Appendix F

Hazardous Materials Group Factual

Luxfer Cylinder Test Rpts

Wilmer, TX
HWY-05-MH-035

P/N-C-M024-20N43-A1A

BX 272790 MISSING S/N HEAT # E422 #2 #4

Report No: L 16846

ARROWHEAD INDUSTRIAL SERVICES, INC.
COMPRESSED GAS CONTAINER SPECIALIST
3537 South 119, P.O. BOX 1000
GRAHAM, N.C. 27253
USA

REPORT OF INSPECTION OF GAS CONTAINERS

Jun 27, 2005

Manufactured for Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
Location at Graham, North Carolina 27253

Manufactured by Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
Location at Graham, North Carolina 27253

Consigned to Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
Location at Graham, North Carolina 27253

Quantity 500 Size 4.38 inches(111.125mm) outside diameter by 25.125 inches(638.175mm) long.
VOLUME: 283.0 CU.IN.(4.638 Liter)
Marks stamped into the shoulder of the cylinders.

Specifications: TC-3ALM 139
DOT-3AL 2015

Serial Numbers BX272574 to BX273073 inclusive

Inspector's Mark

Identifying Symbol (registered) M4141

Test Date 06 05

Tare Weights (yes or no) NO

Other Marks (if any) LUXFER, ②

These containers were made by process of backwards extrusion, induction heating and closing. These cylinders were heat treated by the process of solution heat treat and aging. The material used was identified by the following alloy numbers: 6061 authorized in Table 1 in DOT Specification 3AL (10-1-03 edition) and/or Table 7.1 in TC Specification 3ALM (July 1996 edition). The material used was verified as to chemical analysis and record thereof is attached hereto. The heat codes were marked on the material. See hydrostatic test sheets.

All billets were inspected and each container was inspected both before and after closing in the ends; all that was accepted was found free from seams, cracks, laminations, and other defects which might prove injurious to the strength of the container. The process of manufacture and heat treatment of containers were supervised and found to be efficient and satisfactory.

The container walls were measured and the minimum thickness noted was 0.187 inch(4.75mm). The outside diameter was determined by a close approximation to be 4.38 inches(111.125mm). The wall stress was calculated to be 33557 pounds per square inch (231.367 MPa) under an internal pressure of 3360 pounds per square inch (23.166 MPa).

Hydrostatic test, flattening tests, tensile tests of material, and other tests as prescribed in specification No. DOT-3AL and/or TC-3ALM were made in the presence of the inspector and all material and containers accepted were found to be in compliance with the requirements of that specification. Records thereof are attached hereto.

I hereby certify that all of these containers proved satisfactory in every way and comply with the requirements of Department of Transportation Specification No. 3AL and Transport Canada Specification No.3ALM except as follows:
Exceptions:

Conversions: PSI / 145.0377 = MPa; PSI X 0.06895 = Bar; Lbs X 0.45359 = Kg;
Cu In X .01639 = Liters

ARROWHEAD INDUSTRIAL SERVICES, INC.

Inspector: Ryan Crouch

Ryan Crouch

Digitally signed by Ryan Crouch
DN: CN = Ryan Crouch, C = US, O = Arrowhead
Date: 2005.06.29 10:40:01 -04'00'

.....
Form 100-1C

ARROWHEAD INDUSTRIAL SERVICES, INC.
RECORD OF CHEMICAL ANALYSIS FOR ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
FOR Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
NUMBERED BX272574 TO BX273073 INCLUSIVE

REPORT DATE: June 27, 2005
SYMBOL LUXFER
ALUMINUM ALLOY 6061

MILL HEAT CODE*		HEAT NO.	CHECK ANALYSIS NUMBER	CU	SI	FE	MN	MG	ZN	TI	GA	NI	PB	SN	BI	V	CR
876	(S)	680721		0.24	0.60	0.16	<0.01	0.88	<0.01	0.01	0.01		<0.001	<0.001	<0.001		0.07
885	(S)	690521		0.26	0.58	0.16	0.01	0.88	<0.01	0.01	0.01		<0.001	<0.001	<0.001		0.08

ALUMINUM WAS MANUFACTURED AND MILL ANALYSIS MADE BY:
(A) KITIMAT WORKS, ALCAN ALUMINUM, CANADA.
(C) CRESSONA ALUMINUM COMPANY, CRESSONA, PA.
(S) SHAWINIGAN WORKS, ALCAN ALUMINUM, CANADA.

THE ORIGINALS OF CERTIFIED MILL ANALYSIS AND CHECK ANALYSIS REPORTS ARE IN THE FILES OF THE MANUFACTURERS.
** CHECK ANALYSIS MADE BY ALCAN INGOT IN SEBREEE, KENTUCKY
* APPLICABLE CODES ARE STAMPED INTO EACH CYLINDER

ARROWHEAD INDUSTRIAL SERVICES, INC.
GRAHAM, NC

ARROWHEAD INDUSTRIAL SERVICES, INC.
RECORD OF PHYSICAL ANALYSIS FOR COMPLETED CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
FOR Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
NUMBERED BX272574 TO BX273073 INCLUSIVE

REPORT DATE: June 27, 2005
SYMBOL LUXFER

LOT CODE*	CYLINDERS REPRESENTED SERIAL NOS.		YIELD STRENGTH AT 0.2% OFFSET (POUNDS/SQ.IN.)	TENSILE STRENGTH (POUNDS/SQ.IN.)	ELONGATION % IN 2.0"**	1-1/2" RADIUS FLATTENING TEST
E418	BX272574	THRU BX272588	48400	54700	20.0	PASSED
	BX272716	THRU BX272720	48900	55100	18.0	9T FLAT TEST
E422	BX272781	THRU BX272879	46700	53400	16.5	PASSED
			47100	53700	17.5	9T FLAT TEST
E423	BX272589	THRU BX272715	47200	54200	16.0	PASSED
	BX272721	THRU BX272780	46500	53200	15.0	9T FLAT TEST
E429	BX272880	THRU BX273073	47100	53700	18.5	PASSED
			46900	53500	18.0	9T FLAT TEST

* APPLICABLE CODES ARE STAMPED INTO EACH CYLINDER
** TENSILE TESTS MADE ON 0.5" WIDTH BY 2.0" GUAGE LENGTH. ASTM B557

ARROWHEAD INDUSTRIAL SERVICES, INC.
GRAHAM, NC

ARROWHEAD INDUSTRIAL SERVICES, INC.
RECORD OF HYDROSTATIC TESTS OF ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
FOR Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
TEST PRESSURE: 3360
NUMBERED BX272574 TO BX273073 INCLUSIVE

CYLINDER S/N	CAST CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO %	CODE	HYDRO TEST DATE
BX272781	876	E422	7.46	10.39	31.50	1.20	3.81	0	26 Jun 2005
BX272782	876	E422	7.49	10.33	31.70	0.70	2.21	0	26 Jun 2005
BX272783	876	E422	7.52	10.33	31.10	0.70	2.25	0	26 Jun 2005
BX272784	876	E422	7.46	10.33	31.70	0.70	2.21	0	26 Jun 2005
BX272785	876	E422	7.46	10.36	31.60	1.30	4.11	0	26 Jun 2005
BX272786	876	E422	7.43	10.36	31.60	1.30	4.11	0	26 Jun 2005
BX272787	876	E422	7.49	10.40	31.60	0.70	2.22	0	26 Jun 2005
BX272788	876	E422	7.46	10.36	31.40	0.70	2.23	0	26 Jun 2005
BX272789	876	E422	7.46	10.33	31.80	0.60	1.89	0	26 Jun 2005
* BX272790	876	E422	7.49	10.33	31.60	1.20	3.80	0	26 Jun 2005
BX272791	876	E422	7.46	10.33	31.60	1.20	3.80	0	26 Jun 2005
BX272792	876	E422	7.52	10.27	31.40	0.50	1.59	0	26 Jun 2005
BX272793	876	E422	7.46	10.33	31.40	0.90	2.87	0	26 Jun 2005
BX272794	876	E422	7.46	10.36	32.10	0.60	1.87	0	26 Jun 2005
BX272795	876	E422	7.46	10.36	31.70	1.30	4.10	0	26 Jun 2005
BX272796	876	E422	7.46	10.39	31.50	1.30	4.13	0	26 Jun 2005
BX272797	876	E422	7.49	10.33	31.60	0.70	2.22	0	26 Jun 2005
BX272798	876	E422	7.46	10.33	31.30	0.70	2.24	0	26 Jun 2005
BX272799	876	E422	7.43	10.36	31.90	0.70	2.19	0	26 Jun 2005
BX272800	876	E422	7.46	10.33	31.50	1.20	3.81	0	26 Jun 2005
BX272801	876	E422	7.43	10.46	31.60	1.30	4.11	0	26 Jun 2005
BX272802	876	E422	7.49	10.33	31.80	0.70	2.20	0	26 Jun 2005
BX272803	876	E422	7.49	10.33	31.30	0.70	2.24	0	26 Jun 2005
BX272804	876	E422	7.46	10.33	31.90	0.90	2.82	0	26 Jun 2005
BX272805	876	E422	7.46	10.33	31.80	1.40	4.40	0	26 Jun 2005
BX272806	876	E422	7.43	10.42	31.60	1.10	3.48	0	26 Jun 2005
BX272807	876	E422	7.49	10.26	31.60	0.60	1.90	0	26 Jun 2005
BX272808	876	E422	7.46	10.33	31.20	0.50	1.60	0	26 Jun 2005
BX272809	876	E422	7.46	10.33	31.70	0.60	1.89	0	26 Jun 2005
BX272810	876	E422	7.43	10.36	31.50	1.30	4.13	0	26 Jun 2005
BX272811	876	E422	7.43	10.42	31.70	1.10	3.47	0	26 Jun 2005
BX272812	876	E422	7.49	10.36	31.50	0.50	1.59	0	26 Jun 2005
BX272813	876	E422	7.49	10.33	31.30	0.80	2.56	0	26 Jun 2005
BX272814	876	E422	7.46	10.36	31.80	0.80	2.52	0	26 Jun 2005
BX272815	876	E422	7.46	10.33	31.50	1.30	4.13	0	26 Jun 2005
BX272816	876	E422	7.46	10.39	31.60	1.30	4.11	0	26 Jun 2005
BX272817	876	E422	7.49	10.33	31.50	0.60	1.90	0	26 Jun 2005
BX272818	876	E422	7.46	10.36	31.20	0.70	2.24	0	26 Jun 2005
BX272819	876	E422	7.43	10.36	32.00	0.80	2.50	0	26 Jun 2005
BX272820	876	E422	7.43	10.36	31.80	1.30	4.09	0	26 Jun 2005
BX272821	876	E422	7.43	10.36	31.70	1.30	4.10	0	26 Jun 2005
BX272822	876	E422	7.49	10.33	31.90	0.80	2.51	0	26 Jun 2005
BX272823	876	E422	7.46	10.29	31.30	0.70	2.24	0	26 Jun 2005
BX272824	876	E422	7.46	10.33	31.60	0.30	0.95	0	26 Jun 2005
BX272825	876	E422	7.46	10.36	31.60	1.30	4.11	0	26 Jun 2005
BX272826	876	E422	7.46	10.39	31.50	1.10	3.49	0	26 Jun 2005
BX272827	876	E422	7.49	10.33	31.50	0.70	2.22	0	26 Jun 2005
BX272828	876	E422	7.49	10.33	31.50	0.70	2.22	0	26 Jun 2005
BX272829	876	E422	7.46	10.33	31.80	0.60	1.89	0	26 Jun 2005
BX272830	876	E422	7.49	10.36	31.50	1.30	4.13	0	26 Jun 2005
BX272831	876	E422	7.43	10.32	31.70	1.20	3.79	0	26 Jun 2005
BX272832	876	E422	7.49	10.33	31.40	0.40	1.27	0	26 Jun 2005
BX272833	876	E422	7.46	10.36	31.30	0.60	1.92	0	26 Jun 2005
BX272834	876	E422	7.46	10.33	31.80	0.80	2.52	0	26 Jun 2005
BX272835	876	E422	7.46	10.33	31.60	1.20	3.80	0	26 Jun 2005
BX272836	876	E422	7.43	10.39	31.70	1.40	4.42	0	26 Jun 2005
BX272837	876	E422	7.49	10.33	31.50	0.50	1.59	0	26 Jun 2005
BX272838	876	E422	7.46	10.36	31.20	0.80	2.56	0	26 Jun 2005
BX272839	876	E422	7.46	10.33	31.80	0.70	2.20	0	26 Jun 2005
BX272840	876	E422	7.46	10.33	31.60	1.30	4.11	0	26 Jun 2005
BX272841	876	E422	7.43	10.36	31.50	1.30	4.13	0	26 Jun 2005
BX272842	876	E422	7.46	10.36	31.40	0.70	2.23	0	26 Jun 2005
BX272843	876	E422	7.49	10.33	31.30	0.80	2.56	0	26 Jun 2005
BX272844	876	E422	7.46	10.33	31.80	0.60	1.89	0	26 Jun 2005
BX272845	876	E422	7.46	10.33	31.50	1.30	4.13	0	26 Jun 2005
BX272846	876	E422	7.43	10.39	31.50	1.20	3.81	0	26 Jun 2005
BX272847	876	E422	7.49	10.30	31.60	0.50	1.58	0	26 Jun 2005
BX272848	876	E422	7.46	10.36	31.20	0.80	2.56	0	26 Jun 2005
BX272849	876	E422	7.46	10.33	31.80	0.80	2.52	0	26 Jun 2005

CODES
0 FOR CYLINDERS WEIGHED WITHOUT VALVES
1 FOR CYLINDERS WEIGHED WITH VALVES
2 FOR CYLINDERS WEIGHED WITH VALVES AND HANDLES
3 FOR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS
4 FOR CYLINDERS WEIGHED WITH VALVES AND COLLARS

ARROWHEAD INDUSTRIAL SERVICES, INC.
GRAHAM, NC

ARROWHEAD INDUSTRIAL SERVICES, INC.
RECORD OF HYDROSTATIC TESTS OF ALUMINUM COMPRESSED GAS CYLINDERS

MANUFACTURED BY Luxfer Gas Cylinders, Divn. of Luxfer, Inc.
FOR Luxfer Gas Cylinders, Divn. of Luxfer, Inc. TEST PRESSURE: 3360
NUMBERED BX272574 TO BX273073 INCLUSIVE

CYLINDER S/N	CAST CODE	HEAT LOT	TARE WEIGHT (LBS.)	WATER CAPACITY (LBS.)	TOTAL EXPANSION (CC)	PERMANENT EXPANSION (CC)	RATIO %	CODE	HYDRO TEST DATE
BX272850	876	E422	7.46	10.33	31.50	1.30	4.13	0	26 Jun 2005
BX272851	876	E422	7.43	10.36	31.50	1.20	3.81	0	26 Jun 2005
BX272852	876	E422	7.46	10.33	31.80	0.80	2.52	0	26 Jun 2005
BX272853	876	E422	7.49	10.33	31.20	0.70	2.24	0	26 Jun 2005
BX272854	876	E422	7.46	10.33	31.80	0.70	2.20	0	26 Jun 2005
BX272855	876	E422	7.46	10.33	31.80	1.40	4.40	0	26 Jun 2005
BX272856	876	E422	7.46	10.36	31.70	1.30	4.10	0	26 Jun 2005
BX272857	876	E422	7.49	10.33	31.50	0.70	2.22	0	26 Jun 2005
BX272858	876	E422	7.49	10.33	31.50	0.80	2.54	0	26 Jun 2005
BX272859	876	E422	7.46	10.39	31.80	0.90	2.83	0	26 Jun 2005
BX272860	876	E422	7.46	10.33	31.70	1.30	4.10	0	26 Jun 2005
BX272861	876	E422	7.43	10.36	31.60	1.10	3.48	0	26 Jun 2005
BX272862	876	E422	7.49	10.33	31.80	0.80	2.52	0	26 Jun 2005
BX272863	876	E422	7.49	10.33	31.40	0.70	2.23	0	26 Jun 2005
BX272864	876	E422	7.46	10.33	31.90	0.70	2.19	0	26 Jun 2005
BX272865	876	E422	7.46	10.36	31.90	1.40	4.39	0	26 Jun 2005
BX272866	876	E422	7.43	10.36	31.60	1.10	3.48	0	26 Jun 2005
BX272867	876	E422	7.49	10.36	31.40	0.60	1.91	0	26 Jun 2005
BX272868	876	E422	7.49	10.33	31.30	0.80	2.56	0	26 Jun 2005
BX272869	876	E422	7.46	10.33	31.70	0.80	2.52	0	26 Jun 2005
BX272870	876	E422	7.46	10.36	31.50	1.20	3.81	0	26 Jun 2005
BX272871	876	E422	7.43	10.39	31.60	1.00	3.16	0	26 Jun 2005
BX272872	876	E422	7.49	10.30	31.60	0.40	1.27	0	26 Jun 2005
BX272873	876	E422	7.49	10.36	31.30	0.80	2.56	0	26 Jun 2005
BX272874	876	E422	7.43	10.36	31.90	1.00	3.13	0	26 Jun 2005
BX272875	876	E422	7.46	10.33	31.50	1.30	4.13	0	26 Jun 2005
BX272876	876	E422	7.46	10.36	31.70	1.10	3.47	0	26 Jun 2005
BX272877	876	E422	7.49	10.33	31.60	0.60	1.90	0	26 Jun 2005
BX272878	885	E422	7.49	10.33	31.20	0.60	1.92	0	26 Jun 2005
BX272879	885	E422	7.46	10.33	31.60	0.90	2.85	0	26 Jun 2005
BX272880	885	E429	7.46	10.33	31.70	1.40	4.42	0	26 Jun 2005
BX272881	885	E429	7.46	10.36	31.50	1.00	3.17	0	26 Jun 2005
BX272882	885	E429	7.49	10.33	31.50	0.50	1.59	0	26 Jun 2005
BX272883	885	E429	7.49	10.33	31.20	0.60	1.92	0	26 Jun 2005
BX272884	885	E429	7.46	10.29	31.80	0.80	2.52	0	26 Jun 2005
BX272885	885	E429	7.46	10.33	31.60	1.30	4.11	0	26 Jun 2005
BX272886	885	E429	7.46	10.36	31.60	1.00	3.16	0	26 Jun 2005
BX272887	885	E429	7.49	10.33	31.50	0.80	2.54	0	26 Jun 2005
BX272888	885	E429	7.49	10.36	31.30	0.80	2.56	0	26 Jun 2005
BX272889	885	E429	7.46	10.36	31.80	0.90	2.83	0	26 Jun 2005
BX272890	885	E429	7.46	10.33	32.00	1.30	4.06	0	26 Jun 2005
BX272891	885	E429	7.46	10.36	31.50	1.30	4.13	0	26 Jun 2005
BX272892	885	E429	7.49	10.36	31.60	0.60	1.90	0	26 Jun 2005
BX272893	885	E429	7.49	10.30	31.40	0.70	2.23	0	26 Jun 2005
BX272894	885	E429	7.46	10.33	31.70	0.40	1.26	0	26 Jun 2005
BX272895	885	E429	7.46	10.33	31.60	1.30	4.11	0	26 Jun 2005
BX272896	885	E429	7.43	10.36	31.40	1.30	4.14	0	26 Jun 2005
BX272897	885	E429	7.49	10.36	31.40	0.50	1.59	0	26 Jun 2005
BX272898	885	E429	7.46	10.33	31.20	0.90	2.88	0	26 Jun 2005
BX272899	885	E429	7.46	10.33	31.60	0.80	2.53	0	26 Jun 2005
BX272900	885	E429	7.46	10.36	31.40	1.30	4.14	0	26 Jun 2005
BX272901	885	E429	7.43	10.36	31.50	1.30	4.13	0	26 Jun 2005
BX272902	885	E429	7.49	10.36	31.60	0.70	2.22	0	26 Jun 2005
BX272903	885	E429	7.46	10.33	31.30	0.80	2.56	0	26 Jun 2005
BX272904	885	E429	7.46	10.33	31.60	0.60	1.90	0	26 Jun 2005
BX272905	885	E429	7.46	10.33	31.50	1.30	4.13	0	26 Jun 2005
BX272906	885	E429	7.46	10.36	31.50	1.20	3.81	0	26 Jun 2005
BX272907	885	E429	7.49	10.36	31.50	0.80	2.54	0	26 Jun 2005
BX272908	885	E429	7.46	10.36	31.30	0.90	2.88	0	26 Jun 2005
BX272909	885	E429	7.46	10.36	31.80	0.60	1.89	0	26 Jun 2005
BX272910	885	E429	7.46	10.33	31.80	1.40	4.40	0	26 Jun 2005
BX272911	885	E429	7.46	10.33	31.50	1.20	3.81	0	26 Jun 2005
BX272912	885	E429	7.49	10.33	31.40	0.70	2.23	0	26 Jun 2005
BX272913	885	E429	7.46	10.36	31.20	0.60	1.92	0	26 Jun 2005
BX272914	885	E429	7.46	10.33	31.70	0.60	1.89	0	26 Jun 2005
BX272915	885	E429	7.46	10.33	31.50	1.20	3.81	0	26 Jun 2005
BX272916	885	E429	7.46	10.33	31.70	1.30	4.10	0	26 Jun 2005
BX272917	885	E429	7.49	10.30	31.50	0.60	1.90	0	26 Jun 2005
BX272918	885	E429	7.49	10.33	31.40	0.80	2.55	0	26 Jun 2005

CODES
0 FOR CYLINDERS WEIGHED WITHOUT VALVES
1 FOR CYLINDERS WEIGHED WITH VALVES
2 FOR CYLINDERS WEIGHED WITH VALVES AND HANDLES
3 FOR CYLINDERS WEIGHED WITH PERMANENT NECK RINGS
4 FOR CYLINDERS WEIGHED WITH VALVES AND COLLARS

ARROWHEAD INDUSTRIAL SERVICES, INC.
GRAHAM, NC