



Navistar, Inc.
2801 Navistar Drive
Liste, IL 60532 USA

P: 331-332-1590
W: navistar.com

R. L. Van Laar
Compliance Manager

Stephen A. Ridella
Office of Defects Investigation
Enforcement
1200 New Jersey Ave. S.E.
Washington, D.C. 20590

September 15, 2017

Ref.: NEF-106kmb
EA16-001

Dear Mr. Ridella:

This letter is in response to your letter dated 08/09/2017 that Navistar received by email on the same date regarding the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) Engineering Analysis (EA16 001), issued to evaluate the integrity of the Compressed Natural Gas (CNG) fuel systems on certain model year (MY) 2014 Freightliner Business Class M2 vehicles, on substantially similar Freightliner vehicles, and on certain other medium- and heavy-duty CNG peer vehicles.

Navistar has researched the CNG fuel containers used on Navistar's CNG powered DuraStar, TranStar, and WorkStar units and is providing the attached information in response to your request.

The undersigned should be contacted for any additional information regarding this issue at (331) 332-1590.

Sincerely,

A black rectangular box redacting the signature of R. L. Van Laar.

R. L. Van Laar
Product Compliance Manager
Navistar, Inc.

1. State the number of subject vehicles manufactured to date, grouped by vehicle make, model and model year. Also, for each vehicle make, model and model year grouping, state the number of subject vehicles where Navistar installed the subject component(s) as original equipment.

Response 1:

Navistar manufactured as original equipment a total of 142 CNG powered vehicles from 2011 through 2016 model years and updated an additional 27 units with aftermarket installations. See detailed make/model/year table below.

Make	Model	Model Year	Installation Location	Number of vehicles
Navistar	DuraStar	2012		
		Aftermarket Installation		1
		Orginial Equipment		2
		2013		
		Orginial Equipment		17
Navistar	TranStar	2013		
		Aftermarket Installation		2
		Orginial Equipment		1
		2014		
		Orginial Equipment		52
		2015		
		Orginial Equipment		9
		2016		
		Orginial Equipment		3
Navistar	WorkStar	2011		
		Aftermarket Installation		24
		2012		
		Orginial Equipment		27
		2013		
		Orginial Equipment		29
		2014		
		Orginial Equipment		2
	Grand Total			169

2. State the number of subject vehicles Navistar is aware of, that have experienced Level 3 damage to one or more subject components, grouped by vehicle make, model and model year. Multiple incidents involving the same vehicle are to be counted together as one.

Response 2:

Navistar is not aware of any of the units or subject components experiencing level 3 damage.

3. State the number of subject components Navistar has installed as original equipment on subject vehicles, sold for service replacement and/or aftermarket installation to date, grouped by calendar year of vehicle production (for original equipment) or calendar year of fuel container sale (for service replacement and/or aftermarket installation), and by fuel container designation (Type 1, Type 2, Type 3 or Type 4).

Response 3:

Navistar manufactured as original equipment a total of 142 CNG powered vehicles and updated an additional 27 units with aftermarket installations. See fuel container details in the following table. Note that the 7-digit code listed below would appear on the vehicle line set ticket.

Model Year		Fuel Container Type	Component Count
2011	N/A - Bought directly from Agility	NA	24
2012	0015DRW - Total 55 Diesel Gallon Equivalent: One 40 DGE, Mounted Right Side Under Cab, One 15 DSG, Mounted Left Side Back of Cab	3	5
	0015STH - (1) Total 60 Diesel Gallon Equivalent, Mounted Above Rail Back of Cab	Researching	24
	N/A - Bought directly from Agility	NA	1
2013	0015DRW - Total 55 Diesel Gallon Equivalent: One 40 DGE, Mounted Right Side Under Cab, One 15 DSG, Mounted Left Side Back of Cab	3	9
	0015SKZ - Temporary, Top Draw, Steel, D-Style, 16" Tank Depth, 50 US Gal (189L), with Quick Connect Outlet, Mounted Left Side, Back of Cab	4	1
	0015STH - (1) Total 60 Diesel Gallon Equivalent, Mounted Above Rail Back of Cab	Researching	30
	0015STZ - Temporary; to be used by TSC for Certification and Road Test Only, Customer/Body Builder to Supply & Install Permanent CNG Tank	NA	7
	N/A - Bought directly from Agility	NA	2
2014	0015DSB - Total 75 Diesel Gallon Equivalent: One 45 DGE, Mounted Right Side Under Cab, One 30 DGE, Mounted Left Side Back of Cab	4	22
	0015DSC - Total 57 Diesel Gallon Equivalent: One 40 DGE, Mounted Right Side Under Cab, One 17 DGE, Mounted Left Side Under Cab	4	23
	0015DSE - Total 75 Diesel Gallon Equivalent: One 45 DGE, Mounted Right Side Under Cab, One 30 DGE, Mounted Left Side Under Cab	4	1
	0015SKZ - Temporary, Top Draw, Steel, D-Style, 16" Tank Depth, 50 US Gal (189L), with Quick Connect Outlet, Mounted Left Side, Back of Cab	NA	5

	0015STH - (1) Total 60 Diesel Gallon Equivalent, Mounted Above Rail Back of Cab	Researching	2
	0015SVG - Total 75 Diesel Gallon Equivalent: Five 15 DGE, Mounted Above Rail Back of Cab, for 3600 psi system	3	1
2015	0015DSE - Total 75 Diesel Gallon Equivalent: One 45 DGE, Mounted Right Side Under Cab, One 30 DGE, Mounted Left Side Under Cab	4	2
	0015SKZ - Temporary, Top Draw, Steel, D-Style, 16" Tank Depth, 50 US Gal (189L), with Quick Connect Outlet, Mounted Left Side, Back of Cab	NA	2
	0015STZ - Temporary; to be used by TSC for Certification and Road Test Only, Customer/Body Builder to Supply & Install Permanent CNG Tank	NA	5
2016	0015STZ - Temporary; to be used by TSC for Certification and Road Test Only, Customer/Body Builder to Supply & Install Permanent CNG Tank	NA	3
Grand Total			169

4. State the number of subject components Navistar is aware of, that have experienced Level 3 damage. For each such container, please provide:
- Calendar year of vehicle production (for original equipment) or calendar year of fuel container sale (for service replacement and/or aftermarket installation);
 - End-of-life date;
 - Calendar year the fuel container was condemned;
 - Fuel container designation (Type 1, Type 2, Type 3 or Type 4); and
 - Summary description of damage that condemned the cylinder (i.e. object impact or abrasion; fire exposure; chemical exposure; improper repair attempt).

Response 4:

Navistar manufactured as original equipment a total of 142 CNG powered vehicles and updated an additional 27 units with aftermarket installations. Navistar has received zero reports or warranty claims related to level 3 damage on CNG fuel containers in these vehicles.

5. State the number of each of the following, received by Navistar, or of which Navistar is otherwise aware, which relate to, or may relate to, the integrity of the subject components:
- Reports involving a crash;
 - Reports involving a fire or explosion;
 - Reports involving injury or fatality;
 - Property damage claims;
 - Third-party arbitration proceedings where Navistar is or was a party to the arbitration; and
 - Lawsuits, both pending and closed, in which Navistar is or was a defendant or codefendant.

For subparts "a" through "f," state the total number of each item (e.g., crash reports, injury reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a crash report and an injury report involving the

same incident in which a crash occurred are to be counted as a crash report, an injury report and a lawsuit report).

Response 5:

Navistar has not received any reports of crash, fire, explosion, injury, fatality, or property damage claims for or related to the subject components and Navistar is not aware of any. Navistar has not received any lawsuits or been involved in arbitration proceedings related to any CNG tank on Navistar vehicles and Navistar is not aware of any such litigation or arbitration proceedings

In addition, for each incident related to items "a" through "f," provide a summary description of the alleged problem and causal and contributing factors and Navistar's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "e" and "f," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Response 5b:

No reports of items a-f as stated above.

6. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the integrity of the subject components or the fuel systems they are part of, that have been conducted, are being conducted, are planned, or are being planned by, or for, Navistar. For each such action, provide the following information:
- a. Action title or identifier;
 - b. The actual or planned start date;
 - c. The actual or expected end date;
 - d. Brief summary of the subject and objective of the action;
 - e. Engineering group(s), supplier(s) and/or third-party provider(s) responsible for designing and for conducting the action; and
 - f. A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

Response 6:

Navistar has no testing actions currently planned for past or current product at this time related to the CNG fuel tanks or fuel systems. Attached is a sample of our initial CNG fuel tank product certifications for both our DuraStar and TranStar models.

- a. Action title or identifier;

Response: Statement of Compliance and FMVSS 304 Compressed natural gas fuel container integrity tests.

- b. The actual or planned start date;

Response: 2007

- c. The actual or expected end date;

Response: 8-30-2012

d. Brief summary of the subject and objective of the action;

Response: Navistar's CNG System supplier (Agility) provided FMVSS 304, FMCSR 393.68, and ANSI NGV2-2007 test results required by the Navistar supplier quality acceptance process.

e. Engineering group(s), supplier(s) and/or third-party provider(s) responsible for designing and for conducting the action;

Response: Navistar's CNG System supplier was Agility. Testing was performed for Agility by two third-party testers; Structural Composite Industries (SCI) and Authorized Testing Inc.

f. A brief summary of the findings and/or conclusions resulting from the action.

Response: Test results show that the CNG tanks did comply with the requirements of FMVSS 304, FMCSR 393.68, and ANSI NGV2-2007.

- Please refer to test documents in Attachment 1 "Request #6 – Statement of Compliance NCD 0710" and Attachment 2 "Request #6 – Statement of Compliance NCD-0375".

ATTACHMENT 1

Request #6 – Statement of Compliance NCD-0710

Statement of Compliance

Navistar, Inc.
Lisle, Illinois

No. NCD- 0710

Issued By:

Body Systems Engineering	
Chassis Systems Engineering	X
Electrical / Electronic Systems Engineering	
Thermal Management	

Object: Program 782 Fuel System Compliance With Side Saddle CNG Tanks

The object described above is in conformity with the requirements of the following standard/regulation:

Standard/Regulation No.	Title	Section No.	Revision / Issue Date
ANSI NGV 2-2007	American National Standard For Compressed Natural Gas Vehicle Fuel Containers	All	4 th Edition-2007
FMVSS 304	Compressed Natural Gas Fuel Container Integrity	All	October 30, 2000
FMSCR 393.68	Compressed Natural Gas Fuel Containers	All	August 30, 2012

Supporting Documentation:

Document No.	Title	Revision / Issue Date
Not Applicable	Agility Fuel Tank Description	May, 2012
Not Applicable	Quantum Technologies Compliance Statement (30DGE LH Tank PN113907)	November 21, 2012
Not Applicable	Quantum Technologies Compliance Statement (45DGE RH Tank PN113028)	November 21, 2012
90316G & 91196H	Side Saddle Tank Releases	August 13, 2012
3983411C91	Tank, Fuel, RH CNG Fuel 45 DGE	January, 2013
3983412C91	Tank, Fuel, LH CNG Fuel 30 DGE	January, 2013
N150072332	Fuel Tanks Side Saddle	July 27, 2012

Written By:

[Redacted Signature]

1/25/13

Product Development Engineer – Michael Olesnavich

Written By:

[Redacted Signature]

1/25/13

Product Development Engineer – Dale Norman

Approved By:

[Redacted Signature]

Chief Engineer – William Cornish

Date: 1-25-13

The following pages detail the component specifications and details for the Agility Fuel Systems CNG system. System working pressure is 3600 psi. Unless specified otherwise, each of the following components listed may also substitute an equivalent part from an approved vendor.

We have 2 different types of cylinders that will be used in the range of product configurations being considered.

The Behind the Cab configuration will utilize Type 3 CNG cylinders in the 21 x 80 size. Current approved suppliers of these cylinders are:

- Dynetek Industries *UTI, OMB, UTI*
- Structural Composites Industries *OMB + EMER OR CIRCLE SEAL*
- Luxfer

The Rail Mount configuration will utilize Type 4 CNG cylinders of various diameter and length depending on the configuration. Current approved suppliers for these cylinders are:

- Lincoln *OMB, CIRCLE SEAL*
- Quantum *Yong do, CIRCLE SEAL*



392L – 25 MPa Tank ASM (Part number: 113907)

This is to certify that Quantum 25" CNG Tank with part number 113907 complies with all requirements of NGV2-2007 and FMVSS304. The 25" diameter tank is a design deviation from part number: 101994, which served as a baseline tank passing all testing per NGV2 requirements. Any design deviation from the baseline tank would only require a selected suite of testing to comply. The chart below highlights the testing that was already completed with the baseline tank as well as the additional testing that was required for the 25" diameter tank to also meet the standard.

(Test Requirements for Designs and Design Changes)

Required Tests per NGV2 (Section)	Test	Baseline Tank PN: 101994	Deviated Tank PN: 113907
18.6	Hydrostatic Burst Test	X	X
18.3	Ambient Cycling Test	X	X
18.5	Extreme-temp. cycling	X	
18.9	Bonfire Test	X	X
18.11	Penetration Test	X	
18.7	Composite Flaw Tolerance Test	X	
18.1	Accelerated Stress Rupture Test	X	
18.8	Drop Test	X	
18.12	Permeation Test	X	
18.4	Environmental Test	X	
18.3	Natural Gas Cycling Test	X	

David Rea
Director, Fuel Systems Engineering

Reza Parchami
Quality Engineering, Manager

11/21/12



603L – 25 MPa Tank ASM (Part number: 113028)

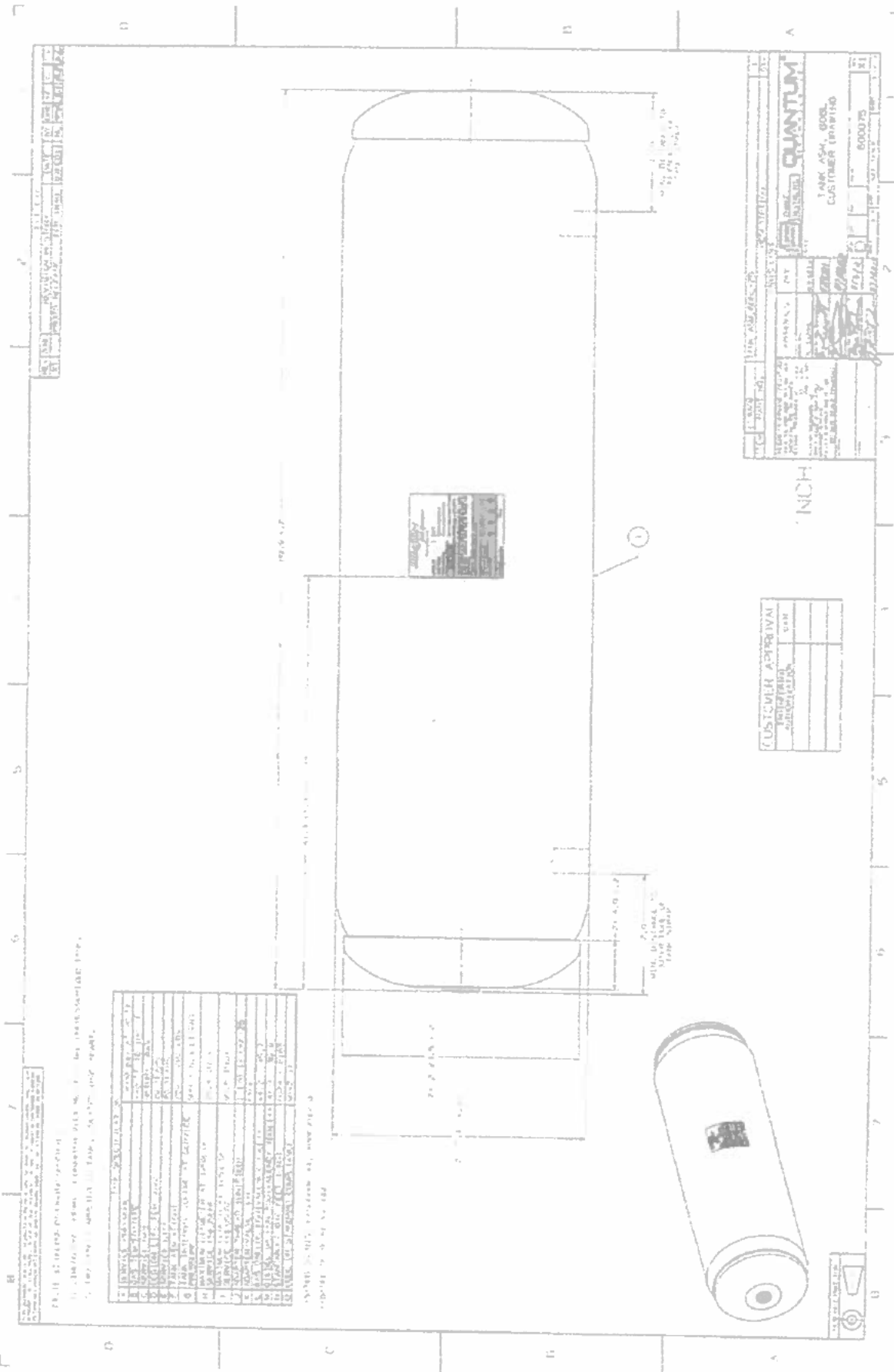
This is to certify that Quantum 25" CNG Tank with part number 113028 complies with all requirements of NGV2-2007 and FMVSS304. The 25" diameter tank is a design deviation from part number: 101994, which served as a baseline tank passing all testing per NGV2 requirements. Any design deviation from the baseline tank would only require a selected suite of testing to comply. The chart below highlights the testing that was already completed with the baseline tank as well as the additional testing that was required for the 25" diameter tank to also meet the standard.

(Test Requirements for Designs and Design Changes)

Required Tests per NGV2 (Section)	Test	Baseline Tank PN: 101994	Deviated Tank PN: 113028
18.6	Hydrostatic Burst Test	X	X
18.3	Ambient Cycling Test	X	X
18.5	Extreme-temp. cycling	X	
18.9	Bonfire Test	X	X
18.11	Penetration Test	X	
18.7	Composite Flaw Tolerance Test	X	
18.1	Accelerated Stress Rupture Test	X	
18.8	Drop Test	X	
18.12	Permeation Test	X	
18.4	Environmental Test	X	
18.3	Natural Gas Cycling Test	X	


David Rea
Director, Fuel Systems Engineering

 11/21/12
Reza Parchami
Quality Engineering, Manager



Release 90316G

Release Report/Work Format - Selection Part										
In PBG	Installation	Asm No	Var No	Item No	Seq No	Part	In/Out	UOM	Description	Quantity
AA	N150072332	07	00	000	000	1	In	PC	UNCLASSIFIED, PSEUDO RECORD1	1
AA	N150072332	07	01	001	010	3985617C1	In	PC	SUPPORT, FUEL TANK, CNG	2
AA	N150072332	07	01	002	010	3691087C1	In	PC	BOLT, HUCK-SPIN 5/8 DIA -14	12
AA	N150072332	07	01	003	010	3691083C1	In	PC	NUT, HUCK SPIN COLLAR 5/8 DIA	12
AA	N150072332	08	00	000	000	1	In	PC	UNCLASSIFIED, PSEUDO RECORD1	1
AA	N150072332	08	01	001	010	3985617C1	In	PC	SUPPORT, FUEL TANK, CNG	2
AA	N150072332	08	01	002	010	3691087C1	In	PC	BOLT, HUCK-SPIN 5/8 DIA -14	12
AA	N150072332	08	01	003	010	3691083C1	In	PC	NUT, HUCK SPIN COLLAR 5/8 DIA	12
AA	N150072332	09	00	000	000	1	In	PC	UNCLASSIFIED, PSEUDO RECORD1	1
AA	N150072332	09	01	004	010	3985616C1	In	PC	SUPPORT, FUEL TANK, CNG	4
AA	N150072332	09	01	005	010	3983412C91	In	PC	TANK,FUEL, LH CNG 30 DGE	1
AA	N150072332	09	01	006	010	3820289C2	In	PC	BOLT, HEX FLG 1/2-13 X 1 3/4 TMS-4523, GRADE 8	20
AA	N150072332	09	01	007	010	3983411C91	In	PC	TANK,FUEL, RH CNG 45 DGE	1

Release 91196H

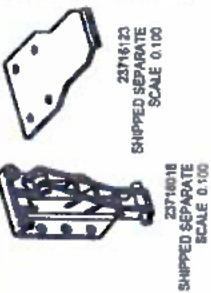
Release Report/Work Format - Selection Part												
In PBG	Installation	Asm No	Var No	Item No	Seq No	Part	In/Out	UOM	Stock Dep	Description	Quantity	Notes
AA	N150072332	01	01	002	020	3691097C1	In	PC		NUT, HUCK SPIN COLLAR 3/4 DIA	7	
AA	N150072332	01	01	003	010	3691087C1	In	PC		BOLT, HUCK-SPIN 5/8 DIA -14	1	
	N150072332	01	01	003	010	3691087C1	Out	PC	3	BOLT, HUCK-SPIN 5/8 DIA -14	1	
AA	N150072332	01	01	003	020	3691083C1	In	PC		NUT, HUCK SPIN COLLAR 5/8 DIA	1	
AA	N150072332	01	01	004	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	7	
	N150072332	01	01	004	010	3691097C1	Out	PC	3	NUT, HUCK SPIN COLLAR 3/4 DIA	7	
AA	N150072332	01	01	005	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	1	
	N150072332	01	01	005	010	3691083C1	Out	PC	3	NUT, HUCK SPIN COLLAR 5/8 DIA	1	
AA	N150072332	01	01	006	020	30756R1	In	PC		NUT, M16, HEX PREV TORQUE FLANGE NUT CL 10	1	
AA	N150072332	01	01	007	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	1	
	N150072332	01	01	007	010	30756R1	Out	PC	3	NUT, M16, HEX PREV TORQUE FLANGE NUT CL 10	1	
AA	N150072332	02	01	002	020	3691097C1	In	PC		NUT, HUCK SPIN COLLAR 3/4 DIA	8	
AA	N150072332	02	01	003	020	3691083C1	In	PC		NUT, HUCK SPIN COLLAR 5/8 DIA	1	
AA	N150072332	02	01	004	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	8	
	N150072332	02	01	004	010	3691097C1	Out	PC	3	NUT, HUCK SPIN COLLAR 3/4 DIA	8	
AA	N150072332	02	01	005	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	1	
	N150072332	02	01	005	010	3691083C1	Out	PC	3	NUT, HUCK SPIN COLLAR 5/8 DIA	1	
AA	N150072332	07	01	001	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	2	
	N150072332	07	01	001	010	3985617C1	Out	PC	3	SUPPORT, FUEL TANK, CNG	2	
AA	N150072332	07	01	002	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	12	
	N150072332	07	01	002	010	3691087C1	Out	PC	3	BOLT, HUCK-SPIN 5/8 DIA -14	12	
AA	N150072332	07	01	003	010	3691087C1	In	PC		BOLT, HUCK-SPIN 5/8 DIA -14	12	
	N150072332	07	01	003	010	3691083C1	Out	PC	3	NUT, HUCK SPIN COLLAR 5/8 DIA	12	
AA	N150072332	07	01	003	020	3691083C1	In	PC		NUT, HUCK SPIN COLLAR 5/8 DIA	12	
AA	N150072332	07	01	018	010	3985617C1	In	PC		SUPPORT, FUEL TANK, CNG	2	
AA	N150072332	08	01	001	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	2	
	N150072332	08	01	001	010	3985617C1	Out	PC	3	SUPPORT, FUEL TANK, CNG	2	
AA	N150072332	08	01	002	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	12	
	N150072332	08	01	002	010	3691087C1	Out	PC	3	BOLT, HUCK-SPIN 5/8 DIA -14	12	
AA	N150072332	08	01	003	010	3691087C1	In	PC		BOLT, HUCK-SPIN 5/8 DIA -14	12	
	N150072332	08	01	003	010	3691083C1	Out	PC	3	NUT, HUCK SPIN COLLAR 5/8 DIA	12	
AA	N150072332	08	01	003	020	3691083C1	In	PC		NUT, HUCK SPIN COLLAR 5/8 DIA	12	
AA	N150072332	08	01	018	010	3985617C1	In	PC		SUPPORT, FUEL TANK, CNG	2	
AA	N150072332	09	01	004	010	FINAL	In	PC		UNCLASSIFIED, DUMMY PART FOR OUT-RELEASING PARTS	4	
	N150072332	09	01	004	010	3985616C1	Out	PC	3	SUPPORT, FUEL TANK, CNG	4	
AA	N150072332	09	01	020	010	3985616C1	In	PC		SUPPORT, FUEL TANK, CNG	4	
AA	N150072332	09	01	021	010	3820289C2	In	PC		BOLT, HEX FLG 1/2-13 X 1 3/4 TMS-4523, GRADE 8	16	

ITEM	QTY	PART NUMBER	DESCRIPTION	REV
1	1	10106008	CYLINDER ASSEMBLY	-
2	1	23722003	BRACKET ASS	D
3	1	23722014	COVER ASSEMBLY	A
4	1	23722015	PRO PLUMBING ASSEMBLY	A
5	1	24380000	INTEGRATED FIRM	B

AQILITY BILL OF MATERIALS

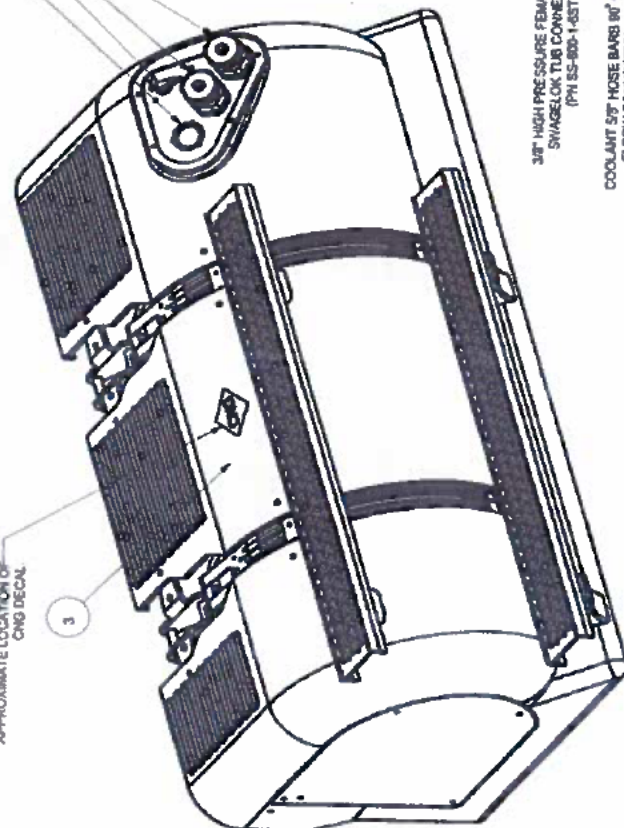
ITEM	QTY	PART NUMBER	DESCRIPTION	REV
1	1	10106008	CYLINDER ASSEMBLY	-
2	1	23722003	BRACKET ASS	D
3	1	23722014	COVER ASSEMBLY	A
4	1	23722015	PRO PLUMBING ASSEMBLY	A
5	1	24380000	INTEGRATED FIRM	B

QTY	PART NUMBER	DESCRIPTION	REV
1	23722011	25680 TANK ASSEMBLY C/W FIRM AND STEPS	B
2	23718018	RAIL BRACKET ASSEMBLY SHIPPED SEPARATELY	B
2	23718123	BRACKET TOP PLATE SHIPPED SEPARATELY	B
2	10702002	NAVISTAR P/N 385581 PC1	B
		1248mm x 142mm ALUMINUM STEP (INSTALLED)	
		NAVISTAR P/N 3821248C1	

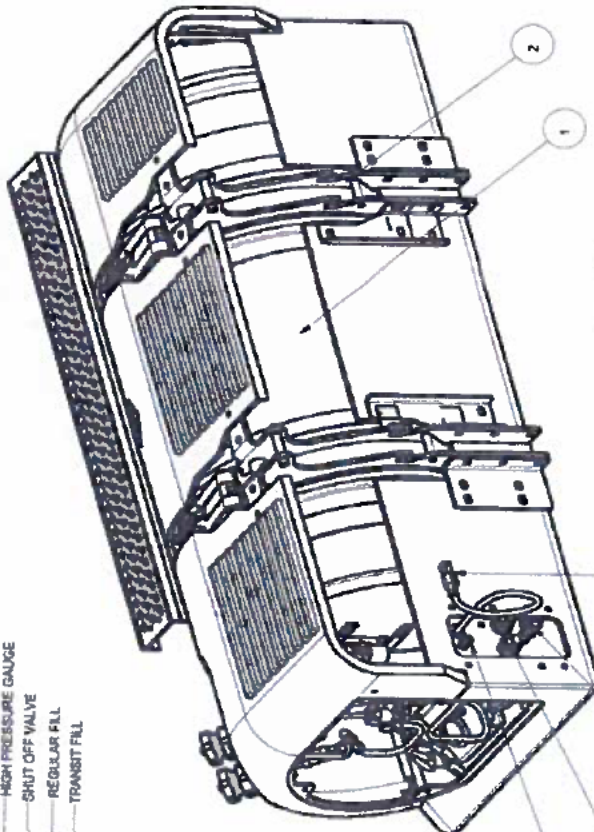


HIGH PRESSURE GAUGE
SHUT OFF VALVE
REGULAR FILL
TRANSIT FILL

APPROXIMATE LOCATION OF
CNG DECAL



SCALE 0.100



SCALE 0.100

6-PIN MOLEX ELECTRICAL CONNECTION
W/ BACK SHELL AND A MIN OF
12" PG TAIL

3/8" HIGH PRESSURE FEMALE
SWAGELOK TUB CONNECTION
(P/N SS-800-1-6ST)

COOLANT 5/8" HOSE BARS 80"
ELBOW CONNECTION (TYP)

-10.0G TO SHOLE FERRULE
LOW PRESSURE FUEL CONNECTION

- NOTES:
1. ASSEMBLE USING GRADE 8 NUTS/BOLTS, ZINC PLATED
 2. 2" X 8" TYPE CNG CYLINDER, MOVZ CODE COMPLIANCE STANDARD, 20 YEAR DESIGN AND SERVICE LIFE
 3. TOTAL SYSTEM CAPACITY: 30 DGE
 4. APPROX DRY WEIGHT: 510 LBS
 5. APPROX WEIGHT WITH FUEL: 680 LBS

IIIAGILITY
fuel systems™

TREAD PLATE LAYOUT

DATE: 03-Aug-12

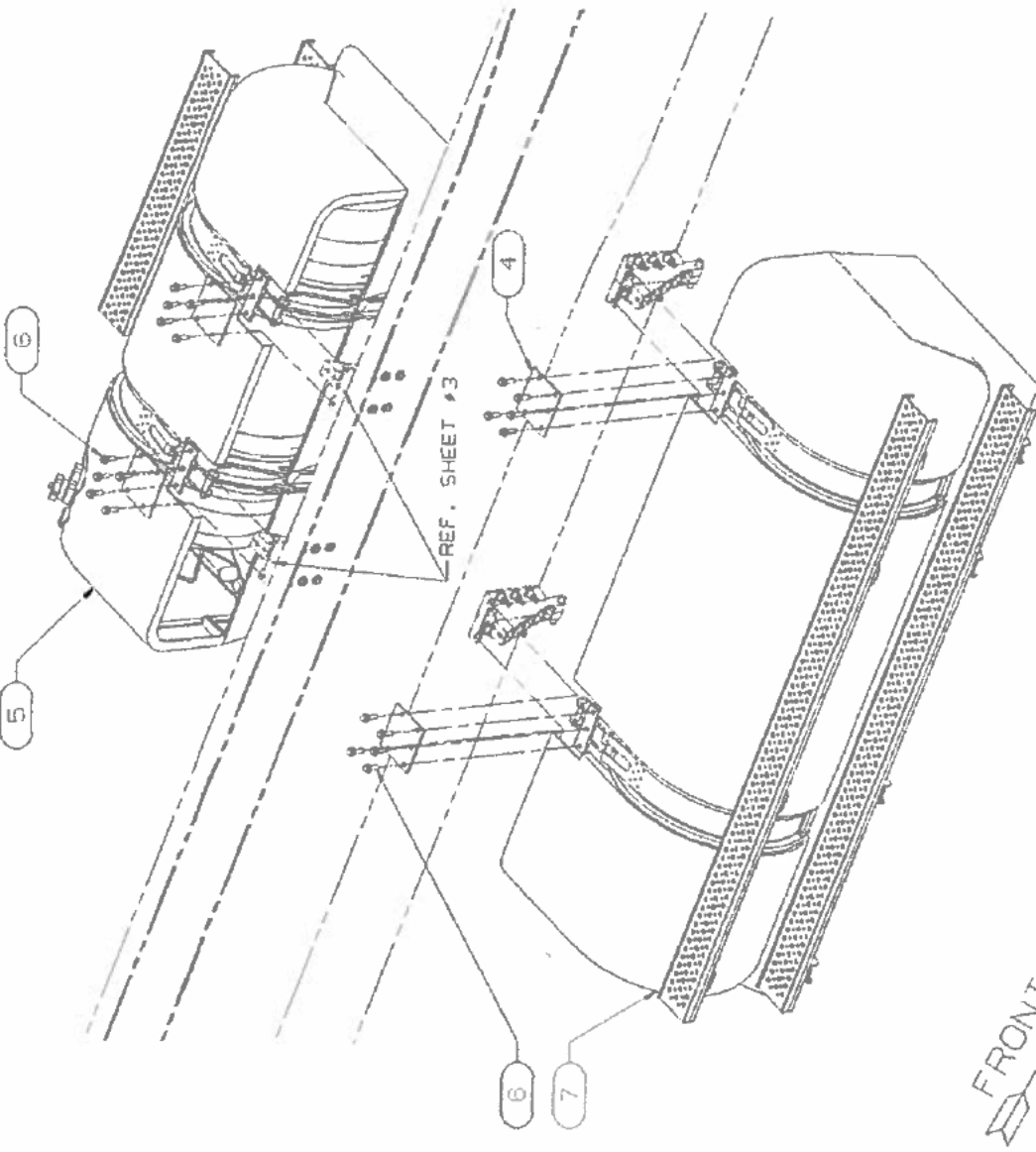
REV: A3 NOTED

CF: 23722011

REV: 1 of 2



NOTES:
1. FASTENER SIZE FOR TOP PLATE: 1/2" GRADE 8, YELLOW ZINC COATED BOLT (TORQUE TO 84-95 FT-LBS)
2. FASTENER SIZE FOR STEP ATTACH BRACKET: 3/8" BOLT (TORQUE TO 15-20 FT-LBS)



FOR: 001505B
 & W/M-NGV RH-HDD
 & W/F-2010-1SLG-ENG
 & W/0016030

NAVISTAR

NAVISTAR, INC. CONFIDENTIAL PROPRIETARY

REFERENCE

1. LINEAR MEASUREMENT: DIM ☒ IN ☐ IN ☐ IN ☐ IN

2. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

3. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

4. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

5. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

6. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

7. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

8. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

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20. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

TANK, FUEL SIDE MOUNT CHG

1. LINEAR MEASUREMENT: DIM ☒ IN ☐ IN ☐ IN ☐ IN

2. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

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20. HOLES: DIM ☒ IN ☐ IN ☐ IN ☐ IN

THIS DOCUMENT IS IN ACCORDANCE WITH THE ASME Y14.3M-1994
 STANDARD FOR DIMENSIONING AND TOLERANCING MANUFACTURED
 PARTS.

ALL PARTS SHOWN TO NAVISTAR
 AS APPROVED BY THE INTERNATIONAL TRUCK DIVISION
 DIMENSIONING AND TOLERANCING DEPARTMENT 2000.

ATTACHMENT 2

Request #6 – Statement of Compliance NCD-0375

Statement of Compliance

Navistar, Inc.
Fort Wayne, Indiana

No. NCD-0375

Issued By:

Body Systems Engineering	
Chassis Systems Engineering	X
Electrical / Electronic Systems Engineering	
Powertrain	

Object: It is Navistar Chassis Systems Engineering's statement that based on these supplier test reports, that WorkStar CNG model vehicles meet all of the requirements of FMVSS 304. Sections 7.1 and 8.1 are shown to be met from SCI Test Report dated 21SEP2009 (See attached document); Section 7.2 is met based on SCI Test Report dated 11SEP2009 (See attached document); Section 7.3 is shown to be met based on SCI Authorized tested dated 23JUL2009 (See attached); and Section 8.3.1(b) is being judged by Engineering to meet per the statement below.

The object described above is in conformity with the requirements of the following standard/regulation:

Standard/Regulation No.	Title	Section No.	Revision / Issue Date
FMVSS 304	CNG Fuel Container	ALL	3DEC1998

Supporting Documentation:

Document No.	Title	Section No.	Revision / Issue Date
SCI Test Report	FMVSS 304, Model 810W		9-21-2009
SCI Test Report	FMVSS-304-3600, 810W		9/11/2009
Authorized Testing, SCI	Part Number: ALT 810W		July 23, 2009

Additional Information:

25% bonfire test will be judged acceptable due to the presence of Thermally Activated Pressure Relief Valves on all cylinders. The pressure tested at becomes irrelevant when using TAPRVs, only the temperature at which the valve operates at is relevant, which was shown on the 100% test.

Written By: (Signature) _____

(Chief Engineer - Name)

6-27-2011

Approved By: (Signature) _____

(Chief Engineer - Name)

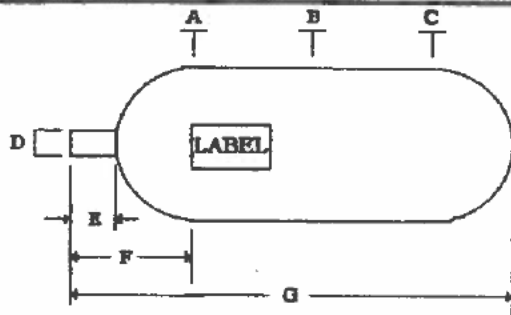
Date: 6-27-2011

Page 2 of 12



FIRST PIECE INSPECTION REPORT

P/N:	REV:	WORK ORDER:
1272949	K	
PART NAME:	MODEL:	
ASSY	810W	
LOT QTY:	SPEC:	
TBD	FMVSS304	
SAMPLE PLAN:	SERIAL NO:	
1	058	



COMMENTS / NOTES:

C.T.F.

CHARACTERISTIC	REQUIREMENTS	INSPECTION METHOD	ACTUAL VALUE	ACC	REV
CYLINDER OD:	A $16.15 \pm .15$	PI TAPE 01241	16.073	✓	
	B $16.15 \pm .15$	PI TAPE 01241	16.087	✓	
	C $16.15 \pm .15$	PI TAPE 01241	16.093	✓	
NECK OD:	D $\phi(2.25)$	CALIPER 01397	2.19	✓	
NECK LENGTH:	E 2.30 MIN	CALIPER 01397	2.36 2.27		✓
LABEL LOCATION:	F (REF)	HT GAGE OR SCALE SCALE	38.0	✓	
CYLINDER OAL:	G $80.55 \pm .20$	HT GAGE OR SCALE SCALE	80.75	✓	
CYLINDER VOLUME:	$12,165^{+250}_{-150}$	SCALE (WEIGHT) Hydro			
CYLINDER WEIGHT:	170 ± 20	SCALE (WEIGHT) Hydro			
THREAD TYPE & MIN. THREADS:	REF.	PLUG GAGE/VISUAL VISUAL	23 23	✓	

TEST TECHNICIAN:	INSPECTION REPORT OR NMR NO:	ACCEPTANCE TAG NO:
RSanchez2	N/A	N/A
INSPECTOR:	INSPECTION DATE:	INSP / TECH STAMP:
N/A	09-15-09	SCT 26



2522 Kansas Avenue • Riverside, CA 92507 USA

Phone: (951) 682-4110 • Fax: (951) 682-6090
Email: f.jensen@authorizedtesting.com
URL: www.authorizedtesting.com

TEST REPORT

CUSTOMER: SCi

TEST DATE: July 23, 2009

PART NUMBER: ALT 810W

SUBMITTED BY: Ed Acree

SERIAL NUMBER: 007

TYPE: 3

BONFIRE TEST

TEST PROCEDURE:

The cylinder was fitted with a EMER 110R-000049 valve (1 end of cylinder) and a EMER Adapter/PRD 110R-000054 (on the opposite end).

Cylinder serial number 007 was filled to 100% of service pressure (3600 psi) with CNG.

Cylinder was then placed centered four inches above a 65 inch propane burner.

ANSI Type "K" thermocouples were attached at the valve (channel #1), upper tangent sidewall (channel #2), Middle sidewall (channel #3) and lower tangent sidewall (channel #4), and aft end (PRD) (channel #5) then connected to an electronic temperature data logger. A calibrated pressure transducer was connected to the valve outlet (channel #8) so that internal pressure could be monitored during the test.

Time, pressure, and temperature recordings were made at one intervals commencing upon ignition of the fuel.

TEST RESULTS:

SERIAL NUMBER: 007

FILL PRESSURE	VENT PRESSURE	TIME TO VENT	VENT DURATION
3600 psi	3641 psi	56 seconds	2 minutes 42 seconds

Each cylinder vented its entire contents through the PRD.

Testing and results of testing were in accordance with SCi PO 9887.

A record of times and pressures is attached.

I certify the above information to be true and correct.

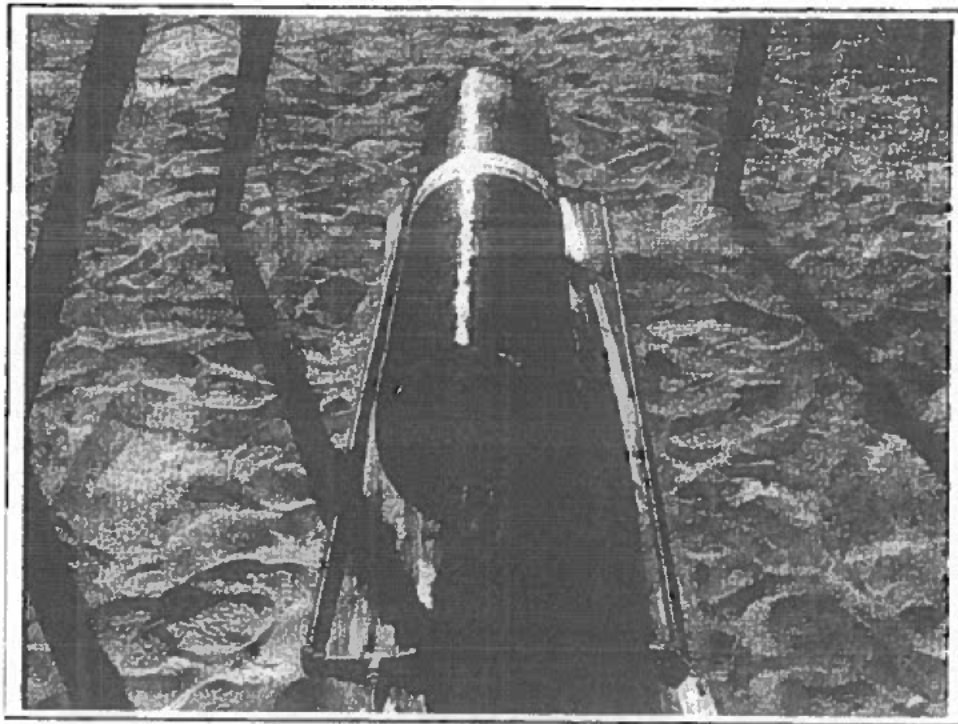
Signed:

[Redacted Signature]

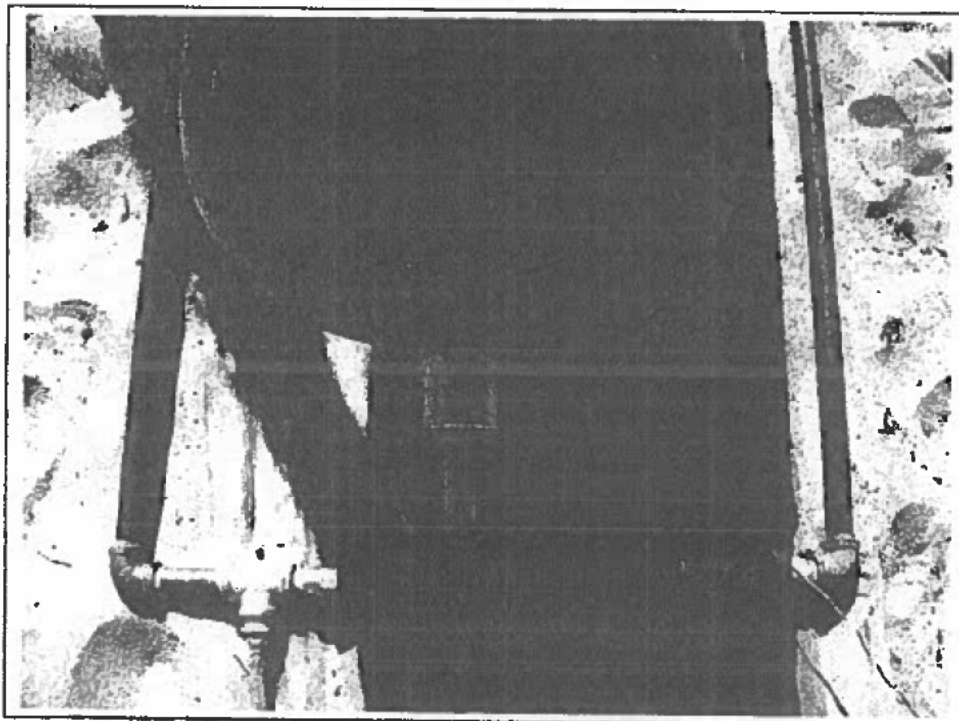
Date: July 29, 2009

Authorized Testing, Inc.

A

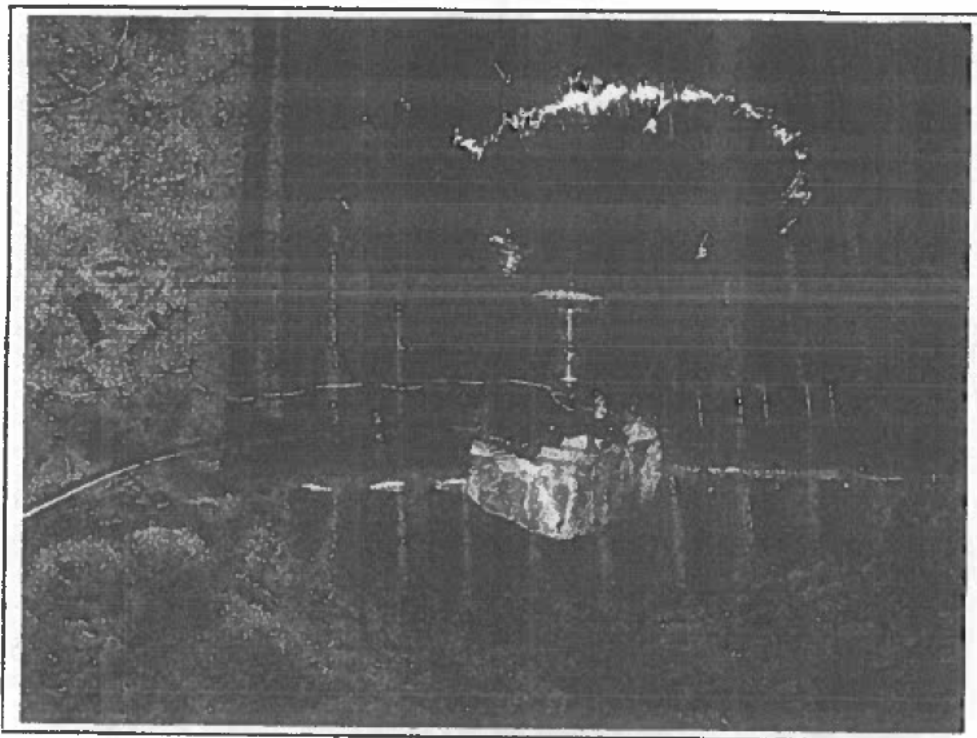


**SCI ALT 810W
PRE-BONFIRE TEST SET-UP
S/N 007**

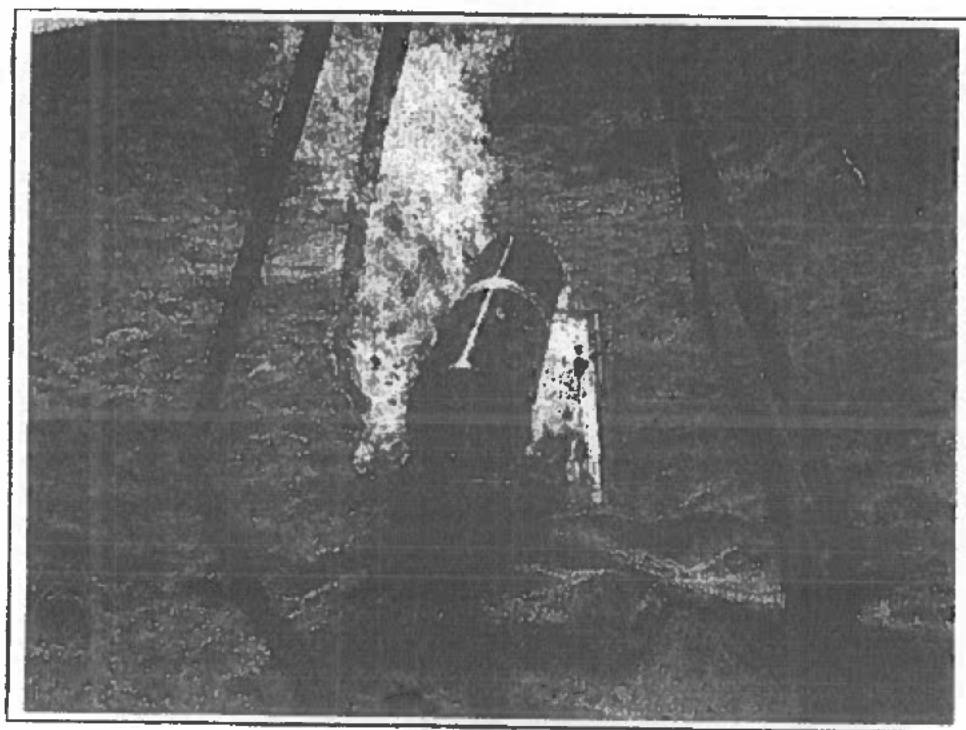


**SCI ALT 810W
PRE-BONFIRE TEST SET-UP
S/N 007**

A

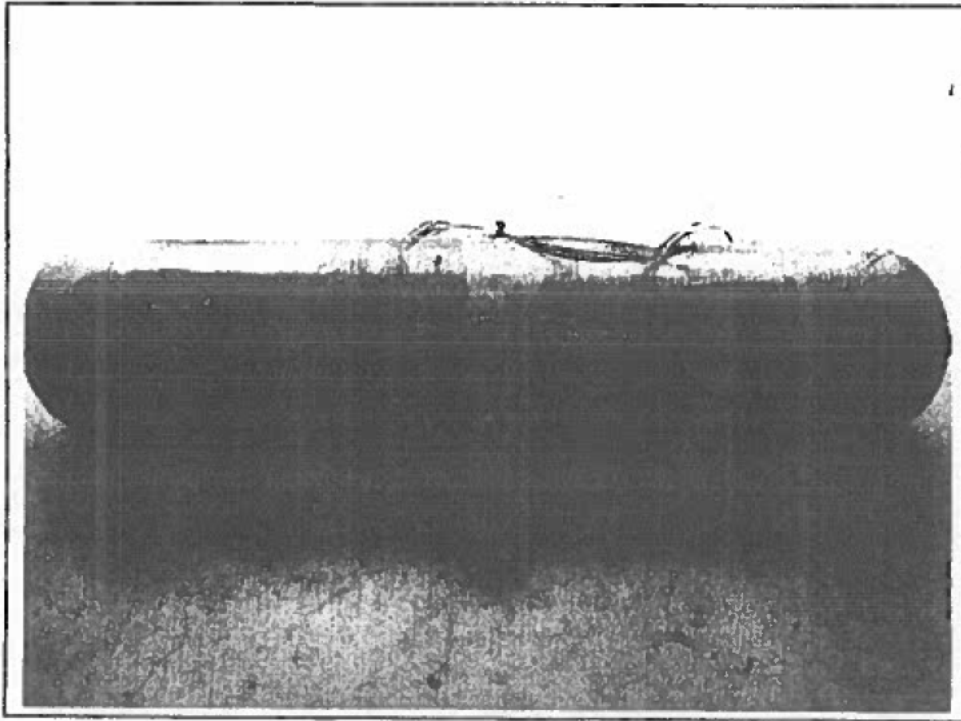


**SCI ALT 810W
PRE-BONFIRE TEST SET-UP
S/N 007**



**SCI ALT 810W
BONFIRE TEST IGNITION
S/N 007**

A



**SCI ALT 810W
POST BONFIRE
S/N 007**

Timestamp	Channel 1 (deg F)	Channel 2 (deg F)	Channel 3 (deg F)	Channel 4 (deg F)	Channel 5 (deg F)	Channel 8 (PSI)
-----------	----------------------	----------------------	----------------------	----------------------	----------------------	--------------------

ALT 810 w S.N. 007

9:36:41.0	111.5	100.4	110.3	99.8	91.8	3600
9:36:42.0	128.2	180.1	269	110	92.1	3600
9:36:43.0	161.2	237.5	353.7	183.6	95.6	3600
9:36:44.0	234.7	359.2	488.7	289.2	98.3	3600
9:36:45.0	280.2	422.2	532.8	339.5	122.4	3600
9:36:46.0	350.8	510.3	614.8	460.3	132.2	3600
9:36:47.0	427.6	536.1	669.4	520	155.1	3600
9:36:48.0	459	586.1	773.7	594.8	170.9	3600
9:36:49.0	490.8	679.2	811.6	621.8	171.9	3600
9:36:50.0	494.5	726.4	848.9	655.5	175.1	3600
9:36:51.0	499.4	805.1	913.5	672.8	174.6	3600
9:36:52.0	503.4	834.1	908.8	745.6	205.2	3600
9:36:53.0	509.6	897.1	880.7	782.3	241.1	3600
9:36:54.0	511.4	920.4	861.5	819.9	508	3600
9:36:55.0	514.6	967.3	834.7	874.9	487.2	3600
9:36:56.0	516.5	982.8	825.1	896.9	657.1	3600
9:36:57.0	516.7	1021.3	818.3	911.6	758.7	3600
9:36:58.0	529.2	1037.4	837.8	917.1	751.3	3600
9:36:59.0	538.2	1050	848.6	945.9	751.9	3600
9:37:00.0	542.6	1080.4	875.1	950.7	881.5	3600
9:37:01.0	546.2	1081.9	936.7	947.1	845.4	3600
9:37:02.0	541.7	1082.7	953.8	957.7	756.5	3600
9:37:03.0	548.6	1084.7	979.8	958.6	848.4	3600
9:37:04.0	601.8	1087.9	982.8	968	754.9	3600
9:37:05.0	629.8	1105.5	968.4	975.4	916.5	3600
9:37:06.0	657.2	1087.8	971.1	991.1	1010	3600
9:37:07.0	705.5	1074	1000.5	997.9	1035.2	3600
9:37:08.0	743.7	1076.4	1018.9	995.7	998.2	3600
9:37:09.0	758.9	1120.8	1053.2	999	915.3	3600
9:37:10.0	756.2	1122.4	1113.7	1012.2	1101.7	3600
9:37:11.0	742.2	1062.6	1144.9	975.9	1001.8	3600
9:37:12.0	733	1045.5	1156.3	980.4	999	3600
9:37:13.0	728	1053.6	1155.3	980.9	997.6	3600
9:37:14.0	704.2	1051.3	1160.8	981.6	1176.4	3600
9:37:15.0	690.2	1062	1158.8	999.8	1121.6	3600
9:37:16.0	671.7	1094.4	1180.2	1026.7	1290.2	3600
9:37:17.0	660.5	1112.5	1148.8	1060	937.5	3600
9:37:18.0	645.6	1072.1	1139.8	1082.6	1034.2	3600
9:37:19.0	634.3	1051	1126.3	1134.1	1000.7	3600
9:37:20.0	609.7	1009.4	1132.2	1144.8	855.4	3604
9:37:21.0	597	1006.6	1130.2	1167.4	939.5	3604
9:37:22.0	569.8	977.4	1093.7	1205.4	976.7	3604
9:37:23.0	542.4	951.3	1081.7	1219	1069.6	3609
9:37:24.0	531.1	961.2	1063.2	1252.6	1083.7	3609
9:37:25.0	505.7	978.5	1078.3	1258.4	1121.5	3614
9:37:26.0	490.3	1001.7	1101.8	1252.3	1203.9	3609
9:37:27.0	459.6	1028.1	1102.5	1221.9	1230.1	3614
9:37:28.0	447.3	1044.1	1099.8	1170.7	1262.7	3620
9:37:29.0	428.9	1054.3	1111.6	1155.6	1282.2	3620
9:37:30.0	418.6	1060.6	1117.4	1125.6	1309	3625
9:37:31.0	397.3	1079.5	1125.9	1103.4	1310.3	3625
9:37:32.0	389.3	1069.4	1128.9	1095	1319.7	3631
9:37:33.0	375	1064.1	1165.3	1116.6	1354.3	3631

9:37:34.0	363.8	1069.7	1181.8	1126.2	1401.3	3636	VENT	AR PRD only
9:37:35.0	358.6	1081.8	1204.2	1154	1472.3	3636		
9:37:36.0	346.5	1071.2	1219	1158.2	1508.5	3641		
9:37:37.0	339.8	1084.1	1235.7	1179.1	1538.6	3490		
9:37:38.0	322.4	895.4	1188.7	1233	1544.8	3339		
9:37:39.0	312.8	1138	1073.4	1294.9	1544.5	3075		
9:37:40.0	293.4	1029.1	1162.3	1245.2	1670.3	2886		
9:37:41.0	285.8	1194.8	1050.1	1208.3	1840.3	2746		
9:37:42.0	271.5	1042.2	1141.3	1081.2	1900.7	2649		
9:37:43.0	258.3	1122.3	1001.6	1051.2	1975.6	2471		
9:37:44.0	252.1	1167.2	890.9	1222.3	1977.4	2396		
9:37:45.0	242.4	1131.7	856.3	1202.5	1981.4	2245		
9:37:46.0	237.9	1107.8	794.8	1161.2	1983.5	2115		
9:37:47.0	229.1	1109.3	780.9	1179	1947.6	2056		
9:37:48.0	226.3	1084.3	779.5	1160.2	1934.5	1943		
9:37:49.0	216.6	1136.2	805.5	1183.3	1941.8	1889		
9:37:50.0	211.7	1145.1	791.3	1209.6	1958.2	1797		
9:37:51.0	202.1	1165.9	799.7	1247.7	1958.7	1749		
9:37:52.0	195.6	1150.7	777.8	1294.1	1916.2	1668		
9:37:53.0	193.6	1122.8	773.4	1369.2	1793.6	1630		
9:37:54.0	191.2	1121.9	753.6	1404	1801	1560		
9:37:55.0	189.7	1153.6	770.1	1454.5	1887.5	1490		
9:37:56.0	187.2	1200.9	785.5	1496.9	1895	1463		
9:37:57.0	186.3	1209.3	862.3	1502.7	1894.6	1404		
9:37:58.0	184	1262.4	870.7	1489.2	1877.3	1377		
9:37:59.0	182.5	1264.6	891.8	1474.7	1865.1	1323		
9:38:00.0	178.9	1301.2	968.5	1445.1	1871.8	1296		
9:38:01.0	176.6	1299.1	1051	1408.8	1820.7	1247		
9:38:02.0	175.2	1273.3	1121.6	1370.7	1774.7	1226		
9:38:03.0	173.3	1249.4	1178.9	1033.4	1714.9	1183		
9:38:04.0	172.1	1236.5	1257.9	1115.7	1719	1139		
9:38:05.0	169.9	1203.4	1289.6	1206.1	1758.3	1123		
9:38:06.0	168.9	1188.3	1331.3	1102.6	1858.7	1086		
9:38:07.0	167.5	1168.7	1384.8	1096.1	1812.5	1064		
9:38:08.0	167.3	1187.7	1414.8	1181.6	1755.3	1032		
9:38:09.0	166.3	1170.1	1472.9	1181	1702.3	1010		
9:38:10.0	165.4	1172.1	1510.5	1154.3	1706.2	983		
9:38:11.0	164.6	1174.4	1561.9	1253.9	1806.5	967		
9:38:12.0	163.6	1190.6	1581.6	1156.3	1768.3	935		
9:38:13.0	163.1	1201.9	1591.4	1141.8	1739.9	908		
9:38:14.0	162.2	1215.2	1620.9	1121.6	1724.1	891		
9:38:15.0	161.4	1198.8	1635.4	1178.9	1619.6	865		
9:38:16.0	160.2	1178.1	1617.8	1257.9	1582.7	848		
9:38:17.0	159.3	1174.2	1613.4	1289.6	1537.1	827		
9:38:18.0	157.9	1194.5	1565.2	1331.3	1606.6	811		
9:38:19.0	154.9	1191.2	1582.6	1364.8	826.6	789		
9:38:20.0	154.3	1181.1	1621.9	1414.8	306.2	773		
9:38:21.0	153	1180.1	1633.5	1472.9	803.1	751		
9:38:22.0	151.8	1177.2	1624.4	1510.5	439.2	730		
9:38:23.0	149	1172.3	1617.1	1561.9	366.7	714		
9:38:24.0	147.2	1175.6	1612.7	1581.6	211.1	692		
9:38:25.0	144.3	1189.1	1600.1	1591.4	434	681		
9:38:26.0	143.9	1167.3	1618.9	1620.9	240.7	665		
9:38:27.0	143.9	1159.7	1640.3	1635.4	310.8	654		
9:38:28.0	142.7	1180.3	1620.5	1617.8	371.8	633		
9:38:29.0	141.3	1191.6	1607.7	1613.4	422.4	622		
9:38:30.0	139.7	1198.2	1619	1565.2	252.3	606		

9:38:31.0	138.9	1220.1	1644.3	1582.6	-508	595 TC wire burned out
9:38:32.0	137.1	1223.1	1672.4	1621.9	-508	573
9:38:33.0	136.7	1217.9	1663	1633.5	-508	557
9:38:34.0	136.3	1225.1	1679.9	1624.4	-508	552
9:38:35.0	136.4	1217.8	1681	1617.1	-508	536
9:38:36.0	135.9	1229.4	1702.1	1612.7	-508	525
9:38:37.0	134.5	1228.4	1688.1	1600.1	-508	509
9:38:38.0	133.4	1241	1671.3	1618.9	-508	503
9:38:39.0	131.9	1251.1	1645.5	1640.3	-508	482
9:38:40.0	131.3	1223	1672.5	1620.5	-508	476
9:38:41.0	130.8	1213.1	1665.5	1607.7	-508	466
9:38:42.0	130	1233.1	1612.4	1619	-508	449
9:38:43.0	129.8	1242.4	1561.5	1644.3	-508	444
9:38:44.0	129.6	1235.7	1554.2	1672.4	-508	428
9:38:45.0	129.9	1259.5	1617.6	1663	-508	422
9:38:46.0	129.8	1262.1	1615.8	1679.9	-508	406
9:38:47.0	129.4	1244	1633.4	1681	-508	401
9:38:48.0	128.9	1230.5	1640.5	1702.1	-508	385
9:38:49.0	128.8	1229.6	1630.9	1686.1	-508	379
9:38:50.0	129.3	1212.2	1624.7	1671.3	-508	368
9:38:51.0	129.6	1215.1	1579.4	1645.5	-508	352
9:38:52.0	130	1263	1530.6	1672.5	-508	347
9:38:53.0	130.3	1281	1512.8	1665.5	-508	338
9:38:54.0	130.6	1309.7	1504.1	1612.4	-508	331
9:38:55.0	130.7	1342.4	1455.5	1581.5	-508	320
9:38:56.0	131.1	1406.6	1337.9	1554.2	-508	315
9:38:57.0	130.8	1426.5	1278	1617.6	-508	304
9:38:58.0	131	1458.8	1203.7	1615.8	-508	298
9:38:59.0	131.1	1443.4	1154.2	1633.4	-508	288
9:39:00.0	130.8	1420.3	1085	1640.5	-508	282
9:39:01.0	129.8	1358.3	1027.7	1630.9	-508	271
9:39:02.0	129.6	1325.7	988.2	1624.7	-508	266
9:39:03.0	129.7	1315.1	971.1	1579.4	-508	261
9:39:04.0	129.6	1318.4	1009.3	1530.6	-508	250
9:39:05.0	128.4	1359	1019	1512.6	-508	244
9:39:06.0	127.9	1342.4	980.7	1504.1	-508	239
9:39:07.0	128.3	1298.8	919.2	1455.5	-508	234
9:39:08.0	128.7	1306.6	906	1337.9	-508	228
9:39:09.0	128.5	1300.1	857.4	1278	-508	217
9:39:10.0	128.7	1306.7	805.1	1203.7	-508	212
9:39:11.0	128.5	1253.7	784.6	1154.2	-508	207
9:39:12.0	127.8	1189.7	762.8	1085	-508	201
9:39:13.0	126.3	1188.7	748.9	1027.7	-508	196
9:39:14.0	124.3	1159.3	763.5	988.2	-508	191
9:39:15.0	124.7	1165.5	760	971.1	-508	185
9:39:16.0	124.9	1137.4	776.4	1009.3	-508	180
9:39:17.0	125.3	1125.2	763	1019	-508	174
9:39:18.0	125.4	1127.7	737.4	980.7	-508	174
9:39:19.0	125.3	1074.5	723.8	919.2	-508	164
9:39:20.0	125.1	1027.5	720.9	906	-508	158
9:39:21.0	125.1	998.6	691.3	857.4	-508	158
9:39:22.0	125.1	1040.1	695.5	805.1	-508	153
9:39:23.0	125.1	1060.9	729.3	784.6	-508	147
9:39:24.0	125.4	1037.7	777.7	762.8	-508	142
9:39:25.0	125.4	1073.1	821.2	748.9	-508	137
9:39:26.0	125.8	1011.6	798.4	763.5	-508	131
9:39:27.0	125.8	1025.8	794.3	760	-508	131

9:39:28.0	125.5	1066.1	803.7	776.4	-508	126
9:39:29.0	125.3	1071.6	805.6	763	-508	120
9:39:30.0	125.5	1045.6	807.2	737.4	-508	120
9:39:31.0	125.1	1041.7	792.9	723.8	-508	115
9:39:32.0	124.6	1006	794.1	720.9	-508	110
9:39:33.0	124.6	1018.3	774.1	691.3	-508	104
9:39:34.0	124.7	1046.2	786.5	685.5	-508	104
9:39:35.0	125.1	1083.8	785.8	729.3	-508	99
9:39:36.0	124.9	1067.3	803.4	777.7	-508	99
9:39:37.0	124.7	1066.1	816.3	821.2	-508	93
9:39:38.0	124.7	1059.2	824.6	798.4	-508	88
9:39:39.0	125.1	1029.9	816.3	794.3	-508	88
9:39:40.0	125.1	996.3	806.2	803.7	-508	83
9:39:41.0	125.5	961.8	805	805.6	-508	83
9:39:42.0	125.9	967.5	787.3	807.2	-508	83
9:39:43.0	125.9	970.1	778	792.9	-508	77
9:39:44.0	125.2	937.9	774.8	794.1	-508	72
9:39:45.0	124.9	920.8	754.9	774.1	-508	72
9:39:46.0	124.4	892.8	777.7	786.5	-508	67
9:39:47.0	124.5	886.4	762.9	785.8	-508	67
9:39:48.0	124.7	862.3	745.4	803.4	-508	67
9:39:49.0	124.9	867.7	755.1	816.3	-508	61
9:39:50.0	125.1	882.9	758	824.6	-508	61
9:39:51.0	125	896.4	772.4	816.3	-508	56
9:39:52.0	124.6	928.4	766.9	806.2	-508	56
9:39:53.0	125	923.2	779.6	805	-508	50
9:39:54.0	125	945.3	793.8	787.3	-508	50
9:39:55.0	125.4	940.1	820.4	778	-508	50
9:39:56.0	125.8	937.4	803.1	774.6	-508	45
9:39:57.0	126.2	933.6	798.3	754.9	-508	45
9:39:58.0	126.2	909	805.6	777.7	-508	45
9:39:59.0	126.5	891.5	802.5	762.9	-508	40
9:40:00.0	126.8	914.8	834.3	745.4	-508	40
9:40:01.0	126.9	922	846.1	755.1	-508	40
9:40:02.0	126.9	1010.7	872.6	758	-508	34
9:40:03.0	126.9	1008.8	902.5	772.4	-508	34
9:40:04.0	126.9	1100.6	917.8	766.9	-508	34
9:40:05.0	126.5	1137.6	952.1	779.6	-508	34
9:40:06.0	125.9	1130.1	971	793.8	-508	29
9:40:07.0	125.6	1138.3	984.5	820.4	-508	29
9:40:08.0	126	1141.7	958.6	803.1	-508	29
9:40:09.0	126.4	1160.8	975.3	798.3	-508	29
9:40:10.0	126.9	1179.8	1014.6	805.6	-508	23
9:40:11.0	126.3	1204.5	1022	802.5	-508	23
9:40:12.0	126.3	1226.2	1075.5	834.3	-508	23
9:40:13.0	126	1235.3	1128.3	846.1	-508	23
9:40:14.0	125.8	1247	1138.2	872.6	-508	18
9:40:15.0	125.7	1205.2	1168.2	902.5	-508	18
9:40:16.0	125.7	1164.2	1187.1	917.8	-508	18
9:40:17.0	125.9	1096.7	1207.5	952.1	-508	18
9:40:18.0	125.7	1103.6	1230.3	971	-508	18



BURST TEST REPORT

WO No: 612.14

Test Date: 09/11/2009

Wind Pattern: WPC-810W

Model No: 810W

Specification: FMVSS-304-3600

Part No:

NMR:

Serial No: 007

Acceptable ☒

Non-Acceptable ☐

Acceptance Criteria
ENGINEERING EVAL STUDY
POST BONFIRE BURST
MIN. REQUIRED BURST PRESSURE=8100

10 Seconds Hold at 8100 psig ☒

Actual Burst Pressure: 10800 PSIG

Failure Mode: HOOP MID CYLINDER SEPARATION

Comments:

Tested By: ROBERT SANCHEZ



BT24025.xls