950	88.2	3150	89.2		
780	86.7	1980	88.2	3180	89.2		
810	86.7	2010	88.2	3210	89.2		
840	86.7	2040	88.2	3240	89.4		
870	86.9	2070	88.2	3270	89.4		
900	86.9	2100	88.2	3300	89.4		
930	87.1	2130	88.2	3330	89.4		
960	87.1	2160	88.3	3360	89.6		
990	87.1	2190	88.3	3390	89.6		
1020	87.1	2220	88.3	3420	89.6		
1050	87.1	2250	88.3	3450	89.6		
1080	87.1	2280	88.3	3480	89.6		
1110	87.3	2310	88.5	3510	89.8		
1140	87.3	2340	88.5	3540	89.8		
1170	87.3	2370	88.5	3570	89.8		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	RX 450h+ AWD
Data is representative for	:	RX 450h+ AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	09/27/2022
Ambient air temperature (at initiation)	:	107.4°F
Ambient air temperature (at completion)	:	109.0°F
Track surface temperature (at initiation)	:	148.6°F
Track surface temperature (at completion)	:	150.3°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	09/28/2022
Ambient air temperature (at initiation)	:	107.4°F
Ambient air temperature (at completion)	:	109.0°F
Track surface temperature (at initiation)	:	148.6°F
Track surface temperature (at completion)	:	150.3°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

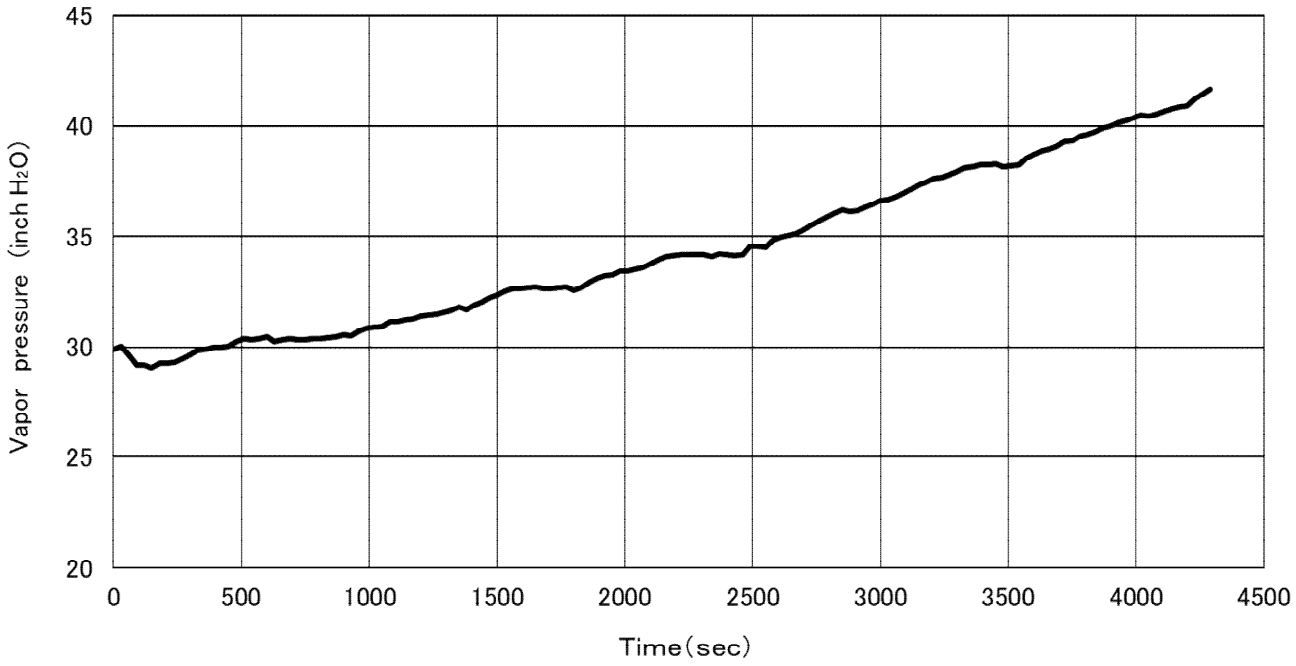
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.0	1200	96.4	2400	97.5	3600	98.6
30	95.2	1230	96.4	2430	97.7	3630	98.6
60	95.0	1260	96.6	2460	97.7	3660	98.6
90	95.2	1290	96.4	2490	97.7	3690	98.6
120	95.4	1320	96.4	2520	97.7	3720	98.6
150	95.2	1350	96.6	2550	97.7	3750	98.6
180	95.2	1380	96.6	2580	97.9	3780	98.6
210	95.2	1410	96.6	2610	97.7	3810	98.8
240	95.2	1440	96.6	2640	97.7	3840	98.8
270	95.4	1470	96.6	2670	97.7	3870	98.8
300	95.4	1500	96.8	2700	97.9	3900	98.8
330	95.4	1530	96.8	2730	97.9	3930	98.8
360	95.4	1560	96.8	2760	97.9	3960	98.8
390	95.4	1590	96.8	2790	97.9	3990	99.0
420	95.4	1620	96.8	2820	98.1	4020	98.8
450	95.5	1650	96.8	2850	98.1	4050	98.8
480	95.5	1680	96.8	2880	98.1	4080	99.0
510	95.5	1710	96.8	2910	98.1	4110	99.0
540	95.5	1740	97.0	2940	98.1	4140	99.0
570	95.7	1770	97.0	2970	98.2	4170	99.0
600	95.7	1800	97.0	3000	98.2	4200	99.0
630	95.7	1830	97.2	3030	98.1	4230	99.1
660	95.9	1860	97.0	3060	98.2	4260	99.0
690	95.9	1890	97.2	3090	98.2	4290	99.1
720	95.7	1920	97.0	3120	98.2		
750	95.9	1950	97.2	3150	98.2		
780	95.9	1980	97.2	3180	98.2		
810	96.1	2010	97.2	3210	98.2		
840	96.1	2040	97.2	3240	98.2		
870	96.1	2070	97.2	3270	98.2		
900	96.1	2100	97.3	3300	98.2		
930	96.1	2130	97.3	3330	98.2		
960	96.1	2160	97.3	3360	98.2		
990	96.3	2190	97.3	3390	98.2		
1020	96.3	2220	97.3	3420	98.4		
1050	96.3	2250	97.5	3450	98.4		
1080	96.3	2280	97.5	3480	98.4		
1110	96.3	2310	97.5	3510	98.4		
1140	96.4	2340	97.7	3540	98.4		
1170	96.4	2370	97.5	3570	98.6		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	RX 450h+ AWD
Data is representative for	:	RX 450h+ AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	09/27/2022
Ambient air temperature (at initiation)	:	97.0°F
Ambient air temperature (at completion)	:	99.0°F
Track surface temperature (at initiation)	:	131.0°F
Track surface temperature (at completion)	:	132.1°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	09/28/2022
Ambient air temperature (at initiation)	:	99.7°F
Ambient air temperature (at completion)	:	100.2°F
Track surface temperature (at initiation)	:	133.2°F
Track surface temperature (at completion)	:	130.6°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

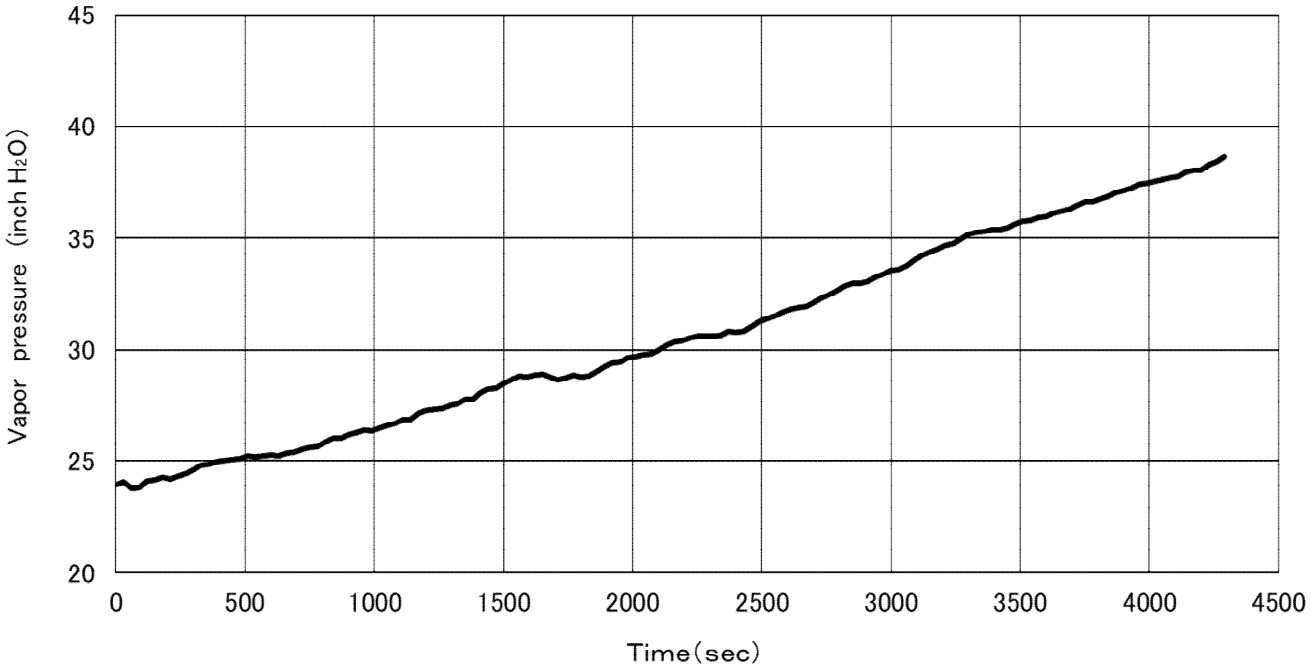
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	85.8	1200	87.1	2400	88.3	3600	89.8
30	85.6	1230	87.1	2430	88.3	3630	89.8
60	85.6	1260	87.1	2460	88.5	3660	89.8
90	85.8	1290	87.1	2490	88.5	3690	89.8
120	85.8	1320	87.1	2520	88.5	3720	90.0
150	85.8	1350	87.1	2550	88.5	3750	90.0
180	85.8	1380	87.1	2580	88.7	3780	89.8
210	85.8	1410	87.3	2610	88.5	3810	90.0
240	85.8	1440	87.3	2640	88.7	3840	90.0
270	85.8	1470	87.3	2670	88.7	3870	90.1
300	85.8	1500	87.4	2700	88.7	3900	90.0
330	86.0	1530	87.4	2730	88.7	3930	90.1
360	86.0	1560	87.3	2760	88.9	3960	90.1
390	86.0	1590	87.4	2790	88.9	3990	90.1
420	86.0	1620	87.4	2820	88.9	4020	90.1
450	86.2	1650	87.4	2850	88.9	4050	90.1
480	86.2	1680	87.4	2880	88.9	4080	90.1
510	86.2	1710	87.6	2910	88.9	4110	90.1
540	86.2	1740	87.6	2940	88.9	4140	90.1
570	86.4	1770	87.6	2970	89.1	4170	90.3
600	86.4	1800	87.6	3000	89.1	4200	90.3
630	86.2	1830	87.8	3030	89.1	4230	90.3
660	86.4	1860	87.8	3060	89.2	4260	90.5
690	86.4	1890	87.8	3090	89.2	4290	90.5
720	86.5	1920	87.8	3120	89.2		
750	86.5	1950	88.0	3150	89.1		
780	86.5	1980	87.8	3180	89.2		
810	86.5	2010	88.0	3210	89.2		
840	86.5	2040	88.0	3240	89.2		
870	86.7	2070	88.0	3270	89.4		
900	86.7	2100	88.0	3300	89.4		
930	86.7	2130	88.0	3330	89.4		
960	86.7	2160	88.0	3360	89.4		
990	86.7	2190	88.2	3390	89.6		
1020	86.7	2220	88.2	3420	89.4		
1050	86.7	2250	88.2	3450	89.6		
1080	86.7	2280	88.2	3480	89.6		
1110	86.9	2310	88.2	3510	89.6		
1140	86.9	2340	88.2	3540	89.6		
1170	86.9	2370	88.3	3570	89.8		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	RX 350h AWD
Data is representative for	:	RX 350h AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	12/09/2021
Ambient air temperature (at initiation)	:	105.8 °F
Ambient air temperature (at completion)	:	108.5 °F
Track surface temperature (at initiation)	:	141.3 °F
Track surface temperature (at completion)	:	147.2 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	12/09/2021
Ambient air temperature (at initiation)	:	105.1 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	142.7 °F
Track surface temperature (at completion)	:	148.1 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

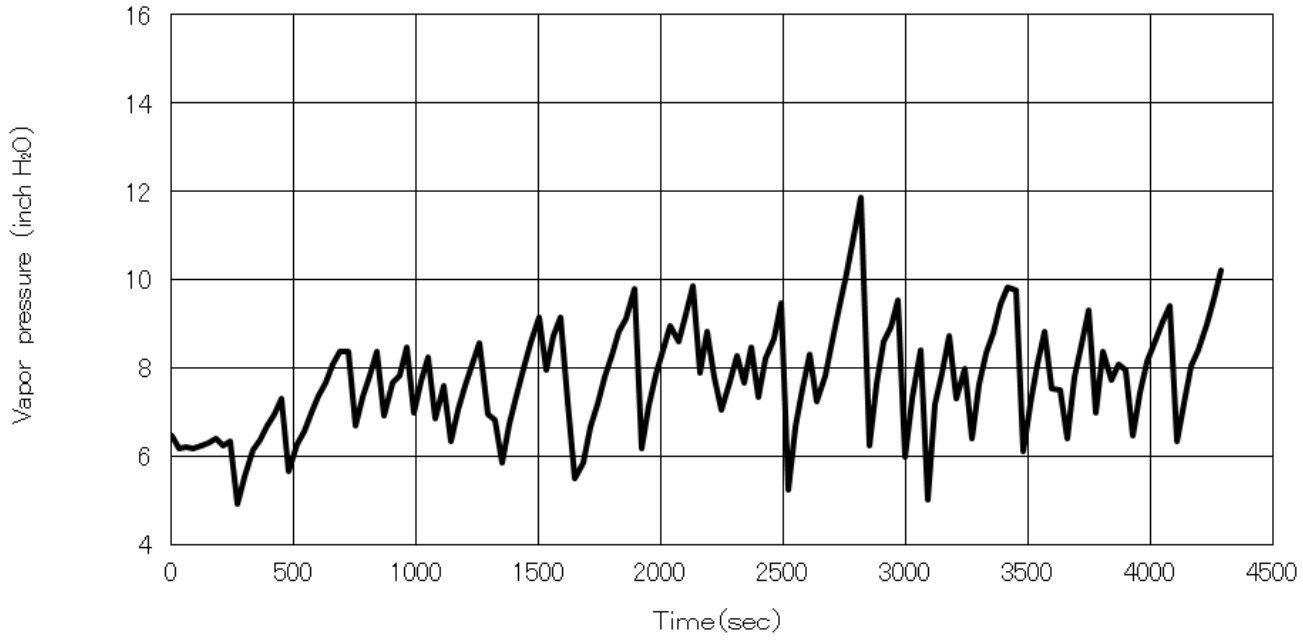
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.8	1200	109.8	2400	113.4	3600	117.3
30	105.8	1230	109.9	2430	113.7	3630	117.7
60	106.0	1260	109.9	2460	113.7	3660	117.3
90	106.3	1290	110.1	2490	113.9	3690	117.7
120	106.7	1320	110.3	2520	113.9	3720	117.7
150	106.5	1350	110.3	2550	114.1	3750	117.7
180	106.9	1380	110.3	2580	114.3	3780	117.3
210	107.6	1410	110.5	2610	114.3	3810	117.7
240	108.1	1440	110.5	2640	114.3	3840	117.5
270	108.5	1470	110.5	2670	114.4	3870	117.9
300	108.7	1500	110.7	2700	114.6	3900	117.9
330	108.1	1530	111.0	2730	114.8	3930	118.0
360	108.5	1560	110.7	2760	114.8	3960	118.0
390	108.7	1590	111.2	2790	115.0	3990	117.7
420	108.9	1620	111.0	2820	115.2	4020	118.0
450	108.9	1650	111.2	2850	115.0	4050	118.2
480	109.2	1680	111.2	2880	115.0	4080	118.2
510	108.7	1710	111.2	2910	115.7	4110	118.4
540	108.9	1740	111.4	2940	115.3	4140	118.4
570	108.9	1770	111.6	2970	115.7	4170	118.4
600	108.9	1800	111.6	3000	115.5	4200	118.6
630	108.5	1830	111.6	3030	115.9	4230	118.8
660	108.7	1860	111.7	3060	116.2	4260	118.9
690	108.9	1890	111.9	3090	116.6	4290	118.9
720	109.0	1920	111.9	3120	116.4		
750	109.0	1950	112.1	3150	115.9		
780	109.0	1980	112.3	3180	116.2		
810	109.2	2010	112.1	3210	116.1		
840	109.2	2040	112.5	3240	116.2		
870	109.6	2070	112.5	3270	116.4		
900	109.2	2100	112.8	3300	116.6		
930	109.4	2130	112.8	3330	116.2		
960	109.4	2160	112.5	3360	116.4		
990	109.4	2190	113.0	3390	116.6		
1020	109.4	2220	112.8	3420	116.6		
1050	109.6	2250	113.2	3450	116.8		
1080	109.9	2280	113.2	3480	117.0		
1110	109.8	2310	113.0	3510	117.0		
1140	109.9	2340	113.2	3540	116.8		
1170	109.8	2370	113.5	3570	117.0		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	RX 350h AWD
Data is representative for	:	RX 350h AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	12/19/2021
Ambient air temperature (at initiation)	:	96.4 °F
Ambient air temperature (at completion)	:	100.0 °F
Track surface temperature (at initiation)	:	136.4 °F
Track surface temperature (at completion)	:	136.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	12/19/2021
Ambient air temperature (at initiation)	:	95.0 °F
Ambient air temperature (at completion)	:	100.4 °F
Track surface temperature (at initiation)	:	137.7 °F
Track surface temperature (at completion)	:	143.4 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

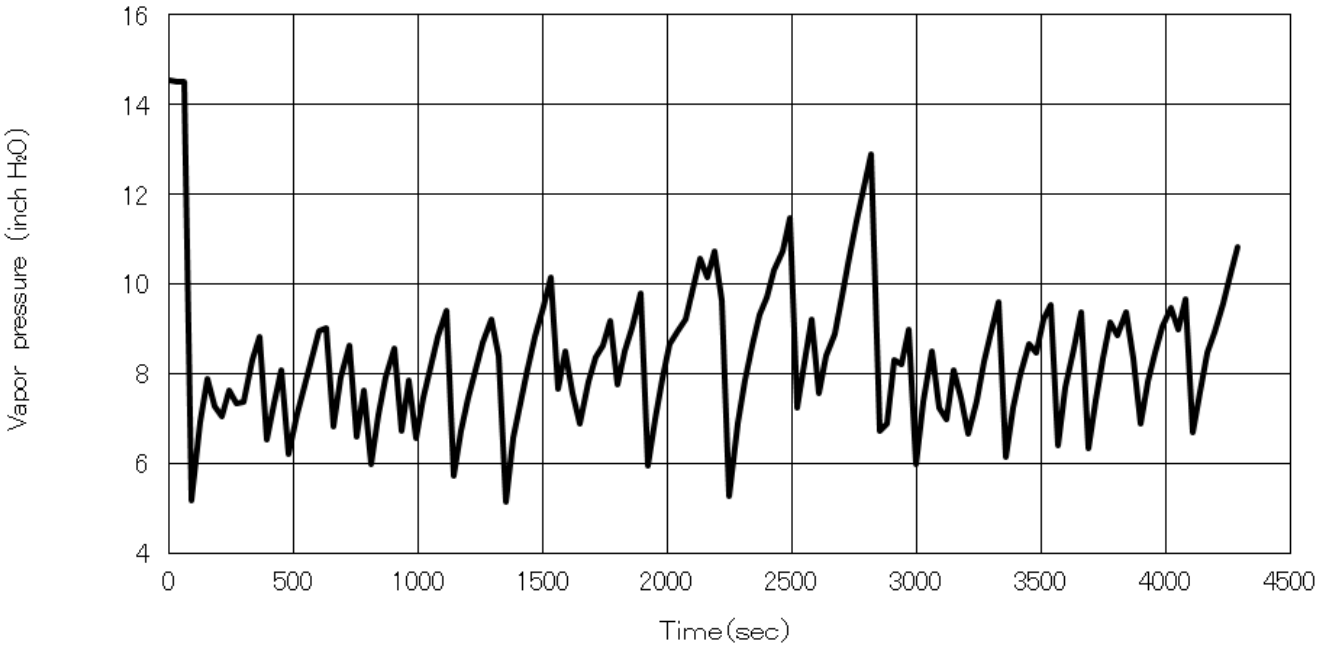
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.1	1200	99.0	2400	102.6	3600	106.3
30	96.1	1230	99.0	2430	102.6	3630	106.3
60	96.4	1260	99.0	2460	102.6	3660	106.2
90	96.6	1290	99.1	2490	102.9	3690	106.3
120	97.0	1320	99.1	2520	102.9	3720	106.5
150	97.0	1350	99.3	2550	103.1	3750	106.5
180	97.3	1380	99.5	2580	103.5	3780	106.5
210	97.9	1410	99.7	2610	103.3	3810	106.7
240	98.4	1440	99.7	2640	103.5	3840	106.5
270	98.2	1470	99.7	2670	103.5	3870	106.5
300	98.2	1500	99.9	2700	103.6	3900	106.7
330	97.9	1530	99.9	2730	103.8	3930	106.9
360	97.9	1560	99.5	2760	103.8	3960	106.9
390	97.9	1590	99.9	2790	104.0	3990	106.7
420	97.9	1620	99.9	2820	104.2	4020	106.9
450	97.7	1650	99.9	2850	104.2	4050	107.1
480	97.9	1680	100.0	2880	104.0	4080	107.2
510	97.5	1710	100.2	2910	104.5	4110	107.4
540	97.5	1740	100.2	2940	104.4	4140	107.4
570	97.3	1770	100.6	2970	104.5	4170	107.6
600	97.3	1800	100.4	3000	104.4	4200	107.4
630	97.2	1830	100.8	3030	104.9	4230	107.8
660	97.5	1860	100.8	3060	105.3	4260	107.8
690	97.5	1890	101.1	3090	105.3	4290	108.0
720	97.5	1920	100.9	3120	105.3		
750	97.7	1950	101.1	3150	105.1		
780	97.7	1980	101.5	3180	105.3		
810	98.1	2010	101.3	3210	105.4		
840	97.9	2040	101.5	3240	105.3		
870	98.1	2070	101.7	3270	105.6		
900	98.2	2100	101.8	3300	105.8		
930	98.2	2130	101.8	3330	105.4		
960	98.1	2160	101.7	3360	105.6		
990	98.2	2190	102.0	3390	105.6		
1020	98.2	2220	101.8	3420	105.4		
1050	98.4	2250	102.0	3450	105.6		
1080	98.8	2280	102.2	3480	105.8		
1110	98.8	2310	102.2	3510	105.8		
1140	98.8	2340	102.2	3540	105.8		
1170	98.8	2370	102.6	3570	106.0		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	GRAND HIGHLANDER HYBRID
Data is representative for	:	GRAND HIGHLANDER HYBRID, GRAND HIGHLANDER HYBRID AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	06/10/2022
Ambient air temperature (at initiation)	:	105.1 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	138.6 °F
Track surface temperature (at completion)	:	142.0 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	06/13/2022
Ambient air temperature (at initiation)	:	105.4 °F
Ambient air temperature (at completion)	:	110.3 °F
Track surface temperature (at initiation)	:	138.0 °F
Track surface temperature (at completion)	:	141.4 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

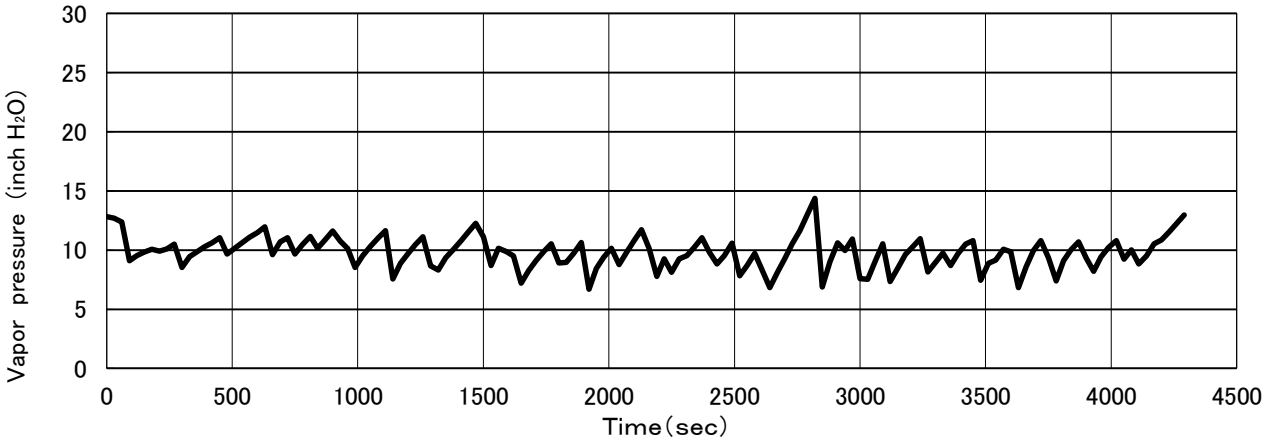
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	107.1	1200	112.8	2400	117.0	3600	121.5
30	107.1	1230	113.0	2430	117.1	3630	122.0
60	106.9	1260	113.0	2460	117.5	3660	121.6
90	107.1	1290	113.4	2490	118.0	3690	122.2
120	107.2	1320	113.2	2520	117.7	3720	122.7
150	107.6	1350	113.7	2550	117.9	3750	122.5
180	107.8	1380	113.5	2580	118.4	3780	122.4
210	108.0	1410	114.1	2610	117.7	3810	122.4
240	108.3	1440	114.3	2640	118.0	3840	122.0
270	108.9	1470	114.3	2670	118.2	3870	122.7
300	109.0	1500	114.4	2700	118.8	3900	122.4
330	108.9	1530	114.8	2730	118.9	3930	122.4
360	109.2	1560	113.9	2760	118.9	3960	122.2
390	109.6	1590	114.6	2790	119.8	3990	122.5
420	109.6	1620	114.4	2820	120.0	4020	122.4
450	109.8	1650	114.4	2850	119.1	4050	122.0
480	110.1	1680	114.4	2880	119.1	4080	122.7
510	109.9	1710	114.3	2910	119.7	4110	122.9
540	110.3	1740	114.3	2940	119.1	4140	122.9
570	110.3	1770	115.0	2970	119.5	4170	123.1
600	110.5	1800	114.6	3000	119.3	4200	123.1
630	110.7	1830	115.0	3030	119.8	4230	123.6
660	111.0	1860	115.2	3060	120.4	4260	124.0
690	111.0	1890	115.5	3090	120.7	4290	124.3
720	111.2	1920	115.2	3120	120.6		
750	111.4	1950	115.5	3150	119.8		
780	111.4	1980	116.1	3180	120.4		
810	111.9	2010	115.5	3210	120.0		
840	111.9	2040	115.7	3240	120.2		
870	111.9	2070	115.7	3270	120.9		
900	112.1	2100	116.2	3300	120.7		
930	112.5	2130	116.6	3330	120.6		
960	112.1	2160	115.9	3360	120.0		
990	112.1	2190	116.4	3390	120.6		
1020	112.3	2220	116.2	3420	121.1		
1050	112.6	2250	116.6	3450	120.9		
1080	112.8	2280	116.4	3480	121.1		
1110	112.8	2310	116.2	3510	121.3		
1140	112.6	2340	116.4	3540	120.7		
1170	112.8	2370	117.3	3570	121.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]		
Model name	:	GRAND HIGHLANDER HYBRID
Data is representative for	:	GRAND HIGHLANDER HYBRID, GRAND HIGHLANDER HYBRID AWD
[Test procedure]	:	EPA method
[Test conditions]		
Date	:	06/10/2022
Ambient air temperature (at initiation)	:	95.4 °F
Ambient air temperature (at completion)	:	100.0 °F
Track surface temperature (at initiation)	:	131.2 °F
Track surface temperature (at completion)	:	134.2 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]		
Date	:	06/13/2022
Ambient air temperature (at initiation)	:	95.0 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	132.3 °F
Track surface temperature (at completion)	:	131.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

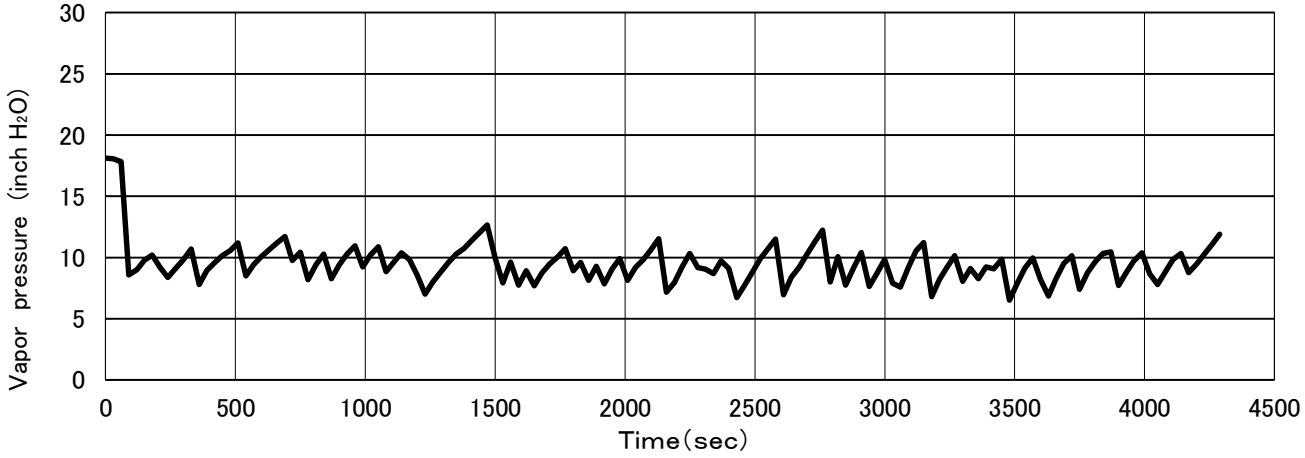
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.8	1200	102.2	2400	105.8	3600	110.8
30	97.0	1230	102.2	2430	106.0	3630	111.4
60	97.0	1260	102.4	2460	106.3	3660	111.0
90	97.0	1290	102.4	2490	107.1	3690	111.7
120	97.2	1320	102.6	2520	106.5	3720	112.1
150	97.3	1350	102.9	2550	106.9	3750	112.3
180	97.5	1380	102.6	2580	107.6	3780	111.4
210	97.5	1410	102.9	2610	106.5	3810	111.7
240	97.9	1440	103.1	2640	107.1	3840	111.6
270	98.2	1470	103.1	2670	107.1	3870	112.5
300	98.2	1500	103.3	2700	107.6	3900	111.7
330	98.4	1530	103.5	2730	108.0	3930	111.9
360	98.6	1560	102.4	2760	108.3	3960	112.1
390	98.6	1590	103.3	2790	108.5	3990	112.3
420	99.0	1620	103.1	2820	108.9	4020	112.1
450	99.0	1650	103.1	2850	108.1	4050	112.1
480	99.3	1680	103.1	2880	108.3	4080	112.5
510	99.3	1710	103.1	2910	109.2	4110	113.0
540	99.5	1740	103.5	2940	108.1	4140	112.5
570	99.5	1770	103.8	2970	108.7	4170	112.8
600	99.7	1800	103.3	3000	108.5	4200	112.8
630	99.7	1830	104.0	3030	109.4	4230	113.2
660	99.9	1860	104.2	3060	109.6	4260	113.4
690	100.0	1890	104.5	3090	110.1	4290	113.4
720	100.2	1920	104.2	3120	110.1		
750	100.2	1950	104.5	3150	109.2		
780	100.2	1980	104.9	3180	109.8		
810	100.6	2010	104.4	3210	109.2		
840	100.8	2040	104.7	3240	109.4		
870	100.9	2070	104.9	3270	109.9		
900	100.9	2100	105.3	3300	110.1		
930	101.1	2130	105.4	3330	109.9		
960	101.1	2160	104.7	3360	109.6		
990	101.5	2190	105.4	3390	110.1		
1020	101.5	2220	105.3	3420	110.5		
1050	101.7	2250	105.6	3450	110.5		
1080	101.8	2280	105.6	3480	110.8		
1110	102.0	2310	105.4	3510	110.7		
1140	102.0	2340	105.4	3540	110.5		
1170	102.0	2370	106.2	3570	110.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	NX 350h AWD
Data is representative for	:	NX 350h, NX 350h AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	07/26/2024
Ambient air temperature (at initiation)	:	109.6 °F
Ambient air temperature (at completion)	:	108.5 °F
Track surface temperature (at initiation)	:	151.3 °F
Track surface temperature (at completion)	:	150.1 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	07/28/2024
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	108.3 °F
Track surface temperature (at initiation)	:	151.5 °F
Track surface temperature (at completion)	:	150.1 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

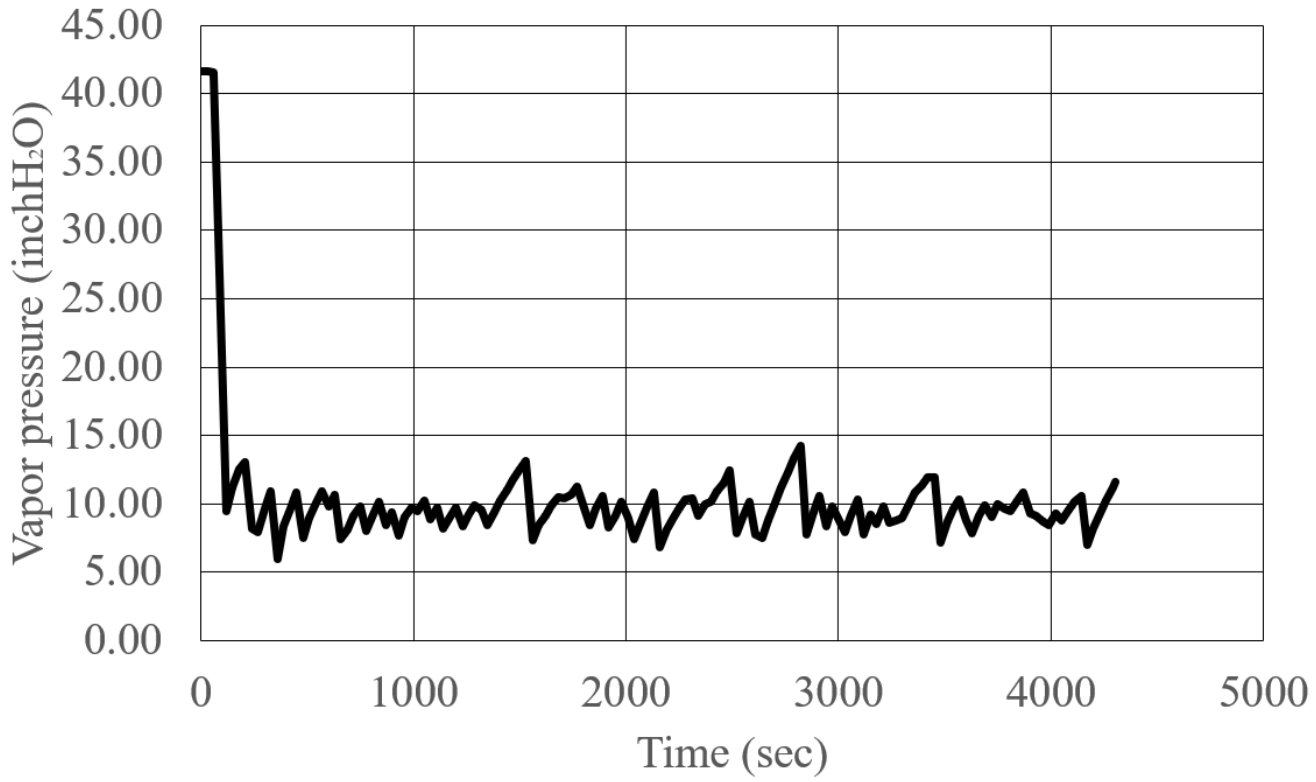
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	104.4	1200	105.4	2400	108.3	3600	111.6
30	104.3	1230	105.4	2430	108.5	3630	111.6
60	104.4	1260	105.6	2460	108.7	3660	111.7
90	104.3	1290	105.6	2490	108.5	3690	111.7
120	104.2	1320	105.6	2520	108.5	3720	111.9
150	104.4	1350	105.6	2550	108.7	3750	111.9
180	104.2	1380	105.6	2580	108.9	3780	112.1
210	104.2	1410	105.8	2610	108.9	3810	112.3
240	104.2	1440	105.8	2640	109.0	3840	112.5
270	104.0	1470	106.0	2670	109.0	3870	112.5
300	104.2	1500	106.0	2700	109.2	3900	112.5
330	104.2	1530	106.0	2730	109.2	3930	112.5
360	104.2	1560	106.0	2760	109.2	3960	112.6
390	104.2	1590	106.2	2790	109.4	3990	112.8
420	104.2	1620	106.3	2820	109.4	4020	112.8
450	104.4	1650	106.2	2850	109.4	4050	112.8
480	104.4	1680	106.2	2880	109.4	4080	113.0
510	104.2	1710	106.3	2910	109.4	4110	113.0
540	104.4	1740	106.5	2940	109.6	4140	113.2
570	104.4	1770	106.5	2970	109.8	4170	113.2
600	104.5	1800	106.5	3000	109.8	4200	113.4
630	104.4	1830	106.7	3030	109.9	4230	113.4
660	104.5	1860	106.9	3060	109.9	4260	113.4
690	104.5	1890	106.9	3090	110.1	4290	113.4
720	104.5	1920	106.9	3120	110.1	4304	113.5
750	104.5	1950	107.1	3150	110.3		
780	104.7	1980	107.2	3180	110.5		
810	104.7	2010	107.2	3210	110.5		
840	104.7	2040	107.4	3240	110.7		
870	104.9	2070	107.4	3270	110.8		
900	104.9	2100	107.4	3300	110.8		
930	104.9	2130	107.6	3330	111.0		
960	105.1	2160	107.6	3360	111.0		
990	105.1	2190	107.8	3390	111.2		
1020	105.1	2220	107.8	3420	111.2		
1050	105.3	2250	107.8	3450	111.4		
1080	105.3	2280	108.0	3480	111.4		
1110	105.3	2310	108.1	3510	111.4		
1140	105.3	2340	108.1	3540	111.4		
1170	105.4	2370	108.3	3570	111.6		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

[Test vehicle]

Model name	:	NX 350h AWD
Data is representative for	:	NX 350h, NX 350h AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	07/26/2024
Ambient air temperature (at initiation)	:	95.4 °F
Ambient air temperature (at completion)	:	99.1 °F
Track surface temperature (at initiation)	:	142.7 °F
Track surface temperature (at completion)	:	140.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	07/26/2024
Ambient air temperature (at initiation)	:	96.3 °F
Ambient air temperature (at completion)	:	99.3 °F
Track surface temperature (at initiation)	:	142.7 °F
Track surface temperature (at completion)	:	140.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

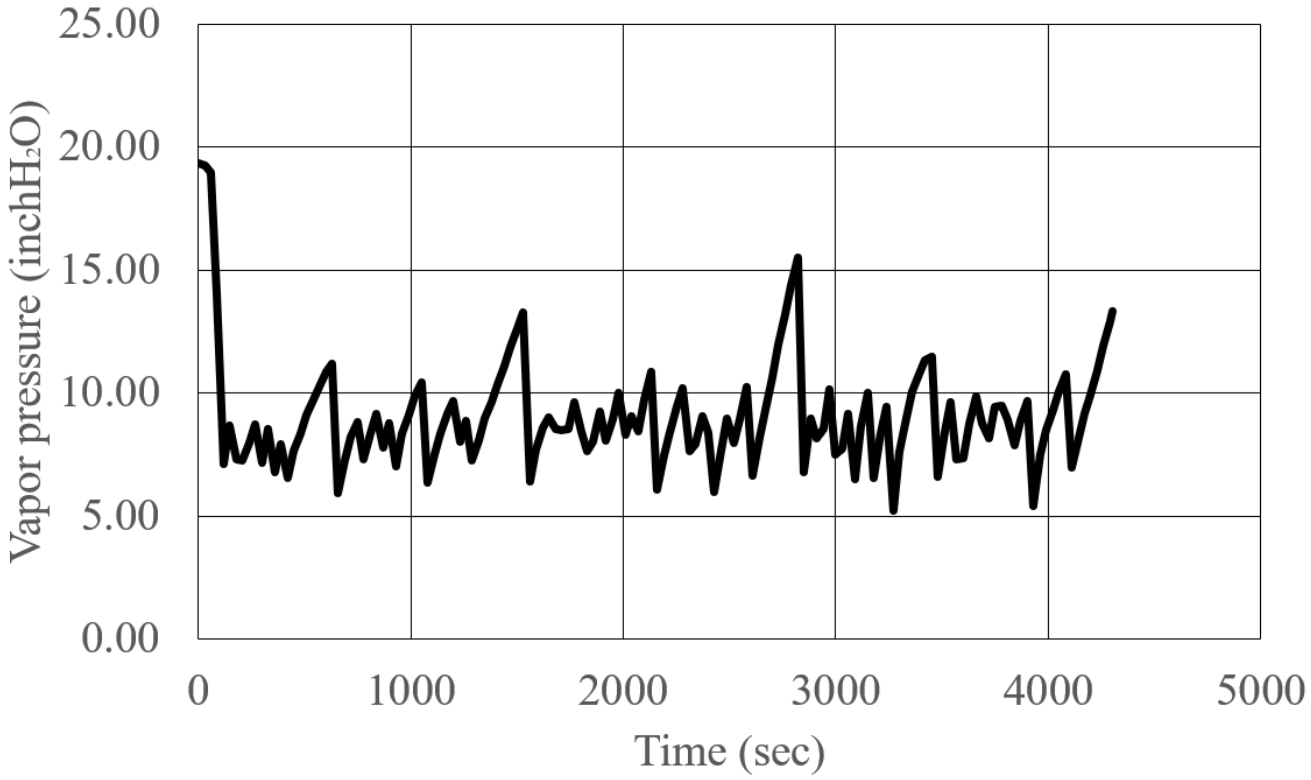
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.8	1200	97.9	2400	101.5	3600	105.3
30	96.7	1230	98.1	2430	101.5	3630	105.3
60	96.7	1260	98.1	2460	101.7	3660	105.4
90	96.7	1290	98.1	2490	101.7	3690	105.4
120	96.8	1320	98.2	2520	101.8	3720	105.8
150	96.6	1350	98.2	2550	101.8	3750	105.6
180	96.6	1380	98.4	2580	102.0	3780	105.6
210	96.6	1410	98.4	2610	102.0	3810	105.8
240	96.6	1440	98.4	2640	102.0	3840	106.0
270	96.6	1470	98.6	2670	102.2	3870	106.0
300	96.6	1500	98.6	2700	102.2	3900	106.0
330	96.6	1530	98.6	2730	102.4	3930	106.2
360	96.8	1560	98.6	2760	102.4	3960	106.3
390	96.6	1590	99.0	2790	102.6	3990	106.3
420	96.8	1620	99.0	2820	102.6	4020	106.3
450	96.8	1650	99.1	2850	102.4	4050	106.5
480	96.8	1680	99.1	2880	102.7	4080	106.7
510	96.8	1710	99.3	2910	102.7	4110	106.7
540	97.0	1740	99.3	2940	102.9	4140	106.9
570	97.0	1770	99.5	2970	103.1	4170	106.9
600	97.0	1800	99.5	3000	103.1	4200	106.9
630	97.0	1830	99.5	3030	103.3	4230	107.1
660	97.0	1860	99.7	3060	103.5	4260	107.1
690	97.2	1890	99.9	3090	103.5	4290	107.1
720	97.2	1920	99.7	3120	103.6	4304	107.1
750	97.2	1950	99.9	3150	103.6		
780	97.2	1980	100.0	3180	103.8		
810	97.2	2010	100.0	3210	104.0		
840	97.3	2040	100.0	3240	104.0		
870	97.3	2070	100.2	3270	104.2		
900	97.3	2100	100.4	3300	104.2		
930	97.3	2130	100.4	3330	104.4		
960	97.5	2160	100.6	3360	104.5		
990	97.5	2190	100.8	3390	104.5		
1020	97.5	2220	100.8	3420	104.7		
1050	97.7	2250	100.9	3450	104.9		
1080	97.7	2280	100.9	3480	104.9		
1110	97.7	2310	101.1	3510	105.1		
1140	97.7	2340	101.1	3540	105.1		
1170	97.9	2370	101.3	3570	105.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle
Test group	:	RTYXT02.5P34
Vehicle ID	:	24-AS2H
Rep. car/truck line	:	GRAND HIGHLANDER HYBRID
Rep. vehicle model	:	AASH10L-AWXNBA
Displacement	:	151.8 CID
Transmission	:	P810-G
Test weight	:	4,750 lbs.
Road load	:	14.3 HP
Evap. code	:	AS1G

		Refueling emission vehicle
Test group	:	LTYXT02.5P34
Vehicle ID	:	20-AU1H
Rep. car/truck line	:	HIGHLANDER HYBRID AWD
Rep. vehicle model	:	AXUH78L-ARXGHA
Displacement	:	151.8 CID
Transmission	:	P810-B
Test weight	:	5,000 lbs.
Road load	:	15.4 HP
Evap. code	:	AU1G

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.000	(g/mile)
Hot soak loss		:	0.0335	(g/test)
3DBL	1st day	:	0.1523*1	(g/test)
	2nd day	:	0.1225	(g/test)
	3rd day	:	0.1148	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0181	(g/mile)
2DBL	1st day	:	0.1741*1	(g/test)
	2nd day	:	0.1354	(g/test)

Refueling sequence test results

Refueling emission		:	0.003	(g/gal)

*1: DBL is added key off monitor loss (0.0002 gram).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J52.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle
Test group	:	RTYXT02.5P33
Vehicle ID	:	24-AL1H
Rep. car/truck line	:	RX 450h+ AWD
Rep. vehicle model	:	AALH16L-AWXGBA
Displacement	:	151.8 CID
Transmission	:	P810-J
Test weight	:	5,000 lbs.
Road load	:	14.8 HP
Evap. code	:	AL2G

		Refueling emission vehicle
Test group	:	MTYXT02.5P33
Vehicle ID	:	21-AP2H
Rep. car/truck line	:	RAV4 PRIME AWD
Rep. vehicle model	:	AXAP54L-ANXGBA
Displacement	:	151.8 CID
Transmission	:	P810-C
Test weight	:	4,500 lbs.
Road load	:	13.2 HP
Evap. code	:	AA2G

Test results

Test procedure : CARB's procedure

3-day diurnal sequence test results

Running loss		:	0.035	(g/mile)
Hot soak loss		:	0.0338	(g/test)
3DBL	1st day	:	0.1528*1	(g/test)
	2nd day	:	0.0837	(g/test)
	3rd day	:	0.0798	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0143	(g/mile)
2DBL	1st day	:	0.1238*1	(g/test)
	2nd day	:	0.0842	(g/test)

Refueling sequence test results

Refueling emission		:	0.004	(g/gal)

*1: DBL is added key off monitor loss (0.0086 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0195J52.

[Test vehicle]

Model name	:	SIENNA
Data is representative for	:	SIENNA, SIENNA AWD

[Test procedure] : CARB method

[Test conditions]

Date	:	08/30/2019
Ambient air temperature (at initiation)	:	105.1 °F
Ambient air temperature (at completion)	:	106.5 °F
Track surface temperature (at initiation)	:	178.2 °F
Track surface temperature (at completion)	:	178.9 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	08/30/2019
Ambient air temperature (at initiation)	:	105.1 °F
Ambient air temperature (at completion)	:	106.3 °F
Track surface temperature (at initiation)	:	175.5 °F
Track surface temperature (at completion)	:	178.9 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0195J52.

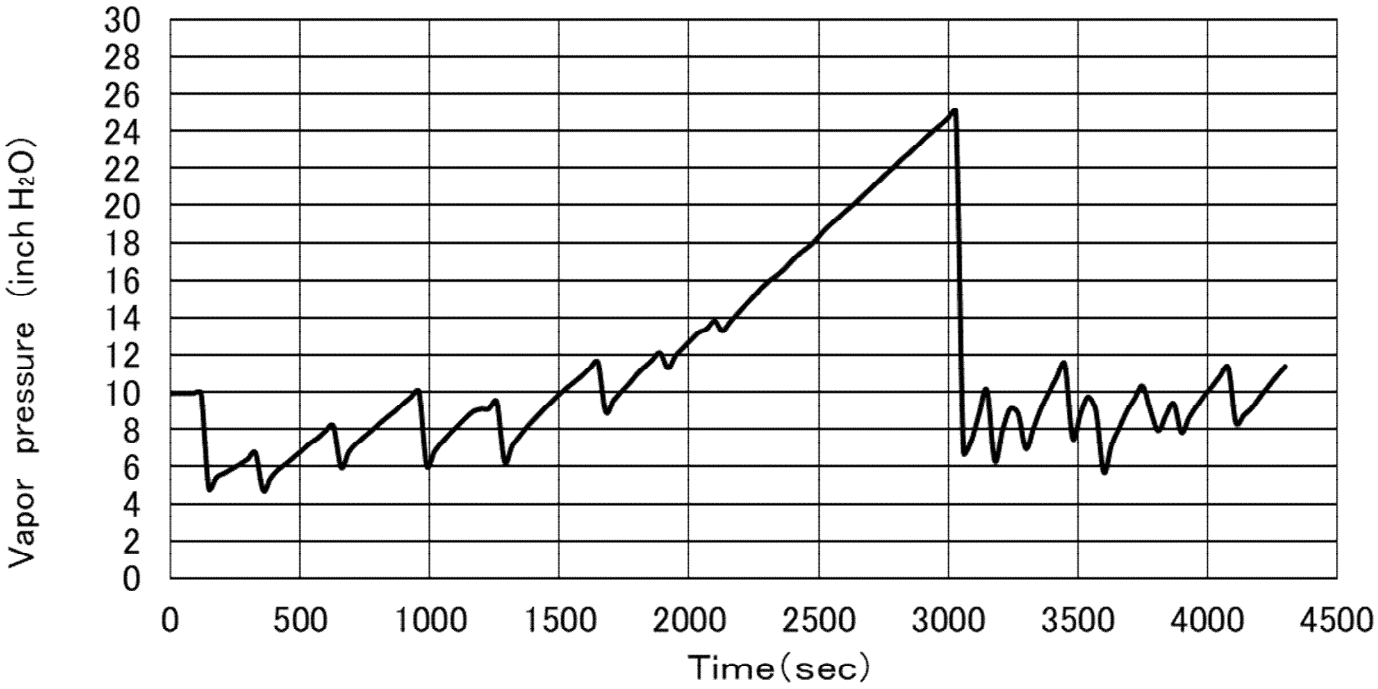
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.6	1200	107.2	2400	109.8	3600	112.6
30	105.6	1230	107.2	2430	109.8	3630	112.6
60	105.6	1260	107.4	2460	109.8	3660	112.6
90	105.6	1290	107.4	2490	110.1	3690	112.6
120	105.6	1320	107.4	2520	110.1	3720	112.8
150	105.6	1350	107.6	2550	110.1	3750	112.8
180	105.6	1380	107.6	2580	110.3	3780	113.0
210	105.6	1410	107.6	2610	110.3	3810	113.0
240	105.6	1440	107.6	2640	110.3	3840	113.0
270	105.6	1470	107.8	2670	110.5	3870	113.2
300	105.8	1500	107.8	2700	110.7	3900	113.0
330	105.8	1530	107.8	2730	110.7	3930	113.2
360	105.6	1560	108.0	2760	110.7	3960	113.4
390	105.8	1590	108.0	2790	110.8	3990	113.4
420	105.8	1620	108.0	2820	110.8	4020	113.4
450	105.8	1650	108.1	2850	111.0	4050	113.5
480	106.0	1680	108.1	2880	111.0	4080	113.5
510	106.0	1710	108.1	2910	111.2	4110	113.5
540	106.0	1740	108.1	2940	111.2	4140	113.5
570	106.2	1770	108.3	2970	111.4	4170	113.7
600	106.2	1800	108.5	3000	111.4	4200	113.7
630	106.2	1830	108.5	3030	111.6	4230	113.7
660	106.2	1860	108.5	3060	111.6	4260	113.7
690	106.2	1890	108.5	3090	111.6	4290	113.9
720	106.3	1920	108.7	3120	111.6		
750	106.3	1950	108.7	3150	111.6		
780	106.3	1980	108.9	3180	111.7		
810	106.5	2010	108.9	3210	111.7		
840	106.5	2040	108.9	3240	111.9		
870	106.5	2070	109.0	3270	111.9		
900	106.7	2100	109.0	3300	112.1		
930	106.7	2130	109.0	3330	112.1		
960	106.7	2160	109.2	3360	112.1		
990	106.9	2190	109.2	3390	112.3		
1020	106.9	2220	109.4	3420	112.3		
1050	106.9	2250	109.4	3450	112.3		
1080	107.1	2280	109.6	3480	112.3		
1110	107.1	2310	109.4	3510	112.3		
1140	107.1	2340	109.6	3540	112.5		
1170	107.2	2370	109.6	3570	112.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0195J52.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0195J52.

[Test vehicle]

Model name	:	SIENNA
Data is representative for	:	SIENNA, SIENNA AWD

[Test procedure] : EPA method

[Test conditions]

Date	:	08/29/2019
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.3 °F
Track surface temperature (at initiation)	:	160.2 °F
Track surface temperature (at completion)	:	160.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	08/29/2019
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.3 °F
Track surface temperature (at initiation)	:	159.8 °F
Track surface temperature (at completion)	:	160.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0195J52.

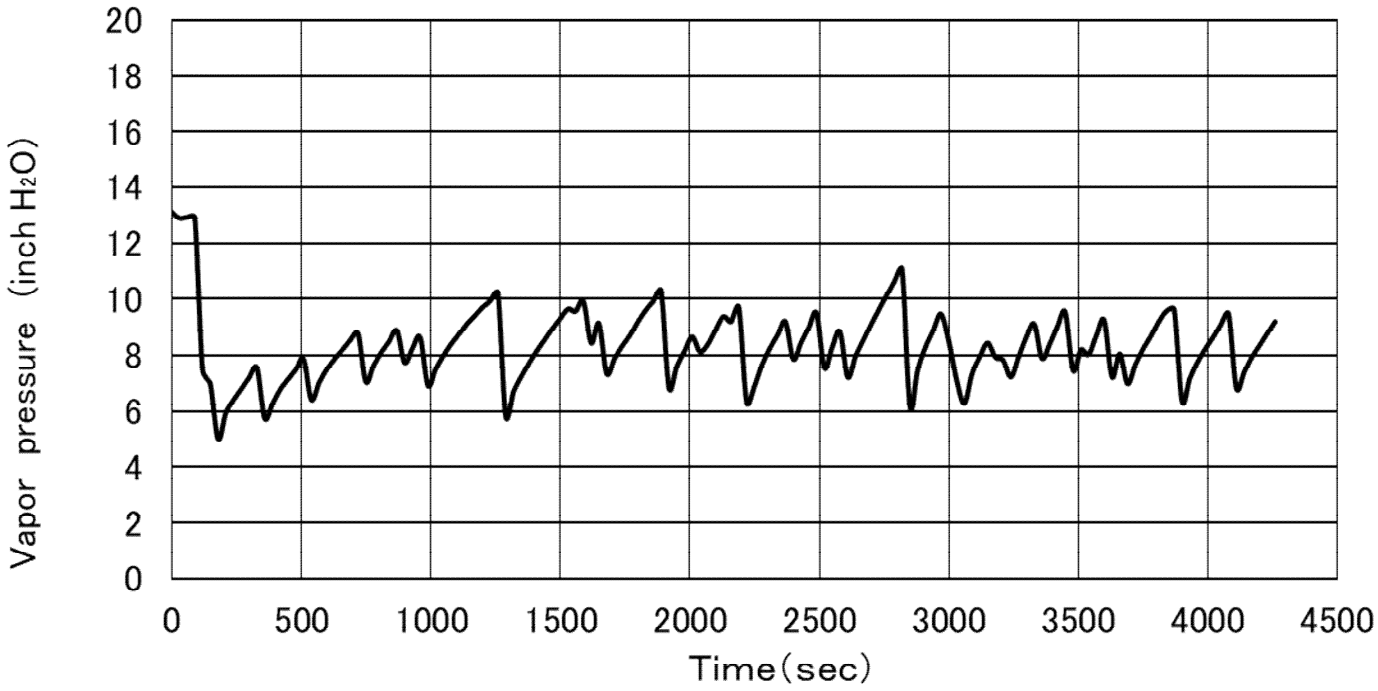
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.1	1200	97.3	2400	99.3	3600	101.5
30	96.1	1230	97.3	2430	99.3	3630	101.5
60	96.1	1260	97.3	2460	99.3	3660	101.7
90	96.3	1290	97.5	2490	99.3	3690	101.7
120	96.1	1320	97.3	2520	99.5	3720	101.7
150	96.1	1350	97.5	2550	99.5	3750	101.8
180	96.1	1380	97.5	2580	99.5	3780	101.8
210	96.1	1410	97.5	2610	99.5	3810	101.8
240	96.1	1440	97.7	2640	99.7	3840	101.8
270	96.1	1470	97.7	2670	99.7	3870	102.0
300	96.1	1500	97.9	2700	99.7	3900	102.0
330	96.3	1530	97.7	2730	99.9	3930	102.0
360	96.1	1560	97.7	2760	99.9	3960	102.2
390	96.3	1590	97.9	2790	99.9	3990	102.0
420	96.3	1620	97.9	2820	100.0	4020	102.2
450	96.3	1650	97.9	2850	100.0	4050	102.4
480	96.3	1680	98.1	2880	100.0	4080	102.4
510	96.4	1710	98.1	2910	100.2	4110	102.4
540	96.4	1740	98.1	2940	100.2	4140	102.4
570	96.6	1770	98.1	2970	100.2	4170	102.6
600	96.4	1800	98.2	3000	100.4	4200	102.6
630	96.4	1830	98.2	3030	100.4	4230	102.6
660	96.4	1860	98.2	3060	100.4	4260	102.6
690	96.6	1890	98.2	3090	100.6	4290	102.7
720	96.6	1920	98.4	3120	100.6		
750	96.6	1950	98.8	3150	100.6		
780	96.6	1980	98.6	3180	100.8		
810	96.8	2010	98.6	3210	100.8		
840	96.8	2040	98.6	3240	100.8		
870	96.8	2070	98.6	3270	100.9		
900	96.8	2100	98.8	3300	100.9		
930	97.0	2130	98.8	3330	100.9		
960	97.0	2160	98.8	3360	101.1		
990	97.0	2190	98.8	3390	101.1		
1020	97.0	2220	99.0	3420	101.1		
1050	97.2	2250	99.0	3450	101.3		
1080	97.2	2280	99.0	3480	101.3		
1110	97.2	2310	99.1	3510	101.3		
1140	97.3	2340	99.1	3540	101.3		
1170	97.3	2370	99.1	3570	101.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0195J52.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0195J52.

Evaporative emission test log

Vehicle Description

	Evaporative emission vehicle	Refueling emission vehicle
Test group	: NTYXT02.5P34	: MTYXT02.5P34
Vehicle ID	: 21-AL1H	: 21-AL1H
Rep. car/truck line	: SIENNA AWD	: SIENNA AWD
Rep. vehicle model	: AXLH45L-PNXLHA	: AXLH45L-PNXLHA
Displacement	: 151.8 CID	: 151.8 CID
Transmission	: P810-E	: P810-E
Test weight	: 5,250 lbs.	: 5,250 lbs.
Road load	: 14.6 HP	: 14.6 HP
Evap. code	: AL1Q	: AL1Q

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.005	(g/mile)
Hot soak loss		:	0.0327	(g/test)
3DBL	1st day	:	0.1203*1	(g/test)
	2nd day	:	0.0990	(g/test)
	3rd day	:	0.0906	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0170	(g/mile)
2DBL	1st day	:	0.1160*1	(g/test)
	2nd day	:	0.1034	(g/test)

Refueling sequence test results

Refueling emission		:	0.006	(g/gal)

*1: DBL is added key off monitor loss (0.0000 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0170J62.

[Test vehicle]

Model name	:	LAND CRUISER
Data is representative for	:	LAND CRUISER

[Test procedure] : CARB method

[Test conditions]

Date	:	03/20/2023
Ambient air temperature (at initiation)	:	107.8 °F
Ambient air temperature (at completion)	:	110.1 °F
Track surface temperature (at initiation)	:	148.6 °F
Track surface temperature (at completion)	:	151.2 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	03/21/2023
Ambient air temperature (at initiation)	:	107.8 °F
Ambient air temperature (at completion)	:	108.9 °F
Track surface temperature (at initiation)	:	148.8 °F
Track surface temperature (at completion)	:	151.2 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0170J62.

Measured temperature and pressure profiles

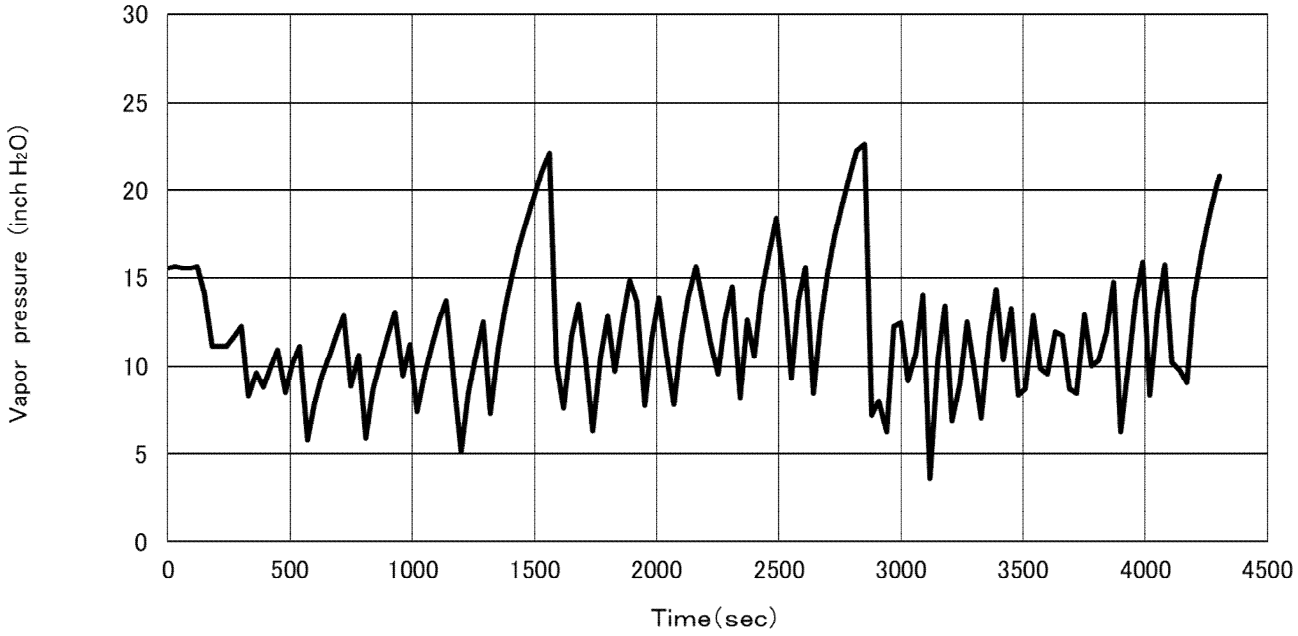
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.0	1200	111.0	2400	118.8	3600	126.0
30	106.2	1230	111.2	2430	118.8	3630	126.1
60	106.2	1260	111.4	2460	118.6	3660	126.3
90	106.2	1290	111.4	2490	118.4	3690	126.5
120	106.5	1320	112.1	2520	118.8	3720	126.7
150	106.5	1350	111.4	2550	118.9	3750	126.7
180	106.5	1380	112.1	2580	119.1	3780	126.9
210	106.7	1410	111.6	2610	119.5	3810	127.0
240	106.9	1440	111.4	2640	119.7	3840	127.2
270	107.1	1470	111.2	2670	120.0	3870	126.7
300	107.2	1500	111.2	2700	119.7	3900	127.4
330	107.2	1530	111.4	2730	119.5	3930	127.2
360	107.2	1560	111.9	2760	119.7	3960	127.6
390	107.6	1590	112.3	2790	119.8	3990	127.2
420	107.4	1620	112.8	2820	120.2	4020	127.4
450	107.2	1650	113.2	2850	120.6	4050	127.9
480	107.6	1680	113.7	2880	121.1	4080	127.6
510	107.8	1710	113.9	2910	121.5	4110	128.1
540	107.8	1740	114.3	2940	121.8	4140	128.1
570	107.6	1770	114.3	2970	121.6	4170	128.1
600	107.8	1800	114.8	3000	122.2	4200	127.9
630	108.1	1830	114.8	3030	122.4	4230	127.9
660	107.6	1860	114.4	3060	122.4	4260	127.6
690	108.3	1890	114.4	3090	122.9	4290	128.7
720	108.3	1920	114.8	3120	123.1	4304	128.7
750	108.7	1950	115.2	3150	123.4		
780	108.7	1980	115.0	3180	123.4		
810	109.2	2010	115.3	3210	123.8		
840	109.4	2040	115.9	3240	123.8		
870	109.6	2070	116.2	3270	123.6		
900	109.9	2100	115.9	3300	124.3		
930	110.1	2130	115.7	3330	124.3		
960	110.3	2160	116.2	3360	124.5		
990	110.5	2190	116.6	3390	124.3		
1020	110.7	2220	117.0	3420	124.9		
1050	110.1	2250	117.3	3450	124.7		
1080	110.5	2280	117.7	3480	124.9		
1110	110.7	2310	118.0	3510	124.7		
1140	111.0	2340	118.4	3540	125.2		
1170	110.8	2370	118.2	3570	125.6		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0170J62.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0170J62.

[Test vehicle]

Model name	:	LAND CRUISER
Data is representative for	:	LAND CRUISER

[Test procedure] : EPA method

[Test conditions]

Date	:	03/20/2023
Ambient air temperature (at initiation)	:	96.4 °F
Ambient air temperature (at completion)	:	100.2 °F
Track surface temperature (at initiation)	:	130.8 °F
Track surface temperature (at completion)	:	132.6 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	03/21/2023
Ambient air temperature (at initiation)	:	99.0 °F
Ambient air temperature (at completion)	:	97.9 °F
Track surface temperature (at initiation)	:	131.4 °F
Track surface temperature (at completion)	:	132.3 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0170J62.

Measured temperature and pressure profiles

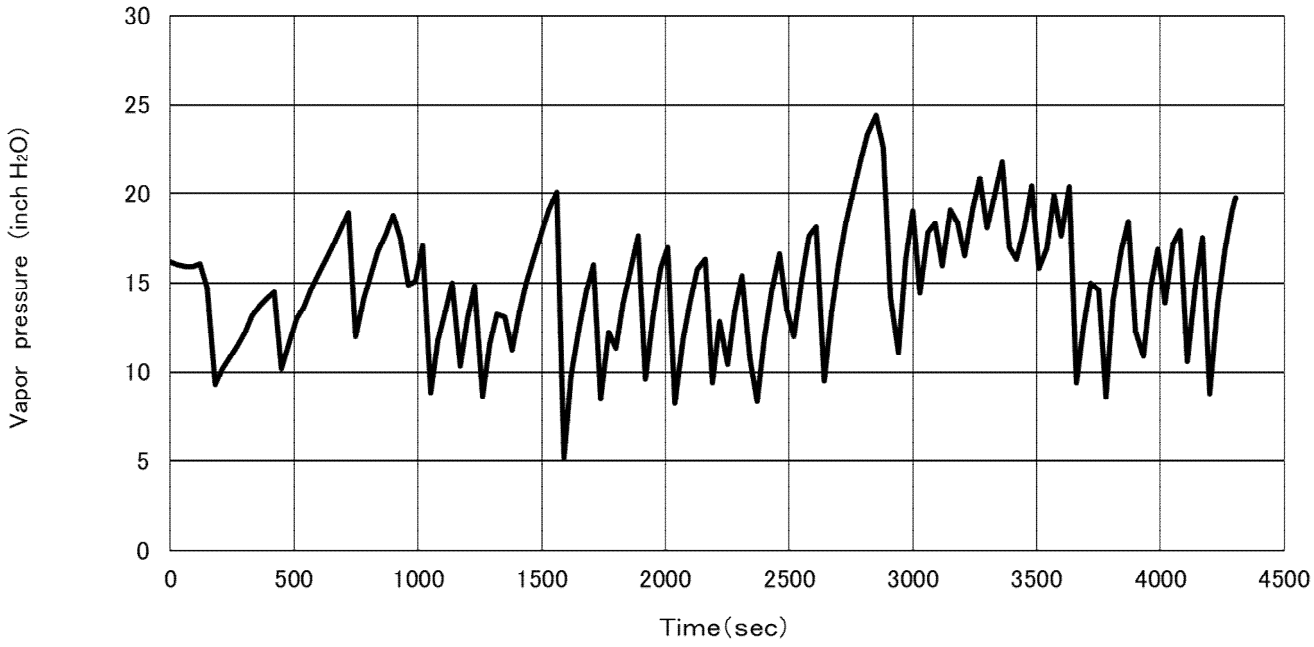
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.5	1200	100.6	2400	107.6	3600	115.5
30	95.5	1230	100.8	2430	107.6	3630	115.7
60	95.5	1260	101.1	2460	107.2	3660	115.9
90	95.9	1290	101.1	2490	107.1	3690	116.1
120	95.9	1320	101.8	2520	107.6	3720	116.2
150	95.9	1350	101.1	2550	107.8	3750	116.4
180	95.9	1380	101.7	2580	107.6	3780	116.4
210	96.1	1410	101.1	2610	108.1	3810	116.8
240	96.3	1440	101.1	2640	108.1	3840	116.8
270	96.4	1470	101.1	2670	108.7	3870	116.1
300	96.4	1500	101.1	2700	108.5	3900	116.8
330	96.6	1530	101.3	2730	108.5	3930	116.8
360	96.4	1560	101.7	2760	108.5	3960	117.1
390	96.6	1590	102.0	2790	108.7	3990	116.8
420	96.8	1620	102.4	2820	108.9	4020	116.8
450	96.6	1650	102.6	2850	109.4	4050	117.3
480	97.0	1680	103.1	2880	110.1	4080	117.1
510	97.3	1710	103.3	2910	110.5	4110	117.7
540	97.3	1740	103.8	2940	110.8	4140	117.3
570	97.2	1770	103.5	2970	110.7	4170	117.5
600	97.5	1800	104.0	3000	111.2	4200	117.1
630	97.9	1830	103.8	3030	111.7	4230	117.1
660	97.2	1860	103.6	3060	111.9	4260	116.8
690	97.9	1890	103.5	3090	112.3	4290	118.0
720	97.9	1920	104.0	3120	112.5	4304	118.0
750	98.4	1950	104.2	3150	112.8		
780	98.4	1980	104.0	3180	112.8		
810	99.0	2010	104.5	3210	113.4		
840	99.0	2040	104.5	3240	113.5		
870	99.1	2070	104.9	3270	113.0		
900	99.5	2100	104.9	3300	113.7		
930	99.5	2130	104.9	3330	113.7		
960	99.9	2160	105.3	3360	114.1		
990	100.0	2190	105.3	3390	113.7		
1020	100.2	2220	105.8	3420	114.4		
1050	99.7	2250	106.2	3450	114.1		
1080	100.0	2280	106.7	3480	114.4		
1110	100.4	2310	106.9	3510	114.3		
1140	100.8	2340	107.2	3540	115.0		
1170	100.6	2370	107.1	3570	115.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0170J62.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0170J62.

Evaporative emission test log

Vehicle Description

		Evaporative / Refueling emission vehicle
Test group	:	RTYXT02.4P34
Vehicle ID	:	24-TN2H
Rep. car/truck line	:	TACOMA HYBRID
Rep. vehicle model	:	TZNH47L-PRVSZA
Displacement	:	146.0 CID
Transmission	:	L580F-A
Test weight	:	5,500 lbs.
Road load	:	20.1 HP
Evap. code	:	TN2L

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.000	(g/mile)
Hot soak loss		:	0.0443	(g/test)
3DBL	1st day	:	0.1270*1	(g/test)
	2nd day	:	0.0971	(g/test)
	3rd day	:	0.0990	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0280	(g/test)
2DBL	1st day	:	0.3295*1	(g/test)
	2nd day	:	0.3115	(g/test)

Refueling sequence test results

Refueling emission		:	0.006	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0010 gram).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0170J62.

Evaporative emission test log

Vehicle Description

	Evaporative emission vehicle	Refueling emission vehicle
Test group	: RTYXT02.4P34	STYXT02.4H3J
Vehicle ID	: 24-TN2H	25-TN2H
Rep. car/truck line	: TACOMA HYBRID	4RUNNER
Rep. vehicle model	: TZNH47L-PRVSZA	TZNH55L-GKVSZA
Displacement	: 146.0 CID	146.0 CID
Transmission	: L580F-A	L580F-C
Test weight	: 5,500 lbs.	5,500 lbs.
Road load	: 20.1 HP	18.8 HP
Evap. code	: TN2L	TN1T

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.000	(g/mile)
Hot soak loss		:	0.0443	(g/test)
3DBL	1st day	:	0.1270*1	(g/test)
	2nd day	:	0.0971	(g/test)
	3rd day	:	0.0990	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0280	(g/test)
2DBL	1st day	:	0.3295*1	(g/test)
	2nd day	:	0.3115	(g/test)

Refueling sequence test results

Refueling emission		:	0.030	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0010 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J62.

[Test vehicle]

Model name	:	TX 550h+
Data is representative for	:	TX 550h+

[Test procedure] : CARB method

[Test conditions]

Date	:	02/08/2023
Ambient air temperature (at initiation)	:	105.1 °F
Ambient air temperature (at completion)	:	110.5 °F
Track surface temperature (at initiation)	:	146.1 °F
Track surface temperature (at completion)	:	150.1 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/09/2023
Ambient air temperature (at initiation)	:	105.4 °F
Ambient air temperature (at completion)	:	110.3 °F
Track surface temperature (at initiation)	:	146.7 °F
Track surface temperature (at completion)	:	150.1 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J62.

Measured temperature and pressure profiles

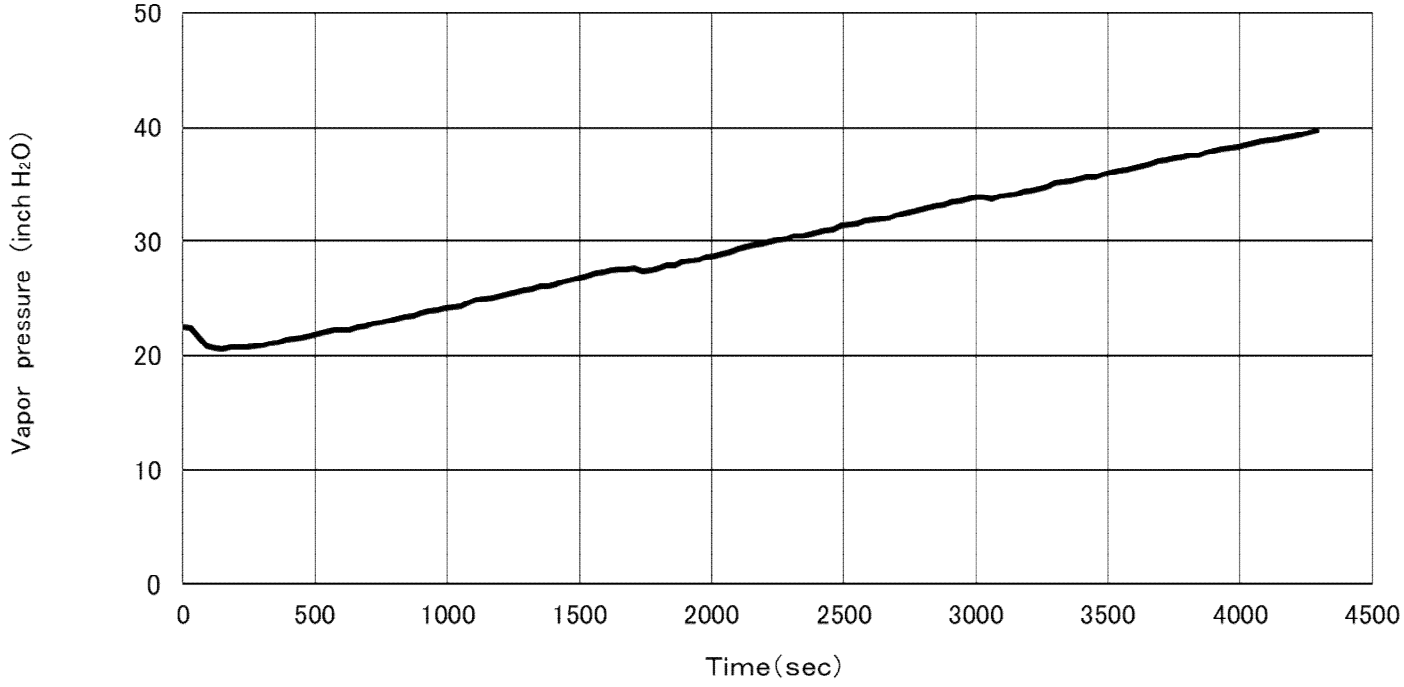
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	97.3	1200	100.9	2400	101.7	3600	102.9
30	97.3	1230	100.9	2430	101.7	3630	102.9
60	97.9	1260	100.9	2460	101.7	3660	102.9
90	98.2	1290	100.9	2490	101.7	3690	103.1
120	98.6	1320	100.9	2520	101.7	3720	102.9
150	98.6	1350	100.9	2550	101.8	3750	103.1
180	99.0	1380	100.9	2580	101.8	3780	103.1
210	99.3	1410	100.9	2610	101.8	3810	103.1
240	99.7	1440	100.9	2640	101.8	3840	103.1
270	99.7	1470	100.9	2670	101.8	3870	103.3
300	99.9	1500	100.9	2700	101.8	3900	103.3
330	100.0	1530	100.9	2730	102.0	3930	103.3
360	100.2	1560	100.9	2760	102.0	3960	103.3
390	100.4	1590	100.9	2790	102.0	3990	103.3
420	100.4	1620	100.9	2820	102.0	4020	103.3
450	100.4	1650	101.1	2850	102.0	4050	103.3
480	100.4	1680	101.1	2880	102.0	4080	103.5
510	100.6	1710	101.1	2910	102.0	4110	103.5
540	100.6	1740	101.3	2940	102.0	4140	103.5
570	100.8	1770	101.1	2970	102.2	4170	103.5
600	100.8	1800	101.1	3000	102.2	4200	103.5
630	100.8	1830	101.1	3030	102.2	4230	103.5
660	100.8	1860	101.3	3060	102.4	4260	103.5
690	100.8	1890	101.3	3090	102.4	4290	103.6
720	100.8	1920	101.3	3120	102.4		
750	100.8	1950	101.3	3150	102.4		
780	100.8	1980	101.3	3180	102.4		
810	100.8	2010	101.3	3210	102.6		
840	100.8	2040	101.5	3240	102.6		
870	100.8	2070	101.5	3270	102.6		
900	100.8	2100	101.5	3300	102.6		
930	100.8	2130	101.5	3330	102.6		
960	100.9	2160	101.5	3360	102.6		
990	100.8	2190	101.5	3390	102.7		
1020	100.9	2220	101.5	3420	102.7		
1050	100.9	2250	101.5	3450	102.7		
1080	100.9	2280	101.5	3480	102.7		
1110	100.9	2310	101.7	3510	102.9		
1140	100.9	2340	101.5	3540	102.9		
1170	100.9	2370	101.5	3570	102.7		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J62.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J62.

[Test vehicle]

Model name	:	TX 550h+
Data is representative for	:	TX 550h+

[Test procedure] : EPA method

[Test conditions]

Date	:	02/08/2023
Ambient air temperature (at initiation)	:	95.5 °F
Ambient air temperature (at completion)	:	100.6 °F
Track surface temperature (at initiation)	:	131.2 °F
Track surface temperature (at completion)	:	134.4 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/09/2023
Ambient air temperature (at initiation)	:	96.1 °F
Ambient air temperature (at completion)	:	100.6 °F
Track surface temperature (at initiation)	:	131.9 °F
Track surface temperature (at completion)	:	136.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J62.

Measured temperature and pressure profiles

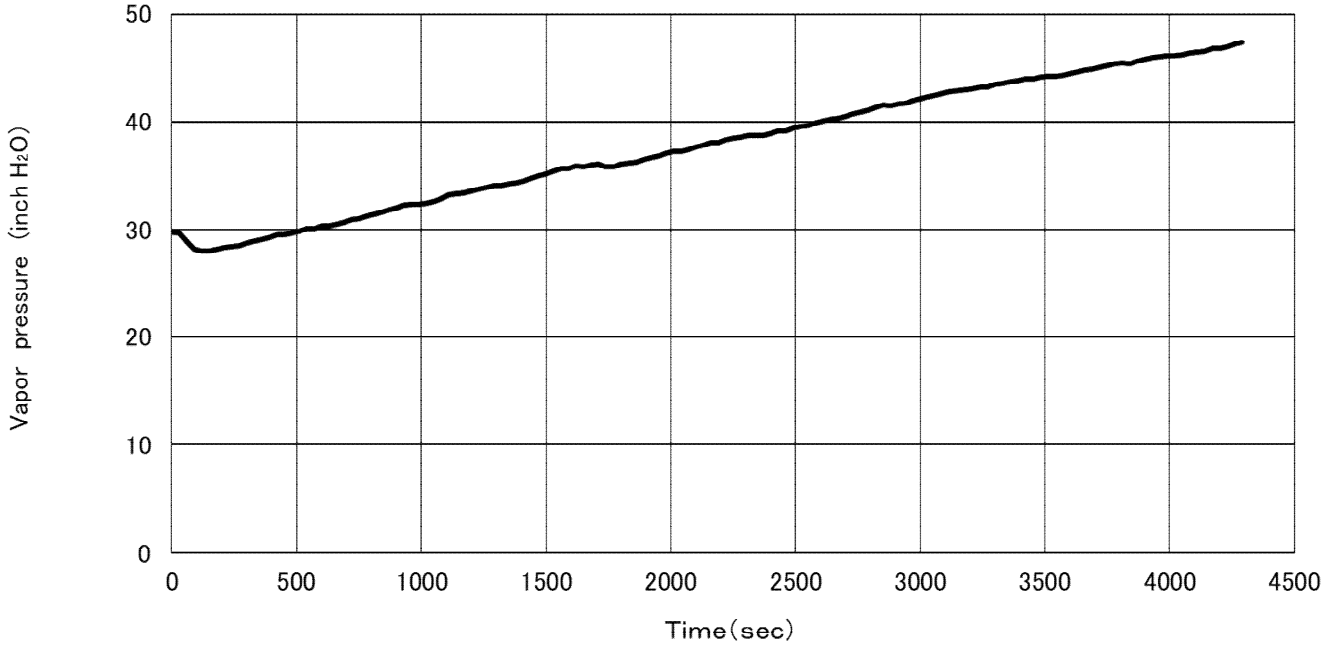
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	87.6	1200	91.4	2400	91.8	3600	92.8
30	87.6	1230	91.4	2430	91.8	3630	92.7
60	88.2	1260	91.4	2460	91.8	3660	92.7
90	88.7	1290	91.4	2490	91.9	3690	92.7
120	89.1	1320	91.4	2520	91.8	3720	92.8
150	89.2	1350	91.4	2550	91.9	3750	92.8
180	89.4	1380	91.4	2580	91.9	3780	92.8
210	89.8	1410	91.4	2610	91.9	3810	92.8
240	90.1	1440	91.4	2640	91.9	3840	92.8
270	90.1	1470	91.4	2670	91.9	3870	92.8
300	90.3	1500	91.2	2700	91.9	3900	92.8
330	90.5	1530	91.4	2730	92.1	3930	92.8
360	90.7	1560	91.4	2760	92.1	3960	93.0
390	90.7	1590	91.4	2790	92.1	3990	92.8
420	90.9	1620	91.2	2820	92.1	4020	93.0
450	90.9	1650	91.2	2850	92.1	4050	93.0
480	91.0	1680	91.2	2880	91.9	4080	93.0
510	91.0	1710	91.2	2910	91.9	4110	93.0
540	91.0	1740	91.4	2940	92.1	4140	93.0
570	91.0	1770	91.4	2970	92.1	4170	93.0
600	91.2	1800	91.4	3000	92.1	4200	93.0
630	91.0	1830	91.4	3030	92.1	4230	93.2
660	91.2	1860	91.4	3060	92.1	4260	93.2
690	91.2	1890	91.4	3090	92.1	4290	93.4
720	91.2	1920	91.4	3120	92.3		
750	91.4	1950	91.4	3150	92.3		
780	91.4	1980	91.4	3180	92.3		
810	91.2	2010	91.4	3210	92.3		
840	91.2	2040	91.4	3240	92.3		
870	91.4	2070	91.4	3270	92.5		
900	91.4	2100	91.6	3300	92.5		
930	91.4	2130	91.6	3330	92.5		
960	91.4	2160	91.4	3360	92.5		
990	91.4	2190	91.4	3390	92.5		
1020	91.4	2220	91.6	3420	92.7		
1050	91.4	2250	91.6	3450	92.7		
1080	91.4	2280	91.6	3480	92.7		
1110	91.4	2310	91.6	3510	92.7		
1140	91.4	2340	91.6	3540	92.7		
1170	91.4	2370	91.8	3570	92.7		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J62.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165J62.

Evaporative emission test log

Vehicle Description

		Evaporative / Refueling emission vehicle
Test group	:	RTYXT03.5P33
Vehicle ID	:	24-GU2H
Rep. car/truck line	:	TX 550h+
Rep. vehicle model	:	GYU15L-BWXGBA
Displacement	:	241.4CID
Transmission	:	P810-I
Test weight	:	5,500 lbs.
Road load	:	15.9 HP
Evap. code	:	GU1E

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0002	(g/mile)
	CO	:	0.00	(g/mile)
	NOx	:	0.0000	(g/mile)
Running loss		:	0.391	(g/mile)
Hot soak loss		:	0.0478	(g/test)
3DBL	1st day	:	0.3431*1	(g/test)
	2nd day	:	0.2084	(g/test)
	3rd day	:	0.1880	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	0.00	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	0.0208	(g/test)
2DBL	1st day	:	0.2759	(g/test)
	2nd day	:	0.1397	(g/test)

Refueling sequence test results

Refueling emission		:	0.001	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0086 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P62.

[Test vehicle]

Model name	:	GX 550
Data is representative for	:	GX 550

[Test procedure] : CARB method

[Test conditions]

Date	:	01/23/2023
Ambient air temperature (at initiation)	:	106.3 °F
Ambient air temperature (at completion)	:	107.8 °F
Track surface temperature (at initiation)	:	148.8 °F
Track surface temperature (at completion)	:	151.0 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	01/24/2023
Ambient air temperature (at initiation)	:	106.3 °F
Ambient air temperature (at completion)	:	107.8 °F
Track surface temperature (at initiation)	:	148.8 °F
Track surface temperature (at completion)	:	151.0 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P62.

Measured temperature and pressure profiles

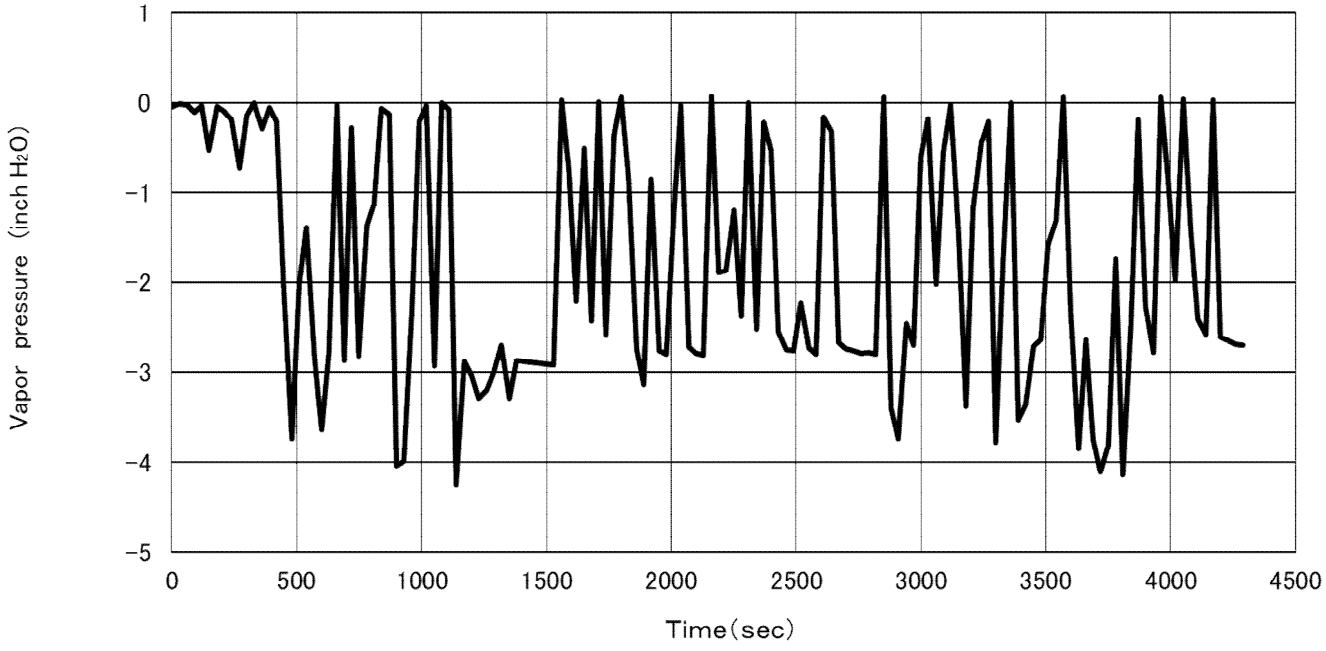
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.7	1200	109.9	2400	116.1	3600	123.1
30	106.7	1230	110.3	2430	115.7	3630	123.3
60	106.7	1260	110.1	2460	115.5	3660	123.6
90	106.7	1290	110.5	2490	115.5	3690	123.8
120	106.7	1320	110.8	2520	116.1	3720	124.0
150	106.5	1350	110.3	2550	116.2	3750	124.2
180	106.5	1380	110.5	2580	116.2	3780	124.3
210	106.9	1410	110.1	2610	117.0	3810	124.5
240	107.1	1440	110.1	2640	117.0	3840	124.7
270	107.2	1470	110.1	2670	117.1	3870	124.2
300	107.2	1500	110.1	2700	117.1	3900	124.7
330	107.4	1530	110.3	2730	117.3	3930	124.3
360	107.1	1560	110.7	2760	117.3	3960	124.9
390	107.4	1590	110.7	2790	117.3	3990	124.7
420	107.4	1620	111.2	2820	117.7	4020	124.9
450	107.2	1650	111.4	2850	118.2	4050	125.4
480	107.6	1680	112.1	2880	118.8	4080	124.9
510	107.8	1710	112.3	2910	118.8	4110	125.4
540	108.0	1740	112.5	2940	119.1	4140	125.2
570	107.8	1770	111.9	2970	118.9	4170	125.4
600	108.0	1800	112.6	3000	119.5	4200	125.2
630	108.1	1830	112.3	3030	119.5	4230	125.1
660	107.8	1860	112.1	3060	119.5	4260	125.1
690	108.0	1890	112.3	3090	119.8	4290	125.4
720	108.1	1920	112.6	3120	120.2		
750	108.3	1950	112.8	3150	120.7		
780	108.5	1980	112.8	3180	120.7		
810	108.9	2010	113.4	3210	121.3		
840	109.0	2040	113.2	3240	121.5		
870	109.4	2070	113.7	3270	121.1		
900	109.4	2100	113.5	3300	121.5		
930	109.6	2130	113.5	3330	121.6		
960	109.8	2160	113.9	3360	122.0		
990	109.9	2190	113.9	3390	121.6		
1020	109.9	2220	114.4	3420	122.2		
1050	109.4	2250	114.6	3450	122.0		
1080	109.8	2280	115.3	3480	122.2		
1110	109.2	2310	115.5	3510	122.0		
1140	110.1	2340	115.9	3540	122.7		
1170	109.8	2370	115.2	3570	122.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P62.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P62.

[Test vehicle]

Model name	:	GX 550
Data is representative for	:	GX 550

[Test procedure] : EPA method

[Test conditions]

Date	:	01/23/2023
Ambient air temperature (at initiation)	:	98.1 °F
Ambient air temperature (at completion)	:	98.6 °F
Track surface temperature (at initiation)	:	131.0 °F
Track surface temperature (at completion)	:	132.6 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	01/24/2023
Ambient air temperature (at initiation)	:	95.5 °F
Ambient air temperature (at completion)	:	99.9 °F
Track surface temperature (at initiation)	:	132.1 °F
Track surface temperature (at completion)	:	133.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P62.

Measured temperature and pressure profiles

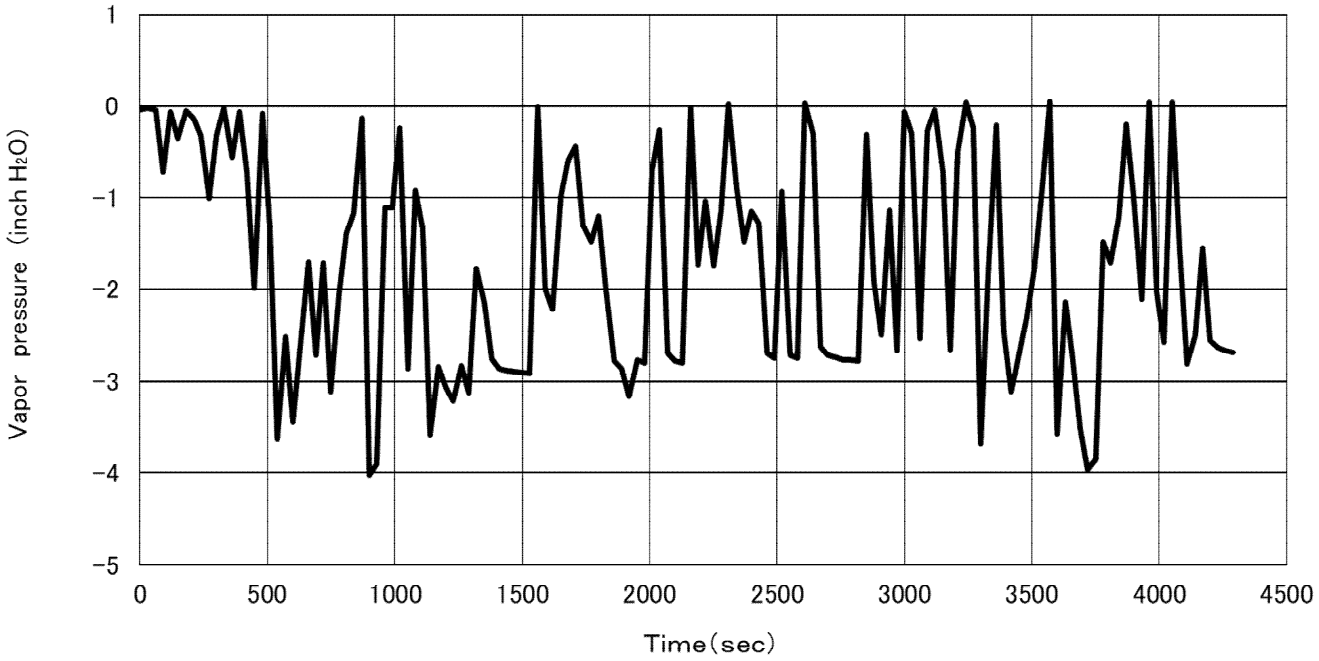
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.7	1200	98.8	2400	104.5	3600	111.4
30	95.7	1230	99.0	2430	104.4	3630	111.6
60	95.9	1260	99.0	2460	104.4	3660	111.7
90	95.9	1290	99.0	2490	104.5	3690	112.1
120	96.1	1320	99.3	2520	104.9	3720	112.3
150	95.9	1350	99.3	2550	105.1	3750	112.3
180	95.9	1380	99.5	2580	105.3	3780	112.5
210	96.1	1410	99.3	2610	105.4	3810	112.6
240	96.1	1440	99.3	2640	105.6	3840	113.0
270	96.3	1470	99.5	2670	105.6	3870	112.6
300	96.3	1500	99.5	2700	105.8	3900	113.0
330	96.3	1530	99.5	2730	106.0	3930	112.8
360	96.1	1560	99.7	2760	106.2	3960	113.4
390	96.4	1590	99.9	2790	106.5	3990	113.0
420	96.3	1620	100.0	2820	106.5	4020	113.2
450	96.3	1650	100.2	2850	106.7	4050	113.5
480	96.4	1680	100.8	2880	107.2	4080	113.5
510	96.6	1710	100.8	2910	107.1	4110	113.7
540	96.6	1740	101.1	2940	107.4	4140	113.9
570	96.4	1770	100.9	2970	107.6	4170	113.9
600	96.6	1800	101.1	3000	107.8	4200	113.9
630	96.8	1830	101.3	3030	107.8	4230	113.9
660	96.8	1860	101.1	3060	107.8	4260	113.9
690	97.0	1890	101.3	3090	108.1	4290	114.1
720	97.0	1920	101.5	3120	108.3		
750	97.2	1950	101.5	3150	109.0		
780	97.2	1980	101.7	3180	109.0		
810	97.5	2010	102.0	3210	109.4		
840	97.7	2040	102.0	3240	109.6		
870	97.7	2070	102.2	3270	109.4		
900	97.9	2100	102.4	3300	109.9		
930	98.1	2130	102.6	3330	109.9		
960	98.2	2160	102.6	3360	110.1		
990	98.2	2190	102.7	3390	110.1		
1020	98.6	2220	103.3	3420	110.5		
1050	98.2	2250	103.5	3450	110.5		
1080	98.4	2280	103.8	3480	110.5		
1110	98.2	2310	103.8	3510	110.5		
1140	98.6	2340	104.2	3540	111.0		
1170	98.6	2370	104.0	3570	111.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P62.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0165P62.

Evaporative emission test log

Vehicle Description

		Evaporative / Refueling emission vehicle
Test group	:	NTYXT03.4M5W
Vehicle ID	:	22-VA1A
Rep. car/truck line	:	LX 600
Rep. vehicle model	:	VJA310L-GKULZA
Displacement	:	210.2CID
Transmission	:	AJA0F-A
Test weight	:	6,000 lbs.
Road load	:	19.6 HP
Evap. code	:	VA1S

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0071	(g/mile)
	CO	:	0.10	(g/mile)
	NOx	:	0.0126	(g/mile)
Running loss		:	0.002	(g/mile)
Hot soak loss		:	0.0644	(g/test)
3DBL	1st day	:	0.1938*1	(g/test)
	2nd day	:	0.1496	(g/test)
	3rd day	:	0.1357	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/test)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0063	(g/mile)
	CO	:	0.08	(g/mile)
	NOx	:	0.0098	(g/mile)
Refueling emission		:	0.006	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0003 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0215P62.

[Test vehicle]

Model name	:	TUNDRA
Data is representative for	:	TUNDRA

[Test procedure] : CARB method

[Test conditions]

Date	:	02/02/2021
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	106.5 °F
Track surface temperature (at initiation)	:	177.6 °F
Track surface temperature (at completion)	:	179.2 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/02/2021
Ambient air temperature (at initiation)	:	106.7 °F
Ambient air temperature (at completion)	:	106.5 °F
Track surface temperature (at initiation)	:	177.4 °F
Track surface temperature (at completion)	:	178.5 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0215P62.

Measured temperature and pressure profiles

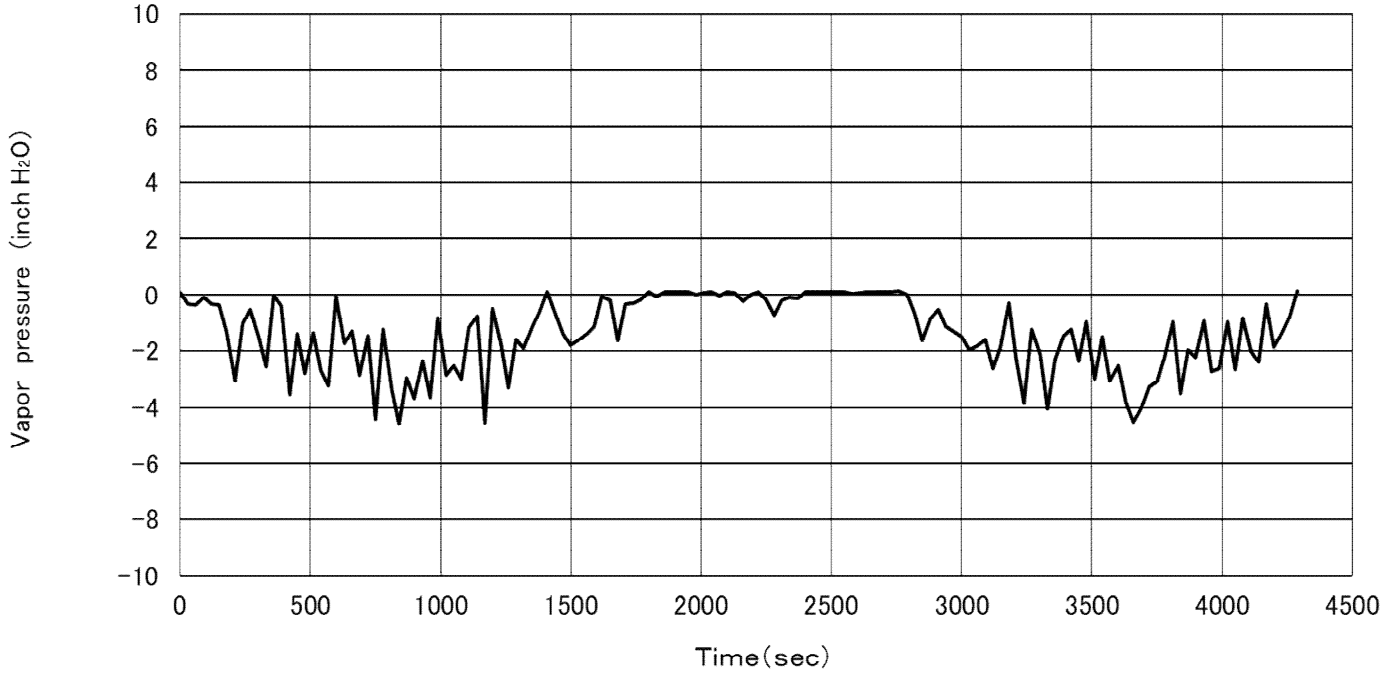
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.3	1200	109.8	2400	113.9	3600	118.0
30	106.3	1230	109.9	2430	114.1	3630	118.0
60	106.3	1260	109.9	2460	114.1	3660	118.2
90	106.3	1290	110.1	2490	114.3	3690	118.2
120	106.3	1320	110.3	2520	114.3	3720	118.4
150	106.5	1350	110.3	2550	114.4	3750	118.6
180	106.5	1380	110.5	2580	114.6	3780	118.6
210	106.5	1410	110.5	2610	114.6	3810	118.6
240	106.5	1440	110.7	2640	114.8	3840	118.8
270	106.7	1470	110.7	2670	115.0	3870	118.8
300	106.7	1500	110.8	2700	115.0	3900	118.9
330	106.9	1530	110.8	2730	115.0	3930	118.9
360	107.1	1560	111.0	2760	115.2	3960	118.9
390	107.1	1590	111.0	2790	115.2	3990	119.1
420	107.1	1620	111.2	2820	115.3	4020	119.1
450	107.2	1650	111.2	2850	115.5	4050	119.3
480	107.2	1680	111.4	2880	115.5	4080	119.3
510	107.4	1710	111.4	2910	115.7	4110	119.3
540	107.6	1740	111.6	2940	115.9	4140	119.5
570	107.6	1770	111.6	2970	115.9	4170	119.5
600	107.8	1800	111.7	3000	115.9	4200	119.7
630	107.8	1830	111.9	3030	116.1	4230	119.7
660	107.8	1860	111.9	3060	116.2	4260	119.8
690	108.0	1890	112.1	3090	116.2	4290	119.8
720	108.1	1920	112.1	3120	116.4		
750	108.1	1950	112.3	3150	116.6		
780	108.3	1980	112.5	3180	116.6		
810	108.3	2010	112.5	3210	116.8		
840	108.5	2040	112.6	3240	116.8		
870	108.7	2070	112.6	3270	117.0		
900	108.7	2100	112.8	3300	117.1		
930	108.9	2130	112.8	3330	117.1		
960	108.9	2160	113.0	3360	117.3		
990	109.0	2190	113.2	3390	117.3		
1020	109.2	2220	113.2	3420	117.5		
1050	109.2	2250	113.4	3450	117.5		
1080	109.4	2280	113.4	3480	117.7		
1110	109.6	2310	113.5	3510	117.7		
1140	109.6	2340	113.7	3540	117.9		
1170	109.8	2370	113.7	3570	117.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0215P62.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0215P62.

[Test vehicle]

Model name	:	TUNDRA
Data is representative for	:	TUNDRA

[Test procedure] : EPA method

[Test conditions]

Date	:	02/01/2021
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	160.2 °F
Track surface temperature (at completion)	:	160.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/01/2021
Ambient air temperature (at initiation)	:	95.7 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	159.6 °F
Track surface temperature (at completion)	:	161.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0215P62.

Measured temperature and pressure profiles

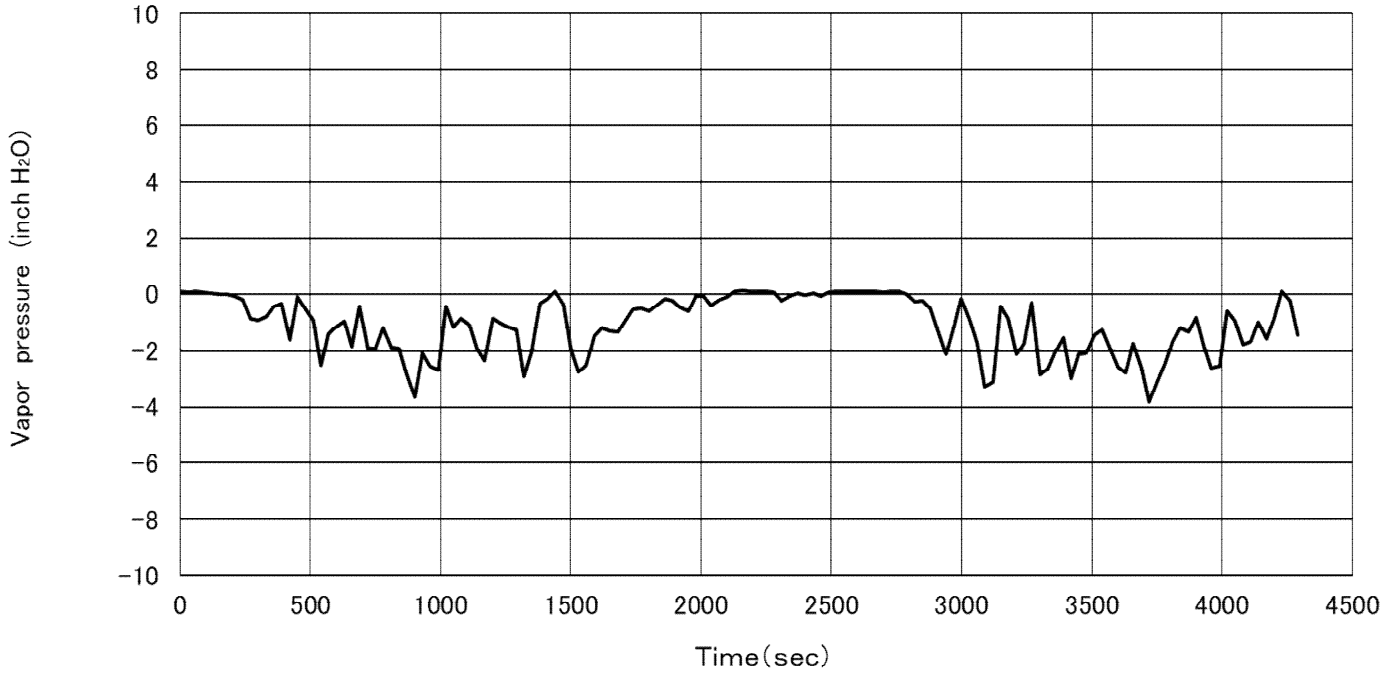
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.4	1200	99.7	2400	103.5	3600	107.4
30	96.4	1230	99.7	2430	103.6	3630	107.4
60	96.4	1260	99.9	2460	103.6	3660	107.6
90	96.4	1290	99.9	2490	103.6	3690	107.6
120	96.4	1320	100.0	2520	103.8	3720	107.8
150	96.4	1350	100.2	2550	104.0	3750	107.8
180	96.6	1380	100.2	2580	104.0	3780	108.0
210	96.6	1410	100.2	2610	104.2	3810	108.0
240	96.8	1440	100.4	2640	104.2	3840	108.1
270	96.8	1470	100.4	2670	104.4	3870	108.1
300	97.0	1500	100.6	2700	104.4	3900	108.3
330	97.0	1530	100.6	2730	104.5	3930	108.3
360	97.0	1560	100.8	2760	104.5	3960	108.5
390	97.0	1590	100.8	2790	104.7	3990	108.5
420	97.2	1620	100.9	2820	104.7	4020	108.5
450	97.3	1650	100.9	2850	104.9	4050	108.7
480	97.3	1680	101.1	2880	104.9	4080	108.7
510	97.5	1710	101.1	2910	105.1	4110	108.9
540	97.5	1740	101.3	2940	105.1	4140	108.9
570	97.7	1770	101.3	2970	105.3	4170	109.0
600	97.7	1800	101.5	3000	105.4	4200	109.0
630	97.9	1830	101.7	3030	105.4	4230	109.2
660	97.9	1860	101.7	3060	105.6	4260	109.2
690	98.1	1890	101.7	3090	105.8	4290	109.4
720	98.1	1920	101.8	3120	105.8		
750	98.2	1950	101.8	3150	106.0		
780	98.2	1980	102.0	3180	106.0		
810	98.4	2010	102.0	3210	106.2		
840	98.4	2040	102.2	3240	106.3		
870	98.6	2070	102.2	3270	106.3		
900	98.6	2100	102.4	3300	106.5		
930	98.8	2130	102.4	3330	106.5		
960	98.8	2160	102.6	3360	106.7		
990	99.0	2190	102.6	3390	106.7		
1020	99.1	2220	102.7	3420	106.9		
1050	99.1	2250	102.7	3450	106.9		
1080	99.3	2280	102.9	3480	107.1		
1110	99.3	2310	102.9	3510	107.1		
1140	99.5	2340	103.1	3540	107.2		
1170	99.5	2370	103.3	3570	107.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0215P62.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0215P62.

Evaporative emission test log

Vehicle Description

	Evaporative / Refueling emission vehicle
Test group	: NTYXT03.4M5W
Vehicle ID	: 22-VK3A
Rep. car/truck line	: TUNDRA
Rep. vehicle model	: VXKA75L-CRULZA
Displacement	: 210.2CID
Transmission	: AJA0F-B
Test weight	: 6,000 lbs.
Road load	: 20.7 HP
Evap. code	: VK15

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0104	(g/mile)
	CO	:	0.08	(g/mile)
	NOx	:	0.0183	(g/mile)
Running loss		:	0.003	(g/mile)
Hot soak loss		:	0.0654	(g/test)
3DBL	1st day	:	0.1898*1	(g/test)
	2nd day	:	0.1574	(g/test)
	3rd day	:	0.1446	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/test)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0115	(g/mile)
	CO	:	0.14	(g/mile)
	NOx	:	0.0220	(g/mile)
Refueling emission		:	0.030	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0004 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0325J62.

[Test vehicle]

Model name	:	TUNDRA
Data is representative for	:	TUNDRA

[Test procedure] : CARB method

[Test conditions]

Date	:	02/02/2021
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	106.5 °F
Track surface temperature (at initiation)	:	177.6 °F
Track surface temperature (at completion)	:	179.2 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/02/2021
Ambient air temperature (at initiation)	:	106.7 °F
Ambient air temperature (at completion)	:	106.5 °F
Track surface temperature (at initiation)	:	177.4 °F
Track surface temperature (at completion)	:	178.5 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0325J62.

Measured temperature and pressure profiles

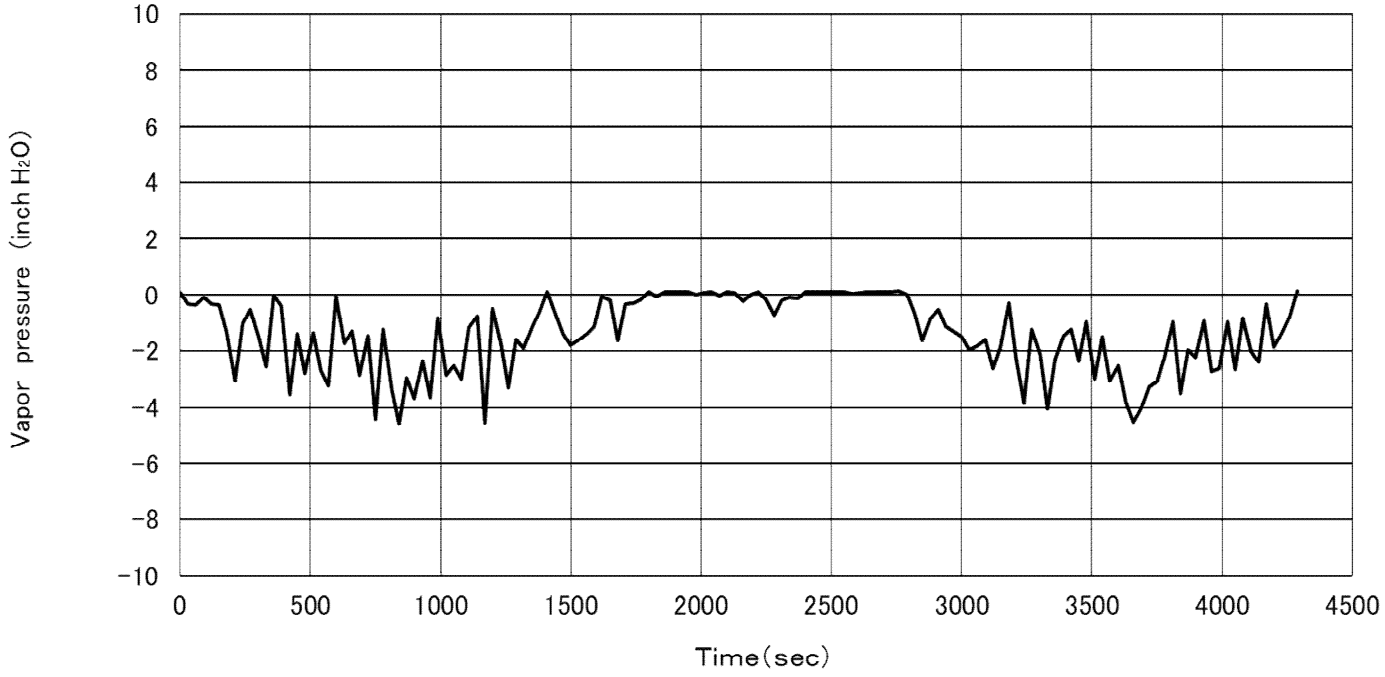
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	106.3	1200	109.8	2400	113.9	3600	118.0
30	106.3	1230	109.9	2430	114.1	3630	118.0
60	106.3	1260	109.9	2460	114.1	3660	118.2
90	106.3	1290	110.1	2490	114.3	3690	118.2
120	106.3	1320	110.3	2520	114.3	3720	118.4
150	106.5	1350	110.3	2550	114.4	3750	118.6
180	106.5	1380	110.5	2580	114.6	3780	118.6
210	106.5	1410	110.5	2610	114.6	3810	118.6
240	106.5	1440	110.7	2640	114.8	3840	118.8
270	106.7	1470	110.7	2670	115.0	3870	118.8
300	106.7	1500	110.8	2700	115.0	3900	118.9
330	106.9	1530	110.8	2730	115.0	3930	118.9
360	107.1	1560	111.0	2760	115.2	3960	118.9
390	107.1	1590	111.0	2790	115.2	3990	119.1
420	107.1	1620	111.2	2820	115.3	4020	119.1
450	107.2	1650	111.2	2850	115.5	4050	119.3
480	107.2	1680	111.4	2880	115.5	4080	119.3
510	107.4	1710	111.4	2910	115.7	4110	119.3
540	107.6	1740	111.6	2940	115.9	4140	119.5
570	107.6	1770	111.6	2970	115.9	4170	119.5
600	107.8	1800	111.7	3000	115.9	4200	119.7
630	107.8	1830	111.9	3030	116.1	4230	119.7
660	107.8	1860	111.9	3060	116.2	4260	119.8
690	108.0	1890	112.1	3090	116.2	4290	119.8
720	108.1	1920	112.1	3120	116.4		
750	108.1	1950	112.3	3150	116.6		
780	108.3	1980	112.5	3180	116.6		
810	108.3	2010	112.5	3210	116.8		
840	108.5	2040	112.6	3240	116.8		
870	108.7	2070	112.6	3270	117.0		
900	108.7	2100	112.8	3300	117.1		
930	108.9	2130	112.8	3330	117.1		
960	108.9	2160	113.0	3360	117.3		
990	109.0	2190	113.2	3390	117.3		
1020	109.2	2220	113.2	3420	117.5		
1050	109.2	2250	113.4	3450	117.5		
1080	109.4	2280	113.4	3480	117.7		
1110	109.6	2310	113.5	3510	117.7		
1140	109.6	2340	113.7	3540	117.9		
1170	109.8	2370	113.7	3570	117.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0325J62.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0325J62.

[Test vehicle]

Model name	:	TUNDRA
Data is representative for	:	TUNDRA

[Test procedure] : EPA method

[Test conditions]

Date	:	02/01/2021
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	160.2 °F
Track surface temperature (at completion)	:	160.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/01/2021
Ambient air temperature (at initiation)	:	95.7 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	159.6 °F
Track surface temperature (at completion)	:	161.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0325J62.

Measured temperature and pressure profiles

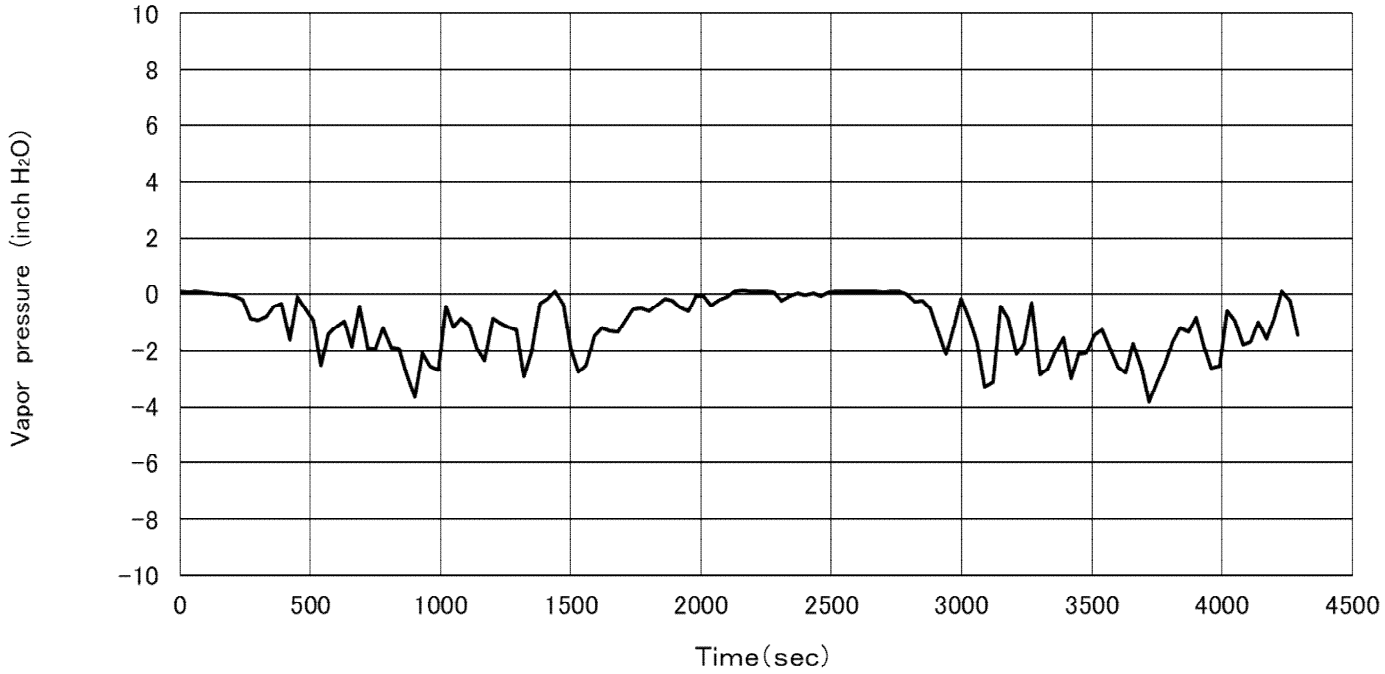
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.4	1200	99.7	2400	103.5	3600	107.4
30	96.4	1230	99.7	2430	103.6	3630	107.4
60	96.4	1260	99.9	2460	103.6	3660	107.6
90	96.4	1290	99.9	2490	103.6	3690	107.6
120	96.4	1320	100.0	2520	103.8	3720	107.8
150	96.4	1350	100.2	2550	104.0	3750	107.8
180	96.6	1380	100.2	2580	104.0	3780	108.0
210	96.6	1410	100.2	2610	104.2	3810	108.0
240	96.8	1440	100.4	2640	104.2	3840	108.1
270	96.8	1470	100.4	2670	104.4	3870	108.1
300	97.0	1500	100.6	2700	104.4	3900	108.3
330	97.0	1530	100.6	2730	104.5	3930	108.3
360	97.0	1560	100.8	2760	104.5	3960	108.5
390	97.0	1590	100.8	2790	104.7	3990	108.5
420	97.2	1620	100.9	2820	104.7	4020	108.5
450	97.3	1650	100.9	2850	104.9	4050	108.7
480	97.3	1680	101.1	2880	104.9	4080	108.7
510	97.5	1710	101.1	2910	105.1	4110	108.9
540	97.5	1740	101.3	2940	105.1	4140	108.9
570	97.7	1770	101.3	2970	105.3	4170	109.0
600	97.7	1800	101.5	3000	105.4	4200	109.0
630	97.9	1830	101.7	3030	105.4	4230	109.2
660	97.9	1860	101.7	3060	105.6	4260	109.2
690	98.1	1890	101.7	3090	105.8	4290	109.4
720	98.1	1920	101.8	3120	105.8		
750	98.2	1950	101.8	3150	106.0		
780	98.2	1980	102.0	3180	106.0		
810	98.4	2010	102.0	3210	106.2		
840	98.4	2040	102.2	3240	106.3		
870	98.6	2070	102.2	3270	106.3		
900	98.6	2100	102.4	3300	106.5		
930	98.8	2130	102.4	3330	106.5		
960	98.8	2160	102.6	3360	106.7		
990	99.0	2190	102.6	3390	106.7		
1020	99.1	2220	102.7	3420	106.9		
1050	99.1	2250	102.7	3450	106.9		
1080	99.3	2280	102.9	3480	107.1		
1110	99.3	2310	102.9	3510	107.1		
1140	99.5	2340	103.1	3540	107.2		
1170	99.5	2370	103.3	3570	107.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0325J62.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0325J62.

Evaporative emission test log

Vehicle Description

		Evaporative / Refueling emission vehicle
Test group	:	NTYXT03.4M53
Vehicle ID	:	22-VK2H
Rep. car/truck line	:	TUNDRA (Hybrid)
Rep. vehicle model	:	VXKH75L-PSVLZA
Displacement	:	210.2CID
Transmission	:	L4A0F-A
Test weight	:	6,500 lbs.
Road load	:	22.2 HP
Evap. code	:	VK17

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.001	(g/mile)
Hot soak loss		:	0.0724	(g/test)
3DBL	1st day	:	0.2414*1	(g/test)
	2nd day	:	0.2003	(g/test)
	3rd day	:	0.1942	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0450	(g/test)
2DBL	1st day	:	0.1859*1	(g/test)
	2nd day	:	0.1484	(g/test)

Refueling sequence test results

Refueling emission		:	0.004	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0055 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0265J62.

[Test vehicle]

Model name	:	SEQUOIA
Data is representative for	:	SEQUOIA

[Test procedure] : CARB method

[Test conditions]

Date	:	09/21/2021
Ambient air temperature (at initiation)	:	105.8 °F
Ambient air temperature (at completion)	:	106.3 °F
Track surface temperature (at initiation)	:	178.3 °F
Track surface temperature (at completion)	:	178.7 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	09/22/2021
Ambient air temperature (at initiation)	:	106.2 °F
Ambient air temperature (at completion)	:	106.5 °F
Track surface temperature (at initiation)	:	178.2 °F
Track surface temperature (at completion)	:	178.9 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0265J62.

Measured temperature and pressure profiles

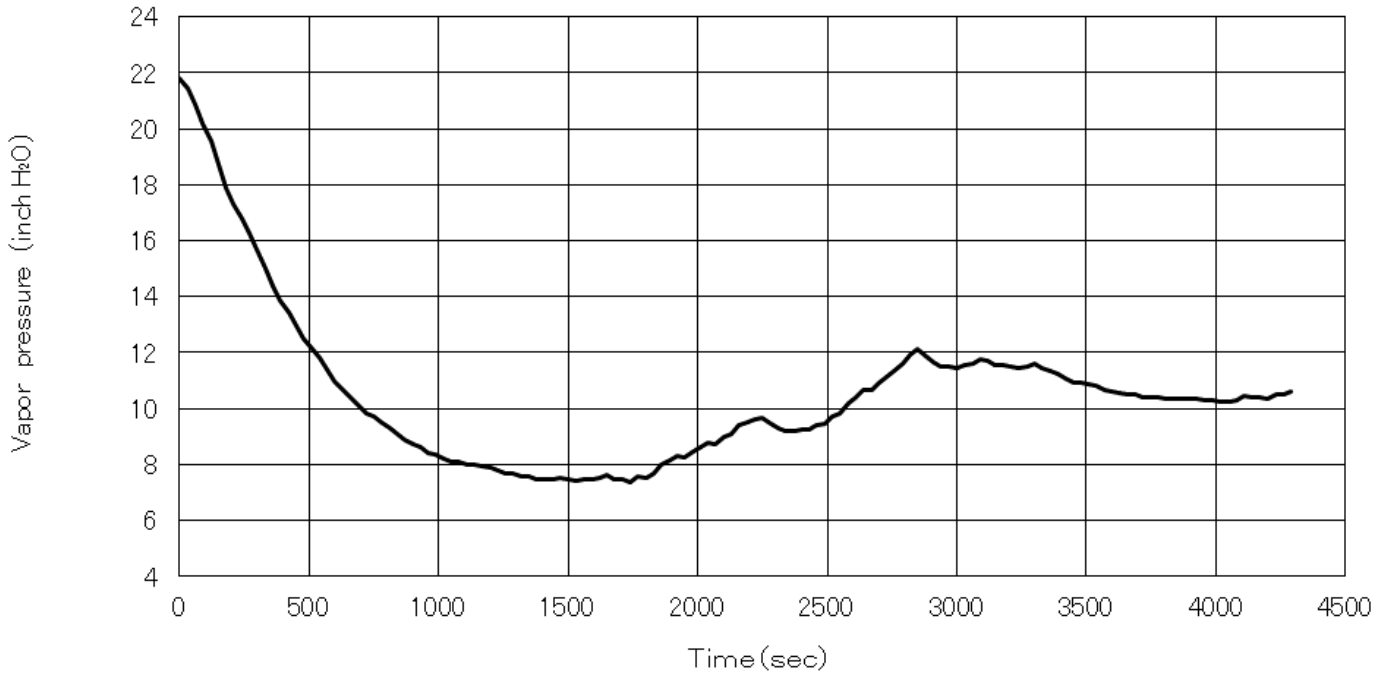
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.8	1200	108.7	2400	112.8	3600	117.7
30	105.8	1230	108.9	2430	112.8	3630	117.9
60	106.0	1260	108.9	2460	113.0	3660	117.9
90	106.0	1290	108.9	2490	113.2	3690	117.9
120	106.2	1320	109.0	2520	113.4	3720	118.0
150	106.2	1350	109.0	2550	113.4	3750	118.2
180	106.2	1380	109.2	2580	113.5	3780	118.2
210	106.2	1410	109.2	2610	113.7	3810	118.4
240	106.3	1440	109.2	2640	113.9	3840	118.4
270	106.3	1470	109.4	2670	113.9	3870	118.4
300	106.5	1500	109.4	2700	114.1	3900	118.6
330	106.5	1530	109.4	2730	114.3	3930	118.8
360	106.7	1560	109.6	2760	114.4	3960	118.8
390	106.7	1590	109.6	2790	114.4	3990	118.9
420	106.7	1620	109.6	2820	114.6	4020	118.9
450	106.9	1650	109.8	2850	114.8	4050	118.9
480	106.9	1680	109.9	2880	114.8	4080	119.1
510	106.9	1710	109.9	2910	115.0	4110	119.3
540	107.1	1740	110.1	2940	115.2	4140	119.3
570	107.1	1770	110.3	2970	115.3	4170	119.5
600	107.1	1800	110.3	3000	115.3	4200	119.5
630	107.1	1830	110.5	3030	115.5	4230	119.5
660	107.2	1860	110.5	3060	115.7	4260	119.5
690	107.2	1890	110.7	3090	115.9	4290	119.7
720	107.4	1920	110.8	3120	116.1		
750	107.4	1950	110.8	3150	116.1		
780	107.6	1980	111.0	3180	116.2		
810	107.6	2010	111.2	3210	116.4		
840	107.8	2040	111.4	3240	116.4		
870	107.8	2070	111.4	3270	116.6		
900	108.0	2100	111.6	3300	116.6		
930	108.0	2130	111.7	3330	116.8		
960	108.1	2160	111.7	3360	116.8		
990	108.1	2190	111.9	3390	117.0		
1020	108.1	2220	111.9	3420	117.1		
1050	108.3	2250	112.1	3450	117.1		
1080	108.3	2280	112.3	3480	117.1		
1110	108.5	2310	112.5	3510	117.3		
1140	108.5	2340	112.5	3540	117.3		
1170	108.7	2370	112.6	3570	117.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0265J62.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0265J62.

[Test vehicle]

Model name	:	SEQUOIA
Data is representative for	:	SEQUOIA

[Test procedure] : EPA method

[Test conditions]

Date	:	09/21/2021
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.3 °F
Track surface temperature (at initiation)	:	160.0 °F
Track surface temperature (at completion)	:	160.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	09/22/2021
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	160.3 °F
Track surface temperature (at completion)	:	160.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0265J62.

Measured temperature and pressure profiles

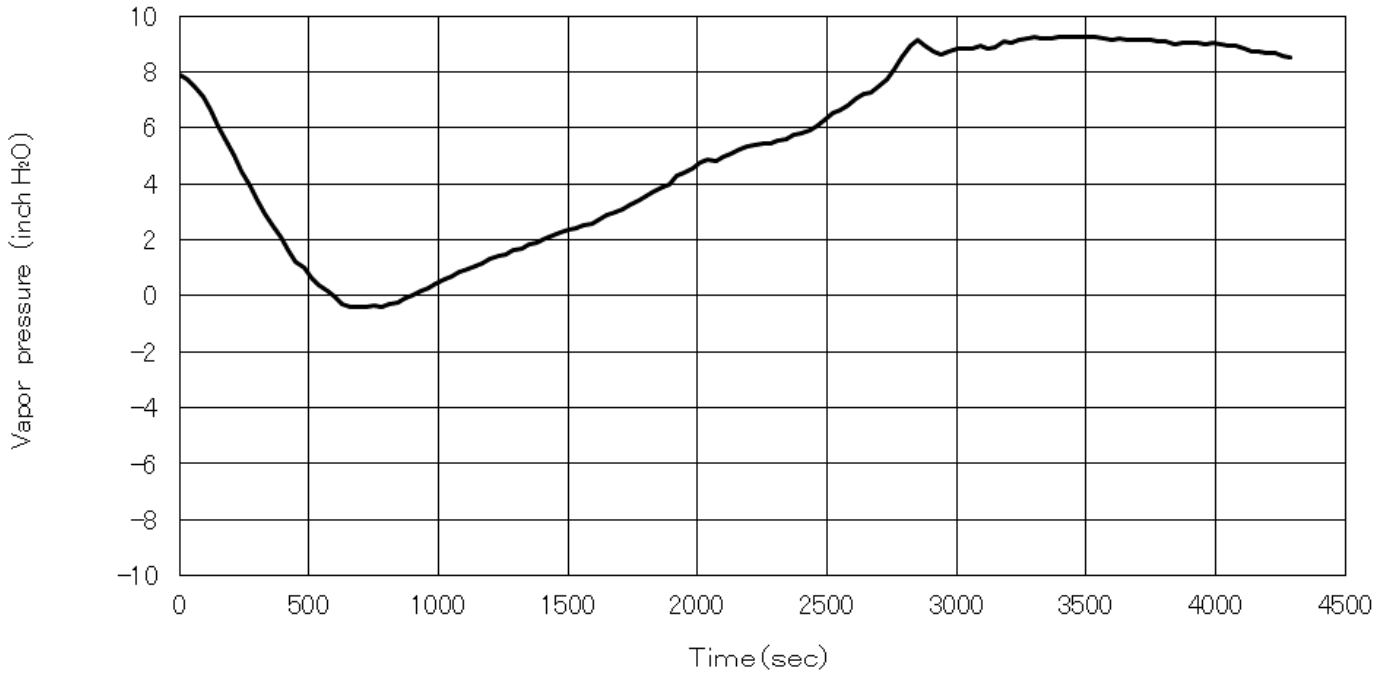
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.7	1200	98.4	2400	101.5	3600	105.8
30	95.7	1230	98.2	2430	101.7	3630	106.0
60	95.9	1260	98.4	2460	101.7	3660	106.0
90	95.9	1290	98.6	2490	101.8	3690	106.2
120	96.1	1320	98.6	2520	102.0	3720	106.2
150	96.1	1350	98.6	2550	102.2	3750	106.3
180	96.1	1380	98.8	2580	102.4	3780	106.3
210	96.1	1410	98.8	2610	102.4	3810	106.5
240	96.3	1440	99.0	2640	102.6	3840	106.5
270	96.3	1470	99.0	2670	102.7	3870	106.7
300	96.3	1500	99.0	2700	102.7	3900	106.7
330	96.4	1530	99.0	2730	102.9	3930	106.9
360	96.4	1560	99.0	2760	103.1	3960	107.1
390	96.4	1590	99.1	2790	103.1	3990	107.1
420	96.6	1620	99.1	2820	103.3	4020	107.2
450	96.6	1650	99.3	2850	103.3	4050	107.2
480	96.6	1680	99.5	2880	103.5	4080	107.2
510	96.8	1710	99.5	2910	103.5	4110	107.4
540	96.8	1740	99.7	2940	103.6	4140	107.4
570	96.8	1770	99.7	2970	103.8	4170	107.4
600	97.0	1800	99.9	3000	103.8	4200	107.6
630	97.0	1830	99.9	3030	103.8	4230	107.6
660	97.0	1860	100.0	3060	104.0	4260	107.6
690	97.0	1890	100.0	3090	104.2	4290	107.8
720	97.2	1920	100.2	3120	104.4		
750	97.2	1950	100.2	3150	104.5		
780	97.2	1980	100.4	3180	104.5		
810	97.3	2010	100.4	3210	104.7		
840	97.5	2040	100.6	3240	104.9		
870	97.5	2070	100.6	3270	104.9		
900	97.5	2100	100.8	3300	104.9		
930	97.5	2130	100.8	3330	105.1		
960	97.7	2160	100.8	3360	105.1		
990	97.7	2190	100.8	3390	105.3		
1020	97.9	2220	100.9	3420	105.3		
1050	97.9	2250	101.1	3450	105.4		
1080	97.9	2280	101.1	3480	105.4		
1110	98.1	2310	101.1	3510	105.6		
1140	98.1	2340	101.3	3540	105.8		
1170	98.2	2370	101.5	3570	105.8		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0265J62.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for TTYXR0265J62.

Evaporative emission test log

Vehicle Description

		Evaporative / Refueling emission vehicle
Test group	:	PTYXT03.4M53
Vehicle ID	:	23-VK2H
Rep. car/truck line	:	SEQUOIA (Hybrid)
Rep. vehicle model	:	VXKH80L-GKVZZA
Displacement	:	210.2CID
Transmission	:	L4A0E-B
Test weight	:	6,000 lbs.
Road load	:	18.8 HP
Evap. code	:	VK1U

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.000	(g/mile)
Hot soak loss		:	0.0809	(g/test)
3DBL	1st day	:	0.1535*1	(g/test)
	2nd day	:	0.0963	(g/test)
	3rd day	:	0.0840	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.0341	(g/test)
2DBL	1st day	:	0.1952*1	(g/test)
	2nd day	:	0.1258	(g/test)

Refueling sequence test results

Refueling emission		:	0.003	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0120 gram).

17.6 New unique or changed emission control technology

New, unique or changed Exhaust, Evaporative/Refueling emission control technology or parts in Toyota 2026 MY is shown below

New, unique or changed emission control technology

Test group	New, unique or changed emission control technology
Not applicable	-

17.7 Service literature

Toyota will make available service bulletins, service manual and Fed World electronically.

Toyota is going to issue California ARB the service account which allows Carb to access Toyota Vehicle all serviceable parts information as stated in CCR section 1969 (l)(1)(C).

17.8 Emission Control Information Labels.

Please refer to the test group file

17.9 Reserved

17.10 Identification of AB71-Qualified Vehicles (Mail-Out #MSO-2000-04)

No vehicles qualified for the 2026MY.

17.11 Supplemental Data Sheet and Certification Review Sheet

Please refer to the each test group file.

17.12 Test group and Evaporative family sales for California

Confidential Information

17.13 California Phase-in Compliance

Confidential Information

17.14 Compliance with OBD-II Phase-in Requirements

Confidential Information

17.15 ZEV and HEV information

Confidential Information

17.16 Warranty information

Please refer to CBI file.

18. Information on Service of Process

Please refer to Section 1.