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EJE # 1829  
CHRYSLER MOTORS

Chrysler Motors Corporation

# COMPLIANCE REPORT

**SUBJECT:** FUEL SYSTEM INTEGRITY - 1993 'EJ' BODY, JEEP "GRAND CHEROKEE" SPORT UTILITY

**STANDARD IDENTIFICATION:** FMVSS 301 - Sections 83., 95., 86. and 87.

**STANDARD TITLE:** Fuel System Integrity

**APPROVALS:**

NAME	Title	Signature	Date
G.M. Aboud, Department Manager		<i>G. Aboud</i>	01-14-92
R.P. LUNDBERG, Executive Engineer		<i>R.P. Lundberg</i>	01-14-92

Date received by Automotive Safety and Security \_\_\_\_\_

File No: 93-EJ-301

14250 Plymouth Road  
Box 33614  
Detroit MI 48232 5614

Safety Documentation Compliance Report

INTRODUCTION

**Subject:** Fuel System Integrity - 1993 'EJ' Body, Jeep "Grand Cherokee" Sport Utility

**Object:** Verification of design compliance with the requirements of Federal Motor Vehicle Safety Standard No. 301.

**Procedure:** CP-194, CP-232, CP-233, CP-234, CP-245 and CP-246.

**Conclusions:** The Chrysler Corporation 1993 'EJ' Body Jeep "Grand Cherokee" Sport Utility with U.V.W. of 10,000 lbs. and under, as design released, complies with the requirements of FMVSS 301 - Sections 83., 85., 86. and 87.

SAFETY DOCUMENTATION COMPLIANCE REPORT (Page 1 of 6)

Prepared by: V.P. Hannawi 12/16/91  
V.P. Hannawi, Safety Specialist, Dept. 1060 Date

Approved by: G.M. Aboud 01-14-92  
G.M. Aboud, Manager, Department 1060 Date

Issued by: Jeep/Truck Safety Program Management

File No: 93-EJ-301

Safety Documentation Compliance Report

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**FUEL SYSTEM INTEGRITY  
1993 'EJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Federal Motor Vehicle Safety Standard No. 301 - Sections S3., S5., S6. and S7.

**DISCUSSION**

The Chrysler Corporation 1993 "EJ-74" Body, Jeep "Grand Cherokee," is an all new sport utility vehicle introduced for the 1993 model year.

Original launch is scheduled for January, 1992 with the following configuration:

- Five (5) seating capacity - front bucket seats.
- 23 gallon plastic fuel tank - rear mount.
- Standard four wheel anti-lock brake system (ABS).
- 106 inch wheelbase.
- 4-door body style.
- 300 lbs. of luggage.

The powertrain is comprised of a longitudinally mounted 4.0 litre (I6) multi-point injection (MPI) engine, 4-speed automatic or 5-speed manual transmission and 4-wheel drive configuration.

The fuel system consists of a 23 gallon plastic fuel tank with an in-tank electric fuel pump. The fuel tank is mounted aft of the rear axle. The filler neck is located on the left side of the vehicle.

The front bumper system consists of thermo plastic olefin (TPO) fascia with energy absorbing polypropylene foam supported by body integrated crossmember.

The rear bumper system consists of thermo plastic olefin (TPO) molded fascia supported by steel reinforcement beam and expanded polypropylene foam with energy absorbers in the guards area include a (TPO) step pad.

Vehicle is equipped with two spoke sport steering wheel with driver air bag as a supplemental restraint and 3-point active seat belt as a primary restraint system. The passenger side will have a 3-point active seat belt system as primary/only restraint system.

In June, 1992, this vehicle will be re-launched offering additional powertrain of 5.2 litre (V8) multi-point injection (MPI) engine and two wheel drive. A supplement to this compliance document will be issued in May, 1992.

Eight vehicles were tested to demonstrate compliance of the "EJ-74" to the requirements of FMVSS 301, Fuel System Integrity. Summaries I, II and III of these vehicles and test results are attached.

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DISCUSSION (continued)

VC4421 and 4432 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedures:

CP-194 "Fixed Collision Barrier 30 MPH Frontal Impact Test", Change 'I,' dated 05/30/90.

VC's 4419, 4426 and 4459 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedures:

CP-232 "Fixed Collision Barrier, 30 mph Angled Frontal Impact Test," Change 'E,' dated 04/09/90.

VC4449 and 4452 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedures:

CP-233 "Moving Barrier 20 mph Lateral Impact Test," Change 'F,' dated 04/09/90.

VC4472 was prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-234 "Moving Barrier 30 mph Rear Impact Test," Change 'G,' dated 03/26/90.

The above test vehicles, did not experience fluid losses that exceeds the fuel spillage criteria specified in Chrysler Corporation Compliance Procedure:

CP-246 "Fuel System Integrity," Change 'G,' dated 03/26/90.

Following barrier impact vehicles were further tested in accordance with the following Chrysler Corporation Compliance Procedure:

~~CP-245 "Fuel System Integrity - Static Rollover Test," Change 'E,' dated 03/23/90.~~

Fluid leakage during and following impact and during static rollover in these tests were within the limit specified in FMVSS 301 - Sections 85.5 and 85.6.

Based on the above, the 1993 "ZJ-74" Body, Jeep "Grand Cherokee" Sport Utility vehicle, as design released, complies with the requirements of FMVSS 301 - sections 83., 85., 86. and 87.

Prepared by: *V.P. Hannawi*

V.P. Hannawi

Date: 12/16/91

File No: 93-2J-301

Safety Documentation Compliance Report

**SUMMARY I**  
**FUEL SYSTEM INTEGRITY**  
**1993 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (Oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover (Oz.)	Position (Oz./Min)
VC4421 (10/25/91)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ78S8NA [REDACTED]	-0-	-0-	-0-	-0-
VC4432 (11/07/91)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, 23 Gallon Fuel Tank, Manual Trans. and 4.0 Litre (I6) MPI Engine.	1J4GZ78S3NA [REDACTED]	-0-	-0-	-0-	-0-
VC4419 (10/24/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, Man. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ78S3NA [REDACTED]	-0-	-0-	-0-	-0-

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: [Signature]

V.P. Hannawi

Date: 12/16/91

File No: 93-ZJ-301

Safety Documentation Compliance Report

**SUMMARY II**  
**FUEL SYSTEM INTEGRITY**  
**1993 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover (Oz.)	Position (Oz/Min)
VC4426 (11/01/91)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ66SXNA [REDACTED]	-0-	-0-	-0-	-0-
VC4459 (11/20/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Tilt Steering Column, 23 Gallon Fuel Tank, Manual Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4449 (11/21/91)	20 MPH Lateral Left	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: [Signature]  
V.P. Hannawi  
Date: 12/16/91

File No: 93-ZJ-301

CONFIDENTIAL BUSINESS INFORMATION

Safety Documentation Compliance Report

SUMMARY III  
 FUEL SYSTEM INTEGRITY  
 1993 '8J' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (OZ)			
				At Impact	Following 30 Mins.	Max in Any (OZ.)	Position (Oz/Min)
VC4452 (11/22/91)	20 MPH Lateral Right	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (16) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-
VC4472 (12/10/91)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Auto Transmission and 4.0 Litre MPI Engine.	1J4GZ88S6PC [REDACTED]	-0-	-0-	-0-	-0-

Allowable Leakage by Weight

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: V.P. Hannawi  
 V.P. Hannawi

Date: 12/16/91

File No: 93-8J-391

CONFIDENTIAL BUSINESS INFORMATION

INFORMATION Redacted PURSUANT TO THE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6)



Chrysler Corporation

# COMPLIANCE REPORT

**SUBJECT:** FUEL SYSTEM INTEGRITY - 1994 'EJ' BODY, JEEP "GRAND CHEROKEE" SPORT UTILITY

**STANDARD IDENTIFICATION:** FMVSS 301 - Sections S3., S5., S6. and S7.

**STANDARD TITLE:** Fuel System Integrity

**APPROVALS:**

NAME	Title	Signature	Date
R.A. Rider, Department Manager			6-5-93
D.C. WIEN, Executive Engineer			6-8-93

Date Received by Safety Programs: JUN 17 1993

File No. 94-EJ-301



## Safety Documentation Compliance Report

## INTRODUCTION

**Subject:** Fuel System Integrity - 1994 'LJ' Body, Jeep "Grand Cherokee"  
Sport Utility

**Object:** Verification of design compliance with the requirements of  
Federal Motor Vehicle Safety Standard No. 301.

**Procedure:** CP-194, CP-232, CP-233, CP-234, CP-245 and CP-246.

**Conclusions:** The Chrysler Corporation 1994 'LJ' Body Jeep "Grand Cherokee"  
Sport Utility with U.V.W. of 10,000 lbs. and under, as design  
released, comply with the requirements of FMVSS 301 - Sections  
83., 85., 86. and 87.

SAFETY DOCUMENTATION COMPLIANCE REPORT (Page 1 of 8)

Prepared by:

V.P. Hannawi  
V.P. Hannawi, Safety Specialist, Dept. 1060

06/03/93

Date

Approved by:

R.A. Rider  
R.A. Rider, Manager, Department 1060

6/3/93

Date

Issued by: Jeep/Truck, Vehicle Impact Development

File No: 94-2J-301

Safety Documentation Compliance Report

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**FUEL SYSTEM INTEGRITY**  
**1994 'EJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Federal Motor Vehicle Safety Standard No. 301 - Sections S3., S5., S6. and S7.

**DISCUSSION**

The Chrysler Corporation 1994 "ZJ-74" Body, Jeep "Grand Cherokee," Sport Utility vehicle is essentially carryover from the 1993 model year with the exception of the 2-wheel driver (4x2) which was launched in January 1993.

The "ZJ" is of unibody construction offered in 106 inch wheelbase.

The powertrain is comprised of a longitudinally mounted 4.0 litre (I6) and 5.2 litre (V8) multi-point injection (MPI) engines, 4-speed automatic or 5-speed manual transmission and 2 or 4-wheel drive configuration.

This vehicle is offered with four wheel Anti-Lock Brake System (ABS), as standard equipment.

Vehicle capacity including seating for five passengers, 23 gallon plastic fuel tank and 300 lbs. of luggage.

The fuel system consists of a 23 gallon plastic fuel tank with an in-tank electric fuel pump. The fuel tank is mounted aft of the rear axle. The filler neck is located on the left side of the vehicle.

The front bumper system consists of thermo plastic olefin (TPO) fascia with energy absorbing polypropylene foam supported by body integrated crossmember.

The rear bumper system consists of thermoplastic olefin (TPO) molded fascia supported by steel reinforcement beam and expanded polypropylene foam with energy absorbers in the guards area include a (TPO) step pad.

Vehicle is equipped with two spoke sport steering wheel with driver air bag as a supplemental restraint and 3-point active seat belt as a primary restraint system. The passenger side will have a 3-point active seat belt system as primary/only restraint system.

Fourteen vehicles were tested to demonstrate compliance of the "EJ-74" to the requirements of FMVSS 301, Fuel System Integrity. Summaries I, II, III IV and V of these vehicles and test results are attached.

VC's 4421, 4432, 4574 and 4680 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

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**DISCUSSION** (continued)

CP-194 "Fixed Collision Barrier 30 MPH Frontal Impact Test", Change 'K'.

VC's 4419, 4426, 4459, 4570, 4576 and 4724 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-232 "Fixed Collision Barrier, 30 mph Angled Frontal Impact Test," Change 'F'.

VC's 4449 and 4452 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-233 "Moving Barrier 20 mph Lateral Impact Test," Change 'H'.

VC's 4472 and 4561 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-234 "Moving Barrier 30 mph Rear Impact Test," Change 'H'.

The above test vehicles, did not experience fluid losses that exceeds the fuel spillage criteria specified in Chrysler Corporation Compliance Procedure:

CP-246 "Fuel System Integrity," Change 'G'.

Following barrier impact vehicles were further tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-245 "Fuel System Integrity - Static Rollover Test," Change 'F'.

~~Fluid leakage during and following impact and during static rollover in these tests were within the limit specified in FMVSS 301 - Sections S5.5 and S5.6.~~

Based on the above, the 1994 "EJ-74" Body, Jeep "Grand Cherokee" Sport Utility vehicle, as design released, comply with the requirements of FMVSS 301 - Sections S3., S5., S6. and S7.

Prepared by: *V.P. Hannawi*

V.P. Hannawi

Date: 06/03/93

File No: 94-EJ-301

Safety Documentation Compliance Report

SUMMARY I  
 FUEL SYSTEM INTEGRITY  
 1994 EJ BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (Oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover Position (Oz.)	Max in Any Rollover Position (Oz/Min)
VC4421* (10/25/91)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ78S8NA [REDACTED]	-0-	-0-	-0-	-0-
VC4432* (11/07/91)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, 23 Gallon Fuel Tank, Manual Trans. and 4.0 Litre (I6) MPI Engine.	1J4GZ78S3NA [REDACTED]	-0-	-0-	-0-	-0-
VC4419* (10/24/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, Man. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ78SXNA [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1993 Compliance Report, Reference File No. ZJSUPL-301.

Allowable Leakage by Weight

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: V.P. Hannawi  
 V.P. Hannawi

Date: 06/03/93

File No: 94-EJ-301

Safety Documentation Compliance Report

**SUMMARY II  
FUEL SYSTEM INTEGRITY  
1994 'EJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any (Oz.)	Rollover Position (Oz/Min)
VC4426* (11/01/91)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ68SXNA [REDACTED]	-0-	-0-	-0-	-0-
VC4459* (11/20/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Tilt Steering Column, 23 Gallon Fuel Tank, Manual Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4449* (11/21/91)	20 MPH Lateral Left	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1993 Compliance Report, Reference File No. ZJSUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: *V.P. Hannawi*  
V.P. Hannawi

Date: 06/03/93

File No: 94-ZJ-301

**SUMMARY III  
FUEL SYSTEM INTEGRITY  
1994 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (OZ)			
				At Impact	Following 30 Mins.	Max in Any Rollover Position (Oz.) (Oz/Min)	
VC4452* (11/22/91)	20 MPH Lateral Right	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-
VC4472* (12/10/91)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Auto. Transmission and 4.0 Litre MPI Engine.	1J4GZ88S6PC [REDACTED]	-0-	-0-	-0-	-0-
VC4561* (05/04/92)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y0PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1993 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: *V.P. Hannawi*  
V.P. Hannawi

Date: 06/03/93

File No: 94-ZJ-301

Safety Documentation Compliance Report

SUMMARY IV  
 FUEL SYSTEM INTEGRITY  
 1994 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any (Oz.)	Rollover Position (Oz/Min)
VC4570* (05/13/92)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y0PC [REDACTED]	-0-	-0-	-0-	-0-
VC4574* (05/18/92)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4576* (05/20/92)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y7PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1993 Compliance Report, Reference File No. ZJSUPL-301.

Allowable Leakage by Weight

1. One (oz) at impact
2. Not more than one (oz) per minute following 30 minutes
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one per minute thereafter.

Prepared by: V.P. Hannawi  
 V.P. Hannawi

Date: 06/03/93

File No: 94-ZJ-301

Safety Documentation Compliance Report

SUMMARY V  
 FUEL SYSTEM INTEGRITY  
 1994 'EJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Leakage Summary (Oz)

<u>Test No.</u> <u>(Date)</u>	<u>Impact</u> <u>Mode</u>	<u>Vehicle Model</u> <u>&amp; Description</u>	<u>Vehicle</u> <u>Identification No.</u>	<u>Max in Any</u>			
				<u>At</u> <u>Impact</u>	<u>Following</u> <u>30 Mins.</u>	<u>Rollover</u> <u>(Oz.)</u>	<u>Position</u> <u>(Oz/Min)</u>
VC4680 (10/20/92)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 2-wheel Drive, 23 gallon Fuel Tank, Tilt-steering Column, Auto-Transmission and 4.0 Litre (I6) MPI Engine.	1J4GX68S7PC [REDACTED]	-0-	-0-	-0-	-0-
VC4724 (12/11/92)	30° Lt. Angle	Jeep Grand "Cherokee" Sport Utility, 2-wheel Drive, 23 gallon Fuel Tank, Non-Tilt-Steering Column, Automatic Transmission and 4.0 Litre (I6) MPI Engine.	1J4GX68S5PC [REDACTED]	-0-	-0-	-0-	-0-

- NOTES:
- (14) Test letters included as Attachment "A".
  - (14) Fuel System and Static Rollover Summary as Attachment "B".

Allowable Leakage by Weight

1. One (oz) at impact
2. Not more than one (oz) per minute following 30 minutes
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one per minute thereafter.

Prepared by: V.P. Hannawi

Date: 06/03/93

File No: 94-EJ-301



**ATTACHMENT "A"**

ATTACHMENT 'A'

1 OF 29

**SAFETY TEST  
VEHICLE CRASH TEST LETTER**

PAGE 01

VC04421 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 22116  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 10/25/91

**TEST PURPOSE**

PRIMARY, 1992 MVSS 208 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 208 OCCUPANT CRASH PROTECTION.

PRIMARY, 1992 MVSS 212 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 212 WINDSHIELD RETENTION.

PRIMARY, 1992 MVSS 219 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 219 WINDSHIELD ZONE INTRUSION.

PRIMARY, 1992 MVSS 301 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 301 FUEL SYSTEM INTEGRITY.

**IMPACT TYPE**

TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD  
DIRECTION; 0 DEGREES

**VEHICLE**

BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GZ78S8NA [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ78S8NA [REDACTED] MOD.

**TEST SPEED** 30.2 MPH BY ELECTRONIC TRAP TIMER.

**TEST WEIGHT (LBS)** 4650 TOTAL, 2306 FRONT, 2344 REAR

**OCCUPANTS**

LEFT FRONT, HYB III CERT, STD INST RESTRAINT-AIR BAG AND KNEE BLOCKER. AD-90  
RIGHT FRONT, HYB III CERT, STD INST RESTRAINT-3 PT. BELT SYSTEM AD-95

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04421 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 22116  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 10/25/91

## BUILD CONDITION

1992.5 ZJ C-1 PILOT, 4-DR, 4X4, 106" WB. (ZJ-8116)  
DOUBLE ROW OF URETHANE BOND ON BOTTOM OF  
WINDSHIELD (11" FROM EACH A-PILLAR).  
ZJ CORPORATE TILT COLUMN.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
4.0L ENGINE, 4 SP. AUTO TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS, WITH FULL SIZE  
SPARE.  
TRAILER HITCH.  
ROOF RACK.  
FULL CONSOLE.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT. WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

## FUEL AND BALLAST

22 GAL. STODDARD.  
300 LBS. OF LUGGAGE BALLAST.  
160 LBS SECURED TO FLOORPAN UNDER REAR SEAT.  
100 LBS SECURED TO REAR FOOTWELL.

## POST TEST REMARKS

THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING THE SUBSEQUENT THIRTY MINUTES. AT THE BEGINNING OF THE STATIC ROLLOVER, A HOLE IN THE TOP REAR PORTION OF THE FUEL TANK WAS DISCOVERED. THIS HOLE WAS CAUSED BY A TEST DUMMY GROUNDING SCREW. SINCE THIS DAMAGE WAS NOT RELATED TO THE PRODUCT, THE HOLE WAS REPAIRED BEFORE PROCEEDING WITH THE ROLLOVER. THERE WAS NO FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THERE WAS NO LOSS OF WINDSHIELD RETENTION.

THERE WAS NO INTRUSION INTO EITHER WINDSHIELD INTRUSION ZONE.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS FACE, AND THE STEERING COLUMN COVER WITH HIS KNEES. THE PASSENGER CONTACTED THE LOWER INSTRUMENT PANEL WITH HIS KNEES. THE PASSENGER BELT PAY-OUT WAS 4.6" AT THE TURNING LOOP, AND 3.0" AT THE RETRACTOR.

## REPORT CODES

A = TRANSDUCER DATA  
C = HIGH SPEED FILM  
E = DUMMY KINEMATICS  
G = UNDERBODY  
I = DYNAMIC CRUSH  
K = DOOR CRUSH  
M = SPECIAL

B = ALL FILM DATA  
D = ENGINEER'S REPORT  
F = STEERING COLUMN  
H = A-POST  
J = ENGINE COMPARTMENT  
L = FORCE/CRUSH/ENERGY

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 03

VC04421 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 2Z116  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 10/25/91

## DISTRIBUTION

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04432 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 28122  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 11/07/91

TEST PURPOSE

PRIMARY, 1992 MVSS 208 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 208 OCCUPANT CRASH  
PROTECTION, DRIVER DUMMY WITH BELTS.

PRIMARY, 1992 MVSS 212 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 212 WINDSHIELD  
RETENTION.

PRIMARY, 1992 MVSS 219 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 219 WINDSHIELD ZONE  
INTRUSION.

PRIMARY, 1992 MVSS 301 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 301 FUEL SYSTEM  
INTEGRITY.

IMPACT TYPE

TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD  
DIRECTION; 0 DEGREES

VEHICLE

BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 5 SPEED MANUAL 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GE78S3NA  
VIN AS BUILT; 1J4GE28S3NA

MOD.  
MOD.

TEST SPEED

30.2 MPH - TRAP TIMER

TEST WEIGHT (LBS)

4686 TOTAL, 2300 FRONT, 2386 REAR

OCCUPANTS

LEFT FRONT, HYB III CERT, STD INST  
RESTRAINT-AIR BAG, KNEE BLOCKER AND 3 PT. UNIBELT. AD-89  
RIGHT FRONT, HYB III CERT, STD INST  
RESTRAINT-3 PT. BELT SYSTEM AD-91

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VCC4432 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 2X122  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 11/07/91

**BUILD CONDITION** 1992.5 ZJ C-1 PILOT, 4-DR, 4X4, 106" WB. (ZJ-8122)  
DOUBLE ROW OF URETHANE BOND ON BOTTOM OF  
WINDSHIELD (11" FROM EACH A-PILLAR).  
ZJ CORPORATE NON-TILT STEERING COLUMN, DRIVER'S  
AIR BAG (E-FOLD) 26-UT-BM-108.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
4.0L ENGINE, 5 SP. MANUAL TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS, WITH MINI SIZE  
SPARE MOUNTED INSIDE REAR LEFT.  
GAS DAMPED SENSOR P/N 86015D003, S/N 261008.

**WEIGHT (LBS)** 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT. WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

**AND BALLAST** 22 GAL. STODDARD.  
300 LBS. OF LUGGAGE BALLAST.  
350 POUNDS IN REAR SEAT AREA

**POST TEST REMARKS** DRIVER ATD - FACE TO CENTER OF WHEEL MOUNTED AIR  
BAG. KNEES CONTACTED THE LOWER INSTRUMENT PANEL  
AND STEERING COLUMN COVER. BELT PAYOUT; FROM  
RETRACTOR 2.0 INCHES, AT TURNING LOOP 2.4 INCHES  
RIGHT FRONT PASSENGER ATD - NO HEAD TO VEHICLE  
CONTACT. KNEES TO LOWER INSTRUMENT PANEL. BELT  
PAYOUT; FROM RETRACOR 2.0 INCHES, AT TURNING  
LOOP 2.2 INCHES.  
WINDSHIELD RETENTION - TOTAL 71.4%, LEFT 66.9%,  
RIGHT 75.8%. RETENTION MATERIAL PULLED GLASS  
FROM WINDSHIELD ALONG FENCE.  
NO WINDSHIELD ZONE INTRUSION  
NO FUEL LEAKAGE DURING IMPACT, IMMEDIATELY POST  
IMPACT, OR DURING THE POST TEST STATIC ROLL.  
STRUCTURE - FRONT RAILS "E" BUCKLED AT FRONT KICK-  
UP. SLIGHT RAIL BUCKLE AT TRANSMISSION  
CROSSMEMBER. LEFT REAR RAIL BUCKLE FORWARD OF  
UPPER SHOCK ATTACHMENT.

**REPORT CODES**

A - TRANSDUCER DATA	B - ALL FILM DATA
C - HIGH SPEED FILM	D - ENGINEER'S REPORT
E - DUMMY KINEMATICS	F - STEERING COLUMN
G - UNDERBODY	H - A-POST
I - DYNAMIC CRUSH	J - ENGINE COMPARTMENT
K - DOOR CRUSH	L - FORCE/CRUSH/ENERGY
M - SPECIAL	

**DISTRIBUTION**

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R. HARBAUGH	422-05-01 (AB)
A. HUBER	428-00-00 (ABCEIL)

6 OF 29

DATE 10/28/91  
TIME 12.59.34.

TEST VALUES  
EDP LETTER

SAFETY TEST  
DEPT 5320

VC04419 ITEM 2Z117  
VC04419 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 2Z117  
1992.5 MVSS 208 AND 301 COMPLINCE.  
TEST DATE 10/24/91

TEST PURPOSE PRIMARY, 1992 MVSS 208 COMPLIANCE.  
OBSERVE AND DETERMINE INJURY CRITERIA.

PRIMARY, 1992 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; LEFT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD  
DIRECTION; 0 DEGREES

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 5 SPEED MANUAL 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GZ78SXNA [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ78SXNA [REDACTED] MOD.

TEST SPEED 30.2 MPH - ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4662 TOTAL, 2300 FRONT, 2362 REAR

OCCUPANTS LEFT FRONT, CERT HYB III, INSTRUMENTED. AD-89  
RESTRAINT-AIR BAG AND KNEE BLOCKER.  
RIGHT FRONT, CERT HYB III, INSTRUMENTED. AD-93  
RESTRAINT-3 PT. BELT SYSTEM.

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4-DR., 4X4, 106" WB.(ZJ-8117)  
DOUBLE ROW OF URETHANE BOND ON BOTTOM OF  
WINDSHIELD (11" FROM EACH A-PILLER).  
ZJ NON-TILT COLUMN.  
KNEE BLOCKER, DRIVER'S SIDE.  
CORPORATE STEERING WHEEL AND AIR BAG.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
4.0L ENGINE, 5 SPD. MANUAL TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS, WITH MINI SPARE.  
GAS DAMPED SENSOR ON KNEE BLOCKER BRACE.  
TWO ROLAMITE SENSORS, TRW TECHNAR P/N 56006868.  
AIR BAG DIAGNOSTIC MODULE P/N 65006872.  
MINI CONSOLE.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT. WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

7 OF 29

DATE 10/28/91  
TIME 12.59.34.

TEST VALUES  
EDP LETTER

SAFETY TEST  
DEPT 5320

VC04419 ITEM 2Z117  
VC04419 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 2Z117  
1992.5 MVSS 208 AND 301 COMPLINCE.  
TEST DATE 10/24/91

FUEL AND BALLAST 22 GAL. STODDARD  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
300 LBS SECURED TO RACK OVER REAR FLOORPAN.  
100 LBS SECURED TO REAR FOOTWELLS.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING THE SUBSEQUENT THIRTY MINUTES. A STATIC ROLL-OVER WAS CONDUCTED WITHOUT FUEL LEAKAGE.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS FACE, THE A-PILLAR WITH HIS FOREHEAD, AND THE STEERING COLUMN COVER WITH HIS KNEES. THE PASSENGER CONTACTED THE LOWER INSTRUMENT PANEL WITH HIS KNEES. THE PASSENGER BELT PAYOUT WAS 2.9" AT THE TURNING LOOP AND 2.4" AT THE RETRACTOR.

CC

W. A. BREITMOSER, JR	422-05-01
J. W. HANIKA	418-42-27
W. R. HARBAUGH	422-05-01
M. A. HUBER	428-00-00
T. P. MAULE	422-05-01
E. A. ZYLIK	514-17-31



8 OF 29

DATE 11/20/91  
TIME 13.25.08.

TEST VALUES  
EDP LETTER

SAFETY TEST  
DEPT 5320

VC04426 ITEM 2Z118  
VC04426 30 MPH R/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 2Z118  
1992.5 MVSS 208 AND 301 COMPLINCE.  
TEST DATE 11/01/91

TEST PURPOSE PRIMARY, 1992 MVSS 208 COMPLIANCE.  
OBSERVE AND DETERMINE INJURY CRITERIA.

PRIMARY, 1992 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; RIGHT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD  
DIRECTION; 0 DEGREES

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GZ68SXNA [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ78SXNA [REDACTED] MOD.

TEST SPEED 30.2 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4650 TOTAL, 2290 FRONT, 2360 REAR

OCCUPANTS LEFT FRONT, CERT HYB III, INSTRUMENTED. AD-90  
RESTRAINT-AIR BAG AND KNEE BLOCKER.  
RIGHT FRONT, CERT HYB III, INSTRUMENTED. AD-95  
RESTRAINT-3 PT. BELT SYSTEM.

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4-DR., 4X4, 106" WB. (ZJ-8118)  
~~DOUBLE ROW OF URETHANE BOND ON BOTTOM OF~~  
WINDSHIELD (11" FROM EACH A-PILLER).  
ZJ TILT COLUMN.  
KNEE BLOCKER, DRIVER'S SIDE.  
CORPORATE STEERING WHEEL AND AIR BAG WITH REVERSE  
FOLD (26-UT-BM-107).  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
4.0L ENGINE, 4 SPD. AUTO TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS, WITH FULL SIZE  
SPARE.  
GAS DAMPED SENSOR ON KNEE BLOCKER BRACE.  
P/N 86015D003, S/N 261005  
TWO ROLAMITE SENSORS, TRW TECHNAR P/N 56006868.  
AIR BAG DIAGNOSTIC MODULE P/N 65006872.  
TRAILER HITCH.  
ROOF RACK.

9 OF 29

DATE 11/20/91  
TIME 13.25.08.

TEST VALUES  
EDP LETTER

SAFETY TEST  
DEPT 5320

VC04426 ITEM 22118  
VC04426 30 MPH R/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 22118  
1992.5 MVSS 208 AND 301 COMPLINCE.  
TEST DATE 11/01/91

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT. WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GAL. STODDARD SOLVENT.  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
225 LBS SECURED TO RACK OVER REAR FLOORPAN.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DUR-  
ING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO  
FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS  
FACE, AND THE STEERING COLUMN COVER WITH HIS  
KNEES. THE PASSENGER CONTACTED THE LOWER INSTRU-  
MENT PANEL WITH HIS KNEES. THE PASSENGER'S UNIBELT  
PAYOUT WAS 2.5" AT THE TURNING LOOP, AND 1.8" AT  
THE RETRACTOR.

CC

W. A. BREITMOSER, JR	422-05-01
J. W. HANIKA	418-42-27
W. R. HARBAUGH	422-05-01
M. A. HUBER	428-00-C0
T. P. MAULE	422-05-01
E. A. ZYLIK	514-17-31

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NOV 22 '91 12:19 FROM CHELSEA IMPACT LAB

PAGE.003

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04459 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 22166  
1992.5 MVSS 301 COMPLIANCE.  
TEST DATE 11/20/91

TEST PURPOSE PRIMARY, 1992 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; LEFT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 5 SPEED MANUAL 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GZ88V8PC MOD.  
VIN AS BUILT; 1J4GZ88V8PC MOD.

TEST SPEED 30.0 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4666 TOTAL, 2350 FRONT, 2316 REAR

OCCUPANTS LEFT FRONT, HYB. II, UNINSTRUMENTED. AD-52  
RESTRAINT-A/B AND KNEE BLOCKER W 3-PT BELT SYSTEM.  
RIGHT FRONT, HYB. II, UNINSTRUMENTED. AD-53  
RESTRAINT-3-PT BELT SYSTEM.

BUILD CONDITION 1992.5 ZJ C1 PILOT, 4 DR., 4X4, 106" WB (ZJ-8166).  
TILT CORPORATE COLUMN.  
STANDARD BUMPER WITH BUMPER GUARDS.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
4.0L ENGINE, 5 SP. MAN. TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE,  
BASE/STANDARD WHEELS.  
TWO ROLAMITE SENSORS, TRW TECHNAR P/N 56006868.  
ONE GAS DAMPED SENSOR, TRW TECHNAR P/N 860150003,  
LOCATED ON KNEE BLOCKER BRACE.  
FUEL LINES TO RAIL HAVE RUBBER HOSES OVER NYLON  
LINES.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR REF MAX OPT WT,  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GALLONS STOODARD.  
50 POUNDS LEFT REAR WHEELWELL  
70 POUNDS RIGHT REAR WHEELWELL  
70 POUNDS RIGHT REAR FOOTWELL  
430 POUNDS ON BACK IN REAR SEAT AREA (300 POUNDS OF

NO. 22 191 1212 FROM HELSER IMPACT LAB

PAGE 02

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04459 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 22166  
1992.5 MVSS 301 COMPLIANCE.  
TEST DATE 11/20/91POST TEST REMARKS NO FUEL LEAKAGE DURING OR IMMEDIATELY POST IMPACT,  
OR DURING THE POST TEST STATIC ROLL.

## REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04449 20 MPH LT. LATERAL IMPACT, ZJ74, 4.0L MPI ITEM 2Z123  
1992.5 FMVSS 301 COMPLIANCE, FUEL SYS. INTEGRITY.  
TEST DATE 11/21/91

TEST PURPOSE PRIMARY, 1992 MVSS 301 COMPLIANCE.  
OBSERVE AND DETERMINE FUEL SYSTEM PERFORMANCE.

IMPACT TYPE TARGET SPEED; 20.2 MPH  
DAMAGE LOCATION; LEFT CENTER  
IMPACT TYPE; TYPE IV  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GZ88V2PC MOD.  
VIN AS BUILT; 1J4GZ88V2PC MOD.

TEST SPEED 20.6 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4652 TOTAL, 2300 FRONT, 2352 REAR

OCCUPANTS LEFT FRONT, 50TH MALE HYB II, UNISTR. AD-52  
RESTRAINT-3 PT. UNIBELT, A/B AND KNEE BLOCKER.  
RIGHT FRONT, 50TH MALE HYB II, UNISTR. AD-53  
RESTRAINT-3 POINT UNIBELT.

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4 DR., 4X4, 106" WHEELBASE  
(ZJ-8123).  
4.0 L I6 MPI, 4 SP. AUTO., PS, ABS, AC.  
23 GALLON PLASTIC FUEL TANK.  
FULL FLOOR CONSOLE.  
TRAILER TOW PACKAGE AHT.  
P215/75R15 TIRES ON STEEL WHEELS WITH FULL SIZE  
SPARE TIRE.  
TILT CORPORATE COLUMN.  
231 TRANSFER CASE.  
NO UNDERCOATING.  
ROOF RACK.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR, REPRESENTING  
MAXIMUM OPTION WEIGHT NOT INCLUDING OCCUPANTS  
OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GALLONS OF STODDARD.  
100 POUNDS ON HOOD  
50 POUNDS RIGHT REAR FOOTWELL  
100 POUNDS CARGO AREA  
100 POUNDS RIGHT REAR WHEELWELL  
NOTE - 300 POUNDS OF LUGGAGE BALLAST INCLUDED IN  
IN THE ABOVE BALLAST.



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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04452 20 MPH RT. LATERAL IMPACT, ZJ74, 4.0L MPI ITEM 22123R  
1992.5 FMVSS 301 COMPLIANCE, FUEL SYS. INTEGRITY.  
TEST DATE 11/22/91

TEST PURPOSE PRIMARY, 1992 MVSS 301 COMPLIANCE.  
OBSERVE AND DETERMINE FUEL SYSTEM PERFORMANCE.

IMPACT TYPE TARGET SPEED; 20.2 MPH  
DAMAGE LOCATION; RIGHT CENTER  
IMPACT TYPE; TYPE IV  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4G288V2PC [REDACTED] MOD.  
VIN AS BUILT; 1J4G288V2PC [REDACTED] MOD.

TEST SPEED 20.2 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4652 TOTAL, 2300 FRONT, 2352 REAR

OCCUPANTS LEFT FRONT, 50TH MALE HYB II, UNISTR. AD-52  
RESTRAINT-3 PT. UNIBELT, A/B AND KNEE BLOCKER.  
RIGHT FRONT, 50TH MALE HYB II, UNINSTR. AD-53  
RESTRAINT-3 POINT UNIBELT.

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4 DR., 4X4, 106" WHEELBASE  
(ZJ-8123).  
4.0 L I6 MPI, 4 SP. AUTO., PS, ABS, AC.  
23 GALLON PLASTIC FUEL TANK.  
FULL FLOOR CONSOLE.  
TRAILER TOW PACKAGE AHT.  
P215/75R15 TIRES ON STEEL WHEELS WITH FULL SIZE  
SPARE TIRE.  
TILT CORPORATE COLUMN.  
231 TRANSFER CASE.  
NO UNDERCOATING.  
ROOF RACK.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR, REPRESENTING  
MAXIMUM OPTION WEIGHT NOT INCLUDING OCCUPANTS  
OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GALLONS OF STODDARD.  
300 LBS. OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
100 POUNDS ON HOOD  
50 POUNDS RIGHT REAR FOOTWELL  
100 POUNDS CARGO AREA  
100 POUNDS RIGHT REAR WHEELWELL.  
NOTE - 300 POUNDS OF LUGGAGE BALLAST INCLUDED IN  
THE ABOVE BALLAST.

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04452 20 MPH RT. LATERAL IMPACT, ZJ74, 4.0L MPI ITEM 22123R  
1992.5 FMVSS 301 COMPLIANCE, FUEL SYS. INTEGRITY.  
TEST DATE 11/22/91

POST TEST REMARKS      THERE WAS NO FUEL LEAKAGE DURING, IMMEDIATELY POST  
IMPACT OR DURING THE POST TEST STATIC ROLL.

REPORT CODES

- |                      |                        |
|----------------------|------------------------|
| A = TRANSDUCER DATA  | B = ALL FILM DATA      |
| C = HIGH SPEED FILM  | D = ENGINEER'S REPORT  |
| F = DUMMY KINEMATICS | F = STEERING COLUMN    |
| G = UNDERBODY        | H = A-POST             |
| I = DYNAMIC CRUSH    | J = ENGINE COMPARTMENT |
| K = DOOR CRUSH       | L = FORCE/CRUSH/ENERGY |
| M = SPECIAL          | N = CATALOG FDP DATA   |
| * = REPORT REQUESTOR |                        |

DISTRIBUTION

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| T.P. MAULE          | 422-05-01 | (A)  |
| E.A. ZYLIK          | 514-15-58 | (AB) |



16 OF 29

## INTER COMPANY CORRESPONDENCE

FILE DCRI21091

DATE 12/20/91

TO  
DISTRIBUTIONFROM  
J. W. HANIKADEPARTMENT  
5320PLANT/OFFICE  
CHRYSLER CENTERCIMS NUMBER  
418-42-27

## SUBJECT:

DYNAMIC CRUSH ANALYSIS  
 VC04472 30 MPH REAR IMPACT, ZJ74, 4.0L, 1992.5 ITEM 22286  
 MVSS 301 FUEL SYSTEM INTEGRITY, COMPLIANCE.  
 TEST DATE 12/10/91

## TEST PURPOSE

PRIMARY, 1992 MVSS 301 COMPLIANCE.  
 DETERMINE FUEL SYSTEM INTEGRITY.

## IMPACT TYPE

TARGET SPEED: 30.2 MPH  
 DAMAGE LOCATION: REAR  
 IMPACT TYPE: BARRIER  
 BARRIER SURFACE: PLYWOOD

## VEHICLE

BODY CLASS: ZJ  
 CAR LINE: J  
 BODY: 74  
 ENGINE: 4.0 LITRE  
 ENGINE NOTE: MPI  
 TRANSMISSION: 4 SPEED AUTO 4X4  
 TRANS. NOTE:  
 VIN AS TESTED: 1J4QZ88S6PC MOD.  
 VIN AS BUILT: 1J4QZ88S6PC MOD.

## TEST SPEED

30.3 MPH - TRAP TIMER

## TEST WEIGHT (LBS)

4668 TOTAL, 2456 FRONT, 2212 REAR

## OCCUPANTS

LEFT FRONT, HYD II, UNINSTRUMENTED. AD-59  
~~RESTRAINT-3-PT. UNIBELT, A/B AND KNEE BLOCKER.~~  
 RIGHT FRONT, HYD II, UNINSTRUMENTED. AD-60  
~~RESTRAINT-3 POINT UNIBELT.~~

## BUILD CONDITION

1992 ZJ PVP VEHICLE, 4-DR., 4X4, 108" WB.  
 (P22J-8286).  
 TRAILER TOWING PACKAGE (AHT).  
 TILT CORPORATE COLUMN & KNEE BLOCKER.  
 BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
 4.0L ENGINE, AUTO. TRANS., P/S, ABS, A/C.  
 P215/75R15 TIRES ON STEEL WHEELS. FULL SIZE SPARE  
 MOUNTED INSIDE LEFT REAR.  
 SPARE TIRE CUP RETAINER P/N 52067921 - ZYTEL ST801  
 IMPACT MODIFIED, NYLON 66. (LOT 1329).  
 291 TRANSFER CASE.  
 FULL FLOOR CONSOLE.  
 REAR AXLE WITH TRACK BAR BRACKET SHIELD.  
 FUEL FILLER HOSE PROTECTION SLEEVE.

TEST VC04472

12/20/91

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EXHAUST SYSTEM-1992.5 MY RELEASE WITH REAR EXIT.  
NO UNDERCOATING.  
ROOF RACK.  
HI-DENSITY REAR FOAM BUMPER GUARDS.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.  
FUEL AND BALLAST 95% CAPACITY OF TANK, (Ø 21.7 GAL.) STOODARD.  
140 POUNDS FRONT FOOTWELL  
120 POUNDS REAR FOOTWELL  
50 POUNDS UNDER REAR SEAT  
150 POUNDS IN CARGO AREA  
NOTE - 300 POUNDS OF LUGGAGE WEIGHT INCLUDED IN  
ABOVE WEIGHTS

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, IN THE  
30 MINUTE PERIOD POST IMPACT OR DURING THE POST  
TEST STATIC ROLL.

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04561 30 MPH REAR BARRIER IMPACT, 5.2L. ITEM 3Z136  
1993 MVSS 301 FUEL SYSTEM INTEGRITY COMPLIANCE.  
TEST DATE 05/04/92

**TEST PURPOSE** PRIMARY, 1993 MVSS 301 COMPLIANCE.  
DETERMINE FUEL SYSTEM INTEGRITY.

**IMPACT TYPE** TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; REAR  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

**VEHICLE** BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 5.2 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE; A518  
VIN AS TESTED; 1J4GZ88Y0PC [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ88Y0PC [REDACTED] MOD.

**TEST SPEED** 30.3 MPH BY ELECTRONIC TRAP TIMER.

**TEST WEIGHT (LBS)** 4834 TOTAL, 2726 FRONT, 2108 REAR

**OCCUPANTS** LEFT FRONT, HYB II, UNINSTRUMENTED. AD-63  
RESTRAINT-3-PT. UNIBELT, A/B AND KNEE BLOCKER.  
RIGHT FRONT, HYB II, UNINSTRUMENTED. AD-67  
RESTRAINT-3 POINT UNIBELT.

**BUILD CONDITION** 1993 C-1 PILOT, 5.2L 4X4, (P3ZJ-8136).  
CORPORATE COLUMN - TILT.  
CORPORATE STEERING WHEEL WITH AIRBAG.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
5.2L ENGINE, AUTO. TRANS., P/S, ABS & A/C.  
P235/75R15 TIRES ON 5-SPOKE STEEL WHEELS. FULL  
SIZE SPARE TIRE MOUNTED INSIDE LEFT REAR.  
SPARE TIRE CUP RETAINER P/N 52057921 - PROPOSED  
POLYPROPYLENE MATERIAL.  
NON-PRODUCTION REAR PROP SHAFT, 1 INCH SHORT.  
249 TRANSFER CASE.  
FULL FLOOR CONSOLE.  
ROOF RACK.

**TARGET WEIGHT (LBS)** 4196 TOTAL, 2353 FRONT, 1843 REAR REP MAX OPT WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04561 30 MPH REAR BARRIER IMPACT, 5.2L. ITEM 3Z136  
1993 MVSS 301 FUEL SYSTEM INTEGRITY COMPLIANCE.  
TEST DATE 05/04/92

FUEL AND BALLAST      21.7 GAL. STODDARD.  
300 LBS. OF LUGGAGE BALLAST SECURED IN CARGO AREA.

POST TEST REMARKS      THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DUR-  
ING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO  
FUEL LEAKAGE DURING THE STATIC ROLLOVER.

REPORT CODES	A = TRANSDUCER DATA	B = ALL FILM DATA
	C = HIGH SPEED FILM	D = ENGINEER'S REPORT
	E = DUMMY KINEMATICS	F = STEERING COLUMN
	G = UNDERBODY	H = A-POST
	I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
	K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
	M = SPECIAL	N = CATALOG EDP DATA
	* = REPORT REQUESTOR	

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04570 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 5.2L ITEM 32135  
1993 MVS 208. MVSS301 COMPLIANCE.  
TEST DATE 05/13/92

TEST PURPOSE PRIMARY, 1993 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

PRIMARY, 1993 MVSS 208 COMPLIANCE.  
OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; LEFT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 5.2 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE; A518  
VIN AS TESTED; 1J4GZ88Y0PC [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ88Y0PC [REDACTED] MOD.

TEST SPEED 30.5 MPH - ELECTRONIC TRAP TIMER

TEST WEIGHT (LBS) 4830 TOTAL, 2494 FRONT, 2336 REAR

OCCUPANTS LEFT FRONT - HYB. III, INSTRUMENTED. AD-90  
RESTRAINT- AIR BAG ONLY.  
RIGHT FRONT - HYB. III, INSTRUMENTED. AD-95  
RESTRAINT- 3-PT. BELT SYSTEM.

~~BUILD CONDITION~~ 1993 ZJ C1 PILOT. (3PZJ-8135)  
5.2L ENGINE, 4 SPD. AUTO., 4X4, P/S, A/C, ABS.  
TILT CORPORATE COLUMN.  
TRAILER HITCH, ROOF RACK, FRONT SKID PLATE.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.  
TRW GAS DAMPED SENSOR S/N 052018.  
LEFT DOOR GLASS IN FULL-UP POSITION FOR TEST.

TARGET WEIGHT (LBS) 4196 TOTAL, 2353 FRONT, 1843 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04570 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 5.2L ITEM 3Z135  
1993 MVS 208. MVSS301 COMPLIANCE.  
TEST DATE 05/13/92

FUEL AND BALLAST 22 GALLONS STODDARD.  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
110 LBS SECURED TO REAR FOOTWELL.

POST TEST REMARKS DRIVER CONTACTED DEPLOYED AIR BAG WITH FACE,  
A-POS AND SIDE WINDOW WITH FOREHEAD, UNDERSIDE  
OF UPPER I/P WITH LEFT KNEE, AND STEERING COLUMN  
COVER WITH RIGHT KNEE.

PASSENGER CONTACTED GLOVE BOX DOOR WITH KNEES.

THERE WAS NO FUEL LEAKAGE DURING IMPACT,  
SUBSEQUENT THIRTY MINUTES, NOR DURING THE POST  
TEST STATIC ROLL.

## REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

VC04574 30 MPH FRONTAL BARRIER IMPACT, ZJ74, 5.2L ITEM 3Z137  
1993 COMPLIANCE - MVSS 208, MVSS 212, MVSS 219, MVSS 301.  
TEST DATE 05/18/92

TEST PURPOSE            PRIMARY, 1993 MVSS 301 COMPLIANCE.  
                             OBSERVE FUEL SYSTEM INTEGRITY.

                             PRIMARY, 1993 MVSS 208 COMPLIANCE.  
                             OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

                             PRIMARY, 1993 MVSS 212 COMPLIANCE.  
                             OBSERVE AND DETERMINE W/SHIELD RETENTION.

                             PRIMARY, 1993 MVSS 219 COMPLIANCE.  
                             OBSERVE AND DETERMINE W/SHIELD ZONE INTRUSION.

IMPACT TYPE            TARGET SPEED;        30.2 MPH  
                             DAMAGE LOCATION; FRONT  
                             IMPACT TYPE;        BARRIER  
                             BARRIER SURFACE; PLYWOOD

VEHICLE                BODY CLASS;        ZJ  
                             CAR LINE;            J  
                             BODY;                74  
                             ENGINE;             5.2 LITRE  
                             ENGINE NOTE;        MPI  
                             TRANSMISSION;      4 SPEED AUTO 4X4  
                             TRANS. NOTE;        A518  
                             VIN AS TESTED;      1J4GZ88Y3PC [REDACTED]    MOD.  
                             VIN AS BUILT;        1J4GZ88Y3PC [REDACTED]    MOD.

TEST SPEED            30.6 MPH - TRAP TIMER

TEST WEIGHT (LBS)    4827 TOTAL, 2502 FRONT, 2325 REAR

OCCUPANTS            LEFT FRONT - HYB. III, INSTRUMENTED.    AD-92  
                             RESTRAINT- AIRBAG ONLY.  
                             RIGHT FRONT - HYB. III, INSTRUMENTED.    AD-93  
                             RESTRAINT- 3-PT. BELT SYSTEM.

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04574 30 MPH FRONTAL BARRIER IMPACT, ZJ74, 5.2L ITEM 3Z137  
1993 COMPLIANCE - MVSS 208, MVSS 212, MVSS 219, MVSS 301.  
TEST DATE 05/18/92

**BUILD CONDITION** 1993 ZJ C1 PILOT. (P3ZJ-8137)  
5.2L ENGINE, 4 SPD. AUTO., 4X4, P/S, A/C, ABS.  
TILT CORPORATE COLUMN.  
TRAILER HITCH, ROOF RACK, FRT. TOW HOOPS,  
REAR SKID PLATE.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
P235/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.  
TRW GAS DAMPED SENSOR S/N 052038.

**TARGET WEIGHT (LBS)** 4196 TOTAL, 2353 FRONT, 1843 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.  
**FUEL AND BALLAST** 22 GALLONS STODDARD.  
300 LBS OF LUGGAGE BALLAST INCLUDED IN THE  
INSTRUMENTATION WEIGHT.  
115 POUNDS IN REAR SEAT FOOTWELLS

**POST TEST REMARKS** THERE WAS NO FUEL LEAKAGE AT IMPACT, IMMEDIATELY  
POST IMPACT OR DURING THE POST TEST STATIC ROLL.  
DRIVER ATD - THE FACE CONTACTED THE CENTER OF THE  
STEERING WHEEL MOUNTED AIR BAG. THE LEFT KNEE  
CONTACTED THE BASE INSTRUMENT PANEL RIGHT OF THE  
STEERING COLUMN COVER. THE RIGHT KNEE CONTACTED  
THE STEERING COLUMN COVER RIGHT OF THE STEERING  
COLUMN.  
RIGHT FRONT PASSENGER ATD - NO HEAD TO VEHICLE  
CONTACT. THE ATD'S CHIN CONTACTED THE CHEST.  
BOTH KNEES CONTACTED THE LOWER INSTRUMENT PANEL.  
THE WINDSHIELD RETENTION WAS 100 PERCENT.  
THERE WAS NO WINDSHIELD ZONE INTRUSION.

<b>REPORT CODES</b>	A = TRANSDUCER DATA	B = ALL FILM DATA
	C = HIGH SPEED FILM	D = ENGINEER'S REPORT
	E = DUMMY KINEMATICS	F = STEERING COLUMN
	G = UNDERBODY	H = A-POST
	I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
	K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
	M = SPECIAL	N = CATALOG EDP DATA
	* = REPORT REQUESTOR	

<b>DISTRIBUTION</b>	W.A. BREITMOSER, JR.	422-05-01 (AB)
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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04576 30 MPH R/ANGLE BARRIER IMPACT, ZJ74,5.2L. ITEM 32133  
1993 MVSS 208, MVSS 301 COMPLIANCE.  
TEST DATE 05/20/92

TEST PURPOSE PRIMARY, 1993 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

PRIMARY, 1993 MVSS 208 COMPLIANCE.  
OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; LEFT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 5.2 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE; A518  
VIN AS TESTED; 1J4GZ88Y7PC [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ88Y7PC [REDACTED] MOD.

TEST SPEED 30.5 MPH - ELECTRONIC TRAP TIMER

TEST WEIGHT (LBS) 4830 TOTAL, 2478 FRONT, 2352 REAR

OCCUPANTS LEFT FRONT - HYB. III, INSTRUMENTED. AD-88  
RESTRAINT- AIR BAG ONLY.  
RIGHT FRONT - HYB. III, INSTRUMENTED. AD-89  
RESTRAINT- 3-PT. BELT SYSTEM.

BUILD CONDITION 1993 ZJ C1 PILOT. (P3ZJ-8133)  
5.2L ENGINE, 4 SPD. AUTO., 4X4, P/S, A/C, ABS.  
TILT CORPORATE COLUMN.  
TRAILER HITCH, ROOF RACK.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.  
TRW GAS DAMPED SENSOR S/N \_\_\_\_\_.

TARGET WEIGHT (LBS) 4196 TOTAL, 2353 FRONT, 1843 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04576 30 MPH R/ANGLE BARRIER IMPACT, ZJ74,5.2L. ITEM 3Z133  
1993 MVSS 208, MVSS 301 COMPLIANCE.  
TEST DATE 05/20/92

FUEL AND BALLAST      22 GALLONS STODDARD.  
                                 300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
                                 200 LBS SECURED TO FLOOR PAN UNDER REAR SEAT.  
                                 100 LBS SECURED IN REAR FOOTWELL.

POST TEST REMARKS      THERE WAS NO FUEL LEAKAGE DURING IMPACT,  
                                 SUBSEQUENT 30 MINUTES, NOR DURING POST  
                                 TEST STATIC ROLL.

DRIVER CONTACTED AIR BAG WITH FACE, AND HIS KNEES  
CONTACTED THE LOWER SURFACE OF UPPER I/P,  
KNEEBLOCKER, AND STEERING COLUMN HOUSING.

PASSENGER CONTACTED KNEEBLOCKER WITH KNEES.  
PASSENGER BELT PAYOUT AT TURNING LOOP WAS 1.8".

## REPORT TEST CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

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260F29

VC04680 30 MPH FRONTAL BARR. IMPACT, ZJT74, 4.0L ITEM 3Z421  
 1993.5 COMPLIANCE - MVSS 208, MVSS 301.  
 TEST DATE 10/20/92

TEST PURPOSE PRIMARY, 93.5 MVSS 301 VALIDATION.  
 OBSERVE FUEL SYSTEM INTEGRITY.

PRIMARY, 93.5 MVSS 208 VALIDATION.  
 OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
 DAMAGE LOCATION; FRONT  
 IMPACT TYPE; BARRIER  
 BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
 CAR LINE; T  
 BODY; 74  
 ENGINE; 4.0 LITRE  
 ENGINE NOTE; MPI  
 TRANSMISSION; 4 SPEED AUTO ELECTRONIC  
 TRANS. NOTE; 42RE  
 VIN AS TESTED; 1J4GX68S7PC [REDACTED] MOD.  
 VIN AS BUILT; 1J4GX68S7PC [REDACTED] MOD.

TEST SPEED 30.3 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4371 TOTAL, 2213 FRONT, 2158 REAR

OCCUPANTS LEFT FRONT - HYB. III, CERTIFIED. AD-88  
 RESTRAINT- AIRBAG ONLY.  
 RIGHT FRONT - HYB. III, CERTIFIED. AD-93  
 RESTRAINT- 3-PT. BELT SYSTEM.

BUILD CONDITION 1993.5 ZJ C1 PILOT. (P3ZJ-8421)  
 4.0 L ENGINE, 4 SPD. AUTO., 4X2, P/S, A/C, ABS.  
 TILT CORPORATE COLUMN.  
 ROOF RACK  
 BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
 CONSOLE.  
 P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
 MOUNTED INSIDE LEFT REAR SIDE.

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TARGET WEIGHT (LBS) 3710 TOTAL, 1997 FRONT, 1713 REAR REP MAX OPT WT NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GALLONS STODDARD.  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
200 LBS SECURED TO RACK OVER REAR SEAT FLOORPAN.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS FACE, AND THE STEERING COLUMN COVER WITH HIS KNEES. THE PASSENGER CONTACTED THE LOWER INSTRUMENT PANEL WITH HIS KNEES. THE PASSENGER SIDE BELT PAYOUT WAS 3.3" AT THE TURNING LOOP.

## REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04724 30 MPH L/ANGLE BARR. IMPACT, ZJT74, 4.0L. ITEM 3Z422  
1993 1/2 MVSS 208, MVSS 301 COMPLIANCE.  
TEST DATE 12/11/92

TEST PURPOSE PRIMARY, 93.5 MVSS 208 COMPLIANCE.  
OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

PRIMARY, 93.5 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; LEFT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; T  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO ELECTRONIC  
TRANS. NOTE; 42RE  
VIN AS TESTED; 1J4GX68S5PC MOD.  
VIN AS BUILT; 1J4GX68S5PC MOD.

TEST SPEED 30.3 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4341 TOTAL, 2166 FRONT, 2175 REAR

OCCUPANTS LEFT FRONT - HYB. III, INSTRUMENTED. AD-88  
RESTRAINT-AIRBAG ONLY.  
RIGHT FRONT - HYB III, INSTRUMENTED. AD-91  
RESTRAINT-3-PT. BELT SYSTEM.

BUILD CONDITION 1993 1/2 ZJ C1 PILOT (P3ZJ-8422).  
~~4.0L ENG., 42RE 4-SPD. AUTO., 4X2, P/S, A/C, ABS.~~  
CORPORATE STEERING COLUMN (NON-TILT).  
SUN ROOF, ROOF RACK, TRAILER HITCH.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS AND FULL  
CONSOLE.  
P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.

TARGET WEIGHT (LBS) 3710 TOTAL, 1997 FRONT, 1713 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

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**SAFETY TEST  
VEHICLE CRASH TEST LETTER**

PAGE 02

VC04724 30 MPH L/ANGLE BARR. IMPACT, 3JT74, 4.0L. ITEM 32422  
1993 1/2 MVSS 208, MVSS 301 COMPLIANCE.  
TEST DATE 12/11/92

**FUEL AND BALLAST** 22 GALLONS STODDARD.  
300 LBS. LUGGAGE SECURED IN CARGO AREA.  
200 LBS SECURED TO RACK OVER REAR FLOORPAN.

**POST TEST REMARKS** THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO NO FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS FACE, AND THE STEERING COLUMN COVER WITH HIS KNEES. THE PASSENGER CONTACTED THE LOWER EDGE OF THE GLOVE BOX DOOR WITH BOTH KNEES, AND THE LOWER INSTRUMENT PANEL WITH HIS RIGHT KNEE. PASSENGER BELT PAYOUT WAS 2.5" AT THE TURNING LOOP.

**REPORT CODES**

- A = TRANSDUCER DATA
- B = ALL FILM DATA
- C = HIGH SPEED FILM
- D = ENGINEER'S REPORT
- E = DUMMY KINEMATICS
- F = STEERING COLUMN
- G = UNDERBODY
- H = A-POST
- I = DYNAMIC CRUSH
- J = ENGINE COMPARTMENT
- K = DOOR CRUSH
- L = FORCE/CRUSH/ENERGY
- M = SPECIAL
- N = CATALOG EDP DATA
- \* = REPORT REQUESTOR

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- E.A. SYLIK 514-15-58 (AB)

# ATTACHMENT "B"

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4421, ITEM NUMBER 22116, TEST ENGINEER MANNEY  
 V.I.N. 1J4GZ78S8NA, TEST DATE 10/25/91, ROLL DATE 10/30/91  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.2 MPH, TEST WEIGHT 4670 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	OK
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER - N/A	
CARBURETOR - N/A	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL/PUMP	AIR/CLEAN	FUEL/TANK	FUEL/FILT	GRO/MET	FILL/CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
2:17 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
2:15 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:04 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
2:04 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER - \_\_\_\_\_



FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4432, ITEM NUMBER 22122, TEST ENGINEER BUSS  
V.I.N. 1J4G278S8NA TEST DATE 11/7/91, ROLL DATE 11/9/91  
TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, ..... GALLONS  
TEST SPEED \_\_\_\_\_ MPH, TEST WEIGHT \_\_\_\_\_ POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	
FUEL VAL -	

ALL OK

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB /TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL PILT	GRO- MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
2:10 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
2:11 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:00 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
2:01 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER \_\_\_\_\_

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4419, ITEM NUMBER 22117, TEST ENGINEER MANNEY  
 V.I.N. 1J4GZ78SXNA [REDACTED] TEST DATE 10/24/91, ROLL DATE 10/25/91  
 TEST TYPE; 30 MPH FRONT 30 DEGREE LEFT ANULAR IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 27.0 GALLONS  
 TEST SPEED 30.2 MPH, TEST WEIGHT 1860 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB /TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO- MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
<u>2:16</u> POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
<u>2:1*</u> POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
<u>2:0A</u> POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
<u>2:0b</u> POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER - \_\_\_\_\_

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FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4426, ITEM NUMBER 22118, TEST ENGINEER MANNEY  
 V.I.N. 1J4GZ68SXNA, TEST DATE 11/1/71, ROLL DATE 11/5/71  
 TEST TYPE; 30 MPH FRONT 30 DEGREE RIGHT ANULAR IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.3 MPH, TEST WEIGHT 964.5 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER - MA	
CARBURETOR - MA	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL/PUMP	AIR/CLEAN	FUEL/TANK	FUEL/PILT	GRO/MET	FILL/CAP	OTHER/***	TOTAL
0-90 1ST 5 MIN									0 *
2:17 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
2:09 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:00 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
2:00 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER - \_\_\_\_\_

70 POUNDS RIGHT REAR FOOTWEAR  
430 POUNDS ON RACK IN REAR SEAT AREA (300 POUNDS OF

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FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4459, ITEM NUMBER 22166, TEST ENGINEER BUSS  
V.I.N. 1J4GZ88V8PC, TEST DATE 11/22/91, ROLL DATE 11/30/91  
TEST TYPE; 30 MPH FRONT 30 DEGREE LEFT ANULAR IMPACT  
FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
TEST SPEED 30.2 MPH, TEST WEIGHT 4666 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	OK
FILLER TUBE -	OK
CAP -	OK
FUEL FILTER -	OK
GROMMET -	NA
FUEL PUMP -	OK
STRAPS -	OK
LINES -	1 inch rearward by power steering fluid line
AIR CLEANER -	Broken
CARBURETOR -	
FUEL PIPING -	Return nipple bent rearward slightly

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK NA

ELECTRIC FUEL PUMP RUN NA

STATIC ROLL LEAKAGE WITH VEHICLE Left SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL PUMP	AIR CLEANER	FUEL TANK	FUEL FILTER	GRO-MET	FILL CAP	OTHER ***	TOTAL
5 MIN									0
2:08 POST 5 MIN									0
90-180 1ST 5 MIN									0
2:08 POST 5 MIN									0
180-270 1ST 5 MIN									0
2:08 POST 5 MIN									0
5 MIN									0
5 MIN									0

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
\*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4449, ITEM NUMBER 22J123, TEST ENGINEER BUSS  
 V.I.N. 1J4GZ78S\*NA TEST DATE 11/21/91, ROLL DATE 11/21/91  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 20.6 MPH, TEST WEIGHT 4652 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
VALVES -	

*ALL 1992.5  
22 lbs*

*ALL OK*

FUEL LEAKAGE DURING IMPACT \_\_\_\_\_, POST IMPACT \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

0-90	1ST 5 MIN								0	*
2:12	POST 5 MIN								0	**
90-180	1ST 5 MIN								0	*
2:11	POST 5 MIN								0	**
180-270	1ST 5 MIN								0	*
2:00	POST 5 MIN								0	**
270-360	1ST 5 MIN								0	*
2:00	POST 5 MIN								0	**

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER - \_\_\_\_\_

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FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4452, ITEM NUMBER 2ZJ123R, TEST ENGINEER BUSS  
V.I.N. 1J4G278S\*NA TEST DATE 11/20/91, ROLL DATE 11/20/91  
FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
TEST SPEED 20.0 MPH, TEST WEIGHT 4650 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
VALVES -	

1997  
20/20

All OK

FUEL LEAKAGE DURING IMPACT 0, POST IMPACT 0

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

0-90 1ST 5 MIN	0	*
2:13 POST 5 MIN	0	**
90-180 1ST 5 MIN	0	*
2:14 POST 5 MIN	0	**
180-270 1ST 5 MIN	0	*
2:00 POST 5 MIN	0	**
270-360 1ST 5 MIN	0	*
2:02 POST 5 MIN	0	**

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
\*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4472, ITEM NUMBER 22285, TEST ENGINEER BUSS  
 V.I.N. 1J4GZ88S6PC [REDACTED], TEST DATE 12/10/91, ROLL DATE 12/10/91  
 FUEL; TYPE AND QUANTITY - .767 S.G, STODDARD SOLVENT, 22 GALLONS  
 TEST SPEED 30.3 MPH, TEST WEIGHT 4669 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	Contacted by trap 2 box bracket. Left front corner. Contacted by differential housing on rear axle
FILLER TUBE -	OK
CAP -	OK
FUEL FILTER -	OK
GROMMET -	NA
FUEL PUMP -	OK
STRAPS -	OK
LINES -	OK
AIR CLEANER -	NA
VALVES -	NA

IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

0-90	1ST 5 MIN								0	*
2:16	POST 5 MIN								0	**
90-180	1ST 5 MIN								0	*
2:17	POST 5 MIN								0	**
180-270	1ST 5 MIN								0	*
2:06	POST 5 MIN								0	**
270-360	1ST 5 MIN								0	*
2:10	POST 5 MIN								0	**

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER -



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FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4561, ITEM NUMBER 32136, TEST ENGINEER MANNEY  
V.I.N. 1J4GZ88Y0PC [REDACTED] TEST DATE 5/4/92, ROLL DATE 5/6/92  
FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 21.7 GALLONS  
TEST SPEED 50.3 MPH, TEST WEIGHT 4834 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	CONTACTS: BUMPER, TRK BAR, TRK BAR BRKT, TAIL PIPE, AXLE
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	LEFT J-HOOK SLIPPED OUT OF SLOT
LINES -	
AIR CLEANER -	
VALVES -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0  
POST TEST PRESSURE CHECK

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB PUMP	FUEL CLEAN	AIR CLEAN	FUEL TANK	FUEL FILT	GRO-MET	FILL-CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
2:18 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
2:15 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:06 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
2:06 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
\*\*\* OTHER -



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FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4570, ITEM NUMBER 32135, TEST ENGINEER MANNEY
V.I.N. 1J4GZ88Y0PC, TEST DATE 5/13/92, ROLL DATE 5/15/92
TEST TYPE; 30 MPH FRONT 30 DEGREE LEFT ANULAR IMPACT
FUEL; TYPE AND QUANTITY - .767 S.G, STODDARD SOLVENT, 22.0 GALLONS
TEST SPEED 30.5 MPH, TEST WEIGHT 1820 POUNDS.

Table with 2 columns: FUEL SYSTEM DATA and POST TEST CONDITION. Rows include TANK, FILLER TUBE, CAP, FUEL FILTER, GROMMET, FUEL PUMP, STRAPS, LINES, AIR CLEANER, and CARBURETOR. Includes handwritten 'ON' and 'NA'.

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 2 IN. 0

POST TEST PRESSURE CHECK

ELECTRIC FUEL PUMP RUN

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

Table with 10 columns: ROLL TIME, CARB/TBI, FUEL/PUMP, AIR/CLEAN, FUEL/TANK, FUEL/FILT, GRO/MET, FILL/CAP, OTHER, TOTAL. Rows show leakage data for various roll times (0-90, 90-180, 180-270, 270-360) and post-5 min intervals.

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE
\*\*\* OTHER -

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FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4574, ITEM NUMBER 22137, TEST ENGINEER BUSS  
 V.I.N. 1J4GZ8BY3PC [REDACTED] TEST DATE 5/18/92 ROLL DATE 5/19/92  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.6 MPH, TEST WEIGHT 4827 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB /TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO- MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									00
<u>2:21</u> POST 5 MIN									00
90-180 1ST 5 MIN									00
<u>2:22</u> POST 5 MIN									00
180-270 1ST 5 MIN									00
<u>2:06</u> POST 5 MIN									00
270-360 1ST 5 MIN									00
<u>2:07</u> POST 5 MIN									00

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER - \_\_\_\_\_

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FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4576, ITEM NUMBER 3Z133, TEST ENGINEER WEIGEL  
 V.I.N. 1J4GZ88Y7PC [REDACTED], TEST DATE 5/20/92 ROLL DATE 5/22/92  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22 GALLONS

TEST SPEED 30.5 MPH, TEST WEIGHT 4830 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	<div style="font-size: 2em; font-weight: bold;">OK</div>
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK N/A

ELECTRIC FUEL PUMP RUN N/A

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB / TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
<u>2:19</u> POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
<u>2:21</u> POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
<u>2:07</u> POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
<u>2:08</u> POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4680, ITEM NUMBER 32421, TEST ENGINEER MANNEY  
 V.I.N. 1J4GX68S7PC TEST DATE 10/20/92, ROLL DATE 10/21/92  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.3 MPH, TEST WEIGHT 4571 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK OK

ELECTRIC FUEL PUMP RUN OK

STATIC ROLL LEAKAGE WITH VEHICLE SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
2:20 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
2:17 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:07 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
2:07 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER -

W.R.M.

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4724      ITEM NUMBER 32422      TEST ENGINEER WEIGEL

V.I.N. 1J4GX68S5PC XXXXXXXXXX      TEST DATE 12/11/92      ROLL DATE 13/14/93

TEST TYPE AND PURPOSE 30 MPH 30DEG. LT. ANGULAR IMPACT MVSS 208 & 301

FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22 GALLONS

TEST SPEED 32.3 MPH,      TEST WEIGHT 4341 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP <input checked="" type="checkbox"/>	
STRAPS -	
LINES -	
AIR CLEANER -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK VIA

ELECTRIC FUEL PUMP RUN VIA

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB /TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO- MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
0:26 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
0:53 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:07 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
0:15 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER -



INFORMATION Redacted PURSUANT TO THE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6)



Chrysler Corporation

# COMPLIANCE REPORT

**SUBJECT:** FUEL SYSTEM INTEGRITY + 1995 'ZJ' BODY, JEEP "GRAND CHEROKEE" SPORT UTILITY

**STANDARD IDENTIFICATION:** FMVSS 301 - Sections S3, S5, S6, and S7.

**STANDARD TITLE:** Fuel System Integrity

**APPROVALS:**

<u>NAME</u>	<u>Title</u>	<u>Signature</u>	<u>Date</u>
E.A. Zylak	Supervisor	<i>E.A. Zylak</i>	7-11-94
B.A. Rider	Department Manager	<i>B.A. Rider</i>	7-13-94
D. BUSER	Executive Engineer	<i>D. Buser</i>	7/14/94

Date Received by Safety Programs: JUL 15 1994

File No.: 95-21-107

Safety Documentation Compliance Report

INTRODUCTION

Subject: Fuel System Integrity - 1995 'ZJ' Body, Jeep "Grand Cherokee" Sport Utility

Object: Verification of design compliance with the requirements of Federal Motor Vehicle Safety Standard No. 301.

Procedure: CP-194, CP-232, CP-233, CP-234, CP-245 and CP-246.

Conclusions: The Chrysler Corporation 1995 'ZJ' Body Jeep "Grand Cherokee" Sport Utility with G.V.W. of 10,000 lbs. and under, as design released, comply with the requirements of FMVSS 301 - Sections 33, 35, 36, and 37.

SAFETY DOCUMENTATION COMPLIANCE REPORT (Page 1 of 8)

Prepared by: V.P. Hannawi (CCG) 7-11-94  
V.P. Hannawi, Safety Specialist, Dept. 1060 Date

Approved by: R.A. Rider 7-11-94  
R.A. Rider, Manager, Department 1060 Date

Issued by: Jeep/Track, Vehicle Impact Development

File No. 75 22 301

Safety Documentation Compliance Report

2

**FUEL SYSTEM INTEGRITY**  
**1995 "ZJ" BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Federal Motor Vehicle Safety Standard No. 301 - Sections S3., S5., S6. and S7.

**DISCUSSION**

The Chrysler Corporation 1995 "ZJ-74" Body, Jeep "Grand Cherokee," Sport Utility vehicle is essentially carryover from the 1993 model year with the exception of the elimination of the fuel return line.

The "ZJ" is of unibody construction offered in 106 inch wheelbase.

The powertrain is comprised of a longitudinally mounted 4.0 litre (I6) and 5.2 litre (V8) multi-point injection (MPI) engines, 4-speed automatic or 5-speed manual transmission and 2 or 4-wheel drive configuration.

This vehicle is offered with four wheel Anti-Lock Brake System (ABS), as standard equipment.

Vehicle capacity including seating for five passengers, 23 gallon plastic fuel tank and 300 lbs. of luggage.

The fuel system consists of a 23 gallon plastic fuel tank with an in-tank electric fuel pump. The fuel tank is mounted aft of the rear axle. The filler neck is located on the left side of the vehicle.

The front bumper system consists of thermo plastic olefin (TPO) fascia with energy absorbing polypropylene foam supported by body integrated crossmember.

The rear bumper system consists of thermoplastic olefin (TPO) molded fascia supported by steel reinforcement beam and expanded polypropylene foam with energy absorbers in the guards area include a (TPO) step pad.

Engineering judgement was made, based on development impact test results, that the elimination of the fuel return line, will not adversely effect its ability to satisfy the requirement relative to FMVSS 301.

Fourteen vehicles were tested to demonstrate compliance of the "ZJ-74" to the requirements of FMVSS 301, Fuel System Integrity. Summaries I, II, III IV and V of these vehicles and test results are attached.

VC's 4421, 4422, 4574 and 4680 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

File No: 95-ZJ-361



## Safety Documentation Compliance Report

DISCUSSION (continued)

CP-194 "Fixed Collision Barrier 30 MPH Frontal Impact Test," Change "K".

VC's 4419, 4426, 4459, 4570, 4576 and 4724 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-232 "Fixed Collision Barrier, 30 mph Angled Frontal Impact Test," Change "P".

VC's 4449 and 4452 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-233 "Moving Barrier 20 mph Lateral Impact Test," Change "H".

VC's 4472 and 4561 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-234 "Moving Barrier 30 mph Rear Impact Test," Change "H".

The above test vehicles, did not experience fluid losses that exceeds the fuel spillage criteria specified in Chrysler Corporation Compliance Procedure:

CP-246 "Fuel System Integrity," Change "G".

Following barrier impact vehicles were further tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-245 "Fuel System Integrity - Static Rollover Test," Change "F".

Fluid leakage during and following impact and during static rollover in these tests were within the limit specified in FMVSS 301 Sections S5.5 and S5.6.

Based on the above, the 1995 "ZJ-74" Body, Jeep "Grand Cherokee" Sport Utility vehicle, as design released, comply with the requirements of FMVSS 301 Sections S3, S5, S6, and S7.

Prepared by:

*V. P. Hannawi (e.g.)*  
V.P. Hannawi

Date:

7-11-95

File No. 95-ZJ-30

**SUMMARY I**  
**FUEL SYSTEM INTEGRITY**  
**1995 "ZJ" BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any Position (Oz.)	Max in Any Position (Oz/Min)
VC4421* (10/25/94)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (16) MPI Engine.	1J4GZ78S8NA [REDACTED]	-0-	-0-	-0-	-0-
VC4432* (11/07/94)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, 23 Gallon Fuel Tank, Manual Trans. and 4.0 Litre (15) MPI Engine.	1J4GZ78S3NA [REDACTED]	-0-	-0-	-0-	-0-
VC4419* (10/24/94)	10° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, Man. Transmission and 4.0 Litre (16) MPI Engine.	1J4GZ78SXNA [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: V. P. Hamrav (C.C.G.)  
 V. P. Hamrav

Date: 7-11-94

File No. 95-201301



SUMMARY II

FUEL SYSTEM INTEGRITY

1995 2J BODY JEEP GRAND CHEROKEE SPORT UTILITY

Leakage Summary (oz)

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max. in Any Position (Oz.)	Following Rollover Position (Oz/Min)
VC4426* (11/01/91)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (16) MPI Engine.	1J4GZ68SXNA [REDACTED]	-0-	-0-	-0-	-0-
VC4459* (11/20/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Tilt Steering Column, 23 Gallon Fuel Tank, Manual Transmission and 4.0 Litre (16) MPI Engine.	1J4GZ88V3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4449* (11/21/91)	20 MPH Lateral Left	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (16) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-

Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301.

Allowable Leakage by Weight

- One (oz) at impact.
- Not more than one (oz) per minute following 30 minutes.
- Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: *V. P. Hanrawi (C.E.G.)*  
V. P. Hanrawi

Date: 7-11-94

**SUMMARY III  
FUEL SYSTEM INTEGRITY**

**1995 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Leakage Summary (oz)

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Roller Position (Oz.)	Max. in Any Position (Oz/Min)
VC4452* (12/22/91)	20 MPH Lateral Right	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre MPI Engine.	1J4GZ88V3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4472* (12/10/91)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Auto. Transmission and 4.0 Litre MPI Engine.	1J4GZ99S6PC [REDACTED]	-0-	-0-	-0-	-0-
VC4561* (05/04/92)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 3.2-Litre V6 MPI Engine.	1J4GZ88Y0PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ SUPN-301.

Allowable Leakage by weight

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: V. P. Hannawi (C.C.)  
V. P. Hannawi  
Date: 7-11-94



SUMMARY IV  
FUEL SYSTEM INTEGRITY

1995 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Leakage Summary (oz)

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover Position (Oz.)	Max in Any Rollover Position (Oz/Min)
VC4576* (05/13/92)	30 Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y0PC [REDACTED]	-0-	-0-	-0-	-0-
VC4574* (05/18/92)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4575* (05/20/92)	30 Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y7PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301.

Allowable Leakage by Weight

1. One (oz) at impact
2. Not more than one (oz) per minute following 30 minutes
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one per minute thereafter.

Prepared by: V. P. Hannawi (P. C. J.)  
V. P. Hannawi

Date: 7-11-94

File No: 95-23-301

**SUMMARY V**  
**FUEL SYSTEM INTEGRITY**

1995-'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Leakage Summary (oz)

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover Position (Oz.)	Max in Any Rollover Position (Oz/Min)
VC4680 (10/20/92)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 2-wheel Drive, 23 gallon Fuel Tank, Tilt steering Column, auto Transmission and 4.0 Litre (16) MPI Engine.	1J4GX68S7PC [REDACTED]	-0-	-0-	-0-	-0-
VC4724 (12/11/92)	30° Lt. Angle	Jeep Grand "Cherokee" Sport Utility, 2-wheel Drive, 23-gallon Fuel Tank, Non-Tilt-Steering Column, Automatic Transmission and 4.0 Litre (16) MPI Engine.	1J4GX6955PC [REDACTED]	-0-	-0-	-0-	-0-

**NOTES:** \*\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301  
 (14) Test letters included as Attachment "A"  
 (11) Fuel System and Static Rollover Summary as Attachment "B"

**Allowable Leakage by Weight**

1. One (oz) at impact
2. Not more than one (oz) per minute following 30 minutes
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one per minute thereafter.

Prepared by: V. P. Hannawi (C.A.G.)  
 V. P. Hannawi

Date: 7-11-94

File No: 95-23-701



SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VCC4724 30 MPH L/ANGLE BARR. IMPACT, ZJT74, 4.0L. ITEM 32422  
 1993 1/2 MVSS 208, MVSS 301 COMPLIANCE.  
 TEST DATE 12/11/92

TEST PURPOSE PRIMARY, 93.5 MVSS 208 COMPLIANCE.  
 OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

PRIMARY, 93.5 MVSS 301 COMPLIANCE.  
 OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
 DAMAGE LOCATION; LEFT FRONT  
 IMPACT TYPE; BARRIER  
 BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
 CAR LINE; T  
 BODY; 74  
 ENGINE; 4.0 LITRE  
 ENGINE NOTE; MPI  
 TRANSMISSION; 4 SPEED AUTO ELECTRONIC  
 TRANS. NOTE; 42RE  
 VIN AS TESTED; 1J4GX68S5PC [REDACTED] MOD.  
 VIN AS BUILT; 1J4GX68S5PC [REDACTED] MOD.

TEST SPEED 30.3 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4341 TOTAL, 2166 FRONT, 2175 REAR

OCCUPANTS LEFT FRONT - HYB. III, INSTRUMENTED. AD-88  
 RESTRAINT-AIRBAG ONLY.  
 RIGHT FRONT - HYB III, INSTRUMENTED. AD-91  
 RESTRAINT-3-PT. BELT SYSTEM.

BUILD CONDITION 1993 1/2 ZJ CL PILOT (P3ZJ-8422).  
 4.0L ENG., 42RE 4-SPD. AUTO., 4X2, P/S, A/C, ABS.  
 CORPORATE STEERING COLUMN (NON-TILT).  
 SUN ROOF, ROOF RACK, TRAILER HITCH.  
 BUCKET SEATS (CLOTH) WITH MANUAL TRACKS AND FULL  
 CONSOLE.  
 P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
 MOUNTED INSIDE LEFT REAR SIDE.

TARGET WEIGHT (LBS) 3710 TOTAL, 1997 FRONT, 1713 REAR REP MAX OPT WT  
 NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04724 30 MPH L/ANGLE BARR. IMPACT, ZJT74, 4.0L. ITEM 32422  
 1993 1/2 MVSS 208, MVSS 301 COMPLIANCE.  
 TEST DATE 12/11/92

## FUEL AND BALLAST

22 GALLONS STODDARD.  
 300 LBS. LUGGAGE SECURED IN CARGO AREA.  
 200 LBS SECURED TO RACK OVER REAR FLOORPAN.

## POST TEST REMARKS

THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO NO FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS FACE, AND THE STEERING COLUMN COVER WITH HIS KNEES. THE PASSENGER CONTACTED THE LOWER EDGE OF THE GLOVE BOX DOOR WITH BOTH KNEES, AND THE LOWER INSTRUMENT PANEL WITH HIS RIGHT KNEE. PASSENGER BELT PAYOUT WAS 2.5" AT THE TURNING LOOP.

## REPORT CODES

A = TRANSDUCER DATA  
 C = HIGH SPEED FILM  
 E = DUMMY KINEMATICS  
 G = UNDERBODY  
 I = DYNAMIC CRUSH  
 K = DOOR CRUSH  
 M = SPECIAL  
 \* = REPORT REQUESTOR

B = ALL FILM DATA  
 D = ENGINEER'S REPORT  
 F = STEERING COLUMN  
 H = A-POST  
 J = ENGINE COMPARTMENT  
 L = FORCE/CRUSH/ENERGY  
 N = CATALOG EDP DATA

## DISTRIBUTION

W.A. BREITMOSER, JR. 422-05-01 (AB)  
 D.J. MCKENZIE 422-05-01 (AB)  
 E.A. ZYLIK 514-15-58 (AB)



FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4724 ITEM NUMBER 3Z422 TEST ENGINEER WEIGEL

V.I.N. 1J4GX68S5PC [REDACTED] TEST DATE 2/28/72 ROLL DATE 2/28/72

TEST TYPE AND PURPOSE 30 MPH 30DEG. LT. ANGULAR IMPACT MVSS 208 & 301

FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22 GALLONS

TEST SPEED 30 MPH, TEST WEIGHT 434 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK W/A

ELECTRIC FUEL PUMP RUN W/A

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB / TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
0-90 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
90-180 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
180-270 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
270-360 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4574, ITEM NUMBER 22137, TEST ENGINEER BUSS  
V.I.N. 14GZ88Y3PC, TEST DATE 5/18/92, ROLL DATE 5/19/92  
TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
TEST SPEED 30.6 MPH, TEST WEIGHT 4827 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK

ELECTRIC FUEL PUMP RUN

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB / TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									
2:21 POST 5 MIN									
90-180 1ST 5 MIN									
2:22 POST 5 MIN									
180-270 1ST 5 MIN									
2:06 POST 5 MIN									
270-360 1ST 5 MIN									
2:07 POST 5 MIN									

00000000

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
\*\*\* OTHER

VC04680 30 MPH FRONTAL BARR. IMPACT, ZJT74, 4.0L ITEM 32421  
 1993.5 COMPLIANCE - MVSS 208, MVSS 301.  
 TEST DATE 10/20/92

## TEST PURPOSE

PRIMARY, 93.5 MVSS 301 VALIDATION.  
 OBSERVE FUEL SYSTEM INTEGRITY.

PRIMARY, 93.5 MVSS 208 VALIDATION.  
 OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

## IMPACT TYPE

TARGET SPEED; 30.2 MPH  
 DAMAGE LOCATION; FRONT  
 IMPACT TYPE; BARRIER  
 BARRIER SURFACE; PLYWOOD

## VEHICLE

BODY CLASS; ZJ  
 CAR LINE; T  
 BODY; 74  
 ENGINE; 4.0 LITRE  
 ENGINE NOTE; MPI  
 TRANSMISSION; 4 SPEED AUTO ELECTRONIC  
 TRANS. NOTE; 42RE  
 VIN AS TESTED; 1J4GX68S7PC [REDACTED] MOD.  
 VIN AS BUILT; 1J4GX68S7PC [REDACTED] MOD.

## TEST SPEED

30.3 MPH BY ELECTRONIC TRAP TIMER.

## TEST WEIGHT (LBS)

4371 TOTAL, 2213 FRONT, 2158 REAR

## OCCUPANTS

LEFT FRONT - HYB. III, CERTIFIED. AD-88  
 RESTRAINT- AIRBAG ONLY.  
 RIGHT FRONT - HYB. III, CERTIFIED. AD-93  
 RESTRAINT- 3-PT. BELT SYSTEM.

## BUILD CONDITION

1993.5 ZJ CI PILOT. (P3ZJ-8421)  
 4.0 L ENGINE, 4 SPD. AUTO., 4X2, P/S, A/C, ABS.  
 TILT CORPORATE COLUMN.  
 ROOF RACK  
 BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
 CONSOLE  
 P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
 MOUNTED INSIDE LEFT REAR SIDE.



TARGET WEIGHT (LBS) 3710 TOTAL, 1997 FRONT, 1713 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.  
FUEL AND BALLAST 22 GALLONS STODDARD.

300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
200 LBS SECURED TO RACK OVER REAR SEAT FLOORPAN.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING  
THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO  
FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH  
HIS FACE, AND THE STEERING COLUMN COVER WITH HIS  
KNEES. THE PASSENGER CONTACTED THE LOWER INSTRUMENT  
PANEL WITH HIS KNEES. THE PASSENGER SIDE SEAT  
PAYOUT WAS 3.3" AT THE TURNING LOOP.

## REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

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D.J. MCKENZIE	422-05-01 (AB)
E.A. ZYLIK	514-15-58 (AB)

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4680, ITEM NUMBER 32421, TEST ENGINEER MANNEY,  
 V.I.N. 1J4GXB57PC, TEST DATE 10/24/92, ROLL DATE 10/31/92  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30 MPH, TEST WEIGHT 5000 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
PIPES -	
AIR CLEANER -	
CARBURETOR -	

POST IMPACT LEAKAGE (OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK OK

ELECTRIC FUEL PUMP RUN OK

ROLL TIME	SIDE DOWN FIRST								
	CARB/TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO MET	FILL CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0
220 POST 5 MIN									0
90-180 1ST 5 MIN									0
270 POST 5 MIN									0
180-270 1ST 5 MIN									0
260 POST 5 MIN									0
270-360 1ST 5 MIN									0
207 POST 5 MIN									0

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER

WMA

INFORMATION Redacted PURSUANT TO THE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6)

372-24 419  
(3 of 3)



Chrysler Corporation

# COMPLIANCE REPORT

**SUBJECT:** FUEL SYSTEM INTEGRITY - 1996 'ZJ' BODY, JEEP "GRAND CHEROKEE" SPORT UTILITY

**STANDARD IDENTIFICATION:** FMVSS 301 - Sections S3., S5., S6. and S7.

**STANDARD TITLE:** Fuel System Integrity

**APPROVALS:**

<u>NAME</u>	<u>Title</u>	<u>Signature</u>	<u>Date</u>
<u>E.A. Zylak</u> , Department Manager		<u>E.A. Zylak</u>	<u>7-20-95</u>
<u>D.F. BUSER</u> , Executive Engineer		<u>D.F. Buser</u>	<u>7/13/95</u>

Date Received by Safety Programs: JUL 19 1995

File No: 96ZJ-301

Safety Documentation Compliance Report

INTRODUCTION

Subject: Fuel System Integrity - 1996 'ZJ' Body, Jeep "Grand Cherokee" Sport Utility

Object: Verification of design compliance with the requirements of Federal Motor Vehicle Safety Standard No. 301.

Procedure: CP-194, CP-232, CP-233, CP-234, CP-245 and CP-246.

Conclusions: The Chrysler Corporation 1996 'ZJ' Body Jeep "Grand Cherokee" Sport Utility with U.V.W. of 10,000 lbs. and under, as design released, comply with the requirements of FMVSS 301 - Sections S3., S5., S6. and S7.

SAFETY DOCUMENTATION COMPLIANCE REPORT (Page 1 of 8)

Prepared by: J. B. Estes 7-12-95  
J. B. Estes, Product Engineer, Dept. 1060 Date

Approved by: E.A. Zylik  
E.A. Zylik, Manager Department 1060 Date

Issued by: Jeep, Vehicle Impact Development



## Safety Documentation Compliance Report

**FUEL SYSTEM INTEGRITY  
1996 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Federal Motor Vehicle Safety Standard No. 301 - Sections S3., S5., S6. and S7.

**DISCUSSION**

The Chrysler Corporation 1996 "ZJ-74" Body, Jeep "Grand Cherokee," Sport Utility vehicle is essentially carryover from the 1995 model year.

The "ZJ" is of unibody construction offered in 106 inch wheelbase.

The powertrain is comprised of a longitudinally mounted 4.0 litre (I6) and 5.2 litre (V8) multi-point injection (MPI) engines, 4-speed automatic or 5-speed manual transmission and 2 or 4-wheel drive configuration.

This vehicle is offered with four wheel Anti-Lock Brake System (ABS), as standard equipment.

Vehicle capacity including seating for five passengers, 23 gallon plastic fuel tank and 300 lbs. of luggage.

The fuel system consists of a 23 gallon plastic fuel tank with an in-tank electric fuel pump. The fuel tank is mounted aft of the rear axle. The filler neck is located on the left side of the vehicle.

The front bumper system consists of thermo plastic olefin (TPO) fascia with energy absorbing polypropylene foam supported by body integrated crossmember.

The rear bumper system consists of thermoplastic olefin (TPO) molded fascia supported by steel reinforcement beam and expanded polypropylene foam with energy absorbers in the guards area include a (TPO) step pad.

Engineering judgement was made, based on development impact test results, that the elimination of the fuel return line, in 1995 M.Y. will not adversely effect its ability to satisfy the requirement relative to FMVSS 301.

Fourteen vehicles were tested to demonstrate compliance of the "ZJ-74" to the requirements of FMVSS 301, Fuel System Integrity. Summaries I, II, III IV and V of these vehicles and test results are attached.

VC's 4421, 4432, 4574 and 4680 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

File No: 96-ZJ-301



Safety Documentation Compliance Report

3

DISCUSSION (continued)

CP-194 "Fixed Collision Barrier 30 MPH Frontal Impact Test", Change 'K'.

VC's 4419, 4426, 4459, 4570, 4576 and 4724 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-232 "Fixed Collision Barrier, 30 mph Angled Frontal Impact Test," Change 'F'.

VC's 4449 and 4452 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-233 "Moving Barrier 20 mph Lateral Impact Test," Change 'H'.

VC's 4472 and 4561 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-234 "Moving Barrier 30 mph Rear Impact Test," Change 'H'.

The above test vehicles, did not experience fluid losses that exceeds the fuel spillage criteria specified in Chrysler Corporation Compliance Procedure:

CP-246 "Fuel System Integrity," Change 'G'.

Following barrier impact vehicles were further tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-245 "Fuel System Integrity - Static Rollover Test," Change 'F'.

Fluid leakage during and following impact and during static rollover in these tests were within the limit specified in FMVSS 301 - Sections S5.5 and S5.6.

Based on the above, the 1995 "ZJ-74" Body, Jeep "Grand Cherokee" Sport Utility vehicle, as design released, comply with the requirements of FMVSS 301 - Sections S3., S5., S6. and S7.

Prepared by: \_\_\_\_\_

J.B. Estes

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

7-12-95

File No: 96-ZJ-301

**SUMMARY I  
FUEL SYSTEM INTEGRITY  
1995 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

<u>Test No.</u> <u>(Date)</u>	<u>Impact</u> <u>Mode</u>	<u>Vehicle Model</u> <u>&amp; Description</u>	<u>Vehicle</u> <u>Identification No.</u>	<u>Leakage Summary (oz)</u>			
				<u>At</u> <u>Impact</u>	<u>Following</u> <u>30 Mins.</u>	<u>Max in Any</u> <u>Rollover</u> <u>(Oz.)</u>	<u>Position</u> <u>(Oz/Min)</u>
VC4421* (10/25/91)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ78S8NA [REDACTED]	-0-	-0-	-0-	-0-
VC4432* (11/07/91)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, 23 Gallon Fuel Tank, Manual Trans. and 4.0 Litre (I6) MPI Engine.	1J4GZ78S3NA [REDACTED]	-0-	-0-	-0-	-0-
VC4419* (10/24/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, Man. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ78SXNA [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: J.B. Estes  
J.B. Estes

Date: 7-12-95

File No: 96-ZJ-301

CONFIDENTIAL BUSINESS INFORMATION

PE10-031-Chrysler-001552

**SUMMARY II  
FUEL SYSTEM INTEGRITY  
1995 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. <u>(Date)</u>	Impact <u>Mode</u>	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Rollover (Oz.)	Max in Any Position (Oz/Min)
VC4426* (11/01/91)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ68SXNA [REDACTED]	-0-	-0-	-0-	-0-
VC4459* (11/20/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Tilt Steering Column, 23 Gallon Fuel Tank, Manual Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4449* (11/21/91)	20 MPH Lateral Left	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: J.B. Estes  
J.B. Estes

Date: 7-12-95

File No: 96-ZJ-301

CONFIDENTIAL BUSINESS INFORMATION

PE10-031-Chrysler-001553

**SUMMARY III  
FUEL SYSTEM INTEGRITY  
1995 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover (Oz.)	Position (Oz/Min)
VC4452* (11/22/91)	20 MPH Lateral Right	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-
VC4472* (12/10/91)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Auto. Transmission and 4.0 Litre MPI Engine.	1J4GZ88S6PC [REDACTED]	-0-	-0-	-0-	-0-
VC4561* (05/04/92)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y0PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: J.B. Estes  
 Date: 7-17-95

File No: 96-ZJ-301

CONFIDENTIAL BUSINESS INFORMATION

PE10-031-Chrysler-001554

**SUMMARY IV  
FUEL SYSTEM INTEGRITY  
1995 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover (Oz.)	Position (Oz/Min)
VC4570* (05/13/92)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y0PC [REDACTED]	-0-	-0-	-0-	-0-
VC4574* (05/18/92)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4576* (05/20/92)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y7PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact
2. Not more than one (oz) per minute following 30 minutes
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one per minute thereafter.

Prepared by: J.B. Estes  
 Date: 7-12-95  
 File No: 96-ZJ-301

CONFIDENTIAL BUSINESS INFORMATION

PE10-031-Chrysler-001555

**SUMMARY V  
FUEL SYSTEM INTEGRITY  
1995 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover (Oz.)	Position (Oz/Min)
VC4680 (10/20/92)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 2-wheel Drive, 23 gallon Fuel Tank, Tilt-steering Column, Auto-Transmission and 4.0 Litre (I6) MPI Engine.	1J4GX68S7PC [REDACTED]	-0-	-0-	-0-	-0-
VC4724 (12/11/92)	30° Lt. Angle	Jeep Grand "Cherokee" Sport Utility, 2-wheel Drive, 23 gallon Fuel Tank, Non-Tilt-Steering Column, Automatic Transmission and 4.0 Litre (I6) MPI Engine.	1J4GX6855PC [REDACTED]	-0-	-0-	-0-	-0-

**NOTES:**      \*\* Tests are carryover from 1994 Compliance Report, Reference File No. ZJ-SUPL-301.  
 (14) Test letters included as Attachment "A".  
 (14) Fuel System and Static Rollover Summary as Attachment "B".

**Allowable Leakage by Weight**

1. One (oz) at impact
2. Not more than one (oz) per minute following 30 minutes
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one per minute thereafter.

Prepared by: J.B. Estes  
 J.B. Estes  
 Date: 2-12-95

File No: 96-ZJ-301

CONFIDENTIAL BUSINESS INFORMATION

PE10-031-Chrysler-001556

VC04680 30 MPH FRONTAL BARR. IMPACT, ZJT74, 4.0L ITEM 3Z421  
1993.5 COMPLIANCE - MVSS 208, MVSS 301.  
TEST DATE 10/20/92

TEST PURPOSE                    PRIMARY, 93.5 MVSS 301 VALIDATION.  
OBSERVE FUEL SYSTEM INTEGRITY.

PRIMARY, 93.5 MVSS 208 VALIDATION.  
OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

IMPACT TYPE                    TARGET SPEED;            30.2 MPH  
DAMAGE LOCATION; FRONT  
IMPACT TYPE;                BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE                        BODY CLASS;              ZJ  
CAR LINE;                    T  
BODY;                        74  
ENGINE;                      4.0 LITRE  
ENGINE NOTE;                MPI  
TRANSMISSION;               4 SPEED AUTO ELECTRONIC  
TRANS. NOTE;                42RE  
VIN AS TESTED;              1J4GX68S7PC [REDACTED]        MOD.  
VIN AS BUILT;                1J4GX68S7PC [REDACTED]        MOD.

TEST SPEED                    30.3 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS)            4371 TOTAL, 2213 FRONT, 2158 REAR

OCCUPANTS                    LEFT FRONT - HYB. III, CERTIFIED.            AD-88  
RESTRAINT- AIRBAG ONLY.  
RIGHT FRONT - HYB. III, CERTIFIED.            AD-93  
RESTRAINT- 3-PT. BELT SYSTEM.

BUILD CONDITION              1993.5 ZJ C1 PILOT. (P3ZJ-8421)  
4.0 L ENGINE, 4 SPD. AUTO., 4X2, P/S, A/C, ABS.  
TILT CORPORATE COLUMN.  
ROOF RACK  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.

TARGET WEIGHT (LBS) 3710 TOTAL, 1997 FRONT, 1713 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.  
FUEL AND BALLAST 22 GALLONS STODDARD.  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
200 LBS SECURED TO RACK OVER REAR SEAT FLOORPAN.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DUR-  
ING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO  
FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH  
HIS FACE, AND THE STEERING COLUMN COVER WITH HIS  
KNEES. THE PASSENGER CONTACTED THE LOWER INSTRU-  
MENT PANEL WITH HIS KNEES. THE PASSENGER SIDE BELT  
PAYOUT WAS 3.3" AT THE TURNING LOOP.

REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

DISTRIBUTION

W.A. BREITMOSER, JR.	422-05-01	(AB)
D.J. MCKENZIE	422-05-01	(AB)
E.A. ZYLIK	514-15-58	(AB)



SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04724 30 MPH L/ANGLE BARR. IMPACT, ZJT74, 4.0L. ITEM 3Z422  
1993 1/2 MVSS 208, MVSS 301 COMPLIANCE.  
TEST DATE 12/11/92

TEST PURPOSE PRIMARY, 93.5 MVSS 208 COMPLIANCE.  
OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

PRIMARY, 93.5 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; LEFT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; T  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO ELECTRONIC  
TRANS. NOTE; 42RE  
VIN AS TESTED; 1J4GX68S5PC [REDACTED] MOD.  
VIN AS BUILT; 1J4GX68S5PC [REDACTED] MOD.

TEST SPEED 30.3 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4341 TOTAL, 2166 FRONT, 2175 REAR

OCCUPANTS LEFT FRONT - HYB. III, INSTRUMENTED. AD-88  
RESTRAINT-AIRBAG ONLY.  
RIGHT FRONT - HYB III, INSTRUMENTED. AD-91  
RESTRAINT-3-PT. BELT SYSTEM.

BUILD CONDITION 1993 1/2 ZJ C1 PILOT (P3ZJ-8422).  
4.0L ENG., 42RE 4-SPD. AUTO., 4X2, P/S, A/C, ABS.  
CORPORATE STEERING COLUMN (NON-TILT).  
SUN ROOF, ROOF RACK, TRAILER HITCH.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS AND FULL  
CONSOLE.  
P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.

TARGET WEIGHT (LBS) 3710 TOTAL, 1997 FRONT, 1713 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04724 30 MPH L/ANGLE BARR. IMPACT, ZJT74, 4.0L. ITEM 3Z422  
1993 1/2 MVSS 208, MVSS 301 COMPLIANCE.  
TEST DATE 12/11/92

FUEL AND BALLAST 22 GALLONS STODDARD.  
300 LBS. LUGGAGE SECURED IN CARGO AREA.  
200 LBS SECURED TO RACK OVER REAR FLOORPAN.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO NO FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS FACE, AND THE STEERING COLUMN COVER WITH HIS KNEES. THE PASSENGER CONTACTED THE LOWER EDGE OF THE GLOVE BOX DOOR WITH BOTH KNEES, AND THE LOWER INSTRUMENT PANEL WITH HIS RIGHT KNEE. PASSENGER BELT PAYOUT WAS 2.5" AT THE TURNING LOOP.

REPORT CODES	A = TRANSDUCER DATA	B = ALL FILM DATA
	C = HIGH SPEED FILM	D = ENGINEER'S REPORT
	E = DUMMY KINEMATICS	F = STEERING COLUMN
	G = UNDERBODY	H = A-POST
	I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
	K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
	M = SPECIAL	N = CATALOG EDP DATA
	* = REPORT REQUESTOR	

DISTRIBUTION	W.A. BREITMOSER, JR.	422-05-01	(AB)
	D.J. MCKENZIE	422-05-01	(AB)
	E.A. ZYLIK	514-15-58	(AB)

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4724                      ITEM NUMBER 32422                      TEST ENGINEER WEIGEL

V.I.N. 1J4GX68S5PC XXXXXXXXXX                      TEST DATE 12/11/92                      ROLL DATE 12/14/92

TEST TYPE AND PURPOSE 30 MPH 30DEG. LT. ANGULAR IMPACT MVSS 208 & 301

FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22 GALLONS

TEST SPEED 32.3 MPH,                      TEST WEIGHT 4341 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
-	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK VIA

ELECTRIC FUEL PUMP RUN VIA

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO-MET	FILL-CAP	OTHER ***	TOTAL
0-90 !1ST 5 MIN !									0 *
<u>0:26</u> !POST 5 MIN!									0 **
90-180 !1ST 5 MIN !									0 *
<u>0:23</u> !POST 5 MIN!									0 **
180-270 !1ST 5 MIN !									0 *
<u>2:07</u> !POST 5 MIN!									0 **
270-360 !1ST 5 MIN !									0 *
<u>0:15</u> !POST 5 MIN!									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4574, ITEM NUMBER 2Z137, TEST ENGINEER BUSS  
 V.I.N. 1J4GZ88Y3PC [REDACTED] TEST DATE 5/18/92 ROLL DATE 5/19/92  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.6 MPH, TEST WEIGHT 4827 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	
-	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB	FUEL	AIR	FUEL	FUEL	GRO	FILL	OTHER	TOTAL
	/TBI	PUMP	CLEAN	TANK	FILT	MET	CAP	***	
0-90 !1ST 5 MIN !	!	!	!	!	!	!	!	!	00 *
<u>2:21</u> !POST 5 MIN!	!	!	!	!	!	!	!	!	00 **
90-180 !1ST 5 MIN !	!	!	!	!	!	!	!	!	00 *
<u>2:22</u> !POST 5 MIN!	!	!	!	!	!	!	!	!	00 **
180-270 !1ST 5 MIN !	!	!	!	!	!	!	!	!	00 *
<u>2:06</u> !POST 5 MIN!	!	!	!	!	!	!	!	!	00 **
270-360 !1ST 5 MIN !	!	!	!	!	!	!	!	!	00 *
<u>2:07</u> !POST 5 MIN!	!	!	!	!	!	!	!	!	00 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER - \_\_\_\_\_

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4680, ITEM NUMBER 32421, TEST ENGINEER MANNEY  
 V.I.N. 1J4GX68S7PC [REDACTED] TEST DATE 10/20/92, ROLL DATE 10/21/92  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.3 MPH, TEST WEIGHT 4571 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	
-	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK OK

ELECTRIC FUEL PUMP RUN OK

STATIC ROLL LEAKAGE WITH VEHICLE SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO-MET	FILL-CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
2:20 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
2:17 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:07 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
2:07 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER -

*W.R.M.*

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04576 30 MPH R/ANGLE BARRIER IMPACT, ZJ74,5.2L. ITEM 3Z133  
1993 MVSS 208, MVSS 301 COMPLIANCE.  
TEST DATE 05/20/92

TEST PURPOSE PRIMARY, 1993 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

PRIMARY, 1993 MVSS 208 COMPLIANCE.  
OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; LEFT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 5.2 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE; A518  
VIN AS TESTED; 1J4GZ88Y7PC [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ88Y7PC [REDACTED] MOD.

TEST SPEED 30.5 MPH - ELECTRONIC TRAP TIMER

TEST WEIGHT (LBS) 4830 TOTAL, 2478 FRONT, 2352 REAR

OCCUPANTS LEFT FRONT - HYB. III, INSTRUMENTED. AD-88  
RESTRAINT- AIR BAG ONLY.  
RIGHT FRONT - HYB. III, INSTRUMENTED. AD-89  
RESTRAINT- 3-PT. BELT SYSTEM.

BUILD CONDITION 1993 ZJ C1 PILOT. (P3ZJ-8133)  
5.2L ENGINE, 4 SPD. AUTO., 4X4, P/S, A/C, ABS.  
TILT CORPORATE COLUMN.  
TRAILER HITCH, ROOF RACK.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.  
TRW GAS DAMPED SENSOR S/N \_\_\_\_\_.

TARGET WEIGHT (LBS) 4196 TOTAL, 2353 FRONT, 1843 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04576 30 MPH R/ANGLE BARRIER IMPACT, ZJ74,5.2L. ITEM 3Z133  
 1993 MVSS 208, MVSS 301 COMPLIANCE.  
 TEST DATE 05/20/92

FUEL AND BALLAST 22 GALLONS STODDARD.  
 300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
 200 LBS SECURED TO FLOOR PAN UNDER REAR SEAT.  
 100 LBS SECURED IN REAR FOOTWELL.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT,  
 SUBSEQUENT 30 MINUTES, NOR DURING POST  
 TEST STATIC ROLL.

DRIVER CONTACTED AIR BAG WITH FACE, AND HIS KNEES  
 CONTACTED THE LOWER SURFACE OF UPPER I/P,  
 KNEEBLOCKER, AND STEERING COLUMN HOUSING.

PASSENGER CONTACTED KNEEBLOCKER WITH KNEES.  
 PASSENGER BELT PAYOUT AT TURNING LOOP WAS 1.8".

## REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

## DISTRIBUTION

W.A. BREITMOSER, JR.	422-05-01	(AB)
D.J. MCKENZIE	422-05-01	(AB)
E.A. ZYLIK	514-15-58	(AB)

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04574 30 MPH FRONTAL BARRIER IMPACT, ZJ74, 5.2L ITEM 3Z137  
 1993 COMPLIANCE - MVSS 208, MVSS 212, MVSS 219, MVSS 301.  
 TEST DATE 05/18/92

TEST PURPOSE                    PRIMARY, 1993 MVSS 301 COMPLIANCE.  
                                   OBSERVE FUEL SYSTEM INTEGRITY.

                                  PRIMARY, 1993 MVSS 208 COMPLIANCE.  
                                   OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

                                  PRIMARY, 1993 MVSS 212 COMPLIANCE.  
                                   OBSERVE AND DETERMINE W/SHIELD RETENTION.

                                  PRIMARY, 1993 MVSS 219 COMPLIANCE.  
                                   OBSERVE AND DETERMINE W/SHIELD ZONE INTRUSION.

IMPACT TYPE                    TARGET SPEED;            30.2 MPH  
                                   DAMAGE LOCATION; FRONT  
                                   IMPACT TYPE;            BARRIER  
                                   BARRIER SURFACE; PLYWOOD

VEHICLE                         BODY CLASS;              ZJ  
                                   CAR LINE;                J  
                                   BODY;                     74  
                                   ENGINE;                  5.2 LITRE  
                                   ENGINE NOTE;            MPI  
                                   TRANSMISSION;          4 SPEED AUTO 4X4  
                                   TRANS. NOTE;            A518  
                                   VIN AS TESTED;         1J4GZ88Y3PC [REDACTED]    MOD.  
                                   VIN AS BUILT;            1J4GZ88Y3PC [REDACTED]    MOD.

TEST SPEED                     30.6 MPH - TRAP TIMER

TEST WEIGHT (LBS)            4827 TOTAL, 2502 FRONT, 2325 REAR

OCCUPANTS                     LEFT FRONT - HYB. III, INSTRUMENTED.        AD-92  
                                   RESTRAINT- AIRBAG ONLY.

                                  RIGHT FRONT - HYB. III, INSTRUMENTED.        AD-93  
                                   RESTRAINT- 3-PT. BELT SYSTEM.



SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04574 30 MPH FRONTAL BARRIER IMPACT, ZJ74, 5.2L ITEM 3Z137  
1993 COMPLIANCE - MVSS 208, MVSS 212, MVSS 219, MVSS 301.  
TEST DATE 05/18/92

**BUILD CONDITION** 1993 ZJ C1 PILOT. (P3ZJ-8137)  
5.2L ENGINE, 4 SPD. AUTO., 4X4, P/S, A/C, ABS.  
TILT CORPORATE COLUMN.  
TRAILER HITCH, ROOF RACK, FRT. TOW HOOPS,  
REAR SKID PLATE.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
P235/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.  
TRW GAS DAMPED SENSOR S/N 052038.

**TARGET WEIGHT (LBS)** 4196 TOTAL, 2353 FRONT, 1843 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

**FUEL AND BALLAST** 22 GALLONS STODDARD.  
300 LBS OF LUGGAGE BALLAST INCLUDED IN THE  
INSTRUMENTATION WEIGHT.  
115 POUNDS IN REAR SEAT FOOTWELLS

**POST TEST REMARKS** THERE WAS NO FUEL LEAKAGE AT IMPACT, IMMEDIATELY  
POST IMPACT OR DURING THE POST TEST STATIC ROLL.  
DRIVER ATD - THE FACE CONTACTED THE CENTER OF THE  
STEERING WHEEL MOUNTED AIR BAG. THE LEFT KNEE  
CONTACTED THE BASE INSTRUMENT PANEL RIGHT OF THE  
STEERING COLUMN COVER. THE RIGHT KNEE CONTACTED  
THE STEERING COLUMN COVER RIGHT OF THE STEERING  
COLUMN.  
RIGHT FRONT PASSENGER ATD - NO HEAD TO VEHICLE  
CONTACT. THE ATD'S CHIN CONTACTED THE CHEST.  
BOTH KNEES CONTACTED THE LOWER INSTRUMENT PANEL.  
THE WINDSHIELD RETENTION WAS 100 PERCENT.  
THERE WAS NO WINDSHIELD ZONE INTRUSION.

**REPORT CODES**

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

**DISTRIBUTION**

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04570 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 5.2L ITEM 3Z135  
1993 MVS 208. MVSS301 COMPLIANCE.  
TEST DATE 05/13/92

TEST PURPOSE                    PRIMARY, 1993 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

PRIMARY, 1993 MVSS 208 COMPLIANCE.  
OBSERVE AND DETERMINE OCCUPANT INJURY CRITERIA.

IMPACT TYPE                    TARGET SPEED;            30.2 MPH  
DAMAGE LOCATION;        LEFT FRONT  
IMPACT TYPE;              BARRIER  
BARRIER SURFACE;        PLYWOOD

VEHICLE                        BODY CLASS;              ZJ  
CAR LINE;                  J  
BODY;                        74  
ENGINE;                     5.2 LITRE  
ENGINE NOTE;              MPI  
TRANSMISSION;             4 SPEED AUTO 4X4  
TRANS. NOTE;              A518  
VIN AS TESTED;            1J4GZ88Y0PC [REDACTED]        MOD.  
VIN AS BUILT;              1J4GZ88Y0PC [REDACTED]        MOD.

TEST SPEED                    30.5 MPH - ELECTRONIC TRAP TIMER

TEST WEIGHT (LBS)            4830    TOTAL, 2494 FRONT, 2336 REAR

OCCUPANTS                    LEFT FRONT - HYB. III, INSTRUMENTED.        AD-90  
RESTRAINT- AIR BAG ONLY.  
RIGHT FRONT - HYB. III, INSTRUMENTED.        AD-95  
RESTRAINT- 3-PT. BELT SYSTEM.

BUILD CONDITION            1993 ZJ C1 PILOT. (3PZJ-8135)  
5.2L ENGINE, 4 SPD. AUTO., 4X4, P/S, A/C, ABS.  
TILT CORPORATE COLUMN.  
TRAILER HITCH, ROOF RACK, FRONT SKID PLATE.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
P225/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR SIDE.  
TRW GAS DAMPED SENSOR S/N 052018.  
LEFT DOOR GLASS IN FULL-UP POSITION FOR TEST.

TARGET WEIGHT (LBS)        4196 TOTAL, 2353 FRONT, 1843 REAR REP MAX OPT WT  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04570 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 5.2L ITEM 3Z135  
1993 MVS 208. MVSS301 COMPLIANCE.  
TEST DATE 05/13/92

FUEL AND BALLAST 22 GALLONS STODDARD.  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
110 LBS SECURED TO REAR FOOTWELL.

POST TEST REMARKS DRIVER CONTACTED DEPLOYED AIR BAG WITH FACE,  
A-POS AND SIDE WINDOW WITH FOREHEAD, UNDERSIDE  
OF UPPER I/P WITH LEFT KNEE, AND STEERING COLUMN  
COVER WITH RIGHT KNEE.

PASSENGER CONTACTED GLOVE BOX DOOR WITH KNEES.

THERE WAS NO FUEL LEAKAGE DURING IMPACT,  
SUBSEQUENT THIRTY MINUTES, NOR DURING THE POST  
TEST STATIC ROLL.

REPORT CODES	A = TRANSDUCER DATA	B = ALL FILM DATA
	C = HIGH SPEED FILM	D = ENGINEER'S REPORT
	E = DUMMY KINEMATICS	F = STEERING COLUMN
	G = UNDERBODY	H = A-POST
	I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
	K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
	M = SPECIAL	N = CATALOG EDP DATA
	* = REPORT REQUESTOR	

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04561 30 MPH REAR BARRIER IMPACT, 5.2L. ITEM 3Z136  
1993 MVSS 301 FUEL SYSTEM INTEGRITY COMPLIANCE.  
TEST DATE 05/04/92

TEST PURPOSE PRIMARY, 1993 MVSS 301 COMPLIANCE.  
DETERMINE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; REAR  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 5.2 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE; A518  
VIN AS TESTED; 1J4GZ88Y0PC [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ88Y0PC [REDACTED] MOD.

TEST SPEED 30.3 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4834 TOTAL, 2726 FRONT, 2108 REAR

OCCUPANTS LEFT FRONT, HYB II, UNINSTRUMENTED. AD-63  
RESTRAINT-3-PT. UNIBELT, A/B AND KNEE BLOCKER.  
RIGHT FRONT, HYB II, UNINSTRUMENTED. AD-67  
RESTRAINT-3 POINT UNIBELT.

BUILD CONDITION 1993 C-1 PILOT, 5.2L 4X4, (P3ZJ-8136).  
CORPORATE COLUMN - TILT.  
CORPORATE STEERING WHEEL WITH AIRBAG.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
5.2L ENGINE, AUTO. TRANS., P/S, ABS & A/C.  
P235/75R15 TIRES ON 5-SPOKE STEEL WHEELS. FULL  
SIZE SPARE TIRE MOUNTED INSIDE LEFT REAR.  
SPARE TIRE CUP RETAINER P/N 52057921 - PROPOSED  
POLYPROPYLENE MATERIAL.  
NON-PRODUCTION REAR PROP SHAFT, 1 INCH SHORT.  
249 TRANSFER CASE.  
FULL FLOOR CONSOLE.  
ROOF RACK.

TARGET WEIGHT (LBS) 4196 TOTAL, 2353 FRONT, 1843 REAR REP MAX OPT WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04561 30 MPH REAR BARRIER IMPACT, 5.2L. ITEM 3Z136  
 1993 MVSS 301 FUEL SYSTEM INTEGRITY COMPLIANCE.  
 TEST DATE 05/04/92

FUEL AND BALLAST 21.7 GAL. STODDARD.  
 300 LBS. OF LUGGAGE BALLAST SECURED IN CARGO AREA.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DUR-  
 ING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO  
 FUEL LEAKAGE DURING THE STATIC ROLLOVER.

REPORT CODES A = TRANSDUCER DATA B = ALL FILM DATA  
 C = HIGH SPEED FILM D = ENGINEER'S REPORT  
 E = DUMMY KINEMATICS F = STEERING COLUMN  
 G = UNDERBODY H = A-POST  
 I = DYNAMIC CRUSH J = ENGINE COMPARTMENT  
 K = DOOR CRUSH L = FORCE/CRUSH/ENERGY  
 M = SPECIAL N = CATALOG EDP DATA  
 \* = REPORT REQUESTOR

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

VC01458 20 MPH RT. LATERAL IMPACT. 2074. 4.6L MPI ITEM 27123R  
1992.5 FMVSS 301 COMPLIANCE, FUEL SYS. INTEGRITY.  
TEST DATE 11/23/91

TEST PURPOSE PRIMARY, 1992 FMVSS 301 COMPLIANCE.  
OBSERVE AND DETERMINE FUEL SYSTEM PERFORMANCE.

IMPACT TYPE TARGET SPEED: 20.2 MPH  
DAMAGE LOCATION: RIGHT CENTER  
IMPACT STYLE: TYPE IV  
BARRIER SURFACE: PLYWOOD

VEHICLE BODY CLASS: 80  
CAR LINE: J  
BODY: 74  
ENGINE: 4.6 LITERE  
ENGINE NOTE: MPI  
TRANSMISSION: 4 SPEED AUTO 4X4  
TRANS. NOTE:  
VIN AS TESTED: 1G4G288J7M [REDACTED] MOD  
VIN AS BUILT: 1G4G288V29L [REDACTED] MOD.

TEST SPEED 20.2 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4662 TOTAL, 2300 FRONT, 2362 REAR

OCCUPANTS LEFT FRONT, 50TH MALE HYB II, UNISTR. AD-52  
RESTRAINT-3 PT. UNBELT, A/B AND KNEE BLOCKER.  
RIGHT FRONT, 50TH MALE HYB II, UNISTR. AD-52  
RESTRAINT-3 POINT UNBELT.

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4 DR., 4X4, 105" WHEELBASE  
(2J-8123).  
4.6 L IS MPI, 4 SP. AUTO., TS, ABS, AC.  
22 GALLON PLASTIC FUEL TANK.  
FUEL PUMP CONSOLE.  
BRALLER TOW PACKAGE AHL.  
P215/75R15 TIRES ON STEEL WHEELS WITH FULL SIZE  
SPARE TIRE.  
TILT CORPGRATE COLUMN.  
211 TRANSFER CASE.  
NO UNDERCOATING.  
ROOF RACK.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR, REPRESENTING  
MAXIMUM GROSS WEIGHT NOT INCLUDING OCCUPANTS  
OR LUGGAGE BALLAST.

FUEL AND BALLAST 32 GALLONS OF STODDARD.  
100 LBS. OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
100 POUNDS ON 1000  
50 POUNDS RIGHT REAR FOOTWELL  
100 POUNDS CARGO AREA  
100 POUNDS RIGHT REAR WHEELWELL  
NOTE - 100 POUNDS OF LUGGAGE BALLAST INCLUDED IN  
THE ABOVE BALLAST.



JAFREY TEST  
DYNAMIC CRUSH TEST SERIES

PAGE 02

VC04452 20 MPH RT. LATERAL IMPACT, Z104, 4.0L MPI SEM 28108R  
1992.5 FMVSS 301 COMPLIANCE. FUEL SYS. INTEGRITY.  
TEST DATE 11/22/91

POST TEST OBSERVES THERE WAS NO FUEL LEAKAGE DURING, IMMEDIATELY POST  
IMPACT OR DURING THE POST TEST STATIC HOLD.

REPORT CODES	A = TRANSDUCER DATA	B = ALL FILM DATA
	C = SLOW SPEED FILM	D = ENGINEER'S REPORT
	E = DUMMY KINEMATICS	F = STEERING COLUMN
	G = INSTRUMENT	H = A-POST
	I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
	K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
	M = SPECIAL	N = CUSTOMER REQ DATA
	O = REPORT PROJECTOR	

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INTER COMPANY CORRESPONDENCE

FILE DCR121091

DATE 12/20/91

TO  
DISTRIBUTION

FROM  
J. W. HANIKA

DEPARTMENT  
5320

PLANT/OFFICE  
CHRYSLER CENTER

CIMS NUMBER  
418-42-27

SUBJECT:  
DYNAMIC CRUSH ANALYSIS  
VC04472 30 MPH REAR IMPACT, ZJ74, 4.0L, 1992.5 ITEM 2Z285  
MVSS 301 FUEL SYSTEM INTEGRITY, COMPLIANCE.  
TEST DATE 12/10/91

TEST PURPOSE PRIMARY, 1992 MVSS 301 COMPLIANCE.  
DETERMINE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED: 30.2 MPH  
DAMAGE LOCATION: REAR  
IMPACT TYPE: BARRIER  
BARRIER SURFACE: PLYWOOD

VEHICLE BODY CLASS: ZJ  
CAR LINE: J  
BODY: 74  
ENGINE: 4.0 LITRE  
ENGINE NOTE: MPI  
TRANSMISSION: 4 SPEED AUTO 4X4  
TRANS. NOTE:  
VIN AS TESTED: 1J4GZ88S6PC [REDACTED] MOD.  
VIN AS BUILT: 1J4GZ88S6PC [REDACTED] MOD.

TEST SPEED 30.3 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4668 TOTAL, 2456 FRONT, 2212 REAR

OCCUPANTS LEFT FRONT, HYB II, UNINSTRUMENTED. AD-53  
~~RESTRAINT-3-PT. UNIBELT, A/B AND KNEE BLOCKER.~~  
RIGHT FRONT, HYB II, UNINSTRUMENTED. AD-60  
~~RESTRAINT-3 POINT UNIBELT.~~

BUILD CONDITION 1992 ZJ PVP VEHICLE, 4-DR., 4X4, 106" WB.  
(P2ZJ-8285).  
TRAILER TOWING PACKAGE (AHT).  
TILT CORPORATE COLUMN & KNEE BLOCKER.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
4.0L ENGINE, AUTO. TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS. FULL SIZE SPARE  
MOUNTED INSIDE LEFT REAR.  
SPARE TIRE CUP RETAINER P/N 52057921 - ZYTEL ST801  
IMPACT MODIFIED, NYLON 66. (LOT 1329).  
231 TRANSFER CASE.  
FULL FLOOR CONSOLE.  
REAR AXLE WITH TRACK BAR BRACKET SHIELD.  
FUEL FILLER HOSE PROTECTION SLEEVE.

DATE 11/20/91 TEST VALUES SAFETY TEST  
 TIME 13.25.08. EDP LETTER DEPT 5320

VC04426 ITEM 2Z118  
 VC04426 30 MPH R/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 2Z118  
 1992.5 MVSS 208 AND 301 COMPLINCE.  
 TEST DATE 11/01/91

TEST PURPOSE PRIMARY, 1992 MVSS 208 COMPLIANCE.  
 OBSERVE AND DETERMINE INJURY CRITERIA.

PRIMARY, 1992 MVSS 301 COMPLIANCE.  
 OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
 DAMAGE LOCATION; RIGHT FRONT  
 IMPACT TYPE; BARRIER  
 BARRIER SURFACE; PLYWOOD  
 DIRECTION; 0 DEGREES

VEHICLE BODY CLASS; ZJ  
 CAR LINE; J  
 BODY; 74  
 ENGINE; 4.0 LITRE  
 ENGINE NOTE; MPI  
 TRANSMISSION; 4 SPEED AUTO 4X4  
 TRANS. NOTE;  
 VIN AS TESTED; 1J4GZ68SXNA [REDACTED] MOD.  
 VIN AS BUILT; 1J4GZ78SXNA [REDACTED] MOD.

TEST SPEED 30.2 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4650 TOTAL, 2290 FRONT, 2360 REAR

OCCUPANTS LEFT FRONT, CERT HYB III, INSTRUMENTED. AD-90  
 RESTRAINT-AIR BAG AND KNEE BLOCKER.  
 RIGHT FRONT, CERT HYB III, INSTRUMENTED. AD-95  
 RESTRAINT-3 PT. BELT SYSTEM.

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4-DR., 4X4, 106" WB. (ZJ-8118)  
 DOUBLE ROW OF URETHANE BOND ON BOTTOM OF  
 WINDSHIELD (11" FROM EACH A-PILLER).  
 ZJ TILT COLUMN.  
 KNEE BLOCKER, DRIVER'S SIDE.  
 CORPORATE STEERING WHEEL AND AIR BAG WITH REVERSE  
 FOLD (26-UT-BM-107).  
 BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
 4.0L ENGINE, 4 SPD. AUTO TRANS., P/S, ABS, A/C.  
 P215/75R15 TIRES ON STEEL WHEELS, WITH FULL SIZE  
 SPARE.  
 GAS DAMPED SENSOR ON KNEE BLOCKER BRACE.  
 P/N 86015D003, S/N 261005  
 TWO ROLAMITE SENSORS, TRW TECHNAR P/N 56006868.  
 AIR BAG DIAGNOSTIC MODULE P/N 65006872.  
 TRAILER HITCH.  
 ROOF RACK.

DATE 11/20/91  
 TIME 13.25.08.

TEST VALUES  
 EDP LETTER

SAFETY TEST  
 DEPT 5320

VC04426 ITEM 2Z118  
 VC04426 30 MPH R/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 2Z118  
 1992.5 MVSS 208 AND 301 COMPLINCE.  
 TEST DATE 11/01/91

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT. WT.  
 NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GAL. STODDARD SOLVENT.  
 300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
 225 LBS SECURED TO RACK OVER REAR FLOORPAN.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DUR-  
 ING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO  
 FUEL LEAKAGE DURING THE STATIC ROLLOVER.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS  
 FACE, AND THE STEERING COLUMN COVER WITH HIS  
 KNEES. THE PASSENGER CONTACTED THE LOWER INSTRU-  
 MENT PANEL WITH HIS KNEES. THE PASSENGER'S UNIBELT  
 PAYOUT WAS 2.5" AT THE TURNING LOOP, AND 1.8" AT  
 THE RETRACTOR.

CC

W. A. BREITMOSER, JR	422-05-01
J. W. HANIKA	418-42-27
W. R. HARBAUGH	422-05-01
M. A. HUBER	428-00-00
T. P. MAULE	422-05-01
E. A. ZYLIK	514-17-31

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04449 20 MPH LT. LATERAL IMPACT, ZJ74, 4.0L MPI ITEM 2Z123  
1992.5 FMVSS 301 COMPLIANCE, FUEL SYS. INTEGRITY.  
TEST DATE 11/21/91

TEST PURPOSE PRIMARY, 1992 MVSS 301 COMPLIANCE.  
OBSERVE AND DETERMINE FUEL SYSTEM PERFORMANCE.

IMPACT TYPE TARGET SPEED; 20.2 MPH  
DAMAGE LOCATION; LEFT CENTER  
IMPACT TYPE; TYPE IV  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 4 SPEED AUTO 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GZ88V2PC [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ88V2PC [REDACTED] MOD.

TEST SPEED 20.6 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4652 TOTAL, 2300 FRONT, 2352 REAR

OCCUPANTS LEFT FRONT, 50TH MALE HYB II, UNISTR. AD-52  
RESTRAINT-3 PT. UNIBELT, A/B AND KNEE BLOCKER.  
RIGHT FRONT, 50TH MALE HYB II, UNINSTR. AD-53  
RESTRAINT-3 POINT UNIBELT.

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4 DR., 4X4, 106" WHEELBASE  
(ZJ-8123).  
4.0 L I6 MPI, 4 SP. AUTO., PS, ABS, AC.  
23 GALLON PLASTIC FUEL TANK.  
FULL FLOOR CONSOLE.  
TRAILER TOW PACKAGE AHT.  
P215/75R15 TIRES ON STEEL WHEELS WITH FULL SIZE  
SPARE TIRE.  
TILT CORPORATE COLUMN.  
231 TRANSFER CASE.  
NO UNDERCOATING.  
ROOF RACK.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR, REPRESENTING  
MAXIMUM OPTION WEIGHT NOT INCLUDING OCCUPANTS  
OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GALLONS OF STODDARD.  
100 POUNDS ON HOOD  
50 POUNDS RIGHT REAR FOOTWELL  
100 POUNDS CARGO AREA  
100 POUNDS RIGHT REAR WHEELWELL  
NOTE - 300 POUNDS OF LUGGAGE BALLAST INCLUDED IN  
IN THE ABOVE BALLAST.

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04449 20 MPH LT. LATERAL IMPACT, ZJ74, 4.0L MPI ITEM 22123  
1992.5 FMVSS 301 COMPLIANCE, FUEL SYS. INTEGRITY.  
TEST DATE 11/21/91

POST TEST REMARKS      THERE WAS NO FUEL LEAKAGE DURING, IMMEDIATELY POST  
  IMPACT OR DURING THE POST TEST STATIC ROLL.

REPORT CODES	A = TRANSDUCER DATA	B = ALL FILM DATA
	C = HIGH SPEED FILM	D = ENGINEER'S REPORT
	E = DUMMY KINEMATICS	F = STEERING COLUMN
	G = UNDERBODY	H = A-POST
	I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
	K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
	M = SPECIAL	N = CATALOG EDP DATA
	* = REPORT REQUESTOR	

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	T.P. MAULE	422-05-01	(A)
	E.A. ZYLIK	514-15-58	(AB)

NOV 22 '91 12:19 FROM CHELSEA IMPACT LAB

PAGE.003

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VCC04459 10 MPH L/ANGLE BARRIER IMPACT, 2074, 4.0L PTSM 22166  
1992.5 MVSS 301 COMPLIANCE.  
TEST DATE 11/20/91

TEST PURPOSE PRIMARY, 1992 MVSS 301 COMPLIANCE.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.0 MPH  
DAMAGE LOCATION; LEFT FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; EJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 5 SPEED MANUAL 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GZ88V8PC MOD.  
VIN AS BUILT; 1J4GZ88V8PC MOD.

TEST SPEED 30.0 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4666 TOTAL, 2350 FRONT, 2316 REAR

OCCUPANTS LEFT FRONT, HYB. II, UNINSTRUMENTED. AD-52  
RESTRAINT-A/B AND KNEE BLOCER W 3-PT BELT SYSTEM.  
RIGHT FRONT, HYB. II, UNINSTRUMENTED. AD-52  
RESTRAINT-3-PT BELT SYSTEM.

BUILD CONDITION 1992.5 EJ C1 PILOT, 6 DR., 4X4, 106' WB (20-2100).  
TILT CORPORATE COLUMN.  
STANDARD BUMPER WITH BUMPER GUARDS.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS, FULL  
CONSOLE.  
4.0L ENGINE, 5 SP. MAN. TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS, FULL SIZE SPACE.  
BASE/STANDARD WHEELS.  
TWO ROLAMITE SENSORS, TRW TECHNAR P/N 86006868.  
ONE GAS DAMPED SENSOR, TRW TECHNAR P/N 860150003,  
LOCATED ON KNEE BLOCER BRACE.  
FUEL LINES TO RAIL HAVE RUBBER HOSES OVER NYLON  
LINES.

TARGET WEIGHT (LBS) 4028 TOTAL, 2198 FRONT, 1822 REAR REF MAX OPT WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GALLONS STODDARD.  
50 POUNDS LEFT REAR WHEELWELL  
70 POUNDS RIGHT REAR WHEELWELL  
70 POUNDS RIGHT REAR FOOTWELL  
430 POUNDS ON RACK IN REAR SEAT AREA (300 POUNDS OF



SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 12

VC04455 30 MPH L/ANGLE BARRIER IMPACT, 2374, 4.00 ITEM 22166  
1992.5 NVSS 301 COMPLIANCE.  
TEST DATE 11/20/91

POST TEST REMARKS NO FUEL LEAKAGE DURING OR IMMEDIATELY POST IMPACT,  
OR DURING THE POST TEST STATIC ROLL.

REPORT CODES

- |                      |                        |
|----------------------|------------------------|
| A = TRANSDUCER DATA  | S = ALL FILM DATA      |
| C = HIGH SPEED FILM  | D = ENGINEER'S REPORT  |
| E = DUMMY KINEMATICS | F = STEERING COLUMN    |
| G = UNDERBODY        | H = A-POST             |
| I = DYNAMIC CRUSH    | J = ENGINE COMPARTMENT |
| K = DOOR CRUSH       | L = FORCE/CRUSH/ENERGY |
| M = SPECIAL          | N = CATALOG BOP DATA   |
| * = REPORT REQUESTOR |                        |

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04432 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 2Z122  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 11/07/91

TEST PURPOSE: PRIMARY, 1992 MVSS 208 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 208 OCCUPANT CRASH PROTECTION, DRIVER DUMMY WITH BELTS.

PRIMARY, 1992 MVSS 212 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 212 WINDSHIELD RETENTION.

PRIMARY, 1992 MVSS 219 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 219 WINDSHIELD BONE INTRUSION.

PRIMARY, 1992 MVSS 301 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 301 FUEL SYSTEM INTEGRITY.

IMPACT TYPE: TARGET SPEED; 30.2 MPH  
DAMAGE LOCATION; FRONT  
IMPACT TYPE; BARRIER  
BARRIER SURFACE; PLYWOOD  
DIRECTION; 0 DEGREES

VEHICLE: BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 4.0 LITRE  
ENGINE NOTE; MPI  
TRANSMISSION; 5 SPEED MANUAL 4X4  
TRANS. NOTE;  
VIN AS TESTED; 1J4GZ78S3NA [REDACTED] MOD.  
VIN AS BUILT; 1J4GZ78S3NA [REDACTED] MOD.

TEST SPEED 30.2 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4686 TOTAL, 2300 FRONT, 2386 REAR

OCCUPANTS: LEFT FRONT, HYB III CERT, STD INST AD-89  
RESTRAINT-AIR BAG, KNEE BLOCKER AND 3 PT. UNIBELT.  
RIGHT FRONT, HYB III CERT, STD INST AD-91  
RESTRAINT-3 PT. BELT SYSTEM

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04432 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 2Z122  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 11/07/91

**BUILD CONDITION** 1992.5 ZJ C-1 PILOT, 4-DR, 4X4, 106" WB. (2J-8122)  
DOUBLE ROW OF URETHANE BOND ON BOTTOM OF  
WINDSHIELD (11" FROM EACH A-PILLAR).  
ZJ CORPORATE NON-TILT STEERING COLUMN, DRIVER'S  
AIR BAG (E-FOLD) 26-UT-BM-109.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
4.0L ENGINE, 5 SP. MANUAL TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS, WITH MINI SIZE  
SPARE MOUNTED INSIDE REAR LEFT.  
GAS DAMPED SENSOR P/N S6015D003, S/N 261008.

**WEIGHT (LBS)** 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT. WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

**AND BALLAST** 22 GAL. STODDARD.  
300 LBS. OF LUGGAGE BALLAST.  
350 POUNDS IN REAR SEAT AREA

**POST TEST REMARKS** DRIVER ATD - FACE TO CENTER OF WHEEL MOUNTED AIR  
BAG. KNEES CONTACTED THE LOWER INSTRUMENT PANEL  
AND STEERING COLUMN COVER. BELT PAYOUT; FROM  
RETRACTOR 2.0 INCHES, AT TURNING LOOP 2.4 INCHES  
RIGHT FRONT PASSENGER ATD - NO HEAD TO VEHICLE  
CONTACT. KNEES TO LOWER INSTRUMENT PANEL. BELT  
PAYOUT; FROM RETRACTOR 2.0 INCHES, AT TURNING  
LOOP 2.2 INCHES.  
WINDSHIELD RETENTION - TOTAL 71.4%, LEFT 66.9%,  
RIGHT 75.8%. RETENTION MATERIAL PULLED GLASS  
FROM WINDSHIELD ALONG FENCE.  
NO WINDSHIELD ZONE INTRUSION  
NO FUEL LEAKAGE DURING IMPACT, IMMEDIATELY POST  
IMPACT, OR DURING THE POST TEST STATIC ROLL.  
STRUCTURE - FRONT RAILS "Z" BUCKLE AT FRONT KICK-  
UP. SLIGHT RAIL BUCKLE AT TRANSMISSION  
CROSSMEMBER. LEFT REAR RAIL BUCKLE FORWARD OF  
UPPER SHOCK ATTACHMENT.

**REPORT CODES**

A = PRODUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	

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SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC04421 30 MPH FRONT BARRIER IMPACT,ZJ74,4.0L. ITEM 22116  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 10/25/91

TEST PURPOSE                    PRIMARY, 1992 MVSS 208 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 208 OCCUPANT CRASH  
PROTECTION.

PRIMARY, 1992 MVSS 212 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 212 WINDSHIELD  
RETENTION.

PRIMARY, 1992 MVSS 219 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS219 WINDSHIELD ZONE  
INTRUSION.

PRIMARY, 1992 MVSS 301 COMPLIANCE.  
DETERMINE COMPLIANCE TO MVSS 301 FUEL SYSTEM  
INTEGRITY.

IMPACT TYPE                    TARGET SPEED;            30.2 MPH  
DAMAGE LOCATION; FRONT  
IMPACT TYPE;            BARRIER  
BARRIER SURFACE; PLYWOOD  
DIRECTION;              0 DEGREES

VEHICLE                        BODY CLASS;              ZJ  
CAR LINE;                J  
BODY;                     74  
ENGINE;                  4.0 LITRE  
ENGINE NOTE;            MPI  
TRANSMISSION;          4 SPEED AUTO 4X4  
TRANS. NOTE;  
VIN AS TESTED;        1J4GZ78S8NA [REDACTED]        MOD.  
VIN AS BUILT;          1J4GZ78S8NA [REDACTED]        MOD.

TEST SPEED                    30.2 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS)            4650    TOTAL, 2306 FRONT, 2344 REAR

OCCUPANTS                    LEFT FRONT,HYB III CERT, STD INST            AD-90  
RESTRAINT-AIR BAG AND KNEE BLOCKER.  
RIGHT FRONT,HYB III CERT, STD INST            AD-95  
RESTRAINT-3 PT. BELT SYSTEM

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC04421 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 2Z116  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 10/25/91

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4-DR, 4X4, 106" WB. (ZJ-8116)  
DOUBLE ROW OF URETHANE BOND ON BOTTOM OF  
WINDSHIELD (11" FROM EACH A-PILLAR).  
ZJ CORPORATE TILT COLUMN.  
BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
4.0L ENGINE, 4 SP. AUTO TRANS., P/S, ABS, A/C.  
P215/75R15 TIRES ON STEEL WHEELS, WITH FULL SIZE  
SPARE.  
TRAILER HITCH.  
ROOF RACK.  
FULL CONSOLE.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT. WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 22 GAL. STODDARD.  
300 LBS. OF LUGGAGE BALLAST.  
160 LBS SECURED TO FLOORPAN UNDER REAR SEAT.  
100 LBS SECURED TO REAR FOOTWELL.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DUR-  
ING THE SUBSEQUENT THIRTY MINUTES. AT THE BEGIN-  
NING OF THE STATIC ROLLOVER, A HOLE IN THE TOP  
REAR PORTION OF THE FUEL TANK WAS DISCOVERED. THIS  
HOLE WAS CAUSED BY A TEST DUMMY GROUNDING SCREW.  
SINCE THIS DAMAGE WAS NOT RELATED TO THE PRODUCT,  
THE HOLE WAS REPAIRED BEFORE PROCEEDING WITH THE  
ROLLOVER. THERE WAS NO FUEL LEAKAGE DURING THE  
STATIC ROLLOVER.

THERE WAS NO LOSS OF WINDSHIELD RETENTION.

THERE WAS NO INTRUSION INTO EITHER WINDSHIELD IN-  
TRUSION ZONE.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS  
FACE, AND THE STEERING COLUMN COVER WITH HIS  
KNEES. THE PASSENGER CONTACTED THE LOWER INSTRU-  
MENT PANEL WITH HIS KNEES. THE PASSENGER BELT PAY-  
OUT WAS 4.6" AT THE TURNING LOOP, AND 3.0" AT THE  
RETRACTOR.

## REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 03

VC04421 30 MPH FRONT BARRIER IMPACT, ZJ74, 4.0L. ITEM 2Z116  
1992.5 MVSS 208, 212, 219, & 301 COMPLIANCE.  
TEST DATE 10/25/91

## DISTRIBUTION

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DATE 10/28/91 TEST VALUES SAFETY TEST  
 TIME 12.59.34. EDP LETTER DEPT 5320

VC04419 ITEM 2Z117  
 VC04419 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 2Z117  
 1992.5 MVSS 208 AND 301 COMPLINCE.  
 TEST DATE 10/24/91

TEST PURPOSE PRIMARY, 1992 MVSS 208 COMPLIANCE.  
 OBSERVE AND DETERMINE INJURY CRITERIA.  
 PRIMARY, 1992 MVSS 301 COMPLIANCE.  
 OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH  
 DAMAGE LOCATION; LEFT FRONT  
 IMPACT TYPE; BARRIER  
 BARRIER SURFACE; PLYWOOD  
 DIRECTION; 0 DEGREES

VEHICLE BODY CLASS; ZJ  
 CAR LINE; J  
 BODY; 74  
 ENGINE; 4.0 LITRE  
 ENGINE NOTE; MPI  
 TRANSMISSION; 5 SPEED MANUAL 4X4  
 TRANS. NOTE;  
 VIN AS TESTED; 1J4GZ78SXNA [REDACTED] MOD.  
 VIN AS BUILT; 1J4GZ78SXNA [REDACTED] MOD.

TEST SPEED 30.2 MPH - ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4662 TOTAL, 2300 FRONT, 2362 REAR

OCCUPANTS LEFT FRONT, CERT HYB III, INSTRUMENTED. AD-89  
 RESTRAINT-AIR BAG AND KNEE BLOCKER.  
 RIGHT FRONT, CERT HYB III, INSTRUMENTED. AD-93  
 RESTRAINT-3 PT. BELT SYSTEM.

BUILD CONDITION 1992.5 ZJ C-1 PILOT, 4-DR., 4X4, 106" WB. (ZJ-8117)  
 DOUBLE ROW OF URETHANE BOND ON BOTTOM OF  
 WINDSHIELD (11" FROM EACH A-PILLER).  
 ZJ NON-TILT COLUMN.  
 KNEE BLOCKER, DRIVER'S SIDE.  
 CORPORATE STEERING WHEEL AND AIR BAG.  
 BUCKET SEATS (CLOTH) WITH MANUAL TRACKS.  
 4.0L ENGINE, 5 SPD. MANUAL TRANS., P/S, ABS, A/C.  
 P215/75R15 TIRES ON STEEL WHEELS, WITH MINI SPARE.  
 GAS DAMPED SENSOR ON KNEE BLOCKER BRACE.  
 TWO ROLAMITE SENSORS, TRW TECHNAR P/N 56006868.  
 AIR BAG DIAGNOSTIC MODULE P/N 65006872.  
 MINI CONSOLE.

TARGET WEIGHT (LBS) 4020 TOTAL, 2198 FRONT, 1822 REAR REP MAX OPT. WT.  
 NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.



DATE 10/28/91  
TIME 12.59.34.

TEST VALUES  
EDP LETTER

SAFETY TEST  
DEPT 5320

VC04419 ITEM 2Z117  
VC04419 30 MPH L/ANGLE BARRIER IMPACT, ZJ74, 4.0L ITEM 2Z117  
1992.5 MVSS 208 AND 301 COMPLINCE.  
TEST DATE 10/24/91

FUEL AND BALLAST 22 GAL. STODDARD  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.  
300 LBS SECURED TO RACK OVER REAR FLOORPAN.  
100 LBS SECURED TO REAR FOOTWELLS.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING THE SUBSEQUENT THIRTY MINUTES. A STATIC ROLL-OVER WAS CONDUCTED WITHOUT FUEL LEAKAGE.

THE DRIVER CONTACTED THE DEPLOYED AIR BAG WITH HIS FACE, THE A-PILLAR WITH HIS FOREHEAD, AND THE STEERING COLUMN COVER WITH HIS KNEES. THE PASSENGER CONTACTED THE LOWER INSTRUMENT PANEL WITH HIS KNEES. THE PASSENGER BELT PAYOUT WAS 2.9" AT THE TURNING LOOP AND 2.4" AT THE RETRACTOR.

CC

W. A. BREITMOSER, JR	422-05-01
J. W. HANIKA	418-42-27
W. R. HARBAUGH	422-05-01
M. A. HUBER	428-00-00
T. P. MAULE	422-05-01
E. A. ZYLIK	514-17-31

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4419, ITEM NUMBER 22117, TEST ENGINEER MANNEY  
 V.I.N. 1J4GZ78SXNA [REDACTED], TEST DATE 10/24/91, ROLL DATE 10/25/91  
 TEST TYPE; 30 MPH FRONT 30 DEGREE LEFT ANULAR IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.2 MPH, TEST WEIGHT 4662 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	
-	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK     

ELECTRIC FUEL PUMP RUN     

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB / TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO-MET	FILL-CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
<u>2:16</u> POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
<u>2:14</u> POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
<u>2:04</u> POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
<u>2:06</u> POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4421, ITEM NUMBER 2Z116, TEST ENGINEER MANNEY  
V.I.N. 1J4GZ78S8NA, TEST DATE 12/25/91, ROLL DATE 12/30/91  
TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
TEST SPEED 30.2 MPH, TEST WEIGHT 4650 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	OK
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER - N/A	
CARBURETOR - N/A	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO-MET	FILL-CAP	OTHER ***	TOTAL
0-90 !1ST 5 MIN									0 *
2:17 !POST 5 MIN									0 **
90-180 !1ST 5 MIN									0 *
2:15 !POST 5 MIN									0 **
180-270 !1ST 5 MIN									0 *
2:04 !POST 5 MIN									0 **
270-360 !1ST 5 MIN									0 *
2:04 !POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER - \_\_\_\_\_

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4432, ITEM NUMBER 22122, TEST ENGINEER BUSS  
 V.I.N. 1J4G278S8NA, TEST DATE 11/7/91, ROLL DATE 11/9/91  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, ..... GALLONS  
 TEST SPEED \_\_\_\_\_ MPH, TEST WEIGHT \_\_\_\_\_ POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	
FUEL RAIL -	

*ALL OK*

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB/	FUEL/	AIR	FUEL	FUEL	GRO-	FILL	OTHER	TOTAL
	/TBI	PUMP	CLEAN	TANK	FILT	MET	CAP	***	
0-90 1ST 5 MIN									0 *
2:10 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
2:11 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:00 POST 5 MIN									0 **
270-350 1ST 5 MIN									0 *
2:00 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER 900459, ITEM NUMBER 22166, TEST ENGINEER BUSS  
 V.I.N. LJ4GZ88VSPC [REDACTED], TEST DATE 11/22/71, ROLL DATE 11/22/71  
 TEST TYPE; 30 MPH FRONT 30 DEGREE LEFT ANGULAR IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STOWARD SOLVENT, 32.0 GALLONS  
 TEST SPEED 30.0 MPH, TEST WEIGHT 4600 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	OK
FILLER TUBE -	OK
CAP -	OK
FUEL FILTER -	OK
GROMMET -	NA
FUEL PUMP -	OK
STRAPS -	OK
LINEs -	Push removed by holding testing fluid line
AIR CLEANER -	Blocked
ORATOR -	
FUEL PAN -	Retain vapor vent pressure 0.12 MPa

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK NA

ELECTRIC FUEL PUMP RUN NA

STATIC ROLL LEAKAGE WITH VEHICLE Left SIDE DOWN FIRST

ROLL TIME	CARB/	FUEL/	AIR/	FUEL/	FUEL/	GRO-	FILL/	OTHER/	TOTAL/
	/TBI	PUMP	CLEAN	TANK	FILT	IMET	CAP	***	
15-20 1ST 5 MIN									0
21-26 POST 5 MIN									0
30-35 1ST 5 MIN									0
36-41 POST 5 MIN									0
45-50 1ST 5 MIN									0
51-56 POST 5 MIN									0
60-65 1ST 5 MIN									0
66-71 POST 5 MIN									0

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4449, ITEM NUMBER 22J123, TEST ENGINEER BUSS  
 V.I.N. 1J4GZ78S\*NA [REDACTED], TEST DATE 11/21/91, ROLL DATE 11/21/91  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 20.6 MPH, TEST WEIGHT 4652 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
VALVES -	

*ALL 1992.5  
Release*

*ALL OK*

FUEL LEAKAGE DURING IMPACT \_\_\_\_\_, POST IMPACT \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

0-90	1ST 5 MIN								0	*
2:12	POST 5 MIN								0	**
90-180	1ST 5 MIN								0	*
2:11	POST 5 MIN								0	**
180-270	1ST 5 MIN								0	*
2:00	POST 5 MIN								0	**
270-360	1ST 5 MIN								0	*
2:00	POST 5 MIN								0	**

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER - \_\_\_\_\_



FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4426, ITEM NUMBER 2Z118, TEST ENGINEER MANNEY  
 V.I.N. 1J4GZ68SXNA [REDACTED], TEST DATE 11/1/91, ROLL DATE 11/5/91  
 TEST TYPE; 30 MPH FRONT 30 DEGREE RIGHT ANULAR IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.2 MPH, TEST WEIGHT 4650 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER - <u>MA</u>	
CARBURETOR - <u>MA</u>	
-	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK ---

ELECTRIC FUEL PUMP RUN ---

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB /TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO- MET	FILL CAP	OTHER ***	TOTAL
0-90 !1ST 5 MIN !									0 *
<u>2:12</u> !POST 5 MIN!									0 **
90-180 !1ST 5 MIN !									0 *
<u>2:09</u> !POST 5 MIN!									0 **
180-270 !1ST 5 MIN !									0 *
<u>2:00</u> !POST 5 MIN!									0 **
270-360 !1ST 5 MIN !									0 *
<u>2:00</u> !POST 5 MIN!									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER - ---

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4472, ITEM NUMBER 2Z285, TEST ENGINEER BUSS  
 V.I.N. 1J4GZ88S6PC [REDACTED], TEST DATE 12/10/91, ROLL DATE 12/10/91  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22 GALLONS  
 TEST SPEED 30.3 MPH, TEST WEIGHT 4668 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	Contacted by track bar bracket. Left front corner. Contacted by differential housing on rear.
FILLER TUBE -	OK
CAP -	OK
FUEL FILTER -	OK
GROMMET -	NA
FUEL PUMP -	OK
STRAPS -	OK
LINES -	OK
AIR CLEANER -	NA
VALVES -	NA

IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

0-90	1ST 5 MIN								0	*
2:16	POST 5 MIN								0	**
90-180	1ST 5 MIN								0	*
2:17	POST 5 MIN								0	**
180-270	1ST 5 MIN								0	*
2:06	POST 5 MIN								0	**
270-360	1ST 5 MIN								0	*
2:10	POST 5 MIN								0	**

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4452, ITEM NUMBER 20141R, TEST ENGINEER BUSS  
 V.I.N. 1J4G678S\*NA [REDACTED], TEST DATE 11/22/41, HOLD DATE 11/22/41  
 FUEL: TYPE AND QUANTITY - 1767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 20.2 MPH, TEST WEIGHT 4187 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER NECK -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINE -	
AIR CLEANER -	
VALVES -	

FUEL LEAKAGE DURING IMPACT 0.2 POST IMPACT 0.2

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN TEST

90-180 (15P 5 MIN)	0.0	*
177 (POST 5 MIN)	0.0	**
90-180 (15P 5 MIN)	0.0	*
174 (POST 5 MIN)	0.0	**
180-270 (15P 5 MIN)	0.0	*
172 (POST 5 MIN)	0.0	**
170-160 (15P 5 MIN)	0.0	*
172 (POST 5 MIN)	0.0	**

0.000000 UNLS PER MINUTE, \*\* 0.000000 PER MINUTE

\*\*\* OTHER

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4561, ITEM NUMBER 3Z136, TEST ENGINEER MANNEY  
 V.I.N. 1J4GZ88Y0PC [REDACTED] TEST DATE 5/4/92 ROLL DATE 5/6/92  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 21.7 GALLONS  
 TEST SPEED 50.3 MPH, TEST WEIGHT 4834 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	CONTACTS: BUMPER, TRK BAR, TRK BAR BRKT, TAIL PIPE, AXLE
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	LEFT J-HOOK SLIPPED OUT OF SLOT
LINES -	
AIR CLEANER -	
VALVES -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0  
 POST TEST PRESSURE CHECK

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB	FUEL	AIR	FUEL	FUEL	GRO-	FILL	OTHER	TOTAL
		PUMP	CLEAN	TANK	FILT	MET	CAP	***	
0-90 !1ST 5 MIN !	!	!	!	!	!	!	!	!	0 !*
2:18 !POST 5 MIN!	!	!	!	!	!	!	!	!	0 !**
90-180 !1ST 5 MIN !	!	!	!	!	!	!	!	!	0 !*
2:15 !POST 5 MIN!	!	!	!	!	!	!	!	!	0 !**
180-270 !1ST 5 MIN !	!	!	!	!	!	!	!	!	0 !*
2:06 !POST 5 MIN!	!	!	!	!	!	!	!	!	0 !**
270-360 !1ST 5 MIN !	!	!	!	!	!	!	!	!	0 !*
2:06 !POST 5 MIN!	!	!	!	!	!	!	!	!	0 !**

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE  
 \*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4570, ITEM NUMBER 32135, TEST ENGINEER MANNEY  
V.I.N. 1J4GZ88Y0PC [REDACTED], TEST DATE 5/13/92, ROLL DATE 5/15/92  
TEST TYPE; 30 MPH FRONT 30 DEGREE LEFT ANULAR IMPACT  
FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
TEST SPEED 32.5 MPH, TEST WEIGHT 4830 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	ON
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	NA
CARBURETOR -	NA

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK -

ELECTRIC FUEL PUMP RUN -

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL/PUMP	AIR/CLEAN	FUEL/TANK	FUEL/FILT	GRO-MET	FILL/CAP	OTHER ***	TOTAL
0-90 1ST 5 MIN									0 *
2:21 POST 5 MIN									0 **
90-180 1ST 5 MIN									0 *
2:19 POST 5 MIN									0 **
180-270 1ST 5 MIN									0 *
2:08 POST 5 MIN									0 **
270-360 1ST 5 MIN									0 *
2:10 POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER -

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4574, ITEM NUMBER 22137, TEST ENGINEER BUSS  
 V.I.N. 1J4GZ88Y3PC [REDACTED], TEST DATE 5/18/92 ROLL DATE 5/19/92  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22.0 GALLONS  
 TEST SPEED 30.6 MPH, TEST WEIGHT 4827 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	
-	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK \_\_\_\_\_

ELECTRIC FUEL PUMP RUN \_\_\_\_\_

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB/TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO-MET	FILL-CAP	OTHER ***	TOTAL
0-90 !1ST 5 MIN									00*
<u>2:21</u> !POST 5 MIN!									00**
90-180 !1ST 5 MIN									00*
<u>2:22</u> !POST 5 MIN!									00**
180-270 !1ST 5 MIN									00*
<u>2:06</u> !POST 5 MIN!									00**
270-360 !1ST 5 MIN									00*
<u>2:07</u> !POST 5 MIN!									00**

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER - \_\_\_\_\_

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC4576, ITEM NUMBER 3Z133, TEST ENGINEER WEIGEL  
 V.I.N. 1J4GZ88Y7PC [REDACTED], TEST DATE 5/20/92 ROLL DATE 5/22/92  
 TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT  
 FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 22 GALLONS

TEST SPEED 30.5 MPH, TEST WEIGHT 4830 POUNDS.

FUEL SYSTEM DATA	POST TEST CONDITION
TANK -	OK
FILLER TUBE -	
CAP -	
FUEL FILTER -	
GROMMET -	
FUEL PUMP -	
STRAPS -	
LINES -	
AIR CLEANER -	
CARBURETOR -	

POST IMPACT LEAKAGE(OZ); AT IMPACT 0, 1ST 5 MIN. 0, NEXT 25 MIN. 0

POST TEST PRESSURE CHECK N/A

ELECTRIC FUEL PUMP RUN N/A

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

ROLL TIME	CARB /TBI	FUEL PUMP	AIR CLEAN	FUEL TANK	FUEL FILT	GRO-MET	FILL-CAP	OTHER ***	TOTAL
0-90 !1ST 5 MIN									0 *
2:19 !POST 5 MIN									0 **
90-180 !1ST 5 MIN									0 *
2:21 !POST 5 MIN									0 **
180-270 !1ST 5 MIN									0 *
2:07 !POST 5 MIN									0 **
270-360 !1ST 5 MIN									0 *
2:08 !POST 5 MIN									0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

\*\*\* OTHER -





Chrysler Motors Corporation

# COMPLIANCE REPORT

**SUBJECT:** FUEL SYSTEM INTEGRITY - 1997 'ZJ' BODY, JEEP "GRAND CHEROKEE" SPORT UTILITY

**STANDARD IDENTIFICATION:** FMVSS 301 - Sections S3., S5., S6. and S7.

**STANDARD TITLE:** Fuel System Integrity

**APPROVALS:**

<u>NAME</u>	<u>Title</u>	<u>Signature</u>	<u>Date</u>
E.A. Zylik,	Department Manager	<u>E.A. Zylik</u>	<u>6/7/96</u>
D.F. BUSER,	Executive Engineer	<u>D.F. Buser</u>	<u>6/7/96</u>

Date Received by Safety Programs: \_\_\_\_\_

File No: 97-ZJ-301



Chrysler Motors Corporation

INTRODUCTION

**Subject:** Fuel System Integrity - 1997 'ZJ' Body, Jeep "Grand Cherokee" Sport Utility

**Object:** Verification of design compliance with the requirements of Federal Motor Vehicle Safety Standard No. 301.

**Procedure:** CP-194, CP-232, CP-233, CP-234, CP-245 and CP-246.

**Conclusions:** The Chrysler Corporation 1997 'ZJ' Body Jeep "Grand Cherokee" Sport Utility with U.V.W. of 10,000 lbs. and under, as design released, comply with the requirements of FMVSS 301 - Sections S3., S5., S6. and S7.

SAFETY DOCUMENTATION COMPLIANCE REPORT (Page 1 of 8)

Prepared by: Judson B Estes 6/7/96  
J.B. Estes, Product Development Engineer, Dept. 1060 Date

Approved by: E.A. Zylik 6/7/96  
E.A. Zylik, Department Manager, Dept. 1060 Date

Issued by: Jeep, Vehicle Impact Development

Safety Documentation Compliance Report

**FUEL SYSTEM INTEGRITY  
1997 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Federal Motor Vehicle Safety Standard No. 301 - Sections S3., S5., S6. and S7.

**DISCUSSION**

The Chrysler Corporation 1997 "ZJ-74" Body, Jeep "Grand Cherokee," Sport Utility vehicle is essentially carryover from the 1997 model. With exception of fuel filter relocated to the top of fuel sending unit module.

The "ZJ" is of unibody construction offered in 106 inch wheelbase.

The powertrain is comprised of a longitudinally mounted 4.0 litre (I6) and 5.2 litre (V8) multi-point injection (MPI) engines, 4-speed automatic transmission and 2 or 4-wheel drive configuration.

This vehicle is offered with four wheel Anti-Lock Brake System (ABS), as standard equipment.

Vehicle capacity including seating for five passengers, 23 gallon plastic fuel tank and 300 lbs. of luggage.

The fuel system consists of a 23 gallon plastic fuel tank with an in-tank electric fuel pump. The fuel tank is mounted aft of the rear axle. The filler neck is located on the left side of the vehicle.

The front bumper system consists of thermo plastic olefin (TPO) fascia with energy absorbing polypropylene foam supported by body integrated crossmember.

The rear bumper system consists of thermoplastic olefin (TPO) molded fascia supported by steel reinforcement beam and expanded polypropylene foam with energy absorbers in the guards area include a (TPO) step pad.

The rear structure of the 'ZJ' is available in four different build levels. The 'ZJ' can have a Trailer Hitch, a skid plate or a Reinforcing Bracket and a combination skid plate and Trailer Hitch.

Five vehicles were tested to demonstrate compliance of the "ZJ-74" to the requirements of FMVSS 301, Fuel System Integrity. Summaries I, II, III IV and V of these vehicles and test results are attached.

XT00649 & XT00652 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-194 "Fixed Collision Barrier 30 MPH Frontal Impact Test",  
Change 'K'.

VC's 4419, 4426, 4459, 4570, 4576 and 4724 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

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Safety Documentation Compliance Report

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CP-232 "Fixed Collision Barrier, 30 mph Angled Frontal Impact Test," Change 'F'.

VC's 4449 and 4452 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-233 "Moving Barrier 20 mph Lateral Impact Test," Change 'H'.

VC's 4472 and 4561 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-234 "Moving Barrier 30 mph Rear Impact Test," Change 'H'.

The above test vehicles, did not experience fluid losses that exceeds the fuel spillage criteria specified in Chrysler Corporation Compliance Procedure:

CP-246 "Fuel System Integrity," Change 'G'.

Following barrier impact vehicles were further tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-245 "Fuel System Integrity - Static Rollover Test," Change 'F'.

Fluid leakage during and following impact and during static rollover in these tests were within the limit specified in FMVSS 301 - Sections S5.5 and S5.6.

Based on the above, the 1997 "ZJ-74" Body, Jeep "Grand Cherokee" Sport Utility vehicle, as design released, comply with the requirements of FMVSS 301 - Sections S3., S5., S6. and S7.

Prepared by: Judson B Estes  
J.B. Estes,  
Date: 6/7/96

File No: 97-ZJ-301

Safety Documentation Compliance Report

**SUMMARY I  
FUEL SYSTEM INTEGRITY  
1997 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Rollover (Oz.)	Max in Any Position (Oz/Min)
x XT00649 (5/6/96)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ78Y0VC [REDACTED]	-0-	-0-	-0-	-0-
X XT00650 (5/6/96)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 2-Wheel Drive, Tilt Steering Column, 23 Gallon Fuel Tank, Auto Trans. and 5.2 Litre (V8) MPI Engine.	1J4GZ58S5VC [REDACTED]	-0-	-0-	-0-	-0-
XT00651 (5/7/96)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Tilt Steering Column, Auto Transmission and Jeep Engine.	1J4GZ78SXNA [REDACTED]	-0-	-0-	-0-	-0-

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: Judson B. Estes  
 J.B. Estes,  
 Date: 6/7/96

File No: 97-ZJ-301

**SUMMARY II  
FUEL SYSTEM INTEGRITY  
1997 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (OZ)			
				At Impact	Following 30 Mins.	Rollover (Oz.)	Max in Any Position (Oz/Min)
YXT00652 (5/8/96)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ78Y2VC [REDACTED]	-0-	-0-	-0-	-0-
VC4449* (11/21/91)	20 MPH Lateral Left	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1996 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: Judson B Estes  
 J.B. Estes,  
 Date: 6/7/96

File No: 97-ZJ-301

PE10-031-Chrysler-001605

CONFIDENTIAL BUSINESS INFORMATION

SUMMARY III  
 FUEL SYSTEM INTEGRITY  
 1997 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (Oz)			
				At Impact	Following 30 Mins.	Rollover (Oz.)	Max in Any Position (Oz/Min)
VC4452* (11/22/91)	20 MPH Lateral Right	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-
VC5967 (06/06/96)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine & Reinforcing Bracket.	1J4GZ78Y3VC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1996 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: Judrea B Estes  
 J.B. Estes,  
 Date: 6/7/96



INFORMATION Redacted PURSUANT TO THE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6)



Chrysler Corporation

# COMPLIANCE REPORT

**SUBJECT:** FUEL SYSTEM INTEGRITY - 1998 'ZJ' BODY, JEEP "GRAND CHEROKEE" SPORT UTILITY

**STANDARD IDENTIFICATION:** FMVSS 301 - Sections S3., S5., S6. and S7.

**STANDARD TITLE:** Fuel System Integrity

**APPROVALS:**

<u>NAME</u>	<u>Title</u>	<u>Signature</u>	<u>Date</u>
E.A. Zylik, Department Manager		<i>E.A. Zylik</i>	6-17-97
D.F. BUSER, Executive Engineer		<i>Donald D Buser</i>	6/17/97

Date Received by Safety Programs: \_\_\_\_\_

File No: 98-ZJ-301



Chrysler Corporation

INTRODUCTION

Subject: Fuel System Integrity - 1998 'ZJ' Body, Jeep "Grand Cherokee" Sport Utility

Object: Verification of design compliance with the requirements of Federal Motor Vehicle Safety Standard No. 301.

Procedure: CP-194, CP-232, CP-233, CP-234, CP-245 and CP-246.

Conclusions: The Chrysler Corporation 1998 'ZJ' Body Jeep "Grand Cherokee" Sport Utility with U.V.W. of 10,000 lbs. and under, as design released, comply with the requirements of FMVSS 301 - Sections S3., S5., S6. and S7.

SAFETY DOCUMENTATION COMPLIANCE REPORT (Page 1 of 8)

Prepared by: Judson B. Estes 6/17/97  
J.B. Estes, Senior Development Engineer, Dept. 1060 Date

Approved by: E.A. Zylik 6-17-97  
E.A. Zylik, Department Manager, Dept. 1060 Date

Issued by: Jeep, Vehicle Impact Development



## Safety Documentation Compliance Report

**FUEL SYSTEM INTEGRITY**  
**1998 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Federal Motor Vehicle Safety Standard No. 301 - Sections S3., S5., S6. and S7.

**DISCUSSION**

The Chrysler Corporation 1998 "ZJ-74" Body, Jeep "Grand Cherokee," Sport Utility vehicle is essentially carryover from the 1997 model.

The "ZJ" is of unibody construction offered in 106 inch wheelbase.

The powertrain is comprised of a longitudinally mounted 4.0 litre (I6) and 5.2 and 5.9 litre (V8) multi-point injection (MPI) engines, 4-speed automatic transmission and 2 or 4-wheel drive configuration.

This vehicle is offered with four wheel Anti-Lock Brake System (ABS), as standard equipment.

Vehicle capacity including seating for five passengers, 23 gallon plastic fuel tank and 300 lbs. of luggage.

The fuel system consists of a 23 gallon plastic fuel tank with an in-tank electric fuel pump. The fuel tank is mounted aft of the rear axle. The filler neck is located on the left side of the vehicle.

The front bumper system consists of thermo plastic olefin (TPO) fascia with energy absorbing polypropylene foam supported by body integrated crossmember.

The rear bumper system consists of thermoplastic olefin (TPO) molded fascia supported by steel reinforcement beam and expanded polypropylene foam with energy absorbers in the guards area include a (TPO) step pad.

The rear structure of the 'ZJ' is available in four different build levels. The 'ZJ' can have a Trailer Hitch, a skid plate or a Reinforcing Bracket and a combination skid plate and Trailer Hitch.

Five vehicles were tested to demonstrate compliance of the "ZJ-74" to the requirements of FMVSS 301, Fuel System Integrity. Summaries I, II, III IV and V of these vehicles and test results are attached.

XT00649 & XT00652 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-194 "Fixed Collision Barrier 30 MPH Frontal Impact Test", Change 'K'.

VC's 4419, 4426, 4459, 4570, 4576 and 4724 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-232 "Fixed Collision Barrier, 30 mph Angled Frontal Impact Test," Change 'F'.

File No: 98-ZJ-301

Safety Documentation Compliance Report

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VC's 4449 and 4452 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-233 "Moving Barrier 20 mph Lateral Impact Test," Change 'H'.

VC's 4472 and 4561 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-234 "Moving Barrier 30 mph Rear Impact Test," Change 'H'.

The above test vehicles, did not experience fluid losses that exceeds the fuel spillage criteria specified in Chrysler Corporation Compliance Procedure:

CP-246 "Fuel System Integrity," Change 'G'.

Following barrier impact vehicles were further tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-245 "Fuel System Integrity - Static Rollover Test," Change 'F'.

Fluid leakage during and following impact and during static rollover in these tests were within the limit specified in FMVSS 301 - Sections S5.5 and S5.6.

Based on the above, the 1998 "ZJ-74" Body, Jeep "Grand Cherokee" Sport Utility vehicle, as design released, comply with the requirements of FMVSS 301 - Sections S3., S5., S6. and S7.

Prepared by: \_\_\_\_\_

*Judson B. Estes*  
J.B. Estes,

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

*6/17/92*

File No: 98-ZJ-301

**SUMMARY I  
FUEL SYSTEM INTEGRITY  
1998 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			Max in Any Position (Oz/Min)
				At Impact	Following 30 Mins.	Rollover (Oz.)	
XT00649 (5/6/96)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ78Y0VC [REDACTED]	-0-	-0-	-0-	-0-
XT00650 (5/6/96)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 2-Wheel Drive, Tilt Steering Column, 23 Gallon Fuel Tank, Auto Trans. and 5.2 Litre (V8) MPI Engine.	1J4GZ58S5VC [REDACTED]	-0-	-0-	-0-	-0-
XT00651 (5/7/96)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Tilt Steering Column, Auto Transmission and Jeep Engine.	1J4GZ78SXNA [REDACTED]	-0-	-0-	-0-	-0-

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: Judson B. Estes  
J.B. Estes,  
Date: 6/17/99

**SUMMARY II**  
**FUEL SYSTEM INTEGRITY**  
**1998 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Leakage Summary (oz)

<u>Test No.</u> <u>(Date)</u>	<u>Impact Mode</u>	<u>Vehicle Model &amp; Description</u>	<u>Vehicle Identification No.</u>	<u>At Impact</u>	<u>Following 30 Mins.</u>	<u>Rollover (Oz.)</u>	<u>Max in Any Position (Oz/Min)</u>
XT00652 (5/8/96)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ78Y2VC [REDACTED]	-0-	-0-	-0-	-0-
VC4449* (11/21/91)	20 MPH Lateral Left	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1996 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: Judson B. Estes  
 J.B. Estes,  
 Date: 6/17/97

File No: 98-ZJ-301

CONFIDENTIAL BUSINESS INFORMATION

**SUMMARY III  
FUEL SYSTEM INTEGRITY  
1998 'ZJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Test No. <u>(Date)</u>	Impact <u>Mode</u>	Vehicle Model <u>&amp; Description</u>	Vehicle <u>Identification No.</u>	<u>Leakage Summary (oz)</u>			
				<u>At Impact</u>	<u>Following 30 Mins.</u>	<u>Rollover (Oz.)</u>	<u>Max in Any Position (Oz/Min)</u>
VC4452* (11/22/91)	20 MPH Lateral Right	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-
VC5967 (06/06/96)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine & Reinforcing Bracket.	1J4GZ78Y3VC [REDACTED]	-0-	-0-	-0-	-0-

\* Tests are carryover from 1996 Compliance Report, Reference File No. ZJ-SUPL-301.

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: Judson B. Estes  
J.B. Estes,  
Date: 6/17/97

CONFIDENTIAL BUSINESS INFORMATION





Chrysler Corporation

# COMPLIANCE REPORT

SUPPLEMENT NO. 1

**SUBJECT:** FUEL SYSTEM INTEGRITY - 1993 'EJ' BODY, JEEP "GRAND CHEROKEE"  
SPORT UTILITY

**STANDARD IDENTIFICATION:** FMVSS 301 - Sections S3., S5., S6. and S7.

**STANDARD TITLE:** Fuel System Integrity

**APPROVALS:**

NAME	Title	Signature	Date
G.M. Aboud, Department Manager		<i>G. Aboud</i>	06-18-92
R.P. LUNDBERG, Executive Engineer		<i>R.P. Lundberg</i>	6-18-92

Date received by Automotive Safety and Security \_\_\_\_\_

Supplement No. 1  
File No. 2 JUNE 1992

14250 Plymouth Road  
Box 33514  
Detroit MI 48232 5514

## Safety Documentation Compliance Report

## INTRODUCTION

**Subject:** Fuel System Integrity - 1993 'ZJ' Body, Jeep "Grand Cherokee" Sport Utility

**Object:** Verification of design compliance with the requirements of Federal Motor Vehicle Safety Standard No. 301.

**Procedure:** CP-194, CP-232, CP-233, CP-234, CP-245 and CP-246.

**Conclusions:** The Chrysler Corporation 1993 'ZJ' Body Jeep "Grand Cherokee" Sport Utility with U.V.W. of 10,000 lbs. and under, as design released, comply with the requirements of FMVSS 301 - Sections S3., S5., S6. and S7.

SAFETY DOCUMENTATION COMPLIANCE REPORT (Page 1 of 7)

Prepared by: *V.P. Hannawi* 06/16/92  
 V.P. Hannawi, Safety Specialist, Dept. 1060 Date

Approved by: *G.M. Aboud* 06-18-92  
 G.M. Aboud, Manager, Department 1060 Date

Issued by: Jeep/Truck Safety Program Management

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**FUEL SYSTEM INTEGRITY**  
**1993 'BJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY**

Federal Motor Vehicle Safety Standard No. 301 - Sections S3., S5., S6. and S7.

**DISCUSSION**

The Chrysler Corporation 1993 "ZJ-74" Body, Jeep "Grand Cherokee," is an all new sport utility vehicle introduced for the 1993 model year.

Original launch is scheduled for January, 1992 with the following configuration:

- Five (5) seating capacity - front bucket seats.
- 23 gallon plastic fuel tank - rear mount.
- Standard four wheel anti-lock brake system (ABS).
- 106 inch wheelbase.
- 4-door body style.
- 300 lbs. of luggage.

The powertrain is comprised of a longitudinally mounted 4.0 litre (I6) and 5.2 litre (V8) multi-point injection (MPI) engines, 4-speed automatic or 5-speed manual transmission and 4-wheel drive configuration.

The fuel system consists of a 23 gallon plastic fuel tank with an in-tank electric fuel pump. The fuel tank is mounted aft of the rear axle. The filler neck is located on the left side of the vehicle.

The front bumper system consists of thermo plastic olefin (TPO) fascia with energy absorbing polypropylene foam supported by body integrated crossmember.

The rear bumper system consists of thermoplastic olefin (TPO) molded fascia supported by steel reinforcement beam and expanded polypropylene foam with energy absorbers in the guards area include a (TPO) step pad.

Vehicle is equipped with two spoke sport steering wheel with driver air bag as a supplemental restraint and 3-point active seat belt as a primary restraint system. The passenger side will have a 3-point active seat belt system as primary/only restraint system.

In January 1993, this vehicle will be re-launched offering additional option of 2-wheel drive (4x2) configuration. A supplement to this compliance document will be issued upon completion of compliance testing.

Twelve vehicles were tested to demonstrate compliance of the "ZJ-74" to the requirements of FMVSS 301, Fuel System Integrity. Summaries I, II, III and IV of these vehicles and test results are attached.

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**DISCUSSION** (continued)

VC's 4421, 4432 and 4574 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedures:

CP-194 "Fixed Collision Barrier 30 MPH Frontal Impact Test", Change J.

VC's 4419, 4426, 4459, 4570 and 4576 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedures:

CP-232 "Fixed Collision Barrier, 30 mph Angled Frontal Impact Test," Change E.

VC's 4449 and 4452 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedures:

CP-233 "Moving Barrier 20 mph Lateral Impact Test," Change G.

VC's 4472 and 4561 were prepared and tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-234 "Moving Barrier 30 mph Rear Impact Test," Change H.

The above test vehicles, did not experience fluid losses that exceeds the fuel spillage criteria specified in Chrysler Corporation Compliance Procedure:

CP-246 "Fuel System Integrity," Change G.

Following barrier impact vehicles were further tested in accordance with the following Chrysler Corporation Compliance Procedure:

CP-245 "Fuel System Integrity - Static Rollover Test," Change F.

~~Fluid leakage during and following impact and during static rollover in these tests were within the limit specified in FMVSS 301 - Sections 85.5 and 85.6.~~

Based on the above, the 1993 "ZJ-74" Body, Jeep "Grand Cherokee" Sport Utility vehicle, as design released, comply with the requirements of FMVSS 301 - Sections 83., 85., 86. and 87.

Prepared by:

*V.P. Hannawi*  
V.P. Hannawi

Date:

06/16/92

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**SUMMARY I**  
**FUEL SYSTEM INTEGRITY**  
 1993 'LJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Rollover (Oz.)	Max in Any Position (Oz./Min)
VC4421 (10/25/91)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (16) MPI Engine.	1J4GZ78S8NA [REDACTED]	-0-	-0-	-0-	-0-
VC4432 (11/07/91)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, 23 Gallon Fuel Tank, Manual Trans. and 4.0 Litre (16) MPI Engine.	1J4GZ78S3NA [REDACTED]	-0-	-0-	-0-	-0-
VC4419 (10/24/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, Non-tilt Steering Column, Man. Transmission and 4.0 Litre (16) MPI Engine.	1J4GE78SXNA [REDACTED]	-0-	-0-	-0-	-0-

**Allowable Leakage by Weight**

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: *V.P. Hannawi*  
 V.P. Hannawi  
 Date: 06/16/92

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SUMMARY II  
 FUEL SYSTEM INTEGRITY  
 1993 'LJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (OZ)			
				At Impact	Following 30 Mins.	Max in Any Position (OZ.)	Position (OZ./MIN)
VC4426 (11/01/91)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (16) MPI Engine.	1J4G26891MA [REDACTED]	-0-	-0-	-0-	-0-
VC4459 (11/20/91)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-wheel Drive, Tilt Steering Column, 23 Gallon Fuel Tank, Manual Transmission and 4.0 Litre (16) MPI Engine.	1J4G28893PC [REDACTED]	-0-	-0-	-0-	-0-
VC4449 (11/21/91)	20 MPH Lateral Left	Jeep "Grand Cherokee" Sport Utility, 4-wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto Transmission and 4.0 Litre (16) MPI Engine.	1J4G28892PC [REDACTED]	-0-	-0-	-0-	-0-

Allowable Leakage by Weight

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: V.P. Hannawi  
 V.P. Hannawi

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SUMMARY III  
 FUEL SYSTEM INTEGRITY  
 1993 'LJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (Oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover Position (Oz.)	Position (Oz./Min)
VC4452 (11/22/91)	20 MPH Lateral Right	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 4.0 Litre (I6) MPI Engine.	1J4GZ88V2PC [REDACTED]	-0-	-0-	-0-	-0-
VC4472 (12/10/91)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Auto. Transmission and 4.0 Litre MPI Engine.	1J4GZ88S6PC [REDACTED]	-0-	-0-	-0-	-0-
VC4561 (05/04/92)	Rear	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y0PC [REDACTED]	-0-	-0-	-0-	-0-

Allowable Leakage by Weight

1. One (oz) at impact.
2. Not more than one (oz) per minute following 30 minutes.
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one (oz) per minute thereafter.

Prepared by: [Signature]  
 V.P. Hannawi  
 Date: 06/16/92

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SUMMARY IV  
 FUEL SYSTEM INTEGRITY  
 1993 'EJ' BODY JEEP "GRAND CHEROKEE" SPORT UTILITY

Test No. (Date)	Impact Mode	Vehicle Model & Description	Vehicle Identification No.	Leakage Summary (oz)			
				At Impact	Following 30 Mins.	Max in Any Rollover Position (Oz.)	Max in Any Rollover Position (Oz/Min)
VC4570 (05/13/92)	30° Lt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y0PC [REDACTED]	-0-	-0-	-0-	-0-
VC4574 (05/18/92)	Flat Front	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y3PC [REDACTED]	-0-	-0-	-0-	-0-
VC4576 (05/20/92)	30° Rt. Angle	Jeep "Grand Cherokee" Sport Utility, 4-Wheel Drive, 23 Gallon Fuel Tank, Tilt Steering Column, Auto. Transmission and 5.2 Litre (V8) MPI Engine.	1J4GZ88Y7PC [REDACTED]	-0-	-0-	-0-	-0-

Allowable Leakage by Weight

1. One (oz) at impact
2. Not more than one (oz) per minute following 30 minutes
3. Five (oz) for first 5 minutes after each 90° rotation and not more than one per minute thereafter.

Prepared by: V.P. Hannawi  
 V.P. Hannawi

Date: 06/16/92

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