

TILX 191488
191499

PLR

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

1 APPROVAL REQUESTED OF: PRECEDENT NON-PRECEDENT
 2 TYPE: CONSTRUCTION WELDED REPAIRS ALTERATION OTHER CONVERSION
 3 AAR NO: L056007
 4 DATE: FEBRUARY 17, 2005
 5 APPLICANT'S NO: T04052, 52A, 52Y
 6 APPLICANT: TRINITY INDUSTRIES, INC.
 P.O. BOX 568887 DALLAS, TEXAS 75356-8887
 7 TANK SPECIFICATION: DOT 111A100W1
 8 STENCILED SPEC: DOT 111A100W1
 9 REPORTING MARKS & CAR NUMBERS: TILX 191377 thru TILX 191539
 10 NUMBER OF CARS: 163

11 Initial commodity	SEE NOTES	12 Density, lb. per gallon	6.59
13 Full water capacity, gal.	30,145	14 Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15 Material type & grade - heads	ASTM A516 Gr. 70	16 Material type & grade - shell	AAR TC128 Gr. B
17 Material thickness - heads, in.	7/16	18 Material thickness - shell, in.	7/16
19 Lining type	NONE	20 Inside diameter - center, in.	119-3/8
21 Inside diameter - end rings, in.	119-3/8	22 Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23 Test pressure, psig	165	24 Insulation type	NONE
25 Insulation thickness, in.	N.A.	26 Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27 Type and number of pressure relief devices	ONE VALVE	28 Pressure relief device start-to-discharge, psig	75
29 Pressure relief device flow cap'y., scfm req'd.	10,846 *	30 Pressure relief device flow capacity, scfm, actual	21,602
31 Tank surface area, sq. ft.	1755	32 Underframe or stub sill type	STUB SILL---TRN 023
33 Center of gravity, loaded, in.	88.7	34 Est. light weight, lb.	66,200
35 AAR clearance diagram	C	36 Rail load limit, lb.	263,000
37 Truck capacity, tons	100	38 Head shields	NONE

NOTES: * Gu = 23.71 for Ethyl Alcohol per Table A5 at 75 psig start-to-discharge pressure

Ethyl Alcohol and products authorized in DOT Part 173 for which there are no special commodity requirements and non-regulated commodities compatible with this class of car

Orig. Cert. _____
 Builder _____
 Date _____
 Former lading _____

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	D-41689A		L046029
40 Tank Arrangement	D-43655 SH. 1H		
41 Reinforced Openings	D-43655 SH. 2C & 3A		
42 Bolster & Draft Sill Arrgt	D-440494-02 SH. 1A & 2A		L036029
43 Fittings Arrangement	D-55021-01E		L046061
44 Manway Assembly	D-643668-105B		L036064
45 Protective Housing	C-38275F		L036048B
46 Venting, Loading and Discharge Valves	See Page 2		
47 Pressure Relief Devices	MIDLAND A-2097		PRD022004
48 Heater Systems (Int <input type="checkbox"/> Ext <input type="checkbox"/>)	NONE		
49 Gauging Devices (Visual Scale)	D-43655 SH. 2C		
50 Bottom Outlet Valve	Jamesbury 4" 5RET3-22HBT		E989005
51 Bottom Outlet Arrgt	D-55757-02E		L046063A
52 Manway cover	D-243613G		L046011
53 Calculations	D-644023 SH. 1 & 2		L026066
54 Tank Qualification Drawing	D-41451B		L046043

REVISIONS:

APPLICATION BY: WILLIAM R. BITTING

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange, and the DOT Railroad Safety Appliance Standards

SIGNATURE: [Signature]
 TITLE: SENIOR DESIGN ENGINEER

APPROVAL - AAR Tank Car Committee

Date Approved: MAR 18 2005
 Signature on behalf of Tank Car Committee: [Signature]

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:
 TILX 191377-191539

Name: [Signature] Date: 3-28-05
 Title: Director Quality Assurance

AAR Number L056007
 Applicant's No T04052, 52A, 52Y
 Date February 17, 2005

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING NUMBER</u>	<u>PRECEDENT APPLICATION NUMBER</u>
55. 15" FLUED NOZZLE	D-440083A	L046011
56. 15" MULTI-HOUSING NOZZLE ASSEMBLY	D-440146B	L986056
57. 15" MULTI-HOUSING NOZZLE COVER FLANGE	D-440199B	L046063A
58. 6" SAFETY VALVE NOZZLE ASSEMBLY	B-27507K	L996141B
59. SAFETY VALVE ARRANGEMENT	D-45651-03C	L046029

LINE 46---VENTING, LOADING AND DISCHARGE VALVES
 THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT D-55021-01

1" SCREWED END BALL VALVE

WATTS CFBV-AAR ----- AAR E049018 Pending
 JAMESBURY 6FR-2236-MT ----- AAR E989012
 ELLCON 2S6BS-FPMP-1 ----- AAR E019003
 JAMESBURY 33-2236-TL ----- AAR E979019A
 JAMESBURY 23-2236-MT ----- AAR E979041A
 GEMINI 86-4RT6-S8-L ----- AAR E009023A

3" SCREWED END BALL VALVE

JAMESBURY 6FR-2236-MT ----- AAR E989012
 WATTS CFBV-AAR ----- AAR E049018 Pending
 ELLCON 2S6BS-FPMP-3 ----- AAR E019003

Cars are constructed in accordance with all applicable DOT/TC and AAR requirements.
 Car body structure meets the requirements of S-286-2002.

APPLICATION BY William R. Bitting

I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.

SIGNATURE [Redacted]
 TITLE Senior Design Engineer

APPROVAL AAR Tank Car Committee

Date Approved

MAR 18 2005

(Signature) on behalf of Tank Car Committee

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

1 APPROVAL REQUESTED OF: PRECEDENT NON-PRECEDENT
 2 TYPE: CONSTRUCTION WELDED REPAIRS ALTERATION OTHER CONVERSION
 3 AAR NO. L056059
 4 DATE: JULY 8, 2005
 5 APPLICANT'S NO. T05019
 6 APPLICANT: TRINITY INDUSTRIES, INC.
 P.O. BOX 568887 DALLAS, TEXAS 75356-8887
 7 TANK SPECIFICATION: DOT 111A100W1
 8 STENCILED SPEC: DOT 111A100W1
 9 REPORTING MARKS & CAR NUMBERS TILX 192303 thru TILX 192332
 TILX 192470 thru TILX 192499
 10 NUMBER OF CARS 60

11 Initial commodity	SEE NOTES	12 Density, lb. per gallon	6.59
13 Full water capacity, gal.	30,145	14 Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15 Material type & grade - heads	ASTM A516 Gr. 70	16 Material type & grade - shell	AAR TC128 Gr. B
17 Material thickness - heads, in.	7/16	18 Material thickness - shell, in.	7/16
19 Lining type	NONE	20 Inside diameter - center, in.	119-3/8
21 Inside diameter - end rings, in.	119-3/8	22 Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23 Test pressure, psig	165	24 Insulation type	NONE
25 Insulation thickness, in.	N.A.	26 Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27 Type and number of pressure relief devices	ONE VALVE	28 Pressure relief device start-to-discharge, psig	75
29 Pressure relief device flow cap'y., scfm req'd.	10,846 *	30 Pressure relief device flow capacity, scfm, actual	21,602
31 Tank surface area, sq. ft.	1755	32 Underframe or stub sill type	STUB SILL—TRN 023
33 Center of gravity, loaded, in.	88.7	34 Est. light weight, lb.	66,200
35 AAR clearance diagram	C	36 Rail load limit, lb.	263,000
37 Truck capacity, tons	100	38 Head shields	NONE

NOTES: * Gu = 23.71 for Ethyl Alcohol per Table A5.

Ethyl Alcohol and products authorized in DOT Part 173 for which there are no special commodity requirements and non-regulated commodities compatible with this class of car.

Orig. Cert. _____
 Builder _____
 Date _____
 Former lading _____

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	D-41778		
40 Tank Arrangement	D-43786 SH. 1		
41 Reinforced Openings	D-43786 SH. 2 & 3		
42 Bolster & Draft Sill Arrgt.	D-440494-01 SH. 1A & 2A		L056062 Pending
43 Fittings Arrangement	D-55096E		
44 Manway Assembly	D-643668-113B		
45 Protective Housing	C-38275F		L036048B
46 Venting, Loading and Discharge Valves	See Page 2		
47 Pressure Relief Devices	MIDLAND A-2097		SRD 022004
48 Heater Systems (Int. <input type="checkbox"/> Ext. <input type="checkbox"/>)	NONE		
49 Gauging Devices (Visual Scale)	D-43786 SH. 2		
50 Bottom Outlet Valve	NONE		
51 Bottom Outlet Arrgt.	D-55779C		L056010
52 Manway cover	D-243613J		L056072 Pending
53 Calculations	D-644023 SH. 1 & 2		L026066
54 Tank Qualification Drawing	D-41451B		L046043

REVISIONS:

APPLICATION BY: WILLIAM R. BITTING

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange, and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____
 TITLE SENIOR DESIGN ENGINEER

APPROVAL - AAR Tank Car Committee

Date Approved JUL 29 2005
 Signature on behalf of Tank Car Committee _____

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:

TILX 192303 - 192332 +
 TILX 192470 - 192499
 Form AAR 4-2 Revised 12/1/00

Name _____ Date 8-3-05
 Title Director/Quality Assurance

AAR Number L056059
 Applicant's No. T05019
 Date July 8, 2005

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING- NUMBER</u>	<u>PRECEDENT APPLICATION NUMBER</u>
55. 15" FLUED NOZZLE	D-440083A	L046011
56. 15" MULTI-HOUSING NOZZLE ASSEMBLY	D-440146B	L986056
57. 15" MULTI-HOUSING NOZZLE FLG. ASSEMBLY	D-840137C	
58. 15" MULTI-HOUSING NOZZLE COVER FLANGE	D-840136B	
59. BOTTOM OUTLET SADDLE ASSEMBLY	D-443885B	
60. 6" SAFETY VALVE NOZZLE ASSEMBLY	B-27507K	L996141B
61. SAFETY VALVE ARRANGEMENT	D-45651-09A	

LINE 46---VENTING, LOADING AND DISCHARGE VALVES
 THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT D-55096

2" SCREWED END BALL VALVE
 JAMESBURY 6FR-3600-MT ----- AAR E989012

3" SCREWED END BALL VALVE
 JAMESBURY 6FR-3600-MT ----- AAR E989012

MIDLAND A-209-W VACUUM RELIEF VALVE ----- AAR E002001

Cars are constructed in accordance with all applicable DOT/TC and AAR requirements. Car body structure meets the requirements of S-286-2002.

APPLICATION BY William R. Bitting
 I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.
SIGNATURE _____
TITLE Senior Design Engineer

APPROVAL AAR Tank Car Committee

Date Approved

JUL 29 2005

(Signature) on behalf of Tank Car Committee

T 08x 194145

SLM

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

Page 1 of 2

1 APPROVAL REQUESTED OF: PRECEDENT NON-PRECEDENT

2 TYPE: CONSTRUCTION WELDED REPAIRS ALTERATION OTHER CONVERSION

3 AAR NO: L066051

4 DATE: AUG. 11, 2006

5 APPLICANT'S NO: T06002

6 APPLICANT: TRINITY INDUSTRIES, INC.
P.O. BOX 568887 DALLAS, TEXAS 75356-8887

7 TANK SPECIFICATION: DOT 111A100W1

8 STENCILED SPEC.: DOT 111A100W1

9 REPORTING MARKS & CAR NUMBERS: TILX 194095 thru TILX 194294

10 NUMBER OF CARS: 200

11	Initial commodity	SEE NOTES	12	Density, lb. per gallon	6.05
13	Full water capacity, gal.	30,145	14	Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15	Material type & grade - heads	ASTM A516 Gr. 70	16	Material type & grade - shell	AAR TC128 Gr. B
17	Material thickness - heads, in.	7/16	18	Material thickness - shell, in.	7/16
19	Lining type	NONE	20	Inside diameter - center, in.	119-3/8
21	Inside diameter - end rings, in.	119-3/8	22	Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23	Test pressure, psig	165	24	Insulation type	NONE
25	Insulation thickness, in.	N.A.	26	Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27	Type and number of pressure relief devices	ONE VALVE	28	Pressure relief device start-to-discharge, psig	165
29	Pressure relief device flow cap'y., scfm req'd.	10,846 *	30	Pressure relief device flow capacity, scfm, actual	35,608
31	Tank surface area, sq. ft.	1755	32	Underframe or stub sill type	STUB SILL---TRN 023
33	Center of gravity, loaded, in.	88.7	34	Est. light weight, lb.	66,200
35	AAR clearance diagram	C	36	Rail load limit, lb.	263,000
37	Truck capacity, tons	100	38	Head shields	NONE

NOTES: * Gu = 23.71 for Ethyl Alcohol per Table A5.

Ethyl Alcohol and products authorized in DOT Part 173 for which there are no special commodity requirements and non-regulated commodities compatible with this class of car.

Orig. Cert. _____

Builder _____

Date _____

Former lading _____

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	D-41689C		L066046
40 Tank Arrangement	D-43783 SH. 1A		L066052 PENDING
41 Reinforced Openings	D-43783 SH. 2 & 3		L066052 PENDING
42 Bolster & Draft Sill Arrgt	D-440494-01 SH. 1A & 2A		L056062
43 Fittings Arrangement	D-55140-01A		
44 Manway Assembly	D-643668-105E		L056121
45 Protective Housing	C-38275F		L036048B
46 Venting, Loading and Discharge Valves	See Page 2		
47 Pressure Relief Devices	MIDLAND A-2165		PRD 002012
48 Heater Systems (Int <input type="checkbox"/> Ext <input type="checkbox"/>)	NONE		
49 Gauging Devices (Visual Scale)	D-43783 SH. 2		L066052 PENDING
50 Bottom Outlet Valve	Jamesbury 4" 5RET3-22HBT		E989005
51 Bottom Outlet Arrgt	D-55757-04B		
52 Manway cover	D-243613M		L066028A
53 Calculations	D-644023 Sheets 1 & 2		L026066
54 Tank Qualification Drawing	D-41451B		L046043

REVISIONS:

APPLICATION BY: SANDY L. MCQUEEN

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____
TITLE ENGINEERING MANAGER

APPROVAL - AAR Tank Car Committee

Date Approved SEP 15 2006

Signature on behalf of Tank Car Committee

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:

TILX 194095 - 194294
Form AAR 4-2 Revised 12/1/00 *SLM*

Name _____ Date 9-19-06
Title Director Quality Assurance

AAR Number L066051
 Applicant's No T06002
 Date Aug. 11. 2006

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING NUMBER</u>	<u>PRECEDENT APPLICATION NUMBER</u>
55. 15" FLUED NOZZLE	D-440083A	L046011
56. 15" MULTI-HOUSING NOZZLE ASSEMBLY	D-440146B	L986056
57. 15" MULTI-HOUSING NOZZLE COVER FLANGE	D-840171A	L056122
58. 6" SAFETY VALVE NOZZLE ASSEMBLY	B-27507K	L996141B
59 SAFETY VALVE ARRANGEMENT	D-55536A	L066027A

LINE 46---VENTING, LOADING AND DISCHARGE VALVES
 THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT D-55140-01

1" SCREWED END BALL VALVE
 JAMESBURY 23-2236MT-1 ----- AAR E979041A
 JAMESBURY 6FR-2236-MT ----- AAR E989012
 JAMESBURY 33-2236-TL ----- AAR E979019A
 WATTS CFBV-AAR ----- AAR E049018
 ELLCON 2S6BS-FPMP-1 ----- AAR E019003
 GEMINI 86-4RT6-S8-L ----- AAR E009023A

3" SCREWED END BALL VALVE
 JAMESBURY 6FR-2236-MT ----- AAR E989012
 WATTS CFBV-AAR ----- AAR E049018
 ELLCON 2S6BS-FPMP-3 ----- AAR E019003

Cars are constructed in accordance with all applicable DOT/TC and AAR requirements. Car body structure meets the requirements of S-286-2002.

APPLICATION BY Sandy L. McQueen

I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT ~~Railroad Safety~~ Appliance Standards.

SIGNATURE _____

TITLE Engineering Manager

APPROVAL AAR Tank Car Committee Date Approved SEP 15 2006 _____
 (Signature) on behalf of Tank Car Committee
 Page 2 of 2

TLX 198946 199078
198738
199062

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

1 APPROVAL REQUESTED OF: PRECEDENT NON-PRECEDENT
 2 TYPE: CONSTRUCTION WELDED REPAIRS ALTERATION OTHER CONVERSION
 3 AAR NO. L086172A
 4 DATE: OCTOBER 7, 2008
 5 APPLICANT'S NO. T06021D & T06021YA
 6 APPLICANT: TRINITY TANK CAR, INC.
P.O. BOX 568887 DALLAS, TEXAS 75356-8887
 7 TANK SPECIFICATION: DOT 111A100W1
 8 STENCILED SPEC.: DOT 111A100W1
 9 REPORTING MARKS & CAR NUMBERS SEE PAGE 2
 10 NUMBER OF CARS 768

11 Initial commodity	SEE NOTES	12 Density, lb. per gallon	6.59
13 Full water capacity, gal.	30,145	14 Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15 Material type & grade - heads	ASTM A516 Gr. 70	16 Material type & grade - shell	AAR TC128 Gr. B
17 Material thickness - heads, in.	7/16	18 Material thickness - shell, in.	7/16
19 Lining type	NONE	20 Inside diameter - center, in.	119-3/8
21 Inside diameter - end rings, in.	119-3/8	22 Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23 Test pressure, psig	165	24 Insulation type	NONE
25 Insulation thickness, in.	N.A.	26 Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27 Type and number of pressure relief devices	ONE VALVE	28 Pressure relief device start-to-discharge, psig	165
29 Pressure relief device flow cap'y., scfm req'd.	11,120*	30 Pressure relief device flow capacity, scfm, actual	35,608
31 Tank surface area, sq. ft.	1755	32 Underframe or stub sill type	STUB SILL---TRN 023
33 Center of gravity, loaded, in.	88.7	34 Est. light weight, lb.	66,200
35 AAR clearance diagram	C	36 Rail load limit, lb.	263,000
37 Truck capacity, tons	100	38 Head shields	NONE

NOTES: * Safety valve sized using default equation of A8.1.1.1

ETHYL ALCOHOL and products authorized in DOT Part 173 for which there are no special commodity requirements and non-regulated commodities compatible with this class of car.

Orig. Cert. _____
 Builder _____
 Date _____
 Former lading _____

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	D-41759		L056040A
40 Tank Arrangement	D-43832 SH. 1E		L076126
41 Reinforced Openings	D-43832 SH. 2A & 3A		L076126
42 Bolster & Draft Sill Arrgt.	D-440494-01 SH. 1A & 2A		L056062
43 Fittings Arrangement	D-55174B		L076016
44 Manway Assembly	D-643668-105J		L086055
45 Protective Housing	C-38275F		L036048B
46 Venting, Loading and Discharge Valves	See Page 2		
47 Pressure Relief Devices	MIDLAND A-2165		SRD002012
48 Heater Systems (Int. <input type="checkbox"/> Ext. <input type="checkbox"/>)	NONE		E029014
49 Gauging Devices (Visual Scale)	D-43832 SH. 2A		L076126
50 Bottom Outlet Valve	Jamesbury 4" 9RET3		E079011
51 Bottom Outlet Arrgt.	D-55901A		L086071
52 Manway cover	D-243613S		L076027
53 Calculations	D-644023 SH. 1A & 2B		L086007 Pending
54 Tank Qualification Drawing	D-41451B		L046043

REVISIONS:

Rev. A, January 9, 2013: Revised lines 5, 9 & 10.

APPLICATION BY: SANDY L. MCQUEEN
 I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, and Safety Appliance Standards.
 SIGNATURE _____
 TITLE ENGINEERING MANAGER

APPROVAL - AAR Tank Car Committee

Date Approved JAN 18 2013

Signature on behalf of Tank Car Committee

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:
SEE PAGE 2

Name _____ Date 1/25/13
 Title V.P. Quality Assurance

AAR Number L086172A
Applicant's No. T06021D & T06021YA

Date OCTOBER 7,

2008

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING NUMBER</u>	<u>PRECEDENT APPLICATION NUMBER</u>
55. 15" FLUED NOZZLE	D-440083A	L046011
56. 15" MULTI-HOUSING NOZZLE ASSEMBLY	D-440146D	L076091A
57. 15" MULTI-HOUSING NOZZLE COVER FLANGE	D-840171B	L076169A
58. 6" SAFETY VALVE NOZZLE ASSEMBLY	B-27507K	L996141B
59. SAFETY VALVE ARRANGEMENT	D-55536A	L066027A

LINE 46---VENTING, LOADING AND DISCHARGE VALVES
THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT D-55174

1" SCREWED END BALL VALVE

JAMESBURY 6FR-2236-MT ----- AAR E989012
WATTS CFBV-AAR ----- AAR E049018
ELLCON 2S6BS-FPMP-1 ----- AAR E019003

Cars are constructed in accordance with all applicable DOT/TC and AAR requirements.
Car body structure meets the requirements of S-286-2006.

Line 9 : TILX 195246 – 195394, TILX 198025 – 198196, TILX 198297 – 198324,
TILX 198705 – 198759, TILX 198910 – 199011, TILX 199061 – 199149,
TILX 199193 – 199293, TILX 199368 – 199374, TILX 199736 – 199800.

APPLICATION BY Sandy L. McQueen

I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____

TITLE _____

Engineering Manager

APPROVAL AAR Tank Car Committee

Date Approved JAN 18 2013

(Signature) on behalf of Tank Car Committee

TILX 199335
199040

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

Page 1 of 2

1 APPROVAL REQUESTED OF: PRECEDENT NON-PRECEDENT

2 TYPE: CONSTRUCTION WELDED REPAIRS
 ALTERATION OTHER
 CONVERSION

3 AAR NO. L066070A

4 DATE: NOVEMBER 10, 2006

5 APPLICANT'S NO. See Page 2

6 APPLICANT: TRINITY INDUSTRIES, INC.
P.O. BOX 568887 DALLAS, TEXAS 75356-8887

7 TANK SPECIFICATION: DOT 111A100W1

8 STENCILED SPEC.: DOT 111A100W1

9 REPORTING MARKS & CAR NUMBERS SEE PAGE 2

10 NUMBER OF CARS 922

11	Initial commodity	SEE NOTES	12	Density, lb. per gallon	6.59
13	Full water capacity, gal.	30,145	14	Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15	Material type & grade - heads	ASTM A516 Gr. 70	16	Material type & grade - shell	AAR TC128 Gr. B
17	Material thickness - heads, in.	7/16	18	Material thickness - shell, in.	7/16
19	Lining type	NONE	20	Inside diameter - center, in.	119-3/8
21	Inside diameter - end rings, in.	119-3/8	22	Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23	Test pressure, psig	165	24	Insulation type	NONE
25	Insulation thickness, in.	N.A.	26	Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27	Type and number of pressure relief devices	ONE VALVE	28	Pressure relief device start-to-discharge, psig	165
29	Pressure relief device flow cap'y., scfm req'd.	11,120 *	30	Pressure relief device flow capacity, scfm, actual	35,608
31	Tank surface area, sq. ft.	1755	32	Underframe or stub sill type	STUB SILL--TRN 023
33	Center of gravity, loaded, in.	88.7	34	Est. light weight, lb.	66,200
35	AAR clearance diagram	C	36	Rail load limit, lb.	263,000
37	Truck capacity, tons	100	38	Head shields	NONE

NOTES: * Gu = 24.31 for Ethyl Alcohol at 165 psig start-to-discharge pressure--per L056040A.

Ethyl Alcohol and products authorized in DOT Part 173 for which there are no special commodity requirements and non-regulated commodities compatible with this class of car.

Orig. Cert. _____
 Builder _____
 Date _____
 Former lading _____

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	D-41759		L056040A
40 Tank Arrangement	D-43832 SH. 1D		L066050
41 Reinforced Openings	D-43832 SH. 2A & 3A		L066050
42 Bolster & Draft Sill Arrgt.	D-440494-01 SH. 1A & 2A		L056062
43 Fittings Arrangement	D-55174A		
44 Manway Assembly	D-643668-105F		L066060A
45 Protective Housing	C-38275F		L036048B
46 Venting, Loading and Discharge Valves	See Page 2		
47 Pressure Relief Devices	MIDLAND A-2165		SRD002012
48 Heater Systems (Int. <input type="checkbox"/> Ext. <input type="checkbox"/>)	NONE		
49 Gauging Devices (Visual Scale)	D-43832 SH. 2A		L066050
50 Bottom Outlet Valve	Jamesbury 4" 5RET3-22HBTT		E989005
51 Bottom Outlet Arrgt.	D-55757-04B		L066051
52 Manway cover	D-243613M		L066028A
53 Calculations	D-644023 SH. 1 & 2B		L066112
54 Tank Qualification Drawing	D-41451B		L046043

REVISIONS:

Rev. A, Jan. 9, 2013: Revised lines 5, 9 & 10.

APPLICATION BY: Sandy L. McQueen

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange, and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____
 TITLE Engineering Manager

APPROVAL - AAR Tank Car Committee

JAN 18 2013

Date Approved _____

Signature on behalf of Tank Car Committee

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:

SEE PAGE 2

Name _____ Date 1/25/13

Title V P Quality Assurance

AAR Number L066070A
 Applicant's No. T06021
 Date November 10, 2006

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING NUMBER</u>	<u>PRECEDENT APPLICATION NUMBER</u>
55. 15" FLUED NOZZLE	D-440083A	L046011
56. 15" MULTI-HOUSING NOZZLE ASSEMBLY	D-440146B	L986056
57. 15" MULTI-HOUSING NOZZLE COVER FLANGE	D-840171A	L056122
58. 6" SAFETY VALVE NOZZLE ASSEMBLY	B-27507K	L996141B
59. SAFETY VALVE ARRANGEMENT	D-55536A	L066027A

LINE 46---VENTING, LOADING AND DISCHARGE VALVES
 THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT D-55174

1" SCREWED END BALL VALVE

JAMESBURY 23-2236MT-1 -----AAR E979041A
 JAMESBURY 6FR-2236-MT -----AAR E989012
 JAMESBURY 33-2236-TL -----AAR E979019A
 WATTS CFBV-AAR -----AAR E049018
 ELLCON 2S6BS-FPMP-1 -----AAR E019003
 GEMINI 86-4RT6-S8-L -----AAR E009023A

Cars are constructed in accordance with all applicable DOT/TC and AAR requirements.
 Car body structure meets the requirements of S-286-2006.

Line 5: T06021, T06021A, T06021B, T06021C, T06021X, T06021Y & T06021Z

Line 9: TILX 194625 – 195245, TILX 198197 - 198296, TILX 199012 – 199060,
 TILX 199150 – 199192, TILX 199294 – 199367, TILX 199801 – 199835.

APPLICATION BY Sandy L. McQueen

I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____
TITLE Engineering Manager

APPROVAL AAR Tank Car Committee Date Approved JAN 18 2013

 (Signature) on behalf of Tank Car Committee
 Page 2 of 2

TILX: 194329

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

1 APPROVAL REQUESTED OF PRECEDENT NON-PRECEDENT

2 TYPE: CONSTRUCTION WELDED REPAIRS ALTERATION OTHER CONVERSION

3 AAR NO L076034A

4 DATE: JULY 26, 2007

5 APPLICANT'S NO T06092

6 APPLICANT: TRINITY TANK CAR, INC.
P.O. BOX 568887 DALLAS, TEXAS 75356-8887

7 TANK SPECIFICATION: DOT 111A100W1

8 STENCILED SPEC DOT 111A100W1

9 REPORTING MARKS & CAR NUMBERS TILX 194310 thru TILX 194339

10 NUMBER OF CARS 30

11 Initial commodity	SEE NOTES	12 Density, lb. per gallon	6.59
13 Full water capacity, gal.	30,145	14 Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15 Material type & grade - heads	ASTM A516 Gr. 70	16 Material type & grade - shell	AAR TC128 Gr. B
17 Material thickness - heads, in.	7/16	18 Material thickness - shell, in.	7/16
19 Lining type	NONE	20 Inside diameter - center, in.	119-3/8
21 Inside diameter - end rings, in.	119-3/8	22 Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23 Test pressure, psig	165	24 Insulation type	NONE
25 Insulation thickness, in.	N.A.	26 Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27 Type and number of pressure relief devices	ONE VALVE	28 Pressure relief device start-to-discharge, psig	165
29 Pressure relief device flow cap'y., scfm req'd.	10,846 *	30 Pressure relief device flow capacity, scfm, actual	35,608
31 Tank surface area, sq. ft.	1755	32 Underframe or stub sill type	STUB SILL---TRN 023
33 Center of gravity, loaded, in.	88.7	34 Est. light weight, lb.	65,900
35 AAR clearance diagram	C	36 Rail load limit, lb.	263,000
37 Truck capacity, tons	100	38 Head shields	NONE

NOTES: * Gu = 23 71 for Ethyl Alcohol per Table A5

Ethyl Alcohol and products authorized in DOT Part 173 for which there are no special commodity requirements and non-regulated commodities compatible with this class of car

Orig. Cert. _____
 Builder _____
 Date _____
 Former lading _____

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	D-41778A		L066080
40 Tank Arrangement	D-43835 SH. 1D		
41 Reinforced Openings	D-43835 SH. 2 & 3		
42 Bolster & Draft Sill Arrgt	D-440494-01 SH. 1A & 2A		L056062
43 Fittings Arrangement	D-55167B		L066080
44 Manway Assembly	D-643668-113D		L066080
45 Protective Housing	C-38275F		L036048B
46 Venting, Loading and Discharge Valves	See Page 2		
47 Pressure Relief Devices	MIDLAND A-2165		SRD 002012
48 Heater Systems (Int <input type="checkbox"/> Ext <input type="checkbox"/>)	NONE		
49 Gauging Devices (Visual Scale)	D-43835 SH. 2		
50 Bottom Outlet Valve	NONE		
51 Bottom Outlet Arrgt	D-55813-04		L066080
52 Manway cover	D-243613S		L076027
53 Calculations	D-644023 SH. 1 & 2B		L066112
54 Tank Qualification Drawing	D-41451B		L046043

REVISIONS:

APPLICATION BY: SANDY L. MCQUEEN

Rev. A, July 31, 2007: Revised sh. 2 drawing revision level at line 53.

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards

SIGNATURE _____
 TITLE ENGINEERING MANAGER

APPROVAL - AAR Tank Car Committee

Date Approved OCT 05 2007

Signature on behalf of Tank Car Committee

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:

TILX 194310 - 194339

Name _____ Date 10-15-07

AAR Number L076034A
 Applicant's No T06092
 Date JULY 26, 2007

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING NUMBER</u>	<u>PRECEDENT APPLICATION NUMBER</u>
55 15" FLUED NOZZLE	D-440083A	L046011
56 15" MULTI-HOUSING NOZZLE ASSEMBLY	D-440146B	L986056
57 15" MULTI-HOUSING NOZZLE COVER FLANGE	D-840171A	L056122
59 BOTTOM OUTLET SADDLE ASSEMBLY	D-443885B	L056059
60 6" SAFETY VALVE NOZZLE ASSEMBLY	B-27507K	L996141B
61 SAFETY VALVE ARRANGEMENT	D-55544-02	L066080

LINE 46--VENTING, LOADING AND DISCHARGE VALVES
 THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT D-55167

2" SCREWED END BALL VALVE
 WATTS S-FBV-AAR ----- AAR E049018
 JAMESBURY 6FR-3600-MT ----- AAR E989012
 ELLCON 2S6BS-FPMP-2 ----- AAR E019003

3" SCREWED END BALL VALVE
 JAMESBURY 6FR-3600-MT ----- AAR E989012
 WATTS S-FBV-AAR ----- AAR E049018
 ELLCON 2S6BS-FPMP-3 ----- AAR E019003

MIDLAND A-222-W FLANGED VACUUM RELIEF VALVE ----- AAR E002010

Cars are constructed in accordance with all applicable DOT/TC and AAR requirements. Car body structure meets the requirements of S-286-2002

APPLICATION BY Sandy L. McQueen
 I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards
SIGNATURE _____
TITLE Engineering Manager

APPROVAL AAR Tank Car Committee Date Approved OCT 05 2007

(Signature) on behalf of Tank Car Committee
 Page 2 of 2

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

ORDER DATE: OCTOBER 9, 2012

1 APPROVAL REQUESTED OF: PRECEDENT NON-PRECEDENT
 2 TYPE: CONSTRUCTION WELDED REPAIRS ALTERATION OTHER CONVERSION
 3 AAR NO. L136111
 4 DATE: JULY 16, 2013
 5 APPLICANT'S NO. T12136XA
 6 APPLICANT: TRINITY TANK CAR, INC.
P.O. BOX 568887 DALLAS, TEXAS 75356-8887
 7 TANK SPECIFICATION: DOT 111A100W1
 8 STENCILED SPEC.: DOT 111A100W1
 9 REPORTING MARKS & CAR NUMBERS TILX 351987 to TILX 352096
TILX 351716 to TILX 351740
 10 NUMBER OF CARS 136

11 Initial commodity	SEE NOTES	12 Density, lb. per gallon	6.63
13 Full water capacity, gal.	31,808	14 Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15 Material type & grade - heads	AAR TC128 Gr. B NORM	16 Material type & grade - shell	AAR TC128 Gr. B NORM
17 Material thickness - heads, in.	1/2	18 Material thickness - shell, in.	1/2
19 Lining type	NONE	20 Inside diameter - center, in.	122-1/2
21 Inside diameter - end rings, in.	122-1/2	22 Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23 Test pressure, psig	165	24 Insulation type	NONE
25 Insulation thickness, in.	NONE	26 Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27 Type and number of safety relief devices	ONE VALVE	28 Safety device start-to-discharge, psig	75
29 Safety device flow cap'y., scfm req'd.	21,073	30 Safety device flow capacity, scfm, actual	27,000
31 Tank surface area, sq. ft.	1,806	32 Underframe or stub sill type	STUB SILL---TRN 024
33 Center of gravity, loaded, in.	88.7	34 Est. light weight, lb.	75,300
35 AAR clearance diagram	C	36 Rail load limit, lb.	286,000
37 Truck capacity, tons	100	38 Head shields	1/2" thk A572-50

NOTES: Petroleum Crude Oil (PG I or II) and products authorized in DOT Part 173 for which there are no special commodity requirements and nonregulated commodities compatible with this class of car.

Orig. Cert. _____
 Builder _____
 Date _____
 Former lading _____

* Safety Valve sized using equation 8.1.1.1a of Appendix A

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	M-042-T12136XA		
40 Arrangement, Tank	T-025-80013 SH. 1 thru 5		L136091
41 Reinforced Openings	T-030-80007 SH. 1, 2 & 3		L136091
42 Draft Sill Arrgt.	U-075-80002 SH. 1B & 2B		L116062B
43 Fittings Arrangement	F-020-80039 SH. 1 & 2		
44 Manway Assembly	T-032-80015		L136091
45 Protective Housing	F-050-80017		L126121
46 Venting, Loading and Discharge Valves	SEE PAGE 2		
47 Safety Relief Devices	KELSO JS75XH		PRD 079004
48 Heater Systems (Int. <input type="checkbox"/> Ext. <input type="checkbox"/>)	NONE		
49 Gaging Device (Visual Scale)	T-030-80007 SH. 3		L136091
50 Bottom Outlet Valve	MIDLAND A-522		E122005
51 Bottom Outlet Arrangement	V-014-80023B		L136091
52 Manway cover	F-021-80007D		L136090
53 Calculations	K-018-2003A		L136014
54 Tank Qualification Drawing	T-023-2000B		

REVISIONS:

APPLICATION BY: SANDY L. MCQUEEN

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange, and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____
 TITLE ENGINEERING MANAGER

APPROVAL - AAR Tank Car Committee

FEB 03 2014
 Date Approved

Signature on behalf of Tank Car Committee

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:

Tilx 351987-352096 & 351716-351740

Name _____ Date 2/20/14

Title V.P. Quality

AAR Number L136111
 Applicant's No. T12136XA
 Date JULY 16, 2013

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING NUMBER</u>	<u>PRECEDENT APPLICATION NO.</u>
55. 20" NOZZLE ASSEMBLY	T-032-80006C	L126097
56. FITTINGS COVER PLATE	F-300-80017A	L126122A
57. TANK HEAD SHIELD ASSY - A & B ENDS	T-034-80001D	L136014A
58. APPLICATION OF GPS UNIT	C-011-80000A	L126000
59. FITTINGS COVER ASSEMBLY	F-070-80002A	L136014A

LINE 46 --- VENTING, LOADING AND DISCHARGE VALVES
 THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT F-020-80039

2" FLANGED BALL VALVE
 APOLLO CA- 87A ----- AAR E119024

3" FLANGED BALL VALVE
 APOLLO CA-87A ----- AAR E119024

MIDLAND A-222-W-5 VACUUM RELIEF VALVE ----- AAR E112001

The tank cars of this application are constructed in accordance with all applicable DOT/TC and AAR requirements, including AAR Standard S-286-2006 and MSRP C-III, Section 2.5 and 2.7.

APPLICATION BY Sandy L. McQueen

I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____
TITLE Engineering Manager

APPROVAL AAR Tank Car Committee

FEB 03 2014
 Date Approved _____

(Signature) on behalf of Tank Car Committee

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

ORDER DATE: OCTOBER 9, 2012

Page 1 of 2

1 APPROVAL REQUESTED OF: PRECEDENT NON-PRECEDENT

2 TYPE: CONSTRUCTION WELDED REPAIRS ALTERATION OTHER CONVERSION

3 AAR NO. **L126114A**

4 DATE: **NOVEMBER 29, 2012**

5 APPLICANT'S NO. **T12145**

6 APPLICANT: **TRINITY TANK CAR, INC.**
P.O. BOX 568887 DALLAS, TEXAS 75356-8887

7 TANK SPECIFICATION: **DOT 111A100W1**

8 STENCILED SPEC.: **DOT 111A100W1**

9 REPORTING MARKS & CAR NUMBERS **TILX 351767 to TILX 351876**

10 NUMBER OF CARS **330**

TILX 352096 to TILX 352316

11 Initial commodity	SEE NOTES	12 Density, lb. per gallon	6.63
13 Full water capacity, gal.	31,808	14 Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15 Material type & grade - heads	AAR TC128 Gr. B NORM	16 Material type & grade - shell	AAR TC128 Gr. B NORM
17 Material thickness - heads, in.	1/2	18 Material thickness - shell, in.	1/2
19 Lining type	NONE	20 Inside diameter - center, in.	122-1/2
21 Inside diameter - end rings, in.	122-1/2	22 Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23 Test pressure, psig	165	24 Insulation type	NONE
25 Insulation thickness, in.	NONE	26 Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27 Type and number of safety relief devices	ONE VALVE	28 Safety device start-to-discharge, psig	75
29 Safety device flow cap'y., scfm req'd.	26,879	30 Safety device flow capacity, scfm, actual	35,608
31 Tank surface area, sq. ft.	1,806	32 Underframe or stub sill type	STUB SILL---TRN 024
33 Center of gravity, loaded, in.	88.7	34 Est. light weight, lb.	75,300
35 AAR clearance diagram	C	36 Rail load limit, lb.	286,000
37 Truck capacity, tons	100	38 Head shields	1/2" thk A572-50

NOTES: Petroleum Crude Oil (PG I or II) and products authorized in DOT Part 173 for which there are no special commodity requirements and nonregulated commodities compatible with this class of car.

Orig. Cert. _____
 Builder _____
 Date _____
 Former lading _____

* Safety Valve sized using equation 8.1.1.1a of Appendix A

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	M-042-T12145		
40 Arrangement, Tank	T-025-80001 SH. 1A thru 5A		L116071A
41 Reinforced Openings	T-030-80003 SH. 1A & 2A		L126108
42 Draft Sill Arrgt.	U-075-80010 SH. 1 & 2		L126108
43 Fittings Arrangement	F-020-80021 SH. 1 & 2		L126111 Pending
44 Manway Assembly	T-032-80004A		L116062B
45 Protective Housing	F-050-80012A		L126108
46 Venting, Loading and Discharge Valves	SEE PAGE 2		
47 Safety Relief Devices	MIDLAND A-2165		PRD 112003
48 Heater Systems (Int <input type="checkbox"/> Ext. <input type="checkbox"/>)	NONE		
49 Gaging Device (Visual Scale)	T-030-80003 SH. 2A		L126108
50 Bottom Outlet Valve	JAMESBURY 4" 9RET3		E079011
51 Bottom Outlet Arrangement	V-014-80017		L126108
52 Manway cover	F-021-80007		L126108
53 Calculations	K-018-2003		L126023B
54 Tank Qualification Drawing	T-023-2000		L126023B

REVISIONS:

APPLICATION BY: **SANDY L. MCQUEEN**

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____
 TITLE **ENGINEERING MANAGER**

APPROVAL - AAR Tank Car Committee

Date Approved **FEB 19 2013**

Signature on behalf of Tank Car Committee

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:

TILX 351767-351876 & 352096-352316

Name _____ Date **3-1-13**

Title **VP Quality Assurance**

AAR Number L126114A
Applicant's No. T12145
Date November 29, 2012

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING NUMBER</u>	<u>PRECEDENT APPLICATION NO.</u>
55. 20" NOZZLE ASSEMBLY	T-032-80006C	L126097
56. FITTINGS COVER PLATE	F-300-80002	L116022A
57. TANK HEAD SHIELD ASSY - A & B ENDS	T-034-80001B	L116062B
58. APPLICATION OF GPS UNIT	C-011-80000A	L126111 Pending

LINE 46 --- VENTING, LOADING AND DISCHARGE VALVES
THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT F-020-80021

2" FLANGED BALL VALVE
JAMESBURY 9150 ----- AAR E089013

3" FLANGED BALL VALVE
JAMESBURY 9150 ----- AAR E089013

MIDLAND A-220-W VACUUM RELIEF VALVE ----- AAR E112001

The tank cars of this application are constructed in accordance with all applicable DOT/TC and AAR requirements, including AAR Standard S-286-2006 and MSRP C-III, Section 2.5 and 2.7.

APPLICATION BY Sandy L. McQueen
I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.
SIGNATURE [Redacted]
TITLE Engineering Manager

APPROVAL AAR Tank Car Committee Date Approved FEB 19 2013

[Redacted]
(Signature) on behalf of Tank Car Committee
Page 2 of 2

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

ORDER DATE: OCTOBER 9, 2012

1 APPROVAL REQUESTED OF: PRECEDENT NON-PRECEDENT

2 TYPE: CONSTRUCTION WELDED REPAIRS ALTERATION OTHER CONVERSION

3 AAR NO. **L146101**

4 DATE: **AUGUST 14, 2014**

5 APPLICANT'S NO. **T12145C**

6 APPLICANT: **TRINITY TANK CAR, INC.**
P.O. BOX 568887 DALLAS, TEXAS 75356-8887

7 TANK SPECIFICATION: **DOT 111A100W1**

8 STENCILED SPEC.: **DOT 111A100W1**

9 REPORTING MARKS & CAR NUMBERS **TILX 351867 to TILX 351874**

10 NUMBER OF CARS **8**

11 Initial commodity	SEE NOTES	12 Density, lb. per gallon	6.63
13 Full water capacity, gal.	31,808	14 Dome capacity or outage, gal.	per DOT 173.24b(a)(1)
15 Material type & grade - heads	AAR TC128 Gr. B NORM	16 Material type & grade - shell	AAR TC128 Gr. B NORM
17 Material thickness - heads, in.	1/2	18 Material thickness - shell, in.	1/2
19 Lining type	NONE	20 Inside diameter - center, in.	122-1/2
21 Inside diameter - end rings, in.	122-1/2	22 Head radius, main, in. (if not 2:1)	2:1 ELLIPSOIDAL
23 Test pressure, psig	165	24 Insulation type	NONE
25 Insulation thickness, in.	NONE	26 Thermal conductivity, Btu-in/hr-ft ² -°F	N.A.
27 Type and number of safety relief devices	ONE VALVE	28 Safety device start-to-discharge, psig	75
29 Safety device flow cap'y., scfm req'd.	26,879	30 Safety device flow capacity, scfm, actual	30,061
31 Tank surface area, sq. ft.	1,806	32 Underframe or stub sill type	STUB SILL---TRN 024
33 Center of gravity, loaded, in.	88.7	34 Est. light weight, lb.	75,300
35 AAR clearance diagram	C	36 Rail load limit, lb.	286,000
37 Truck capacity, tons	100	38 Head shields	1/2" thk A572-50

NOTES: Petroleum Crude Oil (PG I or II) and products authorized in DOT Part 173 for which there are no special commodity requirements and nonregulated commodities compatible with this class of car.

Orig. Cert. _____
 Builder _____
 Date _____
 Former lading _____

* Safety Valve sized using equation 8.1.1.1a of Appendix A

The Following Drawings Apply	Drawing Number	The following prior approvals apply:	
		Drawing Number	Application/Certificate No.
39 General Arrangement	M-042-T12145C		
40 Arrangement, Tank	T-025-80012 SH. 1G thru 5G		
41 Reinforced Openings	T-030-80007 SH. 1F, 2F & 3F		L136095A
42 Draft Sill Arrgt.	U-075-80010 SH. 1A & 2A		L126108A
43 Fittings Arrangement	F-020-80061 SH. 1A & 2A		
44 Manway Assembly	T-032-80015A		L136095A
45 Protective Housing	F-050-80017E		L146001
46 Venting, Loading and Discharge Valves	SEE PAGE 2		
47 Safety Relief Devices	KELSO JS75XH		PRD 079002
48 Heater Systems (Int. <input type="checkbox"/> Ext. <input type="checkbox"/>)	NONE		
49 Gaging Device (Visual Scale)	T-030-80007 SH. 3F		L136095A
50 Bottom Outlet Valve	MIDLAND A-522		E122005
51 Bottom Outlet Arrangement	V-014-80027		L136090
52 Manway cover	F-021-80007D		L136090
53 Calculations	K-018-2003B		L136091
54 Tank Qualification Drawing	T-023-2000B		L136111

REVISIONS:

APPLICATION BY: **SANDY L. MCQUEEN**

I certify that the foregoing conforms to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange, and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____
 TITLE **ENGINEERING MANAGER**

APPROVAL - AAR Tank Car Committee

SEP 29 2014
 Date Approved _____

Signature on behalf of Tank Car Committee _____

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others as required by 49 CFR Part 179.5 before these cars are placed in service.

Initials and Car Numbers:

TILX 351867-351874
 Form AAR 4-2 Revised 12/1/00

Name: _____ Date **10/17/14**
 Title **VP - QUALITY**

AAR Number L146101
Applicant's No. T12145C
Date AUGUST 14, 2014

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

<u>THE FOLLOWING DRAWINGS APPLY</u>	<u>DRAWING NUMBER</u>	<u>PRECEDENT APPLICATION NO.</u>
55. 20" NOZZLE ASSEMBLY	T-032-80006F	L146001
56. FITTINGS COVER PLATE	F-070-80002A	L136014A
57. TANK HEAD SHIELD ASSY - A & B ENDS	T-034-80001E	N146003
58. APPLICATION OF GPS UNIT	C-011-80002	L136031

LINE 46 --- VENTING, LOADING AND DISCHARGE VALVES
THESE ARE THE VALVES REFERENCED ON FITTINGS ARRANGEMENT F-020-80061

2" FLANGED BALL VALVE
JAMESBURY 9150 ----- AAR E089013

3" FLANGED BALL VALVE
JAMESBURY 9150 ----- AAR E089013

MIDLAND A-220-W VACUUM RELIEF VALVE ----- AAR E112001

The tank cars of this application are constructed in accordance with all applicable DOT/TC and AAR requirements, including AAR Standard S-286-2006 and MSRP C-III, Section 2.5 and 2.7.

APPLICATION BY Sandy L. McQueen

I certify that the foregoing conforms to all applicable DOT and AAR requirements, including Specifications, Regulations, Rules of Interchange and the DOT Railroad Safety Appliance Standards.

SIGNATURE _____

TITLE Engineering Manager

APPROVAL AAR Tank Car Committee

Date Approved SEP 29 2014

(Signature) on behalf of Tank Car Committee

TILX 363442 363368 363454

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

1 APPROVAL REQUESTED OF: Non-Precedent

2 TYPE: Construction

3 AAR NO: L176070

4 DATE: 12/28/2017

4.1 ORDER DATE: 10/17/2017

5 APPLICANT'S NO: T17057

7 TANK SPECIFICATION: DOT-117A100W

8 STENCILED SPEC: DOT-117J100W

10 NUMBER OF CARS: 130

6 APPLICANT: TRINITY TANK CAR, INC.
P.O. BOX 56887
DALLAS, TX 75356-8887

9 REPORTING MARKS AND CAR NUMBERS: TILX 363330-363459

11	Initial Commodity	ETHANOL	12	Density (LB Per Gallon)	6.58
13	Full Water Capacity (Gallons)	30300	14	Dome Capacity or Outage (Gallons)	per DOT 173.24b(a) (1)
15	Material Type / Grade Heads	AAR TC-128, Gr. B	15.1	Tank Head Material Normalized	Yes
15.2	Tank Head Spliced	No	15.3	Charpy Requirements	
16	Material Type and Grade Shell	AAR TC-128, Gr. B	16.1	Tank Shell Material Normalized	Yes
16.2	Charpy Requirements		17	Material Thickness Heads (Inches)	0.5625
18	Material Thickness Shell (Inches)	0.5625	19	Lining Type	None
20	Inside Diameter - Center (Inches)	119.375	21	Inside Diameter - End Rings (Inches)	119.375
22	Head Radius, Main (Inches if not 2:1)	2:1	23	Test Pressure (PSI)	165
24	Insulation Type	CF-Ceramic Fiber	25	Insulation Thickness (Inches)	0.5
26	Thermal Conductivity (BTU - in/hr. -ft sq. - degree F)	0.238	27	Type of Safety Relief Devices	Valve
27.1	Number of Safety Relief Devices	1	28	Pressure Relief Device Start-to-Discharge (PSI)	75
29	Pressure Relief Device Flow Capacity (CFM Required)	2302	30	Pressure Relief Device Flow Capacity (CFM Actual)	31676
31	Tank Surface Area (Sq Ft)	1770	32	Underframe or Stub Sill Type	TRN024-TRN024 Stub Sill Design
33	Center of Gravity, Loaded (Inches)	92.0	34	Estimated Light Weight (lb)	90500
35	AAR Clearance Diagram	C	36	Rail Load Limit (lb)	286000
37	Truck Capacity (Tons)	100	38	Head Shield Type	F-Full Shield
38.1	Head Shield Thickness (inches)	0.5			

Notes: Other Related Drawings are attached which should be verified. Other Related Drawings are attached which should be verified.

Original Certificate:

Builder:

Date:

Former lading:

The Following Drawings Apply:

- 39 General Arrangement
- 40 Tank Arrangement
- 41 Reinforced Openings, Including Calculations
- 42 Anchorage, Including Calculations
- 43 Fittings Arrangement
- 44 Manway Assembly
- 45 Protective Housing
- 46 Venting, Loading, and Discharge Valves
- 47 Pressure Relief Devices
- 48 Heater Systems (ext.)
- 49 Gauging Devices
- 50 Bottom Outlet Valve
- 51 Repairs
- 52 Manway Cover
- 53 Calculations
- 54 Tank Qualification Drawing

The Following Prior Approvals Apply:

Drawing Number	Drawing Number	Application/Certificate No
M-042-T17057rA		
T-025-80085 SH 1, 2, 3, 4 & 5		
T-030-80017 SH. 1C, 2C & 3C		
U-075-80026 SH. 1A & 2A		L166091
F-020-80158 SH. 1 & 2		
T-032-80026D		L176013
F-050-80030B		L146089
JAMESBURY 2" 9150		AAR E089013
FORT VALE 0R4		PRD 139512
NONE		
T-030-80017 SH. 2C		
V-014-80272 SH. 1 & 2		
F-021-80066		
K-018-2006E		
T-023-80003D		L166049

REVISIONS:

APPLICATION BY: Samuel Coates

I certify that the foregoing conforms to all applicable DOT and AAR requirements, including specifications, regulations, rules of interchange, and the DOT Railroad Safety Appliance Standards.

SIGNATURE: Samuel Coates

TITLE: Project Engineer

APPROVAL - AAR Tank Car Committee

Date Approved 04/23/2018 Kenneth Dorsey
(signature) on behalf of the Tank Car Committee

APPROVAL COMMENTS:

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements, including specifications, regulations, rules of interchange, and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others, as required by 49 CFR Part 179.5, before these cars are placed in service

Initials and Car Numbers:

TILX 363330-363459

Name: Dean Matzo Date: 08/10/2018

Title: Vice President Quality

AAR No. L176070
Applicant's No. T17057
Date 12/28/2017

8 THE TANK CARS OF THIS APPLICATION ARE CONSTRUCTED IN ACCORDANCE WITH ALL APPLICABLE DOT/TC AND AAR REQUIREMENTS, INCLUDING AAR STANDARD S-286-2006 AND MSRP C-III , SECTIONS 2.5 AND 2.7.

11 AND PRODUCTS AUTHORIZED IN DOT PART 173 FOR WHICH THERE ARE NO SPECIAL COMMODITY REQUIREMENTS AND NONREGULATED COMMODITIES COMPATIBLE WITH THIS CLASS OF CAR.

29 SAFETY VALVE SIZED USING EQUATION A7.1.1.1A.

38.1 A572-50 Material

50 JAMESBURY 9RET ----- E172109

52 Transquip Fabricated Manway Cover TRQ-2016-1222 ---- E172126

Other Related Drawings:

B-23650.pdf

JACKET ANCHOR ----- L176069

F-070-80033.pdf

FITTINGS COVER ASSEMBLY ----- L166100

T-032-80025B.pdf

20" M-H NOZZLE ----- L176050

APPROVAL - AAR Tank Car Committee

Date Approved 04/23/2018 Kenneth Dorsey

(signature) on behalf of the Tank Car Committee

APPLICATION FOR APPROVAL AND CERTIFICATE OF CONSTRUCTION

1 APPROVAL REQUESTED OF: Non-Precedent

2 TYPE: Construction

3 AAR NO: L186065

4 DATE: 09/17/2018

4.1 ORDER DATE: 05/25/2018

5 APPLICANT'S NO: T18058

7 TANK SPECIFICATION: DOT-117A100W

8 STENCILED SPEC: DOT-117J100W

10 NUMBER OF CARS: 50

6 APPLICANT: TRINITY TANK CAR, INC.
P.O. BOX 568887
DALLAS, TEXAS 75356-8887

9 REPORTING MARKS AND CAR NUMBERS: GATX 225795-225844

11	Initial Commodity	Ethanol Solution, NEC (4912324)	12	Density (LB Per Gallon)	6.58
13	Full Water Capacity (Gallons)	30300	14	Dome Capacity or Outage (Gallons)	per DOT 173.24b(a) (1)
15	Material Type / Grade Heads	AAR TC-128, Gr. B	15.1	Tank Head Material Normalized	Yes
15.2	Tank Head Spliced	No	15.3	Charpy Requirements	
16	Material Type and Grade Shell	AAR TC-128, Gr. B	16.1	Tank Shell Material Normalized	Yes
16.2	Charpy Requirements		17	Material Thickness Heads (Inches)	.5625
18	Material Thickness Shell (Inches)	.5625	19	Lining Type	None
20	Inside Diameter - Center (Inches)	119.375	21	Inside Diameter - End Rings (Inches)	119.375
22	Head Radius, Main (Inches if not 2:1)	2:1	23	Test Pressure (PSI)	165
24	Insulation Type	CF-Ceramic Fiber	25	Insulation Thickness (Inches)	.5
26	Thermal Conductivity (BTU - in/hr. -ft sq. - degree F)	.238	27	Type of Safety Relief Devices	Valve
27.1	Number of Safety Relief Devices	1	28	Pressure Relief Device Start-to-Discharge (PSI)	75
29	Pressure Relief Device Flow Capacity (CFM Required)	2302	30	Pressure Relief Device Flow Capacity (CFM Actual)	30061
31	Tank Surface Area (Sq Ft)	1770	32	Underframe or Stub Sill Type	TRN024-TRN024 Stub Sill Design
33	Center of Gravity, Loaded (Inches)	92	34	Estimated Light Weight (lb)	90500
35	AAR Clearance Diagram	C	36	Rail Load Limit (lb)	286000
37	Truck Capacity (Tons)	100	38	Head Shield Type	F-Full Shield
38.1	Head Shield Thickness (inches)	.5			

Notes: Other Related Drawings are attached which should be verified.

Original Certificate:

Builder:

Date:

Former lading:

The Following Drawings Apply:

- 39 General Arrangement
- 40 Tank Arrangement
- 41 Reinforced Openings, Including Calculations
- 42 Anchorage, Including Calculations
- 43 Fittings Arrangement
- 44 Manway Assembly
- 45 Protective Housing
- 46 Venting, Loading, and Discharge Valves
- 47 Pressure Relief Devices
- 48 Heater Systems (ext.)
- 49 Gauging Devices
- 50 Bottom Outlet Valve
- 51 Repairs
- 52 Manway Cover
- 53 Calculations
- 54 Tank Qualification Drawing

Drawing Number	The Following Prior Approvals Apply:	
	Drawing Number	Application/Certificate No
M-042-T18058		
T-025-80077 SH. 1D, 2D, 3D, 4D & 5D		
T-030-80062 SH. 1C, 2C & 3C		
U-075-80026 SH. 1A & 2A		L166091
F-020-80170 SH. 1 & 2		
T-032-80036C		L166078
F-050-80030C		L186059
SEE PAGE 2		
KELSO JS75XHS		PRD 079004
NONE		
T-030-80062 SH. 2C		
V-014-80300 SH. 1 & 2		
F-021-80080		
K-018-2006F		L186055
T-023-80003D		L166049

REVISIONS:

APPLICATION BY: Samuel Coates

I certify that the foregoing conforms to all applicable DOT and AAR requirements, including specifications, regulations, rules of interchange, and the DOT Railroad Safety Appliance Standards.

SIGNATURE: Samuel Coates

TITLE: Project Engineer

APPROVAL - AAR Tank Car Committee

Date Approved 10/30/2018 Kenneth Dorsey

(signature) on behalf of the Tank Car Committee

APPROVAL COMMENTS:

CERTIFICATION: The cars enumerated below conform to the above approved description and to all applicable DOT and AAR requirements, including specifications, regulations, rules of interchange, and the DOT Railroad Safety Appliance Standards. Copy of this Certificate of Construction will be furnished to the owner and others, as required by 49 CFR Part 179.5, before these cars are placed in service

Initials and Car Numbers:

GATX 225795-225844

Name: Dean Matzo

Date: 11/27/2018

Title: Vice President Quality

AAR No. L186065
Applicant's No. T18058
Date 09/17/2018

8 The tank cars of this application are constructed in accordance with all applicable DOT/TC and AAR requirements, including AAR Standard S-286-2006 and MSRP C-III, Sections 2.5 & 2.7.

11 and products authorized in DOT part 173 for which there are no special commodity requirements and nonregulated commodities compatible with this class of car.

29 SAFETY VALVE SIZED USING EQUATION 7.1.1.1a OF APPENDIX A.

38.1 A572-50 MATERIAL

48 THESE VALVES ARE REFERENCED ON ARRANGEMENTS F-020-80170

2" FLANGED BALL VALVE
JAMESBURY 9150 ----- AAR E172100

50 4" FLANGED BOTTOM OUTLET VALVE
JAMESBURY 9RET ----- E172109

Other Related Drawings:

B-23650.pdf

JACKET ANCHOR ----- L176069

F-070-80035.pdf

20" M-H COVER PLATE ----- L166049

T-032-80025B.pdf

20" M-H NOZZLE ASSEMBLY ---- L176050

APPROVAL - AAR Tank Car Committee

Date Approved 10/30/2018 Kenneth Dorsey

(signature) on behalf of the Tank Car Committee