

APPENDIX C

AS-BUILT REPORTS AND PHOTOGRAPHIC RECORDS

Appendix C1 Above Ground Fuel Tank As-Built Report (electronic file only)

Appendix C2 Annual Geotechnical Inspections

Appendix C3 Photographic Records



APPENDIX C1

ABOVE GROUND FUEL TANK AS-BUILT REPORT (electronic file only)

(Pages C1-1 to C1-486)





Baffinland Iron Mines Corporation Mary River Project

Milne Inlet Fuel Storage Facility As-Built Documentation



2012-02-10	1	Client Approval	Francis Kennedy	D. Sterken	A Butte	
2012 01 31	0	Client Approval	F. Kennedy	D. Stephenson	F. Butts	
DATE	REV.	STATUS	PREPARED BY	CHECKED BY	APPROVED BY	APPROVED BY
■ HATCH						CLIENT







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1. Introduction

Baffinland Iron Mines Corporation currently operates a fuel storage and distribution facility at Milne Inlet, Baffin Island, Nunavut.

The existing facility constructed in 2007 consists of an earth dyke with synthetic liner. The fuel storage, as constructed, consisted of twelve (12) Jet Fuel (Jet A-1) and sixty four (64) Diesel Fuel (Arctic Grade), 113,000 Litre bladder tanks.

Fuel is delivered to the site via a marine pipeline to the tank farm from a shoreline ship manifold.

The distribution facility consists of vehicle fuelling and truck loading of diesel fuel and bulk truck loading of Jet A-1 Fuel.

As the existing facility is reaching its life expectancy, a new fuel facility has been designed and constructed.

1.1 General Description

The new facility is located 350 metres to the north east of the existing bladder tank farm.

The facility consists of a 270 metres of marine offload 150 mm diameter pipeline from the Milne Inlet shoreline running south to a 5 million litre (5,000,000 L) aboveground steel tank located within an earth dyke with synthetic liner.

The truck loading system consists of a diesel supply line from the diesel tank to a truck loading module located within a granular truck loading area constructed with a synthetic liner which drains the loading area into the dyke.

A 200 kW diesel generator with 2,270 L fuel tank is located at the truck loading area and supplies electrical power for the fuel facility and supporting camp.

1.2 Design Criteria

The facility is designed and constructed to the following codes and standards:

- 1. National Building Code of Canada (NBC) 2010.
- 2. National Fire Code of Canada (NFCC) 2010.
- Canadian Electrical Code CSA 22.1-06.
- 4. Canadian Environmental Protection Act 1998 (2008 Update), Storage tank System for Petroleum Products and Allied Petroleum Products Regulations.
- 5. CCME Environmental Code of Practice for Aboveground Storage Tank Systems containing Petroleum Products, 2003.
- 6. ANSI B31.3-2010, Process Piping.







7. ADI 650 11th Edition, 2008, Welded Steel tanks for Oil Storage (including Addendums 1 and 2).

1.3 Secondary Containment

The dyke is approximately 50 metres wide x 127 metres long and 1.5 metres high, having 2 to 1 wall slopes and is designed to the National Fire Code of Canada. An eight (8) metre wide access ramp and truck loading area is constructed on the west end of the dyke.

The dyke is of granular construction with a synthetic liner installed within the dyke floor, walls, and under the truck loading area. The liner is buried 450 mm below the floor of the dyke.

Two (2) layers of 38 mm rigid insulation are installed at a sand layer adjacent to the dyke liner in the tank pad and extends 1.5 metres beyond the limit of the tank shell.

The dyke floor is sloped at 1% away from the tank pad to a drainage swale running along the dyke wall which drains to the low point sumps for dyke maintenance.

The containment is designed to contain 110% of the 5,000,000 litre diesel tank in compliance with the National Fire of Canada. The NFCC required dyke capacity is 5,520 cubic metres. The actual surveyed dyke capacity is 5,681 cubic metres with a 0.15 metre freeboard between the dyke capacity liquid level and the top of the liner at the dyke wall.

The truck loading area is designed as a contained area with synthetic liner sloped to drain into the containment dyke.

The final installation of the synthetic liner joints has been visually inspected and vacuum box tested to 1 to 2 psi maximum as per ASTM D5641. All inspections were witnessed and confirmed by the contractor and construction management personnel.

1.4 Aboveground Vertical Storage Tank

The diesel storage tank is a single wall vertical steel storage tank with a weak seam frangible joint roof design. The tank is designed and constructed to API 650, 11th Edition, Welded Steel Tanks for Oil Storage.

The tank is 25.6 metres in diameter by 9.75 metres high with a 5,000,000 litre nominal capacity. The tank is equipped with double block and bleed valves on the tank fill, suction and tank drawdown nozzles. The tank is equipped with three (3) 50 mm diameter water drain valve assemblies.

The shell of the tank has two (2) 610 mm diameter manways and a 610 mm diameter roof manway for tank access.

The roof nozzles are equipped with a standard open roof vent, emergency roof vent, gauge hatch and tank level radar gauge providing tank level indication and overfill alarm set points.

The tank is constructed with a spiral access stairway and guardrail at the roof of the tank.







The tank assembly has been inspected and tested to API 650 Section 8 which includes visual inspection of all welds, radiograph inspection, vacuum box test of welds, liquid penetration tests, shell to floor joint, mag particle and UT tests on reinforcing pads. In lieu of hydrostatic testing, additional liquid penetration tests and vacuum box tests have been completed in compliance with API 650 Section 7.3.5. All inspection and test reports have been confirmed by the contactor and construction management personnel.

1.5 Marine Pipeline

The Milne Inlet tank farm will be refuelled annually by ocean going tanker. A floating hose is deployed from the ship and connected to the onshore manifold. An aboveground steel marine pipeline transfers the fuel from the shore manifold to the tank farm.

The marine pipeline is a 270 metre long, 150 mm diameter, Sch. 40, pipeline running from the shoreline to the 5,000,000 litre diesel tank and is designed and constructed to ANSI B31.3 – 2010, Process Piping.

The ship floater hose manifold connection is equipped with a gate valve and check valve assembly to enable ship-to-shore connection and to prevent backflow. All connections are contained within a spill containment assembly with a hinged and lockable cover.

The pipeline is installed on pre-cast concrete bases with adjustable structural steel supports, and is also fitted with valved high point vents and low point drains to facilitate fuel line draining after discharge.

The marine pipeline has been tested in compliance with ANSI B31.3 - 2010, Process Piping, including a 5% radiograph of all aboveground welded joints and a pneumatic leak test to Section 345.5.

The final installation has been air tested to a minimum of 758 kPa for 1 hrs. and visually inspected and confirmed by contractor and construction management personnel.

1.6 Truck Loading and Refuelling System

The truck loading and refuelling system is built as a fuel system module. The unit is insulated, heated, and complete with interior and exterior lighting.

The interior fuelling and electrical systems are protected with a manually activated glycol fire suppression system.

The pump suction pipeline from the diesel storage tank to the truck loading/refuelling module is 100 diameter Sch. 40 complete with shut-off valves, vents and drains and is designed and constructed to ANSI B31.3 - 2010, Process Piping.

All pipe testing consisted of a radiograph of 5% of the aboveground welded joints and a pneumatic leak test to Section 345.5 of ANSI B31.3 - 2010, Process Piping.

The final installation has been air tested to a minimum of 758 kPa for 1 hrs. and visually inspected and confirmed by contractor and construction management personnel.







The truck loading equipment consists of a 1500 Lpm truck loading pump, product meters, grounding system, flow control valve and hose reel equipped with 7.62 metres of 75 mm diameter loading hose with drybreak.

The vehicle refuelling equipment consists of a 180 Lpm pump, product meter, flow control valve and hose reel with 10.67 metres of 25 mm diameter dispensing hose and nozzle.

Access to the fuelling equipment is through lockable equipment doors and side rollup door.

1.7 Code Compliance Review

The facility design and construction has been reviewed with the specific requirements of the CCME Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products, 2003. The results are tabulated in Appendix A. With regards to the specific sections that apply; this facility conforms with the requirements as laid out in the CCME document.

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2. List of Contractors

HATCH (HATCH GLOBAL CORPORATE OFFICE)	NUNA LOGISTICS LIMITED
Sheridian Science & Technology Park	9839 – 31 Avenue NW
2800 Speakman Drive, Mississauga, ON	Edmonton, AB
L5K 2R7 Canada	T6N 1C5 Canada
Tel: 1-905-855-7600	Tel: 1-780-434-9114
Fax: 1-905-855-8270	Fax: 1-780-434-7758
ADCO IKPIARYUK LIMITED	LAYFIELD GROUP OF COMPANIES
8750 58 th Avenue	11603 – 180 Street NW
Edmonton, AB	Edmonton, AB
T6E 6G6 Canada	T5S 2H6 Canada
Tel: 1-780-465-3265	Tel: 1-780-453-6731
Fax: 1-780-466-8086	Fax: 1-780-455-5218
14.12 700 100 0000	1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
GEM-STEEL EDMONTON LIMITED	UNDERHILL GEOMATICS LIMITED
9060 – 24 Street	Unit 210A – 3430 Brighton Avenue
Edmonton, AB	Burnaby, BC
T6P 1X8 Canada	V5A 3H4 Canada
Tel: 1-780-449-0000	Tel: 1-604-732-3384
Fax: 1-780-449-0001	Fax: 1-604-732-4709
rax. 1-700-449-0001	Fdx. 1-004-752-4709





3. Layfield Group Companies – Liner Installation

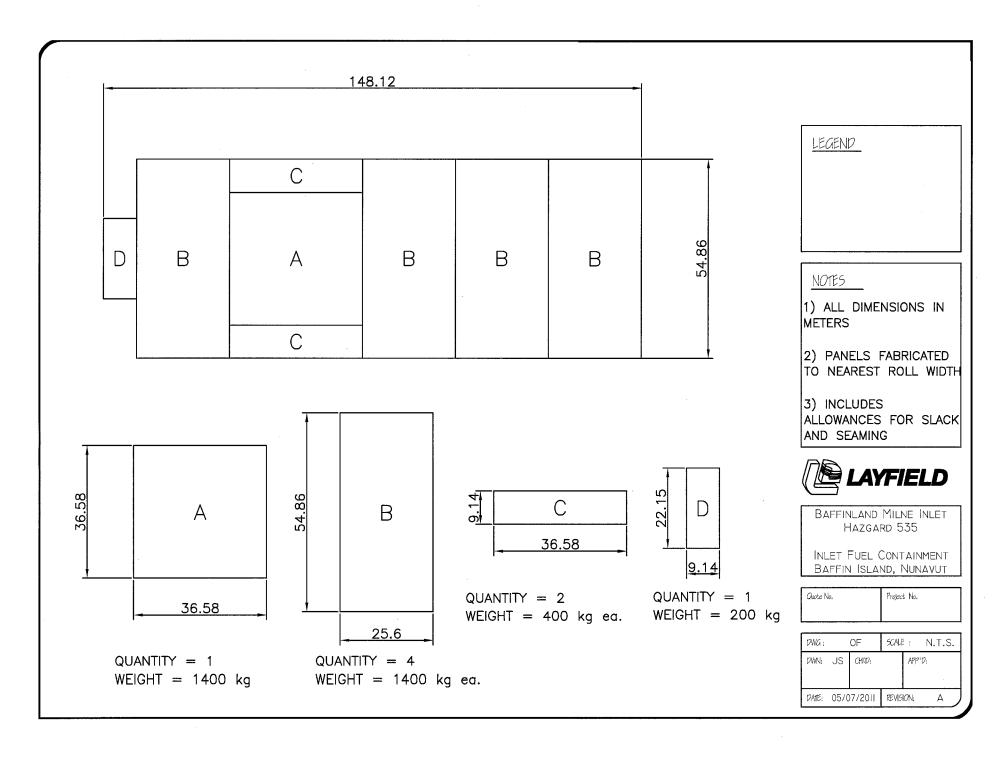
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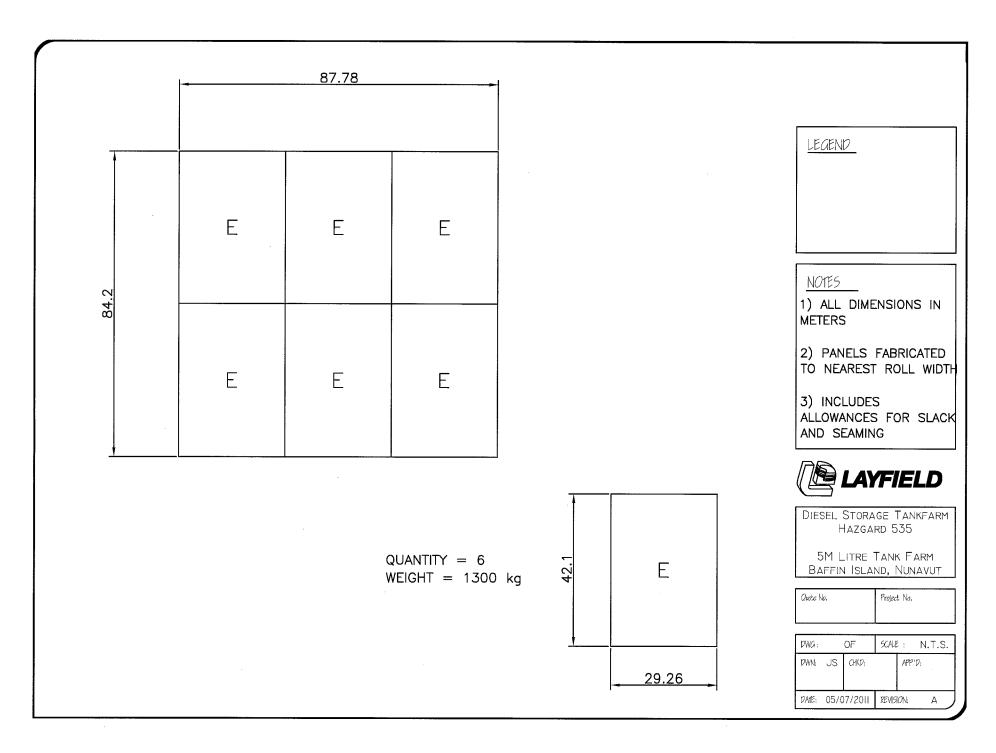




3.1 Liner Shop Drawings

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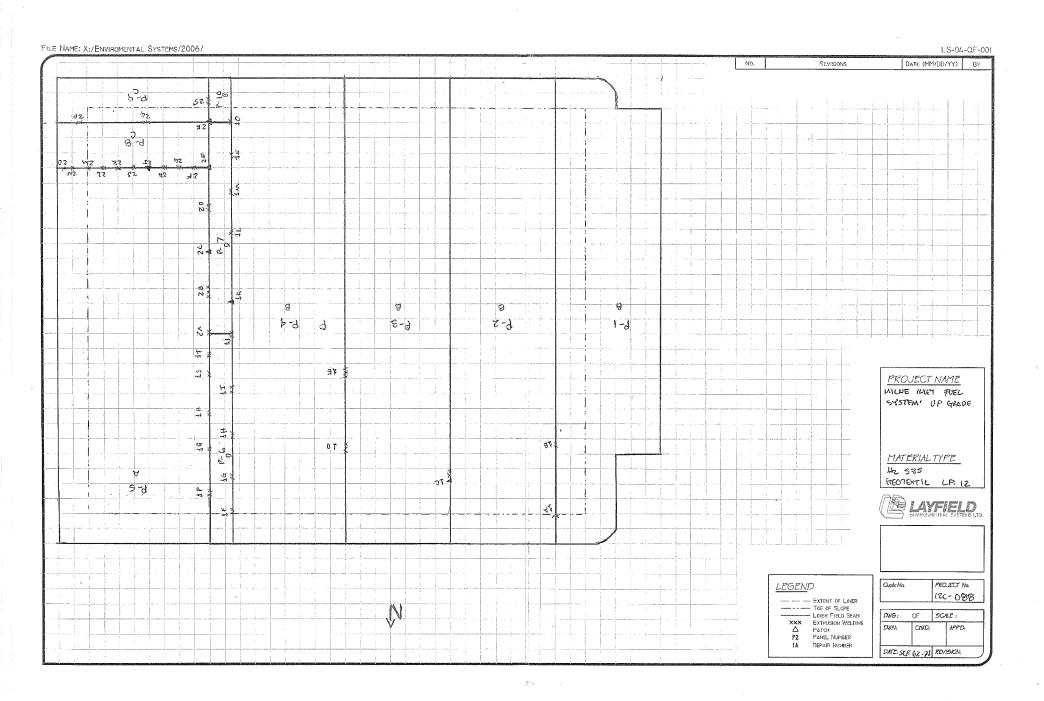






3.2 Liner Installation As-Built Drawing

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3.3 Certificate of Acceptance of Soil Subgrade Surface

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CERTIFICATE OF ACCEPTANCE OF SOIL SUBGRADE SURFACE

	BASCIALAND MILHE LAUET FLEL TAUK FARM
PROJECT NUMBI	
OWNER: HAYCH	Maria
LOCATION: MIL	METHER
(LESL), have visua	a duly appointed representative of Layfield Environmental Systems Ltd. ally observed the soil subgrade described below, and found it to be an on which to install geomembrane.
inspections or tests no representations o	based on observations of the surface of the subgrade only. No subterranean have been performed by Layfield Environmental Systems, and LESL makes or warranties regarding conditions which may exist below the surface of the Environmental Systems accepts no responsibility for conformance of the ject's specifications.
subgrade condition beyond the control	accepted on this date refers to its present condition. Any changes in the a that result from the effects of inclement weather and/or other forces for Layfield Environmental Systems and remedial work to correct the es, will be the direct responsibility of the General Contractor.
Area Being Accepte	ed: FUE TANK FARM. SUBGRADE IS PRODUCENT FOR
-	
LAYFIELD ENVIR	RONMENTAL SYSTEMS REPRESENTATIVE:
Date: Signature: Name: Title:	CHEGODONEE W. MYONCE
OWNERS REPRES	SENTATIVE:
Date:	SEPT 2,2011
Signature:	TE
Name:	TYLER BRUCE
Title:	ASSISTANT PROSECT MANAGER
Company:	NUNA CONTRACTING





3.4 Geosynthetics Inventory Log - Sht. 1, 2, and 3

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LAYFIELD GEOSYNTHETICS INVENTORY LOG

-12/1/19/19/19/19		•
PROJECT NUMBER:	12C-O88	PROJECT TITLE: MILNE INLET FUEL SYSTEM UPGRADE
OWNER: HATCH		CONTRACTOR: NUNA
LOCATION: MARY RI	VER	SHEET NUMBER: 1
MATERIAL TYPE:	GEOMEMBRANE	GEONET GEOTEXTILE X OTHER:
DATE OF ARRIVAL:		DATE OF INVENTORY: AUG-29-2011
UNLOADING METHO	D:	INVENTORY BY: CHRIS NYBACK
PRODUCT TYPE:	GEOTEXTIL LP-12	CONDITION IN TRUCK:
MATERIAL MANUFA	CTURER:	

		rial Dimer	sions	QC	Conf		
	Thickness			Certificate	Sample		
Panel / Roll Number	or Weight	Length	Width	Available	Removed	Other	Remarks
20267354	LP-12	300 FT	15 FT		44		
20267338	LP-12	300 FT	15 FT				
20266215	LP-12	300 FT	15 FT				
20266140	LP-12	300 FT	15 FT				
20263471	LP-12	300 FT	15 FT)
20267333	LP-12	300 FT	15 FT				
20267353	LP-12	300 FT	15 FT				
20267327	LP-12	300 FT	15 FT				
20266154	LP-12	300 FT	15 FT				
20267350	LP-12	300 FT	15 FT				
20266157	LP-12	300 FT	15 FT				,
20267344	LP-12	300 FT	15 FT			-	***************************************
20267340	LP-12	300 FT	15 FT				
2026730	LP-12	300 FT	15 FT				
20266218	LP-12	300 FT	15 FT				
20267348	LP-12	300 FT	15 FT		:		
20267328	LP-12	300 FT	15 FT				
20267329	LP-12	300 FT	15 FT				
20266217	LP-12	300 FT	15 FT		****		
20267349	LP-12	300 FT	15 FT		······································		
20267454	LP-12	300 FT	15 FT				***************************************
20267335	LP-12.	300 FT	15 FT				
20266205	LP-12	300 FT	15 FT				
20267468	LP-12	300 FT	15 FT				

SUBMITTE	OBY:	JC	***
DATE:	AUG-2	9-2011	

LS FORM 1

LAYFIELD ENVIRONMENTAL SYSTEMS

LAYFIELD GEOSYNTHETICS INVENTORY LOG

PROJECT NUMBER: 12C-088	PROJECT TITLE: MILNE INLET FUEL SYSTEM UPGRAD
OWNER: HATCH	CONTRACTOR: NUNA
LOCATION: MARY RIVER	SHEET NUMBER: 3
MATERIAL TYPE: GEOMEMBRANE	GEONET GEOTEXTIL X OTHER:
DATE OF ARRIVAL:	DATE OF INVENTORY: AUG-29-2011
UNLOADING METHOD:	INVENTORY BY: CHRIS NYBACK
PRODUCT TYPE: GEOTEXTIL LP-12	CONDITION IN TRUCK:
MATERIAL MANUFACTURER: LAYFIELD	

	Mate	rial Dimen	sions	QC	Conf		- Handle - Market
-	Thickness			Certificate	Sample		
Panel / Roll Number	or Weight	Length	Width	Available	Removed	Other	Remarks
20267459	LP-I2	300 FT	15 FT				
20267336	LP-12	300 FT	15 FT				
20267466	LP-12	300 FT	15 FT				
20267469	LP-12	300 FT	15 FT				
20267453	LP-12	300 FT	15 FT				**************************************
20267384	LP-12	300 FT	15 FT				
20267455	LP-12	300 FT	15 FT				
20267383	LP-12	300 FT	15 FT				
20267322	LP-12	300 FT	15 FT				
20267312	LP-12	300 FT	15 FT				
20267464	LP-12	300 FT	15 FT				
20267385	LP-12	300 FT	15 FT				
20267323	LP-12	300 FT	15 FT				· · · · · · · · · · · · · · · · · · ·
20267317	LP-12	300 FT	15 FT		111		
20267387	LP-12	300 FT	15 FT				
20267311	LP-12	300 FT	15 FT				
20267386	LP-12	300 FT	15 FT				······································
20267388	LP-12	300 FT	15 FT				
20267351	LP-12	300 FT	I5 FT				
20267334	LP-12	300 FT	15 FT			***************************************	
20267345	LP-12	300 FT	15 FT				
20266216	LP-12	300 FT	15 FT				
20267341	LP-12	300 FT	15 FT				
20266151	LP-12	300 FT	15 FT				

SUBMITT	ED BY:	JC	
DATE:	AUG-29	9-2011	

LS FORM 1

LAYFIELD ENVIRONMENTAL SYSTEMS

LAYFIELD GEOSYNTHETICS INVENTORY LOG

PROJECT NUMBER: 12C-088	PROJECT TITLE: MILNE INLET FUEL SYSTEM UPGRADI
OWNER: HATCH	CONTRACTOR: NUNA
LOCATION: MARY RIVER	SHEET NUMBER: 3
MATERIAL TYPE: GEOMEMBRANE	GEONET GEOTEXTILX OTHER:
DATE OF ARRIVAL:	DATE OF INVENTORY: <u>AUG-29-2011</u>
UNLOADING METHOD:	INVENTORY BY: CHRIS NYBACK
PRODUCT TYPE: GEOTEXTIL LP-12	CONDITION IN TRUCK:
MATERIAL MANUFACTURER:	

	Mate	rial Dimer	sions	QC	Conf		3
	Thickness			Certificate	Sample		
Panel / Roll Number	or Weight	Length	Width	Available	Removed	Other	Remarks
O2O267364	LP-12	300 FT	15 FT			i i	
O2O266138	LP-12	300 FT	15 FT				
O2O266174	LP-I2	300 FT	15 FT	1			
O2O266135	LP-12	300 FT	15 FT			i i	
O2O267337	LP-12	300 FT	15 FT				
O2O266132	LP-12	300 FT	15 FT				
O2O266170	LP-12	300 FT	15 FT				
O2O266152	LP-12	300 FT	15 FT				
O2O266162	LP-12	300 FT	15 FT		***************************************		
O2O26	LP-12	300 FT	15 FT			11///	
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT		1	i i	
O2O26	LP-12	300 FT	15 FT	:	***************************************		
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT		***************************************		
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT				
O2O26	LP-12	300 FT	15 FT				

SUBMITT	ED BY:	JC	
DATE <u>:</u>	AUG-29	-2011	

LS FORM 1

LAYFIELD ENVIRONMENTAL SYSTEMS





3.5 Geomembrane Deployment Log - Sht. 1, 2, and 3

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/ success*				_

GEOMEMBRANE DEPLOYMENT LOG

PROJECT NUMBER:	12C-088		***************************************	PROJECT TITLE:	MILNE INLET FUI	EL SYSTEM UP GRAD
OWNER:	НАТСН			CONTRACTOR:	NUNA	
LOCATION;	MARY RIVER	t .				
GEOMEMBRANE	HZ 535 SEC	CONDARY	PRIMARY	CLOSURE	OTHER	
SUBGRADE CONDITION (S	SURFACE COMP	PACTION, PROTRUSIO	NS, DESICCATION, E	XCESSIVE MOISTURE);		
REMARKS: GEOTEXTIL	UNDER LAY L	P-12			DATE: MONDA	Y / AUG -29-2011
HAZGARD 5	35				SHEET NUMBER:	1
DEPLOYMENT EQUIPME	NT: ESC	AVATOR		****		
	DANIEL LOCA	TION REFERENCE	T PANEL LOCA	TION DEPENDANCE	BUNDA LOCATION	
DESCRIPTION	NUMBER	P-1	NUMBER	ATION REFERENCE P-2	PANEL LOCATION	REPERENCE
		1-1		1-7	NUMBER	
PANEL/ROLL NUMBER DEPLOYMENT LENGTH	55 M	***************************************	B 55 M			
AMBIENT AIR TEMP.	3 C		3 C			
VISUAL OBSERVATION OBSERVED OVERLAP	NO DAMAGE	:	NO DAMAGE			
CHECKED BY	ic		JC JC		-	
ADJACENT PANEL	N=	\$=	N=	S=	N=	S =
	<u>F</u> =	W=	E=	W=	E=	₩≒
	DANEL LOCA	TION REFERENCE	DANIEL LOCA	TION REFERENCE	DANIEL LOCATION	DECEMENOS
DESCRIPTION	1	HON KEPERENCE		1	PANEL LOCATION	
	NUMBER		NUMBER		NUMBER	6
PANEL/ROLL NUMBER DEPLOYMENT LENGTH				******	***************************************	
AMBIENT AIR TEMP.			-			
VISUAL OBSERVATION						
OBSERVED OVERLAP CHECKED BY			-	MANAGE		
ADJACENT PANEL	Nex	S=	N=	S=	N=	S=
	E=	₩±	E=	W=	E==	W=
		****			<u> </u>	
DESCRIPTION	PANEL LOCAT	TION REFERENCE	PANEL LOCA	TION REFERENCE	PANEL LOCATION	REFERENCE
	NUMBER		NUMBER		NUMBER	
					7	
PANEL/ROLL NUMBER						
DEPLOYMENT LENGTH						
AMBIENT AIR TEMP. VISUAL OBSERVATION		***************************************				***************************************
OBSERVED OVERLAP						
CHECKED BY						
ADJACENT PANEL	N=	S=	N=	S=	N=	S=
1	<u> </u>					_
	E=	Væ	E=	W=	Ess	W=
	PANEL LOCAT	ION REFERENCE	PANEL LOCA	TION REFERENCE	PANEL LOCATION	DEEEDENCE
DESCRIPTION	NUMBER		NUMBER	TIOTTIAL BREITED	1	REFERENCE
	WONDER		NOWBER		NUMBER	
PANEL/ROLL NUMBER						
DEPLOYMENT LENGTH						
AMBIENT AIR TEMP.						
VISUAL OBSERVATION		***************************************				
OBSERVED OVERLAP CHECKED BY			 			
ADJACENT PANEL	N-	S≃	N=	S=	N=	S=
	E=	W≃	E=	W-	E=	W≈
				SUBM	ITTED BY:	
					DATE;	

LS FORM 2

	LAYFIELD
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GEOMEMBRANE DEPLOYMENT LOG

PROJECT NUMBER:	12C-088			PROJECT TITLE:	MILNE INLET F	UEL SYSTEM UP GRADI
OWNER:	HATCH			CONTRACTOR:	NUNA	
LOCATION:	MARY RIVER) · (((((((((((((((((((((((((((((((((((
GEOMEMBRANE	HZ 535 SECO	ONDARY	PRIMARY	CLOSURE	OTHER	
SUBGRADE CONDITION (
REMARKS: GEOTEXTIL				•	DATE: THESE	AY/ AUG -30-2011
HAZGARD 5					SHEET NUMBE	
DEPLOYMENT EQUIPME	NT: ESCA	VATOR			oneer trombe	Windowski
, (
DESCRIPTION	1	ION REFERENCE	PANEL LOCA	IJON REFERENCE	PANEL LOCATION	ON REFERENCE
-	NUMBER	P-3	NUMBER	P-4	NUMBER	
PANEL/ROLL NUMBER	В		В			
DEPLOYMENT LENGTH AMBIENT AIR TEMP.	55 M 3 C		55 M 3 C			
VISUAL OBSERVATION	NO DAMAGE		NO DAMAGE			
OBSERVED OVERLAP CHECKED BY	JC.		5"			***************************************
ADJACENT PANEL	N=	Ş=	IC.			
ADJACENT FAIRE	E=	W≈	N≈ E=	S==	N=	S∺
	0.7	M.s.		W=	Ē=	W=
DESCRIPTION	PANEL LOCATI	ON REFERENCE	PANEL LOCAT	TON REFERENCE	PANEL LOCATIO	N REFERENCE
Discount Hou	NUMBER		NUMBER		NUMBER	
				***************************************	TOMBER.	
PANEL/ROLL NUMBER						
DEPLOYMENT LENGTH						
AMBIENT AIR TEMP.						
VISUAL OBSERVATION OBSERVED OVERLAP						
CHECKED BY			·			
4.D.M. G.D. T. D. 12.444	50000					
ADJACENT PANEL	N≔	S==	N=	S=z	N≖	S=
	E=	₩~	E≔	W=	E=	W=
						VV -
DESCRIPTION	PANEL LOCATE	ON REFERENCE	PANEL LOCAT	ION REFERENCE	PANEL LOCATIO	N REFERENCE
	NUMBER		NUMBER		NUMBER	
PANEL/ROLL NUMBER						
DEPLOYMENT LENGTH						
AMBIENT AIR TEMP,						
VISUAL OBSERVATION OBSERVED OVERLAP						
CHECKED BY						
A DATA AND STORE TO A STORE						
ADJACENT PANEL	N=	S=.	N∞	S=	N=	S=
	E=	Wa	E≈	W=	E∞	W=
	<u></u>					
DESCRIPTION	PANEL LOCATION	IN REFERENCE	PANEL LOCATI	ON REFERENCE	PANEL LOCATION	REFERENCE
	NUMBER		NUMBER		NUMBER	
PANEL/ROLL NUMBER						
DEPLOYMENT LENGTH						
AMBIENT AIR TEMP,						
VISUAL OBSERVATION OBSERVED OVERLAP		· · · · · · · · · · · · · · · · · · ·				
HECKED BY						
a Trada o companyo ni na nina						
ADJACENT PANÉL	N=	S ^{ass}	N≔	S=	N=	S=
	E=	W=	E≈	W=	E=	W=

				SUBMI	TTED BY:	
					DATE:	

LS FORM 2

	LAYFIEL	D
C. secondar		

GEOMEMBRANE DEPLOYMENT LOG

PROJECT NUMBER:	12C-088		PROJECT TITLE:	MILNE INLET FUEL	SYSTEM UP GRADI
OWNER:	НАТСН		CONTRACTOR:	NUNA	
LOCATION:	MARY RIVER				
GEOMEMBRANE	HZ 535 SECONDARY	PRIMARY	CLOSURE	OTHER	
SUBGRADE CONDITION (S	SURFACE COMPACTION, PROTRUSIO		(CESSIVE MOISTURE):		
REMARKS: GEOTEXTIL	UNDER LAY LP-12			DATE: SEPT-01-201	1
HAZGARD 5	35			SHEET NUMBER:	
DEPLOYMENT EQUIPME	NT: ESCAVATOR			*	
DESCRIPTION	PANEL LOCATION REFERENCE	1 1	ATION REFERENCE	PANEL LOCATION RI	
	NUMBER P-5	NUMBER	P-6	NUMBER	P-7
PANEL/ROLL NUMBER DEPLOYMENT LENGTH	A 121X 121 FT	D 14X72		D	
AMBIENT AIR TEMP,	3C	3C		14X72 3C	
VISUAL OBSERVATION OBSERVED OVERLAP	NOT DAMAGE 5"	NOT DAMAG	E	NOT DAMAGE	
CHECKED BY	ic	Je Je		JC S	
ADJACENT PANEL	N= S= P-8	N=	S= P-7	N= P-6	S= P-10
	E= W= P-6/7	E= P-5.	W= P-4	E= P-5/P-8	W= P-4
	PANEL LOCATION REFERENCE	PANEL LOCA	TION REFERENCE	DANIEL LOCATION DE	CER CLOS
DESCRIPTION				PANEL LOCATION RE	·
	NUMBER P-8	NUMBER	P-9	NUMBER	P-10
DANIEL POLL NEW PROP					
PANEL/ROLL NUMBER DEPLOYMENT LENGTH	C 117X30	C 117X30		B 34X 34	
AMBIENT AIR TEMP.	4C	4C		4C	
VISUAL OBSERVATION OBSERVED OVERLAP	NOT DAMAGE 5"	NOT DAMAG	E	NOT DAMAGE	
CHECKED BY	1C	JC 2		1C	
ADJACENT PANEL	N∞ P-5 S- P-9				
ADJACENT FANEL	N∞ P-5 S P-9	N= P-8	S=	N= P-7	S=
	E= ₩∞ P-7	E=	W∞ P-10	E= P-9	W= P-4
ř		7	1		
DESCRIPTION	PANEL LOCATION REFERENCE	PANEL LOCA	TION REFERENCE	PANEL LOCATION RE	FERENCE
	NUMBER	NUMBER		NUMBER	
PANEL/ROLL NUMBER			WARRANIA		
DEPLOYMENT LENGTH AMBIENT AIR TEMP.		-			
VISUAL OBSERVATION					
OBSERVED OVERLAP CHECKED BY					Marie Land
CHECKED D1		1			
ADJACENT PANEL	N= S=	N=	S=	N=	S=
	E= W=	E=	w=	E=	W=
DESCRIPTION	PANEL LOCATION REFERENCE	PANEL LOCAT	ION REFERENCE	PANEL LOCATION REI	ERENCE
	NUMBER	NUMBER		NUMBER	

PANEL/ROLL NUMBER					
DEPLOYMENT LENGTH				***************************************	
AMBIENT AIR TEMP, VISUAL OBSERVATION		-			
OBSERVED OVERLAP					
CHECKED BY		-			
ADJACENT PANEL	N= S=	N-	S=	N=	S=
	_				3
	E= \\\'		W ²⁰⁰	E=	W=
			SUBMI	TTED BY:	
					-
				DATE:	

LS FORM 2





3.6 Geomembrane Trail Seam Log



GEOMEMBRANE TRIAL SEAM LOG

Superbulgingspur																						
PROJEC	T NUMBER:	12C-088					PROJI	ECT	CT TITLE: MILNE INLET FUEL SYST						YSTEM	UP GR	ADE					
OWNER	:	НАТСН					CONT	RAC	то	R:			NUN	JA_		***************************************			-,-,-	w		
LOCATI	ON:	MARY RIVER					SHEET	ΓNU	MВ	ER:			1									
X	TF - # FUSI	ION		,	X	TX - # = 1	EXTRU	ISIO	N										TS - #	= SOL	VENT	•
	APPROX,	WELDING			TEMPER	ATURES							TES	T RES	ULTS		····			PASS		
SAMPLE NUMBER	TIME & DATE	MACHINE NUMBER	WELD TECH.	AMBIENT AIR TEMP.	PREHEAT OR MACHINE	EXTRUDER	WEDGE TEMP. Deg F		PEI	INSIDI EL MC	DE			PEE	UTSIC EL MO	DE		SHEAR STRE		OR RE - TEST	CH'KD BY	REMARKS
TF 1	AUG-30-2011	#23		3 C	CHALLY		860	62		68	2211	67		76	DENC	59		68			JC	
	8:00		CN		520				62		67		49		68		61		69	PASSS		
TX 1	AUG30-2011		CN	9.0	475													•				***************************************
TX 2	11:00 AUG-31-2011	#07	CNI	3 C	175	460 F		64		69		67		56		65		81	68	PASS	JC	
11 2	15:00	#07	CN	5 C	475	460 F		50						-52								
TF 2	SEPT-01-2011			3.0		400 F	,	58 69		52 63		53 66		52 70		56 61		55	55	PASS	JC	***************************************
11 2	13:00	#23	CN	4C	650		860	09	56	03	64	00	68	70	66	01	65	70	65	PASS	10	
TX 3	SEPT -03-2011						000		20		04	_	00		00		0.5		0.5	PASS	JC	***************************************
	7:35	#07	CN	4C	475	460		70		65		74		67		75		72	67	PASS	JС	
											~~~~									11100	30	
										-												
																				-		
															$\dashv$							
									***************************************											1		

LS FORM 3

LAYFIELD ENVIRONMENTAL SYSTEMS

SUBMITTED BY: JC DATE: AUG-30-2011



LS FORM 4

## GEOMEMBRANE SEAM LOG

PROJECT N	UMBER:	12C-088					PROJECT '	TITLE:	MILNE II	NLET F	UEL SYSTEN	1 UP GRAD	E
OWNER:		НАТСН					CONTRAC	TOR:	NUNA				
LOCATION:		MARY RI	VER				-						
					PASSING	TRIAL SEA	AMS						
X	FUSION		TF-1	NO.	8:00	TIME	TECH ID	CN					
	EXTRUSION			***						SHEE	ΓNUMBER:	1	
	SOLVENT										DATE:	<u>AUG-30-201</u>	1
SEAM	SEAM SECTION *	APPROX.	AMB.	WELD	PREHEAT		MPERATURES	APPROX.					ON- RUCTIVE
NUMBER	START FINISH POINT POINT	START TIME	AIR TEMP.	WELD TECH.	OR MACH. SPEED	DIGITAL SET WEDGE OR BARREL	INDICATOR WEDGE OR BARREL	LENGTH WELDED (M)	DESTR. NUMBER	CHK'D BY	REMARKS	TEST DATE	CHECKED BY
P-1 / P-2	NEOS-SEOS	8:46	3C	CN	520%		860	181.0		JC		<u></u>	
P-1 / P-2	SEOS-NEOS	9:35	3C	CN	520%		860	14.0		JC	cap		
P-1 / P-2	NEOS-SEOS	9:50	3C	CN	520%		860	14.0		JC	cáp	**************************************	
P-2 / P-3 P-3 / P-4	NEOS-SEOS SEOS-NEOS	14:55	3C	CN	520%		860	181.0		1C			
/ / / / /	SEUS-NEUS	18:20	3C	CN	520%-		860	181.0		JC			4040
	***************************************												
7					***************************************				-				
/									-				
1							***************************************						
/													
* REFERENCE SEA	IM ENDPOINTS FROM AN	END OF SEA	M (EOS).	A REPAI	R, OR A POINT		LY TOTAL HE SEAM.	571.0		SHRM	ITTED BY:	IC	A
I C EODM 4	,		. ,							SODIVI		AUG-30-20:	11

C1-44 of 486



## GEOMEMBRANE SEAM LOG

PROJECT N	UMBER:	12C-088					PROJECT	TITLE:	MILNE I	NLET F	UEL SYSTEN	1 UP GRAD	E
OWNER:		НАТСН					CONTRAC	TOR:	NUNA				
LOCATION:		MARY R	IVER	***************************************			ija.						
					PASSING	TRIAL SE.	AMS						
X	FUSION		TF-	NO.	13:00	TIME	ТЕСН ІЕ	CN					
	EXTRUSION								-	SHEE	T NUMBER:	2	
**************************************	. 1211110510,1								_		DATE:	AUG-30-201	1
***************************************	SOLVENT								_				
						MACHINE TE	MPERATURES						
SÉAM NÚMBER	SEAM SECTION * START FINISH POINT POINT	APPROX. START TIME	AMB. AIR TEMP,	WELD TECH.	PREHEAT OR MACH, SPEED	DIGITAL SET WEDGE OR	INDICATOR WEDGE OR	APPROX. LENGTH WELDED (M)	DESTR. NUMBER	CHK'D BY	REMARKS		ON- LUCTIVE CHECKED
P-6 / P-4	NEOG CEOG	14.20	0.0	- CIVI	C 7.00/	BARREL	BARREL					DATE	BY
P-4 / P-7	NEOS-SEOS NEOS-SEOS	14:30	9 C	CN	650%		860	80.0					
P-10 / P-7	NEOS-SEOS	10.01	9 C	CN	650%		860	80.0					
P-7/10 / P-9	WEOS-EEOS	18:01	9 C	CN	650%		860	21.0	ļ .				
P-6/7 / P-5	WEOS-EEOS WEOS-EEOS	14:10	9 C	CN CN	650%		860	48.0					
P-5 / P-6	NEOS-SEOS	13:25	9 C	CN	650%		860	43.0					
P-9 / P-8	WEOS-EEOS	15:51	9 C	CN	650%		860	80.0					
P-8 / P-5	EEOS-WEOS	16:40	9 C	CN	650% 650%		860	117.0					
P-10 / P-4	NEOS-SEOS	17:45	9 C	CN	650%		860	117.0					
P-8 / P-7	NEOS -SEOS	17:00	9 C	CN	******		860	34.0					
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1100 -0100	17.00	10	CIA	650%		860	29.0					
		J				DAII	LY TOTAL	649.0					
* REFERENCE SEA	MENDPOINTS FROM AN	END OF SEA	M (EOS),	A REPAI.	R, OR A POINT	LOCATION ON T	HE SEAM.		-	SUBM	ITTED BY:		
LS FORM 4						IAVEIELDEN	JV/ID/AIM/PAIT	AI OMOTE	21.00		DATE:	SEPT-06-20	11





3.7 Geomembrane Seam Pressure Test Log - Sht. 1, 2, 3, and 4

	LAYFIELD
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## GEOMEMBRANE SEAM PRESSURE TEST LOG

OCHTECONE.	<del>.</del>						_	CONTRAC	IOK;	NUNA		
OCATION:	MARY	RIVER	*				_					
											DATE: SHEET	AUG -30-2011 NUMBER 1
SEAM	SEAM SECTION *	TECH.	PRESSU		Ti	ME		RESULTS		AM	CH'KD	
NUMBER	FROM TO	ID	PSI Start	Finish	START	F	INISH	PASS FAIL	COM	PLETE YES	BY	REMARKS **
l / P-2	IB - 1A	JC	35 :	35	15 : 2	15	: 7	PASS	NO		JC	
/ P-2	1B - SEOS	JC	35 :	35	15 : 5	15	: 10	PASS		YES	JC	
2 / P-3	IC - NEOS	JC	34 :	34	16 : 40	16	: 45	PASS	NO		JC	- HOLDON COLOR COL
2 / P-3	IC - SEOS	JC	32 :	32	16 : 42		: 47	PASS		YEŚ	JC	
/ P-4	ID - NEOS	JC	35 :	35	17 : 37	17	: 42	PASS	NO		JC	
/ P-4	1D - 1E	JC	34 :	34	17 : 23	17	: 28	PASS	NO		JC	
/ P-4	1E - SEOS	JC	35 :	35	17 : 45	17	: 50	PASS		YES	JC	
• /	<b>=</b> .		;		:		:					
	***		:				:					
/	<b>94</b>		:		:		:					
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	-		:		*		:					
	<b></b>		:				:					
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(LAYFIELD	GEOME
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LS FORM 5

## EMBRANE SEAM PRESSURE TEST LOG

PROJECT N	UMBER:	12C-088		PROJECT TITLE: MILNE INLET FUEL SYSTEM UP GRADE			RADE							
OWNER:		HATCH		***************************************	•			CONTRAC	гок: <u>N</u>	IUNA	**************************************			
LOCATION	:	MARY I	RIVER											
											DATE: SHEET	NUMBER	SEPT-02-2	2011
SEAM NUMBER	SEAM SEG	CTION *	TECH. ID	PRESSI PSI Start		TIN START	ME FINISH	RESULTS PASS FAIL	SEAN COMPL	ETE	CH'KD BY	F	LEMARKS *	*
P-4 / P-6	1F -	NEOS	JC	32 :	32	10 : 15	***************************************	PASS	NO NO	YES	JC			
P-4 / P-6	IF -	-	JC	33 :	33	10 : 15	10 : 20	PASS	NO		JC			
P-4 / P-6	1G -		JC	35 :	35	10 : 16	10 : 21	PASS	NO	********	JC			
P-4 / P-6	1H -		JC	36 :	36	10 : 16	10 : 21	PASS	NO		JC			
P-4 / P-6	1I -		JC	39 :	39	10 : 16		PASS		YES	JC	~~~~~~~~		
P-6 / P-7	1J -	The second secon	JC	35 :	34	10 : 2I	10 : 26	PASS		YES	JC		***************************************	
P-4 <u>/ P-7</u>	1J -		JC	35 :	35	10 : 21	10 : 26	PASS	NO		JC			
P-4 / P-7	1K -		JC	35 :	34	10 : 21		PASS	NO		JC		***************************************	
P-4 / P-7	1L -		JC	35 :	33	10 : 21	10 : 26	PASS	NO		JC		· · · · · · · · · · · · · · · · · · ·	
P-4 / P-7	1M -		JC	35 :	35	10 : 23		PASS	NO		JC			
P-4 / P-7	1N -		JC	35 :	35	10 : 23		PASS		YES	JC			
P-7 / P-10	10 -		JC	35 :	35	11 : 15		PASS		YES	JC			
P-9 / P-8	2R -	***************************************	JC	35 :	35	11 : 15		PASS	NO		JC			
P-9 / P-8	2Q -		JC	35 :	35	11 : 15		PASS	NO		JC			
P-9 / P-8		EEOS	JC I C	30 :	30	11 : 15	**************************************	PASS		YES	JC			
P-7 / P-8 P-5 / P-8	2R -		JC	32 :		11 : 23		PASS	***************************************	YES	JC	- Vol. 1		
P-5 / P-8	2E -	2F	JC	30 :	30	11 : 23	11 : 28	PASS		YES	JC			
		* REFERI ** RECOI	ENCE SE RD ANY	EAM ENDPO	OINTS F Y OF LE	ROM AN ENI AKS DETECT	O OF SEAM ( ED AND RE	EOS), A REPA FERENCE NEV	IR NUMBE V DEFECT	CODE	A POINT IN REMA	ON THE SE	AM.	

LAYFIELD ENVIRONMENTAL SYSTEMS

SUBMITTED BY:

M	LAYFIELD
CONTRACTOR N	LATFIELD

PROJECT NUMBER:

12C-088

## GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT N	UMBER:	12C-088				PROJECT TITLE: MILNE INLET FUEL SYSTEM UP GRADE						
OWNER:		НАТСН			W		CONTRAC	TOR: <u>NUNA</u>				
LOCATION:	:	MARY	RIVER									
									DATE: SHEET	SEPT-02-2011 NUMBER 3		
SEAM	SEAM SE	CTION *	ТЕСН.	PRESSURE	TI	ME	RESULTS	SEAM	CH'KD			
NUMBER	FROM	TO	ID	PSI Start Finish	START	FINISH	PASS FAIL	COMPLETE NO YES	BY	REMARKS **		
P-8 / P-5	2F -	2G	JC	30 : 30	12 : 32	12 : 37	PASS	NO		·		
P-8 / P-5	2G -	2H	JC	32 : 32	12 : 32	12 : 37	PASS	NO				
P-8 / P-5	2H -	2I	JC	35 : 35	12 : 32	12 : 37	PASS	NO	1			
P-8 / P-5	21 -	2J	JC	32 : 32	12 : 36	12 : 41	PASS	NO				
P-8 / P-5	2J -		JC	32 : 32	12 : 36	12 : 41	PASS	NO				
P-8 / P-5	2K -	2L	JC	32 : 32	12 : 36	12 : 41	PASS	NO				
P-8 / P-5	2L -	2M	JC	30 : 30	12 : 36	12 : 41	PASS	NO				
P-8 / P-5	2M -	2N	JC	30 : 30	12 : 36	12 : 41	PASS	NO		***************************************		
P-8 / P-5		20	JC	30 : 30	12 : 37	12 : 42	PASS	YES				
P-7 / P-5	2F -		JC	31 : 31	13 : 1	13 : 6	PASS	NO				
P-7 / P-5	2D -	***************************************	JC	31 : 31	13 : 1	13 : 6	PASS	NO				
P-7 / P-5	2C -		JC	31 : 30	13 : 1	13 : 6	PASS	NO				
P-7 / P-5	2B -	2A	JC	31 : 31	13 : 1	13 : 6	PASS	YES				

: 20

: 20

PASS

PASS

C1-51 of 486

13 : 15 | 13 : 20 | PASS

13 : 15 13

13 : 15 | 13

	DATE:	SEPT -02-2011
LAYFIELD ENVIRONMENTAL SYSTEMS	SUBMITTED BY:	JC

NO

NO

NO

NO

LS FORM 5

/ P-6

/ P-6

/ P-6

1P - NEOS

1P - 1Q

10 - 1R

1R - 1S

30 : 30

30 : 30

31 : 31

JC

^{*} REFERENCE SEAM ENDPOINTS FROM AN END OF SEAM (EOS), A REPAIR NUMBER, OR A POINT ON THE SEAM.

^{**} RECORD ANY QUANTITY OF LEAKS DETECTED AND REFERENCE NEW DEFECT CODE IN REMARKS.

sources.	LAYFIEI	we i
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LS FORM 5

# D GEOMEMBRANE SEAM PRESSURE TEST LOG

PROJECT NU	J <b>MBER</b> :	12C-088		4×60			PROJECT TITLE: MILNE INLET FUEL SYSTEM UP GRADE				
OWNER:		НАТСН				WOMEN COMPANY		CONTRACT	TOR: NUNA		
LOCATION:		MARY	RIVER		W-1						
										DATE:	SEPT-02-2011 Γ NUMBER 4
SEAM NUMBER	SEAM SE	CTION * TO	TECH. ID	PRESSURE PSI Start Finish	TIN START	ME FINI	SH	RESULTS PASS FAIL	SEAM COMPLETE NO YES	CH'KD BY	REMARKS **
P-5 / P-6	1S -	1T		32 : 32	11 : 20		25	PASS	NO	<del>                                     </del>	
P-5 / P-6	1T -	2A		32 : 32	11 : 20		25	PASS	YES		
/	-			.#	:	:					
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			<u> </u>	. *						<u> </u>	
		* REFERI ** RECO	ENCE SE RD ANY	EAM ENDPOINTS F QUANTITY OF LE	ROM AN ENI AKS DETECT	OF SE ED AN	EAM ( D RE	EOS), A REPA FERENCE NEV	IR NUMBER, OR V DEFECT CODE	IN REM	Γ ON THE SEAM. ARKS. SEPT-02-2011
t a nainy									SUBMITT		





#### 3.8 Geomembrane Defect/Repair Logs

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# GEOMEMBRANE DEFECT / REPAIR LOG

PROJECT NUMBER: 12C-088						Γ TITLE:	MILNE INLET FUEL SYSTEM UP GRADE					
OWNER	<b>k</b> :	HATCH			CONTRA	CTOR:	NUNA					
LOCATION: MARY RIVER					SHEET NUMBER: 1							
	DEFECT LOCATION				T	T		······································				
DEFECT CODE	LOG DATE	SEAM OR PANEL NO.	DEFECT LOCATION DESCRIPTION	DEFECT TYPE	REPAIR TYPE	WELD TECH.	REPAIR DATE	REMARKS **	TEST DATE	CHECKED BY		
1 A	AUG-30-2011	1 / 2	15FT FR NEOS	В	G&W	CN	AUG 30-2011			***************************************		
1 B	AUG-30-2011	1 / 2	20FT SEOS 1A	В	G&W	CN	AUG 30-2011					
1 C	AUG-30-2011	2 / 3	17FT FR NEOS	BO	PATCH	CN	AUG 30-2011					
1 D	AUG-30-2011	3 / 4	21FT FR NEOS	ВО	G&W	CN	AUG 30-2011			***************************************		
1 E	AUG-30-2011	3 / 4	1 IFT FR ID SEOS	BO	G&W	CN	AUG 30-2011					
1 F	SEPT-02-2011	4 / 6	8FT FR NEOS	ВО	G&W	CN	SEPT-02-2011					
1 G	SEPT-02-2011	4 / 6	15FT FR 1F SEOS	BO	G&W	CN	SEPT-02-2012	<del>*************************************</del>				
1 H	SEPT-02-2011	4 / 6	17FT FR 1G SEOS	BO	G&W	CN	SEPT-02-2013			***************************************		
1 I	SEPT-02-2011	4 / 6	32FT FR 1H SEOS	ВО	G&W	CN	SEPT-02-2014					
1 J	SEPT-02-2011	4 / 6	7FT FR 11 SEOS	T	G&W	CN	SEPT-02-2015					
1 K	SEPT-02-2011	4 / 7	15FT FR 1J SEOS	DT	PATCH	CN	SEPT-02-2016					
1 L	SEPT-02-2011	4 / 7	32 FT FR 1K SEOS	BO.	G&W	CN	SEPT-02-2017					
1 M	SEPT-02-2011	4 / 7	15FT FR 1L SEOS	BO	G&W	CN	SEPT-02-2018					
1 N	SEPT-02-2011	4 / 7	10 FT FR 1M SEOS	BO	G&W	CN	SEPT-02-2019					
10	SEPT-02-2011	4 / 7	7FT FR IN SEOS	Т	G&W	CN	SEPT-02-2020	· · · · · · · · · · · · · · · · · · ·				
1 P	SEPT-02-2011	5 / 6	17FT FR NEOS	BO	G&W	CN	SEPT-02-2021					
1 Q	SEPT-02-2011	5 / 6	25FT FR 1P SEOS	BO	G&W	CN	SEPT-02-2022			***************************************		
1 R	SEPT-02-2011	5 / 6	20FT FR 1Q SEOS	BO	G&W	CN	SEPT-02-2023					
1 S	SEPT-02-2011	5 / 6	15 FT FR 1R SEOS	BO	G&W	CN	SEPT-02-2024					
1 T	SEPT-02-2011	5 / 6	4TF FR 1S SEOS	BO	G&W	CN	SEPT-02-2025					
DEFECT TYPE:	AD - ANIMAL RELATED D  B - UNDISPERSED RESENT	BEAD	EE - EARTHWORK EQUIPMENT DAMAGE EXT - EXTENSION EXT - EXTENSION	PT - PRESSURE TES SI - SOIL SURFACE	RREGULARITY			PASSING TRIAL SE				
DS - BOOT-SCHET FROM FML PENETRATION PS - FAILED SEAM LENGTH CO - CHANGE OF OVERLAP FTS - FRIED TEST STRIP CR - CREASE IIT - HEAT TACK BURN D - INSTALLATION DAMAGE IO - INSUFFICIENT OVERLAP (UNDER SPEC.)				SI SLAG ON TEXT T - THREE PANEL B VL - VACIJUM TEST WR - WRINKLE WS - WELDER REST OTHER:	TERRECTION LEAK	one of the state o	-	NO. TIME	TECH ID.			
** COLUMNS TO BE USED BY THE PROJECT SUPERVISOR OR LEAD TECHNICIAN ONLY.  LPL FORM 7 LAYFIELD ENVIRONMENTAL SYSTEMS						SU	BMITTED BY:					



# GEOMEMBRANE DEFECT / REPAIR LOG

PROJEC	T NUMBER	l: <u>12C-088</u>	}	PROJECT TITLE: MILNE INLET FUEL SYSTEM UP GRADE										
OWNER	l:	HATCH			CONTR	ACTOR	: NUNA							
LOCATI	ION:	MARY	RIVER		SHEET NUMBER 1									
	1		DEFECT LOCATION		T			·····						
DEFECT CODE	LOG DATE	SEAM OR PANEL NO.	DEFECT LOCATION DESCRIPTION	DEFECT TYPE	REPAIR TYPE	WELD TECH.	REPAIR DATE		ARKS **	TEST DATE	CHECKED BY			
	SEPT- 02-2011	6 / 7	P-5	Т	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	7 / 5	14FT FR 2A SEOS	BO ·	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	7 / 5	10 FT FR 2B SEOS	BO	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	7 / 5	11FT FR 2C SEOS	BO	G&W	CN	SEPT 02-2011				· · · · · · · · · · · · · · · · · · ·			
	SEPT- 02-2011	8 / 5	P-7	T	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	5 / 8	9FT FR 2E EEOS	Т	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	5 / 8	9FT FR 2F EEOS	Т	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	5 / 8	9FT FR 2G EEOS	Т	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	5 / 8	9FT FR 2H EEOS	Т	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	5 / 8	9FT FR 21 EEOS	Т	PATCH	CN	SEPT 02-2011	DI	7#2					
	SEPT- 02-2011	5 / 8	9FT FR 2J EEOS	Т	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	5 / 8	9FT FR 2K EEOS	Т	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	5 / 8	9FT FR 2L EEOS	Т	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	5 / 8	9FT FR 2M EEOS	Т	G&W	CN	SEPT 02-2011		······					
	SEPT- 02-2011	5 / 8	4FT FR 2N EEOS	BO	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	8 / 9	16FT FR EEOS	BO	G&W	CN	SEPT 02-2011				-			
	SEPT- 02-2011	8 / 9	57 FT FR 2P WEOS	ВО	G&W	CN	SEPT 02-2011							
	SEPT- 02-2011	8 / 9	38 FT FR 2Q WEOS	BO	G&W	CN	SEPT 02-2011							
2 S	SEPT- 02-2011	8 / 9	8 FT FR 2R SEOS	BO	G&W	CN	SEPT 02-2011							
2 T		/												
	AD-ANIMAL RELATED DA		EE - EARTHWORK EQUIPMENT DAMAGE	PT - PRESSURE TEST	rcur									
	B - UNDISPERSED RESIN B BO - FUSION WELDER BUR		EXT - EXTENSION FM - FISHMOUTH	SI - SOIL SURFACE II SL - SLAG ON TEXTI					SSING TRIAL SEAMS					
	BS - BOOT/SKIRT FROM FA	AL PENETRATION	FS - FAILED SEAM LENGTH	T - THREE PANEL IN			-	NO.	TIME	TECH ID,				
	CO - CHANGE OF OVERLAI CR - CREASE		FTS - FIELD TEST STRIP HT - HEAT TACK BURN	VL - VACUUM TEST WR - WRINKLE	LEAK									
	D - INSTALLATION DAMAG	GE .	IO - INSUFFICIENT OVERLAP (UNDER SPEC.)	WS - WELDER REST.	ART						-			
	DS-# - DESTRUCTIVE TEST P - PATCH, C - CAP, RS - RE	CONSTRUCTED SEAM, G&W - (	MD - MANUFACTURER DELIVERY DAMAGE GRINDWELD	OTHER:										
** ^	OI UNAME TO T	E HOED DAMES	OD CATCOT CHAPTER VICE OF A TAXABLE				60-ca			***************************************	·			
			PROJECT SUPERVISOR OR LEAD TECHNIC	CIAN ONLY,		SI	UBMITTED BY: _							
LPL I	FORM 7		LAYFIELD ENVIRONMENTAL SYSTEMS				DATE:							





3.9 Geomembrane Vacuum/Air Lance Test Log – Sht. 1 and 2

( LAYFIELD
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### GEOMEMBRANE VACUUM / AIR LANCE TEST LOG

PROJECT NUMBER:	12C 088		PROJECT TITLE:	MILNE INLET FUEL SYST	EM UP GRADE
OWNER:	НАТСН		CONTRACTOR:	NUNA	
LOCATION:	MARY RIVER	•	_		
VACUUM BOX X		AIR LANCE		SHEET NUMBER:	1

		SE	CAMS	***************************************				REPAIRS					
SEAM NUMBER	SEAM SECTION * FROM TO	TEST DATE	TECH ID	DEFECTS **	COMPLETE NO	CHK'D BY	REMARKS **	DEFECT CODE	TEST DATE	TECH ID	DEFECTS	CHK'D BY	REMARKS **
1	•				-			1 A	AUG-30-201	JC	В	JC	***************************************
1 .	-							1 B	\UG-30-201	JC	В	JC	
1	*								AUG-30-201	JC	ВО	JC	
/	-								AUG-30-201	JC	BO	JC	
/	-								AUG-30-201	JC	ВО	JC	
	-			····					EPT-02-201	JC	BO	JC	
	-									JC	ВО	JC	
1.	·=.							1 H	EPT-02-201		ВО	JC	
	-							1 1	EPT-02-201	JC	ВО	JC	
1,									EPT-02-201		Т	JC	
	<b>*</b>								EPT-02-201		DT	JC	
									EPT-02-201		BO	JC	
1.	-					ļ			EPT-02-201		ВО	JC	····
	<b>H</b>								EPT-02-201		ВО	JC	···
- ',	-								EPT-02-201		Т	JC	
<del>', ', '</del>	-					-			EPT-02-201		BO	JC	
1	-				<u> </u>				EPT-02-201		BO	JC	
<del></del> ;	<b>—</b>					<del>  -</del>			EPT-02-201		BO	JC	
1				***************************************		<del>  -</del>			EPT-02-201		BO	JC	***************************************
1	-					L		1 T	EPT-02-201	JC	ВО	JC	

^{*} REFERENCE SEAM ENDPOINTS FROM AN END OF SEAM (EOS), A REPAIR NUMBER. OR A POINT LOCATION ON THE SEAM

		SUBMITTED BY:	JC
LS FORM 6	LAYFIELD ENVIRONMENTAL SYSTEMS	DATE:	SEPT 02 -2011

^{**} RECORD QUANTITY OF LEAKS DETECTED AND REFERENCE NEW DEFECT CODE IN REMARKS

	LA	YF	EL	D
--	----	----	----	---

## GEOMEMBRANE VACUUM / AIR LANCE TEST LOG

PROJECT NUMBER:	12C 088		PROJECT TITLE:	MILNE INLET FUEL SYS	TEM UP GRADE
OWNER:	НАТСН		CONTRACTOR:	NUNA	
LOCATION:	MARY RIVER		<del></del>		
VACUUM BOX X		AIR LANCE		SHEET NUMBER:	2

		S:	EAMS		***************************************					Į.	REPAIRS		
SEAM NUMBER	SEAM SECTION * FROM TO	TEST DATE	TECH ID	DEFECTS **	COMPLETE NO	CHK'D BY	REMARKS **	DEFECT CODE	TEST DATE	TECH ID	DEFECTS **	CHK'D BY	REMARKS **
	-							2 A	EPT- 02-201	JC	T	JC	
/	-								EPT- 02-201		BO	JC	
	A						-	2 C	EPT- 02-201	JC	BO	JC	
<del>'</del>	<b>-</b>							2 D	EPT- 02-201	JC	BO	JC	
	н	······						2 E	EPT- 02-201	JC .	T	JC	
				MANAGEMENT OF THE STREET, STRE			THE STATE OF THE S	2 F	EPT- 02-201	JC	T	JC	
									EPT- 02-201		Т	JC	
	*								EPT- 02-201		T	JC	
	-								EPT- 02-201		Т	JC	
	-							2 J	EPT- 02-201		T	JC	
	*								EPT- 02-201	JC	T	JC	
1	-								EPT- 02-201		Т	JC	
<del>  ',  </del>	-	·····	-					2 M	EPT- 02-201	JC	<u>T'</u>	JC	
<del></del>	-		<del>  -</del>						EPT- 02-201		Т	JC	
<del></del>	-								EPT- 02-201	JC	ВО	JC	
,	-								EPT- 02-20 I	JC	BO	JC	
	-								EPT- 02-201		ВО	JC	
	*								EPT- 02-201		ВО	JC	
	-								EPT- 02-201	JC	BO	JC	
	•							2 T					

^{*} REFERENCE SEAM ENDPOINTS FROM AN END OF SEAM (EOS), A REPAIR NUMBER, OR A POINT LOCATION ON THE SEAM

I G PODI ( C		SUBMITTED BY:	JC
LS FORM 6	LAYFIELD ENVIRONMENTAL SYSTEMS	DATE:	SEPT -02-2011

^{**} RECORD QUANTITY OF LEAKS DETECTED AND REFERENCE NEW DEFECT CODE IN REMARKS





#### 3.10 Geomembrane Destructive Test Reports

	HATCH			CONTRACTOR:	MILNE I NUNA		
OCATION:	MARY RIVER			SHEET NUMBER	R:	1	
ESTRUCTIVE	TEST NUMBER*:	DT# 1		TEST DATE:	SEPT 02-2011		
EAM NUMBER	t:	P-4 /P-7			LAYFIELD	OWNER	ENGINEER
AMPLE LOCAT	TION:	15 FT FR 1J SEOS		3RD PARTY	YES	NO	WHO?
ATE SEAMED	/ SAMPLED:	SEPT 02 -2011 -		DATE FORWARI	DED TO LAB		
YPE OF SEAM	:	WEDGE		DATE LAB TEST	RESULTS REC'D		
ether than the succession of	SHEAR STRENGT		TEST RESUL	ΓS (units = lbf. /		ON	
	SHEAR STRENGT		D TEST RESUL	TS (units = lbf. /	in. width = ppi) PEEL ADHESI	ON	
SPECIMEN NUMBER	SHEAR STRENGTH	TH  ** LOCUS OF	SPECIMEN NUMBER	INSII ADHESION	PEEL ADHESION DE SEAM LOCUS OF	OU ADHESION	
SPECIMEN	SEAM STRENGTH	** LOCUS OF BREAK CODE	SPECIMEN NUMBER	INSII ADHESION STRENGTH	PEEL ADHESION DE SEAM LOCUS OF BREAK CODE	OU ADHESION STRENGTI	N ** LOCUS ( H BREAK CO
SPECIMEN NUMBER	SEAM STRENGTH	** LOCUS OF BREAK CODE SEI	SPECIMEN NUMBER 2	INSII ADHESION STRENGTH 62	PEEL ADHESION DE SEAM LOCUS OF BREAK CODE SEI	ADHESION STRENGTI 72	** LOCUS ( H BREAK CO SEI
SPECIMEN NUMBER 1 3	SEAM STRENGTH  80  72	** LOCUS OF BREAK CODE SEI SEI	SPECIMEN NUMBER 2 4	INSII ADHESION STRENGTH 62 64	PEEL ADHESION DE SEAM LOCUS OF BREAK CODE SEI SEI	ADHESION STRENGTI 72 62	N ** LOCUS ( H BREAK CO: SEI SEI
SPECIMEN NUMBER	SEAM STRENGTH  80  72  73	** LOCUS OF BREAK CODE SEI SEI SEI	SPECIMEN NUMBER 2 4 6	INSII ADHESION STRENGTH 62 64 64	PEEL ADHESION DE SEAM LOCUS OF BREAK CODE SEI SEI SEI SEI	ADHESION STRENGTI 72 62 75	N ** LOCUS ( H BREAK CO: SEI SEI SEI
SPECIMEN NUMBER 1 3 5	SEAM STRENGTH  80  72	** LOCUS OF BREAK CODE SEI SEI	SPECIMEN NUMBER 2 4	INSII ADHESION STRENGTH 62 64	PEEL ADHESION DE SEAM LOCUS OF BREAK CODE SEI SEI	ADHESION STRENGTI 72 62	N ** LOCUS ( H BREAK CO: SEI SEI

LS FORM 8 (OPTIONAL)

SUPPORTED MATERIALS.

NOTES:

LAYFIELD ENVIRONMENTAL SYSTEMS

3RD PARTY / LAB: PASS _____ FAIL ____

CHECKED BY: JC DATE: SEPT 02 -2011

ROJECT NUM WNER:	h			PROJECT TITLE: CONTRACTOR:	MILNE II NUNA	NLET FUEL SYST	EM UP GRADE
CATION:	MARY RIVER			SHEET NUMBER:		1_	
ESTRUCTIVE	TEST NUMBER*:	DT# 1		TEST DATE:	SEPT 02-2011		
AM NUMBE	R:	P-5 /P-8 15 FT FR 1J SEOS		ARCHIVE		OWNER	ENGINEER
MPLE LOCA	TION:	15 FT FR 1J SEOS		3RD PARTY	YES	NO	WHO?
TE SEAMED	/SAMPLED:	SEPT 02 -2011 -		DATE FORWARD	ED TO LAB	***************************************	
PE OF SEAM	-	WEDGE		DATE LAB TEST	RESULTS REC'D		
	CHEAD CTDENCT	'LI	•			N.T. T	
-	SHEAR STRENGT	H		<u> </u>	PEEL ADHESIC		
SPECIMEN		** LOCUS OF	SPECIMEN		E SEAM	OU'	TSIDE SEAM
SPECIMEN NUMBER	SHEAR STRENGT SEAM STRENGTH		SPECIMEN NUMBER	INSID ADHESION STRENGTH			** LOCUS
NUMBER I	SEAM STRENGTH	** LOCUS OF		ADHESION	E SEAM LOCUS OF	OU' ADHESION	** LOCUS
NUMBER  1 3	SEAM STRENGTH  77 59	** LOCUS OF BREAK CODE	NUMBER	ADHESION STRENGTH	E SEAM LOCUS OF BREAK CODE	OU' ADHESION STRENGTH	** LOCUS ( BREAK CO
NUMBER  1 3 5	SEAM STRENGTH  77 59 69	** LOCUS OF BREAK CODE SEI SEI	NUMBER  2  4  6	ADHESION STRENGTH 72 70 67	LOCUS OF BREAK CODE SEI SEI SEI	OU' ADHESION STRENGTH 66	** LOCUS BREAK CO SEI
NUMBER  1 3 5 7	SEAM STRENGTH  77 59 69 65	** LOCUS OF BREAK CODE SEI SEI SEI SEI	NUMBER  2  4  6  8	ADHESION STRENGTH 72 70 67 73	LOCUS OF BREAK CODE SEI SEI SEI SEI	OU' ADHESION STRENGTH 66 55 61 65	** LOCUS OF BREAK CONTROL SEIN SEIN SEIN SEIN SEIN SEIN SEIN SEIN
NUMBER  1 3 5 7 9	SEAM STRENGTH  77 59 69	** LOCUS OF BREAK CODE SEI SEI	NUMBER  2 4 6 8 10	ADHESION STRENGTH 72 70 67	LOCUS OF BREAK CODE SEI SEI SEI	OU' ADHESION STRENGTH 66 55	** LOCUS ( BREAK CO SEI SEI SEI
NUMBER  1 3 5 7	SEAM STRENGTH  77 59 69 65	** LOCUS OF BREAK CODE SEI SEI SEI SEI	NUMBER  2  4  6  8	ADHESION STRENGTH 72 70 67 73	LOCUS OF BREAK CODE SEI SEI SEI SEI	OU' ADHESION STRENGTH 66 55 61 65	** LOCUS BREAK CO SEI SEI SEI SEI
NUMBER  1 3 5 7 9 11 DESTRUCTIVE	SEAM STRENGTH  77 59 69 65	** LOCUS OF BREAK CODE  SEI SEI SEI SEI SEI LD BE SEQUENTIAL	NUMBER  2 4 6 8 10 12  AND ARE TO BE	ADHESION STRENGTH 72 70 67 73 68	LOCUS OF BREAK CODE SEI SEI SEI SEI	OU' ADHESION STRENGTH 66 55 61 65 52	** LOCUS BREAK CO SEI SEI SEI SEI SEI

LAYFIELD ENVIRONMENTAL SYSTEMS

DATE:

SEPT -02-2011

LS FORM 8 (OPTIONAL)





#### 3.11 Certificate of Final Inspection and Acceptance



### CERTIFICATE OF FINAL INSPECTION AND ACCEPTANCE

PROJECT NAME: MILLIE INLEST FLUE THERE FROM.
PROJECT NUMBER: 12C-038 DATE: 5001-02.2011
OWNER: HART MINING
LOCATION: MILLE INLET.
Scope of Installation(s): THE WORK  - University   During LP12 GEOTEONIE: B Paris Asserted 53  WELDED TESTED PEDGISON As Por Languages QC.
Part 1 – LAYFIELD ENVIRONMENTAL SYSTEMS LTD.
I, CLESCO, a duly appointed representative of Layfield Environmental Systems Ltd. (LESL), have visually observed the installations (as outlined above), and have found the Work to be complete and free of defects and declare that the Work was completed in accordance with the project specifications, Layfield Environmental Systems' QC program and the terms and conditions of the contract.
Layfield Environmental Systems Representative:
Name: Current Hark
Date: Signature: COT, Signature:
Part 2 – OWNER (or Representative)
I, Tues Brues, a duly appointed representative of Nona Contractions, do hereby take over and accept the installation(s) described above, and confirm that the work has been completed in accordance with the project
specifications and the terms of the conditions of the contract.
I have evaluated and measured the work together with the Layfield Environmental Systems representative, and agree that the measurements shown are both true and correct, and that the installation has met our approval.
Owners Representative:
Title: Assistant Provest Manager
Company: Nua Contracting  Date: SEPT Z, 2011 Signature: INTERMEDIA
Comments:
COMMINION,





#### 3.12 Shop QC Fabrication

BLA	VEI			SHO	OP Q	C		Speci	al Fabri	cation	nstruct	tions	······································			In-Pro	cess I	nspecti	on	
CH LA	IFI	EL.		LG-03	-QF-00	24-1	Иау-11	Descr	iption o	f Opera	ations/F	rocedu	ıres			#1	#2	#3	Comp	leted
Job Desc.	Baffinla	and - Inl	et Fuel (	Contain	nent (Pa	nel A)					·									
Customer:					ics Ltd.															
Sales Person:	JF		Date:		6-Jı	ıl-11														
Material Type:	H	AZGAI	RD 535	Red/l	3lack 1	48" W	de													
Prod Code:	12	C-C	38	0		7121														
Fab Code:		-i	03	LMHZ																
Length	120	)	Width		12	0.0														
Docket / Lot#			#		Roll#		Liner#	/ Pane	els		Quan,	tity	Repai	rs		_				
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446 291			G-27	760	HZ 53	5-1205	1/	421	. " "		1	,		, , ,						
46129			E272	160	H253 H253	-005		6	*											
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ASTM D6392	Shear	(Seam	#)		, .	Peel (S	Seam #	^E )					AW/44/4			Tech/	Ďate (	Seam#	)	<del></del>
Liner#	1	6	9			1 L	R	6 L	R	9 L	·R	L	R	L	R	1	6	9	<u> </u>	
	168	70	66			64	67	65	59	31	56					TH	TH	· 74	H . **	1 6 -
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Inspections		<u> </u>		#1	-100			#2	*			#3				Final		7		
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				*****	July	166	, <del></del>													

BIA	VEIEI		SHC	)PQ	C		Specia	al Fabric	cation I	nstructi	ions				In-Pro	cess In	spectio	on	
CH LA	YFIEL		LG-03-	QF-004	£ 24-N	√lay-11	Descri	ption of	f Opera	tions/P	rocedu	res			#1	#2	#3	Comp	leted
Job Desc.	Baffinland - Ir	let Fuel	Containm	nent (Pa	nel B)														
Customer:		Nuna	Logistic	cs Ltd.															
Sales Person:	JF	Date:		6-Ju	ıl-11														
Material Type:	HAZGA	RD 53	5 Red/B	Black 1	48" Wi	de													
Prod Code:	12C-08	S	0	5	7127	7													
Fab Code:		03	BLMHZ5	35					,										
Length	180	Width		84	I.O														
Docket / Lot#		#		Roll#		Liner#	/ Pane	ls	Į.	Quant	ity	Repair	s						
V4905		EXA		535-	011	11	(A.I.	100	- <del> </del>			10	PA	10	RUL 6	RILE	- RD	FEAR	1STAT
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46/20		472	535	ő C	56	5.V2	5	+10	4170										
46129		E272	L60 1	HZ53	5-008	2/(	0-7												QUARACTE PROPERTY.
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46129		1527	) GO	H5223	3-008			01+3	0'			_							1
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		E27,		4253		3/3	G	01+3	'o'			#			500		860		
46129		E27,		4253	5-001 10,D_	3/3	5. 5. 2	01+3	201					Speed	<i>50</i> 0	Temp		> ⁷ Splice	
46(29	Shear (Sear	E27, E27, 124 149	260 335 535	42.538 <u>03</u> 0	5-001 5.7 5.7	3/3	5 2	01+3						Speed	:500	Temp	SEC	Splice	
46129	Shear (Sear	E27, 124 149 149 140 16	260 335 535	42.538 <u>03</u> 0	5-001 10,D_	3/3	5 2	0 + 3. R	6 L	R	l L			Speed R	:500		SEC	Splice	
46(29) 45(29) 45(4) 48TM D6392 Liner #	1 76 69	6	260 335 535	42.538 <u>03</u> 0	Peel (S	3/3 4-1 Seam#	5 2 )46	R	6 L	~····	L	Magh			Tech/	Date (S	: <i>%C</i> eam # 6	Splice	
46(29) 45(29) 45(4) ASTM D6392 Liner #	1 76 69	6 4-(	200 335 535	42.538 <u>03</u> 0	Peel (S	3/3 4 Seam#	2 ) 46 5 L 5 G	R 65	6 L	63	L	Magh			Tech/	Date (S 5 34	eam #	Splice	
46 29 ASTM D6392 Liner #	1 5 1 76 69 2 68 70	6 7-1 60	200 335 535	42.538 <u>03</u> 0	Peel (S 1 L 7 / 63	3/3 4+ Geam# R 70	2 2 5 5 5 5 5 5 5	R	6 L	~····	L	Magh			Tech/ 1 234	Date (S	eam #	Splice	
ASTM D6392 Liner #	1 5 1 76 69 2 68 70	6 4-(	200 335 535	42.538 <u>03</u> 0	Peel (S 1 L 7 /	3/3 4-1 Seam# R 70	2 ) 46 5 L 5 G	R 65 82	6 L	63 61	L	Magh			Tech/ 1 234	Date (S 5 34	eam #	Splice	
ASTM D6392 Liner #	1 5 1 76 69 2 68 70 3 72 74	69	200 335 535	42.538 <u>03</u> 0	Peel (S 1 L 7 / 63	3/3 14 Seam# R P 90	5 2 5 5 5 5 5 5 6	R 65 52	6 L	63 61 60	L	Magh			Tech/	Date (S	6 -244	Splice	
ASTM D6392 Liner # 0 2 0 2	1 5 1 76 69 2 68 70 3 72 74	69	200 335 535	42.538 <u>03</u> 0	Peel (S 1 L 7 / 63	3/3 14 Seam# R P 90	5 2 5 5 5 5 5 5 6	R 65 52	6 L	63 61 60	L	Magh			Tech/ 1 234	Date (S	eam #	Splice	
ASTM D6392 Liner #  0 2 0 3 0 4	1 5 1 76 69 2 68 70 3 72 74	69	200 335 535	42.538 <u>03</u> 0	Peel (S 1 L 7 / 63	3/3 14 Seam# R P 90	5 2 5 5 5 5 5 5 6	R 65 52	6 L	63 61 60	L	Magh			Tech/ 1 234	Date (S	eam #	Splice	
ASTM D6392 Liner #  0	1 5 1 76 69 2 68 70 3 72 74	69	200 335 535	42.538 <u>03</u> 0	Peel (S 1 L 7 / 63	3/3 14 Seam# R P 90	5 2 5 5 5 5 5 5 6	R 65 52	6 L	63 61 60	L	Magh			Tech/ 1 234	Date (S	eam #	Splice	
ASTM D6392 Liner #  0 2 0 3 0 4 0 0 0 0	1 5 1 76 69 2 68 70 3 72 74	69	200 335 535	42.538 <u>03</u> 0	Peel (S 1 L 7 / 63	3/3 14 Seam# R P 90	5 2 5 5 5 5 5 5 6	R 65 52	6 L	63 61 60	L	Magh			Tech/ 1 234	Date (S	eam #	Splice	
16 ( 2 °)  ASTM D6392  Liner #  0	1 5 1 76 69 2 68 70 3 72 74	6 7-1 60 7-3 69	260 -	#2533 (D) (	Peel (S 1 L 7 / S 57	3/3 14 Seam# R P 90	5 2 5 5 5 5 5 5 6	R 65 52	6 L	63 61 60	L	Magh			Tech/ 1 234	Date (S	eam #	Splice	
ASTM D6392 Liner #  0	1 5 1 76 69 2 68 70 3 72 74	6 7-1 60 7-3 69	260 -	#2533 (D) (	Peel (S 1 L 7 / S 57	3/3 14 R R 70 68 58	5 2 5 5 5 5 5 5 6	R 65 55 60 59	6L 62 63 60	63 61 60	L   L	Magh			Tech/ 1 234	Date (S	eam #	Splice	
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Job Desc.	Baffinla	and - Inl	let Fuel (	Containr	nent (Pa	anel C)														
Customer:				Logist																
Sales Person:	JF		Date:			ul-11														
Material Type:	H.	AZGA	RD 535	Red/l	Black 1	48" W	ide													
Prod Code:	12	C - C5	55	0 ,	5	7123	>			***************************************										
Fab Code:				LMHZ											····					
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Job Desc.	Baffinland - Ir	nlet Fuel C	ontainment (F	Panel D)			***************************************		***************************************						Mary Markettan Commission		T
Customer:			ogistics Ltd										1				1
Sales Person:	JF	Date:	6-c	Jul-11						· · · · · · · · · · · · · · · · · · ·			1	1			
Material Type:	HAZGA	RD 535	Red/Black	148" Wide							**************************************				1		
Prod Code:	120-05	<b>\$</b>	0	57-124	-		***************************************										1
Fab Code:	*	03L	MHZ535							***************************************			1			<u> </u>	1
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			LG-03-QF-004	24-May-11	Description	of Opera	ations/P	roced	ures			#1	#2	#3	Comp	lete
Job Desc.	Baffinland -	5M Diesel	Storage (Panel E)												-	T
Customer:			Logistics Ltd.									1				T
Sales Person:	JF	Date:	6-Jui-	11										1		T
Material Type:	HAZG	ARD 535	Red/Black 148	3" Wide								1		1		t
Prod Code:	1200	994	0 521	25						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	·	1				十
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#### 3.13 Geomembrane Certificate of Analysis – Hazguard 535



### Geomembrane Certificate of Analysis

LAYFIELD POLY FILMS LTD.

Phone: (604) 275-5588

11120 Silversmith Place, Richmond, BC, V7A 5E4

Fax: (604) 275-7867

Web: www.geomembranes.com

E-Mail: millcerts@LayfieldGroup.com

customer Layfield Geosynthetics and Industrial Fabrics Ltd.

Customer PO#

E26965

Address 11603-180 Street NW

Edmonton

Alberta

T5S 2H6 Canada

Layfield Job #

Values (US/Metric)

44905 ÜS

#### **HAZGARD 535**

Manufacturing Test	t Results									
Property		Method* ASTM	<b>Units</b> US	Spec		Roll 1	Roll 10	Roll 19	Roll 28	Roll 37
Thickness(min)		D5199	mil	35	<b>✓</b>	38.7	38.5	37.4	38.4	38.9
Thickness(min)										
Thickness(Ave)		D5199	mil	38	✓	40.3	40.6	39.3	40.6	39.8
Tensile Strength	MD	D638	lb/in	130	$\checkmark$	186	196	210	201	198
Elongation N	/ID	D638	%	800	$\checkmark$	1506.9	1506.4	1840.1	1647.5	1592.0
Tensile Strength	TD	D638	lb/in	130	✓	187	209	204	205	203
Elongation T	D	D638	%	800	✓	1582.4	1617.1	1600.3	1614.5	1755 <i>.</i> 5
Tear Strength I	MD	D1004	lbs	19	$\checkmark$	24.1		24.1		25.7
Tear Strength	TD	D1004	lbs	19	✓	24.0		24.9		25.2
Puncture Strength		D4833	lbs	49	✓	74.5		71.1		71.3
Dim. Stab. MD (ma	ax)	D1204	%	1.5	✓	0.0				
Dim. Stab. TD (ma	ax)	D1204	%	1.5	✓	0.0				
Carbon Black Conto	ent	D1603	%	3	✓					
Carbon Black Dispe	ersion	D5596	1 or 2	2	✓					
Specific Gravity (mi	in)	D1505	g/cc	0.939	$\checkmark$	0.941				

We hereby certify that the geomembrane produced meets or exceeds Layfield's specifications outlined above.

*Please refer to testing notes on reverse.

**Formulation Tested Previously Successfully

October 4, 2011

Date

Authorized Signature



## Geomembrane Certificate of Analysis

LAYFIELD POLY FILMS LTD.

11120 Silversmith Place, Richmond, BC, V7A 5E4

Phone: (604) 275-5588

Fax: (604) 275-7867

Web: www.geomembranes.com

E-Mail: millcerts@LayfieldGroup.com

customer Layfield Geosynthetics and Industrial Fabrics Ltd.

Address 11603-180 Street NW

Edmonton Alberta T5S 2H6 Canada Customer PO#

E27260

Layfield Job # Values (US/Metric) 46129 US

#### **HAZGARD 535**

Manufacturing Test Results									
Property	Method*	Units	Spec		Roll	Roll	Roll	Roll	Roll
	ASTM	US			1	10	19	28	37
Thickness(min)	D5199	mil	35	✓	38.2	39.1	39.6	38.0	40.5
Thickness(Ave)	D5199	mil	38	✓	40.0	40.8	41.8	41.4	41.9
Tensile Strength MD	D638	lb/in	130	✓	202	186	192	197	202
Elongation MD	D638	%	800	✓	1373.1	1260.4	1304.9	1323.0	1306.8
Tensile Strength TD	D638	lb/in	130	✓	201	193	194	191	197
Elongation TD	D638	%	800	$\checkmark$	1418.1	1338.8	1324.3	1290.7	1321.0
Tear Strength MD	D1004	lbs	19	✓	24.0		26.3	24.5	
Tear Strength TD	D1004	lbs	19	✓	25.0		26.1	24.9	
Puncture Strength	D4833	lbs	49	✓	58.8		72.0	74.0	
Dim. Stab. MD (max)	D1204	%	1.5	$\checkmark$	8.0			0.0	
Dim. Stab. TD (max)	D1204	%	1.5	✓	0.0			0.00	
Carbon Black Content	D1603	%	3	✓	3.4			3	
Carbon Black Dispersion	D5596	1 or 2	2	$\checkmark$					
Specific Gravity (min)	D1505	g/cc	0.939	✓	0.941			0.9	

We hereby certify that the geomembrane produced meets or exceeds Layfield's specifications outlined above.

October 4, 2011

Date

Authorized Signature

^{*}Please refer to testing notes on reverse.

^{**}Formulation Tested Previously Successfully





#### 3.14 Installation Warranty

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LAYFIELD ENVIRONMENTAL SYSTEMS LTD.

11603 - 180 Street Edmonton, Alberta T5S 2H6 Canada

# Phone: (780) 453-6731 # Fax: (780) 452-9495 # Toll Free: 1 800 840-2884 # Web; www.layfieldgroup.com # E-Mail: edm@layfieldgroup.com

#### INSTALLATION WARRANTY

Layfield Reference No.: (Job #) 12C-122

LAYFIELD ENVIRONMENTAL SYSTEMS LTD. (LAYFIELD) hereby warrants to <u>Baffinland Iron Mines Corporation</u>; (the Customer) that the work performed by LAYFIELD on the Installation described as <u>Baffinland Milne Inlet Tank Farm / Hazgard 535</u> will:

- Meet the field seam specifications set out in the contract between LAYFIELD and the Customer (as amended by LAYFIELD's quotation), all workmanship to meet the requirements of LAYFIELD's Field Installation Quality Assurance program, and be free of defects at the time of completion of the Installation; and
- 2. Be free of installation defects from the date of the completion of the Installation (<u>September 2, 2011</u>), for a period of <u>one year</u> so long as the completed Installation is used for the purposes and in the manner for which the Installation was designed.

Should damage or defects within the scope of the aforesaid warranties occur, LAYFIELD shall repair the damage or defects, PROVIDED THAT the area to be repaired must first be made ready by the Customer and be in a clean, dry, unencumbered condition, free from all water, soil, sludge, residuals, and liquids of any kind.

To enable LAYFIELD to investigate and determine the cause of any alleged damage or defect, notice and details of any claim hereunder must be presented in writing to LAYFIELD within thirty (30) days after the alleged damage or defect was first noticed or observed. Failure to provide such notice and details shall invalidate all warranties provided hereunder.

The liability of LAYFIELD under the aforesaid warranties are subject to the following conditions:

- LAYFIELD's only obligation shall be to repair or replace any defective workmanship and in no event shall LAYFIELD be liable for any amount in excess of the cost of the Installation;
- No allowance will be made for repairs, replacements or alterations made by the Customer unless with the prior written consent of LAYFIELD;
- c. The warranties hereunder extend only to the Customer and are not transferable;
- d. The warranties hereunder shall not apply to any damage or defects resulting from misuse, mechanical abuse by machinery, equipment or persons, excessive pressures or stresses, exposure of the completed Installation of harmful chemicals, unusual weather conditions, casualty catastrophe such as (but not limited to) earthquake, flood, hail, tornado, or any other act of God;
- e. Under no circumstances shall LAYFIELD be liable for any special, direct, indirect, or consequential damages including the loss of use of the Installation howsoever caused;
- f. The warranties hereunder are given in lieu of all other warranties, express, implied, statutory, or otherwise, and the Customer expressly waives all other warranties and claims whatsoever except those specifically given herein, and the Customer acknowledges that the warranties hereunder are accepted in preference to and to the exclusion of any or all other warranties; and
- g. An Installation Warranty will <u>not</u> be provided for lining projects unless the installation is completed by LAYFIELD personnel or designated LAYFIELD subcontractors.

LAYFIELD ENVIRONMENTAL SYSTEMS LTD.

Greg Van Peten, Director of Construction Operations

Layfield Environmental Systems





4. ADCO Ikpiaryuk Limited – Piping/Electrical/Mechanical

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#### 4.1 Fuel Storage Tank Installation Check List





PMENT: API 650 Storage Tank ITION: Baffin Island, Nunavut O.: T-001  # DESCRIPTION  Name plate details as per API 650 data sheet & specifications.  Tank internals are clean, free of debris and water.  All access stairs and platforms are complete.  All required external and internal welding to tank shell, floor plates, roof plates have been completed and tested as per API 650 requirements.  All internal boiling and torque completed to specification.  All internal boiling and torque completed to specification.  All internal piping installed as per engineering drawings and specifications.  Water draw off piping / unobstructed.  All internal flanged connections have the correct nuts, boilts and gaskets as per the engineering drawings and specifications.  [Roof vent, level transmitters and roof gauge hatches installed.]	MODEL: PRODUC CHECK	CTURER:		Gem - Steel N/A DIESEL CONTRACTOR (C	CONSULTANT	COMMENTS  M.C. M.C. M.C. M.C. M.C. M.C. M.C. M.
All internal bolting and torque completed to specification.  All internal bolting and torque completed to specification.  All internal are of specifications.  All internal specifications are complete.  All required external and internal welding to tank shell, floor plates, roof plates have been completed and tested as per API 650 requirements.  All internal bolting and torque completed to specification.  All internal piping installed as per angineering drawings and specifications.  All internal reproductions are to the correct nuts, bolts and gaskets as per the engineering drawings and g	PRODUC	DATE I	INITIALS	DIESEL CONTRACTOR C	CONSULTANT	M.C. M.C. M.C. M.C.
O: T-001  # DESCRIPTION  Name plate details as per API 650 data sheet & specifications.  Tank internals are clean, free of debris and water.  All access stairs and platforms are complete.  All required external and internal welding to tank shell, floor plates, roof plates have been completed and tested as per API 650 requirements.  All internal boiling and torque completed to specification.  All external boiling and torque completed to specification.  All internal piping installed as per engineering drawings and specifications.  Water draw off piping / unobstructed.  All internal flanged connections have the correct nuts, boits and gaskets as per the engineering transport of the preficiency.	1	DATE	INITIALS	CONTRACTOR	ONSOLITANI	M.C. M.C. M.C. M.C.
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Name plate details as per API 650 data sheet & specifications.  Tank internals are clean, free of debris and water.  All access stairs and platforms are complete.  All required external and internal welding to tank shell, floor plates, roof plates have been completed and tested as per API 650 requirements.  All internal bolting and torque completed to specification.  All external bolting and torque completed to specification.  All internal piping installed as per engineering drawings and specifications.  Water draw off piping / unobstructed.  All internal flanged connections have the correct nuts, bolts and gaskets as per the engineering transport of the properties of the correct nuts, bolts and gaskets as per the engineering transport of the properties of the correct nuts, bolts and gaskets as per the engineering transport of the properties of the correct nuts, bolts and gaskets as per the engineering transport of the properties of the correct nuts, bolts and gaskets as per the engineering transport of the properties of t	1	11/22/		W. Kee		m.c
Tank internals are clean, free of debris and water.  All access stairs and platforms are complete.  All required external and internal welding to tank shell, floor plates, roof plates have been completed and tested as per API 650 requirements.  All internal bolting and torque completed to specification.  All internal bolting and torque completed to specification.  All internal piping installed as per angineering drawings and specifications.  Water draw off piping / unobstructed.  All internal flanged connections have the correct nuts, bolts and gaskets as per the engineering descriptions.	1	11/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/		N SEX		m.c
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0 Roof vent, level transmitters and roof guass	1	il.		6		111.
All required NDE has been complete and back up documentation has been received/approv	ed.	sept 8	-	Adco		
All required NDE has been complete and back by documenting drawings.  Pipe connections aligned and supported as per engineering drawings.	V	-	1		NA	NA
Pipe connections aligned and supported as per engineering drawings and manufacturer's instructions.  All tank trim installed as per engineering drawings and manufacturer's instructions.	N/	170/4	NA	10/40	10/41	Sa.
	i		-			2.0
Valve inspection / lockout on all connections.     All internal and external tank instrumentation installed as per engineering drawings &	-			1 40		200
All internal and external tank instruments	wing	113		1		DH
specifications.  All external flanged connections have the correct nuts, boits and gaskets as per the engine	ining -	16/		8 2		and
		1	1	3 3		
drawings and specifications.  17 Clearance lights installed on Tank as per engineering drawing and specifications.	-	3		2 15		Brog
ACCUSATION OF THE PROPERTY OF	11112	10		-	in manual (	Checklist #
18 Confirm grounding connections  ITEM  DATE	INIT	AL		Equ	iibment c	MEGKIIST II
hecks Complete Dates Dave 27/91	1 1	-	and the same of th		T-0	0.4





#### 4.2 Inspection Test Plan (ITP)

	Inspection Test Plan		
Client: Nuna Logistics Limited/ Baffin Land Milne site  Job Number:  Description: Fuel Supply System	Job Number: 3266	lumber:	Sept 2/11

H: A mandatory hold on manufacturer until release by inspector or official waiver from client.

M: Inspection stage by inspector on a spot basis but not a mandatory hold point.

HR: A mandatory review and acceptance/approval of specified document.

W: To be informed and invited to inspect. Fabrication to continue if inspector does not attend.

R: Review of test report/certifications.

A: Audit (Review at random)

Activity Number	Quality Related Activity	Reference Documents	Acceptance Criteria	Document Certification Required		Adco			Nuna			Hatch	
Number		Dogwins		Required	Hold	Sign	Date	Hold	Sign	Date	Hold	Sign	Date
10	Pre-Inspection Kick off			Meeting Minutes ITP Hold	Н	PL	AUS 31 2011	Н	CF	Aug31	H	种	31-08-11
10	meeting/			Point Identified	HR		2011	Н				W.I	31-68-11
20	Weld procedure specifications, including repairs, weld procedure qualifications. Approved for use by Client prior to start of welding	ASME IX / ASME B31.3	ASME IX / ASME B31.3	WPS/PQR		R	AUS 31 2011	*	CF	2011	H	<b>₩</b>	
	production/fabrication.		"B" Pressure Certification	Welder certification	. н	12	AUS 31	Н	CF	Aug 31	H	pot	31-02d
30	Welder qualified to WPS.	ASME IX	B Pressure Certification	VVCIder continuation		1	2011			2011		1	30-09-11
40	Check that certification is available to weld	ADCO Quality Manual (QSM)		Manufacturers Certification for welding consumables	HR	对	Aug 31		CF	2011	H	An.	30.08.0
50	consumables.  Ensure material description and heat numbers match that of the MTRs prior to	PO / drawings / MTRs t and Heat Number Index Log	Correct material and free from contamination and damage.	Receiving Report and Heat Number Index Log.	W	4	AU33 2011	R	CF	Aug 31 2011	8	A	જી-જ ા
	fabrication.		D. in a DOM Itom	Asbuilt Dwg, MTRs	R	-1	Aug3	) R	- 1-	10.00			
60	Tracability of materials / Production Record started for all components.	ADCO Quality Manual (QSM)	Drawing BOM Item traceable to MTR and/or Production Record			P	2011		CF	2011			

	Inspection Test Pla	an	
Client: Nuna Logistics Limited/ Baffin land milne site	Job Number: 3266	PO Number:	Date: Sept 2/11
	H337697-4020-60-012-0001 RV B	P&ID:	

H: A mandatory hold on manufacturer until release by inspector or official waiver from client.
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R: Review of test report/certifications.

A: Audit (Review at random)

Activity Number	Quality Related Activity	Reference Documents	Acceptance Criteria	Document Certification Required	GJ.	Adco			Nuna			Hatch	
	Check internal and external finish of components.	ASME B31.3	Free of debris, damage and contamination.	Inspection report.	Н	#	Sept 4 2011	Α	CF	52011	A	N	mate
	Review / ensure that a weld map / record is being operated so that all operations carried out on a specific joint are fully detailed.	Weld Map / Record	Liot an joint frame	Control Sheet / Asbuilt fabrication drawing.	HR	4	Sept 14 2011	R	CF	Sept 15 2011	R	*	. No. West
90	Review welders performance qualification.	ASME IX / Welders Log	Current certificate to approved procedure.	Qualification certificates.	HR	DY	Sept 14/11	Н	CF	Sept			
100	Review NDT technician qualifications.	ASME V	Current and correct category certification CGSB Level 2 or 3 (or international equivalent)	Qualification certificates.	HR	H	Sept 24/11	R _.	CF	24			
110	Check fit-up, alignment and tacking of weld joints.	Weld procedure / approved drawing	PFI ES-3 & PFI ES-24	Inspection report.	M	#	Sept 24/11	A	CF	Sept 25/4	A	ALL	- Indahi
120	Visually examine all completed welds.	ASME B31.3 Welding Inspection requirements	ASME B31.3 Welding Inspection requirements	Inspection report.	HR	平	2011	А	cF	20H			

	Inspection Test Plan			
Client: Nuna Logistics Limited				In ( 0 1004
Job Number:3266	000 11011110111 0200		Number:	Date: Sept 2/11
Description: Fuel Supply System	Drawing: H337697-4020-60-012-0001 RV	В	P&ID:	
M: Inspection stage by inspector on a spot	basis but not a mandatory hold point. pproval of specified document.			

130	NDE performed as per applicable line classes identified on IFC drawings 100% VT press. Welds, 100% RT, 100% MT SWs.	Approved NDT procedures ASME B 31.3		NDE Report	Н	A	2011	R	CF	2011		NA	
140	Ensure all welding repairs have welding repair sign off sheets signed by welder.	ADCO Quality System Manual	ASME B31.3 normal service conditions	Weld Repair Form	Н .	H	2011	R	CF	204		NA	
150	Marking / Tagging of spools.	ADCO Quality System Manual		N/A	M	A	oct/5- 2011	M	CF	Outs 20H	A	bot	11
160	Pressure Testing as per IFC Drawings.	ADCO Quality System Manual	Minimum 10 minute hold at or above minimum test pressure with no drop. Visual inspection of all joints	Pressure Test Record & Gauge Calibration Certificate	Н	A	204/2	W	CF	Oct 2 2011	tt	M	11
170	Review all documents.	ASME B31.1	Asbuilts reviewed and accepted, NCRs signed off and completed and NDT requirements met	Asbuilt Drawings, NCRs and AB-83	R	4	2011	N/A	CF	Set 5 2011	8	What I was	pals o
180	Issue of Letter of Mechanical Completion to client.	ADCO Quality System Manual	Review of documents	QA acceptance / release	Н	4	2011	N/A	CF	Oct 5 2011			

Customer Acceptance:			
_	(Print)	(Sign)	(Date)

	Inspection Te	st Plan	
Client: Nuna Logistics Limited			
Job Number: 3266	Job Number: 3266	PO Number:	Date: Aug 31,2011
Description: Milne Inlet Fuel System Upgrade	Project: H337697	P&ID:	
I a se a se al a			

Legend

**H**: A mandatory hold on manufacturer until release by inspector or official waiver from client.

M: Inspection stage by inspector on a spot basis but not a mandatory hold point.

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R: Review of test report/certifications.

A: Audit (Review at random)

Activity Number	Quality Related Activity	Reference Documents	Acceptance Criteria	Document Certification Required		Adco			Nuna			Hatch	
					Hold	Sign	Date	Hold	Sign	Date	Hold	Sign	Date
10	Pre-Inspection Kick off meeting/ with client	construction from Hatch	Manufacture equipment manuals and documentation	Meeting Minutes ITP Hold Point Identified	Н	武	Aug/3) 2011	Н	CF	Aug31 2011	*	Nest le	*
20	Low voltage equipment procedure installation approved for installation by client	ADCO Quality Manual with pre-inspection checklist	Electrical equipment Checklist, Electrical cable Checklist	Manufacturers Certification and manuals	HR	A	2011	Н	CF	9014 2011	Ħ	As As	
30	Electrician qualified	ADCO Quality Manual	Electrical 309A certification	Electrician certification	Н	D	AUS/31	М	CF	A 253/	#	mise	100
40	Inspection for transformers and non combustible material	Electrical CEC regulations	Electrical CEC regulations	Manufacturers 5 ppled Certification for Nan Equipment	N A			Н					
50	Ensure material description matches site standards and electrical prints	PO / drawings / and CSA standards	Correct material and free from any damage.	Receiving Report and shop drawings	HR	2044		w	CF	Oct 4 2011	e/	an an	A.
60	Inspection of low voltage installation and components	AdcoQA/QC inspection documentation and shop drawings	Inspection test forms and manufacture shop drawings	Electrician certification Manufacture certification	R	94 2011		R	CF	Det4 2011	R	34	360

#### Inspection Test Plan

Client: Nuna Logistics Limited

Job Number: 3266	Job Number: 3266	PO Number:	Date: Aug 31,2011
Description: Milne Inlet Fuel System Upgrade	Project: H337697	P&ID:	

Legend:

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**W**: To be informed and invited to inspect. Fabrication to continue if inspector does not attend.

R: Review of test report/certifications.

A: Audit (Review at random)

Activity Number	Quality Related Activity	Reference Documents	Acceptance Criteria	Document Certification Required		Adco			Nuna			Newmo	
70	Documentation of grounding installation	CEC grounding lcodes of installation requirements	Grounding inspection reports of installation	Inspection report.	HR	政	Sept 15	Н	CF	उक्तेर २०11	M	NOTE OF	THE
80	Review / ensure that proper cable installation are implemented	Electrical layout and cec regulations	Cable installation and Megger report sheets	Cable installation and Megger report sheets	HR			M					
90	Inspection of all termination before power is applied to equipment	Cable installation and Megger report sheets, For all cables	Cable installation and Megger report sheets, for all cables	QA/QC and turnover packages from contractor	HR	P	2011	HR	CF	Det 5	AK	045	Pat
100	Inspection of all cable tags and lamicoids needed for installation for identification	Need to implement cable identification numbers	implementation of identification termination codes	Cable inspection report  N/A  No Cable Tass  Crives	HR			R					
110					M			Α					
120					HR			Α					

	Inspection Te	st Plan	
Client: Nuna Logistics Limited			
Job Number: 3266	Job Number: 3266	PO Number:	Date: Aug 31,2011
Description: Milne Inlet Fuel System Upgrade	Project: H337697	P&ID:	

Legend:

**H:** A mandatory hold on manufacturer until release by inspector or official waiver from client.

M: Inspection stage by inspector on a spot basis but not a mandatory hold point.

HR: A mandatory review and acceptance/approval of specified document.

it (Review at random)			
Customer Acceptance:			
	(Print)	(Sign)	(D





#### 4.3 Welder Performance Qualification Card

# GRB Enterprises Ltd

Edmonton Alberta	AOQP /10/(C)
WELDER PERFORMANCE	QUALIFICATION CARD
Poos :	
Name SUNDBY	W-15609
Name	ABSA File Number
This card is issued pursuant to the Safety Co Regulation. The performance qualification is i ASME BPV Code and subject to the li	n accordance with Section IX of the
APRIL 16, 2010	
Date of Test	Welder Signature
BRUCE CORMIER	1517 <del>6</del>
Welding Examiner (Print/Type)	GRB Card No.
	unioni tinan in tambani or a salah majahan dan dan bahasa salah dan

Performance Qualification GRB Card No. 15176
Process(es) SMAUU Materials (P.No.)
Filler Metal (F.No) = 3 = Min. Outside Pipe Diameter
Max Deposited 6, 104" TELD Position(s) ALL Weld Metal Qualified
Backing <u> </u>
Progression $\frac{\Box PH}{\Box} = \frac{\#E00 = 52}{Examiner File No.}$
PRIL 10, 2012 12-66-
P.Q. Expiry Date Welding Examiner Signature



## Welder Qualification This care is voild only while employed by a CWB certified company Transferable Welder

Name: DOUG W. SUNDBY

Employer: Adco Power Ltd., Edmonton, AB Thickness Range: 3mm & above

Mode: MANUAL

Exp. Date: Aug 30, 2013

Material: Carbon Steel Process: SMAW Standard: CSA W47.1

Classification: S Electrode: F4

Class: FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD

See Reverse for Conditions

Welder's Last Name Initial First I	Name	Signature / Large	4 // J	inp 140.
Res. Address	her have	Postal Code	Provincial Registration No.	
		1 1 1 1 1	WP. K3989	-
Employer Name	Special Control		Company PQR No.	1 2
Allegare Dukerous Technique	( T) -1 1	or the	97-0M	
Street Address	all storm	5	Company WPS No.used	
1000 Delate Meser		Postal Code	G Z-O/	
1 Branch 3 m		49,435	7/-01	
Welding Process(es) Used 5 MACL	Ţ	Γype(s) ∑manu	al machine semi-automatic	automatic
Base Material(s) 54/068/54/065		Thickness(es)	13/8	
Variables for All Processes	Actual Va	alues	Range Qualified	
Backing material (with/without)	F30500	2- FA W. 774	Flusta orlation	- 15 WITH
ASME P or S No. to ASME P or S No.	to .	20		1 Sept
( ) Plate ( Pipe (enter diameter if pipe)		2	1"00 -t UP	
Filler Metal Specification (SFA) Class (QW-404) (Informational Only)	Eworo/	E TOF		
Consumable Insert for GTAW or PAW (QW-404)				
Welding Position (1G, 5G, etc.) (QW-405)	(c	5 (-	Mes Grove (-	FICKERS
Manual or Semi-automatic Variables (QW-350)	Actual Va	alues	Range Qualified	
Filler Metal F- No. (QW-404)	F3	A S	14321 (F3 injurante	THE BACKET
Filler Metal Product Form for GTAW, PAW (QW-404)				
Weld deposit thickness for each welding process (QW-404)	FILM	" 不是朋報"	F3.200 FE.23	
Process 1: 3 layers minimum Yes No	-			
Process 2: 3 layers minimum				
Vertical progression (uphill/downhill) (QW-405)	U THE	Pr.	DATTEC OW	6
GTAW, PAW or GMAW backing gas; or OFW luel gas (QW-408)				× ×
GMAW transfer mode (spray/globular or pulse to short circuit) (QW-409)				
GTAW welding current type & polarity (AG, DCEP, DCEN)(QW-409)	-			
Machine Welding Variables (QW-361.2)	Actual V	alues	Range Qualified	
Direct or remote visual control				,
Automatic arc voltage control (GTAW)				
Automatic joint tracking		-# T	Contract of the second	
Multiple or single pass per side				
Automatic Welding Variables (QW-361.1)	Actual V	alues	Range Qualified	
Filler metal (EBW or LBW)	C1-105 o	of 486	9	





Welder Qualification
This card is valid only while employed by a CWB certified company
Transferable Welder

Name: STEVE NJ GIFFORD

Exp. Date: Nov 13, 2011

Employer: Allied Marine & Industrial, Port Colborne Testing Standard. CSA W47.1-03 Material: Carbon Steel

Process; SMAW Mode of Transfer: N/A

Mode: Manual

Class: Flat/Horizontal/Vertical Up/Overhead Classification: S Electrode: F4 Thickness Range: 3mm & above

See Reverse for Conditions

Technical 3300 Bloor Street West Toronto, Ontario M8X 2X4 Web site: www.tssa.org	Techni Boilers	Welder/Welding Operator Certificate  of Standards and Salety Act and Pressure Vessels Regulation.  No. 265095
Veider's Last Name Initial First Na	ame Sign	Stamp No.
GIFFORD N STEL	I.E. Boot	Tible 1 Provincial Begistration No.
les. Address	Posi	11. 12 WARSTEN 50
inployer Name		Company PQR No.
Allenge Allerono-Technico	33 IN	97-014
treet Address		S Company WPS No. used
1006 UNEW WELLIA	Poi	tal Code
ميار ي کار در	Cons	9 43 53
	Тур	(s) Vinanual machine semi-automatic automatic
- CELTURE CONTRACTOR C	-	
ase Material(s) 5/4/06 B/3/4/06 B		Daniel Durilland
ariables for All Processes.	Actual Value	
Backing material (with/without)	F3 W THOU	PEWITH FOUNTACIDATION TO WITH
ASME P or S. No. to ASME P or S. No.	pr to	
( ) Plate ( Pipe (enter diameter if pipe)		CO-LUT
Filler Metal Specification (SFA) Class (QW-404) (Informational Only)	thorogra	
Gonsumable Insertior GTAW or PAW (QW-404)	6	Ale Growe ( - Frace)
Welding Position (1G, 5G, etc.) (GW-405)  Manual or Semi-automatic Variables (GW-350)	Actual Valu	The state of the s
Filler Metal F- No. (QW-404)		E Pase I Facura on Whenthe Back
Filler Metal Product Form for GTAW, PAW (QW-404)	- 3 (	
Weld deposit thickness for each welding process (QW-404)	153 com	Esta 63 000 FE 1236
Process 1: 3 layers minimum   Yes  No.	1	
Process 2: 3 layers minimum  Yes  Nov-	-	
Vertical progression (uphill/downhill) (QW-405)	Urexes	Chartie only
GTAW, PAW or GMAW backing gas; or OFW tuni gas (QW-408)		
GMAW transfer mode (spray/globular or pulse to short circuit) (QW-409)		, 400
GTAW welding current type & polarity (AC, DCEP, DCEN)(QW-409)	north day	
Machine Welding Variables (QW-361.2)	Actual Valu	Range Oxalified
Direct or remote visual control	- 1512-0 7 800	
Automatic are voltage control (GTAW)		
Automatic joint tracking	-	
The state of the s	- 16	
Multiple or single pass per side		
Automatic Welding Variables (QW-361.1)	Actual Val	es Range Qualified
Filler-metal (EBW or LBW)		
Laser type for LBW (CO ₂ to YAG etc.)		
Continuous drive or inertia welding (FW)		
Vacuum or out of vacuum (EBW)		

Note: Values in "Range Qualified" are valid only when used with a Qualified Welding Procedure.

RESULTS

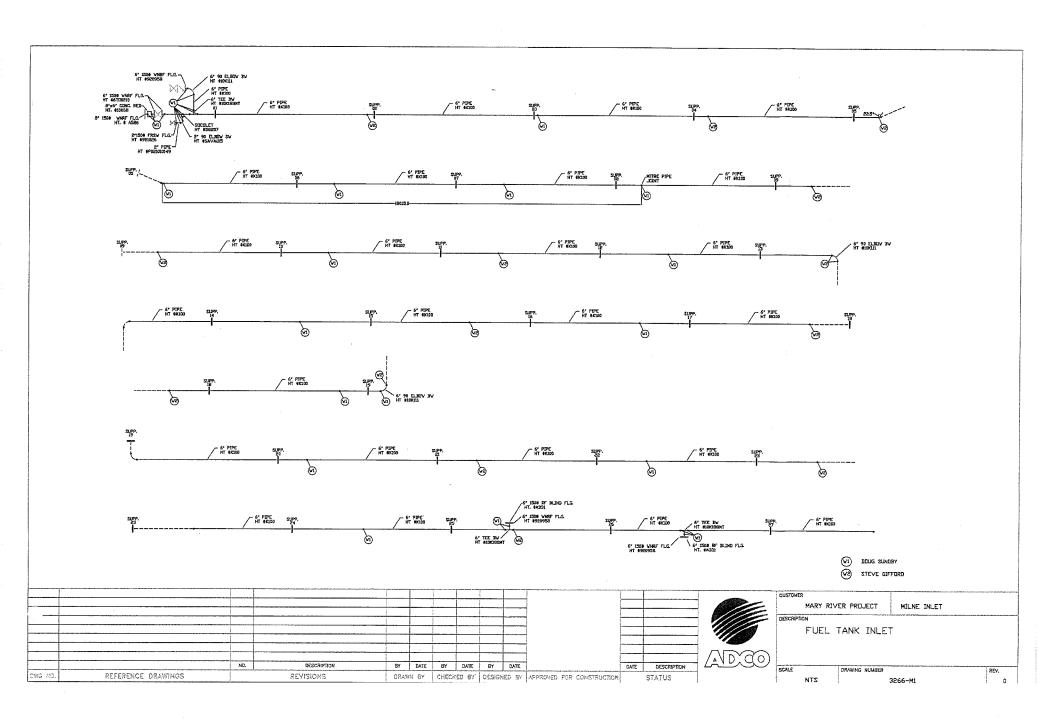
	Visual Examination of	f Completed W	eld (QW-302.4)	444					
	Tra	nsverse root a	nd face [QW-462.3(a	); Longitud	inal root	and face	[QW-462.3(b)]; [	Side (QW-462	.2);
	Pipe bend s	pecimen, corro	sion-resistant overlay	y [QW-462:5(o)];		Plate ben	d specimen, corrosi	on-resistant overl	ay [QW-462.5(d)];
	☐ Pip	oe specimen, m	acro test for fusion [	QW-462.5(b)];		Plate spec	lmen, macro test fo	r fusion [QW-462.	5(e)]
	Туре	Result	Туре	Result	1	уре	Résult	Type	Result
	1 ROOT	JE OK	J NOOF	Sort.			5 P P		.60
	2 446	· ×	40000	· ·					
	Alternative radiographi	ic examination	results (QW-191)				1		L
	Fillet weld — fracture		The state of the s		Length	and perd	ent of defects		
	11		⊋ [QW-462.4(b)]			pipe [QW			
	Tonings of	Color San Allen Carlotte					the sale of the sales	h.A.	
16/ GHUS	Macro examination (Q Other tests	(VV-104)	Fillet ,Size	(III.)	- ^ -		incavity/convexity (		- T
	Ellm or principanes ou	alusted his						Company	
	Mechanical tests cond	duated by	3017				Labor	atory test no	
	Welding supervised b	S /	175151 F		-		Labor	atory test no	
	welding supervised t	Jy	and provide the second Ord Town	A second				ADO. N	
	Test requested by (Pr								
	We certify that the stat				upons w	ere prepar	ed, welded, and tes	ted in accordance	with the requirement
	of Section IX of the AS	SME Boiler and	Pressure Vessel Con	de.		and here	The same of the sa	and the state of t	miliation
	Organization	south End	Ada bold our dent	action the	Signatu	e	The state of the s	Dat	e
	10000	100 mary 100 miles (100 miles (10	FO	OR TSSA INSI	PECTO	RUSEC	DNLY	- Mary and All	"
	The Welder named at	and the second s		and the second second second second second		chnical S	Standards and Saf	ety Act, Boilers a	nd Pressure Vessels
	Regulation and is here	The second of the second	subject to the limitati	ons of this certific	cate.				
	Check ( ) applicable							1.42	10/11
	- 4461		amed above only.			This Cert	ificate expires:		3-yyyy)
8	For seeking	employment on	ly.				1 1	1761	7
	G-010	The state of the s	Ann. Ann.				( )	10 ( Col) 3/2	5/2 ·
	Inspe PV 09397 (11/09)	ctor Name and No	umber (Print)				Inst	ector Signature	
	1 00001 (11108)								

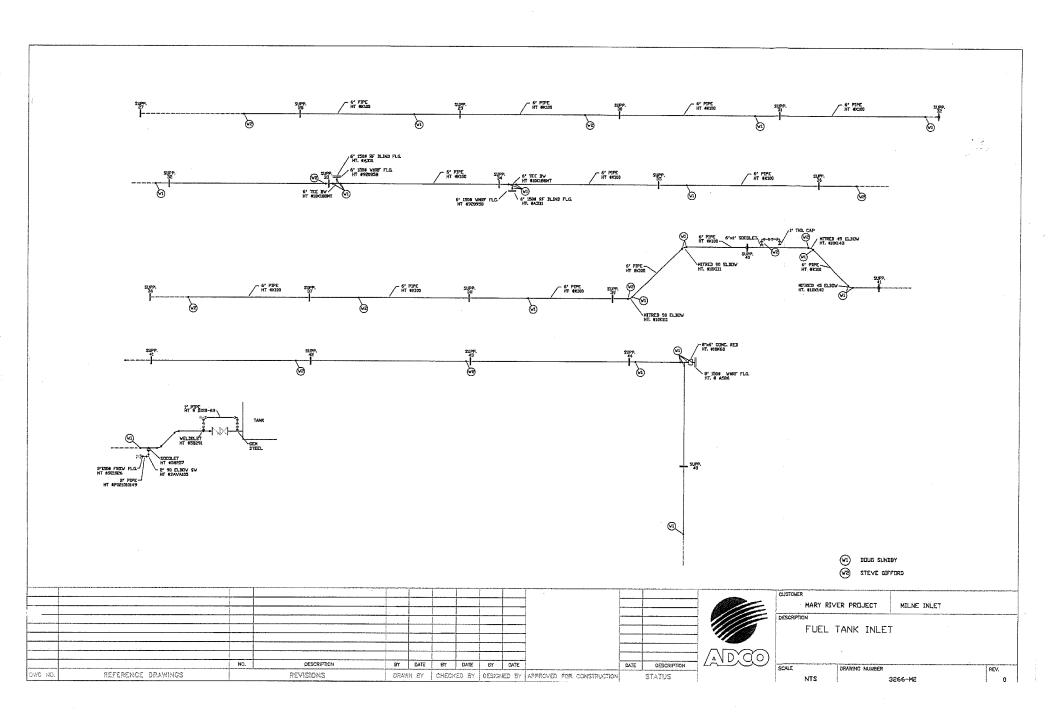


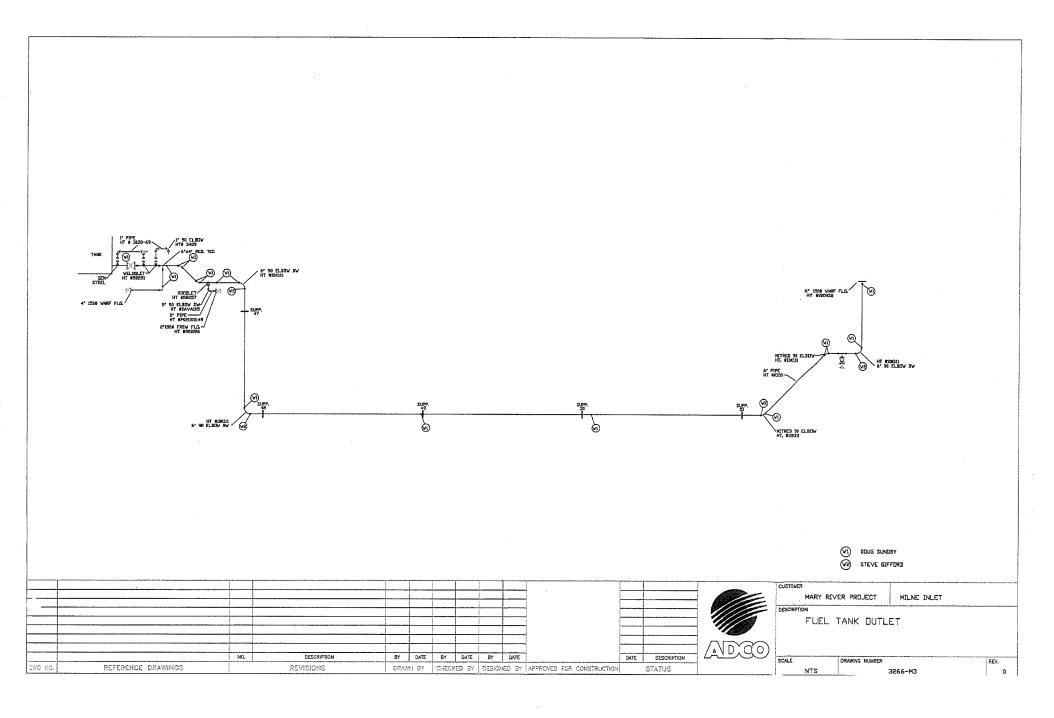


Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

## 4.4 Welding Pipe Map











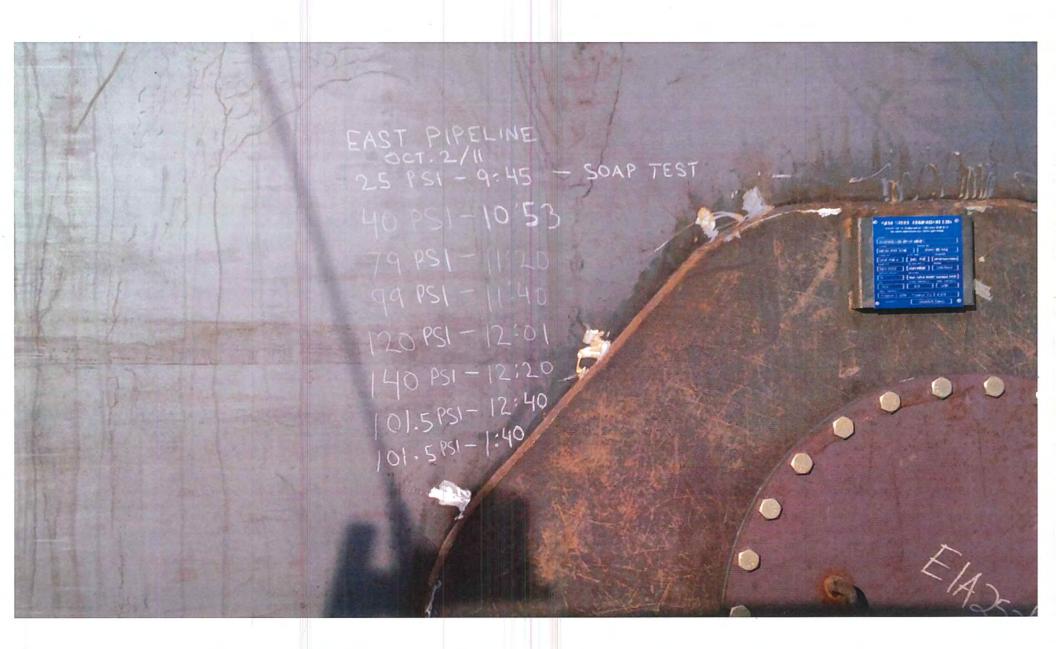
Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

## 4.5 ASME B-31.3 Pressure Piping Test

C1-117 of 486

OCT 2/11  29 PSI - 3 21 - SOAP TEST  49 PSI - 3:36  87 PSI - 3:53   LOTT TIME  122 PSI - 5:02 FO HOSE  142 PSI - 5:02 PROBLEM  101 PSI - 5:32  101 PSI - 6:38	

OCT. 2/	/11	
29 PSI 49 PSI 87 PSI 122 PSI 101 P.S.I 101 P.S.I	3:36 3:53 \ LOST TIME 5:02 FOR HOSE PROBLEM 5:18 5:32 6:38	





2011-10-02_11-45-58_828.jpg



2011-10-02_11-58-20_66.jpg



2011-10-02_12-08-06_673.jpg



2011-10-02_12-17-28_804.jpg



2011-10-02_12-26-03_515.jpg



2011-10-02_12-39-10_627.jpg



2011-10-02_13-39-38_349.jpg



2011-10-02_13-40-40_613.jpg



2011-10-02_15-18-59_405.jpg



2011-10-02_15-26-36_828.jpg



2011-10-02_15-30-45_960.jpg



2011-10-02_15-33-16_583.jpg



2011-10-02_15-50-09_583.jpg



2011-10-02_16-03-58_426.jpg



2011-10-02_16-43-52_202.jpg



2011-10-02_16-54-57_292.jpg



2011-10-02_17-00-13_142.jpg



2011-10-02_17-11-08_260.jpg



2011-10-02_17-14-49_965.jpg



2011-10-02_17-24-36_796.jpg



2011-10-02_17-29-43_646.jpg



2011-10-02_18-34-24_678.jpg



2011-10-02_10-12-47_225.jpg



2011-10-02_10-50-26_279.jpg



2011-10-02_11-17-18_612.jpg



2011-10-02_11-30-02_829.jpg



2011-10-02_11-37-20_373.jpg







































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Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

## 4.6 Material Test Reports (MTRs)

C1-127 of 486



Wednesday, 27-Jul-2011

From:

Gary Kitt 5815 - 75 St

Edmonton, AB, Canada

T6E 0T3

Phone: 780-465-0381
Fax: 780-466-0371
Email: mtr@cwcarry.com
Web Site: www.cwcarry.com

To:

ADCO POWER JEFF 8750-58 AVE. EDMONTON, AB

Phone: 465-3265 Fax: 466-8086

PO # or Ref #: PO# 3266-00034 WO# 166080

## **Document Summary Page**

The MTR's are printed in the following order:

#	Description	Heat	ID#
1	L4X4X5/16	PL1120291501	
2	C 8 X 13.75	W907874	



MTRs produced using MetalTrace®. Visit www.TraceApps.com or call toll-free 1-866-429-7007 for more information.

COLD CW CARRY(1967) LTD

5815 - 75TH ST.

1 1 1 2 m c m 2 3 T. MONTON AUTERTUM

Tree symbol light

CHITCHIOMILL TEST REPORT ATTURES A DESIGNATION OF MILES AND AN ALBIS. CERTIFIED MILE

Page: 4

CANADA

SHIP C.W. CARRY LTD.

Ship from: Nucor Steel - Utah

W Cemetery Road PLYMOUTH, UT 84330

Date: 20-Jun-2011 B.L. Number: 378195 Load Number: 196280

EDMONTON AB T6E 0T3

CANADA

TO:

435-458-2300

\$10340 na \$1---- a acad

	s Sheets are available at www.nucorbar.com or b		******	SICAL TES	TS				CHE	AICAL TEST	· <del></del>	MG-08 Merch	
HEAT NUM.*	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	C NI	Mn Cr	PMo	\$ V	-	Cu Sn	Ç,E
PO#=>	27275										· · · · · · · · · · · · · · · · · · ·	'·	
PL1120206001	Nucor Steel - Utah	51,576	76,540	31.0%			.15	.74	.027	.010	.24	.29	.:
	1/2x10" Flat		528MPa				.09	.12	.005	.008	.001	•	
	20' A36/44W	50,044	72,158	33.0%					101,1	1111	100.		
	CSA G40.21-04 44W/ASTM A36/A36M- 08	345MPa	498MPa										
	ASTM A709/A709M-10 GR 36 [250]												
	ASME SA36-2007 EDITION-2009 ADDE NDA												
The state of the s	ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad												
PO# =>	27275												
PL1120291501	Nucor Steel - Utah	51,669	73.311	34.0%			.15	.76	.015	.040	.23	.26	.3
	4x4x5/16 Angle		505MPa				.08	.12	.005	800.	.001	,20	••
	40' A36/44W	50,833	72,529	35.0%			.00		1000	.000	200 (		
	CSA G40.21-04 44W/ASTM A36/A36M- 08		500MPa			•							
	ASTM A709/A709M-10 GR 36 [250]												
	ASME SA36-2007 EDITION-2009 ADDE NDA												
	ASTM A36/A36M-08, A709/A709M-09a												
	GR36, ASME SA36-07 Ed 09 Ad												
•													
•													
**													
-													

I hereby contify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

1.) Weld repair was not performed on this reaterial.

2.) Melted and Manufactured in the United States.

3.) Mercury, Radium, or hiphs source materials in any form have not been used in the production of this material.

QUALITY ASSURANCE:

Scott Laurenti



#### Chemical and Physical Test Report MADE IN CANADA

W-116678

WHITBY STEEL MILL HOPKINS STREET SOUTH WHITEY ON LIN 5T1 CAN (905) 668-8811

SHIP TO INVOICE TO SHIP DATE C.W. CARRY 1976 LTD C.W. CARRY 1975 LTD 05/31/11 5815 75TH ST. - SIDING CN Z062 ACCTS PAYABLE 780-465-0381 5815 75 ST NW CUST. ACCOUNT NO EDMONTON, AB T6E 0T3 EDMONTON, AB THE 0T3 60122230

PRODUCED IN-WHITEY

"THOUGHED INTERN	يحابي	!																							
SHAPE + SIZE		GRAD	Ε	SPECI	FICATION	ON													SA	LES OR	DER	CU	STP.O.	NUMBE	R
CB X 13.75#		#4W		A36/44	W/50W	/A572G	R50; AS	TM:A36	08;A572	CR50 N	1-08;CS	AG40.2	-04 (R20	109) 4		<del></del>			104	0156-0	4	277	267-04	***************************************	
HEAT LD.	C	Mh	P	5	Si	Cu	Ni	Cr	Мо	V	Nb	3	N	Sh	Al	Ti	Zr	Ca	C Eqv	T					
W907874	.14	.81	.013	.034	19	.30	.10	.09	.027	.000	.009	.0004	.0135	.011	.000	.00000	.000	.00000	.357				*****		
		7			***************************************							-			<del> </del>			<del></del>	***************************************	4	·		·	<del></del>	****

Mechanical Test Yield 54810 PSI, 377.9 MPA Tensile: 73950 PSI, 509.94 MPA %Ek 23.6/8in, 23.6/200MM Def HT: 0, DMM %I/h D Yield 54965 PSI, 372.9 MPA Tencile: 74478 PSI, 513.51 MPA %El: 26.2/8in, 26.2/200MM Def HT: 0, 0MM %/h 0 Mechanical Test

2RO	DUCE	D-HV	WHIT	ÞΥ

SHAPE+SIZE		GRAD	E	SPECI	FICATI	OM													SA	ES OR	DER	CU	STP.O	NUMBI	ER
C8 X 13.75#		44W		A36/44	W/50V	//A572G	R50: AS	TM:A36	08;A572	GR50 N	1-08:CS	AG40.21	-04 (R2	009)4					104	0156-04		27	267-04		
HEAT I.D.	С	Mn	P	ş	Si	Cu	N	Cř	Mo	V	Nb.	В	N	\$n	AI.	TI	Zr	Ca	C Eqv	1			Ī .	I T	
W907875	.15	.77	.014	.032	.18	,29	.10	.08	.024	.000	.011	.0004	.0172	.010	.000	20000	.000	.00000	.352						

Mechanical Test: Yield 54684 PSI, 377.03 MPA Tensile: 73286 PSI, 505.29 MPA %5I: 23.1/8in, 23.1/200MM Dof HT: 0, 0MM %in 0 Mechanical Test: Yield 51979 PSI, 358.28 MPA Tenefle: 72092 PSI, 497.06 MPA %EI: 22.5/8in, 22.5/200MM Def HT: 0, 0MM %Wh 0

#### PRODUCED IN WHITEV

SHAPE+SIZE GRADE				SPEC	FICAT	NC.				-					,				SA	LES OF	DER	CU	ST P.O.	NUMBE	R
C10 X 15.3#		44W		A36/4	4VV/50VV	/A572G	R50; AS	TMIA3B	-08;A572	GR50 N	1-08;CS	AG40.2	1-04 (R2	009) 4					104	0155-0	7	27	267-07		
HEAT LO.	€ .	Mn	Р	S	SI	Cu	Ni	Cr	Mo	V	Nb.	8	N	Sn	Al	Ti	Zı	Ca	C Eqv		T				~~~~
W908753	.14	.79	.011	.029	.21	.34	.08	.09	.024	.000	.012	.0008	.0000	.010	.000	.00000	.000	.00000	.358		1	<del> </del>			
Mechanical Test Mechanical Test	Yield 58 Yield 57								\ %E:								L-1-41			i	·	ــ سينيسا	,		

#### **Customer Notes**

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This motorial, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchili

Quality Director

Gerdau Ameristeel

THE ABOVE FIGURES ARE CERTIFIED CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

Metallurgical Services Manager

WHITEY STEEL MILL

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, in no event shall sailer be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller.

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of some in order to allow the seller the opportunity to inspect the material in question.



Thursday, 21-Jul-2011

#### From:

Gary Kitt 5815 - 75 St Edmonton, AB, Canada T6E 0T3

Phone: 780-465-0381
Fax: 780-466-0371
Email: mtr@cwcarry.com
Web Site: www.cwcarry.com

To:

ADCO POWER
JEFF
8750-58 AVE.
EDMONTON, AB
Phone: 465-3265
Fax: 466-8086

PO # or Ref #: PO# 3266-00026 WO# SO-0165890

# **Document Summary Page**

The MTR's are printed in the following order:

		Heat ID.#	
#	Description	SE1110228701	
1	3/4 MS ROUND		J



MTRs produced using MetalTrace®. Visit www.TraceApps.com or call toll-free 1-866-429-7007 for more information.

SOLD CW CARRY(1967) LTD

TO: 5815 75TH ST **EDMONTON AB T6E 0T3** 

CANADA

SHIP

TO:

C W CARRY

CANADA

5815 75TH ST

**EDMONTON AB T6E 0T3** 

エロロロア

NUCOR STEEL SEATTLE, INC.

Page: 2

Ship from:

Nucor Steel Seattle, Inc. 2424 SW Andover

SEATTLE, WA 98106-1100

**CERTIFIED MILL TEST REPORT** 

Date: 1-Jun-2011 B.L. Number: 413610

206-933-2222

Load Number: 251117

Material Safety Data Sheets are available at www.nucorbar.com or by contacting your inside sales representative. NBMG-05 March 9, 2011 PHYSICAL TESTS CHEMICAL TESTS HEAT NUM. * DESCRIPTION TENSILE P.S.I. ELONG % IN 8" BEND Cu C.E. Ni DEF Sn PO# => 27266 SE1110181801 Nucor Steel Seattle, Inc. 65,014 102,280 11.7% -3.8% .38 1.15 .016 .050 .21 .31 .60 15mm Rebar 19'8" 448MPa 705MPa .044 .11 .12 .030 800. .004 Gr400R CSA G30.18-09 GR 400R TEN/YD = 1.57 PO# => 27282 SE1110228701 Nucor Steel Seattle, Inc. 52,906 78,579 25.0% .17 .74 .013 .037 .20 .27 3/4" Rd 365MPa 542MPa .10 .11 .030 .006 .002 20' A36/44W 52,556 77,671 25.8% CSA G40.21-04 44W/ASTM A36/A36M-362MPa 536MPa 80 ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad

I becely certify that the caterial described herein has been samulactured in accordance with the specifications and standards lined above and that it satisfies those requirements.

1) Wold speir was not performed on this material.

2.) Molted and Manufactured in the United States.

3.) Marcuy, Radium, or Alpha source materials in ony form have not been used in the production of this naterial.

QUALITY ASSURANCE:

Winky Lai

Winkyh-



Friday, 08-Jul-2011

From:

Gary Kitt 5815 - 75 St Edmonton, AB, Canada T6E 0T3 Phone: 780-465-0381

Fax : 780-466-0371 Email: mtr@cwcarry.com Web Site: www.cwcarry.com To:

ADCO POWER JEFF 8750-58 AVE. EDMONTON, AB Phone: 465-3265 Fax: 466-8086

PO # or Ref #: PO# 3266-00002 WO# 165139

## **Document Summary Page**

The MTR's are printed in the following order:

#	Description	Heat	ID#
1	3/4 MS ROUND	SE1110228801	
2	W 6 X 15	G111822	



MTRs produced using MetalTrace®. Visit www.TraceApps.com or call toll-free 1-866-429-7007 for more information.

SOLD CW CARRY(1967) LTD

MUCOR NUCOR STEEL SEATTLE, INC.

**CERTIFIED MILL TEST REPORT** 

Page: 2

5815 75TH ST TO:

**EDMONTON AB T6E 0T3** 

CANADA

Ship from:

C W CARRY SHIP 5815 75TH ST

EDMONTON AB T6E 0T3

CANADA

Nucor Steel Seattle, Inc.

2424 SW Andover SEATTLE, WA 98106-1100

Date: 15-Jun-2011 B.L. Number: 414553

206-933-2222

Load Number: 251909

			PHY	SICAL TES	rs					CH	MICAL TE	STS		
HEAT NUM.*	DESCRIPTION	P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	°_	NI I	Ān Cr	P Mo	S V	Si	Cu Sn	C.E.
P0#=>	27396				•									
SE1110162401	Nucor Steel - Seattle Inc	50,526	74,748	31.3%				.17	.71	.016	.03	.18	.27	.34
	1/4x6" Flat	348MPa	515MPa					.10	.12	.020	.00	B .00	3	
	20' A36/44W	52,053	75,253	34.4%										
	CSA G40.21-04 44W/ASTM A36/A36M- 08	359MPa	519MPa											
	ASTM A709/A709M-10 GR 36 [250]													
	ASME SA36-2007 EDITION-2009 ADDE NDA													
	ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad													
PO#=>	27396												,	
SE1110228801	Nucor Steel Seattle, Inc.	52,264	77,201	27.3%		***		.16	.74	.012	. ,03	4 .19	.32	.34
	3/4" Rd	360MPa	532MPa					.09	.10	.020	.00	5 .00	2	
	-20' A36/44W	53,501	77,345	28.1%										
	CSA G40,21-04 44W/ASTM A36/A36M-		533MPa											
	08													
	ASTM A709/A709M-10 GR 36 [250]													
	ASME SA36-2007 EDITION-2009 ADDE NDA													
	ASTM A36/A36M-08, A709/A709M-09a													
	GR36, ASME SA36-07 Ed 09 Ad													
.=	5, 1, 5, 1, 5, 1, 1, 5, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,													
•														
•														

I hereby certify that the material described howein has been manufactured in accordance with the specifications and stondards listed above and that it satisfies those requirements.

1.1 Weld repair was not performed on this saterial.

2.1 Welted and Manufactured in the Sates States.

1.1 Metery, sadius, or highs source saterials in any form have not been used in the production of this meterial.

QUALITY

Winky Lai

Winkyh

EM GERDAU AMERISTEEL

Chemical and Physical Test Report Made and Melted In USA

G-172727

Page 8 of 9

CARTERSVILLE STEEL MILL 384 OLD GRASSDALE RD NE CARTERSVILLE GA 30121 USA (770) 387-3300

SHIP TO

C.W. CARRY 1976 LTD

EDMONTON, AS THE OTS

5815 75TH ST. - SIDING ON Z062

C.W. CARRY 1976 LTD ACCTS PAYABLE 5815 75 ST NW

EDMONTON, AB TOE 013

INVOICE TO

SHIP DATE 04/01/11

CUST. ACCOUNT NO

60122230

PRODUCED IN: CARTERSVILLE

SHAPE + SIZE		GRAD	=	SPEC	FICATIO	XV				<del></del> -		<del></del>							CALE	CODE	<del></del> -				
W6 X 15#		A5725	1932	ASTM	A572 GI	50-07	ASTM A	1992-06	A ASTI	4 A709	GR50-1	Ď.				<del></del>			10204	ORDER	1	CUST		MBER	
HEAT LD.	C	Mn	P	S	Si	Си	Ni	G	Мо	V	Nb	В	N	Sa	AI	1 11	i. Ca	Zn	C Eav	30-01		26505	-01		
G111789	.17	1.01	.015	.014	.26	.30	- 08	.05	120.	.016	.002	.0005	.0091	.011	.001	.00100	.00140	.00560							

Mechanical Test: Yield 54900 PSI, 378.52 MPA Tentile: 75200 PSI, 518.49 MPA %EI: 26.6/8in, 26.6/200MM

Customer Requirements CASTING: STHAND CAST

Comment NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

Mechanical Test: Yield 54900 PSI, 377.83 MPA Tensile: 75100 PSI, 517.8 MPA %: 25.8/36in, 25.8/200MM

Customer Requirements CASTING: STRAND CAST

Comment NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

PRODUCED IN CARTERSVILLE

SHAPE + SIZE	$\overline{}$	GRAD	E	SPECI	FICATI	ON								-					l ea	LES ORE	100	100	lov o m			
W6 X 15#		A5725	0/992	ASTM	A572 G	FI50-07,	ASTM A	1992 -06	A, ASTI	/A709	GR50-14	)								0436-02			JST P.O. 505-02	NUMBER	K	4
HEAT I.D.	C	Mn	P	S	Sī	Cu	Ni	Cr	Mo	ν	Nb	8	I N	So	Ai	Ti	Ca	70	C Eov	1		كلم	7	·		_
G111822	.16	/1.02	.011	.028	-50	,29	.08	.05	.023	.016	.001	.0007	.0094	.012	.001	.00100		1					1			-

Mcchanical Test: Yield 57800 PSI, 398.52 MPA Tensile: 78700 PSI, 542.62 MPA %-Et: 22.97871, 22.97200MM

Customer Requirements_EASTING: STRAND CAST

COMMENT NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

Mechanical Test: Yield 57800 PSI, 998.52 MPA Tensile: 79200 PSI, 546.05 MPA %Et; 23.5/8in, 23.5/200MM

Customer Requirements CASTING: STRAND CAST

COMMEND NO WELD REPAIRMENT PERFORMED, STEEL NOT EXPOSED TO MERCURY.

#### **Customer Notes**

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

All manufacturing processes including melt and cast, occurred in USA, MTR

complies with EN10204 3.1B

Bhaskar Yalamanchili

Quality Director

Gordau Ameristeel

THE ABOVE FIGURES ARE CERTIFIED CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

> Metallurgical Services Manager CARTERSVILLE STEEL MILL

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. In no event shall soller be liable for indirect, consequential or puritive damages arising out of or related to the materials furnished by soller.

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in

PO# 3266-00048 50#0283438 "AMITY"

Shanxi Guanjiaying Flange Forging Co.,Ltd. DingXiang, ShanXi, China

Approved according to ISO9001 and AD(2000)-W0/TRD100 by TÜV Rheinland

Inspection Certificate EN10204/DIN50049-3.1B

Abnahmepruefzeugnis

Zertifiziert nach Druckgeraete-Richthnie 97/23/EG, Anhang I, Abschnitt 4.3 durch 1

Anlagentechetechnik GmbH (Benannte Stelle Kenn-Nr.0035)

Certificate No.

Pruef-Nr.

G110035010

Page: 10

Seite

Customer:

Resteller

Degentor			-
Order No./Bestell Nr.	dated / vcm	Works No / Werks Nr.	
P.O.7003726		2011-035	

Article / Gegenstand:

Forging temperature 1050°C-1200°C

Specification/Anforderung:

Material / Werkstoff:

according to I entsprechend: ASTM A105-2010

A/SA105N

ASME SA105 Section II

AD(2000)-W0/TRD100, AD(2000)-W9/TRD107 ASME B16.5-2009

Part A Ed. 2007 and Addenda-2008

State of delivery / Lieferzustand: Normalized 910°C/ 0.60hrs Melting process/Erschmelzungsart:

LD+LF

Marking/Kennzeichnung:

Material, Size, PN, DN, Heal-No. /

Werkstoff, Groesse, PN, DN, Schmelze-Nr.

Stamp of Manufacture ( ):

Inspector's stamp: H Pruefstempel

Herstellerzeichen

Content of the Delivery / Lieferumfang:

Pieces/Stueckzahi	Desc	cription/Bezeichnung:	Heat No / Schmelze-Nr.	Test No/ProbeNr.
30	150# SW RF STD	2"	10710334	1
275	150# THR RF	2"	10710334	
70	300# THR RF	2"	10710334	

Mechanical tests / Mechanische Pruefungen:

Position of specimen/Probenlage: Tangential

1		Tensile test	/ Zugversuch		Charpy-impact Test, ISO-V	Specimen	Hardness
est Value	Tensile strength	Yield strength(0.2%)	Elongation	Reduction of area	Kerbschlagversuch, ISO-V-	Probe 20°C	Haerte
. 1	Moa	Mpa	GL=4d=50MM %	%	J	Σ/N	НВ
Spec	≥485	≥250	≥22	≥30			137-187
1	498	295	32	58			154
1	498	295	32	58			

Chemical analysis / chemische Analyse:

Heat No./ S	chmelze-Nr.	% C	% Si	% Mn	% P	% S	% Cr	% Mo	% Ni
	Spec	€0.23	0.10-0.35	0.60-1.05	≤0.035	≤0.040	≤0.30	≤0.12	≤0.40
	cast analysis	0.190	0.300	1.040	0,015	0.007	0,023	0.005	0.010
10710334		%V	% Cu	% Nb	% AI	Cu+ Ni+	Cr+ Mo	Cr+ Mo	CE
	Spec	≤0.08	≤0.40	≤0.02		≤1	.00	≤0.32	≤0.43
	cast analysis	0.000	0.010	0.000	1	0.0	48	0.028	0.370

Visual and dimensional inspection / Besichtigung und Ausmessung: 100% OK

RF/FF Machined finish: 125-250min RMS dimensional inspection: 2% recorded Dimension according to customer's drawing Smooth finish according to MSS-SP6

Hardness to Nace MR01-75 -2003/ISO15156: NACE MR 0103-2005.

mechanical test have been taken from the forged product

Quality assurance requirement according to Annex 1, Section 4.3: PED97/23/EC

We hereby certify that the material described above has been tested And complies with the terms of the order.

Place / Ort

Date / Dalum 2011-5-10

Works Inspector / Werkssachverstaendiger

Dingxiang



# Phoenix * Capitol * Camco Cap Products

### Certified Mill Test Report

Heat Code: CV1

Heat Number: 319089

Item: 15112008: 2 X 4" XHSML BK STL NIPL

Material: ASTM A106-2008 / ASME SA106-2007 Edition, No Addenda

**Chemistry Properties** 

C	Mn	P	S	Si	Cu	Cr
0.2100	0.5200	0.0070	0.0170	0.2200	0.2100	0.0800
Ni	Mo	Υ	Co	Al	Cb	N
0.1600	0.0220	0.0010				
Pb	Sn	Ta	Ti	C Eq. Long		
				0.3420		

Additional Chemical Properties

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- 1				

Mechanical Properties

Tensile(PSI)	Yield(PSI)	Elong. % in 2 in.	Reduction	HBW	HBW 2
71000	46000	34%		140	

Charpy Minimum Impact - ft/lbs

Test 1 Test 2		Test 3	Avg.	Test Temp.	

Bend Test Passed

Hydro Test Passed at 2500 psi

This material meets the requirements of the governing specifications. We certify that the above material has been inspected and tested in accordance with the methods prescribed in the governing specification and the results of such inspections and tests conform with applicable requirements.

We further certify this material was inspected with independent inspectors conforming to the requirements of EN 10204 Section 3.1B.

#### Specification comments:

Meets Hardness Requirements of NACE MRO175 latest edition. Meets ASME SA 106 Grade B Requirements, No weld repair was performed on these products. This material was not exposed to Mercury or any other metal alloy that is liquid at ambient temperatures during processing or while in our possession.

Heat Code Remarks:



# Phoenix * Capitol * Camco Cap Products

#### **Certified Mill Test Report**

Heat Code: CVI

Heat Number: 319089

Item: 15112012: 2 X 6" XHSML BK STL NIPL

Material: ASTM A106-2008 / ASME SA106-2007 Edition, No Addenda

**Chemistry Properties** 

C	Mn	P	S	Si	Cu	Cr
0.2100	0,5200	0.0070	0.0170	0.2200	0.2100	0.0800
Ni	Mo	V	Co	Al	Cb	N
0.1600	0.0220	0.0010	, , , , , , , , , , , , , , , , , , , ,			
Pb	Sn	Ta	Ti	C Eq. Long		
			- Control of Arthurson	0.3420		

	Properties

			,
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1			

Mechanical Properties

Tensile(PSI)	Yield(PSI)	Elong. % in 2 in.	Reduction	HBW	HBW 2
71000	46000	34%		140	

Charpy Minimum Impact - ft/lbs

	Test 1	Test 2	Test 3	Avg.	Test Temp.
I					

Bend Test Passed

Hydro Test Passed at 2500 psi

This material meets the requirements of the governing specifications. We certify that the above material has been inspected and tested in accordance with the methods prescribed in the governing specification and the results of such inspections and tests conform with applicable requirements.

We further certify this material was inspected with independent inspectors conforming to the requirements of EN 10204 Section 3.1B.

#### Specification comments:

Meets Hardness Requirments of NACE MRO175 latest edition. Meets ASME SA 106 Grade B Requirements. No weld repair was performed on these products. This material was not exposed to Mercury or any other metal alloy that is liquid at ambient temperatures during processing or while in our possession.

Heat Code Remarks:



# Phoenix * Capitol * Camco Cap Products

### **Certified Mill Test Report**

Heat Code: ZJ9

Heat Number: 4002182

Item: 15112012txb: 2 X 6" XHSML BK STL NIPL TOE X BEVEL Material: ASTM A106-2008 / ASME SA106-2007 Edition, No Addenda

Chemistry Properties

C	Mn	P	<b>S</b>	Si	Cu	$\mathbf{Cr}$
0.1800	1,2000	0.0140	0,0060	0.2100	0.0060	0.0100
Ni	Mo	V	Co	Al	Cb	Ŋ
0.0080	0.0030	0.0010				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Pb	Sn	Ta	Ti	C Eq. Long		
				0.3840		

Additional Chemical Properties

Mechanical Properties

Tensile(PSI)	Yield(PSI)	Elong. % in 2 in.	Reduction	HBW	HBW 2
81527	55172	32.4%		140	

Charpy Minimum Impact - ft/lbs

Test 1	Test 2	Test 3	Avg.	Test Temp.

Bend Test Passed

Hydro Test Passed at 2500 psi

This material meets the requirements of the governing specifications. We certify that the above material has been inspected and tested in accordance with the methods prescribed in the governing specification and the results of such inspections and tests conform with applicable requirements.

We further certify this material was inspected with independent inspectors conforming to the requirements of EN 10204 Section 3.1B.

#### Specification comments:

Meets Hardness Requirements of NACE MRO175 latest edition, Meets ASME SA 106 Grade B Requirements. No weld repair was performed on these products. This material was not exposed to Mercury or any other metal alloy that is liquid at ambient temperatures during processing or while in our possession.

Heat Code Remarks:

#### INSPECTION CERTIFICATE

DATE:

2010-1-18

STANDARD: ASTM A234/ASME SA234-07 WPB

951, Kesheng Road Beiguan, Malu tuwn, Jia-ding District,

ORDER NO:

7003359

MATERIALS: ASTM A106 Gr.B INSP.SPEC.: ASME B16.9-07

Shanghai, China TEL: 86-21-69155661

FAX: 86-21-69155662

SHANGHAI GATEWAY FITTINGS COLLED

P.I.NO: CERTIFI.NO:

11A1-7/8

	,									, 2, 5 . 0 . 7 . 0 .				CERTIF	1410,	11A1-772	·
M NO.	PRODUC	r & siz	E		NTITY CS		MFG NO	).	MENT	AL&DI FIONAL ECTION	HARD MAX.I		HEAT TREATME NT(NOTE)	PAR	NETIC TICLE INATION		
61	Tee-2" STD			1.	50		10K176		60	OOD	93.	85	N		Ж		
62	Tee-2 1/2" STD				5		10K181		1	OOD	76-		N		OK		
63	Tec-3" STD			<u> </u>	0		10K182		C	OOD	76-		N		OK .		
64	Tec-4" STD			5	50		10K185			OOD	92~		N		)K		
65	Tee-6" STD			14	0.0		10K188		G	OOD	97-		N		ЭK	İ	
66	Tee-8" STD			3	5		10K194		G	OOD	90-	1.7	N		OK .		
67	Elbow 45 LR-2" X			1:	50		10J29		G	COC	90-		ا ٪ ا	Ì	,		
68	Elbow 45 LR-6" X			3	0		10K38		G	OOD	98-	108	A			1	
69	Elbow 45 LR-8" X			1	2		10K41		CC	OOD	86-	66	1 A 1			1	
70	Elbow 90 LR-1 1/2	"XH		[ 7	5		10057		G	aoc	83~	92					
	MATERIAL		j	,										PH	YSICAL TE	ST	
ITE.	CHARGE NO.	C.	Şi	Mn	P	S	Cu	Ni	Ст	*100	Mo	V		YS	TS	F.	C.E
M		-100	*100	*100	1000	*1000	*100	*100	l Cr	1001	*100	*160		KSI	KSI	%	x100
NO.	STAND MIN.	<u> </u>	10	29										35.5	60		· · · · · · · · · · · · · · · · · · ·
	ARD MAX.	30	ļ	106	50	58	40	40	<u> </u>	40	15	8			85.0		50
61	202456	21	20	42	13	15		0.8		1.2	0.1	0		37.29	66,46	32.0	29.31
62	9107858	17	25	46	21	11	1.3	4.3	2	5.8	0.3	o		42.81	68,92	30.0	29.31 27.47
63	9106351	18	27	48	15	11	1.5	3.2	,	1.9	1.0	ě	1 1	44.98	68.92	30.0	28.89
64	9105872	17	21	58	12	10	1.2	1.7	.	4.5	1.0	ō		43,53	68.92	30.0	29.08
65	093029738	20.	26	49	17	12	1.2	1,1		2	0.1	0		38.45	65.30	31.0	29.86
66	08008463	20	24	50	.19	9	1.3	1.1	:	3.3	0.1	Ð		40.63	61.67	30.0	30.39
67	A-216	21	19	44	17	8	3	4		5	0.7	Ð.	[	46.43	78.36	35.0	32.74
68	WB92-6422	21	23	47:	18	11	1	1	1	3	I	0.		42.08	67.47	37.5	30.70
69 70	0833231	19	25	50	19	17	I	19		16.	2.1	0		37.73	71.10	31.5	33.22
10	1039243	17	25	42	20	10	10	3	.	4	1	0	1 1	39.18	64.57	30.0	35.20
ľ	(NOTE). A. HOT	CARLERY							-				<u> </u>				

. (NOTE):A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C - 980°C, AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C *0.5 HR, AIR COOLING.

NACE MR-01-75: SATISFACTORY

MILL TEST CERTIFICATE ACCORDING TO EN10204/3.1

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDA WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE

TEST RESULTS SHOWN HEREIN ARE CORRECT.

MANAGER OF Q. A. DEPT

Po# 3266-00033 So# 0281669 "AMITY"

10# 3266-0003. AMITY *

PURCHASER: SEYBOLD INTERNATIONAL CORP. ST INSPECTION CERTIFICATE

DATE: 2008-9-18

ASTM A234 WPB-86 STANDARD: ASME SAZ34 WPB-03

SHANGHAI GATEWAY FITTINGS CO.,LTD 951, Kesheng Road Beiguan, Malu town, Jia-ding District, Shanghai, China

ORDER NO: P.I.NO-

MATERIALS: ASTM A106 Gr.B INSPSPEC.: ASME B16.9-03

PRODUC	- Week of the 2000												IFI.NO:	8191-4	ur i
	PCS 700 700			NTIITY PCS		MFG N	O.,	DESTINATION VISUAL ADDRESS OF THE PROPERTY OF		NESS 197 FB	TEAT THEATMENT CATORS		IC FARTICLE ENATION		
31 EL-1-1/4"90°STD 32 EL-1-1/2"90°STD 33 EL-2"90°STD 34 EL-3"90°STD 35 EL-4"90°STD 36 EL-6"90°STD 37 EL-3"90°STD 38 EL-10"90°STD 39 TEE-3"*2"STD 40 TEE-1"*2"STD			AC Angel Commencer and Commenc	709 250 090 090 000 70 40 20 30 25		8A05 8A03 8B13 3B69 8A07 8A01 8G162 7K13 8E102 8E104		GOOD GOOD GOOD GOOD GOOD GOOD GOOD GOOD	92 91- 37 91- 83 91-	75.55	A A A A A A N		ЭК ЭК	The state of the s	
MATERIAL CHARGENO.	C *100	Si *100	Mn *100	P *1000	\$ *1000	Cu *100	Ni *100	Cr	Mo	V		РН ҮЗ	YSICAL TE	ST E	CE
O. STANGARD MIN. MAXX	30	10	29				100	-100	*100	*100		KS1 35.5	KSI 64	%	x194
1 B1246	20	21	105 49	50	58	40	40	40	15	8			85,0		50
7 Y28708843 YD601094 Y607-1371 318856 B2353 Y604-423 07-11-561 5E10682 1-366	29 19 19 14 20 20 20 20 20	21 19 20 19 20 21 21 23	49 52 53 74 53 58 45 52 47	12 12 5 13 5 11 14 10 9	27 27 7 0.7 2 7 9 19	2 2 5 9 7 8 5 9 1 3	2 2 2 3 4 3 7 1 2	3 4 2 4 1 5 1 3	0 0 0 0 0 0 0 1.2	0 0 0 1.1 0	The second of th	46.43 46.43 47.16 44.69 46.43 47.83 54.41 39.90	67.47 68.92 68.92 68.92 65.83 67.47 67.47 65.30 68.20	35.0 34.0 33.0 34.0 36.5 15.0 36.0 30.0	30.96 32.70 36.40 37.77 34.27 37.90 35.53 37.63 29.93

ERATURE BETWEEN 1207 - 260 T. AIR COOLING.

N: NORMALIZING AT TEMPERATURE \$80 C-0.5 ER. AIR COOLING.

NACEME 0176; SATISFACTORY

WE BEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS EETN MANUSACTURED IN ACCIDEDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND TEAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT.

MANAGER OF Q.A. DEPT

MATERIALS TES APCOPPEED HAGS CO., LTD.

was about publicant with alterna to to the form to to

CERTIFIC ATE

BUTI-WELDI: # FITTINGS

EN 10204 ..

CUSTOMER PONO

TEF CANADA INC

S-10006

with the appearance of the state of

e poste printing to him in a selections. This encouragement is they be undersection.

MATERIAL STANDARDS ASTM ARRA WPRIADME SA204/WPB 2007 DIMENSION STANDARU ANSI B16 9/836 28-200-SPECIAL CONDITIONS. Made of scamless pipes

Ct = C ·

	acy och mod	ATE NO 00108Q11791R28/2200				MEC	HANICAL	PROPE	RTIES	į.					CHEN	IICAL	COMPO	SITION				
:	MINIMUM S	TANDARD'AS PER ABOVE SPEC	IFICATIO	NS .	415 Mpa Min	240 Mpa Min	Elongation (longitudinal)	197 H8	COLD	FORMED	g a max	D 29 1d	ני טיב יישריו	0 058 /nax	G 1	70.4	0 15	0.4 coax	0.4	0 06 Max	0.02	0.5
TEM.	NPS	DESCRIPTION	OTY	HEAT #	TENSILE	MELD	22%	HARDNS	Y/N	TEMP C	G.	Mn	Р	S	Si	Cr	Mo	Nı	Cu	V	Nb	CE
3	1*	90 LR ELBOW STD	250	CT	450	275	32	121	NO	870	0.19	0.53	0 013	C 008	0.23	0.06	6 02	0.07	C 07	800.0	0.007	0.30
5	1-1/2"	40 LR ELBOW STD	500	£1	485	270	32	+27	NO	870	.0 10	0.52	0.012	0 007	0.23	0.02	3.03	0.04	0.05	a ac7	\$00.0	0 29
22	7-1/2	45 LR ELBOW STO	300 "	EI	465	270	32	127	NO	87C	0.19	0.57	0.012	0.007	0 23	0 02	0.03	0.94	0.05	0 007	C 008	0 29
28	:8-	90 LR ELBOW XS	3	12076	475	265	33	125	NO	870	0.18	0.52	0.012	0 005	0.24	0.02	0.03	0.02	0.05	0.007	0.009	0.28
34	145"	90 LR ELBOW SCH40	4	12076	475	265	33	125	NO	870	D 18	0.52	0.012	0 005	U.24	0.02	0.03	0.02	0.05	0.007	0.009	0 26
30	20,	90 LR ELBOW SCH40	5	72108	465	270	35	122	NO	870	0 19	0.55	0 017	0.009	0.26	0.05	0 07	0.05	0.03	0.006	0.008	1 0.32
38	10"	50 LR ELBOW SCHOO	72	35468	472	265	36	124	NO	870	0 15	956	0.016	0.008	0.24	1 0 05	80 0	0.04	0.05	0.008	0 007	0.30
45	15"	PO LR ELBOW SCHOO	9	61244	469	285	33	123	NO	170	0:8	0.55	0.012	0.008	0.24	0.03	001	0.07	0.05	800.0	0 007	0 29
41	20	90 LR ELBOW SCH80	4	72117	465	265	32	122	NO	870	0.13	0.52	0.013	3.008	9.25	0.03	0.02	0.05	0.01	0.003	0.007	0.28
47	3	180 LR RETURN BEND STD	200	50856	475	280	33	125	NO	\$70	0.20	0.53	13 0 15	0.006	9.25	0.06	0.02	0.04	0.05	0.007	9 008	0.31
46	4"	18G LR RETURN BENU STD	150	75814	473	265	33	124	NO	E7C	0.20	0.56	D 013	0.009	0 24	0.00	0.02	0.05	0 03	2 008	0.009	031
49	6"	180 LR RETURN BEND STD	100	32692	482	275	32	126	NO	67C	0.20	0.52		0.005	9 22	003	0.05	0 04	0.02	0.007	2 003	031
51	2	180 SR RETURN BEND STD	100	42976	469	265	32	123	NO	570	0 19	0.52		0.007	0 25	0.03	0 04	0.05	0.03	0.007	0.008	0.30
52	3"	180 SR RETURN BEND STD	100	50356	475	250	33	125	NO	870	0.20	0.53		0.006	0 26	0.06	0 02	0.04	D 05	D 20	6006	0.31
53	4-	100 SR RETURN BEND STD	50	25814	473	265	33	124	NO	£70	0.20	0.50	0 013	0 009	0 24	0.04	0.02	0.05	0.03	0.008	0.009	031
55	3/4"	TEE STO	200	G1	4G9	265	32	123	YES	1	0.18	0.56	0.013	900.0	0.24	0.04	0.04	0.05	0.03	800.0	0 009	0.30
57	1-1/4"	TEE STD	100	3 J1	465	265	33	122	YES	Viana	0.20	0.55	0.009	0.005	0.24	0.04	0.01	0.03	0.05	0.008	0.008	D 31
53	2"	TEE STD	500	1854G	490	270	34	128	YES		015	0.52	0.010	C.CDB	0.24	0.03	0 02	906	90.0	0.007	0.008	0.30
60	1/2"	TEE XS	300	F2	472	260	33	124	NO	870	C.20	0.53	0.012	0.005	0.25	0.03	0.05	0.04	0.05	0.006	0.008	0 31
51	3/4"	TEE XS	200	Už	476	265	32	125	NO	576	0.19	0.57	0.003	6.606	0.25	0 03	0.02	0.04	0.06	0.007	0.009	0.29
63	1+1/4"	TEEXS	100	J2	465	285	32	122	NO	870	0.20	1 0.52		J D06	0 23	0.06	0 02	0.04	0.65	C 008	0.007	0.31
65	12"	TEE SCH40	15	51420	490	285	33	128	NO	870	0.19	0.53		0.007	0.26	0 02	0 03	0.04	0.06	5.007	800.0	0.30
66	14"	TEE SCH40	9	65729	472	265	33	124	110	370	0.18	0.52	0 012	0 008	0.25	0 03	0.04	0.05	2 04	2 008	0 009	0.29
£7	*5"	TEE SCH40	10	17360	465	270	32	122	NO	e70	0 10	十岁海一	0 013	0 000	0.24	0.05	0 02	C 03	0 02	0 007	0 008	0.30
77	4.X5	YEE STO	50	34173	473	285	34	124	YES	de 12 marina	0.19	0.55	CCI	4.00M	0.72	0 05	0 04	0.03	0 05	0 007	0.003	0.31
73	5"X4"	TEE STO	50	34003	485	2/5	31	127	YES	ļ	0 19	1 0 53	0.015	0.000	0.70	0.04	0.01	0.04	\$ 39	0 007	0.003	0 30

We hereby untily that the material described herein has been inepected/tested satisfactorily in accordance with the standards specified above and purchase order requirements. HEATWOF LAIL

REMARKS : VISUAL EXAMINATION GOOD

Strain Control

2. DIMENSIONAL EXAMINATION GOOD

3 MELTING PROCEDURE E

4 MATERIAL IN ACCORDANCE WITH NACE MR\$175-2002

 C1
 53946
 G2
 91867
 52
 58062

 E1
 35038
 J1
 29788

 G1
 40502
 J2
 65295

* PEAT TREATMENT HOT FORMED FITTINGS HAVE BEEN FORMULD AT TEMP ATC C AND LODGED IN STILL AR

APCO PIPE FITTÉN**GSICÓ**S ÉTIL

SUFF I NESNED IS

80# 3266-0. 33 S0# 0281546

#### INSPECTION CERTIFICATE SHANGHALGATEWAY FITTINGS COLLED

DATE:

2010-1-18

STANDARD: ASTM A234/ASME SA234-07 WPB

951, Kesheng Road Beiguan, Malu town, Jia-ding District,

ORDER NO:

7003359

MATERIALS: ASTM A106 Gr.B. INSP.SPEC.: ASME B16.9-07

Shanghai, China

TEL: 86-21-69155661 FAX: 86-21-69155662

P.I.NO: CERTIFINO.

11A1-5/8

	and the						1EL: 60	-21-69155	001 L	4X: 86-21-69155	700			CERTIF	.NO:	11A1-5/8	
M NO.	. 1	RODUC	r & sizi	ξ		STITY CS		MFG NO	<b>t,</b>	VISUAL&DI MENTIONAL INSPECTION	HARD MAX.1		HEAT TREATME NT(NOTE)	PART	NETIC TICLE NATION		
41	Elbow 90	LR-3" S	TD		86	00		10K106		GOOD	87~	45	A				
42	Elbow 90	LR-4" S	TD.		21	00		10K108		GOOD	92~		A				
43	Elbow 90	LR-5"S	TD		5	0		10K110		GOOD	85~	-	Â				
44	Elbow 90	LR-6" S	TD		21	00		10KH1		GOOD	75~		Â				
45	Elbow 90	LR-8" S	TD		6	.0		10K114		COOD	89-		A				
46	Tee-3 x 2	"STD			. 5	0	ļ	10K184		GOOD	85-		N	C	K		
47	Tee-4 x 2				1:	50		10K186		GOOD	69~	85	l n	0	К	1	
48	Tec-1 x 3				5	0		10K187		COOD	99.	85	N	Ç	К		٠.
49	Tec-6 x 3				1	5		101(190		GOOD	85-	99	N	C	K	1	
- 50	Tee-6 x 4	"STD		:	5	0		10J155		COOD	69-	-85	N	C	K	.]	
	MATE	D143									***************************************		*	PHY	SICAL TE	ST	
ITE	CHARG		C	Si	Mo	r	S	Cu	Ni		Mo	V		Y\$	TS	E	C.E
M			*100	*100	<b>≁100</b>	*1000	*1000	*100	*100	Cr *100	-100	A100	f [	KSI	KSI	%	x100
NO.	STAND	MIN.		to	29									35.5	60		
	ARD	MAX.	30	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	106	50	58	-40	40	40	15	8			85.0		50
41	7-10814		19	24	52	14	7	0.9	0.5	6	2.1	0		41.35	76.90	35.0	30.22
42	593948		21	28	56	11	14	10	3		2	ň	[	48.61	74.00	30.5	41.73
43	A-225		20	23	46	16	15	2	2	1 2	ī	ő		43.53	69.65	30.5	30.40
44	593695		20	23	47	9	10	8	3	5	1	0		44.98	71.10	32.0	37.2
45	892717		19	23	56	20	9	0.7	I	2	0.1	0		42.08	66.75	36.5	28.92
46	9106068		19	26	48	2.3	23	1.2	1.8	4.6	1.0	0		41.35	66.75	31.0	29.4
47	9105872		17	21	58	12	10	1.2	1.7	4.5	1.0	0		43.53	68.92	30.0	29.08
48	9105872		17	21	58	12	10	1.2	1.7	4.5	1.0	0		43.53	68.92	30.0	29.0
49	09302973	8	20	26	49	17	12	1.2	1.1	2	0.1	0		38,45	65.30	31.0	29.8
50	499448		20	2.3	53	13	7.	10	5	6	•	a	1	37.00	68.20	31.5	40.5

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C - 980°C , AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880°C*0.5 HR, AIR COOLING.

NACE MR-01-75: SATISFACTORY

MILL TEST CERTIFICATE ACCORDING TO EN10204/3.1

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDA WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE

TEST RESULTS SHOWN HEREIN ARE CORRECT.

MANAGER OF Q. A. DEPT

FLANGES

ASME B16.5-09

ASME SA105N-05

#### **CERTIFICADO DE INSPECCION**

05/03/2010

N.º

Na.

FECHA:

E1-325

Date:

NACE MR0103/03 & MR0176/03

SU PEDIDO N.º

Your Order No.

Votro Cdg. N.*

Inspection Certificate - Certificat de Réception ISO 10474/3.1

130325

DE

DIN EN 10204 / 3.1

HOJA:

Pugu; 1

of. - do 04/01/2010



SOI 1022184

ULMA FORJA, S.COOP.

8° Zubiliogo, 3 - Apdo. 14 20560 ONATI (Glpuzkoa) SPAIN Tol: 34 - 943 780552 Fox: 34 - 043 78180E E-mail; ulma@ulmapiping.com

76002

Certified acc. PED 97/23/EC by TOV Rheinland N.º 01 202 E/Q 02 7445 MARCA DEL FABRICANTE

Mark of factory Marque du tabricant

Section

DEPARTAMENTO QUALITY ASSURANCE

				الإيان	udement				-	
Description	OBSERVACIONES Remarks Observallans (*)	N. Coulo	T.Strongth Roshit Rupi	Y.Strongto	Allonzacion	ESTRICCION Rod. Ama Stricken St	RESILIENCIA Impacticat Rásilience Joules	LICOLA AMERICA LICONOMIA	"C	DUREZA Horicas Duruk HB
OLB RF A105N OLB RF A105N LB STD/40 RF A105N LB STD/40 RF A105N	2	379A9 33A0 341A9 6TO	505 515 534 501	312- 314- 309- 296	29,70 30,30 32,70 28,80	56,00 55,00 81,40 52,30		Total was departed to the contract of the cont		147 155 149 156 148 154 148 156
Ų	DLB RF A105N DLB RF A105N LB STD/40 RF A105N	DLB RF A105N NE  DLB RF A105N NE  LB STD/40 RF A105N NE	Observoidans	Observoicans	Observation	Observations	Observation	Observation	Observation	Observation

	COLADA N		C	OMPOS	ICION C	QUIMICA	-STEE	LMAR	(ER'S L	ADLE A	NALYS	S-ANA	LYSE CI	HMIQUE		
	N.*Coalte	C%	SI %	Mn 36	P%	S%	Cr%	Ni %	Mo 96	Nb %	V%	Cu %	AI % .	77 %	N %	CEq %
>	33A0 341A9 379A9 5T0	0,210 0,190 0,190 0,180	0,230 0,170 0,190 0,180	0,830 0,910 0,820 0,920	0,013 0,013 0,014 0,014	0,005 0,015 0,005 0,016	0,080 0,050 0,040 0,050	0.120 0.110 0,090 0,090	0,030 0,020 0,050 0,010	0,007 0,005 0,002 0,004	0,001 0,001 0,008 0,001	0,230 0,310 0,160 0,330	0,028 0,002 0,023 0,000	0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000	0,394 0,384 0,363 0,357

Los dimensiones y la confictón superficial se hallaren solislactoria.

- Dimension and surface condition were found acceptable

Les dimensions et étals de surface sont sutisfeisents

- Los maleriales citados cumplen las normas aplicables

- Magulacturing regulroments are satisfied - Los normes applicables sont respectées

**ELINSPECTOR** 

Works Inspector - L'Inspectour

ULMA FORMAS, COOP. Quality Assurance Dept - 151

(*) OBSERVACIONES! Romarks

PRODUCTO

Article - Produk

NORMAS APLICABLES

MODO DE FUSION (1)

Requirements - Normes Applicables

Malarial Correspondent - Quality

MATERIAL CORRESPONDIENTE ASTMA105N-05

N_NORMALIZED AT 800 C AND ALLOWED TO COOL IN STILL AIR

FL6150 WN 6

670



## 信盛(姜堰)五金鍛造有限公司

SHINSEI (JIANGYAN) STEEL FLANGES CO., LTD.

江苏省美堰市经济开发区天目路688号(邮编: 225500)

NO.688, TIANMU ROAD, JIANGYAN ECONOMIC DEVELOPMENT ZONE,

JIANGYAN CITY, JIANGSU ,CHINA (225500) TEL:0523-88206028 FAX:0523-88206058

E-mail:sales@shinsei.ssflanges.com.cn;shipment@shinsei.ssflanges.com.cn

WBE:http://www.ssflanges.com.en

SSWI/QD8.2.4A-04

ACCORDING TO EN10204-3, 1/2004

#### MILL TEST & INSPECTION CERTIFICATE

CUSTOMER: SEYBOLD (AMITY)

CERT NO: 11010076

ORDER NO:7003357 (17660)

DATE: 2011-01-27

PAGE: 2

CERT	NO: 1101001	10 0	KUEK NO:7	00333		.,,		****		- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10			
ITEM	RAW MATERI HEAT N	Al.	SHINSEI HT.CD.			D E	E S	CRIP	КОІТ		QUANTTIY	SPECIFICA ASTAVASAE SA DIMENSION	•
005 005 006 007 007	2302-13403 880009003 10701343 10701343 09703777 10706683		A142 A464 A464 A331 A565	BLRF OLAF HLRF DLRF BLRF	1 150 1 150 1 150 1 150 6 150 6 150 8 150						8 PC\$	\$°	
008	1305-01979		A500		HEA		, ,	. <u> </u>	MPOS	TION	(%)	<u> </u>	
ITEN	c I	Si	Mn		) )	S		Cu	Сг	Ni	Mo	٧	CE
Min Max	0, 350	0. 100 0. 350	0, 600 1, 050	0, 0	- 1	0. 0	10	0. 400	o. 300	0.400	0, 120	0.080	0. 430 0. 361
005 005	0. 190 0. 190	0. 260 0. 230 0. 250	0, 960 1, 030 1, 000	9, 0 9, 0 9, 0	ar I	0, 0 0, 0 0, 0	06	0, 020 0, 120 0, 010	0. 040 0. 004 0. 040	0, 010 0, 004 0, 030	0, 001 0, 0012 0, 050	0, 006 0, 008 0, 004	0.373
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007	0. 180 0. 200	0, 250 0, 250	0. 980 0. 950	0.0	014	0.0	03	0, 100 0, 020	0.080	0, 010	0.002	0,005	0, 368
ITBI	Tensile Strength	Yield		n-	Rof		Ha	rdness	MATERIAL 1	HENT:NORMALI N ACC. WITH N OS A PED97/2 KBLATT WO CE	ACE MRO175-20 3/EC CERTIFIE	03(ONLY IIAI D	ROMESS)
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007 007	73.4 73.1	49. 1 49. 5	33.	. 6	66	. 0		143. 0 144. 0		C. MANAGER	and the second s	INSPECT	OR .
608	71.7	\$1.6	31.	. 8	64	71		141, 0					



Po#3266-00033 50#0281472 "AMITY"

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#### INSPECTION CERTIFICATE

SHANGHAL GATEWAY FITTINGS CO., LTD

951, Kesheng Road Beiguan, Malu town, Jia-ding District,

Shanghai, China

TEL: 86-21-69155661 FAX- 86-71-69155667 DATE:

2010-1-18

7003359

ORDER NO:

P.I.NO:

nor un ocu:	ASING D	10.7-07		- -		1.51. 00	-21-67133	001 F/	AA: 86	-21-69155	662			CERTIF	INO:	11A1-3/	8
M NO.	PRODUC	r & size	<u> </u>		CS		MFG NO	). 	MEN	AL&DI FIONAL ECTION	HARE MAX.I		HEAT TREATME NT (NOTE)	PAR	NETIC TICLE INATION		
21 Cone Re	ducer-6 x	5" STD		1	0	]	10K86		G	COC	87~	.03	N	,	ж	1	
22 Conc Ro	ducer-8 x	6" STD		] 3	ð		10K88		1 1	aoc	87-		N				
23   Conc Re	ducer-10x	8" STD		1	5		10K91		1	COD	91-		N		OK OK	1	
24 Ecc Red	lucer-3 x 2'	STD		2	5	1	10K146		1	COC	85-		N N		ok ok	1	
25 Ecc Red	lucer-3 x 2	1/2" STD		1	0	1	10K147		1	aoc	69~		N		ok ok		
26 Ecc Red	lucer-4 x 3	"STD		2	5		10K150		1 -	OOD	99.		N		OK	1	
27   Ecc Red	ucer-6 x4"	STD		] 2	5	1	(0K152		1 -	OOD	85-		N				
28   Ecc Red	lucer-8 x3"	STD		ı	5	1	10K153		1	qoo	85-		N N		OK OK		
29 Ret Ben	d 180 LR-2	e" STD		1.	20		1010170			goo	85~		1 2	•	Ж		
30 Ret Ben	d 180 LR-3	3" STD		2	\$		10K171		1 '	OOD	91~		Â			-	
	·····			<del></del>		<u> </u>			1				L			<u> </u>	T
ተጥሮ ፣	ERIAL.	Ċ	Si	Ma	P	s	Cυ	Ni	T				ı		YSICAL TE		<b></b>
M CHAR	GE NO.	*100	^100	*100	+1000	*1000	*100	*100	Cr	*100	Ma *100	*100		YS	TS	E	C.E
NO. STAND	-MIN.		10	29			100	120	<del> </del>		~100	-100	<del> </del> -	KSI	KSI	%	x100
ARD	MAX	30		106	50	58	40	40	<del> </del>	40	15	8	II	35. <i>5</i>	60	<u> </u>	<u> </u>
21 002022	**								+	-	1.5		ļl		85.0	-	50
21 09302973 22 08008463		20	26	49	17	12	1.2	1.1		2	0.1	0		38.45	65.30	31.0	29.86
22   08008463 23   1092074		20	24	50	19:	9.	1.3	1.1	1 -	3.3	0.1	0		40.63	61.67	30.0	30.39
24 00605		21	23	53	11	8	3	1		i l	0.2	0.1	[	39.18	65,30	32.5	33.16
25 00605		19	23	50 50	25	14	1.6	3.6	1	0.4	1.3	0	1	38.45	67.47	30.0	31.51
26 WB02-8	10	19 20	23	50	25	14	1.6	3.6	] 1	0.4	1.3	0		38.45	67.47	30.0	31.51
27 1000416			24	48	19	12	1	1	l	2	1.0	0		43.53	69.65	27.0	29.67
28 976362	<b>J</b>	19	24	49	18	13	0.8	1.7		.6	1,9:	0		38.45	68.92	28.5	28.78
	<b>717</b>	19	24	48	19	18	3	2		1	I	Ð	1	42.81	66-75	31.0	30.53
29 WB10-3		20 21	20 19	49 50	18 17	10 10	1.8 1.5	3.5 2.3		7	2	0		36.28	65.30	30.0	32.00

(NOTE):A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C - 980°C, AIR COOLING.

N: NORMALIZING AT TEMPERATURE 880 C +0.5 HR, AIR COOLING.

NACE MR-01-75: SATISFACTORY

STANDARD: ASTM A234/ASME SA234-07 WPB

. MATERIALS: ASTM A106 Gr.B

INSPISPEC .: ASME B16.9-07

MILL TEST CERTIFICATE ACCORDING TO EN10204/3.1

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDA WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE

TEST RESULTS SHOWN HEREIN ARE CORRECT.

MANAGER OF Q. A. DEPT

#### MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN 10204 :2004 3.1

CUSTOMER : SEYBOLD INTERNATIONAL CORP

CERT. NO : 110221

L/C NO:



An ISO 9001:2008 Registered Manufacturer

BOTH-WELL STEEL FITTINGS CO., LTD. NO.303, JEN-HSIN ROAD JEN-WU HSIANG KAOHSIUNG HSIEN, TAIWAN R.O.C.(81460)

ORDER	NO ±	7003371	(17661)	D	ATE :	01/28/	2011			,			ING HSI					A THOUGH			
	E NO :1							: TAIR	AN								72-0260	FA.	X: 886-7-371-386 eff.com.tw or box@both	54, 371-3t	382
	BW		ATERIAL	1						·	1	iconc.iii	(ID2) WYYY.	DOUITVEIL	DILLEGA C	-man.out			ATION FOR	INSPEC	TTON
ITEM	HT,CD.		T NO.					D	ESCRIPT	ION					QUANT	TY -	MATER		FITTING	SURFACE	
142	3382	317342		45D EL	PO# 1" 3	000# S	/W		1704-170	······			·	•	46	PC	ASTM A105		11(11)143	OUNT NOT	Dia.
143	3365	316685			EOW 1-1/		-								1	PC			ASDE B16.11 - 2009		}
144	3125	306553		90D FI	POW 3/4"	3000#	S/7								1	:PC	ASTE SAT	1050		6000	GOOD
145	3409	318229			BOW 1" 3	* 5 7 711									1	PC				0005	LUCUL
146	3358	316682			.BOW 1-1/										1	PC					
70004			·					a	EMICAL	COMPOS	ITION	<b>%</b> )	········				<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>				L
ITEM	BW	С	Si	Mn	P	S	Cu	Cr	Ni	Мо	V	Cb(Nb)	И	Al	Ti	Zr	1	CE			
Min	HT.CD.	-	0.100	0.600	- [	-	·-	-		•	4	-	-					-	MATERIAL	SUPPLIER	
Max		0.350	0.350	CONCERNATION OF THE PARTY OF TH		0.040	0.400	0.300	0.400	0.120	0.080	-	-					0.430			
142	3382	0.210	0.200	1 1		0.011	0.120	0.090	0.040	0.010	0.002	0.001	-				1	0.384			
143	3365	0.190	0.180			0.014	0.130	0.150	0.080	0.020	0.002	0.001	-					0.373			
144	3125 3409	0.200	0.200 8.200	0.830	. 1	0.016	0.150	0.080	0.060	0.020	0.002	1	-					0.376			
146	3358	0.190				0.016	0.020	0.100	0.060	0.010	0.002	0.001	-					0.376			
1		97475	0.130	0.020		***************************************	L	L		0.010	0.002	1 0.001	<u> </u>	<b>L</b>	L	LDD TOT	ONAL TE		J. DVO		
1757.					MOE	CHANK	CAL PRO	PERTIES					HEAT	TREATME					75/MR0103-2003		
ITEM	BW	T. S.	Y. S.	EL.	R of	A Ha	rdness		Cha	гру Імр	act	7						1.50	ELECTRIC FURNACE	F:	
1	HT.CD.		(KSI)	(%)	(%)	(HI	(AVG)		Ŧ"	I	0 °C		NAD	MALIZED	1	1-				_	
Min		70.0	36.0	22.0	30.0		-	MIN./AW	J.	$I^{\circ}$	( )	ouls )	I KOIN								
Max		-		<u> </u>			187	1	2		3	AVG.									
142	3382	73.3	50.9	35.8				1													
143	3365	73.4	51.4	34.6	1	1		İ	Ì	Ì	1										
144	3125	75.8	51.8	32.6	}						- 1	I	860	C A.C.							
145	3409	75.6	54.4	36.0	1 111	1		ĺ	-			1									
146	3358	73.1	48.3	37.0				<u></u>		L_			···				····	W-1		*	
WE	NEKERY (	CERTIFY	, THAT	THE MATE	ERIAL DE	SCRIB	ED ABOV	e has b	EEN TES	TED AN	COMPI	JES WIT	H THE T	ERMS OF	•	1	c. H		PVV	1200	-
11110	OWER	CONTRAC	1.												1		C. * *	· (	<i>j</i> ( ( )	CHAIR .	J
																	O.C.MAN	ACFR	:11	SPECTOR	
<u></u>																	IEN CHI			YAO CHAN	3
450	חבסגעו עו																				

⊕ BW-D0839 REV:1

#### MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN 10204 :2004 3.1

CUSTOMER : SEYBOLD INTERNATIONAL CORP

CERT. NO :110666 ORDER NO : 7003507

L/C NO :

DATE : 03/19/2011



拍鍵鐵工般份有限公司 A 高雄縣仁武卿馬林村仁心路 303 號 BOTH-WELL STEEL FITTINGS CO., LTD. NO.303, JEN-HSIN ROAD JEN-WU HSIANG KAOHSIUNG HSIEN, TAIWAN R.O.C.(81460) TEL: 886-7-371-0497, 371-1536, 372-0260

FAY: 886-7-371-3864 371-3882

An ISO 9001:2008 Registered Manufacturer

INVOI	CE NO :I	37109911	179	F	AGE :	13	ORIGIN	: TAIW	'AN			LET: 88 web site:ht	6-7-37. tp://www.	L-0497, bothwell.c	371- om.tw	1536, 3° e-mall:box	72-0260 hwei⊚w	) L'AL ww.bothwe	X: 886-7-371-386 Acom.tw or box@both	4,371°36 vell.com.tw	82 82
ITEM	BW HT.CD.		ATERIAL					מ	ESCRIPI	יזראי		·	,,,, , , , , , , , , , , , , , , , , ,		QUAN	rity.	SI	PECIFICA	ITION FOR	INSPEC	
			r NO.						water :	101		W			ÇOMI		HATER.		FITTING	SURFACE	DIM.
035		393712		CAP 1	/4" 3000f	NPT										25 PC	ASTM A105	N -09		1	
036	3374	316851		CAP I	/2" 3000/	NPT										25 PC	ASME SA	1058	ASSE B16,11 - 2009		
037	3234	310575		CAP 1	3000#1	PT										75 PC	POLICE OF	103.4		G000	GOOD
038	3327	315758		FULL (	PLG 1/8'	3000#	NPT								4	00 PC					
039	3334	315764		FULL (	PLG 1/4	3000#	NPT								5	oo rcl					
ITEM								CH	EMICAL	COMPOS	ITION				·					<u> </u>	I
	BW HT.CD.	C	Si	Mn	P	S	Cu	Cr	Ni	Мо	V	Cb(Nb)	N	Al	Ti	Zr		CE	TATGGTAU	SUPPLIER	
Min	m.w.	0.350	0.100	0.600	0.035	0.040	0 400	0 200	~ ***				-		ľ	1			militarii.	OUI LILIAN	
035	2714	0.200	0.190	0.850		0.013	0.400	0.300	0.400	0.120	0.080		-				<del> </del>	0.430			
036	3374	0.200	0.200	0.840		0.013	0.140	0.120	0.050	0.010	0.002		-			-		0.373			
037	3234	0.210	0.190	0.820	0.017		0.210	0.100	0.080	0.020	0.002		-					0.387			
038	3327	0.200	0.190	0.840	0.015		0.160	0.070	0.050	0.010	0.002							0.370			
039	3334	0.190	0.180	0.850			0.180		0.060	0.020	1	0.001						0.370			
		5 F-77	*	<u>-</u>	100	CHANGE	יחממ זגי	ERTIES				,	Tro		<u>'_</u> _T	ADDITI	ONAL TE		ARKS		
ITEM						<del></del>		EKI1ES					HEAL	TREATME	NI				5/MR0103-2003		
	BW HT.CD.	T. S.	Y. S.	EL.	Rof		dness			rpy Imp				•	Į:	STEEL M	aking pi	XOCESS:	ELECTRIC FURNAC	E	
Min	m.w.		-	(%)	(%)		)(AVG)		Ŧ	1	0°C		NOR	IALIZED	. 1						
Max		70.0	36.0	22.0	30.0			MIN. /AVG		1	( )	oule )									
035	2714	36 n			+		187	1	2		3	AVG.									
036	3374	76.9 72.6	59.8 49.2	28.8	1 77.7				1	-	1	1									
037	3234	77.7		36.8		1	•		1	1	l										
038	3327	73.4	55.2 46.9	31.6						1	1		860	C A.C.	ľ						
039	3334	73.4	46.0	35.3 36.0	1		140				]	1									
	1						140														
THE	ORDER (	CONTRACT	'IDAL I	ne mali	KIAL UE	SCKIRE	U ABUVI	S HAS BI	en tes	IED ANI	COMP	LIES WIT	H THE T	ERMS OF	3	C	C. H	-	P YY	Char	- The second
															ı				9		
																	Q.C.MAN	IAGER		SPECTOR	
(音) B	7-D0839															C	BEN CHI	HUANG	YUAN	YAO CHAN	G

INTERNATIONAL OF THE PRODUCTS

Manufactures of Popula and Pressure Vessel Commonwate

4407 Haygood St.- Houston, TX 77022 Phone: 713-695-3633 Fax: 713-695-3528 A Bonney Forge Company

This product has not come in direct contact with mercury or any of its compounds, nor with any mercury-containing device employing a single boundary of containment. No welding performed.

We certify that the contents of this report are correct and accurate, and that all test results and operations performed by WFI or its subcontractors are in compliance with the material specification and requirements of the referenced code or standard, and that the material conforms to the dimensional requirements of the order. This document is in accordance with EN10204 3.1.

Material: A/SA165N 09

ltem

Description

11

36 - 3 X 1 3M THP

AJSA105N

28

36-3 X 13M SWP <

A/SA105N

Page 39 of 40

Sold To:

MTR#: 198,951

PO#: C1-10-527

Sales Order #: C001013323

Date: 11/23/2010.

Certified Material Test Report

Heat Code: 58189

Chemical Composition

Ladle	C.	CR	cu	121	MO	NB	NI	P
	0.200	0.03	0,120	1.09	0.010	0.01	0.03	0.007
	s	SI	y					
	0.023	0.18	0.00					

Carbon Equivalency: Ladle 0.40

Product 72,500

Yield PSI 50,000 Elong % 35.95 RA % 66.10 Hardness 130 BHN

130 BHN

Normalized

1. IN ACCORDANCE WITH NACE SPEC MR0175-2002

Marie Dehmer

Quality Assurance Representative





Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

5. Gem-Steel Edmonton Limited – Aboveground Tank Construction

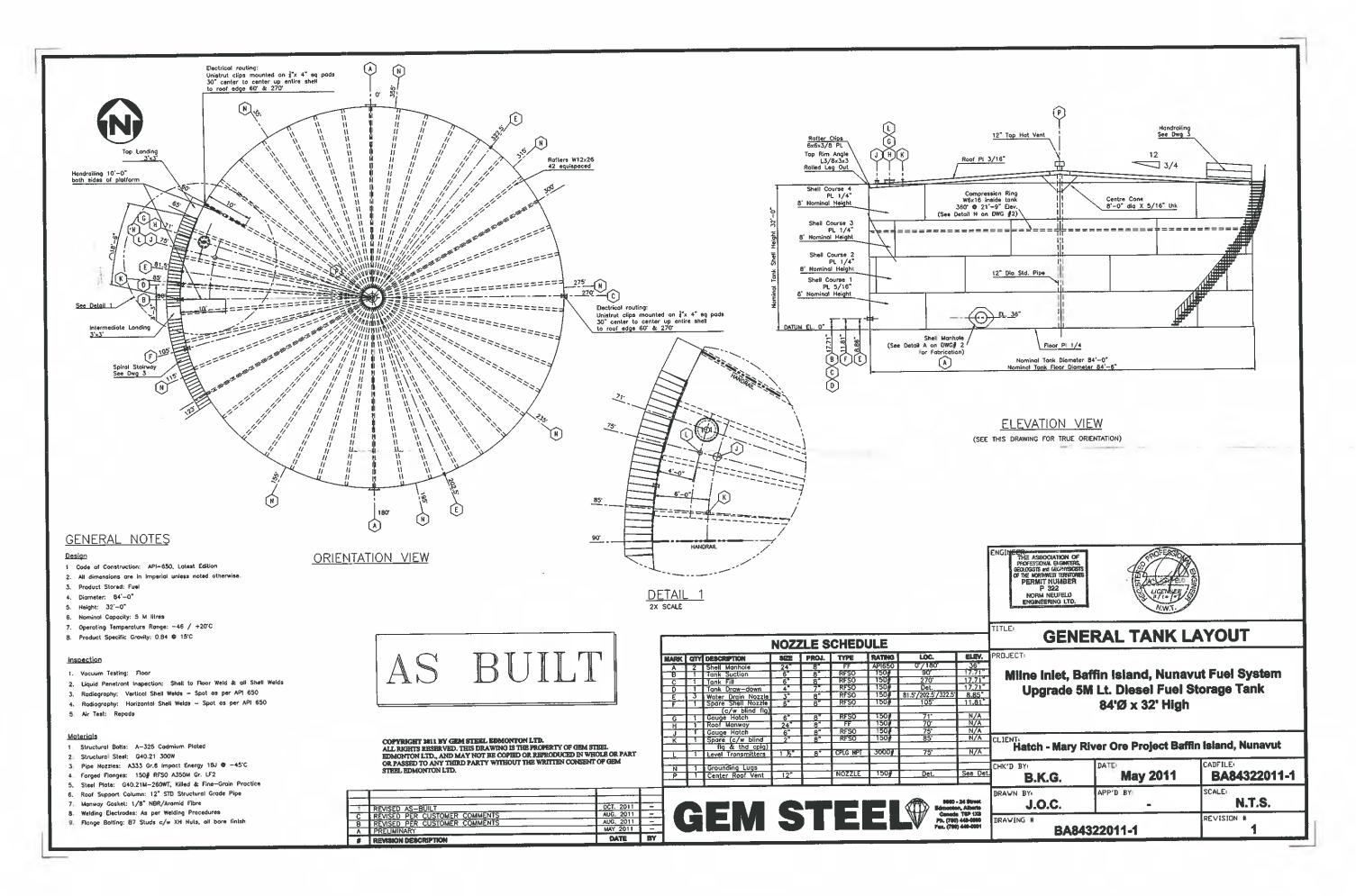
C1-163 of 486

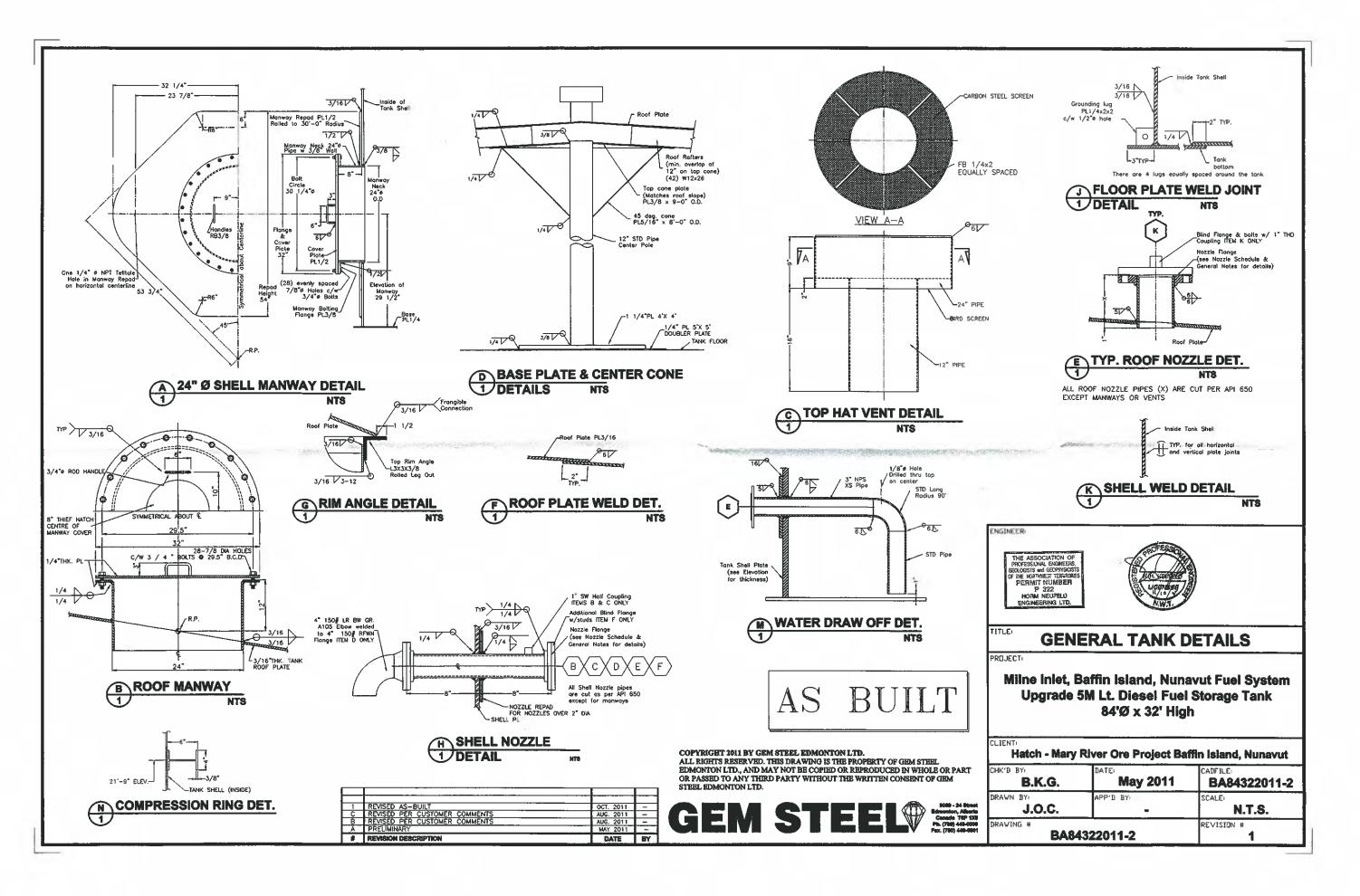


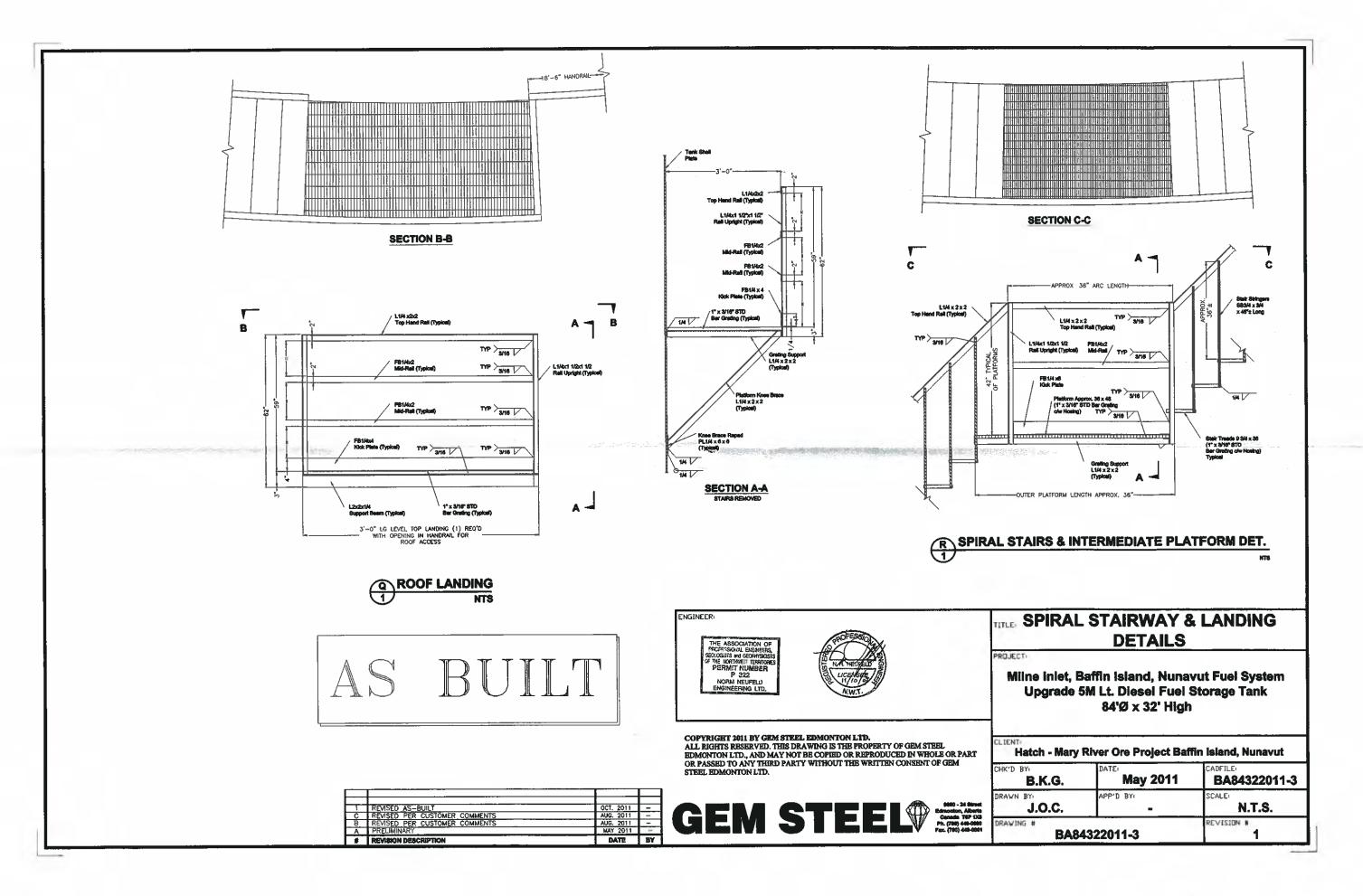


Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

#### 5.1 Tank As-Built Drawings











Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

5.2 Mill Test Reports (MTRs) and Certificates - Diesel Tank

C1-173 of 486



9060 – 24 St. Edmonton, AB. T6P 1X8 Phone (780) 449-0000 Fax (780) 449-0001

# MILL TEST REPORTS (MTR'S)

## PROJECT: MARY RIVER - BAFFIN ISLAND, <u>NUNAVUT</u>

PURCHASE ORDER# H377697-CM-010

1) 5 millon liter Diesel Fuel Storage Tank



#### 2011 MARY RIVER, BAFFIN ISLAND - MTR LIST OF MATERIALS - Wed-Oct-5-2011

Material Description	Heat Number
Cold Temp. Plate	
Plate 3/16" 260WT Cold Temp. Material	NW0790
	NW0854
	NW0863
	NW0858
	NW0860
Cold Temp. Plate	
Plate 1/4" 260WT Cold Temp. Material	NW0828
	NW0811
	NW0804
	NW0821
	NW0844
	NW0810
	NW0809
	NW0830
	NW0834
	NW0819
	NW0831
·	NW0843
Cold Temp. Plate	
Plate 5/16" 260WT Cold Temp. Material	NW0828
	NW0831
	NW0819
	NW0833
	NT6686
All 44W Grade Plate	
Plate 1/4" 44W	NW0667
Plate 3/8" 44W	1658L-04
Plate 1/2" 44W	E1A252
Plate 1-1/4" 44W	V305026
Beam	
W 12 X 26 Beam	22586470
	22568530
	22568530
	D 098967
	2103045
	22586530
	D 097161
	22586460
	2107168
	1107162
	1107167

#### 2011 MARY RIVER, BAFFIN ISLAND - MTR LIST OF MATERIALS - Wed-Oct-5-2011

	1107163
W 6 X 16 Beam	2004669
W O X TO Beam	2004003
Channel	
Angle Iron	
L 3 x 3 x 3/8 Angle Iron	SE1110059101
	SE1110059201
L 3 x 3 x 1/4 Angle Iron	SE1110148401
L C X C X II I Taliglio II C II	GETTTO 140401
L 2 x 2 x 1/4 Angle Iron	W904277
	W908728
	W907721
L 1-1/2 x 1-1/2 x 1/4 Angle Iron	SE1010067401
	N104483
Flat Bar	
Flat Bar 3/8 x 6	SE1010075701
	SE1110162702
Flatbar 1/4 x 6	R639946
Flat Bar 1/4 x 4	054040047004
rial bai 1/4 x 4	SE1010017601 SE1010284601
	3E1010204001
Flat Bar 1/4 x 2	SE1010090401
	SE1010581801
	SE1110223201
Hot Rolled Bar Stock	
Round bar 3/4" Square bar 3/4"	SE1010075201
Square par 3/4	N103588
ALL PIPE Grades / Schedules	
2" XS A333 Low Temp. Pipe	07506827
	10-A8715
	10603028
011 0 . 1 . 00 . 4400 D	
2"-Sch.80, A106B	556818
3" XS A333 Low Temp. Pipe	33330
	Y607-637
	930423
3" XS - A106B	1026650V
3" Sch.40 - A333 Low Temp. Pipe	36390
3" Sch.40 - A106	1105995

## 2011 MARY RIVER, BAFFIN ISLAND - MTR LIST OF MATERIALS - Wed-Oct-5-2011

	1240450
	31C158
4" XS A333 Low Temp. Pipe	O822342V
14 No Adda Low Temp. Tipe	B52873
	B02070
6" XS A333 Low Temp. Pipe	80893
7.6 7.666 Edw Tellip. Tipe	10324-49Y
	10021101
6" Std. A333 Low Temp. Pipe	1034963V
6" Std. A53 Pipe	C926150
12" Sch.40 - ASME A252 Grade 3	R10200525
ALL Flanges, Blinds, Elbows etc	
2"-150# -Raised Face Slip-On Flange - LF2 Low Temp.	48960
	931274
	28V0
	16V1
2"-150# -R.F. Blind Flange - LF2 Low Temp.	73669
	21382
3" - 150# - R.F.S.O. Flange - LF2 Low Temp.	31243
3" StdL.R.B.W. 90 Degree Elbow	751-0381
4" - 150# - R.F.S.O. Flange - LF2 Low Temp.	31240
4" - 150# - R.F.W.N. Flange - LF2 Low Temp.	74569
	31240
48 450 / D.E. D.E. J.E. J.E. J.E. J.E. J.E. J.E.	10/01070
4"-150# -R.F. Blind Flange - LF2 Low Temp.	10/31378
All Child D.D.M. CO.D Elbann	0.70007
4" StdL.R.B.W. 90 Degree Elbow	2-70387
6" - 150# - R.F.S.O. Flange - LF2 Low Temp.	31240
o - 150# - K.F.S.O. Flange - LF2 Low Temp.	802220
	4390797
6" - 150# - R.F. <b>W.N</b> . Flange - LF2 Low Temp.	362V9
100m-11.1. Tange - Li Z Low Temp.	555299
	000200
6"-150# -R.F. Blind Flange	09/36040
o room rui . Dillia i lange	21303
	21000
COUPLINGS & MISC. FITTINGS	
1-1/2" - 3000# Coupling	4773
2" - 3000# Coupling	4183
	4421

## 2011 MARY RIVER, BAFFIN ISLAND - MTR LIST OF MATERIALS - Wed-Oct-5-2011

2" Hex Plug - LF2	76569
	76569 72435
1" Soc-O-Let - 3000#	56348
	57433
	58038
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I certify the above to be correct as contained in the records of EVRAZ INC, NA By

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EVRAZ EVRAZ INC. NA Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203		REPORT OF CHEMICAL/PH	YSICAL TESTS	CERTIFICATE NO. DATE PAGE   1149953 Apr 11, 2011 1
RUSSEL METALS INC [EI ATTN:TIM MAIER PO BOX 4128 EDMONTON, AB T6E,472 CA	- (l	RUSSEL METALS INC P.O. BOX 4128 EDMONTON, AB TOI CANADA		MILL ORDER NO.  242387  CUSTOMER ORDER NO.  M62006238  JOBAREO. NO.  SHIPPING NO.  1149953  DATE  04/11/2011
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO CARBON STRUCTURAL QUALITY PLATE CSA G40 AVG @ -50 F (H) 20 FT.LBF MIN.	0.21-04 GRADE 2	NS AND PURCHASE ORDER REQUES TO SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE SERVIC	JIREMENTS FT.LBF	CARRIER UNION PACIPIC CARTRUCK NO. ORANGE
ПЭНИО DESCRIPTION	Y	MELD TENSILE % ELONG 11X 100 PSI X 100 B 2" % F	HARDNESS BEND RA BHN TEST	IMPACTS
1 0.1880 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57491 17 PCS 46903 LBS 5 PCS 13795 LBS	NW0860	472 635 25 480 635 27 LCVN @ -50 DEG F LCVN @ -50 DEG F 480 645 28 468 630 30 LCVN @ -50 DEG F	2.5mm 25 25 23 / 2.5mm 24 22 24 / 2.5mm 22 20 20 / 2.5mm 25 24 22 /	23 ft.lbf 20 ft.lbf
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I certify the above to be correct as contained in the records of EVRAZ INC. NA

By QUALITY COORDINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By _____ Control of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the s

**QUALITY COORDINATOR** 

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RUSSEL METALS INC   EDMONTON   ATTH TITM MAIRS   APT 30, 2011	Evra	z Oregon Si	<b>L</b> ee! 1440	EVRAZ INC	C. NA	nd Otogon	87002			REP	ORT OF	CHE	MICAL	/PHYSI	CAL TEST	S		CERTIFIC	ATE NO.	DATE	<del>-</del> -	-   rn
RUSSEL METALS INC EDMONTON    RUSSEL METALS INC-EDMONTON-BATES   242387				- m. m. argute t	5174., 1 01114	iu, Oregon	37 203													Apr	30,	2011
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THE MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS CARRON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 260WT CAT4. LCVN 20 FT.LBF  DESCRIPTION  PHYSICAL PROPERTIES    INION PACIFIC CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMPRICAND ORANGE   CAMP			D				æ ልጥ ⁴	_	3 11			, M	AB	T6E 4	T2					38		
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I certify the above to be correct as contained in the records of EVRAZ INC. NA By			1 CE	my me apove	e to ne cot	I FC I SE CO	ntained	in the reco	rds of EVRA	AZ INC. NA	Ву			مشر	tim lake							•

EVRAZ INC. NA Evraz Oregon Steel: 14400 N: Rivergate Bivd., Portiánd, Oregon 97203	***	REPORT OF CHEMICAL	PHYSICAL TESTS	DERTIFICATE NO. DATE  1149054 Apr 06, 2011 1
RUSSEL METALS INC [EXACTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T]	. •	RUSSEL METALS P.O. BOX 4128 EDMONTON, AB CANADA	INC-EDMONTON-BATES TEE 4T2	MILL ORDER NO. DATE  242387  CUSTOMER ORDER NO.  M62006238  JOBREO, NO.
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO	716 D MEET THE SPECIFICATIO	INS AND PURCHASE ORDER I	484 BAHO	SHIPPING NO. DATE 1149054 04/06/2011 CARRIER
CARBON STRUCTURAL QUALITY PLATE CSA G4 AVG @ -50 F (H) 20 FT.LBF MIN.	. (	60WT CAT4. LCVN  CAL PROPERTIES	20 FT.LBF	UNION PACIFIC CARTRUCK NO. ORANGE
DESCRIPTION	Y	YIELD TENSILE % ELONG SI-X 100 PSI X 100 8° 2'	HARDNESS BEND	IMPACTS
1 0.1880 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57491  2 PCS 5518 LBS	NW0863	473 635 30 468 635 28 LCVN @ -50 DES LCVN @ -50 DES	F 2.5mm 24 24 24 /	1
HEATANO C. May D. C. C.		MICAL ANALYSIS		and the second fire
HEATNO C Mn P S Si CU NW0863 09 1.06 .008 .009 29 .02 HEATS INDICATED WITH (+) WERE MELTE:	.05 .003 .0	D IN THE USA. HEA		CE McCount Spr Gran Sie
I certify the above to be correct as containe	d in the records of EVPA7 ii	NC NA By	QUALITY COOF	DINATOR

I certify the above to be correct as contained in the records of EVRAZ INC. NA By

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			l cert	ify the above	e to be corr	ect as co	ntained	in the rec	ords of ÉV	RAZING N	IA Ru				QUAL	TY CO	ORD	INATOR			
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<b>EVRAZ</b> EVRAZ INC. NA		REPORT OF CHEMICAL	/PHYSICAL TESTS	CERTIFICATE NO. DATE   PAGI
Evraz Oregon Steel 14400 N. Rivergate Bivd., Portland, Oregon 97203			<u>- Karangan Pangangan Pangangan Pangangan Pangangan Pangangan Pangangan Pangangan Pangangan Pangangan Pangan Pa</u>	1154179 Apr 30, 2011 1
				MILL ORDER NO. DATE
S RUSSEL METALS INC	[EDMONTON]		INC-EDMONTON-BATES	242388
ISO 9001 2 ATTN: TIM MAIER		P.O. BOX 4128		CUSTOMER ORDER NO.
REGISTER D PU BUX 4128	11	EDMONTON, AB	TEE 4T2 BAHO	M6200623B
EDMONTON, AB TEE	1/2	CANADA		JOB/REQ. NO.
TE PROV	IV /11		14×11	SHIPPING NO. DATE
	(-/7		[ [ 0 7 .	SHIPPING NO. DATE 04/30/2011
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUNI	TO MEET THE SPECIFICATION	NS AND PURCHASE ORDER	RECHIREMENTS	CARRIER
CARBON STRUCTURAL QUALITY PLATE CSA (	340.21-04 GRADE 2		20 FT.LBF	UNION PACIFIC
AVG @ -50 F (H) 20 FT.LBF MIN.	//			CAR/TRUCK NO.
4-				WHITE
	PHYS	CAL PROPERTIES		360
DESCRIPTION	HEAT NO. SLAB PS	YIELD TENSILE % ELONG SEX 100 PSI X 100 8" 2"	% RA BHN TEST	IMPACTS
1 0.2500 X 98.000ME X 528.000				
SCHEDULE B:7208.52.00.00		.		
PT# 57493				
2 PCS 7338 LBS	2			
2 103 /338 HB3	NW0811	605 785 24 610 795 26		••
. (			F 5.0mm 30 22 24 /	25
	7		F 5.0mm 30 24 23 /	
2 PCS 7338 LBS TOTALS		•		
	CHEM	IICAL ANALYSIS		
	u Ni V Ci		TI B N C	a CE McQuaig Bro
WW0811 15 1.19 .015 .005 27 .0	1 .04 023 .01	14 .046 .02 .00		GE Gran size
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HEATS INDICATED WITH (+) WERE MELT	ED & MANUFACTURE	O IN THE USA HEA	TS INDICATED WITH (^)	WERE ROLLED IN THE USA.
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= EV-TAZ-EVRAZINC-NA		REPORT OF CHEMICA	AL/PHYSICAL TESTS	CERTIFICATE NO. DATE	
EVIAZ Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203				1146798 Mar	24. 2017 1
	,			MILL ORDER NO.	DATE .
S RUSSEL METALS INC [ED]	MONTON]	RUSSEL METALS	F INC-EDMONTON-BAT	ES 242388	
ISO 9001 P ATTN: TIM MAIER					<del></del>
ACC OFFICE TO TO TO THE TELES		EDMONTON, AB	T6E 4T2		
		CANADA ,	1	JOB/REQ. NO.	
T CA	$\nu / l = 1$	11.	011		
	1/4/	14	X 9 pa	SHIPPING NO.	DATE
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THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO	MEET THE SPECIFICATION	S AND PURCHASE ORDER	REQUIREMENTS	CARRIER	03/21/2011
CARBON STRUCTURAL QUALITY PLATE CSA G40.	.21-04 GRADE 26			UNION PACTRIC	
AVG @ -50 F (H) 20 FT.LBF MIN.					
·			•		
	PHYSIC	AL PROPERTIES	3	(100g) in 44	
EVRAZINGENA   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET   CARGON STREET					
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I certify the above to be correct as contained in the records of EVRAZ INC. NA By

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## MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATION AND PURCHASE ORDER REQUIREMENTS  CARRON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADS 26 GWT CATA. LCVN 20 FT.LBP  DESCRIPTION  DESCRIPTION  DESCRIPTION  DESCRIPTION  1 146799  0.24/201:  CAMPINIS CAL PROPERTIES    M	Grand Control		ION, A	. 102	. (112	ゴィン	V. 11	`	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-	17	10.1		٠.					
## MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS  AVG @ -50 F (H) 20 PT.LBP MIN.    PHYSICAL PROPERTIES	TATE PROPU		•		. ~	-H	/4				14	DU		72 _A	11_	SHIPPING NO.		DATE	
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DESCRIPTION  HEAT NO. SLAB YIELD TENSILE % ELONG % AA HARDRESS BEED (BRIVE SCHEDULE B:7208.52.00.00 PT# 57493  7 PCS 25683 LBS  NW0804  565 765 22 605 800 21 LCVN @ -50 DEG F 5. Dmm 39 25 29 / 31 ft.lbf LCVN @ -50 DEG F 5. Dmm 39 11 46 / 29 ft.lbf  8 PCS 29352 LBS  NW0810  575 765 24 615 810 21 LCVN @ -50 DEG F 5. Dmm 39 12 46 / 29 ft.lbf  15 PCS 55035 LBS TOTALS  CHEMICAL ANALYSIS  HEAT NO. C Mm P S S CU NI V Cb AI Cr Mo Ti B N Ca CE MARKED CONTROL OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE ANALYSIS OF THE A							2017	CUZONI	BBO	DEPT	TEC					2008			
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QUALITY COORDINATOR			.										N //	1/	AV		. /		
I certify the above to be correct as contained in the records of EVRAZ INC, NA By	END	OF REPORT .		}								1 1	/} //	M / I	$I$ . $\Lambda_{L}$	Link			
I certify the above to be correct as contained in the records of EVRAZ INC, NA By	1.									L	ļ	<i>K</i>	<u>ما سامرة ال</u> م	اقر اق			×		L
I certify the above to be correct as contained in the records of EVRAZ INC, NA By										•			QUAL	ITY C	OOR	DINATO	R		•
		I certify the above	ve to be car	rect as co	ntained	in the reco	rds of EVF	RAZ INC. N.	A By		<u> </u>								·
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EVRAZ EVRAZ INC. NA Evraz Oregon Steel 14400 N. Rivergate Bivd., Portland, Oregon 97203  RUSSEL METALS INC [EDMONTON]	RUSSEL METALS INC-EDMONTON-BATES	CERTIFICATE NO.   DATE
DEGGET AGENTS THE ENDOWNERS	RUSSEL METALS INC-EDMONTON-BATES	MILL ORDER NO. DATE
ISO 9001  BEGISTIERO  CA  RUSSEL METALS INC (EDMONTON)  ATTN: TIM MAIER  PO BOX 4128  EDMONTON, AB T6E 4P2  (/	EDMONTON, AB T6E 4T2 CANADA  (48 H0	242388  CUSTOMER ORDER NO.  M62006238  JOB/REQ. NO.  SHIPPING NO.  1146680  03/24/2011
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICAT CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE AVG @ -50 F (H) 20 FT.LBF MIN.	250WT CAT4 LCVN 20 FT.LBF	CARRIER UNION PACIFIC CARVTRUCK NO. WHITE
FHYS	ICAL PROPERTIES	and the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of the first of t
DESCRIPTION HEAT NO. SLAB	YIELD TENSILE % ELONG HARDNESS BEND ST X 100 PSI X 100 8" 2" % RA BHN TEST	IMPACTS
1 0.2500 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57493  4 PCS 14676 LBS  NW0809  1 PC 3659 LBS  A PCS 22014 LBS	625 810 20 625 810 25 LCVN @ -50 DEG F 5. Dmm 25 36 28 / 2 LCVN @ -50 DEG F 5. Dmm 22 40 26 / 2 595 775 24 LCVN @ -50 DEG F 5. Dmm 3D 24 30 / 2 625 800 24 620 795 23 LCVN @ -50 DEG F 5. Dmm 26 40 30 / 3 LCVN @ -50 DEG F 5. Dmm 46 32 25 / 3	9 ft.lbf 8 ft.lbf 2 ft.lbf 4 ft.lbf
	Cb Al Cr Mo Ti B N Ca	
NW0828 14 1.21 .008 .004 25 .01 .05 018 .	014 .039 .03 .00 012 .043 .01 .00 014 .038 .02 .00 ED IN THE USA. HEATS INDICATED AITH ()	WERE ROLLED IN THE USA.

| certify the above to be correct as contained in the records of EVRAZ INC. NA | By _

C1-193 of 486

TALS INC [EDMONTON] MAIER 28	1 •		<del> </del>	1146680 Mar	24, 2011
AB T6E 4T2/1/		METALS INC-E X 4128 N, AB T6E 4	OI/	MILL ORDER NO. 242388 CUSTOMER ORDER NO. M62006238 JOB/REG. NO.	DATE
T/			D7 BAHO	SHIPPING NO. 1146680	DATE 03/24/201
LATE CSA G40.21-04 GRAJ				UNION PACIFI	c ·
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1	LATE CSA G40.21-04 GRAJ MIN.  HEAT NO. SLA  OTALS  Si Cu Ni V  5 26 .01 .05 .019  WERE MELTED & MANUFACT	PHYSICAL PROP   TENSILE   PSIX 100   PSIX 100   OTALS   CHEMICAL ANA	CHEINICAL ANALYSIS   Si	PHYSICAL PROPERTIES	1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146680   1146

C1-194 of 486

I certify the above to be correct as contained in the records of EVRAZ INC. NA By _

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E\	/R/	\Z	EVRAZ INC	. NA					RE	PORT O	F CHE	MICAL	/PHYSIC	AL TEST	S		CERTIFIC	ATE NO. D	ATE -		PAGI
Evraz C	regon Ste	el 14400	N. Rivergate B	IVI., Portland	, Oregon 8	7203												6681	Mar :		011 1
	-	1										•	-				MILL ORG	DER NO.	-	DATE	
	1	S	RUSSE	L META	LS IN	C [ED	MOTION	1}		RUSSE	L ME	rals	INC-E	DMONTON	V-BAT	ES	242	388			
<b>ISO</b> 9	<b>001</b>	0	ATTN:	TIM MA	IER					P.O.	BOX 4	128					CUSTOME	ER ORDER N	٥.		•
		P		X 4128					.	EDMON	TON,	AB	T6E 4	T2				00623	8		
REGIST			EDMON	TON, A	в т <u>6</u>	E 4T2	- :/1	ſ		CANAD	A				٠,		JOB/REQ.	NO.			
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THIS MATERI																	CARRIER				
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· .	•			7		300 ACV 1	alika a seksesi	F/51	YSICA	- p					<u> </u>			esistencytus/		system of the	9 - 4 <del>9</del> 5 - 8
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I certify the above to be correct as contained in the records of EVRAZ INC. NA By _

C1-195 of 486

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EV	R	7	EL 70 4 7 1 1 1 C	NA	•	*			REF	ORT OF	CHEM	AICAL/	PHYSIC	AL TEST	S		CERT	IFICATE NO.	DATE		PAGE
Evraz Or	regon Ste	el 14400 f	EVKAZ INC. I. Rivergate Bir	, NA vd., Portland	, Oragon 9	7203				-11.	4.,,,,,,			A	<b>-</b>		1	146682	Mar	24, 2	011 2
<u> </u>		1.															Mill	ORDER NO.		DATE	
		s	RUSSEI	L META	LS IN	C [EDI	MONTO	4]	1	RUSSEL	MET.	ALS :	INC-EI	OTIOMO	N-BA	TES	2	42388	.	•	
100 00	204	ŏ		TIM MA					,	P.O. B	OX 4	128					CUST	OMER ORDER	NO		
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CARBON	STRUC	TURAL	QUALIT	ry PLA	TE CS	A G40	. 21 - 04	4 GRAD	B 260W	r CAT4	./L	CVN	20 FT	LBF			U	NION P	ACIFI	c	
AVG @ -										/	<u> </u>	,					CAR/	TRUCK NO.			
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e Salar e					j <u>-</u>			PH'	YSICAL	. PRO	233	TIES									
					,				VIELD	TENSIL	E % El	LONG		HARDNESS	BEND	•			A OTO		
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								1	59.	5 77	5 27										
į.				•		/			1 :	LCVN @	-50	DEG	F 5.	0mm 2	3 2	29	/ 25	ft.1b	f		
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certify the above to be correct as contained in the records of EVRAZ INC. NA By

	ΞV	R/	١Z	EVRAZ INC N. Rivergate B	. NA		202			REP	ORT OF	CHEM	IICAL/	PHYSIC	AL TEST	<b>S</b>	, ·	RTIFICATE NO. 1	DATE Mar 3	1. 20	,,,,,,
ISC	9(	001	S O L D	RUSSE ATTN:	L META	LS INC	·············		τ(	P	RUSSEL P.O. E EDMONT	OX 4	128		DMONTO	N-BATI	ES CL	LL ORDER NO. 242388 ISTOMEN ORDER I M6200623 BRIEG, NO.	YO.	DATE	
			0				TL	- 14			·	148	34	<del></del>	Bot	HO	)	1148255		DATE 03/3:	1/2011
CARI	NOE	STRUC	TURA.	NUFACTURI L QUALI 20 FT	TY PLA	TE CSA	JND TO	MEETTHE 1.21-04	SPECIFIC	EATIONS AN	D PURCI	HASE OF	RDER R CVN	EQUIREJ 20 FT	MENTS '. LBF			UNION PA AR/TRUCK NO. ORANGE	CIFIC		
				•				ike a saasaatti	DE L	SICAL	PEO	PERT	TIES					OXULIGI		-	
ПЕМ МО	2265.08		D	ESCAIPTIC	)N			HEAT NO		YIELD	TENSIL	E % EL	ONG	% RA	HARDNESS BHN	BEND TEST	<u>, i</u>	IMP	ACTS		
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		7 PC		25683 L			^	NW0810	1	1	S 81 CVN @	T T	DEG		1	1		t ft.lbi			<i>.</i>
				130/0		- /		//		610		0 21							•		
		:		<u>-</u>	* *				CH	HEMICA	L AN	ALYS	SIS		I	<u> </u>					
TASH 080WM 180WM 180WM	)4 LO		Mn 1.23 1.24 1.20	P .013 .014 .010	.005 .004 .005	22 25 25	.01 .01 .01	. Ni .04 .04	V .017 .017	Cb .013 .014	Al . 042 . 041 . 045	Cr .03 .03 .05	.00 .00 .00	-	В	N	Ca			CE	McCusid Byn Grein Size
I	IEAT	S IND	ICAT	ED WITH	(+) W	BRB M	LTED	& MA	NUFACT	URED I	N THE	USA.	нва	TS IN	DICATE	DWIT	H (^)	VERE ROLI	BD IN	THE	USA.
														Ŕ.	AUDI IAUO	ITY C	OORDI	NATOR			
		. ,		rtify the abov	e to be cor	rect as co		in the rec			A By_				- Caronia	<del> </del>					

EVRAZ EVRAZ INC. NA		REPORT OF CHEMI	CAL/PHYSICAL TESTS	CERTIFICATE NO. DATE PAGE
Evraz Oregon Steel 14400 N. Rivergate Bivd., Port	and, Oregon 97203			1148255 Mar 31, 2011 2 MILL ORDER NO. DATE
ISO 9001 P ATTN:TIM N		RUSSEL META P.O. BOX 41 EDMONTON, A	•	242388 CUSTOMER ORDER NO. M62006238
REGISTERED D EDMONTON, CA O CA	AB T6E 4T2 // (1	CANADA	484 BA HO	JOB/REQ. NO. DATE 1148255 03/31/2011
THIS MATERIAL HAS BEEN MANUFACTURED, TEST CARBON STRUCTURAL QUALITY PI AVG @ -50 F (H) 20 FT.LBF M	LATE CSA G40.21-04 GRADE	TIONS AND PURCHASE ORD	DER REQUIREMENTS VN 20 FT.LBF	CARRIER UNION PACIFIC CARVIRUCK NO.
		SICAL PROPERTI	==	ORANGE
DESCRIPTION	HEAT NO. SLAB	YIELD TENSILE % ELC PSI-X 100 PSI X 100 B'	NG HARDNESS BEND	IMPACTS
1 0.2500 X 98.000ME X 528.00	00			
4 PCS 14676 LBS	NW0819		DEG F 5.0mm 2B 3D 29	
1 PC 3669 LBS	^ NW0821	575 770 24 565 760 27	DEG P 5.0mm 39 24 31	/ 21
		LCVN @ -50	DEG F 5.0mm 34 29 26	
1 PC 3669 LBS	7 NW0831	590 775 23 615 790 24 LCVN @ -50	DES F 5.0mm 44 28 24 DES F 5.0mm 18 20 23	/ 32 ft.lbf
		LCVN @ -50	DEG F 5. Umm 18 20 23	, 20 10.101
		EMICAL ANALYS		Ca CE McOuld Company
HEAT NO. C Mn P S NW0819 14 1.20 .010 .00	5 25 .01 .05 .016	Cb Al Cr .017 .045 .05 .012 .033 .03	Mo Ti B N	Ca CE Manage
NW0821 15 1.21 .010 .00 NW0831 15 1.20 .018 .00	- [	.016 .046 .02	.00	
HEATS INDICATED WITH (+)	WERE MELTED & MANUFACT	RED IN THE USA.	HEATS INDICATED WITH	WHERE ROLLED IN THE USA.
			QUALITY COC	POMINATOR
	correct as contained in the records of EVF	RAZ INC. NA By	QUALITY COL	JRUINARUK

I certify the above to be correct as contained in the records of EVRAZ INC. NA By ...

 $(1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta)^{2} + (1-\delta$ 

SO 9001  SO PROMETER STATES INC [EDMONTON]  ATTN:TIM MATER PO BOX 4128  EDMONTON, AB T6E 4T2  CANADA  IS MATERIAL HAS SEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE AND FOUND TO MEET THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS AND THE SPECIFICATIONS	EVRAZ	EVRAZ INC. NA		REPORT OF CH	EMICAL/PHYSIC	CAL TESTS	CERTIFICATE NO. DATE	P
RUSSEL METALS INC [EDMONTON] ATTH:TIM MAIRR POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128 POROX 4128	Evraz-Oregon Steel-14	400 N. Rivergate Bivd., Portland, Oregon 97203				<del></del>		
ATTN:TIM MAIRE   PO BOX 4128   BIMONTON, AB T6E 4T2   CANADA   M6206238   JUSAGE WG.		RUSSEL METALS INC (RE	MONTONI	PHISSEL MI	TALE THE T	פשייה מיינים - ארוייתרואתי	1	
EMMONTON, AB T6E 4T2 CA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANADA  CANAD		1				DROW DATES		<del></del>
CANADA		PO BOX 4128				T·2	M62006238	
1148254   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/		EDMONTON, AB TEE 4T2	1011	CANADA			JOB/REQ. NO.	
1148254   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   13/8824   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/31/20   03/	TATEPROOF T	CA CA	> /11 4	111-	.11.	0.4		
IS MATERIAL HAS SEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PORCHASE ORDER REQUIREMENTS CARRON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 250WT CAT4. LCVN 20 FT.LBF  UNION PACIFIC CAMPRICK NO. BLUE  PHYSICAL PROPERTIES  O DESCRIPTION  HEAT NO. SLAB PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100 PSIX 100	•	T . T	<b>ン/ Y</b>	147	, 4	ph HO	1	
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PHYSICAL PROPERTIES  DESCRIPTION  HEAT NO. SLAB PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 100 PSX 10	CARBON STRUCTUI	RAL QUALITY PLATE CSA G40	.21-04 GRADE 26	SOWT CAT4.	LCVN 20 FT	MENTS LBF		<u>.</u>
DESCRIPTION    HEAT NO.   SLAB   YIELD   TENSILE   % ELONG   8' 2'   % PA   HARDRES   BEND   TEST   IMPACTS			1				<u> </u>	-
DESCRIPTION  HEAT NO. SLAB PSIX 100 PSIX 100 F 2 RAA HARDNESS SEND IMPACTS  LCVN @ -50 DEG F 5. Dmm 4# 2B 24 / 12 ft.lbf  LCVN @ -50 DEG F 5. Dmm 19 2D 23 / 20 ft.lbf    CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSIS   CHEMICAL ANALYSI			(			·	BLUE	
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11 PCS 40359 LBS NW0831	x0	DESCRIPTION	HEAT NO. SLAB PSI	ELD TENSILE %	ELONG 8° 2° % RA		IMPACTS	
CVN @ -50 DE3 F 5.0mm 19 20 23 / 20 ft.1bf   15 PCS   55035 LBS TOTALS     CHEMICAL ANALYSIS     EAT NO.   C   Mn   P   S   S  Cu   Ni   V   Cb   Ai   Cr   Mo   Ti   B   N   Ca     CE   MS250   Co   CE   MS250   Co   CE   MS250   Co   CE   MS250   Co   CE   CE   CE   CE   CE   CE   CE	0.2500 X 98.0	00MR X 528.000				ŀ		
CVN @ -50 DE3 F 5.0mm 19 20 23 / 20 ft.1bf   15 PCS   55035 LBS TOTALS     CHEMICAL ANALYSIS     EAT NO.   C   Mn   P   S   S  Cu   Ni   V   Cb   Ai   Cr   Mo   Ti   B   N   Ca     CE   MS250   Co   CE   MS250   Co   CE   MS250   Co   CE   MS250   Co   CE   CE   CE   CE   CE   CE   CE	11 700	10350 755						
CHEMICAL ANALYSIS  EAT NO. C Mn P S SI CU Ni V Cb Al Cr Mo Ti B N Ca CE MAN  0831 15 1.20 .018 .005 21 .01 .05 .021 .016 .046 .02 .00  HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.	11 PCs	40359 LBS	NW0831	1	1 1	1 1 1		
CHEMICAL ANALYSIS  EAT NO. C Mn P S SI Cu Ni V Cb Al Cr Mo Ti B N Ca CE MSST  10831 15 1.20 .018 .005 21 .01 .05 021 .016 .046 .02 .00  HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.				TOW & L	DEG F 5.	PIRT 19 20 23 /	20 It.1DI .	
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I certify the above to be correct as contained in the records of EVRAZ INC. NA By

FVRA7	REPORT OF CHEMICAL/PHYSICAL TESTS	CERTIFICATE ND. DATE PAGE
EVRAZ INC. NA Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203	HEI SHE ST SHEMISTER HEISTONE TESTS	1146885 Mar 25, 2011 1
		MILL ORDER NO. DATE
RUSSEL METALS INC [EDMONTON]	RUSSEL METALS INC-EDMONTON-BATES	242388
	P.O. BOX 4128	CUSTOMER ORDER NO.
ISO 9001 P ATTN: TIM MAIER	EDMONTON, AB T6E 4T2	M62006238
PU BUA 9128	CANADA	JOB/REQ. NO.
& BEMONTON, AB 135 412	CANADA	doubled No.
TATE PROPERTY CA	1401/ 24 46	SHIPPING NO. DATE
10/4	1484 BA HO	l l
	1 10	1146885 03/25/2011
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATION		CARRIER
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE 2	60WT CAT4. LCVN 20 FT.LBF	UNION PACIFIC
AVG @ -50 F (H) 20 FT.LBF MIN.		CAR/TRUCK NO.
		WHITE
PHYSI	CAL PROPERTIES	
	YIELD TENSILE % ELONG HARDNESS BEND SI-X 100 PSI X 100 8° 2° % RA BHN TEST	IMPACTS
1 0.2500 X 98.000ME X 528.000	37 (00 ) div (00 ) 0 L	
SCHEDULE B:7208.52.00.00		•
PT# 57493		
F1# 57493		
10 000 2000 700	525 000 24	,
10 PCS 36690 LBS NW0830	625 800 24	• •
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	LCVN @ -50 DEG F 5.0mm 26 40 30 /	
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10 700 25500 770 770		
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CHEN	MICAL ANALYSIS	
1127411121 2 1111 1 1 1 1 1 1 1 1 1 1 1 1 1		Ca CE MoQuaid Brin Grain Size
NW0830 14 1.25 .013 .005 26 .01 .05 030 .0	14 .038 .02 .00	
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURE	D IN THE USA. HEATS INDICATED WITH (^	) WHERE ROLLED IN THE USA.
END OF REPORT		
		July 1
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CA	RBON STRUCTU	RAL QUALITY PLATE C	SA G40.21-04	GRADE	260WT	CAM4.	LCVN	20 F7	LBP	•		UNION I	PACIFI	C	
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EVRAZ INC. NA Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203		ALTON OF GREWIGE	L/PHISIGAL 1ESIS	1
		T		1146888 Mar 25, 2011 1
RUSSEL METALS INC [EI	MONTONII	DITCORT ACRONAL	TIG TOMOTON DISTRICT	
· · · · · · · · · · · · · · · · · · ·	DMONTON	1 .	INC-EDMONTON-BATES	242388
ISO 9001 2 ATTN: TIM MAIER PO BOX 4128		P.O. BOX 4128	•	CUSTOMER ORDER NO.
REGISTERED D		EDMONTON, AB	T68 4T2	М62006238
EDMONTON, AB T6E 4T2  T CA	7/1/4	CANADA	· · · · · · · · · · · · · · · · · · ·	JORAREO. ND.
Z _{47E PROOF}	$\mathcal{I}_{\mathcal{U}}$	11151		
T	_/ 4	1474	BA HO	SHIPPING NO. DATE
		101	- +	1146888 03/25/2011
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO	MEET THE SPECIFICATION	AS AND PURCHASE ORDER	REQUIREMENTS	CARRIER
CARBON STRUCTURAL QUALITY PLATE CSA G40	).21-04 GRADE 2	60WT CAT4. LCVN	20 FT.LBF	UNION PACIFIC
AVG @ -50 F (H) 20 FT.LBF MIN.		<i>/</i> ·		CAR/TRUCK NO.
	1	<u> </u>	<u> </u>	ORANGE
	PHYSI	CAL PROPERTIES		
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	HEAT NO. SLAB PS	I-X 100 PSI X 100 8 2	% RA BHN TEST	IMPACTS
1 0.2500 X 98.000ME X 528.000				
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			· [ ]	
3 PCS 11007 LBS	NW0809	625 810 20		
1		625 810 25		••
		LCVN @ -50 DE	G F 5.0mm 25 36 28 /	29 ft.lbf
			GF 5.0mm 22 40 26 /	
6 PCS 22014 LBS	NWOB11	605 785 24		
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( )		LCVN @ -50 DE	G F 5.0mm 30 22 24 /	25 ft 15f
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I certify the above to be correct as contained in the records of EVRAZ INC. NA By

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EVRAZINO NA		REPORT OF CHEMI	CAL/PHYSICAL TESTS	CERTIFICATE NO. DATE
Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203				1149951 Apr 11, 2011 1
PHECEN ACCUSE THE				MILL ORDER NO. DATE
S RUSSEL METALS INC [E	DMONTON]		LS INC-EDMONTON-BATES	242388
ISO 9001 2 ATTN: TIM MAIER PO BOX 4128		P.O. BOX 412		CUSTOMER ORDER NO.
REGISTERED DEDMONTON AR THE ATT	,	EDMONTON, AI	B T6E 4T2	M62006238
T CA	01/11	CANADA	· · · · · · · · · · · · · · · · · · ·	JOB/REQ. NO.
O O	V /u		•	·
	V1	IURY	BA: HO	SHIPPING NO. DATE
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO	WEET THE OPENION AND	1101	21 HO	1149951 04/11/2011
CARBON STRUCTURAL QUALITY PLATE CSA G4	0.21-04 GRADE 26	NS AND PURCHASE ORD	ER REQUIREMENTS	CARRIER
AVG @ -50 F (H) 20 FT.LBF MIN.	or diameter	CATA. LC	N 20 FT.LBF	UNION PACIFIC
	1.			CAR/TRUCK NO:
	PHYSIC	AL PROPERTIE	<del>-</del> S	BLUE
DESCRIPTION		ELD TENSILE % ELON		Late the second section is a second section.
		X 100 PSI X 100 8 2	IG HARDNESS BEND % RA BHN TEST	IMPACTS
1 0.2500 X 98.000ME X 528.000				
SCHEDULE B:7208.52.00.00				·
PT# 57493				
		·		
2 PCS 7338 LBS ^	MW0809	625 810 20		
//		625 810 25		••
		LCVN @ -50 D	EG F 5.0mm 25 36 28 /	29 ft.lbf
		LCVN @ -50 D	EG F 5.0mm 22 40 26 / :	
3, 500				
3 PCS 11007 LBS	NW0811	605 785 24		
/		610 795 26		٠ ,
/		L VN @ -50 D	EFF 5.0mm 30 22 24 / 3	25 ft.lbf
		LCVN @ -50 D	EG F 5.0mm 30 24 23 / 2	25 ft.lbf
1 PC 3669 LBS				
1 FC 3009 LBS		575 770 24	1. 1.	
		565 760 27		
LICATA NO.	CHEMI	CAL ANALYSIS		
HEAT NO: C Mn P S SI Cu W0809 14 1.20 .016 .003 .20 .91	NI V Cb		do Ti B N Ca	CE McChaid Enn
mtn 011 7 7 100 100 100 100 100 100 100 100	.04 021 .014	.	00	Unan 828
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I certify the above to be correct as contained in the records of EVRAZ INC. NA

By QUALITY COORDINATOR

EVRAZ EVRAZ INC. NA						61Au355
EVRAZ INC. NA Evraz Oregon Steel 14400 N. Rivergate Bivd., Portland, Oregon 97203		REPORT OF (	HEMICAL/PHYS	ICAL TESTS	CERTIFICATE NO. DATE	
14400 N. Hivergate Bivd., Portland, Oregon 97203		<del></del>				r 24, 2011 1
S RUSSEL METALS INC [	:D1(0);mo.:1			•	MILL ORDER NO.	DATE
	EDMONTON]			EDMONTON-BATES	242388	
130 900   L PO BOX 4128		P.O. BO			CUSTOMER ORDER NO	
REGISTERED	2	CANADA	N, AB TEE	4T2	M62006238	·
EDMONTON, AB TEE 47	TD 1/11	CANADA	. /	A Company	JOB/REQ. NO.	
O .	H /4	- 1   11	100	01 1/-	CUIDDING NO	
	1.0/		107	BA HO	SHIPPING NO. 1146682	DATE
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND T	O MEET THE SPECIFICAT	TIONS AND PURCHA	SE OBDER REQUIRE	MENTE	CARRIER	03/24/2011
CARBON STRUCTURAL QUALITY PLATE CSA G4	0.21-04 GRADE	260WT CAT4.	LCVN 20 F	r.lbf	UNION PACIFI	rc '
AVG @ -50 F (H) 20 FT.LBF MIN.	(				CARVTRUCK NO.	
	<i></i>		•		ORANGE	
Maria de la companya de la companya de la companya de la companya de la companya de la companya de la companya	PHYS	SICAL PROPI	ERTIES			
TIDAMO DESCRIPTION		YIELD TENSILE	% ELONG	HARDNESS BEND		·
1 0.2500 X 98.000MB X 528.000	HEAT NO. SLAB	PSI-X 100 PSI X 100	8" 2" % PA	BHN TEST	IMPACTS	
SCHEDULE B:7208.52.00.00						
PT# 57493				•		•
7 PCS 25683 LBS ^	NW0804	565 365				
	140004	565 765 605 800	1 1			• •
		1 1	4 7	0mm 39 25 29 /		
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1 PC 3669 LBS	NW0810	575 765	24			•
		615 810	21			\$
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		LCVN @	50 DEG F 5.	0mm 10 25 26 /	20 ft.1bf	
1 PC 3669 LBS	NW0821	575 770	24			
		.565 760	27		•	
UP AT NO.	CHE	MICAL ANAL	YSIS		<b>.</b>	_
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	· · ·	<u></u>		OHALITY COOPE		<b></b>
I certify the above to be correct as contained	in the records of EVRA7	INC. NA By		QUALITY COORE	INATUR	
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EVRAZ EVRAZ INC. NA  Evraz Oregon Steel 14400 N. Rivergete Blvd., Portland, Oregon 97203  RUSSEL METALS INC [EDMONTON]  ATTN: TIM MAIRR  PO BOX 4128  EDMONTON, AB T6E 4T2  CA	RUSSEL META P.O. BOX 41 EDMONTON, A CANADA	•	1149951 Apr 11, 2011 3 MILL ORDER NO. DATE 242388 CUSTOMER ORDER NO. M62006238 JOBARGO NO.
ISO 9001 D ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2	P.O. BOX 41 EDMONTON, A	128	242388 CUSTOMER ORDER NO. M62006238
ISO 9001 D ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2	P.O. BOX 41 EDMONTON, A	128	CUSTOMER ORDER NO. M62006238
ISO 9001 D ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2	P.O. BOX 41 EDMONTON, A	128	M62006238
BEGISTERED D PO BOX 4128  REMONTON, AB T6E 4T2	EDMONTON, A	•	M62006238
REGISTERED D EDMONTON, AB T6E 4T2	· ·	AB T6E 4T2	
RDMONTON, AB T6E 4T2	CANADA 1480	· /	JORNHEIT WO.
TA CA	1489	• /	
1 /4	1484	1 /	
	190		SHIPPING NO. DATE
		1 A $10$	1149951 04/11/2011
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THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATION	INS AND PURCHASE OH	dint of him this	UNION PACIFIC
CARBON STRUCTURAL QUALITY PLATE CSA G40.21-04 GRADE	60WT CAT4.	CVN 20 FT.LBF	
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		· · · · · · · · · · · · · · · · · · ·	BLUE
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1 PC 3669 LBS / NW0844	LCVN @ -50	DEG F 5.0mm 23 26 29 /	26 ft.lbf
	LCVN @ -50	DEG F 5.0mm 49 27 33 /	36 ft.1bf
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13 PCS 47697 LBS TOTALS			
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HEATS INDICATED WITH (+) WERE MELTED & MANUFACTUR	ED IN THE USA	HEATS INDICATED WITH (^	) WERE ROLLED IN THE USA.
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END OF REPORT	}		
			/ / / / / / / / / / / / / / / / / / /
	<del></del>		
		QUALITY COOF	POINATOR
I certify the above to be correct as contained in the records of EVRAZ	INC. NA By	<u> </u>	

C1-208 of 486

RUSSEL METALS INC [RIMONTON]   RUSSEL METALS INC -EDMONTON-BATES   242348   ATTN:TIM MATER   DE DEC 4128   EDMONTON, AB T6E 4T2   CANADA   MG 2006238   COMMON TON-BATES   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CANADA   MG 2006238   CAN		EV	RA egon Stee		VRAZ INC.		Oregan 9720	13			REP	ORT OF	CHEM	ICAL/F	HYSIC	AL TEST	S		CERTIFICATE 11466	82 Ma	F 24, 20	11 1
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUNDTO MEET THE SPECIFICATIONS AND FURCHASE CHORR REQUIREMENTS CARBON STRUCTURAL QUALITY PLATE CSA 940.21.04 GRADE 2650T CAT4. LCVN 20 FF.LBF    CARBON STRUCTURAL QUALITY PLATE CSA 940.21.04 GRADE 2650T CAT4. LCVN 20 FF.LBF    CARBON STRUCTURAL QUALITY PLATE CSA 940.21.04 GRADE 2650T CAT4. LCVN 20 FF.LBF    DESCRIPTION	REG	ISTE	RED	O L	ATTN:T PO BOX EDMONT	IM MAI 4128	ER		OUTON	) / ₁₁	P	O. BO	OX 4:	L28 _.			N-BA:	Ces	24238 CUSTOMER 0 M6200	8 RDER NO 6238	·	
THE MATERIAL HAS SEEN MANUFACTURED TESTED AND FORMED BETTINES SUBMIT PACT STATES AND PROTEST CATA LCUN 20 FT. LBF    CARRON STRUCTURAL QUALITY PLATE CSA 640.21-04 GRADE 2588T CATA LCUN 20 FT. LBF   CARRON STRUCTURAL QUALITY COORDINATOR	***A	41E PRO	SNOE		CA			1	L /4	f"			4	34	,	BA	Н	0	1			1/2011
DESCRIPTION  HEAT NO. SLAB POX 100 FENSILE % FLOND FOR BINN THE SEND FOR BINN THE SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE STATE OF SEND FOR BINN THE ST	CAR	RBON	STRUC	TURAL	TILLAUQ	Y PLAT	E CSA	G40	MEET THE 21-04	SPECIFIC GRADE	ATIONS AND 260WT	CAT4	ASE OF	DER RI	QUIREN 20 FT	MENTS .LBF			UNION	(0,	IC	
1 0.2500 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57493  7 PCS 25683 LBS  NW0804  565 765 22 605 800 21 LCVN @ -50 DE3 F 5.0mm 39 25 29 / 31 ft.lbf LCVN @ -50 DE3 F 5.0mm 30 13 46 / 29 ft.lbf  1 PC 3669 LBS  NW0810  575 765 24 615 810 21 LCVN @ -50 DE3 F 5.0mm 35 28 28 / 31 ft.lbf LCVN @ -50 DE3 F 5.0mm 10 25 26 / 20 ft.lbf  1 PC 3669 LBS  NW0821  575 770 24 565 765 27  CHEWIGAL ANALYSIS  HEAT NO. C Mn P S SI CU N V Cb AI Cr Mo T B N Ca CE NW0801 15 1.24 .014 .004 .25 .01 .04 .017 .013 .042 .03 .00 NW0810 .15 1.24 .014 .004 .25 .01 .04 .017 .013 .042 .03 .00 NW0821 .15 1.21 .010 .003 .22 .01 .05 .013 .012 .033 .03 .00 HEAT INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH () WERE ROLLED IN THE USA.	77410			DE	SCRIPTIO	N			LIEAT NO		YIELD	TENSIL	E % EL	ONG	% 84		BEND TEST			IMPACTS	· · · · · · · · · · · · · · · · · · ·	
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HEATNO. C Mn P S SI CU NI V Cb AI Cr Mo TI B N Ca CE NW0804 .14 1.23 .013 .005 .22 .01 .04 .017 .013 .042 .03 .00 NW0810 .15 1.24 .014 .004 .25 .01 .04 .017 .014 .041 .03 .00 NW0821 .15 1.21 .010 .003 .22 .01 .05 .013 .012 .033 .03 .00 HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH () WERE ROLLED IN THE USA.  QUALITY COORDINATOR			1 PC	. ,3	669 LB:	5		A	NW0821		575	77	70 24		P 5.	0mm ]	0 25	26 /	20 ft	.lbf		
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QUALITY COORDINATOR	NWO 8	304 310 321	.14 .15 .15	1.23 1.24 1.21	.013 .014 .010	.005	22 25 22	.01 .01 .01	.04	017 017 013	.013 .014 .012	.042 .041 .033	.03	.00						$ \uparrow $		
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				Lceri	ify the abov	re to be cor	rect as co	ntained	in the reco	ords of EV	RAZ ING. N	A By.		·		QUAI	LITY	COO	RDINAT	)R		· .

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Evraz O	regon Ste	ei 14400 i	N. Rivergate Bi	ivd., Portland	Oregon 97	203											1	146681 :	Mar 2	4, 20 DATE	11 2
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L VIAZ OTEGOTI Steel 14400 N. Rivergate Biva., Portland, Oregon 97203				1154180 Apr	30, 2011
s RUSSEL METALS INC [	EDMONTONI	PHEGET, MEMAT.C.	INC-EDMONTON-BATES	MILL ORDER NO.	DATE
ISO 9001 2 ATTN: TIM MAIER		P.O. BOX 4128	INC-EDMONION-BAIRS	242389 CUSTOMER ORDER NO.	
	, u	EDMONTON, AB	T6E 4T2	M62006238	
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I certify the above to be correct as contained in the records of EVRAZ INC. NA By QUALITY COUNDINA FO

EVRAZ EVRAZINO NA	REPORT OF CHE	MICAL/PHYSICAL TESTS	CERTIFICATE NO.   DATE
RUSSEL METALS INC [1 ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB TEE 47 CA	EDMONTON]  RUSSEL MET P.O. BOX 4 EDMONTON, CANADA	TALS INC-EDMONTON-BATES A128 AB T6E 4T2	TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABLE   TABL
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND T CARBON STRUCTURAL QUALITY PLATE CSA G4 AVG @ -50 F (H) 20 FT.LBF MIN.	40.21-04 GRADE 280WT CAT4. L	CVN 20 FT.LBF	CARRIER UNION PACIFIC CARATRUCK NO. WHITE
ПВИ DESCRIPTION	PHYSICAL PROPERT		
1 0.3130 X 98.000ME X 528.000 SCHEDULE B:7208.52.00.00 PT# 57495  13 PCS 59709 LBS  13 PCS 59709 LBS TOTALS	TCAN @ 120	DEG F 5.0mm 28 30 28 / 2 DEG F 5.0mm 49 48 43 / 4	IMPACTS  28 ft.lbf 46 ft.lbf
HEAT NO. C Mn P S SI Cu NW0828 14 1.21 .008 .004 .35	CHEMICAL ANALYSI	Ma Ti a	
HEATS INDICATED WITH (+) WERE MELTED	.05 018 .012 .043 .01	.00	CE MONTHE USA.
certify the above to be correct as contained i		QUALITY COORD	NATOR
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Evraz O	regon Ste	el 14400		Blvd., Portlan	d, Oregon 9	7203									<del>-</del>		1146886	Mar	25, 2	011 1
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C1-214 of 486

I certify the above to be correct as contained in the records of EVRAZ INC, NA By _______

EVRAZ EVRAZ INC. NA Evraz Oregon Steel 14400 N. Rivergate Blvd., Portland, Oregon 97203	:	REPORT OF CHEMICA	L/PHYSICAL TESTS	CERTIFICATE NO. DATE PAGE 1149948 Apr 11, 2011 1
RUSSEL METALS INC [ED] ATTN: TIM MAIER PO BOX 4128 EDMONTON, AB T6E 4T2 CA		RUSSEL METALS P.O. BOX 4128 EDMONTON, AB CANADA	•	MILL ORDER NO. DATE  242389  CUSTOMER ORDER NO.  M62006238  JOB/REQ. NO.  SHIPPING NO. DATE
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO CARBON STRUCTURAL QUALITY PLATE CSA G40 AVG @ -50 F (H) 20 FT.LBF MIN.	MEET THE SPECIFICATION .21-04 GRADE 26	US AND PURCHASE ORDER	REQUIREMENTS	1149948 04/11/2011 CARRIER UNION PACIFIC CAPUTRUCK NO. WHITE
	PHYSIC	CAL PROPERTIES	S	
DESCRIPTION		IELD TENSÎLE % ELONG X 100 PSI X 100 8° 2°	HARDNESS BEND % RA BHN TEST	IMPACTS
	NW0819	585 775 25	EG F 5.0mm 32 29 30 /	·
HEAT NO. C Mn P S Si Cu	Nì V C	b Al Cr A	Ao Tì B N	Ca CE McQueld Etn.
NW0819 14 1.20 .010 .005 25 .01  NW0833 .14 1.23 .013 .005 .26 .01  HEATS INDICATED WITH (+) WERE MELTED  END OF REPORT	.05 .016 .01	16 .050 .03 .	00 00 EATS INDICATED WITH (^	) WERE BOLIED IN THE USA.

I certify the above to be correct as contained in the records of EVRAZ INC. NA By ...



Test Certificate EVRAZ EVRAZ INC. NA Form TC1: Revision 1: Date 31 Oct 2000 8250 130th Street, Surrey, BC, V3W 8J9 Mill Order No.: 41-240145-01 Shipping Manifest: ST046526 Customer P.O. No.: 26520 Customer: C.W. CARRY LTD. Product Description: CSA G40.21(2004)44W/300W / ASTM A36(05) Ship Date: 18 May 11 Cert No: 011125240 5815 - 75TH STREET A709(01A)36/ASME SA36(01ED) Cert Date: 18 May 11 (Page 1 of 1) EDMONTON AB T6E0T3 Size: 0.250 X 96.00 X 240.0 (IN) Charpy Impact Tests Tensiles Tested Pieces Abs. Energy(FTLB) % Shear · · Tst Tst Tst . BDWTT %RA Elong % Tst | Average Piece Tst YSUTS Piece Heat 2 3 Avg |Tmp | Dir | Siz Tmp %Shr (PSI) 2in 8in Dir Hardness 1 2 3 Avg 1 Loc (PSI) Id Id Dimensions L 52000 72000 C 50000 71000 L 59000 73000 C 50000 69000 0.250 X 96.00 (CUT) VW0667 A24 0.250 X 96.00 (CUT) NW1370 A20

}	Heat									Chemic	al Anal	ysis					
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	TW0667 TW1370	14 :13	.86 .87	.005 .012	.008 .007	.30 .23	.051 .045	.01 .01	.05 .05	.01 .02	.00 .00	.005 .005	.002 :004	.003 .002	0000		CAN CAN

MATERIAL MARKED WITH AN ASTERISK IS PRODUCED FROM COIL PCES: 6, WGT: 9801 * NW1370 A20

NW0667

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PCES: 24, WGT:

39204

WE HEREBY CERTIFY THAT THIS MATERIAL Cust Part #: Greg Balsdon WAS TESTED IN ACCORDANCE WITH THE CHECKED BY APPROPRIATE SPECIFICATION

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U/U CUIU I E			
ESSAR Steel Algoma Inc. 105 West Street, Sault Ste. Marie	e. Ontario Canada P6A 7	B4	
CUSTOMER PURCHASE ORDER NUMBER ENTRYDATE CREATE DATE TALLYNUMBER SHIPPER'S NO. CARRIE PO-0025800-1 2011/02/03 2011/02/03 212374 - BCOL	ER	-864047	MILL ORDER 73422
CHARSE TO CUSTOMER NAME AND ADDRESS  C W CARRY LTD STEEL SERVICE CENTRE 5815 - 75TH STREET EDMONTON ALBERTA T6E 0T3  CUSTOMER SPECIFICATION HR MULTIPLE CERTIFIED PLATE - HSLA - CSA G40.21 38W/44W/ASTM A36/A (04) (04) (08) (10) - FLATNESS 1/2 A-6	ASME SA36	MILL TEST REI ESSAR STEEL ALGOMA INC CERTIFIES THAT THE MATE DESCRIBED WAS MADE AND ACCORDANCE WITH THE RL SPECIFICATION SHOWN, A ARE RETAINED IN ACCORDA COMPANY'S STANDARD RECC COMPANY'S STANDARD RECC	L HEREBY RIAL HEREIN TESTED IN ULES OF THE LL RESULTS INCE WITH THE
SUPPLIMENTARY INSTRUCTIONS		PRACTICES.  M. MCLEAN  MANAGING METALLU  THIS MILL TEST REPORT MA	IRGIST Y NOT BE
TEST CERT 1: RMILES@CWCARRY.COM TEST CERT 2: PLATE TEST COUPO N:    INSPTAR TEST REPORTS REQUIRED	2000173573 PF 2011/02/07 07:26	REPRODUCED EXCEPT IN FU WRITTEN APPROVAL OF ESS ALSOMA INC. IF YOU RECIE DOCUMENT AND ARE NOT I RECEIVER, PLEASE CALL (7 COLLECT FOR INSTRUCTION OF DISPOSAL OF DOCUME	SAR STEEL EVE THIS THE INTENDED TOS}945-2624 IS ON METHOD
MEETS EN 10204 3.1 ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARST ALL HEATS FULLY KILLED HEATS INDICATED WITH (*) FINE GRAINED HEATS INDICATED WITH (+) MADE IN CANADA WITH DOMESTIC AND NORTH AME	ERICAN MATERIALS	* * * * * *	* * * *
CUSTOMER ITEM 00002 OUR ITEM 002 DIMENSIONS .375 X 120 X 480	H		
PLATE NO. WEIGHT PLATE NUMBER 01361 1660L-01 1 6125 02838 02839 1658L-04 2 12251 02842 02843 02843 1658L-04 2 12251 02846 02850 1658L-55 1 6125	HEAT-MS PIECES 1658L-02 1 1658L-04 2 1658L-04 2	EIGHT 62251 12251 12251 12251	
* * * * * * * * * * * * * * * * * * M E C H A N I C A L P R O P E R	TIES****	* * * * * * *	* * * *
TENSILE TESTS:  * SAMPLE * * * TEST * * YIELD TENSILE  HEAT SRCE GAUGE COND METH DIR KSI KSI * ELONO 1658L 166" .3750 AR .2 T 50.4 71.1 25(8") 166" .3750 AR .2 T 53.0 71.4 25(8") 166" .3750 AR .2 T 53.0 71.4 25(8")	}		LAB ALG ALG ALG

PAGE 1 OF 5

**WARNING**

THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIRMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING 1, 1) OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL C1-218 of 486

1601 Al 20FC

ESSAR Steel Algoma Inc.						Ontario Canada	P6A 7	B4	
CUSTOMER PURCHASE ORDER NUMBER		CREATE DATE		SHIPPER'S NO.	CARRIER				MILL DROER
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CHARGE TO CUSTOMER NAME AND ADDRESS	l	SHIP TO CUSTOM	ER NAME AND A	DDRESS					
C W CARRY LTD STEEL SERV	ICE CENTRE		RRY LTD				ļ	MILL TEST RE	PORTS
5815 - 75TH STREET EDMONTON ALBERTA T6E 0T3			SERVIC R BAR A	ES CENTR LBERTA	E			ESSAR STEEL ALGOMA INC CERTIFIES THAT THE MATE DESCRIBED WAS MADE AND ACCORDANCE WITH THE RU	RLAL HEREIN TESTED IN
CUSTOMER SPECIFICATION HR MULTIPLE CERTIFIED PL (04) (04) (08) (10) - FLATN	ATE - HSLA - ESS 1/2 A-6	- CSA G40.2	1 38W/4	4W/ASTM	A36/ASI	ME SA36		SPECIFICATION SHOWN, A ARE RETAINED IN ACCORDA COMPANY'S STANDARD RECO PRACTICES.	LL RESULTS NCE WITH THE
								M. MCLEAN	
								MANAGING METALL	Reist
N:	ARRY.COM TES	ST CERT 2:	PLATE	TEST CO		0000182582		THIS MILL TEST REPORT MA REPRODUCED EXCEPT IN FU WAITTEN APPROVAL OF ES: ALGOMA INC. IF YOU RECIE DOCUMENT AND ARE NOT I RECEIVER, PLEASE CALL (7	LL WITHOUT SAR STEEL VE THIS HE INTENDED 05)945-2624
INSPITE TEST REPORTS REQUIR	ED					2000173573 1	? 또'	COLLECT FOR INSTRUCTION OF DISPOSAL OF DOCUME	
CUST RESALE		-				2011/02/07	7:26		
* * * * * * * * * * * * *	* * * * C H	HEMICA	L F	ROPE	RTI	ES***	* * *	* * * * * * *	* * * *
HEAT (WT %) C MN	P S N AS	SI CR	NI	CU MO	$\mathtt{AL}$	CB	V	В	DO
HEAT (WT %) C MN TI SN 1658L*+ .15 1.13	.010 .004	SI CR ZR PB 1 .20 .02	.01	.02 .01	.045	.000	.039		.35
1660L*+ .004 .16 1.16 .003	.010 .006	.21 .02	.01	.03 .01	.028	.000	.040		.37

PAGE 2 OF 5

**WARNING**

THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIRMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL C1-219 of 486

## **SSAB**



### **Test Certificate**

pl !

62A004783

Form TC1: Revision 1: Date 31 Oct 2000

12400 Highway 43 North, Axis, Alabama 36505

Customer: RUSSEL METALS INC - EDMONTON P.O. BOX 4128

EDMONTON AB T6E4T2 Customer P.O. No.: 62006139 & 41-290251

Product Description: CSA G40.21(2004)44W/300W / ASTM A36(08) A709(01A)36/ASME SA36(01ED)

Ship Date: 14 Feb 11 Cert Date: 14 Feb 11

Mill Order No.: 41-290252-02

Cert No: 081264318 (Page 1 of 1)

Shipping Manifest: AR110820A

Size: 0.500 X 120.0 X 240.0 (IN)

	Tested Piec	ees			Tensil	es				Ch	arpy	Impact Te	sts		 		
Heat Id	Piece Id	Piece Dimensions	Tst Loc	YS (PSI).			Elong % 2in 8in		J	nergy(FTLB 3 Avg	) 1	% Shear 2 3		Tst Tmp	 	BDV Tmp	VTT %Shr
E1A252	A87	0.497 X 120.0 (	(DISCRT) L	53000	74000		23	Ţ									

Heat									Chemic	al Anal	ysis					
1d	C	Mn	P	S	_Sî	Tot Al	Cu	Ni	Cr	Mo	Cb	V	Tī	В	N	ORGN
E1A252	.18	.90	.013	.003	.24	.028	.25	.10	.14	.03	.002	1.005	.020_	.0001	.0088	USA

MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT MTR DIN EN10204:2004 TYPE 3.1 COMPLIANT PRODUCTS SHIPPED:

E1A252

A87

PCES: 10, WGT:

40983

(P)

Cust Part #: 42583

WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION

Jason Thomas

# V 305026

ORDER NO. 8636-V

: HEWLY PRODUCED, PRIME QUALITY, HOT ROLLED STEEL PLATES

5,335

LOTI

: WIRTH STEEL

: E-044-2011

Specification : C8A G40.21 GRADE 44W

S. Contract no. : 018/G08/2011

Order No.

### PT. GUNAWAN DIANJAYA STEEL Tbk.

Surabaya - Indonesia

ACC, TO EN10204: 2004 3.1

: quality@gunawansteel.com http://www.gunawansteel.com

Certificate No. : GDS/QC/11/044 Date : March 30, 2011

SHIPPING MARKS: PT. GOS TIK/ISIZEHIEAT HO/PLATE HO/SPECI

Head Office : JL Margomulyo No. 29 A Greges - Asemrowo - Surabaya 60183 Phone : (52-31) 7490598 (Hunting)
Fex : (52-31) 7490581

Page: 51 of 58

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WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENT CALLED FOR BY THE ABOVE ORDER

PT. GUHARAH DAHLAYA STEF" TAN

C1-221 of 486

1	17 7/ 1/07 Al JA/SPR BATO
	W/LXL6 1607/ 2019
	Bill To:  C.W. CARRY 1975 LTD  ACCTS PAYABLE  Ship To: 1  C.W. CARRY LTD.  CN. CARRY LTD.  CN. CARRY LTD.  PO No:26508  GERTIFIED MATERIAL TEST REPORT  Midlothian Mill  EDMONTON  AB  T6E 0T3  CA  Manifest No:2065361  Midlothian, TX 76065  (972)775-6241
Server	SIZE GRADE LENGTH PRODUCT  SPECIFICATIONS W 12 X 26# / W310 X 38.7 992/572-50 40 FT / 12.192 M WF BEAMS  ASTM A6-09, A992-06a, A572-07
- Co	HEAT NO: 22536470 CHEMICAL ANALYSIS
, T	C Mn P S Si Cu Ni Co M
	.08 .69 .015 .033 .22 .34 .10 .15 .029 .011 .002 .003 .018 .20
015	
8/(	Tensile Strength Specimen Area Elongation Bend Test ROA
~	NSI MPA KSI MPA Sq In Sq cm % Gage Length Dia. Result %
ഥ	56.3 388.2 74.8 515.7 0.536 3.46 24.3 8 In 200 mm
PAGE	TENSILE TEST RATIOS
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4,	
teel	All manufacturing processes of this product, including electric arc MELTING and continuous CASTING, occurred in the U.S.A.
1.51	
erdauAmeri	"I hereby certify that the contents of this report are correct and accurate. All tests and operations performed by this material manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material specifications and applicable purchaser designated requirements."
au,	a land the second decignated requirements.
rd.	Signed: Date:Apr. 12, 2011 Signed: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date: Date:
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C1-222 of 486

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BC

CA

GRADE

992/572-50

Bill To: VARSTEEL LTD ACCTS PAYABLE 220 4TH ST. S. 87E-330 LETHERIDGE 713 437 CA

Ship To: 12 VARSTEEL-DELTA 9500 PIVER ROAD DELTA V4G 185

Order Date: 12/13/2010 PO No: DE-933916 Mill Order No:3823759 Load No:1354008 Manifest No:2053014

CERTIFIED MATERIAL TEST REPORT GERDAU AMERISTEEL Midlothian Mill

GEL GERDAU AMERISTEEL

300 Ward Road Midlothian, TX 76065 (972)775-8241

LENGTH 40 FT / 12.192 M PRODUCT WF BEAMS

W 12 X 26# / W310 X 38.7 ASTM A6-09, A992-068, A572-07 HEAT NO: 22568520

Mn S Si .07 Cu Ni .92 .014 .034 . 26 .37 .12

SIZE

CHEMICAL ANALYSIS Sn Al Ν'n .038 CE .016 .002 .003 .017 . 29

Held Strength Tensile Strength KSI MPa KSI 58.5 403,3 MPa 76.2 58.6 525.4 404.6 76.1 TENSILE TEST RATIOS 524.7

PHYSICAL PROPERTIES Specimen Area Elongation Sg In Sq cm Cage Length 0,517 3.34 26.5 a In 0.523 200 mm 3.37 24.8 8 In 200 mm

Bend Test Dia. Result

SPECIFICATIONS

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5%

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YEE/TENS TENS/YED YED/TENS TENS/YED

i.3 .77

Notary Public (if applicable) Date: Page: 1 of

All manufacturing processes of this product, including electric arc XELTING and continuous CASTING, occurred in the U.S.A.

Thereby certify that the contents of this report are correct and accurate. All tests and operations performed by this contents of the material Takerial manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material sperifications and applicable purchaser designated requirements." L. Harrington: Quality Assurance Manager Date: Feb. 04, 201; Signed:

INSPECTION CERTIFICATE

	HYUNDAI STEEL COMPANY
ad Office	1, Songhyeon-done D

Head Office 1, Songhyeon-dong, Dong-gu, Inc 401-7!2, S. Korea Certificate No: IH20110104416 - 4

Spa	cilication	H-BEAN	1			7								<del> </del>		401	-7!2, S. Ko	dong, Dong-gu, Inc
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Contract No. Customer

L/C No. P/O No.

Commodity

HYUNDAI CORPORATION

462011018008

H-BEAM

General Manager of Q.A Team

WE HEREBY CERTIFY THAT THE MATERIAL HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ABOVE ORDER

HMS I 102(A)-3a

2009014

A4(210)

Heat Number D098967

Heat Number 2103045

NUCUR STEEL BERKELEY 9.3. Bax 2259

Mt. 01558ant, 5.0. 29464 Phono: (843) 336 6500

CERTIFIED MILL TEST REPORT

3/20/11 4:3:38 THE MELIED AND MANUFECTURED IN THE USA

All beams produced by Mucor Bockeley are cast and rolled to a fully killed and fine grain practice.

Mercury has not been used in the direct manufacturing of this material.

Sold has VARSTERS and

330. 220.418 STREET SOUTS

Ship To: VARSTEEL INC

Costemer R.: 2715 . 4

602 13 AVE

b.u.L. A...: 870866

LETHBRIDGE, AS IIJ 437

MISKU, OB THE /PG

SPECIFICATIONS: Tested is accordance with ASIM specification ASIM(4) and A370, Quality Manual Rev 423.

PSTM : 6542, 856:037 | 370520 | 15 5 (74572 07 5070709 10 5076709 345M

wascription 	Noble Grade(5) 1636	Yrelay Tensile Ruli	(251)	Tansil, (PSI) (EPa)	ε Σίνης Ş	) ( ) () ; () () ()	y 800	i Sn	c   c   d   d   d   d   d   d   d   d	5i V 8		NI ANTAKE CI	0E1 0E2 0E2 2CD
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FOR E C-(\$1,30)+(MA/20)+(CA/20)+(N1/6))+(CF/20)+(MC/)5)+(V/10)-58

 $CE2 = C^{-1}(Mn+5!)/6) + ((Cr+Mo+V+Cb)/5) + ((N1+Cb)/15)$ 

i horoby continy that the contents of this report are accurate and correct. All cost cosmits and operations performed by the material Contractorer are in compliance with material specifications, and when designated by the Parchaser, more applicable specifications,

Bruce A. Work Modailorgist

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Diti To: Thio To: 26 CERTIFIED MATERIAL TEST REPORT rder Date:12/16/2016 VARCTERL LTD Varsteel Regina PO No:ES-934193 GERDAU AMERISTEEL ACCURG PAYABLE Mill Order No:3826081 2191 Albert Street N. Midlothian Mili CLL ATH ST. S. DDE-330 (+) GERDAU AMERISTEEL SK RECINA Load No:1367602 300 Ward Road LETHERIEGE AB. S49 3E1 CA Manifest No:2064151 Midlothlan, TX 76065 T13 4J7 26 (972)775-8241 SIZE GRADE LENGTH PRODUCT W 12 X 36# 7 W310 X 38.7 JEWILL CONTLONS 9927572-50 40 FT / 12.192 M WE BEAMS ASIM Actor, ABBL-KAY, Abid-67 HEAD NOT DASSELSO CHEMICAL ANALYSIS Mn Si Cu Ni Cr Mo Sn V A1Kb CE . :2 ... 1.1 .038 .26 .13 .30 .12 .033 .010 .002 .003 .018 . 3 PHYSICAL PROPERTIES Barriel Streetings Tensile Strength Specimen Area Elongation Bend Test <u>ROA</u> F.5.1 XPa. KS1 MPa Sq In Sq cat Gage Length Dia. Result 56.4 368.5 74.8 515.7 0.521 3.36 24.2 8 In 200 mra 55.5 382.7 73.1 504.0 0.533 3.44 24.3 8 In 200 mm TERSILE TEST RATIOS YED/TENS TENS/YED YED/TENS TENS/YED 1. 1.35 .76 1.32

All manufacturies processes if this product, including electric arc MEDTING and continuous CASTING, occurred in the 0.8.A. UNIX complies with EX 10204  $\pm 0.1$ 

"I noteby continy than the contents of this report are correct and accurate. All tests and operations performed by this material panels of its sub-contractors, when applicable, are in compliance with the requirements of the material specifications and applicable purchaser designated requirements."

Tom U. Harrington: Quality Assurance Manager	Signed:  Motary Fublic (if applicable)	Date:
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### INSPECTION CERTIFICATE

MILL TEST CERTIFICATE

STEEL COMPANY

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Heat Number D097161



Vendor GERDAU AMERISTEEL (T46123U) US

B111 To: CERTIFIED MATERIAL TE MARSTEEL LOD Varsteel PC No:RD-934667 GERDAU AMERISTEEL ACCIS PAYABLE VARSTEEL Mill Order No:3834544 Midlothian Mill REO ATH ST. S. 602 13 AVENUE GERDAU A MERISTEEL Load No:1373038 300 Ward Road LETHBRIDGE AΒ NISKU AB Manifest No:2069300 Midlorhian, TX 76065 T1J 4J7 CA T9E 786 CA (972)775-8241 S12E GRADE LENGTH PROTUCT W 12 X 36* / W310 X 38.7 GHERLICICATIONS 992/572-50 40 FT / 12.192 M WE BEAMS ASIE A6-29, A992-064, A572-07 HEAT NO: 20026460 CHEMICAL AMALYSIS Kn Ni CrSn A1CE .010 .021 .22 .09 .15 .029 .01: .002 .004 .018 PHYSICAL PROPERTIES Bree de Grindsgree Tensile Strongth Sperfings Area Reng Test EOA KS1 MPa KSI KPa Sq In Sq cm Gage Length Dia. Result 55.8 384.7 73.5 520.6 0.556 3.59 24.0 8 In 200 mm 388.2 76.0 524.0 0.552 3.56 23.9 8 In 200 mm TEMBILE TEST FATTOS YEO/TENE TEMO/YEE YEO/TENS TEMS/YED 2.30 . 74 1.35

All manufacturing processes of this product, including electric arc MESTING and continuous CASTING, occurred in the V.S.A.

". noteby destrify that the dontents of this report are correct and accurate. All tests and operations performed by this material confidence or its sub-contractors, when applicable, are in compliance with the requirements of the material specifications and applicable purchaser designated requirements."

Tom L. Harrington: Quality Assurance Eanager Notary Public (if apolicable)

Page: 1 of 1

P.O. Box 2250

Mt. Pleasant, S.C. 29464 Phone: (843) 336-6000

6/07/11 4:50:25 100% MELTED AND MANUFACTURED IN THE USA All beens produced by Nucles Boskeley are cast and

rolled to a fully killed and fine grain practice. Mercury has not been used in the direct manufacturing of this material.

Sold for VARSTEEL LID

330. 220 4TH STREET SOOTH

Ship To: VERSTEEL INC 6U2-13 AVE

Cuscome: #.: 2715 _ 4

B.o.L. B...: 884988

LETHBRIDGE, AB TIJ 437

NISKU, AB ISE 7PG

SPECIFICATIONS: Tested in accordance with ASTM specification of 11/A6M II and A370. Quality Manual Rev #24.

ASTM : 9992-069:935-03/A529-05-50/A572-07-50/A709 10 50/A709-345M

				======:	======	=======		<b></b>	=========	=======		========	
Description	Healt Crade(s) Test	Yield/ Tunsile Ratio	Yield (129) (MPa)	Tensila (PSI) (MPa)		XXXXXX Ct C	Mυ		S B B KKEKFK		Cc Nb FRIXXX	Mi XXXXXX CI	CE1 CE2 Pcn
W12x26 L48' 01.00' W310x3x.7 U12.1"20#	1187182 9332 Brp	.82	56000 386 55400 382	68600 473 68100 470	25.78		.81 .01 .000 Place(s)	.005 .0076 Customer		.0057	.027	.06 4.62 inv#:	.23 ,2780 .1302
#12x20 @401 00,c01 #310x36.7 @12:1726#	1107153 0092-366	.02	57400 396 54000 378	70000 483 73300 505	23.30 25.01	.04	.02 .01 .000 Place(s)	.005 .0002 Customer	.0007 .0007 PD: 81-4	.032 .0057	.025	80.     80.     80.)	.24 .2572 .1402
\$12x2f 64f/60.00f \$10X30.7 (12.1020c	1107157 #192-169	.81	55 400 382 56 200 387	68500 472 59000 476	24.34 23u.28	. 05	.82 : .01 : .000 Piece(s)	.007 .0087 Customer	.0002	.002 .0062	.027	.36 4.79 Inv#:	.23 .2628 .1136
W12x2A C40' 01.01' W310x38.7 012.1920#	2107168 0992 )66	.81	57400 396 59100 407	70900 489 72900 503	22.83	.07   .08   .52 [	.02 .02 .091 :ece(5)	.004 .0024 Customos	020. 2000. (*-18 :C9	.023	.029	.14 4.40 Inv#:	.25 .3020 .1336

Flongation based on 8° (20.32cm) gauge length, 'No Weld Repair' was performed. Hg free and no contact with Hg during manufacture,  $CEI = 20.01C0 \pm 3.880 \pm 1.23C \pm 1.495 \pm 17.289 \pm (7.29C0 \times ML) + (3.10 ML Mp) + 33.39(Cu x Cu)$  CEI = CI(Mn/e) + ((Cr + Me + V)/a) + ((M1 + Cu)/1a)RC = C!(S1/30)!(Kn/25)!(Cn/23)!(K1/60)!(C1/20)!(Mo/15)!(V/10)+5B

CE2 = C:((MniSi)/A)+((Cr+Mo+V:Ch)/S)+((Ni+Cu)/15)

I horoby comitte that the contents of this report are accurate and correct. All test results and operations performed by the material manufactures are in compliance with magerial specifications, and when designated by the Parchaser, meet applicable specifications.

Bruce A. Work Metallurgist

CERTIFIED MILL TEST REPORT

1583

MUCDR STEEL - BERKELEY

P.O. Box 2259

Mt. 21-asant, S.C. 29464 Phose: (843) 336-5000 6/07/11 4:50:25

100: MELTED AND MANUFACTURED IN THE USA All beams produced by Nucer Berkeley are cast and

rolled to a fully killed and fine grain practice.

Mercury has not been used in the direct manufacturing of this material.

Sold for VARSIEEL LID 330, 220-418 STREET SOUTH Ship To: VARSTEEL INC 602-13 AVE

Cuscomer N.: 2715 - 4

LETHBRIDGE, AB T1J 4J7

NISKU, AB IBE 706

B.o.L. | .... 884888

SPECIFICATIONS: Tusted in accordance with ASTM specification A6 11/A6M II and A370. Quality Manual Roy 424.

onseto : M270-50-05

ASTM : ANS2-084(A36-08/A529-05-50/A572-07-50/A709 10 50/A709-345M

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Description	Beath Crade(s) Test	Yield/ Tensile Ratio	(PSI)			C C C C C	i Mu	Şα		V	Cu Nb NXXXXX	XXXXXX Si	CE2
W12x25 .440 00.05 W310x36.7 .312.1721#	1137162 9392-969	.81	56000 386 55400 382	68600 473 68100 470	23.50		.81 .000 ! .000 Piec=(9)		snon.	; .24 ; .003 ; .0057 39673	.027	.06 4,42 Inv#:	.23 .278n .1302
W13x25 .440' 05.89' W310x33.7 .012.1920s	1107163 6992-066	. 0 2 . 7 5	57600 396 54600 378	70000 483 73300 505	23.36 25.01	.04	.01	.0082	.0002		.025	.00 4.68 InvH:	.24 .2872 .1402
%12x26 0411 00.001 W:10X30,7 (12:1920m	1107157 9332-369	.81 .81	55400 362 50200 387		230.20	.05		.0087	.0002.	8900.	.627	.06 ; 4.70 lnv#:	.23 .2628 .1336
W12x26 940′ 03.40° W31bX36.7 912.1920π	2107169 a992 366	.81 .81	57400 396 59100 407	70900 489 72900 503	22.83	.08	.82 .02 .nn1 Piece(s)	.0084	i.	.003	.02:	4,46	.25 .3020 .1396

I hereby contify that the contents of this report are accurate and correct. All test results and operations performed by the material manufacturer are in compliance with material specifications, and when designated by the Purchaser, meet applicable specifications.

Bruce A. Work Metallurgist

THUS MELTED AND MANUFACTURED IN THE USA All beams produced by Nacor Berkulon arm cast and

colled to a fully killed and fine grain practice.

Mercury has not been used in the direct manufacturing of this material.

Sold Tol VARSIEEL LID 330. 220.4TH STREET SCUTH Shir for VERSICEL INC 5U2-13 AVII

Customer #.: 2715 - 9

B.o.t. B...: 064800

LETHBRIDGE, AB TIJ 4J7

NISKU, NB ISE 7PG

SPECIFICATIONS: Edscod in accordance with ASTM Specification of 11/ACM to and A370, Quality Manual Rev #24.

ARSHIC : M270-50-05

SUCUR STEEL - BERKELEY

Phone: (343) 336-5000

Mt. Pleasant, S.C. 24464

p.m. Box 2259

#SIK : P942-06#:#36-09/P529-U5-50/P572-00-50/P709-14 50/9709-345X

							========	=========		=========	========	=========	======
Description	Beat# Beat# Crade(5) lost	Yield/ Yield/ Tensile Ratio	Yield (1893)	Tensile (PSI) (MPa)	Elong	XXXXXX Ct C	Mn   Mo   Ti	XXXXX DS G	5 B XXXXXX	5i V N	ANXXXX GC	CI XXXXXX NJ	CE1 CE2 Pon
W12x28 040' 00.80' W310x38.7 U12.1920m	1107152 A992-066	. fi 2	55000 386 55400 382	68600 473 68100 470	25.78	.06 .04	.81   .01   .000   .000	.006 .8076 Customer	8 20. 2000. 4-14 : Ug	.24 .003 .0057 39673	19.027	06 4.42 Inuli:	.23 .2780 .1302
W12x26 040' 00.00' W310X35.7 C12.1920m	1107163 6992-066	.02 .75	57400 396 54800 378	70000 483 73300 505	23.36	.07	.02   .01   .000   .000	,005 ,0082 Customer	.023 .0002	.23 .002 .0057 39673	,21 ,025	6.68 invli:	.24 .2672 .1402
w)2x25	1107167 8902-068	.81 .81	55400 382 56200 387	68500 472 69000 476	24.34 230.20	.06	.62 .01 .000 Piece(5)	.007 .0087 Customer	.024 .0002 e.1u :0u	.23 .002 .0062 37673	.21	.06 4,70 Inv#:	.23 .25 28 .13 34
W12x26 040 / 00.00 / W310x35.7 012,1920 p	2107158 A992 066	.81	57400 396 59100 407	70900 489 72900 563	22.83	.07	.82 .02 .001 Piece(0)	.094 .0084 Custoper		=========		4.40   Invit:	25.   0208.   A881. 

Pcm = C1(\$1/30)+(Mm/20)+(Cu/20)+(N1/60)+(Cs/20)+(Mc/15)+(Y/10)+58

CE2 = Ci((Mn+51)/6)+((CFHM0(V+Cb)/5)+((N++Cu)/15)

I herein certify that the contents of this report are accurate and correct. All twee results and operations performed by the material manufacturer are in compliance with natorial specifications, and when designated by the Purchaser, meet applicable specifications.

Bruce A. Vork Metallucgist

6/07/11 4:58:25

1004 MELTED AND MANUFACTURED IN THE USA

All beans produced by Nacer Berkeley are cast and rolled to a fully killed and (ine grain practice.

Mercury has not been used in the direct manufacturing of this material.

Sold To: VARSTEEL LID 330. NEU-418 STREET SUETR Ship to: VARSIEEL INC 602-13 AVE

Customer 8.: 2715 - 4

B.o.L. H...: 3848E8

DETHBRIDGE, AB TIJ 437

RISKU, AB TOE 7PG

SPECIFICATIONS: Legged in accordance with asim specification of 11/A6M 11 and 0370. Quality Manual Rev 426.

ENSBIG : M270-50-05

KUCOR STEEL - BERKELEY

Phone: (843) 335-6000

Mr. Pleasant, S.C. 29464

P.O. Box 2259

FSTM : F372.069:835-0376523.05-5078572-07-5078739 10 5078709-345M

			-======	======	=====	======	========	=======================================	=====	sesessassas: ! Ki ;	::::::::::::::::::::::::::::::::::::::
Bescription	neard Crade(s) Test	Yield/ Tedsil/ Ratio	Yield (PSI) (MFa)	Tousile (PSI) (MPa)		C C C	Mn Mo Ti	Su B A	XAXXX MP Co:	(1)   XXXXXX	Pon
W12x25 045' 80.99' W310x38.7 912.1920m	1107152 6392-366	.82	54090 386 55490 382	48608 473 66108 470	25.78 23.50	an, an, 4n,	.81 .01 .000 Fince(s)	0076 .023 .24 .0076 .0002 .003 .0057 .0057 .0057	.19 .027	1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	.23 (2780   .1302
W12x26 0401 00.031 W310x38.7 U12.1320m	1107163 A332-06A	.62	57400 396 54800 378	70000 483 73300 505	23.36 25.01	28	.02 .01 .000 Piece(5)	.005 .023 .23 .0082 .0002 .002 .0057 .0057	.21 .025	6.68 1   4.68	.24 .2872 .1402 .0
%12x25 C40' 00.40' W310X30.7 C12.1020m	1107167 A)312.468	.81 .81	55400 382 56200 387	68580 672 63080 476	24.34 230.28	30.   20.   4	.92 .01 .uuu piece(s)	.007   .024   .23   .0037   .0002   .0002   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0062   .0	.21 .827	4.70 1nv#:	.23 .2628 .1336 U
W12x26 040' 03.00' W310X38.7 012.1920m	2107158 n992 968	.81 .81	57450 396 54100 407	79900 489 72900 503	22, 23	.07 .08	,82 .02 .001 Place(5)	.004 .030 .25 .0084 .0002 .003 .0062 .0062 .0062	.17 .029	4.4n Luv#:	.25 .3620 .1396 .0

************************************ Fcm = C+(S1/30)+(M1/20)+(Cu/20)+(N1/60)+(C1/20)+(M3/15)+(V/16)+58

I heroby certify that the contents of this report are accurate and correct. All test results and operations performed by the material manufacturer are in compliance with material specifications, and when designated by the Purchaser, meet applicable specifications.

Bruce A. Work Metallurgist

**LAND 15 NUCOR STEEL - BERKELEY P.O. Box 2259 Mt. Pleasant, S.C. 29464

Phone: (843) 336-6000

CERTIFIED MILL TEST REPORT

100% MBLTED AND MANUFACTURED IN THE USA All beams produced by Nucor-Berkeley are cast and rolled to a fully killed and fine grain practice.

Mercury has not been used in the direct manufacturing of this material.

Sold To: PRICE STEEL LTD. 13500 - 156 STREET

EDMONTON, AB TSV 1L3

Ship To: PRICE STEEL LTD. 13500 - 156 STREET

EDMONTON, AB T5V 1L3

Customer # .: 827 -Customer PO: 29333F B.O.L. # ... 815915

Invoice #..: 1188232

SPECIFICATIONS: Tested in accordance with ASTM specification A6/A6M and A370.

AASHTO : M270-50-05

ASTM : A992-06a:A36-08/A529 05-50/A572-07-50/A709-345M/A70909a0S

	7									RE	CEIVED	MAY 2	7=2010===
Description	Heat# Grade(s) Test	Mield/ Tensile Matio	Yield (PSI) (MPa)	Tensile (PSI) (MPa)	Elong	C Cr	Mn Mo	P Sn	S B ******	si v N	Cu Nb	Ni CI	CB1 CB2 Pcm
W6X16 040' 00.00* W150X24.0 012.1920m	2004669 A992-06a	.83	56400 389 56400 389	67600 466 68100 470	28.38	.06 .03	_83 .00 Lece(8)	.006 .0079	.021	.16 .002 .0062	.17	4.08	.23 .2633 .1279
%6X16 040'00.00" W150X24.0 012.1920m	2004664 A992-06a	. 83	58400 403 57400 396	70000 483 69100 476	25.51 24.19	.06 .03	.87 .00 lece(s)	.006	.028	.22 .002 .0061	.16	.04 4.06	.23 .2813 .1337

2 Heat(s) for this MTR.

Elongation based on 8" (20.32cm) gauge length. 'No Weld Repair' was peformed. CI = 26.01Cu+3.88Ni+1.20Cr+1.49Si+17.28P-(7.29Cu*Ni)-(9.10Ni*P)-33.39(Cu*Cu) PCD = C + (Si/30) + (Mn/20) + (Cu/20) + (Ni/60) + (Cr/20) + (Mo/15) + (V/10) + 5B

CE1 = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Ni+Cu)/15)CE2 = C + ((Mn+Si)/6) + ((Cr+Mo+V+Cb)/5) + ((Ni+Cu)/15)

I hereby certify that the contents of this report are accurate and correct. All test results and operations performed by the material manufacturer are in compliance with material specifications, and when designated by the Purchaser, meet applicable specifications. **BND

Bruce A. Work Metallurgist

CW CARRY(1967) LTD SOLD

アレロロア NUCOR STEEL SEATTLE, INC.

5815 75TH ST TO:

EDMONTON AB T6E 0T3 CANADA

Ship from:

Nucor Steel Seattle, Inc. 2424 SW Andover

CERTIFIED MILL TEST REPORT

SEATTLE, WA 98106-1100 206-933-2222

B.L. Number: 408836 Load Number: 247833

Page: 3

Date:

SHIP TO:

C W CARRY 5815 75TH ST

EDMONTON AB T6E 0T3 CANADA

NBMG-08 March 24, 2009 Material Safety Data Sheets are available at www.nucorbar.com or by contacting your Inside sales representative. CHEMICAL TESTS PHYSICAL TESTS DESCRIPTION Si Cu HEAT NUM. * ELONG % IN 8" С S YIELD TENSILE C.E. BEND P.S.I. P.S.I. Мо DEF PO# => 26198 32.0% .16 .71 .013 .042 .25 .36 .33 50,052 72,403 SE1110059101 Nucor Steel - Seatt .07 .006 .003 3x3x3/8 Angle 345MPa 499MPa .11 .020 72,109 31.3% 40' A36/44\A CSA G40.21-04 44W/ASTM A36/A36M-339MPa 497MPa ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad PO# => 26198 30.5% .17 .69 .011 .035 .24 .31 .33 Nucor Steel Seattle, Inc. 51,501 73,745 SE1110059501 .07 .030 .007 .002 3x3x3/16 Angle 355MPa 508MPa .10 40' A36/44W 52,490 74,434 28.9% CSA G40.21-04 44W/ASTM A36/A36M-362MPa 513MPa 80 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

OUALITY ASSURANCE:

Winky Lai

Ninkyh

C W CARRY(1967) LTD

5815 75TH ST

NUCOR STEEL SEATTLE, INC.

MUCOR

TO:

EDMONTON AB T6E 0T3

CANADA

C W CARRY SHIP 5815 75TH ST TO:

EDMONTON AB T6E 0T3

CANADA

**CERTIFIED MILL TEST REPORT** 

Page: 1

Ship from:

Nucor Steel Seattle, Inc. 2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 10-May-2011

B.L. Number: 412461 Load Number: 250367

Material Safety Data	a Sheets are avallable at www.nucorbar.com or	by contacting		sales repres /SICAL TES						CHE	MICAL TEST		BMG-08 March	9, 2011
HEAT NUM. *	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	C	Mn Vi	Cr	P Mo			Cu Sn	C.E.
PO# =>	26737													
SE1110059201	Nucor Steel Seattle Inc		72,943	28.1%				8	.70	.013	.041	.21	.33	.35
	3x3x3/8 Angle 40' A36/44W CSA G40.21-04 44W/ASTM A36/A36M- 08	50,687	503MPa 73,318 506MPa	28.1%	•		.1	10	.11	.020	.006	.003		
PO# =>	ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad		٠.							·				
SE1110147902	26737 Nucor Steel - Seattle Inc 1-1/2x1-1/2x3/16 Angle 40' A36/44W CSA G40.21-04 44W/ASTM A36/A36M- 08	48,880 337MPa 49,051 338MPa	496MPa 71,954	28.9% 28.1%	,			4 0	.66 .13	.015 .030	.042 .006	.19	.36	.31
	ASTM A709/A709M-10 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad													
•												*		

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

1.) Weld repair was not performed on this material.

2.) Melted and Manufactured in the United States.

3.) Mercury, Radium, or Alpha source materials in any form have no been used in the production of this material.

QUALITY ASSURANCE:

Winky Lai

nlinkyt

C W CARRY(1967) LTD SOLD

MUCOR

NUCOR STEEL SEATTLE, INC. 5815 75TH ST EDMONTON AB T6E 0T3

CANADA

TO:

C W CARRY SHIP 5815 75TH ST TO:

EDMONTON AB T6E 0T3

CERTIFIED MILL TEST REPORT

Ship from:

Nucor Steel Seattle, Inc. 2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Page: 2

Date: 17-Mar-2011

B.L. Number: 410083 Load Number: 248452

										08 March 24	
the of wown pricorbat.com or b	contacting your inside sa	les represe	ntative.					AL TESTS	Cu		C.E.
	PHYSILE F	ELONG	BEND	WT% DEF	C Ni Mn	Cr F	Mo S	V	Cb	Sn	
DESCRIPTION	P.S.I. P.S.I.	% IIV 0		<u> </u>			015	036	.19	.36	.37
26198  Nucor Steel Seattle, Inc. 3/8x5" Flat 20' A36/44W  CSA G40.21-04 44W/ASTM A36/A36M- 08  ASTM A709/A709M-08 GR 36 [250]	52,267 77,119 360MPa 532MPa 52,556 76,904 362MPa 530MPa	27.3% 34.4%		***	,19 ,11	.10	.020	.007	,003		
NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad 26198 Nucor Steel Seattle, Inc. 3x3k1/4 Angle	52,566 74,493 362MPa 514MPa 52,461 74,792	34.4%		***	: ,16 ,11	.68 .13	.017 .030	.041 .008	.21 .003	.36	.34
08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADD	E										
					,						
	DESCRIPTION  28198  Nucor Steel Seattle, Inc. 3/8x5" Flat 20' A36/44W  CSA G40.21-04 44W/ASTM A36/A36M- 08  ASTM A709/A709M-08 GR 36 [250]  ASME SA36-2007 EDITION-2009 ADDE  NDA  ASTM A36/A36M-08, A709/A709M-09a  GR36, ASME SA36-07 Ed 09 Ad  26198  Nucor Steel Seattle, Inc. 3x3x1/4 Angle 40' A36/44W  CSA G40.21-04 44W/ASTM A36/A36M- 08  ASTM A709/A709M-08 GR 36 [250]  ASME SA36-2007 EDITION-2009 ADD  NDA	DESCRIPTION  28198  Nucor Steel Seattle, Inc. 3/8x5" Flat 20' A36/44W  CSA G40.21-04 44W/ASTM A36/A36M- 08  ASTM A709/A709M-08 GR 36 [250]  ASME SA36-2007 EDITION-2009 ADDE  NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad 26198  Nucor Steel Seattle, Inc. 3x3x1/4 Angle 40' A36/A36M-08  ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE  NDA  ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE  NDA  ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE  NDA  ASTM A709/A709M-08 A709/A709M-09a	DESCRIPTION    YIELD   TENSILE   KLUN8	26198 Nucor Steel Seattle, Inc. 3/8x5" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M- 08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad 26198 Nucor Steel Seattle, Inc. 3x3x1/4 Angle 4th A36/A4W CSA G40.21-04 44W/ASTM A36/A36M- 08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A709/A709M-08 A709/A709M-09a	DESCRIPTION    YIELD   TENSILE   P.S.I.   Win 8"   BEND   DEF	26198 Nucor Steel Seattle, Inc. 3/80/F Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M- 08 ASTM A709/A709M-08 GR 36 [250] ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad 26198 Nucor Steel Seattle, Inc. 360MPa 532MPa 52,556 76,904 34.4% 362MPa 530MPa  52,556 76,904 34.4% 362MPa 530MPa  52,566 74,493 34.4% 362MPa 514MPa 52,461 74,792 34.4% 362MPa 516MPa  52,461 74,792 34.4% 362MPa 516MPa  52,461 74,792 34.4% 362MPa 516MPa  52,461 74,792 34.4% 362MPa 516MPa  52,461 74,792 34.4% 362MPa 516MPa  52,461 74,792 34.4% 362MPa 516MPa  52,461 74,792 34.4% 362MPa 516MPa  52,461 74,792 34.4% 362MPa 516MPa	26198 Nucor Steel Seattle, inc. 3/8x5" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M- 08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE 108 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE 108 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE 109 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE 110 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE 111 ASME SA36-2007 EDITION-2009 ADDE	DESCRIPTION  YELD P.S.I.  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P.S.I.	26198 Nucor Steel Seattle, Inc. 360MPa 532MPa 52,556 76,904 362MPa 530MPa 08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA Nucor Steel Seattle, Inc. 360MPa 532MPa 52,556 76,904 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 530MPa 362MPa 34.4% 362MPa 514MPa 362MPa 514MPa 52,461 74,792 34.4% 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa 362MPa 516MPa	26198 Nucor Steel Seattle, Inc. 360MPa 532MPa 378K5" Flat 52,256 76,904 362MPa 530MPa 08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA STM A36/A36M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA STM A36/A36M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA SASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA SASTM A709/A709M-08a S2,461 74,792 34,493 34,4% 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa 52,461 74,792 34,494 362MPa 516MPa

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELDING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD PREE, MELDING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTION OR TESTING OF THIS MATERIAL, MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE:

Page 9 of 11

**GERDAU AMERISTEEL** 

WHITBY STEEL MILL HOPKINS STREET SOUTH WHITBY ON L1N 5T1 CAN (905) 668-8811

Chemical and Physical Test Report MADE IN CANADA

W-114962

SHIP TO

C.W. CARRY 1976 LTD 5815 75TH ST. - SIDING CN Z062

780-465-0381

EDMONTON, AB T6E 0T3

INVOICE TO C.W. CARRY 1976 LTD

ACCTS PAYABLE 5815 75 ST NW

EDMONTON, AB T6E 0T3

SHIP DATE 04/11/11

CUST. ACCOUNT NO

60122230

PRODUCED IN: WHITRY

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7	W908728	+	.11	.80	.013	.032	.18	.34	.10	.13	.030	.000	.000	8000.	.0000	.009	,	.00000		.00000	C Eqv			<b></b> _			
<u> </u>	Mechanical Fest;	Yi	eld 50	487 PSI	, 348.1 N	/PA T	enslle:		L						Def HT				.000	טטטטט.	.326			ـــــا			

Yield 50846 PSI, 350.57 MPA Tensile: 68307 PSI, 470.96 MPA %EI: 30.0/8in, 30.0/200MM Def HT: 0, 0MM %I/h 0 RODUCED IN: WHITBY

SHAPE + SIZE		GRAD	Ē	SPEC	IFICATI	ON													1						
A2 X 2 X 3/16		44W		CSA	G40.21	-04 (R20	0001 441	A)												LES OR		Cu	ST P.O	. NUMB	≛R
				0.0.	G40.2	1-04 (RZI	109) 441	y											102	5269-01	1	266	377-01		
HEAT I.D.	C	Mn	Р	S	ļ SI	Cu	Ni	Cr	Мо	V	NЬ	В	N	Sn	Al	TI	Zr	Ca	C Egy I			بسطحم		1	
W908760	.18	.70	.010	.037	.18	.37	.08	.07	.020	.000	.000	.0008	.0000	.011	.000	,00000	.000	.00000				<b> </b>		<del> </del>	<del></del>
Mechanical Test	Yield 55	249 PS!,	380.93	MPA	Tensile:	75082 F	SI, 517	.67 MPA	%El	26,2/8	n, 26.2	200MM	Def H								!	1	L		L

Yield 55878 PSI, 385.27 MPA Tensile: 74788 PSI, 515.65 MPA %EI: 26.2/8in, 26.2/200MM Def HT: 0, 0MM %l/h 0 PRODUCED IN: WHITBY

SHAPE + SIZE		GRAD	E	SPEC	IFICAT	ON													SA	LES OR	DEB	LCI	JST P.O. NUM	DED
A2 X 2 X 3/16		44W		C.S.A	. G40.2	1-04 (R2	009) 44	N								~~~				25269-0			677-01	DEN.
IEAT I.D.	C	Mn	P	s	SI	Сп	NI	Сг	Mo	ΙV	Nb	В	N	Sn	ΑĬ	TTI	7r	Ca	CEDV	-	, 		1	
V908762	.16	.66	.010	.031	.18	.33	.08	.06	.021	.000	,000	.0008	.0000			.00000	000	.00000					<del>  </del>	
Mechanical Test Mechanical Test:	Yield 52 Yield 53	639 PSI	362,93	MPA MPA	Tensile	71193	PSI, 490	.86 MPA	%EI:	26.9/8	n. 26.9/	200MM	DefH	T. U U	MM %	6l/h D	.000	1.00000	.342	1				

**Customer Notes** 

Mechanical Test:

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This meterial, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchill

Quality Director

Gerdau Ameristeel

THE ABOVE FIGURES ARE CERTIFIED CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

Metallurgical Services Manager

WHITBY STEEL MILL

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. in no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller.

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in

(FIN GERDAU AMERISTEEL

Chemical and Physical Test Report MADE IN CANADA

W-112932

WHITBY STEEL MILL HOPKINS STREET SOUTH WHITBY ON LIN 5T1 CAN (905) 668-8811

SHIP TO

C.W. CARRY 1976 LTD

5815 75TH ST. - SIDING CN Z062 780-465-0381

EDMONTON, AB T6E 0T3

INVOICE TO

C.W. CARRY 1976 LTD ACCTS PAYABLE 5815 75 ST NW

EDMONTON, AB T6E 0T3

SHIP DATE 01/27/11

CUST, ACCOUNT NO

60122230

PRODUCED IN: WHITBY

I IIODO O MEDITO																									A 44 M APRIC	
SHAPE + SIZE			GRADE		SPEC	IFICATIO	NC.													SAI	LES OR	DEH	C	UST P.O	NUMBE	:H
A2 X 2 X 1/4		1	44W		C.S.A.	G40,21	-04 (FI20	09) 44V	7											100	5227-03	3	2	5713-03		
HEAT I.D.	· C	亣	Mn	Р	S	Si	Cu	Ni ·	· Ct	Mo	٧	Nb	· В	N	· Sn	Al	Ti.	. Zr	Ga	C Eqv			٠	<u> </u>		
W907721	1:	1	.78	.012	.026	.18	.34:	.16	.11	.032	.000	.000	.0004	.0155	.013	.000	00000	.000	.00000	.351			<u> </u>	<u> 1: </u>	<u>i                                     </u>	

Yield 55963 PSI, 385.85 MPA Tensile: 74581 PSI, 514.22 MPA %EI: 26.2/8in, 26.2/200MM Def HT: 0, 0MM %I/n 0 Yield 56096 PSI, 386.77 MPA Tensile: 75122 PSI, 517.95 MPA %El: 27.5/8in, 27.5/200MM Def HT: 0, 0MM %I/n 0 Mechanical Test:

PRODUCED IN: WHITBY

SHAPE + SIZE		GRAD	E	SPEC	IFICATIO	NC													SA	LES OR	DER	Cr	JST P.O	, NUMBI	<u> </u>
A2 X 2 X 1/4		44W		C.S.A.	G40.21	-04 (R20	09) 44W	/											100	5227-03	3	25	713-03		
HEAT I.D.	C	Mn	P	S	Si	Cu	Ni	Cr	Мо	V	Nb	B	N	Sn	Al	Tī	Zr	Ca	C Eqv			Ĺ			
W907723	.13	.76	.013	.031	.20	.37	.13	.10	.027	.000	.000	.0004	.0184	.012	.000	.00000	.000	00000.	.344					L	

Yield 54530 PSI, 375.97 MPA Tensile: 72706 PSI, 501.29 MPA %El: 28.8/8in, 28.8/200MM Def HT: 0, 0MM %I/h 0 Mechanical Test: Yield 54637 PSI, 376.71 MPA Tensile: 73213 PSI, 504.79 MPA %El: 25.0/8in, 25.0/200MM Def HT: 0, 0MM %/h 0 Mechanical Test:

PRODUCED IN WHITEY

SHAPE + SIZE	ופוות	GRAD	<del>-</del>	SPECI	FICATIO	W													SAL	ES OR	DER	10	UST P.O	, NUMBE	R
A2 X 2 X 3/16		44W					09) 44W	,											100	5227-02	2	2	5713-02		
HEAT I.D.	C	Mn	Р	S	Si	Cu	Ni	Cr	Мо	V	Nb	8	N	Sn	Al	Ti ·	Zr	Ca	СЕф			T			
W907779	.15	.70	.013	.036	.21	.35	·:10·	80.	.035	.000	.000	.0004	.0152	.010	.000	.00000	.000	.00000	.354					,	15.03

Yield 56245 PSI, 387.8 MPA Tensile: 73959 PSI, 509.93 MPA %El: 28.8/8in, 28.8/200MM Def HT: 0, 0MM %I/h 0 Mechanical Test: Yield 56045 PSI, 386.42 MPA Tensile: 73604 PSI, 507.48 MPA %El: 27.5/8in, 27.5/200MM Def HT: 0, 0MM %I/n 0 Mechanical Test:

#### **Customer Notes**

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This material, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchili

Quality Director

Gerdau Ameristeel

THE ABOVE FIGURES ARE CERTIFIED CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

Metallurgical Services Manager

WHITBY STEEL MILL

Seller warrants that all material lumished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller,

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in question.

GERDAU AMERISTEEL

Chemical and Physical Test Report MADE IN CANADA

W-105595

WHITBY STEEL MILL HOPKINS STREET SOUTH WHITBY ON L1N 5T1 CAN (905) 668-8811

SHIP TO

C.W. CARRY 1976 LTD

5815 75TH ST. - SIDING CN Z062

780-465-0381

EDMONTON, AB T6E 0T3

INVOICE TO

C.W. CARRY 1976 LTD ACCTS PAYABLE 5815 75 ST NW

EDMONTON, AB T6E 0T3

SHIP DATE 04/28/10

CUST. ACCOUNT NO

60122230

PRODUCED IN: WHITEY

	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,																									
$\leq$	SHAPE + SIZE	)	GRADI	=	SPECI	FICATION	NC													SA	LESOR	DER	CU	ST P.O.	NUMBE	:R
	A2 X 2 X 1/4	_	44W		C.S.A.	G40.21	-04 (R20	109) 44V	V											00	71134-0	1	218	357-01		
/	HEAT I.D.	) _C	Mn	P	S	SI	Cu	NI	Or	Мο	V	Νb	8	N	Sn	Al	TI	Zr	Ca	C Eqv						
	W904277	.12	.80	.009	.037	.19	.40	.13	.12	.037 .	,000	.000	.0010	.0000	.011	,000	.00000	.000	00000	.363					}	

Mechanical Toot Meetanioal Test:

Yield 50867 PSI, 349.27 MPA Tensile: 69625 PSI, 480.05 MPA %El: 30.0/8in, 30.0/200MM Yleid 51881 PSI, 358.19 MPA Tensile: 70408 PSI, 485.43 MPA %El: 28.8/8in, 28.8/200MM Def HT: 0, 0MM %I/h 0

Def HT: 0, 0MM

PRODUCED IN: WHITEY

SHAPE + SIZE		GRAD	E	SPEC	FICATION	NC													SA	LES OF	DER	l cr	JST P.C	, NUMB	ĒR.
A2 X 2 X 1/4		44W		C,S,A.	G40,21	-04 (R20	009) 44V	٧												71134-0	1	21	857-01	,	
HEAT I.D.	C	Mn	Р	S	61	Cu	NI	Cr	Мо	V	Nb	В	N	Sn	A!	TI	2r	Св	C Eqv	L	<u></u>	<u> </u>		<u> </u>	
W904280	.12	.79	.007	.030	.17	.34	.14	,09	.043	.000	.000	.0010	,0000	.010	.000	.00000	,000	.00000	.838		<u> </u>			<u> </u>	

Mechanical Test: Mechanical Test: Yield 69865 PSI, 411.38 MPA Tansile: 73808 PSI, 508.89 MPA %EI: 28.2/8lin, 28.2/200MM Def HT: 0, 0MM %l/h 0. Yield 80107 PSI, 414.42 MPA Tensile: 75023 PSI, 517.27 MPA %EI: 26.2/6ln, 26.2/200MM Def HT: 0, 0MM %/h 0

DOODLICED IN WUITEY

SHAPE + SIZE		GRAD	E	SPEC	FICATION	ON			_										I SA	LES O	RDER	_   C	UST P.C	), NUMB	ER
A4 X 4 X 1/4		44W		A38/4	4W/60W	/A629G	R60;AS1	rM:A38-	08;A629	GR50 M	-08;CS/	4:G40.2	-04(R20	09) 44					00	71134-0	)4	2	1857-04		
HEAT I.D.	C	Мп	P	S	SI	Gu	NI	Cr	Мо	V	NЬ	В	N	Sn	Al	TI	Zr	Ca	C Eqy						
W904318	.17	.92	.009	.041	.17	.32	.13	.09	.020	.000.	.000	.0008	.0147	.010	.000	.00000	,000	00000	,398	Ī					L

Mechanical Test: Mechanical Test: Yield 53414 PSI, 388,28 MPA Tensile: 73239 PSI, 504.97 MPA %EI: 20.0/8ln, 20.0/200MM Def HT: 0, 0MM %I/h 0 Yield 54496 PSI, 375,73 MPA Tensile: 73790 PSI, 508,78 MPA %El: 24.4/8ln, 24.4/200MM

Def HT: 0, 0MM % // h 0

Customer Notes

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY. This material, including the billets, was malted and manufactured in Canada

Bhaskar Yalamanchill

: Quality Director

Gerdau Amerieteel

THE ABOVE FIGURES ARE CERTIFIED EXTRACTS FROM THE ORIGINAL CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

Metallurgical Services Manager

WHITBY STEEL MILL

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE ·SELLERTAND-SPEGIFIGALLY-EXGLUDED-ARE-WARRANTIES OF-MERCHANTABILITY-AND-FITNESS-FOR-A-PĀRTICUĻAR-PURPOSE-

In no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller.

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in

Page 13 of 22

N-080652

EN GERDAU AMERISTEEL

Chemical and Physical Test Report MADE IN CANADA

CAMBRIDGE STEEL MILL 160 ORION PLACE CAMBRIDGE ON N1T 1R9 CAN (519) 740-2488

SHIP TO

C.W. CARRY 1976 LTD

581 5 75TH ST. - SIDING CN Z062

780-465-0381

EDMONTON, AB T6E 0T3

INVOICE TO

C.W. CARRY 1976 LTD ACCTS PAYABLE

5815 75 ST NW

EDMONTON, AB T6E 0T3

SHIP DATE

03/02/11

CUST. ACCOUNT NO

60122230

PRODUCED IN: CAMBRIDGE

THOUGHT III.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,																							- 11 12	
SHAPE + SIZE		GRAD	E	SPEC	<b>IFICATIO</b>	NC													SA	LES ORI	DER	CU	ST P.O.	NUMBE	iH
A1 1/2 X 1 1/2 X 1/4		44W		CSA-G	340.21-3	00W-04	(44W); A	STM A	36/A36M	-08									101	3546-13		261	58-13		
HEAT I.D.	.C	Mn	P	S	Si	Cυ	Ni	Cr	Mo	V	Νb	В	N	Sn	Αl	Ti	Zr	Ca	Zn	C Eqv					
N104477	.17	.60	.010	.029	.21	:35	.13	.11	.040	.004	.002	.0002	.0198	.011	.002	.00100	.002	.00000	.00400	.33	. 1		ľ		ł

Mechanical Test: Mechanical Test:

Yield 49120 PSI, 338.67 MPA Tensile: 72297 PSI, 498.47 MPA %El: 28.0/8ln, 28.0/200MM Red R 36.3 : 1

Yield 48759 PSI, 336.18 MPA Tensile: 71930 PSI, 495.94 MPA %El: 28.0/8in, 28.0/200MM Red R 36.3 : 1

Customer Requirements CASTING: STRAND CAST Customer Requirements CASTING: STRAND CAST

Customer Requirements CASTING: STRAND CAST

PRODUCED IN CAMBRIDGE

	PRODUCED IN: CA	AMDH	DUCE																							
	SHAPE + SIZE		GRAD	É	SPEC	FICATION	ON.													SA	LES OR	DER	CI	UST P.O.	NUMBE	∄R
	A1 1/2 X 1 1/2 X 1/4		44W		CSA-C	340.21-4	4W-04													101	3546-13	1	26	7 58-13		
7	HEAT I.D.	C	Mn	P	S	Si	Cu	Ni	Cr	Мо	V	Nb	В	N	Sn	Al	Ti	Zr	Ca	Zn	C Eqv					i
٠.	N1,04483	.16	-59	.014	.036	.16	.37	.12	.16	.030	.003	.002	.0001	.0707	.011	.001	.00100	.002	.00030	.00200	.33					

Mechanical Test: Mechanical Test:

Yield 51848 PSI, 357.48 MPA Tensite: 72007 PSI, 496.47 MPA %El: 28.5/8in, 28.5/200MM Red R 36.3 :1

Customer Requirements CASTING: STRAND CAST

Yield 51138 PSI, 352.58 MPA Tensile: 72243 PSI, 498.1 MPA %EI: 29.0/8in, 29.0/200MM Red R 36.3 : 1

#### **Customer Notes**

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY. This material, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchili

Quality Director

Gerdau Ameristeel

THE ABOVE FIGURES ARE CERTIFIED CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

Metallurgical Services Manager

CAMBRIDGE STEEL MILL

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SOLD RUSSEL - EDMONTON P O BOX 4128

NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

61A030305

EDMONTON AB T6E 4T2 CANADA

RUSSEL METALS INC

1202

Ship from:

Nucor Steel Seattle, Inc. 2424 SW Andover

SEATTLE, WA 98106-1100 206-933-2222 Date: 14-Apr-2010 B.L. Number: 390781

Load Number: 234236

SHIP TO: RUSSEL M

EDMONTON AB T6E 4T2

CANADA

Material Safety Data	a Sheets are available at www.nucorbar.com or	by contacting		sales repres	 			CHE	MICAL TESTS		IG-08 March	24, 2009
HEAT NUM	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	 VT% DEF	C Ni	Mn Cr	PMo			Sn	C.I
PO# =>	M61085624											
SE1010067401	Nucor Şteel Seattle, Inc.	51,528	77,458	25.8%	***	.17	.74	.017	.030	-17	.37	
۸	1-1/2x1-1/2x1/4 Angle	355MPa	534MPa			.15	.12	.030	.006	.004		
$\sim h / l$	20' A36/44W .	51,414	77,291	27.3%								
	CSA G40.21-04 44W/ASTM A36/A36M-	354MPa	533MPa									
The same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the sa	ASTM A709/A709M-08 GR 36 [250]											
	ASME SA36-2007 EDITION											
	ASTM A36/A36M-08, A709/A709M-07											
	GR36, ASME SA36-07											
PO# =>	M81035624											
E1010067801	Nucor Steel Seattle, Inc.	52,860	73,829	26.6%	***	.15	.71	.017	.034	.21	.33	
	1-1/2x1-1/2x3/16 Angle		509MPa			.11	.12	.020	.006	.005		
	20' A36/44W	52,896	74,041	27.3%								
	CSA G40.21-04 44W/ASTM A36/A36M- 08	365MPa	510MPa							•		
	ASTM A709/A709M-08 GR 36 [250]											
	ASME SA36-2007 EDITION		•									
	ASTM A36/A36M-08, A709/A709M-07 GR36, ASME SA36-07											
PO# =>	M61035474								•	•		
E1010074202	Nucor Steel Seattle, Inc.	49,689	74,004	30.5%	***	.16	.76	.014	.032	.22	.32	
	1/2x3* Flat		510MPa			.12	.11	.020	.005	.004		
	20' A36/44W	49,902	74,163	29.7%								
	CSA G40.21-04 44W/ASTM A36/A36M- 08	344MPa	511MPa									
	ASTM A709/A709M-08 GR 36 [250]											
	ASME SA36-2007 EDITION											
	ASTM A36/A36M-08, A709/A709M-07											
	GR36, ASME SA36-07											

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING NELTING, MAYE OCCURRED MITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE MED FREE. MERCURY. 1H ANY FORM, MAS NOT BEEN USED IN THE PRODUCTION OF TESTING OF THIS MATERIAL.

QUALITY ASSURANCE:

Winky Lai

nlinkyh

**MUCOR** 

NUCOR STEEL SEATTLE, INC.

C W CARRY(1967) LTD SOLD

5815 75TH ST

**EDMONTON AB T6E 0T3** 

CANADA

SHIP

TO:

C W CARRY

5815 75TH ST TO:

**EDMONTON AB T6E 0T3** 

CANADA

**CERTIFIED MILL TEST REPORT** 

Page: 1

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 6-May-2011

NBMG-08 March 9, 2011

B.L. Number: 412316 Load Number: 250220

Material Safety Data Sheets are available at www.nucorbar.com or by contacting your inside sales representative.

	Malenai Galety Date	Sileets are available at www.hucorbar.com or t	y cornacing	your maide	dalos repido	Cincativor									,
				PHY	SICAL TES	rs			<del></del>		CHEM	ICAL TEST	rs a		
	HEAT NUM. *	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	CNI	Mn Cr	Р	Mo	S V	Si Cb	Cu Sn	C.E.
	PO# =>	26737		-											
	SE1110223201	Nucor \$teel - Seattle Inc	54,015	73,513	30.5%			.15			116	.040	.19	.32	.34
	1/2	1/4x2"/Flat	372MPa	507MPa				.14	.1	0. 8	040	.008	.001		
ł	1-1	20! A36/44W	53,309	74,215	27.3%										
. 1	7	CSA G40.21-04 44W/ASTM A36/A36M-	368MPa	512MPa											
		08													1
		ASTM A709/A709M-10 GR 36 [250]													
Ì		ASME SA36-2007 EDITION-2009 ADDE						•							
ļ		NDA													
		ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad													
	PO# =>	26737													
	SE1110223302	Nucor Steel - Seattle Inc	53,461	76,634	26.6%			.15			17	.029	.17	.37	.37
		3/8x2-1/2" Flat	369MPa	528MPa				.17	.2	2 .(	050	.010	.003		
		20' A36/44W	54,104	76,994	30.5%										Į
		CSA G40.21-04 44W/ASTM A36/A36M- 08	373MPa	531MPa										•	
		ASTM A709/A709M-10 GR 36 [250]				•									
		ASME SA36-2007 EDITION-2009 ADDE NDA													
		ASTM A36/A36M-08, A709/A709M-09a													
		GR36, ASME SA36-07 Ed 09 Ad													
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QUALITY ASSURANCE:

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

1.) Weld repair was not performed on this material.

2.) Helted and Manufactured in the United States.

2.) Hercury, Radium, or Alpha source materials in any form have not been used in the production of this material.

C W CARRY(1967) LTD SOLD

5815 75TH ST TO:

EDMONTON AB T6E 013

CANADA

SHIP TO:

C W CARRY 5815 75TH ST

EDMONTON AB T6E 0T3

CANADA

NUCOR

NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Page: 2

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 26-Apr-2011

B.L. Number: 411892 Load Number: 249376

				SICAL TES	TS				CHEM	ICAL TESTS	3		
HEAT NUM. *	DESCRIPTION	YIELD P.S.J.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	CNI	Mn Cr	P Mo	S V S	Si Cb	Cu Sn	
5011													
PO# =>	26737	10 177	70.000	04.404									
E1110162702	Nucor Steel - Seattle Inc 3/8x6- Plat	48,177	72,029	34.4%			.18	.69	.016	.049	.19	.36	
. 0.12	20 A36/44W		497MPa	54.404			.11	.15	.030	.006	.003		
70		47,751	71,347	34.4%									
J. J.	CSA G40.21-04 44W/ASTM A36/A36M- 08	329MPa	492MPa										
	ASTM A709/A709M-10 GR 36 [250]												
	ASME SA36-2007 EDITION-2009 ADDE												
	NDA								•				
	ASTM A36/A36M-08, A709/A709M-09a						•						
	GR36, ASME SA36-07 Ed 09 Ad												
PO# =>	26737											•	
E1110162801	Nucor Steel - Seattle Inc	50,510	74,376	31.3%			.16	.73	.016	.044	.21	.33	
	1/2x6" Flat	•	513MPa				.12	.14	.030	.006	.003	.55	
	20' A36/44W	50,836	73,903	32.0%				.17	.000	.000	.003		
	CSA G40,21-04 44W/ASTM A36/A36M-		510MPa										
	08												
	ASTM A709/A709M-10 GR 36 [250]				-								
	ASME SA36-2007 EDITION-2009 ADDE												
	NDA												
	ASTM A36/A36M-08, A709/A709M-09a												
	GR36, ASME SA36-07 Ed 09 Ad												
•													
•													
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•		1											
		*											

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

1.) Weld repair was not performed on this material.

2.) Malted and Manufactured in the United States.

1.) Mercury, Radium, or Alpha source materials in any form have not been used in the production of this material.

QUALITY ASSURANCE:

Winky Lai

Winkyt

SOLD C-W CARRY(1967) LTD

5815 75TH ST

EDMONTON AB T6E 0T3

CANADA

SHIP TO:

C W CARRY 5815 75TH ST

EDMONTON AB T6E 0T3

CANADA

**NUCOR** 

NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Page: 3

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 8-Mar-2010 B.L. Number: 389014

Load Number: 232608

N	Material Safety Data	a Sheets are available at www.nucorbar.com or	by contacting	your inside	sales repres	entative.						NE	MG-08 March 2	4, 2009
Г				PHY	SICAL TES	TS				CHEN	AICAL TES	TS		
	HEAT NUM.*	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	C NI Mn	Cr	P Mo	SV	SICb	Cu Sn	C.E.
T		00704												
21	PO#=>	20724												<b>.</b> .
1 5	SE1010075701	Nucor Steel - Seattle Inc	51,453	73,938	32.8%			.15	.74	.017	.043	.20	.36	.34
		3/8x6" Flat	355MPa	510MPa				.11	.13	.030	.005	.005		
		20' A36/44W	51,796	73,338	34.4%									
+		CSA G40.21-04 44W/ASTM A36/A36M-	357MPa	506MPa										

08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-08, A709/A709M-07

GR36, ASME SA36-07

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MEDITAR, BAYE OCCURRED WITHIN THE ONITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY
ASSURANCE:
C1-244 of 486

Winky Lai

nlinkyt

en gerd/	GERDAU AMERISTEEL GERDAU AMERISTEEL MANITOBA									Che		al and DE IN		-	n ies	пер	ort								R	-024271
GERDAU AMERIST 27 MAIN ST. SELKIRK MB R1A (204)482-3241			A	1	3		//	XE	1				1	/ L	10	7	3									
SHIP TO C.W. CARRY LTD. 5815 75TH ST EDMONTON, AB							C.\ AC 58	VOICE W. CAR CTS PA 15 75 S MONTO	RY 197 AYABL T NW	Ē								01/2 CU	P DATE 18/11 ST. ACC 22230		NO					w.,
PRODUCED IN: M	ANITO	ВА															•			1.5	ALES O	DEB.		UST P.O	AN IBAIR	=0
SHAPE + SIZE		GRADE			FICATIO																05186-0			719-02	. INCIVIO	<u>-n</u>
F1/4 X 8		44W/50			40.21-0									-	F		-			<del></del>	1031007	7	7 14	7		
HEAT I.D. R639935	.18	Mn 1.04	.012	.024	Si .22	Cu .32	.12	.015	.000	.000	<u></u> -	1-		••	·				<del></del>	+		+	+	+		
Mechanical Test: PRODUCED IN: M	Yield 54 Yield 55 ANITO	200 PSI, IB <b>A</b>	380.59 (	MPA -	Tensile:	80900 P 81400 P				31.6/2 31.5/2	•									T S	ALES O	RDER	Tc	UST P.C	). NUMB	ER
SHAPE + SIZE		GRADI			FICATIO																05186-			5719-01		
F1/4 X 6	7 - 2	44W/5	DW D	S	40.21-0 Si	4 Cu	Cr	Мо	T V	Nb		1			T	7	T			-	1	Ţ			T	T
HEAT LO. R639946	C	Mn 1.04	.008	.023	.20	.27	.12	.023	.000	.000	+					+	+	-	1	1	+	+	1		1	
Mechanical Test:	Yield 54 Yield 54	600 PSI,	376.45	MPA	Tensile:	79200 F 79200 F	SI, 546	.06 MPA	%El:	32.1/2 32.2/2	-															
PRODUCED IN: M	IANITO	BA																			ALES O	DUCO		UST P.C	NUME	FR
SHAPE + SIZE		GRAD			FICATIO																005186-			5719-03	7. TEGIVIE	
F3/8 X 6		44W/5	أورزات فسنسري		40.21-0	and the state of the state of		·	-				-	, <u>.</u>	T				1		100100	-T		1		T
HEAT I.D.	C	Mn	Р	S	Si	Си	Cr	Мо	V	Nb	1		_		ļ	-	-		-	<del></del>	<del>-  </del>	+	+	+	+	<del> </del>
R639956	.19	.85	.012	.026	.22	.29	.13	.021	.000	.017	ــــــــــــــــــــــــــــــــــــــ				<u> </u>											
Mechanical Test:	Yield 57	600 PSI,	397.141	MPA :	Tensile:	79800 F	'SI, 550	2 MPA	%El:	32.2/20	1, 322	2/50.8n	nm													

#### **Customer Notes**

Mechanical Test:

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This material, including the billets, was melted and manufactured in Canada

Bhaskar Yalamandiili

Quality Director Gerdau Ameristeel THE ABOVE FIGURES ARE CERTIFIED CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

> Metallurgical Services Manager GERDAU AMERISTEEL MANITOBA

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials turnished by seller.

Yield 57600 PSI, 397.14 MPA Tensile: 79800 PSI, 550.2 MPA %EI: 32.2/2in, 32.2/50.8mm

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in question.

SOLD CW CARRY(1967) LTD

5815 75TH ST

EDMONTON AB T6E 0T3

CANADA

SHIP TO: C W CARRY

5815 75TH ST

EDMONTON AB T6E 0T3

CANADA

HUCOR

NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Page: 1

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 9-Feb-2010

NBMG-08 March 24, 2009

B.L. Number: 388199

Load Number: 231573

Material Safety Data Sheets are available at www.nucorbar.com or by contacting your inside sales representative.

Material Calciy Date	a Sheets are available at www.nucorbar.com or			SICAL TES						ICAL TESTS			
HEAT NUM. *	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	CNI	Mn Cr	P Mo	SVS	Si Cb C	Sn	C.E.
PO# =>	20724	E2 004	74 404	22.7%			.14	.69	.014	.049	.21	.40	.32
SE1010013601	Nucor Steel Seattle, Inc. 1/4x2" Flat	53,064 366MPa	71,121 490MPa				.15	.10	.040	.005	.004		
	20' A36/44W	52,965	71,908 · 496MPa	25.0%									
	CSA G40.21-04 44W/ASTM A36/A36M- 08	30311172	1 490MFa										
	ASTM A709/A709M-08 GR 36 [250]												
	ASME SA36-2007 EDITION ASTM A36/A36M-08, A709/A709M-07												
	GR36, ASME SA36-07												
PO# => SE1010017601	20724 Nucor Steel Seattle, Inc.	52,450	73,944	30.5%		***	.17	.74	.021	.047	.19	.35	.3
	1/4×4" Flat		510MPa				.12	.15	.030	.006	.005		
	∕20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M-	52,500 362MPa	73,596 507MPa	34.4%									
	08												
	ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION												
	ASTM A36/A36M-08, A709/A709M-07												
	GR36, ASME SA36-07												
											•		

I HEREBY CERTIFY THAT THE ABOVE PIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, MAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE:

Winky Lai

linkyt-

C W CARRY(1967) LTD SOLD

5815 75TH ST TO:

EDMONTON AB T6E 0T3

CANADA

C W CARRY SHIP

5815 75TH ST TO: EDMONTON AB T6E 0T3

CANADA

MUCOR

NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Page: 3

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 29-Jun-2010 B.L. Number: 394800

Load Number: 236979

Material Safety Data Sheets are available at www.nucorba	r.com or by contacting your inside sales representative.	NBMG-08 March 24, 200
	PHYSICAL TESTS ·	CHEMICAL TESTS

	!			PHY	SICAL TES	S	•			CHEM	CAL TESTS	3		
	HEAT NUM. *	DESCRIPTION	YIELD. P.S.I.	TENSILE P.S.I.	ELONG. % IN 8"	BEND	WT% DEF	C Ni M	n Cr	P Mo	S V	Si Cb C	Sn	C.E.
	PO# ≈>	22791												
	SE1010264001	Nucor Steel Seattle, Inc.	53,230	72,681	26.6%		***	.15	.71	.015	.042	.21	.30	.32
		2x2x1/8 Angle		501MPa				,10	.12	.020	.006	.003		-
		20' A36/44W	52,572	72,481	28.1%									[
		CSA G40,21-04 44W/ASTM A36/A36M-		500MPa										
		08												1
		ASTM A709/A709M-08 GR 36 [250]												
		ASME SA36-2007 EDITION												İ
		_ASTM A36/A36M-08, A709/A709M-07												}
	1	GR86, ASME SA36-07												1
//	PO# =>	22791												
X	SE1010284601	Nucor Steel - Seattle Inc	52,337	74,565	28.1%			.18	.81	.015	.041	.15	.32	.37
7/1		1/4x4y Flat	361MPa	514MPa				.11	.11	.030	.007	.003		1
		28 A36/44W	52,067	73,966	28.1%									[
	/	CSA G40.21-04 44W/ASTM A36/A36M-		510MPa										1
		08												
_		ASTM A709/A709M-08 GR 36 [250]												
		ASME SA36-2007 EDITION												
		ASTM A36/A36M-08, A709/A709M-07												
ļ		GR36, ASME SA36-07												Ì
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I HEREBY CERTIFY THAT THE ABOVE PIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELL FREE MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE:

61A030307

Nucor

4/15/2010 11:42:04

Steel

2/003

Fax

PAGE

CERTIFIED MILL TEST REPORT

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover SEATTLE, WA 98106-1100

Date: 15-Apr-2010 B.L. Number: 390843 Load Number: 234235

てしに ロス・

NUCOR STEEL SEATTLE, INC.

SOLD RUSSEL - EDMONTON P O BOX 4128 TO: EDMONTON AB T6E 4T2 CANADA

RUSSEL METALS INC 7016 99TH STREET

CANADA

.EDMONTON AB, T6E, 4T2

TO:

			PH	SICAL TES	TS .		110		CHE	MICAL TES		4G 08 March 2	
HEAT NUM. *	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT%DEF	CNI	Mn Cı	P Mo	SV	Si Cb	Cu Sn	C.E
PO# =>	M61035474					•							
SE1010074801	Nucor Steel Seattle, Inc.	49,850	72,659	27.3%		***	.16	.63	.015	.042	,25	.31	.33
	1/4x4" 闩at	344MPa	501 MPa				.11	.13	.030	.005	.003		•
	20' A36/44W	50,460	70,397	32.0%									
	CSA G40.21-04 44W/ASTM A36/A36M- 08	348MPa	485MPa										
	ASTM A709/A709M-08 GR 36 [250]												
	ASME SA36-2007 EDITION												
THE RESERVE OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED ASSESSMENT OF THE PERSON NAMED	ASTM A36/A36M-08, A709/A709M-07												
764	GR36, ASME SA36-07												
PO# -> E1010090401	M61035474 Nucor Steel Seattle Inc.	52.001	74.077	27.3%		***	17	70	014	000	10	0.4	0.5
DE 1010090401	1/4x2* Flat	52,901 365MPa	74,377 513MPa	27.370			.17 .11	.76 .09	.014 .020	.036 .006	.16	.34	.35
10	20' A36/44W	52,812	73,874	26,6%			.11	.09	.020	.000	.003		
4× _	CSA G40.21-04 44W/ASTM A36/A36M-	364MPa	•	20,076									
	08	SUMMIFA	SUSIVIFA										
	ASTM A709/A709M-08 GR 36 [250]												
•	ASME SA36-2007 EDITION												
	ASTM A36/A36M-08, A709/A709M-07												
	GR36, ASME <b>SA36-07</b>												
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•	the second to the second to												

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURARED WITHIN THE UNITED STATES, ALL PRODUCTS PRODUCEO ARE WELD FREE, MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE:

NUCOR STEEL SEATTLE, INC.

SOLD CW CARRY(1967) LTD

5815 75TH ST TO:

EDMONTON AB T6E 0T3

CANADA

C W CARRY SHIP 5815 75TH ST TO:

EDMONTON AB T6E 0T3

CANADA

**CERTIFIED MILL TEST REPORT** 

Page: 1

Ship from:

Nucor Steel Seattle, Inc. 2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 6-May-2011

MONTO OR 14---- P. 2014

B.L. Number: 412316 Load Number: 250220

Material Safety Data Sheets are available at www.nucorbar.com or by contacting your inside sales representative

			PHY	SICAL TES	rs				CHEM	IICAL TESTS	3		
HEAT NUM. *	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	CNI	An Cr	P Mo	S V	Si Cb C	Cu Sn	C.E
PO# =>	26737												
SE1110223201	Nucor Steel - Seattle Inc	54,015	73,513	30.5%			.15	.67	.016	.040	.19	.32	.3
6.6	1/4x2" Flat	372MPa	507MPa				.14	.18	.040	.008	.001		
18	20' A36/44W	53,309	74,215	27.3%									
77	CSA G40.21-04 44W/ASTM A36/A36M- 08	368MPa	512MPa										
V	ASTM A709/A709M-10 GR 36 [250]												
	ASME SA36-2007 EDITION-2009 ADDE NDA						•						
	ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad											•	
PO# =>	26737												
SE1110223302	Nucor Steel - Seattle Inc	53,461	76,634	26.6%			.15	.76	.017	.029	.17	.37	.3
	3/8×2-1/2" Flat	369MPa	528MPa				.17	<b>.2</b> 2	.050	.010	.003		
	20' A36/44W	54,104	76,994	30.5%									
•	CSA G40.21-04 44W/ASTM A36/A36M- 08	373MPa	531MPa									•	
	ASTM A709/A709M-10 GR 36 [250]												
	ASME SA36-2007 EDITION-2009 ADDE NDA												
	ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad												
	Sitted from Sites of Education												

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements, 1.) Weld repair was not performed on this material. 2.) Melted and Manufactured in the United States. 3.) Mercury, Radium, or Alpha source materials in any form "we not been used in the production of this material.

OUALITY ASSURANCE:

C1-249 of 486

C W CARRY(1967) LTD SOLD

**MUCOR** NUCOR STEEL SEATTLE, INC. CERTIFIED MILL TEST REPORT

Page: 3

TO:

SHIP

TO:

5815 75TH ST

EDMONTON AB T6E 0T3

CANADA

C W CARRY

5815 75TH ST EDMONTON AB T6E 0T3

CANADA

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 20-Dec-2010

B.L. Number: 404619

Load Number: 244787

NBMG-08 March 24, 2009

Sheets are available at www.nucorbar.com or b		TENSILE P.S.I.	SICAL TEST ELONG % IN 8"	BEND WT%	C NI N	In Cr F	Mo S	3 V S	Cb C	u Sn	C.
							1				
24846 Nucor Steel Seattle, Inc. 1/2x2" Flat 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M- 08 ASTM A709/A709M-08 GR 36 [250]	53,109	78,010	25.0% 31.3%	***	.19 .09	.77 .14	.032 .020	.032 .007	.23 .003	.30	.:
NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad 24846 Nucor Steel Seattle, Inc. 1/4x2" Flat 20' A36/44W CSA G40,21-04 44W/ASTM A36/A36M-	56,353	79,295	26.6%	***	.18 .10	.70 .13	.021 .020	.029 .006	.21 .003	.37	
OB ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a GR36, ASME SA36-07 Ed 09 Ad										·	
	ASTM A709/A709M-08 GR 36 [250] ASTM A709/A709M-08 GR 36 [250] ASTM A36/A36M-08, A709/A709M-09a ASTM A36/A36M-08, A709/A709M-09a ASTM A36/A36M-08, A709/A709M-09a ASTM A36/A36M-08, A709/A709M-09a ASTM A36/A36M-08, A709/A709M-09a ASTM A36/A36M-08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a	Nucor Steel Seattle, Inc.  72x2" Flat  80' A36/44W  CSA G40.21-04 44W/ASTM A36/A36M- 08  ASTM A709/A709M-08 GR 36 [250]  ASME SA36-2007 EDITION-2009 ADDE  NDA  ASTM A36/A36M-08, A709/A709M-09a  GR36, ASME SA36-07 Ed 09 Ad  24846  Nucor Steel Seattle, Inc.  755,455  382MPa  20' A36/44W  CSA G40,21-04 44W/ASTM A36/A36M- 08  ASTM A709/A709M-08 GR 36 [250]  ASME SA36-2007 EDITION-2009 ADDE  NDA  ASTM A36/A36M-08, A709/A709M-09a	ASTM A709/A709M-08 GR 36 [250] ASKE SA36-2007 EDITION-2009 ADDE NUCO Steel Seattle, Inc.  1/2x2" Flat 20' A36/44W 359MPa 53,109 78,010 366MPa 538MPa 538MPa 538MPa 536MPa 538MPa 538MPa 538MPa 538MPa 55,455 79,069 382MPa 55,455 79,069 382MPa 545MPa 56,353 79,295 389MPa 547MPa 08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION-2009 ADDE NDA ASTM A36/A36M-08, A709/A709M-09a	ASTM A709/A709M-08 GR 36 [250] ASKE SA36-2007 EDITION-2009 ADDE NDA ASTM A709/A709M-08 GR 36 [250] ASKE SA36-07 Ed 09 Ad 24846 NUCOR Steel Seattle, Inc.  1/4/22" Flat 20' A36/44W  25, A56/45 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, A57 26, 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A36/40W 205 A36/40W 205 A36/40W 206 A36/40W 207 A36/40W 208 A36/A36M-08, A709/A709M-09a	August Steel Seattle, Inc.    72x2" Flat   359MPa   536MPa   536MPa   53,109   78,010   31.3%   366MPa   53,109   78,010   31.3%   366MPa   53,109   78,010   31.3%   366MPa   53,109   78,010   31.3%   366MPa   53,109   78,010   31.3%   366MPa   53,109   78,010   31.3%   366MPa   53,109   78,010   31.3%   366MPa   538MPa   538MPa   538MPa   538MPa   538MPa   538MPa   538MPa   545MPa   56,353   79,295   25.8%   ***	August Steel Seattle, Inc.  1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 1/2x2" Flat 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Joseph Bastle, Inc.  Joseph Bastle, Inc.  Jo

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD PRES. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

QUALITY ASSURANCE:

SOLD CW CARRY(1967) LTD

5815 75TH ST

EDMONTON AB T6E 0T3

CANADA

C W CARRY SHIP 5815 75TH ST

TO: EDMONTON AB T6E 0T3

CANADA

MUCOR

NUCOR STEEL SEATTLE, INC.

CERTIFIED MILL TEST REPORT

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 5-Mar-2010

B.L. Number: 388954 Load Number: 232569

			PHY	SICAL TES	TS			* ****	CHEMIC	CAL TESTS		MG-08 March 2	1, 2003
HEAT NUM. *	DESCRIPTION	YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	CNI	Mn Cr	P Mo S	V S	Сь	Cu Sn	C.E.
E1010075201	2108 Nucpr Steel - Seattle Inc 3/4* Rd 20' A36/44W CSA G40.21-04 44W/ASTM A36/A36M- 08 ASTM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-08, A709/A709M-07 GR36, ASME SA36-07	54,704	78,189 539MPa 77,603 535MPa	21.9% 23.4%		a.	.18 .11	.66 .12	,019 .020 0	.035 .00 0	.21 .00	.33	.35

QUALITY ASSURANCE:

Winky Lai

I HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

GERDAU AMERISTEEL

CAMBRIDGE STEEL MILL 160 ORION PLACE CAMBRIDGE ON N1T 1R9 CAN (519) 740-2488

Chemical and Physical Test Report MADE IN CANADA

N-080525

SHIP TO

RUSSEL METALS - EDMONTON C/O CN OIL & GAS DIST CTR ON TRACK VS36 SCOTFORD, AB T8L 4A4

INVOICE TO

RUSSEL METALS INC ACTS PAYABLE

EDM

SHIP DATE 02/22/11

PO BOX 4128

EDMONTON, AB T6E 4T2

CUST. ACCOUNT NO

60072055

PRODUCED IN: CAMBRIDGE

SHAPE + SIZE		GRAD	E	SPECI	FICATIO	NC												SA	LES OR	DER	C	UST P.O.	NUMBE	R
F1/2 X 4		44W		CSA-G	40.21-3	00W-04	(44W); A	STM A	36/A36N	N-08								013	30562-1	3	61	1037695-	13	
HEAT I.D.	С	Mn	Р	5	51	Сu	NI	Gr	Mα	V	Мp	В	\$n	Al	Ζr	C Eqv			1			1.		
N103039	.18	.63	.017	,039	.18	.37	.13	.19	.050	.003	.001	.0001	.01,5	.001	.001	37							i	

Mechanical Test:

Yield 46584 PSI, 321.19 MPA Tensile: 72121 PSI, 497.26 MPA %EI: 27.5/8in, 27.5/200MM Red R 12.5 : 1 Idi Diam: .6

Customer Requirements CASTING: STRAND CAST

Mechanical Test:

Yield 48272 PSI, 332.82 MPA Tensile: 72086 PSI, 497.02 MPA %EI: 27.5/8in, 27.5/200MM Red R 12.5 ; 1 ldl Diam: .6

Customer Regultaments CASTING: STRAND CAST

CUST ITEM NUMBER: 38316

PRODUCED IN: CAMBRIDGE

- 1																											
/	SHAPE + SIZE		GRAD	ΣE	SPEC	FICATION	NC													SA	LES OR	DER	CL	IST P.O.	NUMBE	R	7
L	S3/4		44W		CSA-C	340.21-3	300W-04	(44W); A	ASTM A	36/A36N	1-08									013	30562-19	9	61	037695-	19		1
ì	HEAT I.D.	c/	Mn	Р	S	SI	Cu	N	Cr	Mo	V	Nb	B	N	Sn	Al	Ti	Zr	Ca	Zn	C Eqv						7
	N103588	/18	,65	,016	.041	.17	.40	.10	.13	.040	.003	.001	:0001	.0039	.012	.001	.00100	.001	.00010	.00100	.36						1

Mechanical Test:

Ýleid 48330 PSI, 333.22 MPA - Tensile: 71915 PSI, 495.84 MPA - %El: 27.0/8in, 27.0/200MM - Red R 44,4 ; 1

Customer Reguliements CASTING: STRAND CAST

Mechanical Test:

Yield 47825 PSI, 329.74 MPA Tensile: 72287 PSI, 498.4 MPA %EI: 25.0/8in, 25.0/200MM Red R 44.4 ; 1

Customer Requirements CASTING: STRAND CAST CUST ITEM NUMBER: 37870

**Customer Notes** 

NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.

This material, including the billets, was melted and manufactured in Canada

Bhaskar Yalamanchill

Quality Director

Gerdau Ameristeel

THE ABOVE FIGURES ARE CERTIFIED CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

Metallurgical Services Manager

CAMBRIDGE STEEL MILL

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE,

In no event shall seller be liable for indirect, consequential or punitive demages arising out of or related to the materials furnished by seller.

Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in question.

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# 2" XH A333 HT = 07506827

Contract No.: PO.NO.:

CI-09-418 CI-09-418

Name of Customer TRANS AM PIPING PRODUCTS LTD.

L/C NO.: Description: DPCHCV929006

PIPE

HENGYANG VALIN STEEL TUBE CO.,LTD

Add: 10 Dallxincun, Hengyang City, Hunan, China

Tel and Fax: +86 734 8873739 8872942

Cable: 6993 P.C. 421001

MILL INSPECTION CERTIFICATE

Date: NOV 05,2009

TOTA				BOADLES								Page	: 1/1	<u>-</u>										
SPE	C:ASTM	1 A333	GR 6-200	5/ASME SA	333 GI	R6-2007	,NAC	E MR017	5-2003/1	SO 151	56								CERT	IFICAT	re no:0	9-1-11-1	3	
NO.	BAT		HEAT NO.	STE GRA				SIZ	ZE				BUND	LES	PIE	CES	FE	ETS		TMAU	YTI	(MT)	ACTUAL V	VEIGHT(M
1	09-A1	0493	0750682	7 B		60.3	2'	X 5.54	A333 G	R 6 B.E	. XS						-				-			
				7								-					‡===		-					
	ļ											_			<u> </u>		-							· · · · · · · · · · · · · · · · · · ·
NO.	\ <u>-</u>	IVER		NC	DNDES	TRUCT	IVE TE	ST				J	CHE	EMICAL	COMPO	SITION	%		L					
	CONDI	ITION(	≥650°C)	ET	. ,		UT	<del></del>	c	Si	Mn		P	S	Cu	Ni	Cf	Mo	V	TI	H	NB	CE	T
1	1	YORM!	ALIZEU	OK.			<del>.,</del>	<del></del>	0.17	0.31	1.20	0.	020	0.010	0.02	0.01	0.02	0.01	0.01	0	0	0.001	0.38	
											ļ	-			<del> </del>		ļ				-			
												-				<u> </u>					1			
NO.		T.		T	Y.S. (MPA	1		E.L (%)	l		Ak ·			HARD BRIN	NESS		L DROSTA			ATTE	⊥ :N Ti	-07	BEND	TEST
				Full, L,		·				1	2	<del>,</del>	AVG.		(B)	TE	ST (MP	'A)	}	L/111L	.14 11	201	BEND	1601
1		550/	550		400 /40	00		34.0/34	1,U	49/43	52/57	41/46	47/49	164.	/166		17.0				ρĸ			K
<del></del>																								
		<u> </u>		<del></del>					·—·	<del> </del>	<b> </b> -													
														·										
FLE	MARKS:	1.We h	ereby cedify	that this centric	cate of q	uality is is:	sued an	ವ signed by	the manu	facture.									1	11/1/1	i Siee,	1110		

- 2. We hereby certify that the properties described herein meet the requirement of the above spec.
- 3. We hereby certify that this certificate is issued accordance with EN 10204 0.1B
- 4. SPECIMEN SIZE: (Pipe end, Longitudinal, Gauge Length=2")

A.For pipes≤1" full length specimen were used;

B.For plpes > 1" longitudinal strip specimen were used; the width of the gauge tength portion is 3/4"

5 HEAT TREATMENT CONDITION FOR PIPE NORMALIZED:900°C X 10MIN

6.tmpact Test:5X10X55MM AT 45°C

7.DIMENSION STANDARD ASME B36.10

8.MANUFACTURE METHOD; COLD DRAWN

QUALITY MANAGER (新港亞灣管有限公司)

a a ≃

IH W

## 2"XH A333 HT# 07506827

Contract No.:

CI-09-418

PO.NO.:

CI-09-418

L/C NO.:

Name of Customer: TRANS AM PIPING PRODUCTS LTD. DPCHCV929006

Description:

PIPE

HENGYANG VALIN STEEL TUBE CO., LTD

MILL INSPECTION CERTIFICATE

Date: NOV 05,2009

Add: 10 Dalixincun, Hengyang City, hunan, China Tel and Fax: 186 734 8873739 8872942

Cable: 6993 P.C. 421001

TOTA_: 91 PCS 3 BUNDLES ,4.013MT Page: 1/1

NO.	BATCH	HEAT	ASME SAB33 GI									<del></del>		<del></del> .		CER	IFICAT	E NO:09	3-1-11-1	3	
	NO.	NO.	GRADE		SIZ	ZE				BUND	DLES	114	ECES	FE	ETS		TNAUC	ITY (I	MT)	TACTUAL!	WEIGHT(M
1	09-A10493	07506827	B	60.3 2	X 5.54	A333 C	R 6 B.E	. XS				<del> </del>		<del> </del>	_	<del></del>				THOTOAL	VEIGH I (IV
	<del>                                     </del>		-			···								t -		-				<del> </del>	
			1						-							1				<del> </del>	
									+ -					-						<del> </del>	
	DELIVER	,							+		· · · · · · · · · · · · · · · · · · ·	<del> </del>		<del> </del>		<del> </del>					
10.	CONDITION(		NONDES:	TRUCTIVE T	EST			·		CHI	EMICAL	COMPO	DSITION	%							
1	NORMA		OK -	UT		0.17	Si	Mn	+	<u>P</u>	S	Cu	Ni		Mo	V	П	ы	NB	CE	T
						0.1/_	0.31	1.20	0.	020.	0.010	0.02	0.01	0.02	0.01	0.01	0	n	0.001	0.38	†
													-		<del></del>	<del> </del>	<del> </del>				
		-	+			·	ļ	ļ							<del>                                     </del>	<b>-</b>	<del>                                     </del>			<del></del> -	<del> </del>
$\Box$							ļ	<u> </u>	<del> </del>		ļ ———	~									-
0.	T.S (MP.		Y.S. (MPA)		E.L (%)			Ak ·			HARD		HYD	ROSTA	TIC		L				
_			Full, L, Lo=50m				1	IMP/	<del></del>	AVG.	BRIN (H			ST (MP		Fl	VLLE	Y TES	iT (	BEND	TEST
<u>'</u> .	550/5	50	400 /400	)	34.0/34	.U	49/43	52/57		47/49				17.0				Σ			
			·																	0	<u>K</u>
_																					
			t this centricate of qua																		

- 3. We hereby certify that this certificate is issued accordance with EN 10204 3.1B
- 4. SPECIMEN SIZE: (Pipe end, Longitudinal, Gauge Length=2")

A.For pipos≤1" full length specimen were used;

B.For olpes>1" longitudinal strip specimen were used; the width of the gauge length portion is 3/4"

5 HEAT TREATMENT CONDITION FOR PIPE NORMALIZED:900°C X 10MIN

6.Impact Test:5X10X55MM AT 45°C

7.DIMENSION STANDARD ASME B36.10

8.MANUFACTURE METHOD:COLD DRAWN

QUALITY MANAGE

S

 $\alpha = \mu \circ$ 

# 2" XH A333 HT 10603028

Contract No.:

CI-10-181

LON.OR L/C NO.:

CI-10-181 Name of Customer: TRANS AM PIPING PRODUCTS LTD.,

DPCHCV012667

HENGYANG VALIN STEEL TUBE CO.,LTD

MILL INSPECTION CERTIFICATE

Date: JUN 03 2010

Add: 10 Dalixincun, Hengyang City, Hunan, China Tel and Fax: +86 734 8873739 8872942

Cable: 6993 P.C. 421001

Descri		PIPE	. 1					nate:	Page:		J					1.0.					
SPEC		3 GR 6-2005	ASME SA333 G	R6-2007 ,NA	.CE MR017	5-2003/15	50 1515		, ogc.		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					CERT	FICAT	E NO:10	)-1-06-1	1	
NO.	BATCH NO.	HEAT NO.	STEEL		Siz				В	BUNDL	ES	PIE	CES	FE	ETS	C	UANTI	TY (N	MT)	ACTUAL W	/EIGHT(MT)
1	10-A5331	10603028	A B	60.3 2	X 5.54	A333 G	₹6 B.E.	XS		_			_								
	\	1	/													<u> </u>					
	DELIVE		NONDE	STRUCTIVE	TEST	1				CHE	MICAL	COMPO	OSITION	%	<u> </u>						
ИО	CONDITIO		ET	T	IT	c	Si	Mn	F		s	Cu	Ni		Мо	V	TI	В	NB	CE	
1	<del></del>	MALIZED	ОК			0.18	0.41	1.32	0.0	23	0.014	0.01	0.01	0.02	0	0.01	0	0	0.001	0.41	
							-														
																		<u> </u>			
NO.	ŧ.	T.S. Y.S. (MPA) (MPA)						Ak IMP/	ACT		BRII	NESS		DROSTA		F	LATTE	N TE	EST	BEND	TEST
			Full, L. Lo=5				1 1	2		AVG.		IB)				-		016		<del> </del>	
1	535/535		390/3	90	32.0/3	2.0	57/59	56/61	63/67	59/52	168	5/165		17.0				OK			OK
							<del>                                     </del>		-		<del> </del>		<del> </del>			-				<del> </del>	
L	L		15-14-1					L	L	i	L						733 67	FFI 70	×		

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacture.

- 2. We hereby certify that the properties described herein meet the requirement of the above spec.
- 3. We hereby certify that this certificate is issued accordance with EN 10204-3.1B
- 4. SPECIMEN SIZE: (Pipe end, Longitudinal, Gauge Length=2")

A.For pipes≤" full length specimen were used;

B.For pipes > "" longitudinal strip specimen were used; the width of the gauge length portion is 3/4"

- 5.HEAT TREATMENT CONDITION FOR PIPE NORMALIZED, 900°C X 16MIN
- 6.Impact Test:5X10X55MM AT -45°C
- 7.DIMENSION STANDARD; ASME 836.10
- 8.MANUFACTURE METHOD:COLD DRAWN



Postfach 13 40 33043 Paderborn Deutschland

Tel.: +49.5254.81-0 Fax: +49.5254.13666

BST 09-5133 / E.W. 9115282-00

### BEN TELER T

Blatt:

Page:

Page:

1/

#### Stahl/Rohr

ABNAHMEPRUFZEUGNIS EN 10204-3.1 **INSPECTION CERTIFICATE EN 10204-3.1** 

CERTIFICAT DE RECEPTION EN 10204-3,1 EN 10204:2005-01

Benteler Stahl/Rohr GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

Emco Westlund 4103 - 84 th Avenue EDMONTON, AB T6B 2Z3 KANADA

Dokument-Nr.: Document No.:

No. du document: Kunden-Bestell-Nr.:

Purchase Order No.:

41-568248/002/P

Prüf-Nr.:

Hersteller:

Inspection No.: No. du certificat:

Warmrohrwerk/Zieherei

Manufacturer:

ISO/TS 16949 (ISO 9001) TÜV CERT 44111090381-002

Producteur: Herstellerzeichen: PED 97/23/EC TÜV CERT 07-202-5635 WZ-0606/07

Benteler Auftrags-Nr.:

No. de commande du client:

Benteler Order No.: No. de commande Benteler:

Versandanzeigen-Nr.:

No. d'avis d'expédition:

Dispatch Note No.:

Product:

Produit:

1546851

4113429

Marque du producteur: Stempel des Abnahmebeauftragten:

Stamp of the inspection representative:

Poincon du contrôleur:

Manufacturer's brand:

NAHTLOSE STAHLROHRE Produkt: SEAMLESS STEEL TUBES

TUBES D' ACIER SANS SOUDURE

Stahlerschmelzungsverfahren: Steelmaking process:

ELEKTROSTAHL **ELECTRIC FURNACE** 

Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

Lieferbedingungen:

API Specification 5L Forty-Fourth Edition, October 2007, 1SO 3183:2007, PSL 1, ASME SA-106, ASME Section II Part A Edition 2007 Addenda 2009b, S5 ASTM-A 106-2008, S6, CSA Standard Z245.1-07 Terms of delivery: Category I, Sour Service, NACE MR0175/ISO 151\( \frac{15}{6} - 1:2001 \) NACE MR0175/ISO 15156-2:2003 Conditions de livraison:

Maße - Toleranzen:

ASME B36.10M-2004, ASME SA-530, ASME Section II Part A Edition 2007 Addenda 2009b, ASTM-A 530-2004a

Dimensions-tolerances:

Dimensions-tolérances:

Stahlsorte:

GRADE 290. GRADE B. GRADE X 42

Steel grade:

Nuance d'acier:

Lieferzustand:

Hot rolled

Delivery condition: État de livraison:

Produktkennzeichnung:

FS: BENTELER Z.245.1-07 - ISO 3183 - A 106-S6 - SA-106-S5 5L-0151.1 API SIGN 0110 PSL1 B/X42/290 SS HEAT-NO. TEST PRESSURE NDE DIMENSIONS, WA GERMANY P.O. 9115282-00

Product marking:

Marquage du produit:

AEZ = Atztintenbeschriftung, Etching ink marking, Gravure à l'encre |FK = Farbkennzeichnung, colour marking, marquage par couleur |FS = Farbschablonjerung, paint stencilling, marquage par peintureFSD = Farbstrahldrucker, Colour jet printer, Imprimante à jet d' LK = Laserkennzeichnung, Laser marking, Marquage laser | PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette | PS = Prägestempel, die/stamp, marquage par poinconnage | TS = Tintenstrahlkennzeichnung, Ink jet spray marking, imprimante à jet d

Pos.	Stück Number Nombre	Maße Dimensions Dimensions		Länge Length Longueur	Gewicht / Weight / Poids	Schmelzen-Nr.  Heat No.  No. de coulée	Test pressure	Rohr-NrGruppe Tube number group Série de no. des tubes	Vielfachlä <b>Multiple len</b> Longueurs r
			feet	feet	lbs /		PSI s		
0001	200	1/2" NPS * Sched. 80 20 FT - 22 FT		4199,48	4630 (	556818	3000 5	252-0354	

非の凡の

Contract No.:

CI-10-493

PO.NO.:

CI-10-493

Name of Customer: TRANS AM PIPING PRODUCTS LTD.,

PIPE

L/C NO.:

Description:

HENGYANG VALIN STEEL TUBE CO.,LTD

MILL INSPECTION CERTIFICATE

Date: DEC 02,2010

Add: 10 Dalixincun, Hengyang City, Hunan, China Tel and Fax: +86 734 8873739 8872942

Cable: 6993

P.C. 421001

		·							Page: 1/1						<del>,</del>					
SPEC	C:ASTM A333	GR 6-2005/	ASME SA333 GI	R6-2007 ,NA	CE MR0176	5-2003/15	SO 151	56							CERT	FICAT	E NO:10	0-1-12-0	6	
NO.	BATCH NO.	HEAT NO.	STEEL GRADE		SIZ	ZE.			BUNE	DLES	PIE	CES	FE	ETS	C	UANT	TY (i	MT)	ACTUAL W	VEIGHT(MT
1	10-A8714	903 <b>A</b> -5	В	60.3 2	X 5.54	A333 G	R 6 B.E	XS							I					
- 2	10-A8715	1009A-19	В	60.3 2	X 5.54	A333 G	R 6 B.E.	XS							ļ					
3	10-A8716	1011A-3	В	60.3 2	X 5.54	A333 G					1									
4	10-A8717	1009A-15	В	60.3 2	X 5.54	A333 G	R 6 B.E.	. XS	ļ		ļ				-					
				<del></del>	<del></del>										+		· /-		<del> </del>	
NO.	DELIVER'	Y	NONDES	TRUCTIVE	TEST				Ch	HEMICAL	COMPO	SITION	%					<del></del>		
	CONDITION	(≥650℃)	ET	U	T	С	Sì	Мп	Р	S	Cu	Ni	Cr	Мо	V	Ti	В	NB	CE	
1	NORM		. OK			0.19	0.22	0.45	0.010	0.007	0.04	0.02	0.01	0.01	0.01	0	0	0	0.28	
2	NORMA	<del></del>	ОК			0.19	0.18	0.47	0.007	0.013	0.02	0.01	0.03	0.01	0	0	0	0.001	0.28	
3	NORMA		OK			0.20	0.21	0.51	0.010	0.012	0.02	0.02	0.02	0.01	0.01	0	0	0	0.30	
4	NORMA	ALIZED	ок			0.19	0.22	0.46	0.014	0.008	0.02	0.01	0.03	0.01	0	0	0	0	0.28	
					····															
NO.	T. (MF	.S. PA)	Y.S. (MPA		E.L. (%)			Ak IMP		1	ONESS NNEL		DROSTA		F	LATTE	N TE	EST	BEND	TEST
			Full, L, Lo=50	mm			1	2	3 AVC	3. (H	HB)	'-	ST (MF	-A)						
1	460/	/465	290/29	5	- 35.0/38	5.0	9/9	10/10	11/10 10/1	0 165	7165		17.0				ОК			DK .
2	470/	/480	310/320 35.5/3			5.0	14/16	10/16	16/17 13/1	6 164	<b>1</b> /166		17.0				OK			ок 🚤
3	480/	480/475 320/315 35			35,0/35	5.5	15/15	16/17	1,7/17 16/1	6 164	1/165		17.0				ок			OK .
4	475/	475/480 315/320 35.0/					16/15	16/17	17/17 16/1	6 166	5/167	ļ	17.0				OK			OK
							<del> </del>			-		-				1 Ni C	IEEL, T		<del> </del>	

- 2. We hereby certify that the properties described herein meet the requirement of the above spec,
- 3. We hereby certify that this certificate is issued accordance with EN 10204 3,1B
- 4 SPECIMEN SIZE: (Pipe end, Longitudinal, Gauge Length=2")

A.For pipes ≤ 1" full length specimen were used;

B.For pipes > 1" longitudinal strip specimen were used; the width of the gauge length portion is 3/4"

- 5.HEAT TREATMENT CONDITION FOR PIPE NORMALIZED:900°C X 10MIN
- 6.Impact Test :2.5X10X55MM AT -45°C
- 7.DIMENSION STANDARD:ASME B36.10
- 8.MANUFACTURE METHOD:COLD DRAWN



Postfach 13 40 33043 Paderborn Deutschland

Tel.: +49.5254.81-0 Fax: +49.5254.13666

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BETITELER 7

Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1 INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:
Document No.:
No. du document:

41-568248/002/P

Prüf-Nr.: Inspection No.: No. du certificat: Blatt: Page: Page:

Pos. Item Poste	Stück Number Nombre	Maße  Dimensions  Dimensions	feet	Länge <b>Length</b> Longueur feet	Gewicht Weight Poids Ibs	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruc Test pression d PSI	ure	Rohr-NrGruppe Tube number group Série de no. des tubes	Vielfachlä Multiple len Longueurs r
0002	80	1/2" NPS * Sched. 160 20 FT - 22 FT	1000	1661,42	2172	-556757	3000	5	252-05	08
0003	146	3/4" NPS * Sched. 80 20 FT - 22 FT		3142,26	4762	556818	3000	5	252-03	36Z
0004	97	1" NPS * Sched. 160 20 FT - 22 FT		2099,74	5964	557121	3000	5	252- 09	524

#### Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr. Heat No.	С	SI	MN	Р	s	CR	МО	NI	cu	<b>V</b> .	NB	TI	В
Poste	No. de coulée 556818	0,130	0,220	0.79	0,009	0,004	0,10	0,03	0,08	0,12	0,002	0,001	0,002	0,01
	55675 <b>7</b>	0,140	0,210	0,80	0,018	0,005	0,12	0,03	0,08	0,19	0,002	0,001	0,002	0,01
	556818	0,130	0,220	0,79	0,009	0,004	0,10	0,03	0,08	0,12	0,002	0,001	0,002	0,00
0004	557121	0,130	0,190	0,81	0,009	0,002	0,16	0,06	0,11	0,11	0,003	0,001	0,002	0,01

1. Formel: CE IIW=C+(Mn/6)+((Cr+Mo+V)/5)+((Cu+Ni)/15)<=0,40 %

2. Formel:  $CEV=C+F^*((Mn/6)+(Si/24)+(Cu/15)+(Ni/20)+((Cr+Mo+V+Nb)/5)+(5*B)) <=0,40$ 

3. Formel: Mn/C>=3/1

4. Formel: Cr+Cu+Mo+Ni+V<=1,00 %

#### Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel	
ltem	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula	
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule	
0001	556818	0,301	0,274	6,077	0,332	
0002	556757	0,320	0,300	5,714	0,412	
0003	556818	0,301	0,274	6,077	0,332	
3004	557121	0,324	0,291	6,231	0,443	

Postfach 13 40 33043 Paderborn

Deutschland

Tel.: +49.5254.81-0 Fax: +49.5254.13666

3 OF 5

BENTELER

Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1 INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: Document No.: No. du document:

41-568248/002/P

Prüf-Nr.: Inspection No.: No. du certificat:

Blatt: 3, Page:

Page:

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	С	SI	MN	P	s	CR	МО	NI	CU	v	NB	TI	В
0001	556818	0,140	0,220	0,81	0,008	0.000	0.10							
0001	556818	0,140	———			0,002	0,10	0,04	0,08	0,12	0,002	0,005	0,003	0 , C
	556757	<u></u>	0,230	0,81	0,008	0,002	0,11	0,04	0,08	0,12	0,002	0,005	0,003	0,0
		0,140	0,220	0,80	0,016	0,003	0,12	0,03	0,08	0,19	0,002			
0002	556757	0,140	0,220	0,80	0,015	0,003	0,13	· ·				0,005	0,002	0,0
0003	556818	0,140	0,220					0,03	0,08	0,19	0,002	0,005	0,002	0,0
	556818			0,81	0,008	0,002	0,10	0,04	0,08	0,12	0,002	0,005	0,003	0,0
		0,140	0,230	0,81	0,008	0,002	0,11	0,04	0,08	0,12	0,002	<del></del>		
0004	557121	0,120	0,180	0,78	0,008	0,001						0,005	0,003	0,0
0004	557121	0,130	0,180		<del></del>		0,17	0,06	0,10	0,11	0,002	0,003	0,002	0,0
	·	0,230	0,180	0,80	0,007	0,001	0,17	0,06	0,10	0,12	0,002	0,003	0.002	0.0

1. Formel: CE IIW=C+(Mn/6)+((Cr+Mo+V)/5)+((Cu+Ni)/15)<=0,40 %

2. Formel:  $CEV=C+F^*((Mn/6)+(Si/24)+(Cu/15)+(Ni/20)+((Cr+Mo+V+Nb)/5)+(5^*B)) <=0,40$ 

3. Formel: Mn/C>=3/1

4. Formel: Cr+Cu+Mo+Ni+V<=1,00 %

#### Formelergebnisse / Formula results / Résultats des formula

Pos. Item Poste	Schmelzen-Nr <b>Heat No.</b> No. de coulée	1. Formel <b>1. Formula</b> 1. Formule	2. Formula 2. Formula	3. Formula 3. Formula	4. Formel 4. Formula 4. Formule	
0001	556818	0,316	0,299	5,785	0,342	
0001	556818	0,318	0,301	5,785	0,352	
0002	556757	0,321	0,303	5,714	0,422	
0002	556757	0,323	0,305	5,714		
0003	556818	0,316	0,299	5,785	0,432	
0 0 0 3	556818	0,318	0,301		0,342	
00 / 4	557121	0,310		5,785	0,352	
0004	557121		0,269	6,500	0,442	
,		0,324	0,292	6,153	0,452	

Postfach 13 40 33043 Paderborn

Deutschland Tel.: +49.5254.81-0 Fax: +49.5254.13666 1494 4 of Stahl/Rohr



ABNAHMEPRÜFZEUGNIS INSPECTION CERTIFICATE EN 10204-3.1 CERTIFICAT DE RECEPTION EN 10204-3		Dokument-Nr.: Document No.: No. du document:	41-568248/002/P	Prüf-Nr.: Inspection No.: No. du certificat:	Blatt: 4 / <b>Page:</b> Pag <b>e</b> :
Prüfergebnisse / Test results / Résults	its des essais				
Die Rohre sind auf Dichtheit gep The tubes have been submitted to a leal Les tubes ont passé un contrôle d'étand	tightness test by:	Hydrostatic test: acc pressure/Time-reco	c. to CSA Z245.1, holding tired	me min 5 seconds, Test	PASSED
Die Rohre wurden zerstörungsfr The tubes are non destructive tested: Les tubes ont passé un essai non destru		ET-test: acc. to CS	A Z245.1; for imperfections;	drilled hole: 3,20 mm	PASSED
Augensichtkontrolle: Visual inspection: Examen visuel:	PASSED	Biegeversuch: Bending test: Essai de cintrage:	PASS	Maßkontrolle:  Dimensions examination:  Vérification des dimensions:	PASSED

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probennahme erfolgte an Vielfachlängen.

The sampling was carried out on multiple lengths.

L'echantillonage etait realise aux longueurs multiples.

Zugversuch Vollprobe / Tensile test Full section test specimen / Essai de traction Eprouvette a section complete

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouve	Schmelzen-Nr.  Heat No.  ette No. de coulée	Probenabm Specimen dim Dimensions de	ensions	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement		Einschnürung  Area reduction  Coefficient de striction	Ré/ Re/R Re/R
Anforder Requirement Exigences	ents		mm		ReH N/mm² MIN 290	Rm N/mm² 415-625	A2" % MIN 30	1. Formel 1. Formula 1. Formule		
0001	000001	556818	21,40 X	3,90	371	492	42			
0002	000001	556757	21,34 X	4,71	323	477	42			
0003	000001	556818	26,70 X	3,90	373	503	52			
0004	000001	557121	33,38 X	6,22	312	464	52			

Postfach 13 40 33043 Paderborn Deutschland

Tel.: +49.5254.81-0 Fax: +49.5254.13666

1494

5 of 5

### **BENTELER'**

Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1 Dokument-Nr.: 41-568248/002/P Prüf-Nr.: Blatt: 5/ **INSPECTION CERTIFICATE EN 10204-3.1** Document No.: Inspection No.: Page: CERTIFICAT DE RECEPTION EN 10204-3.1 No. du document: No. du certificat: Page: Härteprüfung / Hardness test / Essai de dureté Pos. Proben-Nr. Schmelzen-Nr. Härte Item Specimen No. Heat No. **Hardness** Poste No. de l'éprouv. No. de coulée Dureté Anforderungen HRC HB HV HRB **HBW** Requirements Exigences MAX 200 0001 000001 556818 149 0002 100000 556757 139 0003 000001 556818 155 0004 000001 557121 138

#### Restmagnetismus / Demagnetize / Démagnétiser

demagnetized tubes; 1 measurement per 4 hours on both tube ends Two readings 180° apart around the circumference. Average value max 3.0 Millitesla (24 A/cm), individual value max 3.5 Millitesla (28 A/cm)

#### Vermerk / Remark / Remarque

NACE Standard: Hardness acc. to NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103; Certificate remarks: Sour Service, The Material is Aluminium deoxydized and inclusion shape controlled with Calcium-Silicon treatment, This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-07 meets the requirement for micro hardness of max. 248 HV 500 gf., No weld repair has been carried out; Bend test: mandrel diameter 12D; Bending angle: 90 °

Verkäufer(in) / Salesman/ woman in charge / Personne chargée :

Mr Buerger, Tel.: 05254/81-4266, Fax: 4299

Paderborn Schloß Neuhaus, 15.02.2010, TEL.: 05254.81-1765 FAX: 05254.81-1752

VERIFIED

BY

WESTLUND/

Abnahmebeauftragter Inspection representative

Contrôleur

THOMAS GOLLAN / GUT We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.

Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

C1-261 of 486

3" XH 4333

Penant

1575 A

INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

# 21800 ---

Siderca S.A.I.C Dr Jorge A. Simini 250 (82804MH-X) Campana Buenos Aires, Argentina (54) 3489 433100 tel (54) 3489 433405 fax

∕ag./Page Fecha I Date Número / Number Expedientel Manufacturing Order 03/08/2004 1 / 13 216076 5/7887.01 Referencia del Cliente I Customer Reference Item Orden de Comptal Purchase Order 00001 PO 45029439 Scamless steet line pipe Extremos I Ends Grado i Grade Norma L Standard BEVELLED AT 30 DEG. ASTM 1&6+290/1 ASTM A333/ASME SA333 + CSA Z245.1 Cantidades / Quantities Superficie Externa l External Surface Longitud / Length Peso Nominal | Nominal Weight Dimensiones i Dimensions Schedule 60598 Kg 3990.87 m 602 Pz VARNISHED S.R. (SP) 15.27 KG/MT 80 133596 Lb 88.90 x 7.62 mm 602 Pcs 13093.41 Ft 10.25 LB/FT 0.300 inches 3 1/2 x

**ENSAYOS DE TRACCION / TENSILE TEST** 

																							Alar	gamle	nto I	Re	≥d. '	1	Dureza / Hard	ness
	Colada	Nº de Ensayo		Con	dición d	de la probe	eta		Temp de	Dimensiones	Sección		Fluencia	/Ylek	i Streng	<b>j</b> th		Ro	யா∌/ப்.`	T.S	Rela F/			ongatio		d	ea.		Tipo / type: I	ЗНИ
			<u> </u>						Ens			Official	Method		EUL M	ethod							Lo				1	1 1	} ·	
				_					Test	Size	Area	Reg.	V.	EUL	Req.	V.	Req.	Req.	ν.	Req.	٠.	JTS.	2"	Req.	٧.			Req	V 054	Req.
1	•			Sp	ecimen	condition	1		Temp	Size	7.00	Min	obL		Min	obt	Max	Min	obt.	Max		tio		Min	obt		ed.	Min	V. Obt.	linax
Ж	Heat	T∈st Nº		Estado	Ext.	N°	Tipo	T	101119			0.2%									Req.		建龙	, v		Req.			1	
16			Zone	l	1	РП	1 .	On	·c	Inches	inchs2	К	(sl	%		Ksi			Ksi	<u> </u>	Max.	Obt	mm		/ <u>·</u>	Min	%	<del>}</del> ∤	1	
					1		1	1		0.714 2 0.700	0,225			0.5	42	59.5		60	76.6			tri c	50.8	33.6	34.8		ł	1 /	166	237
	32824	441323		PRO	Ī		~51	-	TA/RT		1			0.5	42	87.5		60	77.9	Ì	*.4	1	50.8	33.8	34.8		ĺ	1 /	165	237
_	32824	441340	C/B	PRO	1	1	ST	L	TA/RT			1		0.5	42	71.6		60	B1.8	l '			50.8	33.6	37.2			1 1	177	237
>	▶33330	441287	C/B	PRO	1		ST	-		0,744 X 0,301	0,226	ł		0.5	. 42	68.7		60	79,2			l i	50.8	33.6	37.8		1	1	180	. 237
	33330	441288	C/B	PRO	ļ .		ST	١.		0,765 X 0,301	0,229	i		ı		70.1		60	79.7				50.8	33.8	38.0		l	1 1	189	237
1.	33330	441290	C/8	PRO		1	ST	٠L	TA/RT	0,752 X 0,297	0.228			0,5	42	1 1		80	81.0				50.8	33,6	35.1			'	187	237
	33330	441292	C/8	PRO	1	ł	ST	L	TAIRT	0,747 X 0,302	0,228	i ·		0.5	. 42	70.2				ŀ		,	50,8	33.6	34.5	l		1 - 1	189	237
1	33330	441293	C/B	PRO	1	ļ	ST.	L	TA/RT	0,742 X 0,300	0.225			0.5	42	72.0		80	82.9				50.B	33,6	34.5		l	1 /	188	237
	33330	441294	С/В	PRO			ST	L	TA/RT	0,748 X 0,300	0,228	İ	1	0.5	. 42	68.5		. 60	79.4	ļ ·				33.6	35.8		l		182	237
	33330	441298	c/ia	PRO	1	ŀ	ST	L	TA/RT	0,742 X 0,301	0,225	1	1	0.5	42	68.5		. 60	80.3	1		]	50.8	ł	1 1	1	1	1 1	178	237
	33330	441297	C/B	PRO			ST	L	TA/RT	0,747 X 0,309	0,233			0.5	42 .	71.5		60	81.8				50.8	33.8	37.0		İ	1.	182	237
		441299	C/B	PRO	1		ST	1	TA/RT	0,743 X 0,291	0,218	l		0.5	42	72.2		. 80	82.9	1			50.8	33.6	34.8			1 '	1 1 1	237
	33330	i 1		PRO		}	ST	1,		0,745 X 0,305	1		1	0.5	42	71.2		60	83.4	١.		}	50.8	33.6	34.3		1	'	182	237
	33330	441301	C/B	PRO		1	1 3	1		2,, ,2 ,7 0,240	.,,	<u> </u>	<u> </u>	<u> </u>	<u> </u>			1107	<u></u>		Ц	I								

TEST TECNOLOGICO / TECHNOLOGICAL TEST

Aplastamiento Curvado Abocardado Pestañado Fisatenina Test Band test Flaring Test Flange Test Ring expanding Test Ring expanding Test Ring tensile Test

Flattening Test Bend lest Flating Test Flange Test Ring expanding Test Ring tensile Test

Sattlsfact. N.A N.A N.A N.A N.A N.A N.A

Pro = Proceso/ Process

N = Normalizeda/ Normalized

DIST = Distensionada / Stress Relief

Q & T = Templado y Revenido/ Quenched & Tempered

TA/RT = Temp. Amblente/ Room Temperature

RE = Rectangular

CI = Cilindrica/ Cylindrical

ST = Segmento Tubular /

Tubular segmen

TU = Transversal

C/B = Cuerpo / Body

R/U = Recalque / Upset

P/A = Promedio / Average

Min = Minimo / minimum

Max = Máximo / Maximum

L = Longitudinal
T = Transversal
P/T = Tubo/ Pipe

EXT = Extremo/ End

M = Medio/ Middle

V.Obt = Valor Obtenido / Obtained value

E = Comienzo de marcación/ Stenciling starting

O = Extremo opuesto al E/ Opposite extreme to E

CALI 176/04



TA/RT = Temp. Ambiente/ Room Temperature

### INSPECTION CERTIFICATE

Siderca S.A.I.C Dr Jorge A. Simini 250 (82804MHA) Campana Buenos Aires, Argentina (54) 3489 433100 tel (54) 3489 433405 fax

(EN 10204 3.1B - ISO 10474 3.1B)

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Colada	Nº de Ensayo		Cond	lición	de la probe	ta		Temp de Ens	Dimensiones	Secció	n	Fluen	cla / Yle	ld Strer	ngth		Ro	tura/U	.T.S	Rela F	ición /R		rgamie ongati		c	ed. ie rea			type:	
	<u> </u>	<del>                                     </del>	Spe	ecime	n condition			Test	Size	Area	Re	- 1	EUI	Req.	Method V.	Req.	Req	v.	Req.	425,5	UTS ito	Lo 2"	Req.	V.	•	rea ed.	Req. Min		V. Obt.	Req. Max
Heat	Test Nº	Zona	Estado	Ext.	N°	Tipo		Temp			- Mi 0.2	%	-   %	Min	obt. Ksl	Max	Min	obt. Ksi	Max	Req.	F-11	mm	7.D	%	Req.	%				
ļ		Zona	ļ I		P/T	Туре	Orl	°C	inches	inchs2	-	Ksl		1	71.3	Ĺ	60	62.5		- 2		50.8	33.6	35.6				181		237
33330	441331	C/B	PRO		ł	ST	L	TA/RT	0,748 X 0,297 0.759 X 0,303	0,224		į	0.5	1	69.6	1	60	79.1		] :	100	50.8	33.6	34.2			'	180		237
33330	441332	1	PRO PRO			ST	L	TA/RT	0,759 X 0,303	0,232	1		0.5	1	68.9		60	79.7				50.8	33.6	34.7		1		185		237
33330	441333 441334	ı	PRO			ST	L	TAIRT	0,758 X 0,293	0,224			0.5	42	70.8	1	60	B1.4				50.8	33.6	36.9			[	178 185		237 237
33330	441335	i	PRO			ST	L	TA/RT	0.787 X 0.300	0,232	i	1	0,5		68.6	4	В0	79.f	1			50.8 50.8	33.6 33.6	37.6 35.4	1			175		237
33330	441338	С/В	PRO		j	ST	L	TAIRT	0,757 X 0,295	0,225			0.5		70.6	1	60 80	80.3		1		50.8	33.6	35.3				183		237
33330	441337	СВ	PRO		1	ST	1	TA/RT	0,757 X 0,294	0,225			0,5		71.2 67.8		80	78.3	1	١.		50.8	33.8	35.0		ļ		182		237
33330	44133B	С/В	PRO			ST		TAIRT	0,758 X 0,298	0,227			0.5		70.3		60	80.8	1	1		50.8	33.6	35.5			ŀ	181	i I	237
33330	441339	C/B	PRO		1	ST		TA/RT	0,757 X 0,304	0,232	. 1	-1	0.5	1	71.2	. [	60	81.4	1	1		50:8	33.6	35.8				180		237
33330	441341	С/В	PRO	2.5	1	ST	L	TA/RT	0,762 X 0,319 0,765 X 0,298	0,229			0.4	1	70.0	1	60	80.5	1			50.8	33.6	35.4	1		1	188	. 1	237
33330	441351	СЛВ	PRO			ST	[ ]	TA/RT	l '	1			0.4	1	71.9	1:	60	80.9	i	ĺ	<b>l</b> .	50.8	33.6	33.7	1		1.	190		237
33330.	441352	1 .	PRO						0,751 % 0,010						<del></del>	JOTA	/ NO	TF-			<u> </u>									
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	imiento ing Test		urvado lend test		Abocardado Flaring Tesi		Pesta Flang	iñado e Test	Ring expanding			Ring tensile																•		
<b></b>	tisfact.	+	N.A	_†	N.A			N.A	Ň	I.A			N.A								<del></del>	V.Obt.	`> (-)	. Ohton	lda / O	htained	value			
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TA/RT = Temp, Ambiente/ Room Temperature

### INSPECTION CERTIFICATE

Siderca S.A.I.C Dr Jorge A. Simini 250 (82804MHA) Campana Buenos Aires, Argentina (54) 3489 433100 tel (54) 3489 433405 fax

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente	[ Custo	отег	<del></del>								<del></del>			· · ·		E	xpedie	nte/ Ma 5/788		uring O	rder	Nún		Numbe 5076	r	Fecha 03/	/ Date /08/20		1 -	IPage   13
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Dimen	siones i	Dime	nsions		Schedule	e Pe	so N		/ Nominal Weig	ht	Longit S.R. (S	ud   Length <b>P)</b>			rficie i NISHE		na I Ex	ternal S	urface					6	02 Pz	-	1990.87			1598 Kg 1596 Lb
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33330	441354 441355	1	PRO PRO			ST	L	TAIRT	0,763 X 0,291	0,224	1.		0.5	42	69.4	ļ	60	79.7				50.8 50.8	33.6 33.6	36.0 34.1	1		Ĭ	180		237
33330 .	441356		PRO			ST	L	TA/RT	0,755 X 0,300	0,228		<b>.</b>	0.5 0.5	42	69.5		60	80.7 79.8		1	1.	50.8	33.6	35.8	1	l		185		237
33330	441357	1	PRO			ST	L	TAIRT	0,758 X 0,313 0,759 X 0,289	0,240			0.5	42	69.2		60	1	1.			50.8	33.6	35.4	1			178		237 237
33330	441384 441385		PRO			ST		., ., .,	0,760 X 0,292	0,224			0.5	42	72.6		.80	83.1	•			50,8	33.6	35.6 35.2	l		<b>1</b> ,	177 176		237
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33330	441372	C/B	PRO PRO			ST	L	TA/RT	0,752 X 0,298 0,748 X 0,291	0,226 0,220	.		0.5 0.5	42 42	71.0		60 60	1				50.8	33.6			1		176		237
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(EN 10204 3.1B - ISO 10474 3.1B)

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(EN 10204 3.1B - ISO 10474 3.1B)

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( 441357 )	P	rod	13	26	109	3	3	٥		10	1	26	1	28	3	49	2	19	3	1	1	6	20	5	17	1	29		1	12	33 33	29 29		136 148			8.3 8.3		
( 441364 )	1	rod	13	26	109	4	3	0		10 10	1	26 27	2	26 27	3	50 49	2	19	3	1	1	6 . 8	10 10	5	18	1	30 26		1	"	33	29		137	1	j '	8.4		i
( 441365 ) ( 441366 )		rod rod	13 13	26 26	110	3	2 2	"		10	1	26	1 1	26	4	49	2	19	4	;	;	6	20	5	16	1	29		1		33	29		126	1		8.3		L
( 441372 )		rod	13	26	109	3	2	0		10	1	26.	2	26	4	51	2	19	3	1	1	8.	30	5	17	1	28		1		33	29		129		1. 1.	8,3		
( 441373.)	₽	rod	13	26	109	3	1	0	ľ	10	. 1 .	27	.2	26	4	51	2	19	3	1	1	8	10	5	. 17	1	30		1		33	28		120			8.3		l : '
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			Щ		<u> </u>	<u> </u>		<u></u>	<u></u>	ᆜ	<u></u>	<u></u>	$\Box$			Ш	b -	<u></u>	<u></u>	<u></u>	L	l.	) Ear	holes	te/Fo	ivale	nt Ca	bon	<del>-</del>		R= F	Ratio			Part per n	nillion	<del></del>		
NOTAS / N					ie cok			Analy	sis.	Р,	• Aná	lisis d	e pro															=	<del></del>	PCA									===
CEQ 1 =				)+V)/:	5+(NI+	-CU)	/15					ᆜ		-		C+	F((M	N/6)+(	SI/24	)+(CL	1/15)+	(NI/2	υ)+(C	K+M(	J+V+I	AR NO	+(5°B)	4		=		<del></del>							
Sum 1 =	CR+CI	J+MO+	NI+V											SUI	W 2 =															<u></u>	43=	<u> </u>						===	=
R1=	MN/C										•	$\neg$		R2	-				. –											R3	*								

CALI 178/04



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(EN 10204 3.1B - ISO 10474 3.1B)

Cliente I Customer	<del>`                                  </del>				Expedientel Manufacturing Order 5/7887.01	Número l 21	Number 6076	Fecha / Date 03/08/2004	Pág./Page 7 / 13
VAN LEEUWEN CANADA  Producto / Product  Seamless steel line pipe					Orden de Comprel Purchase Order PO 45029439	Item 00001	Referencia	del Cliente I Custom	er Reference
Norma / Standard	7045.4				Grado / Grade 1&6+290/II			D AT 30 DEG. ASTN	<u> </u>
ASTM A333/ASME SA333 + CSA  Dimensiones / Dimensions  88.90 x 7.62 mm		Peso Nominal I Nominal Weight 15.27 KG/MT 10.25 LB/FT	Longitud   Length S.R. (SP)	 erficie Ext NISHED	ema I External Surface		Cantidades 602 Pz 602 Pc	3990.87 m 3993.41 Ft	60598 Kg 133596 Lb

ENSAYOS DE IMPACTO / IMPACT TEST

							<u> </u>	<u>U3</u>	Energia A		de ( A	$\frac{9}{4}$	ad Energ	<u>~~</u>			·	Area	ductil / Shear Are	в (%)		Exp	anslór	Later	al/Latera	l Exp.	(Mis)	_
		Cor	idición de l	a probeta / S	Specimen conditio								V,Obt/Ob		Value	_	. Re		V,Obt/Obtaine		ies	Re	eq.	V.O	bt/Obta	ined V	alues	_
Colada	Ensayo	Zona	Metodo	Entalia	Dimensiones	Orient.	Tem		Unidad Unit		P/A		Sample N		Min	P/A	Min	P/A		Min	P/A	Min	P/A	Sat	nple N°		in P/	<b>^</b>
Heat	Test	Zone	Method	Notch	Size	0-11	Req.	T/E	Unit	Mili	FIA	1	2	3		2 ., .			1 2 3					1	2 :	3		_
					Inches	Orient.	Req.	17.5	<del></del>				<del></del>						CONTRACTOR SERVICE							- 1		
32824	441323	C/B	CHARPY	V	0,394 x 0,197	L	-52	-52	Joules	7.0	9.0	122.0	120.0	120.0	i 1				100.0 100.0 100.0	+00.0	100 0	1				- 1		- 1
32824	441323	C/B	CHARPY	V	0,394 x 0,197	L	<b>-4</b> 5	-45	Joules	0.0	20,0	1		146.0				1.6	100.0 100.0 100.0	F.						1		- 1
32824	441340	C/B	CHARPY	V	0,394 x 0,197	L	-45	-45	Joules	0.0	20.0	120.			1			85.0	10079 10070 10070	:	155.5	1			•		- 1.	- 1
32824	441340	C/B	CHARPY	٧	0,394 x 0,197	Ł	-52	-52	Joules	7.0	9.0	115.				i 1		25.0	100.0 100.0 100.0	100.0	100.0		, ,			1		1
33330	441287	Ç/B	CHARPY	V	0,394 × 0,197	L	-45	-45	Joules	0.0	20.0	•		136.0		1 1		0.08	100.0 100.0 100.0	1	1	1	'			- 1		
33330	441287	C/B	CHARPY	V	0,394 x 0,197	L	-52	-52	Joules	7.0	9.0			131.0		1			100.0 100.0 100.0	100.0	100.0	1						
33330	441288	C/B	CHARPY	v	0,394 x 0,197	L.	-45	-45	Joules	0.0	20.0					l	1	85.0	100.0 100.0 100.0	1	,,,,,,	1						
33330	441288	C/B	CHARPY	٧.	0,394 x 0,197	L	-52	-52	Joules	7.0	i .	108.		111.0				25.0	100.0 100.0 106.0	100.0	100.0		1.2					
33330	441290	C/B	CHARPY	V.	0,384 × 0,197	. L	-45	-45	Joules	0.0	1	1 1	120.0	•			t.	85.0	1000 1000 1000	1	1	1 .						
33330	441290	C/B	CHARPY	٧	0,394 x 0,197	L	-52	-52	Joules	7.0	9,0	113.	*2 *.		l	1 .		25.0	100.0 100.0 100.0	1000	100.0	1				- [ ·		. 1
33330	441292	C/B	CHARPY	v .	0,394 x 0,197	L	· -45	-45	Joules	0.0	1.	. 1	0. 116.0		D	1.	8.	85.0	100.0 100.0 100.0	1 ,,,,,	1		1			- 1	- 1	- 1
33330	441292	· C/B	CHARPY	v	0,394 × 0,197	j L	<b>-5</b> 2	-52	Joules	7.0	1		0 126:0		1		i	050	100.0 100.0 100.0	100.0	100.0		ł					l
33330	441293	C/B	CHARPY	v	0,394 x 0,197	L	45	-45	Joules	0.0			٠.	-	l	i i	Į.	85.0	100.0 100.0 100	1:	1	'	1					
33330	441293	C/B	CHARPY	v	0,394 x 0,197	L	-52	-52	Joules	7.0		1 .	0 115.0		Į.	ł			100.0 100.0 100.0	100	100					-1	- }	- 1
33330	441294	C/B	CHARPY	v	0,394 x 0,197	L	-45°	-45	Joules	0.0	20.0	121.	0 , 114.0	,				85,0	100.0 100.0 100.0	1 100.	7,00.	1	1	1		- 1		
33330	441294	C/B	CHARPY	V	0,394 x 0,197	L	-52	-52	Joules	7.0	9.0	1,14.	0 117.0	115.0	1	1	ł		100.0 100.0 100.0	1004	100 0		1	١			- 1	- 1
1	441298	C/B	CHARPY	V	0,394 x 0,197	, L	-45	-45	Joules	0.0	20.0	112	0 117.0		1	ı	1	85.0	100.0 100.0 100.0	100.	100.0	1		l			- 1	- 1
33330	441296	C/B	CHARPY	l v	0,394 x 0,197	L	-52	-52	Joules	7.0	9,0	.115.	0 122.0		1	1	1	1	1			1	1			- 1	- 1	- 1
33330	441296 441297	C/B	CHARPY	V	0.394 x 0,197	L	-52	-52	Joules	7.0		112			1	111.3	1			1,00	1	.1	1				- 1	- 1
33330	l i	C/B	CHARPY	v	0,394 x 0,197	L.	-45	-45	Joules	0.0	20.0	110	0 128.0		1			85.0	100.0 100.0 100.0	100.	100.1	1	1	1		1		- 1
33330	441297	C/B	CHARPY	l ,	0.394 x 0,197	L	-52	-52	Joules	7.0	4	109		113.0						]	1,00			1		1		- 1
33330	441299		CHARPY	v	0,394 x 0,197	1 .	-45	-45	Joules	0.0	20.0	117	.0 130.0	130.0	117.0	125.7	1	85.0	100,0 100.0 100.	160.	100.0	<u> </u>						ه
33330	441299	C/B	CHARPY		1 0,354 × 5,107		<u> </u>	1			<u> </u>	4-							Augmae Min . M	Inlma I	Minim	um Til	E = Te	mo. En	s. / Test	Temp.		1

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body R/U = Recalque / Upset Orient = Orientación / Orientation V = Valor / Value P/A = Promedio / Average Min = Minimo / Minimum T/E = Temp. Ens. / Test Temp.



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(EN 10204 3.1B - ISO 10474 3.1B)

Cliente / Customer					Expediente/ Manufacturing Order 5/7887.01	Número I 21	Number <b>6076</b>	Fecha   Date 03/08/2004	Pág./Page 8 / 13
Producto / Product Seamless steel line pipe					Orden de Compral Purchase Order PO 45029439	ltem 00001	Referencia	del Cliente   Custom	er Reference
Norma I Standard	7245.1			:	Grado / Grade 1&6+290/II		Extremos / I	Ends AT 30 DEG. ASTM	<u> </u>
		Peso Nominal I Nominal Weight 15.27 KG/MT 10.25 LB/FT	Longitud / Length S.R. (SP)	Superficie Ext VARNISHED	erna I External Surface		Cantidades 602 Pz 602 Pcs	/ Quantities 3990.87 m 13093.41 Ft	60598 Kg 133596 Lb

**ENSAYOS DE IMPACTO / IMPACT TEST** 

		Cor	dición de la	a probeta /	Specimen conditio				Energia Al	osorbi	da / A	bsorbe	d Energ	y.	ir.			Area	ductil / Shear Are	a (%)		Exp	ansió	Lateral/L	ateral E	ср. (М	<b>s</b> )
Colada	Ensayo	Zona	Metodo	Entalla	Dimensiones	Orient.	Tem	per.	Unidad	Re	eq.	V.	ОРЛОР	tained			Re		V.Obt/Obtaine				eq.		Obtaine		
Heat	Test	Zone	Method	Notch	Size		•	c	Unlit	Min	P/A	Sa	mple N	4	Mln	P/A	Min	P/A	Sample Nº	Min	P/A	Min	P/A	Sampl		Min	P/A
1,550			.,,		Inches	Orlent.	Req.	T/E	l	· .		1	2	3					1 2 3			<u> </u>		1 2	3		igspace
33330	441301	С/В	CHARPY	>	0,394 x 0,197	L	-52	-52	Joules	7.0	9.0	121.0	121.0	138.0	121.0	126.7		1 2 2			l						
33330	441301	C/B	CHARPY	v	0,394 x 0,197	L	-45	~45	Joules	0.0	20.0	119.0	116.0	123.0	116.0	119.3		85.0	100.0 100.0 100.0	::100.0	100.0	l				į	'
.33330	441331	C/B	CHARPY	V	0,394 x 0,197	L	-52	-52	Joules	7.0	9.0	124.0	114.0	114.0	114.0	117.3				Tr Tr		i	]	i			1 1
33330	441331	C/B	CHARPY	v	0,394 x 0,197	L	-45	-45	Joules	0.0	20.0	126.0	118.0	119.0	118.0	121.0		85.0	100.0 100.0 100.0	-100.0	100.0	I	1				1
33330	441332	C/B	CHARPY	v	0,394 x 0,197	L	-52	-52	Joules	7.0	9.0	118.0	114.0	118.0	114.0	116.7		1	entrolling their in the			1	1			1	
33330	441332	C/B	CHARPY	v	0,394 x 0,197	ايا	-45	-45	Joules	0.0	20,0	133.0	132.0	126.0	126.0	130.3		85,0	100.0 100.0 100.0	100.0	100,0		١.,			1	1
33330	441333	C/B	CHARPY	v	0,394 x 0,197	L L	-52	-52	Joules	7.0	9.0	124.0	119.0	122.0	119.0	121.7					1	1	i :		1.17	ľ	
33330	441333	C/B	CHARPY	v	0,394 x 0,197		-45	-45	Joules	0.0	20.0	119,0	127.0	122.0	119.0	122.7		85.0	100.0 100.0 100.0	100.0	100.0			25 5 11	. :		1
33330	441334	C/B	CHARPY	v	0.394 x 0.197		-52	-52	Joules	7.0			110.0	114.0	110.0	111.3						ľ					
	441334	C/B i	CHARPY	v	0,394 x 0,197		45	-45	Joules	0.0		114.0	117.0	111.0	111.0	114.0		85.0	100.0 100.0 100.0	. 100.0	100.0						
33330			CHARPY	v	0,394 x 0,197		45	-45	Joules	0.0		i	112.0		. 1			85.0	100.0 100.0 100.0	100.0	100.0				•		1
33330	441335	C/B C/B	CHARPY	v	0,394 x 0,197	-	-52	-62	Joules	7.0		1		114.0		- 4					l						'
33330	441335			v .			-45	-45	Joules	0.0		•	116.0		1			85.0	100.0 100.0 100.0	100.0	100.0		1	·			
33330	441338	C/B	CHARPY	v	1	-	-52	-52	Joules	7.0	9.0	l .	115.0		1				,	1						İ	'
33330	441338	C/B	CHARPY	-	1 '		-45	-45	Joules	0.0	20.0	l	114.0		1			85.0	100.0 100.0 100.0	100.0	100.0	<b>i</b> .					1. !
33330	441337	C/B	CHARPY	V	0,394 x 0,197	-	-52	-52	Joules	7.0	9.0	5 ⁻	118.0		f I	1	i			İ	İ	1	Ī	٠.			
13330	441337	C/B	CHARPY	٧	0,394 x 0,197				Joules	0.0	20.0	1	•		4	113.3		85.0	100,0 100.0 100.0	100.0	100.0	l				l	1
33330	441338	C/B	CHARPY	٧	0,394 x 0,197		-45	-45		7.0	9.0	118.0														1	1 1
33330	441338	C/B	CHARPY	V .	0,394 x 0,197		-52	-52	Joules		20.0	ı			l .			85.0	100.0 100.0 100.0	100.0	100.0	1					
33330	441339	C/B	CHARPY	V	0,394 x 0,197	-	-45 50	-45	, Joules	0.0 7.0	9.0				ı	1				:		1	1			l	1
33330	441339	C/B	CHARPY	٧	0,394 x 0,197		-52	-52	Joules				118.0		į	1 1		85.0	100.0 100.0 100.0	100.0	100.0	1	1				
33330	441341	. C/B	CHARPY	٧	0,394 x 0,197	L	-45	-45	Joules	0,0		ŧ i	118.0		ŧ	9 1		100.0	100.0 100.2 100.0								
33330	441341	C/B	CHARPY	٧	0,394 x 0,197	L	-52 ·	-52	Joules	7.0	9.0	12/.0	118.0	134.0	114,0	118./		<u>L.</u>		<u> </u>	<u> </u>	<u>L</u>	<u> </u>			<u> </u>	Ц—

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body R/U = Recalque / Upset Orient = Orientación / Orientation V = Valor / Value P/A = Promedio / Average Min = Minimo / Minimum T/E = Temp. Ens. / Test Temp.

CALI 175/04



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(EN 10204 3.1B - ISO 10474 3.1B)

Cliente   Customer				Expedientel Manufacturing Order 5/7887.01		6076	Fecha / Date 03/08/2004	Pág.iPage <b>9</b> / <b>1</b> 3
VAN LEEUWEN CANADA  Producto / Product  Seamless steel line pipe				Orden de Compral Purchase Order PO 45029439	/tem 00001	Referencia d	el Cliente / Custom	er Reference
Norma   Standard	·			Grado / Grade 1&6+290/II			AT 30 DEG. ASTN	1
ASTM A333/ASME SA333 + CSA ZZ45.1  Dimensiones   Dimensions   Schedule   88.90 x 7.62 mm   80	Peso Nominal I Nominal Weight 15.27 KG/MT 10.25 LB/FT	Longitud I Length S.R. (SP)	Superficie Ex VARNISHED	terna I External Surface		Cantidades / 602 Pz 602 Pcs	Quantities 3990.87 m 13093.41 Ft	60598 Kg 133596 Lb

ENSAYOS DE IMPACTO / IMPACT TEST

						EN	SAY	OS	<u>DE IM</u>	PA	CT	<u>O / I</u>	MP.	ACI		<u> </u>			ductil / Shear Are	n (%)		Exp	ansiór	Lateral/I	ateral E	cp. (Mi	(5)
		Con	dición de la	a probeta / S	Specimen conditio				Energia Al	bsorbi	da / Al	bsorbe	l Energ	у.	· .			<del></del>	V,Obt/Obtaine		~-		q.		/Obtaine		
		Zona	Metodo	Entalla	Dimensiones	Orient.	Tem	per.	Unidad		q.			tained \	/alue	8	Re		Sample Nº	Min	P/A			Samp		Min	
Colada Heat	Ensayo Test	Zone	Method	Notch	Size		•(		Unit	Min	P/A	Sa	mple N		Min	P/A	Mun	P/A	1 2 3	1,41,71				1 2		<u> </u>	
Liegi	10.51	22			inches	Orlent	Req.	T/E				1	2	3		-			marka sur Williame (S. s.								
		OID	CHARPY	>	0,394 x 0,197	L	<b>-</b> 45	-45	Joules	0.0	20.0	117.0	118.0	113.0	113.0	116.0		85.0	100.0 100.0 100.0	100.0	100.0						
33330	441351	C/B	CHARPY	v	0,394 x 0,197		-52	-52	Joules	7.0	9.0	118.0	111.0	120.0	111.0	116.3				g		1				-	
33330	441351	C/B		v	0,394 x 0,197	_	-45	-45	Joules	0.0	20.0	113.0	113.0	116.0	113.0	114.0		85.0	100.8 100.0 100.0	100.0	100.0					l	
33330	441352	C/B	CHARPY	v	0,394 x 0,197	] [	-52	-52	Joules	7.0	9.0	112.0	119.0	116.0	112.0	115.7		- 4									
33330	441352	C/B	CHARPY			1 .	-45	-45	Joùles	0.0	20.0	119.0	124.0	122.0	119.0	121.7		85.0	100,0 100.0 100.0	100.0	100.0	1		١.			
33330	441353	C/B	CHARPY	\ \ \ \		-	-52	-52	Joules	7.0	9.0	113.0	110.0	113.0	110.0	112.0					1	1		1			-
33330	441353	C/B	CHARPY	V		-	-45	-45	Joules	0.0	20.0	120.0	116.0	122.0	116.0	119.3		85.0	100.0 100.0 100.0	100.0	100.0	1	l			1	-
33330	441354	C/B	CHARPY	V 		-	-52	-52	Joules	7.0	9.0	116.0	118.0	112.0	112.0	115.3	'			1	1		1			1	
33330	441354	C/B	CHARPY	.V.	0,394 x 0,197	1	-52	-52	Joules	7.0	9.0	109.0	118.0	113.0	109.0	113.3				ŀ	1	1				1	
33330	441355	C/B	CHARPY	٧	0,394 x 0,197	,	-45	-45	Joules	0.0	20.0	112.0	113.0	118.0	112.0	114.3	1	65.0	100.0 100.0 100.0	100.0	100.0	)	1				
33330	441355	C/B	CHARPY	V	0,394 x 0,197		-52	-52	Joules	7.0	9.0	112.0	110.0	115.0	110.0	112.3	1			1	1	1 .					1
33330	441356	C/B	CHARPY	٧	0,394 x 0,197		-45	-45	Joules	0.0	20.0	116.0	112.0	116.0	112.0	114.7	1	85.0	100.0 100.0 100.0	100.0	100.0	)				1	1
33330	441358	C/B	CHARPY	.^	0,394 x 0,197		-52	-52	Joules	7.0	9.0	112.0	120.0	118.0	112.0	116.7			1		İ					1	
33330	441357	C/B	CHARPY	· v	0,394 x 0,197	-	1	-45	Joules	0.0	1 .	118.0	. 129.0	132.0	118.	126.3	l		100.0 100.0 100.0					l		1	
33330	441357	C/B	CHARPY	V	0,394 x 0,197	<u> </u>	-45	1	Joules	0.0	20.0			114.0				85.0	100.0 100.0 100.0	100.0	100.0	ו		ļ		1	1
33330	441364	C/B	CHARPY	<b>'</b>	0,394 x 0,197		-45	-45	Jaules	7.0	9.0			110.0				1		1		1	1	1		1	1
33330	441364	C/B	CHARPY	i '	0,394 x 0,197	١ ١	-62	-52	1	0.0		117.0				1		85.0	100.0 100.0 100.0	100.0	100.	0	1	1			
33330	441385	C/B	CHARPY	V	0,394 x 0,197		-45	-45 -50	Joules	7.0	9.0	1		112.0	ł	1	Į.	l		Į.		1	1			1	İ
33330	441385	C/B	CHARPY	٧	0,384 x 0,197	L	-52	-52	Joules	0.0	20.0	1		115.0	1	1		85.0	100.0 100.0 100.	d 100.0	0 100.	٥	1	1		1	
33330	441386	C/B	CHARPY	٧	0,394 x 0,197	L	-45	-46	Joules	7.0	1	120.0		i	1		,				1			1		1	
33330	441368	C/B	CHARPY	٧	0,394 x 0,197	L	-52	-52	Joules	0.0	1			120.0	1	L	l .	85.0	100.0 100.0 100.	d 100.	0 100.	0		1		1	
33330	441372	` слв	CHARPY	٧	0,394 x 0,197	L	-45.	-45	Joules	7.0	1			115.0	1		ι	1	1					1			
33330	441372	C/B	CHARPY	V	0,394 x 0,197	L	-52	-52	Joules	1		1				i .	1	<u></u>	<u> </u>	<del></del>	<del></del>		<u> </u>	Fac	/ Tact To	mo.	
				l	<u> </u>	<u> </u>										n/4 -	Drome	adia /	Average Min = M	inimo /	Minim	ium Ti	E = Te	mp. Ens.	resite	np.	

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body R/U = Recalque / Upset Orientación / Orientation V = Valor / Value P/A = Promedio / Average Min = Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo / Minimo /



Siderca S.A.I.C Dr Jorge A. Simini 250 (B2804MHA) Campana Buenos Aires, Argentina (54) 3489 433100 tel (54) 3489 433405 fax

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente l' Customer				Expedientel Manufacturing Order 5/7887.01		6076	Fecha / Date 03/08/2004	Pág./Page 10 / 13
Producto / Product Seamless steet line pipe		· · · · · · · · · · · · · · · · · · ·	•	Orden de Compral Purchase Order PO 45029439	ltem 00001	Referencia	del Cliente I Custom	er Reference
Norma I Standard ASTM A363/ASME SA333 + CSA Z245.1				Grado   Grade 1&6+290/II		Extremos / BEVELLE	Ends ) AT 30 DEG. ASTM	!
Dimensiones   Dimensions   Schedule   Pe   88.90 x 7.62 mm   80   3 1/2 x 0.300 Inches	eso Nominal / Nominal Weight 15.27 KG/MT 10.25 LB/FT	Longitud / Length S.R. (SP)	Superficie Ext VARNISHED	erria   External Surface		Cantidades 602 Pz 602 Pcs	/ Quantities 3990.87 m 13093.41 Ft	60598 Kg 133596 Lb

**ENSAYOS DE IMPACTO / IMPACT TEST** 

r	T	C 0/	ndición de l	a probeta /	Specimen conditio		<u> </u>		Energia Al						7			Area	ductil / Shear Are	ea (%)		Exp	ansió	ı Lateral/La	teral Ex	φ. (Mi	s)
	F	Zona	Metodo	Entalla	Dimensiones	Orient	Tem	ner.	Unidad		g.		.Obl/Ot		Value	5	Re	q.	V.Obt/Obtaine	d Valu	es		eq.	V.Obt./C			
Colada	Ensayo Test	Zone	Method	Notch	Size	Onen		C .			P/A		ample I			P/A	Min	P/A	Sample N°	Min	P/A	Min	P/A	Sample		Min	P/A
11000	, , , ,	201.0		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	· inches	Orient	Req.	T/E				. 1	2	3					. 1 2 3	<b></b>				1 2	3		<b></b>
33330 33330	1	C/B C/B	CHARPY CHARPY	v v	0,394 x 0,197 0,394 x 0,197	L	-45 -52	-45 -52	Joul <del>os</del> Joules	0.0 7.0		1	118.0 132.0				l.	85.0	100.0(-100.0) 190.1	100.0	100.0						
											.02			· :.·													
	Reg = Reg								nt = Orienta	alán í	Odopt	ation	V= \	/alor / V	alue	P/A =	Prom	edio /	Average <b>Min =</b> M	Inimo /	Minimu	ım T/I	E= Te	mp. Ens. / T	est Tem	np.	

CALL 175/04

NOTE: Req = Requisitos / Requirements C/B = Cuerpo / Body R/U = Recalque / Upset Orient = Orientación / Orientation



Siderca S.A.I.C Dr Jorge A. Simini 250 (82804MHA) Campana Buenos Aires, Argentina (54) 3489 433100 tel (54) 3489 433405 fax

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente I Customer VAN LEEUWEN CANADA	Expedientel Manufacturing Order         Número I Number         Fecha I Date         Pág.           5/7887.01         216076         03/08/2004         11
Producto / Product Seamless steel line pipe	Orden de Compral Purchase Order   Item   Referencia del Cliente I Customer Rei   PO 45029439   00001
Norma / Standard ASTM-A333/ASME SA333 + CSA Z245.1	Grado   Grade
Dimensiones   Dimensions   Schedule   Peso Nominal   Nominal Weight   Longitud   Length   S.R. (SP)   3 1/2 x 0.300   Inches   10.25 LB/FT	Superficie External External Surface   Cantidades / Quantities     VARNISHED   602 Pz   3990.87 m   603 Pc   13093.41 Ft   1333
,	rcas / Marking = Longitud / length PPP = Peso / Weight @ = Monograma / Monogram API HNXXXXX = Colada / Heat
Estarcido (Tubo) / Stencilling (Pipe) NNNNN LLLL PPPPP TENARIS SD MM.YY A333/SA333 CSA Z245.1-98 3 X 0,3 10,25 1/6 QT/290CAT II H	Q M45C SCH80 XS 3000PSI SEAMLESS PO45029439 V.L. CODE 21800 5/7887.01 MADE IN ARGEN
Tarjeta / Card: SIDERCA MADE IN ARGENTINA P.O.: PO 45029439 OF: 5/7887-01 PIECES: LENGTH: WEIGHT(KG): LIFT: SIZE: 88,90 X 7,62 GDO:1&6+290/II SPEC: ASTMA333 HEAT: GLW.L.: GANADA	
*FABRICADO POR SIDERCA*	*MANUFACTURED BY SIDERCA*
PROCESO DE ACERACIÓN* - FABRICACIÓN DE ACERO: FUNDICIÓN POR ARCO ELECTRICO Y COLADO CONTINUO - ACERO CALMADO AL ALUMINIO.	-*ACIERAGE PROCESS* -STEEL MAKING PROCESS: E.A.F./L.F. AND CONTINUOUS CASTING - FULL ALUMINIUM KILLEI FINE GRAIN PRACTICE.
LA PRACTICA DE AFINO EN EL HORNO - CUCHARA INCLUYE UNA INYECCIÓN FINAL DE UNA VÁRILLA DE SILICIÚRO DE CALCIO PARA OBTENER UNA FORMA GLOBULAR DE EVENTUALES MICROÍNCLUSIONES.	-THE LF PRACTICE INCLUDES A FINAL INJECTION OF CALCIUM SILICIDE WIRE FOR MICROINCLUSION SHAPE CONTROL.
-MATERIAL LIBRE DE CONTAMINACIÓN DE MERCURIO.	-MATERIAL FREE FROM MERCURY CONTAMINATION.
"PROCESO DE LAMINACIÓN"	*ROLLING PROCESS*
	-MANUFACTURING PROCESS : SEAMLESS HOT ROLLED.
-FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA.	
-FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA.  *CONTROLES*	*CONTROLS*
	*CONTROLS* -VISUAL AND DIMENSIONAL INSPECTION: SATISFACTORYPIPE NON DESTRUCTIVE TEST (N.D.T.): SATISFACTORY.

CALI 175/04



IMPACT TEST ACCORDING ASTM A370.

HARDNESS ACCORDING TO NACE MR-01-75 LATEST EDITION.

### INSPECTION CERTIFICATE

Siderca S.A.I.C Dr Jorge A. Simini 250 (82804MHA) Campana Buenos Aires, Argentina (54) 3489 433100 tel (54) 3489 433405 fax

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente † Customer VAN LEEUWEN CANADA			Expedientel Manufacturing Order 5/7887.01	Número / 21	6076	Fecha   Date 03/08/2004	Pág./Page 12 / 13
Producto   Product   Seamless steel line pipe			Orden de Compral Purchase Orde PO 45029439	00001	Referencia	del Cliente   Custo	mer Reference
Norma   Standard ASTM A333/ASME SA333 + CSA Z245.1			Grado / Grade 1&6+290/II		Extremo / Er BEVELLED	nds AT 30 DEG. ASTI	А
Dimensiones   Dimensions   Schedule   Peso Nominal   Nominal Weight   88.99   x   7.62   mm   3   1/2   x   0.300   Inches   10.25 LB/FT	cht Longitud I Length S.R. (SP)	Superficie Ex VARNISHED	tema I Extemal Surface		Cantidades 602 Pz 602 Pcs	3990.87 m	60598 Kg 133596 Lb
*CONDICIONES DEL MATERIAL*		*MATERIAL	CONDITIONS*				
-NO REPARADO POR SOLDADURA.		-NO REPAI	R BY WELDING.				
*PROPIEDADES DEL MATERIAL*			PROPERTIES*		NTION		
-LA DUREZA CUMPLE CON LA NORMA NACE MR 01-75 ULTIMA EDICI	ON.		S ACCORDING TO NACE MR-01-7			CONTION OR	
-EL MATERIAL CUMPLE CON LOS REQUISITOS DE ASTM A530/A530M	MEDICION 98.		ACCORDING TO REQUIREMENT	S OF ASTM	ASSU/ASSUM E	DITION 50.	
*NORMAS*		*STANDARI			40474 2 4 D/6	22	
-CERTIFICADO DE ACUERDO CON: EN 10204 3.1.B/95 - ISO 10474 3.1	1.B/92.	L.	TE ACCORDING TO : EN 10204 3		104/4 3.1.6/8	<b>3</b> 2.	
-EDICION DE LA NORMA : ASME SA 333/01.	•		F REGULATION: ASME SA 333/01		TION		
-EDICION DE LA NORMA : NACE MR-01-75 ULTIMA EDICION		1	F REGULATION: NACE MR-01-75	LATESTED	11014		
-EDICION DE LA NORMA: CSA Z245.1/98.		<b>I</b> ()	F REGULATION: CSA Z245.1/98.				
EDICION DE LA NORMA : ASTM A333/99.		-EDITION O	F REGULATION: ASTM A333/99.	-	<del></del>	<del></del>	
Observaciones / Remarks	1,						
HYDROSTATIC TEST PRESSURE: 211 Kg/Cm2 = 3000 PSI (5 sec.).	•			٠.			
	•			٠.		,	
HEAT TREATMENT: QUENCHED & TEMPERED.						•	
QUENCH MEDIA OF HEAT TREATING PROCESS: WATER		·					
INSPECTION METHODS: E.M.I. LONG.(EXT.) NOTCH 5%							
E.M.I. LONG.(INT.) NOTCH 10%			•				
E.M.I. TRANSV. (EXT./INT.) NOTCH 10%.							

CALI 175/04



Siderca S.A.I.C Dr Jorge A. Simini 250 (82804MHA) Campana Buenos Aires, Argentina (54) 3489 433100 tel (54) 3489 433405 fax

(EN 10204 3.1B - ISO 10474 3.1B)

Cliente   Customer			Expedientel Manufacturing Order 5/7887.01		6076	Fecha / Date 03/08/2004	Pág.IPage 13 / 13
VAN LEELWEN CANADA  Producto i Product  Seamless steel line pipe			Orden de Compral Purchase Order PO 45029439	ltern 00001	Referencia	del Cliente / Cust	omer Reference
Norma I, Staridard			Grado / Grade 1&6+290/ll		Extremo / Er BEVELLED	nds AT 30 DEG. AST	пм
ASTM A333/ASME SA333 + CSA Z245.1	MT S.R. (SP)	Superficie Exte VARNISHED	erna I External Surface		Cantidades 602 Pz 602 Pcs	3990.87 m	60598 Kg 133596 Lb

ONE YELLOW LONGITUDINAL STRIPE FULL LENGTH.

ONE ORANGE BAND.

	I have been manufactured in accordance
Por la presente certificamos que el material aqui descripto ha sido fabricado	We hereby certify that material herein described has been manufactured in accordance
de acuerdo con las normas y especificaciones solicitadas en vuestra orden	with the standards and specifications required in your order and satisfies the
P. de a constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la consta	corresponding requirements.
and additional and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and	This certificate is issued by a computerized system and it is valid with electronic signature.
Este Celtificado se entido medicino en sector	On the original certificate the trade-mark Tenaris light-green coloured at the bottom of the
Inrima electronica.El certificado enginal presente el reg-	page is stamped. In case the owner of the certificate would release a copy of it, he must
impreso en la parte inferior de la hoja. En caso que el poseedor del certificado	page is stamped. In case the owner of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of the certificate would receive a start of
entregue una copia del mismo, deberá garantizar la conformidad con el	attest its conformity to the original one taking upon himself the responsibility for any
the standard recognition of cualquier uso ilegal o indebido.	unlawful or not allowed use.
li the standard action suits a la lev	Any atteration and / or falsification will be subject to the law.
Cualquier alleracion y / Graisincación estara espera a - 15)	If you need to assure the authenticity of this certificate, please do not
Si necesita asegurar la autenticidad de este certificado, contactarse con	hesitate to contact Siderca SAIC through this e-address:aye@siderca.com
Siderca SAIC, e-mail: aye@siderca.com	hesitate to contact Sidercal SATO tritodyn titis associationary og



QUALITY CERTIFICATION DEPT.

DTO CERTIFICACION DE CALIDAD

EDUARDO A. AYERBE

CALJ 175/04



#### WUXI DINGYUAN PRECISION COLD-DRAWN STEEL PIPE CO.,LTD

CONTRACT NO: NAME OF CUSTOMER: 2005041

WEIFANG STEEL CANADA LTD.

DESCRIPTION: TOTAL

SEAMLESS STEEL PIPE

4467 pieces, 206 bundles, 1M E88,056

Add Qianqiao Industrial Area, Wux City, Jiangsu

Province, 214151, P.R.China

Tel. 0086-510-83231334 Fax: 0086-510-83218987

DATE	:	15-0	Oct-06		^	$\Lambda$											Page: 1 of 1:
SPE	CIFICATION: ASTMI	ASME	A/SA3	33-199	9,GR.	, MACI	MRO	-175-19	99						CERTIFICAT	TE NO: 061010	501
				_	- Va	ST	EEL			<del></del>				· · · · · · · · · · · · · · · · · · ·	QL	JANTITY	
NO.	BATCH NO.		HEA	T NO.		-GR	ADE			51	ZE			BUNDLES	PIECES	FEET	WEIGHT(MT)
1	R060509497		Y060	505521		G	R.B		2" S	TD A333-	GR & SF	RL*21		6	181	3,801	6.298
2	R060509147/148		Y60	7-634		G	₹.8		3" S	TD A333	GR.6 SF	(L*21'		16	296	6,216	21:392
3	R060509001/002		Y:60	7-635		G	₹.8.		4" S	TD A333-	GR,6 SF	L*21		39	383	6,321	30,965
4	R060709260		Y60	3-854		G	₹.8		1" X	H A333-	GR.6 SR	L*21'		6	512	10,752	10:607
5	R060509491/492/493		Y060	505520	17	G	₹.8		2" X	H A3334	GR.6 SR	L*2†		32	1,16.1	24,381	55,587
6	R060509234/235/236/237		Y60	7-637		G	R.B	ļ	73'X	H A333-	GR.6 SR	1.*21		-56	1,050	22,050	102,637
7	R060509498/499		Ŷ60	7-656		G	R.B		7. X	H A3334	GR,6,SR	L*21		16	301	8,043	54.713
В	R060509342/343/344		Y60	7-633		G	₹.8.		2"\$1	60 A333	-GR.6 SF	7L'21		25	470	9,870	33,332
9	R060509146		Y60	7-637		G	R.8		3".61	60 A333	-GR:6 Si	7L*21		10	113	2,373	15,401
NO	DELIVERY				1.0	CHEM	CALO	MPOS	TION %	d.	mpinasi in mani		······································	Hermony, and make Albahalasa Arabahalasa and and	NONDEST	RUCTIVE TEST	
NO.	CONDITION	C	Si.	Mn	P	S	Cu	Cr	T. Ni	. Mo	Li	W	V.	EDDY CUR	RENT TEST	ULTRA	SONIC TEST
1	COLD-DRAWN	0.18	0.21	1.31	0.009	0.005	0.07	0.04	0.04	0.011	0.011	0.006	0:001	Č	Ж		1
2	COLD-DRAWN	0.19	0.23.	1.29	0.010	0.005	0.08	0.04	0.02	0.01	0.001	0.006	0.001	Č	K		į.
3	COLD-DRAWN	0.48	0.23	1.28	0.012	0.006	0.10	0.05	0.01	0.012	0.002	0.003	0.001	C	Ж		$\mathcal{F}_{i}$
4	COLD-DRAWN	0.17	0.21	1.30	0.008	0.004	0,08	0.02	0.01	0.01	0.002	0.002	0.002	C	)K		_ {
5	COLD-DRAWN	0,15	0.20	1.34	0.011	0.005	0.07	0.04	0.04	0.011	0.001	0.002	0.002	C	K .		1
6	COLD-DRAWN	0.19	0.23	1,29	0.009	0.005	0,10	0.04	0.02	0.01	0.001	0,003	0.001	C	ĸ	3 * * * * * * * * * * * * * * * * * * *	1
7	COLD-DRAWN	0.17	0.21	1.29	0.011	0.004	0.09	0.04	0.04	0.014	0.001	0.003	0.001	Ć	)K		1
8	COLD-DRAWN	0.18	0.22	1.28	0.009	0.003	0.08	0.02	0.01	0.011	0.001	0,002	0.001	6	K		7
9	COLD-DRAWN	0.19	0.23	1.29	0.009	0,005	0,10	0.04	0.02	0.01	0.001	0,005	0.002	Ċ	)K		7
NO.	YIELD STRENGTH	Ŧ	ENSILE:	STRENG	TH	El	ONGAT	ION	FLA	TTEN		CHARE	YIMPAC	TIEST	HARDNESS	HYDROSTATIC	1
MU,	(PSI)		(F	SI)		C	L=50mn	1. %	TE	ST	Temp	Dime	(mm)	J.	HRB	TEST (PSI)	TREATMENT
1	56000 7 58900		75635	/ 76360			34,0/33	O	(	ЭK	-45°C	10*3,3	*55mm	70:72:62/68	64/83	2500	
2	60360 / 59635		77090	1 78545	·	1	34,0/33	0		)K	-45°C	10.5	55mm	78:96:80/85	86/84	2500	
3	45820 / 47270		72725	1 74180			30.5/30	0		ΣK	-45°C	10*5*	55mm	90:92:81/88	85/87	2200	
4	53090 / 55270		74180	1.74907			32.5/31	5	1	Ж	-45°C	10*3:3	*55mm	64:68:70/68	82/85	850	Associate the control of the control
5	53820 / 58910			/ 75635	<del> </del>	1	32.0/31	0	1	ЭК	-45°C	10'5'	55mm	94.90:85/90	83/84	2200	Normalized 880°C: 20min
6	58180 / 58910			7 76360		1	33.5/32	5	1	Ж	-45°C	10.5	55mm	84:94:78/85	8,3/85	2200	20040
7	62545 / 63270		-	/ 74180	<del></del>	1	34.0/33	5	1 0	ЭK	-45°C	10*10	*55mm	88.90:82/87	87/88	2800	
8	52545 / 64000		77820	/ 80000			33.5/32	0	1 6	Ж	-45°C	10.5	55mm	70:77:80/76	83/86	TAX CRAPHINGS	
9	58910 / 59635	<del>''' '' '' '' '' '' '' '' '</del>	description of the second	777815		<del> </del>	34.0/33			ЭK	-45°C	10*5*	55mm	86:90:80/85	86/85	TO LEADING THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PAR	1223

#### REMARKS:

We hereby centify that this certificate of quality is issued and signed by the manufacturer. 1.

2. We hereby certify that the properties described herein meet the requirement of the above spec.

We hereby certify that this certificate is issued accordance with EN10204 3.1.8. 3.

Origin: Made in China

O a a ~

. a - c アエトの

Contract No.:

L/C NO.:

CI-10-117

PO.NO.: CI-10-117

Name of Customer: TRANS-AM PIPING PRODUCTS LTD.,

HENGYANG VALIN STEEL TUBE CO.,LTD

MILL INSPECTION CERTIFICATE

Add: 10 Dalixincun, Hengyang Cky, Hunan, China Tel and Fax: +86 734 8873739 8872942

Cable: 6993 421001 P.C.

DECHCVO) 1501

PIPE

Date: MAR 12,2010

Descri						Date:	MAR 12,20 Page: 1/1	10					P.C.	4210	J01 	<u>.                                    </u>		
SPEC	:ASTM 4333 GR 6-2005	LASME SA333 GR6-20	07 ,NACE MR0	175-2003/1	SO 1515	6	м						CERT	IFICAT	E NO:10	-1-03-36	3	
NO.	BATCH HEAT NO. NO.	STEEL		SIZE			BUND	ES	PIE	CES	FE	ETS		TUAUC	TY - {\bar{h}}	AT)	ACTUAL W	EIGHT(MT)
1	10-A1151 00930423		9.9 3 X 7.62	A333 G	R 6 B.E.	XS					<del>                                     </del>			<del></del> -				
-																		
																	•	
ļ	DELIVERY	NONDESTRU	CTIVE TEST				CHE	EMICAL	COMPO	SITION	%						<del></del>	
NO.	CONDITION(>650°C)	ET	ŲΤ	c	si	Mn	ρ	S	Cit	Ni	Cr	Mo	V	Ti	В	NB	CE	<u> </u>
1	NORMALIZED	OK		0.17	0.35	1,31	0.014	0.015	0.09	0.05	0.03	0.01	·   - <u>0</u> -	0	0	D	0.41	
													-	-	4	<del> </del>	4	
								<del> </del> -	<del> </del>		<del> </del>	<del> </del>	-					
}					1											<u> </u>		<u> </u>
NO.	T.S. (MPA)	Y S. (MPA)		E.L. (%)		Ak IMP	ACT	BRI	DNESS NNEL		DROSTA			FLATTE	EN TE	ST	BEND	TEST
		Full, L, Lo=50mm			1	2	3 AVG	+	HB)	- <del> </del>							+	
1	530/545	385 /400	33	.0/34.0	61/65	58/64	55/62 58/64	16	3/165		17,0				ОК		+	)K

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacture.

- 2. We hereby certify that the properties described herein meet the requirement of the above speci-
- 3. We hereby centry that this certificate is issued accordance with EN 10204 3.18
- 4, SPECIMEN SIZE: (Pipe end, Longitud nal, Gauge Length=2")
- A. For pipes < 1" full length specimen were used;
- B. For pipes > 1" longitualist strip specimen were used; the width of the gauge length portion is 3/4"
- 5 HEAT TREATMENT CONDITION FOR FIPE NORMALIZED 900 % X 10MIN
- 6.Impact Test :5X10X55MM AT -45°C
- 7.DIMENSION STANDARD:ASME B36.10
- 7.MANUFACTURE METHOD:COLD DRAWN



Contract No: 2110001760

### HENGYANG VALIN STEEL TUBE CO., LTD

MILL TEST CERTIFICATE

Add: 10 Dalixincun, Hengyang City, Hunan, China

Tel and Fax: +86 734 8873739 8872942

Cable:

6993

P.C. 421001

DESCRIPTION: | Seamless Steel Line Pipe

Name of Customer: IMEX CANADA INC

TOTAL: <u>1637</u>PIECES,<u>123</u>BUNDLES,<u>171.153</u>MT

page 5/6

SPEC: ASTM A53/A106 B/ASME SA53/SA106 B/API 5LB/ CSA Z245.1 GR 290 CAT 1 NACE MR-0175/ISO 15156-2(REGION 3)/MR-

0103	SOUR SERV	ICE .	/ASME 3A53/:	SA106 B	API 5LB	/ CSA	Z245.	1 GR 2	90 CAT 1 NAC	E MR-0175/IS	0 151	56-2(R	EGION 3)/MR-		CET	OTTETO A	TT NO			
NO.	BATCH NO.	HEAT NO.	STEEL GRADE		S	IZE			BUNDLES	PIECES	3		FEET		ORETICAL	LIFICA	TE NO	2011-(	03-0118-:	5
$\frac{28}{20}$	902101310	1026650V	B/290		3″*0.3	300**4	)FT	<del></del>	3	27	·			<del> </del>	HT (MT)	<u> </u>		paur	20de	
<u>29</u>	80*200670	10266907	B/290		3″*0.	138**20	FT		1			<del> </del>	1080	<del> </del>	5. 03			2860	031	
30	807300541	1026532V	B/290		3**0. (				2	22		<del> </del>	440	<del> </del>	2. 865			2860	049	
31. 1	902103113	1015642V	B/290		4**0.2				6	17		ļ	340	<u> </u>	2. 87			2860		
31. 2	902103114	10272787	B/290		4**0. 2					108			2160		10. 59			2860		
	DELIVER	37	Total				<u></u>		3 15	56			1120		5. 491			2860		
NO.	CONDITIO	1	NONDESTRU	CTIVE T	EST				19	230	CUEW	I	5140	2	6. 846			2000	010	
28	HOT-ROLL		EMI OK		П	TYPE:	С	Si	Mn P	S	CHE <b>M</b> Cu	Ni Ni	COMPOSITION	(	%)					
		-	UK		K	P	0.12	0. 23	1.08 0.008	0.002	0. 05	0.02	Cr 0, 03	Mo	V	Ti	В	Nb	Mn:C	CE (IIW
						P	0. 13	0.24	1.07 0.008	0. 002	0.05	0.02	0. 03	0.01	0.0019	0. 026	0.0001	0. 028		0,28
29	HOT-ROLLI	ED	OK		K	L P	0.13	0.24	1.08 0.008	0.002	0.04	0.02	0. 03	0.01	0.0019	0.026	0. 0001	0.028		0.30
						P	0. 14	0. 24	1.05 0.009	0.002	0.06	0.03	0. 05	0.02	0.0019		0.0001	0.028		0.30
30						1.	0.14	0. 25	1.06 0.009 1.04 0.009	. 0.002	0.06	0.03	0. 05	0.02	0.0013	0. 027	0.0001		7. 50	0.32
30	HOT-ROLLI	ED	OK	C	K	P	0. 13	0. 22	1. 04 0. 009 1. 01 0. 010	0. 002	0.06	0.03	0. 03	0.01	0, 0029	0. 028	0.0001	0. 035 0. 028	7. 57	0.32
						P	0.13.	0. 21	1.00 0.010	0.004	0.04	0.02	0. 03	0.01	0.0031	0.031	0.0003		8. 00 7. 77	0.29
31. 1	HOT-ROLLI		-07/		-	L	0.13	0. 20	1. 01 0. 010	0. 004 0. 004	0.04	0.02	0, 03	0.01	0.0031		0.0003		7. 69	0.29
	1301 KOLLI	<del>"   -</del> -	OK	<u>o</u>	K	P	0.13	0. 23	1.05 0.012	0.002	0.04	0.02	0. 04	0.01	0.0031		0.0002	0. 027		0.29
						P	0.14	0. 24	1.04 0.012	0.002	0.06	0.02	0. 04	0.01	0.0022	0.028	0.0002	0. 032		0.29 0.3C
31. 2	HOT-ROLLE	D	OK			L	0.14	0:23	1.05 0.013	0.002	0.06	0.02	0.04	0.01	0.0022	0.028	0.0002		7. 43	0.32
			- OK	0	K.	P	0. 12	0. 26	1. 02 0. 010	0,002	0.04	0.02	0: 04	0.01	0.0022		0.0002		7.50	0.32
						P	0.13	0. 27	1.03 0.010	0.002	0.04	0.02	0. 04	0.01	0.0045		0. 0002	0. 032	8. 50	0.27
	TEMENT	777 74	YIELD		J	L	0. 12	0. 27	1.02 0.010	0.002	0.03		0.04	0.01	0. 0045		0.0002	0.032		0.29
NO		TRENGTH	STRENGTH	0 5	ELONGA'	TION	1		· · · · · · · · · · · · · · · · · · ·		-	<u> </u>	0, 03	0.01	0.0045	0. 031	0.0002	0.032	8. 50	0.27
	р р	(PSI)	(PSI)	o s	δ (%				ПМРАСТ			HARDNE	223	HVDD	OCTATIO			_		
		strin	,L,bo=19mm,Lo=										200		OSTATIC		TEN	D.	END	TECT
8	674	25	51475	-Somm				ZE	AK (J)	Ori/Tem				163	「(Psi/s)	TE	ST	Di	ZIND	TEST
9	710	50	60175		43. 5			/A	N/A	N/A			HB 136	<del> </del>						
)	623	50	48575		39			/A	. N/A	N/A			HB 156		3000	0			N/A	
		strip .	L,bo=25.4mm,Lo=	=50mm	43. 5		N.	/A	N/A	N/A			HB 157		3000	0			N/A	
1.1	7105	50	52200	-30Hum	4 -				`			-	101 011		3000	- T. T. T. T. T. T. T. T. T. T. T. T. T.	K		N/A	\
1.2	6960		52200		26.5		N.		N/A	N/A			HB 133	<u> </u>	200	1775		Elic	-	
REM	ARKS: I. W	hereby cer	tify that this cert	<u>-</u>	36.5		N/	/A	N/A	N/A			HB 135		700	0		E Co	N/A	

REMARKS: 1. We hereby certify that this certificate of quality constant pro-signed by the majuracturer.

2. We hereby certify that the properties described herein meet the requirement of the above specification 3. We hereby certify that this certificate is issued accordance with EN10204 3.180R4041NDAYISO 15156-2 (REGION 3)/MR-0103 SOURSERVICE

4. Type: P-Product analysis, L-Ladle analysis;

QUALITY MANAGER:

2708

C1-277 of 486

N/A

36390





(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

SIDERCA S.A.I.C. Dr Jorge A. Simini 250 (82804MHA) Campana Buenos Aires, Argentina

(54) 3489 433100 tel. (54) 3489 433405 fax

		Expedientel Manufacturing Order 5/4483.03	Número I 245	Number 5392	11/02/2005	1/6
Cilente / Gustomer CCTF Producto / Product CARBON STEEL FOR SERVICES AT LOW TEMPERA		Orden de Comprel Purchase Order 4810082	ltem 00019	Referencia 3598-R-LA	del Cliente   Custome 07 REV.8	Reference
Norma   Standard		Grado / Grade 1/6/290 2SS			.25F2A(ANSIB16.25)	
ASTM A333/ASMC SA333 + C9A Z245.1-D416 CAN  Dimensiones / timensione Sanedula Peso Nominal / Nominal Weight Longitud / Length 11.29 KGMT 11.6/13.4 m	Superficie Ex VARNISHED	dema i External Surface .		Cantidade 27 P 27 P		3682 Kg 8117 Lb

anemiC 19.88	iones/(i   X	5.43		1	29000UI		50 140	1	1.29 KG/MT	1	1,6/13,4	m		VARN	USHE	D									7 Pcs	1	072,05	Pt	811	7 Lb
3 1/:	2 X	0.21	6 Inc	n6s/					7.58 LB/FT ENSA	YOS	DE	TRA	CCI	ON	/ T	ENS	SILE	E TE	EST	-	<del></del>				Rec	,	· ,	HIPTER /	Hardnes	
Colada	Nº da Ensayo		Cond	ickn d	a la probe	zta	T	Temp de		Sección	,	Fluencia						ura/U.7	1	Reb		Ð	gamia		de	.			ypa: BHN	
			Spe	cimen	condition	<u></u>		Test	Sizo	Area	Offset Req.	Wethod V.	1	EUL M Req. Min	V. obt	Roq.	Req. Min.	V.	Req.	YS/I Ra		1.0 2"	Req. Min	V. obt	Are Req.		Flog. Min	<b>v.</b>	Obr	Req. Max
Host	Ī		Estado	Ext	N° P/T	Tipo		Тептр	inches	inchs2	0.2%	cst _	%		Ksl			Ksi		Req.	Obt	ttem	-	% <u> </u>	Min	*	-	150		200
38021 36021 36380 36390	476121 476123 476122 476124	CAB	PRO PRO PRO			डा डा डा	L L L	TAJRT TAJRT TAJRT TAJRT	0,746 X 0,219 0,746 X 0,217 0,749 X 0,216 0,746 X 0,218	0,164			0.5 0.5 0.5	42 42 42 42	59.2 57.3 57.8 57.7		60 60 60	71.0 70.7 69.3 60.2				50,8 50,8 50,8 50.8	29.0 29.0 29.0 29.0	31.3 - 32.4 - 31.0 - 35.6	1 1			145 149 142		200 200 200
TEST	TECN	IOLO	GICO	/TEC	HNOL	OGIC	AL T	EST			16	ns. De Tra	nción de	snélo	<del> </del>	1015	1 110													
Aplast	emiento ing Test		urvado Send tes	1.	Abocerdat Fluring Te	10	P951	añado ge Test	Ens. De anilo Ring expandir		F	ling tensilu	Test		_	•														
5	tisfact		N.		N.A			N.A	1	ŁA			N.A					Ti =	Longill	dlool		V.Obt	= Va	or Oble	nido / O	blaine	d value			
Pro = N = DIST	Proce	so/Pro zada/I enskon	oess lormaliseds / St	ned ress Re	ilief senched & emperatu	. Тектере гв	onerci Demo		RE = Red CI = Clifind ST = Seg Tub TU = Tran	trice/ Cylin mento Tut ular segna	xutar/		R/I P / MI	A≕ F n = M	romed Intro	Body I Upse I o / Ave I minimu / Maxim	m) egen	T × P/T : EXT	Trans Tubo Extr	versal	xd	FĦ	Comie	roo de :	merceck sto si E/	ór/Ste	ındling	starting	E	CALI 17

#### 市华友特钢有限公司 无 Wuxi Huayou Special Steel Co., Ltd.



### 产品质量证明书

Page 1 / 1

无锡市江海西路 888 号

		HUAYOU S	PECIAL	L STEEL					M	ILI	TES	T C	ERTI	FIC.	ATE			Т	el:(05	10)83	073086		10)830	73086
	货单位 TOMER		BRI	I-CHE	M STE	EL COR	PORAT	ION				书号		100	726024	+	MAK	制造方法 ING MET	HOD		C	冷拔 OLD DRA	WN	
	货单位 CHASER		BR	I-CHE	M STE	EL COR	PORAT	ION			信用证	号 L/C	NO.				[	交货状态 DELIVER	Υ		N	正火态 ORMALI	ZED	
عدر	品名称 ODUCT		***	SEA		缝钢管 STEE	L PIPES	3	10-11			同 TRACT		1	00222		HEA	A处理工艺 「TREATI	MENT					
标		AS ⁻	TM/AS	SME A	/SA333	-05 NA	CE MR	0175-20	003		(	钢级 GRADE		,	GR.6		DA	出货日期 FE OF IS:				2010-7-2	26	
外? O.I		14.3mm NPS4	壁厚 W.T		3.56mm XH	ı K	度 IGT	11.8m	above	1	TOTAL P	总支数 IECES	(PCS)	6	2		·米数 JATC	7	68.13		总重量(I OTAL WE		17.	147
			N	<i>[</i>						1		学 们CAL(	成 COMPOS	17.2	%							金属夹杂。 etallic Inc		级) Grade)
序号 NO.	生产批 WORK I			支数 PCS	*1	碳 C	硅 Si	锰 Mn	磷 P	硫 S	铜 Cu	镍 Ni	格 Cr	钼 Mo	钒 V	砚 B	铌 Nb	钛 Ti	飶 Bi	神 As	А	В	С	D
			)		Max Min	0.30	0.10	1.35 0.29	0.025	0.02	5		-							-	_			
1	Hy10060	856 B5287	73	62	Н	0.21	0.22	1.31	0.014	0.00	5 –		_				_							
		拉伸试 标距 GAUGI						冲		IMPA KV (J	ACT TES I)	Т	補舟	试验					探伤检 V.D.E.	验 		金村 METALLC	试验 GRAPH	IC
同上 序号 NO.		抗拉强度 T.S MPa	S. 屈	服强度		仲长率 A			温度 Ti	EMPE TEST	RATURI	OF	HARE TE (HRO	NESS ST C≤22)	HYDI	压试验 ROSTA TEST		涡流探负 E.T.		⋾波探伤 U.T.	MICR	微组织 OSTRUC	-   "	品粒度 (级)
	Max Min	- 415		240	)	3	0	1	2		3	AVG	(HB:	≤234)				L. 1.		O, 1,	T	URE	GRA	AIN SIZE
1	L.	510/520		335/3	40	34/	35	51	52		55	53	HB128	125/135	5			合格 GOOD		合格 GOOD				
VISU	外观和片 AL & DIM	ENSION	合桁 GOC		_	E 局试系 ENING		合 GO		BEI	弯曲试》 NDING T				-	口试验 ND TE	ST	-	<del></del>	FL	卷边试》 ARING T	EGT L	CLAZ	
	た符	*1、H: HEA [*] *3、试验方向 WE HEREBY	ORII	ENTAT	ION +	1=纵向	LONG	IYUDIN	AL. *4	SY:	=0.2%OF	FSET	<b>,</b>						ITAMIN	ATION			JALITY	
	验者 /EYOR	兹证明本表) WE HEREE SAMPLED,	RY CE	ERTIF	Z THAT	THE	MATER	IALS D	ESCRII	BED I	HEREIN	HAVE	BEEN M	IANUFA PECIFIC	CTURE ATION(		检验 NSPE	员 CTOR	王	金峰	检验印章	(IEE)	TIFICAL	
SUR	VETOR !	AND THAT							, atoL	*****							1		STAM		AILL INSF		· ·	

C1-279 of 486

6" XH A333 HT#80893

**Tenaris** 

75 PD

H/B 011

### INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

21805

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	Cliente / Customer VAN LEEUWEN CANADA				Número /		Fecha / Date	Pag Page
	Producto / Product CARBON STEEL FOR SERVICES AT LOW TEMPERA Norma / Standard			5/0823.06 Orden de Compra/ Purchase Order 45000372		8076 Referencia d 45000372	06/08/2006 lel Cliente / Custon	1/6
_	ASTM A333/ASME SA333 CSA Z245.1-02*CANADA TENARIS P4.18-01/00 OCT 24,20		1	Grado / Grade 1/6/290 2SS		Extremos / E. BEVELLED	nds AT 30 DEG. ASTM	
ļ	168.30 x 10.97 mm		Superficie Exte VARNISHED	ma / External Surface		Cantidades / 267 Pz		74707 Kg
	ENSAYOS	DE TRACCIO	ON / TEN	ICH E TECT		267 Pcs	5768.11 Ft	164701 Lb

ENSAYOS DE TRACCION / TENSILE TEST  Cotada Enaryo  Condición de la probeta  Tent p  General Dimensiones  Sección  Fluencia / Vield Strength  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  Fluencia (Vield Strength)  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Relactin  ReduraU.T.S  Rela			•			-				FNSA	VOS	DE	TDA	~~	101									4	267 Pc	<u>:s</u>	5768.	11 Ft	16470	)1 L
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(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

SIDERCA S.A.I.C. Dr Jorge A. Simini 250 (B2804MHA) Campana Buenos Aires, Argentina

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(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

SIDERCA S.A.I.C. Dr Jorge A. Simini 250 (B2804MHA) Campana Buenos Aires, Argentina

(54) 3489 433100 tel. (54) 3489 433405 fax

Cliente / Customer								(54) 3489 4334	05 fax
VAN LEEUWEN CANADA					Expediente/ Manufacturing Order 5/0823.06	Número .		Fecha / Date	Pág./Page
Producto / Product		-					5076	06/08/2006	3/6
CARBON STEEL FOR SERVICE	S AT LOW	TEMPERA			Orden de Compra/ Purchase Order 45000372	Item 00010	Referencia 45000372	del Cliente / Custon	ner Reference
Norma / Standard				<del></del>		<u> </u>			
ASTM A333/ASME SA333 CSA Z	245.1-02*C	ANADA TENARIS P4.18-01/00 OCT	24,2003		Grado / Grade 1/6/290 2SS		Extremos /		
Dimensiones / Dimensions	Schedule	Peso Nominal / Nominal Weight	Longitud / Length				BEVELLED	AT 30 DEG. ASTM	<u> </u>
168.30 x 10.97 mm 6 5/8 x 0,432 inches	80	42.56 KG/MT 28.57 LB/FT	S.R. (SP)	VARNISHED	ema / External Surface		Cantidades 267 Pz	/ Quantities 1758.12 m	74707 Ka
			·····				267 Pcs	5768.11 Ft	164701 Lb

ENSAYOS DE IMPACTO / IMPACT TEST

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(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

SIDERCA S.A.I.C. Dr Jorge A. Simini 250 (B2804MHA) Campana Buenos Aires, Argentina

(54) 3489 433100 tel. (54) 3489 433405 fax

Cliente / Customer VAN LEEUWEN CAN	ADA				Expediente/ Manufacturing Order 5/0823,06		/ Number 3 <b>5076</b>	Fecha / Date 06/08/2006	Pág /Page 4 / 6
Producto / Product CARBON STEEL FOR	R SERVICES AT LOW T	EMPERA		·	Orden de Compra/ Purchase Order 45000372	Item 00010	Referencia 45000372	a del Cliente / Custo	mer Reference
Norma / Standard ASTM A333/ASME SA	\333 CSA Z245.1-02*C/	ANADA TENARIS P4.18-01/00 OCT 2	4,2003		Grado / Grade 1/6/290 2SS	<u> </u>	Extremo / E	Ends D AT 30 DEG. ASTN	Λ
Dimensiones / Dimens 168.30 x 10.97 6 5/8 x 0.432	1	Peso Nominal / Nominal Weight 42.56 KG/MT 28.57 LB/FT	Longitud / Length S.R. (SP)	Superficie Exte VARNISHED	ema / Extemal Surface		Cantidades 267 Pz 267 Pc		74707 Kg 164701 Lb
& = Monograma / Mo MM.YY = Mes / Año	-	NNNNN = Número de tubo / Y/T = Año / Trimestre Year / Qua	Nbr of pipe L	Marcas / Marking LL = Longitud / le HNXXXXX :	ngth <b>PPP</b> = Peso / Weigh = Colada / Heat	t	@= Mono	grama / Monogram /	API
	1	Prueba Hidráulica / Hydros	static Test				<u> </u>		
Pn Unidad / Unit	esión / Pressure Valor / Value	Tiempo / Time Segundos / Second			ado / Results rio / Salisfactory				
PSI	3000	5.00	3	Saustacto	no / Salisractory				
*FABRICADO POR S			2.4H%ind		URED BY SIDERCA*	ur 1074694			34.× .
*FABRICADO POR S				*MANUFACT	225				
CALMADO AL ALUM	NO.	PRARCO ELECTRICO Y COLADO (		FINE GRAIN					KILLED AND
VARILLA DE SILCIU MICROINGLUSIONE	RO DE CALCIO PARA	CUCHARA)NCLUYE UNA INYECGI GETENER UNA FORMA GLOBULAI	ON EINAL DE UNA R DE EVENTUALES	MICROINGLE	CTICE INCLUDES A FINAL INJECTI ISION SHAPE CONTROL	ON OF CAL	LCIUM SILIK	JOE WIRE FOR	
-MAT <b>ERIAL LIBRE D</b>	E CONTAMINACIÓN D	E MERCURIO.		-MATERIAL F	REE FROM MERCURY GONTAMIN	ATION.			140
*PROCESO DE LAM -FABRICACIÓN DE T	754	CALIENTE Y SIN COSTURA		PROLING PE	ROCESS* URING PROCESS : SEAMLESS HO	ROLLED.			
*CONTROLES*	DIMENSIONAL SATI	SFAGTORIO		*CONTROLS*	DIMENSIONAL INSPECTION: SAT	MAC.	Y.		
*CONDICIONES DEL -NO REPARADO PO				MATERIAL C	ONDITIONS* RED BY WELDING.				
*PROPIEDADES DEL -LA DUREZA CUMPL		CE MR 01+75 ULTIMA EDICION 28		*MATERIAL P	ROPERTIES* ACCORDING TO NACE MR-01-75 C	ATEST EQ	TÍŌN.		
									CATTATAG



(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

SIDERCA S.A.I.C. Dr Jorge A. Simini 250 (B2804MHA) Campana Buenos Aires, Argentina

(54) 3489 433100 tel. (54) 3489 433405 fax

Cliente / Customer					15	- ₁	····	(34) 3489 4334	
VAN LEEUWEN CANADA Producto / Product					Expediente/ Manufacturing Order 5/0823.06		/ Number 35076	Fecha / Date 06/08/2006	Pág /Page
CARBON STEEL FOR SERVICE	S AT LOW TE	MPERA			Orden de Compra/ Purchase Order 45000372	Item 00010		a del Cliente / Custo	5 / 6 mer Reference
Norma / Standard ASTM A333/ASME SA333 CSA Z	245.1-02*CAN	IADA TENARIS P4.18-01/00 OCT 2	4,2003		Grado / Grade 1/6/290 2SS	<u> </u>	Extremo / E		
Dimensiones / Dimensions 168.30 x 10.97 mm		eso Nominal / Nominal Weight	Longitud / Length	Superficie Ext	ema / External Surface			DAT 30 DEG. ASTA	A
6 5/8 x 0,432 inches		42.56 KG/MT 28.57 LB/FT	S.R. (SP)	VARNISHED			267 Pz 267 Pc		74707 Kg 164701 Lb
*NORMAS*	OS REQUERI	IMIENTOS CSA Z245.1 GR 241/29	0 CAT I	- MATERIAL	COMPLIES WITH CSA Z245.1 GR 2	41/290 CAT	1		104707 LB
-EDICION DE LA NORMA : NAC	E MR-01-75 H	II TIMA EDICION		*STANDARD	S*		·		
-EDICION DE LA NORMA: ASME	SA 333 SEC.	II PARTE A/01 Addendum 2003		-EDITION OF	REGULATION: NACE MR-01-75 LA	TEST EDIT	ЮИ		ļ ·
-EDICION DE LA NORMA : ASTA	/I A333/04a,	- TO THE GOING AND EDGS,		-EDITION OF	REGULATION: ASME SA 333 SEC.	II PART A	'01 Addendu	m 2003.	
-EDICION DE LA NORMA: CSA 2	245.1/02.		-	-EDITION OF	REGULATION: ASTM A333/04a, REGULATION: CSA 2245 1702			· ·	1
Observaciones / Remarks					NEODENTON, CSA 2223 1/12	55E			
NON DESTRUCTIVE TEST: SATIS	SFACTORY.								
INSPECTION METHODS: E.M.I. LO		NOTCH 5%							
	ONG.(INT.) NO								
+ E.M.I. Tr	RANS (EXTAIN	IT NOTCH 109.				¥9			Tak Britania
ONE YELLOW LONGITUDINAL BA END MARKING ONE ORANGE BA	ND.								
Tratamiento termico (Fulto) Heat tra	Andrew Property								
Metodo de enmaniento del tratamie	nto térmico (Tu	QUENCHED AND I thos) / Quench media of heat tream	EMPERED ent process (Pipes)		WATER				707
Protectories/Eng Protectors: NON LIF TABLE CEOSED PLASTIC			Action Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the		WAIER ENGINEERING				
	- NOVECTOR	S-SK-1-ALMBAYEEBPIPESSUR	PLIER METALCENTRO						
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			C1-	-284 of 486	。 1490年2月1日 - 14日時代開始後後後の日本日	£ "\$			CAU 17864

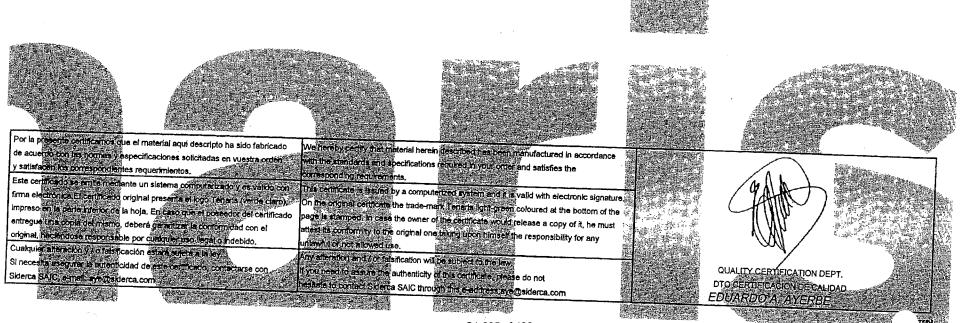


(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

SIDERCA S.A.I.C. Dr Jorge A. Simini 250 (B2804MHA) Campana Buenos Aires, Argentina

(54) 3489 433100 tel.

Cliente / Customer	<del></del>							(54) 3489 433	105 fax
VAN LEEUWEN CANADA					Expediente/ Manufacturing Order 5/0823,06	Número		Fecha / Date	Pág./Page
Producto / Product CARBON STEEL FOR SERVICE	S AT LOW	TEMPERA			Orden de Compra/ Purchase Order 45000372		Referencia 45000372	del Cliente / Custo	6 / 6 mer Reference
Norma / Standard ASTM A333/ASME SA333 CSA Z	245.1-02°C	ANADA TENARIS P4.18-01/00 OCT	24,2003		Grado / Grade 1/6/290 2SS	L	Extremo / Er		
Dimensiones / Dimensions           168.30 x 10.97 mm           6 5/8 x 0.432 inches	80	Peso Nominal / Nominal Weight 42.56 KG/MT 28.57 LB/FT	Longitud / Length S.R. (SP)	Superficie Ext	ema / External Surface		BEVELLED Cantidades / 267 Pz	AT 30 DEG, ASTI Quantities 1758,12 m	74707 Kg
							267 Pcs	5768.11 Ft	164701 Lb



HENGYANG VALIN STEEL TUBE CO., LTD

L-C NO.: 0FAHD5-00364

P.O. NO.: PO.2 1995-OR-2100-D (LOT B)

Contract No.: 2210001764-2

Name of Customer: CE FRANKETS
DESCRIPTION: SEAMLESS CARBON STEEL

MILL TEST REPORT

Add: 10 Dalixincun, Hengyang City, Hunan, China Tel and Fax: +86 734 8873739 8872942

Cable: 6993

						L PIPE FOR OIL AND GAS US L_7725.06FY	SE.	Date: Jt							P.(		21001 52001			
5	PEC.	ASTH	/A333-6	-2005, A	ME SA333	6-2007, NACE MR-0175-2	005/ISO 1	5156-2(W	c: 2/2	1 3\04B 044	12/50									
$\vdash$		-17		TOWE Z	O CATEGO	RY 11)				· 2/12/10/11	13133				1	CER1	TIFICATE N	O: 2010	1-02-0538	
	ا	NO.	HEAT NO.	GRADE		, SIZE			В	UNDLES	PI	ECES	FI	EET		MILLA	T		VEIGHT(M	
			1032149V	A333-6		6"*0.432***40FT				12					,	ML)	1 ^	OI UAL 9	remarita.	1)
-			10324494	A333-6		6°°0,432°°40FT				9		50		1,58		. 164		1	UA.	
1-3			10333697		1	8"*0_500"*40FT				27		44		31.15		. 853		1	UA.	
-	10 ⁺⁰ -500 ⁺⁴ 0FT 5 10 400.25 2.3															305		N	I/A	
N	DELIVERY MONDESTRUCTIVE TEST 10 400.26 9.95 N/A CHEMICAL COMPOSITION (3)																			
	D. DELIVERY NONDESTRUCTIVE TEST  CONDITION  EMI UT TYPE: C Si Wa P S Cu Ni Cr Wo V T P N N N N N N N N N N N N N N N N N N																			
3	CONDITION ENGI UT TYPE: C Si Mn P S Cu Ni Cr Mo V Ti B Nb Maic CE    HOT-ROLLED OX NVA P																			
	3 HOT-ROLLED OX N/A P 0.11 0.22 1.05 0.008 0.0016 0.07 0.02 0.03 0.01 0.01 0.02 0.0001 0.025 9.55 0.30																			
-	3 HOT-ROLLED OK NVA P 0.11 0.22 1.05 0.008 0.0016 0.07 0.02 0.03 0.01 0.01 0.02 0.0001 0.025 9.55 0.30 HOT-ROLLED OK NVA P 0.11 0.23 1.04 0.008 0.0016 0.07 0.02 0.03 0.01 0.01 0.02 0.0001 0.025 9.55 0.30 HOT-ROLLED OK NVA D 0.03 0.051 0.03 0.051 0.03 0.001 0.03 0.03 0.03 0.03 0.03 0.																			
	3 HOT-ROLLED OK N/A P 0.11 0.22 L05 0.008 0.0016 0.07 0.02 0.03 0.01 0.01 0.02 0.000 0.025 9.55 0.30  HOT-ROLLED OK N/A P 0.11 0.23 1.04 0.008 0.0016 0.07 0.02 0.03 0.01 0.01 0.02 0.001 0.02 9.55 0.30  HOT-ROLLED OK N/A P 0.12 0.23 1.04 0.008 0.0016 0.07 0.02 0.03 0.01 0.01 0.02 0.001 0.02 9.45 0.30  HOT-ROLLED OK N/A P 0.12 0.24 1.07 0.008 0.0013 0.07 0.03 0.05 0.01 0.01 0.02 0.002 0.03 8.08 0.33																			
	3 HOT-ROLLED OX N/A P 0.11 0.22 LoS 0.008 0.0016 0.07 0.02 0.03 0.01 0.01 0.02 0.001 0.025 9.55 0.30 P 0.12 0.23 1.04 0.008 0.010 0.003 0.07 0.02 0.03 0.01 0.01 0.02 0.001 0.025 9.55 0.30 HOT-ROLLED OK N/A P 0.12 0.23 1.05 0.010 0.008 0.013 0.07 0.03 0.05 0.01 0.01 0.01 0.02 0.000 0.025 9.53 0.30 HOT-ROLLED OK N/A P 0.12 0.23 1.05 0.010 0.008 0.013 0.07 0.02 0.03 0.01 0.01 0.02 0.000 0.025 9.53 0.30 0.00 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005																			
							0. 13			0.008 •	0.0013	0, 07	0.02	0.00	0. 01	10.0	0.02 0.0			0.31
4	но	T-ROLLE		OK	N/A		0.13	0. 25		0.010	0.003	0.07	0. 03	0.05	0.01	0.01		002 0.03		0.33
					1000	P	0.11	0.28		0.008	0.0015	0.08	0.03	0.05	0.01	0.01		001 0.02		0.30
							0.11	0. 28		0, 008	0.0016	0.08	0.03	0.05	0. 01	0.01		001 0.02		0.30
5	HO	T-ROLLE		OK ·	N/A		0. 12	0, 29		0.009	0.002	0.09	0. 03		0.01	0.01		001 0, 02		0.30
						P	0.12			0.007	0. D015 ·	0.08		0.04	0. 03	0.01		002 0 03		0.31
						L ·	0.11	0. 26 1		0.007	0.0015			0.04	0.01	0.01	0.021 0.0	002 0.03		0.32
NO	TEMS	SILE STR		YIELD 5	TRENGTH		V- 11	0. 27		0. 007	0.0019 .	0.08	0_02	0.05	2.01	0.01		001 0.02		0.31
-	<del> </del>	2 P (P:	<u> </u>	2.0	(Psi)	ELUNCATION 5 (%)	1		DAPA.	.CT		HARDNESS		BADD	OCT ATTIC	FLATTER				1
_	-			strip,L,	bo-12.5.1.o-5	Denen	SIZE	AK ()	, 1	SHEAK	Ori∕Texa	<del> </del>		TEST	PSV 6s)	TEST	SSC TES		HEAT	HIC
3	703		6887.5	55825	54375	42.0/29.0	7.5+10+5	Y/136,14		ERACTURE 86/85/87		HRC				755,	<u> </u>	LKI	ATMENT	TEST
-	696		70325	54375	55100	39, 0/39, 0	7.5+10+5	V/136,14		87/85/85	T/-45°C	01			000	ox	N/A	$-\Box$	N/A	N/A
+	754		76850	58000	59450	41.0/40.0	10+10+55	V/122, 118		30/30/35	T/-45°C	01			000	OK.	N/A		N/A	N/A
5	652	50	66700	49300	50025	33, 5/26, 0	1	V/214, 202			T/45°C	OI			000	OK.	NiA	$\perp$	N/A	N/A
	REMARI	KS: 1. T	Ve hereby	cartify the	t this certifica	to of quality is impact and since	12	-1 =+74 200	TAUL !	XV/00/10	T/-45°C	10		30	200	OK	N/A		N/A	N/A

We hereby certify that this certificate of quality is issued and signed by the manufacturer.
 We hereby certify that the properties described herein meet the requirement of the above specification

1. We hereby certify that this certificate is issued accordance with EN10204 3.1/DIN 50049 3.1B

4. Type: P-Product analysis, L-Ladle analysis,

5. Origin: Made in China;

6. Content of chemical composition: Cr+Cu+Mo+V+Ni≤1%.

QUALITY MANAGER:



6"std 19333 HT 103496 V

Contract No: 2210001881

L/C NO.:11074606T02126

Customer: CCTF CORPORATION

P.O NO.:4888062-00

DESCRIPTION: SEAMLESS STEEL PIPE

HENGYANG VALIN STEEL TUBE CO., LTD

MILL TEST REPORT

Date: NOV 17,2010

2860077

Add: 10 Dalixincun, Hengyang City, Hunan, China

Tel and Fax: +86 734 8873739 8872942

Cable: 6993

P.C. 4

421001

	KILLIOM: 2									$\alpha$	000										
TOTA	L: <u>218</u> PIEC	ES,498UN	DLES,76.959	MT			4 O COUR S	EDVICE								CERT	TFICATE 1	NO: 20	10-03-11	15-1	
SPEC		/	<del></del>	CSAZ24	5.1 Gr.		at 2 SOUR S	ERVICE	DIDE	1.00	DIE	CES	FEI	er	THEORI	1		ACTUAL	. WEIGH	r(MT)	
МО	BATCH NO.	HEAT NO.	GRADE			S	SIZE		BUND	LES									N/A		
<del>  </del>						c″+0 5	280**21FT	1	7			49	10:	$\overline{}$	8.8				N/A		
9	K91L03231	1034963	A333-6			0 +0.2	200 -2111		7			49	103	29	8.8	62			14/12	C	F
	Total  NONDESTRUCTIVE TEST									CHEMI	CAL CC	MPOSITION	(%)								
	DELIVER								Ип	D	ç	Cu	Ni	Cr	Мо	V	Ti	В	Nb	Pem	IIW
NO.	CONDITION EM UT TYPE: C			SI		0,0080	0.0021	0.07	0.03	0.04	0.01	0.0010	0. 022	0.0001	0.030	0.19	N/A				
1-a	NORMALIZ		OK.	OK		Р	0. 12	0. 22	1.05			0.07	0.03		0.01	0.0010	0.022		0.030	0.17	N/A
1 3	NOKIVIALII					P	0. 11	0. 21	1.04	0.0080	0.0021	0.07	0.04			0,0100	0. 023	0.0001	0.029	0.19	N/A
						L	0. 12	0. 22	1.05	0.0090	0.0024	0.08	0.01	0.00		<del></del>					
ИО	TENSILE STRENGTH YIELD STRENGTH ELONGATION					IMPACT		<del></del>		HARDNE			OSTATIC PSI/ 6s )	FLATTE	HE TREA	AT IMENT	HIC TEST	SSC TEST			
						SIZE	AK (J)	)	Average	Ori/Tem	% shear area	HRC	:≤22			N TEST	<del>  </del>			<del> </del>	
	strip,L, bo=12.5,Lo=50mm SIZE							<del>                                     </del>		1			l .		1		alized:		l		
9	9 71050 71050 55100 55100 40.0/39.5 10*5*55 V8/82			V8/82/82/84		83	T/-45℃	90/90/90		K	2	670	OK	•	E±10°C Min						
1					<u> </u>		<u> </u>	<u> </u>			<u> </u>		<del></del>								

REMARKS: 1. We hereby certify that this certificate of quality is issued and signed by the manufacturer.

- 2. We hereby certify that the properties described herein meet the requirement of the above specification
- $3. \ \ We hereby certify that this certificate is issued accordance with EN10204\ 3.1B/NACE\ MR0175/ISO15156-2/NACE\ MR0103\ .$

4. Type: P-Product analysis, L-Ladle analysis;

QUALITY MANAGER:

E S

1245 Al 6"-578-453

	P/O No. 4886837-00 L/C No. : SH980317JK  SSUED DATE : 2009.12.30  COMMODITY : E.R.W. STEEL PIPE API 5LB/ASTM A53B SPECIFICATION : ASME SA 53B  API 5LB/ASTM A53B SPECIFICATION : ASME SA 53B  ORDER SIZE  API 5LB/ASTM A53B SPECIFICATION : ASME SA 53B  ORDER SIZE  TENSILE TEST  CERTIFICATE No. :091230-A452-1  CERTIFICATE No. :091230-A452-1  MANUFACTURED No.:09-12-006  SUPPLIER : HUSTEEL CO., LTD.  CUSTOMER : HUSTEEL USA INC.																						
						······································		Y	IUSTE	EL C	O., L	TD.			CERTI	FICATE	No.	09123	0-A45	52-1			
	ISS	UED DATE	: 200	9.12.30			] HEAD OF	FICE : Shi	nan B/D 15F,	943-19, Da	echi-dong, k	angnam-l	ĸu,		MANUI	ACTUR	ED No.	:09-12	-006				
	_co	MMODITY				<u> </u>	DANGJIN CHL	PLANT : 5	69-1, BUGOR NGNAM-DO, I	(-RI, SONG KOREA	AK-MYEON	, DANGJI	N-GUN	ŧ,	SUPPL	IER	:	HUSTE	EL CO.	, LTD.			
	SPE	CIFICATION													CUSTO	MER	:	: HUSTE	EL USA	INC.			
						0				,			,,,,,			СНЕМ	ICAL CC	MPOSI	TION(9	ه)			
	ITEM	HEAT NO.	TYPE	QUANTITY (PIECES)	NOMINAL SIZE	O.D.	w.T.	<u> </u>	WEIGHT			T	С	Si	Mn	Р	s	Cu	NI	Сг		Γ.,	Γ.
	NO.			-		(inch)	(inch)	LENGTH (ft)	(kg/ft)	1	YIELD STRENGTI	ELONG- ATION (%)		2	<u> </u>		l	· · · · · · · · · · · · · · · · · · ·	3		Мо		Ti
			0	<del> </del>	ļ	@	3	L		(PSI)	(PSI)	(/"/					Œ	)					
32	01	C915712	BPEB	1,035	2-3/8	2.375	0.154	21	1.66	79000	66000	35	14	14	76	11	1	15	10	14	2	1	1
77/_	02	C915710	BPEB	280	3-1/2	3.500	0.216	21	3.44	76900	63800	35	14	14	79	11	2	13	9	14	2	2	1
05	03	C926150		<b>§</b> 105	6-5/8	6.625	0,280	21	8.61	76100	62400	35	13	15	77	11	1	16	8	15	2	1	1-1
30	04	C926389 C915711	BPEB BPEB	) 50	8-5/8	8,625	0,322	21	12.95	78300	61600	35	15	14	77	12	1	15	13	8	3	2	1
64	05	SQ85321	BPEB	40	8-5/8	8.625 10.750	0.322 0.365	21 21	12.95 18.36	78300 69300	62400 46700	31	14	14	76 80	13	5	11	8 12	15 16	3	3	1
· ·				1	P																-	'	'
				XX																			
	ITEM	HYDROSTAT	ic lesi	HEAT TREATMEN	NDT	HARDNESS	THRE	ADS	TENSILE	ZINC COA TEST	VISUA		w	R	F	C	R	s.T		T TEST	Res.		_
	NO.	TP (PSI)	RE- SULT	(°C)	(U.T, E.T)	TEST (HV)	TPI	ETL (mm)	STRENGTH OF WELDS	WZC (g/m) (T	CST DIMEN		L	T	L T	R T	F	(%)	ENE- RGY (J)	SHEAR AREA (%)	Mag.		E- RKS
		(5)	JOLI		6		(	D	(PSI)	(g)/  (·)	1000				<u> </u>	L	L	L	(3)	37	Gauss		
	01	2500	GOOD	900	GOOD					Ī	GOOD	GOOD		GOOD	<u>`</u>	ĺ	<u> </u>	0.1		<del></del>	<del>                                     </del>	-	
	02	2500	GOOD	900	GOOD						G000	1		GOOD				0.1		'	B 7	İ	
:	03	1780	GOOD	900	GOOD					1.	GOOD	GOOD		GOOD		Į		0.1		'	10		
	04	1570	GOOD	900	G000				82000		GOOD	GOOD		GOOD				0.1			9		
		1570	GOOD	900	GOOD			ļ	82400		6000	GOOD		GOOD				0.1			10		
	05	1430	GOOD	900	GOOD				73500		G000	GOOD		GOOD			:	0.1			12		
					1															'			
				}																			
	N	① TYPE-BE	E-BLAC	K DI AIN END	S BOEC BOT	PENCENCE S	TE DI SONO	L				1	<u> </u>			<u> </u>	Ļ.,						
	0	GTC-GALVA	WIZED T	HREAD & CO	JUPLED ® O	DEVELLED'S	TE-BLACK I	D IN THAIR	ENDS,BTC-BLA	CK THREAD	ED & COUPLE	D,GPE-G/	LVANE	ED PLAIN	ENDS,G	TE-GAL\	ANIZED	THREAD	ED END	S,			
	T E	E.T:EDDY C	URRENT	r test u.t:u	ILTRASONIC	TEST ① TPL	THREADS P	ER INCH ET	L THICKNESS LEFFECTIVE	ENGTH OF	THEEAUS (I)	M7C4MC	0, 3:×10	00 (5) T.P.:	TESTING	PRESS	URE ® N	NDT:NON	DESTR	JCTIVE '	TEST,		
	E	CST:COPPE	R SULP	HATE TEST (	® WDT:WEL	D DUCTILITY	TEST,RGT:	RING GAGE	TEST,FLT:FLA	NGE TEST.	CRT:CRUSH	TEST RFT:	REVER	SE FLATTE	NING (9) ENING TI	KES.MA	STRAIGE	JUAL MA	GNETIS	M, TD:TO	۸۵۵		
	SIGN	ATURE		1					HEREIN HA							VATURI		III NEOO,I	<del></del>	re Boog			
l	SURV	EYOR TO:		1.					SO WITH TH											đ			
I		C-30-05-(21)	<del></del>		······································									- ONOLIN.		EAM M	ANAGE	R OF Q	JALITY	ASSUF	RANCE	TEAM	Λ
	INC	U-3U-U3-(21)	1																				

. HUSTEEL

#### 本溪北方钢管有限公司 BENXI NORTHERN STEEL PIPES CO.,LTD.



# 产品质量证明书

BENXI NORTHERN STEEL PIPES CO. LTD

273.1

323.9

3

3

.08.1073.17

R10200525

1

8521

8521

Producer

MILL TEST CERTIFICATE

CENTER COLUMN

贫为你单位制造二铜管,已经本公司重位中心根据标准、技术条件、合同检验合格、特发非证。

This is to certify that in accordance with the relevant specifications and contracts

The ERW sleet pipes manufactured were tested and qualified by our Quality Control Department.

ASTM A252 GRADE 3 兹为你单位生产的该批石频焊接钢管检查依据 55930.80、米

3384.700 师 3775 文 该批离频焊接钢件按理论计重合计 ASTM A252 GRADE 3

VANCOUVER B.C. CANADA

Destination:

27.0

470

350

2.8 1.8 128

The ERW steel pipes are tested according to 3384.700 MT. 3775 pcs 55930.80 M

无损检验 and counted nominally amount 延過試験 高规焊接铅篮 货物名称 水压试验 焊缝物理性能 Description ERW STEEL PIPES 物理性能 化学成分(%) **处观尺寸** 数量 UT Hydrostatic Test Flattening 产品规格(Size) Welding. 钢级 此号. 序号 Holding time:10s Physical properties properties Chemical properties.  $\times 10^{2}$ Dimensional Quantity Test Length Test W.T. O.D. Tensile Steel Yield P = MoaElongation αb strength strength S (%) Ъ Mn Heat No. C Si Inspection No. (Mpa) ОК irl(MT) (Mpa) OΚ 米:(川): 根(Pcs) M mm OΚ mm Grade 32.0 515 0.7 370 2.7 OK 146 12 25 OK OK: 156,000 3657:600 ΟK 300 12.192 30.5 219.1 8.18 510 3 385 L9410987 1.2 8521. 155 3.1 ΟK 10 27 OK OΚ 156:000 3657,500 300 OK 12.192 31.0 8,18 3. 219.1 515 19410988 375 1.0 8521 3.0 OK 154 12 25 OK OK 156.000 3657.600 300 OK 12.192 30.5 8:18 219,1 510 3 L9410985 390 1:1 8521. 3.3 OK 158 11 26 OK OK 129.600 3048.000 200 OΚ 15.240 30.0 8.1B 3 219.1 520 19410983 395 8521 1.0 3.1 OK 152 28 12 QΚ OK 117.000 2743,200 18.288 150 OΚ 30.5 8.18 3 219.1 515 L9410984 395 0.2 8521 1.6 OΚ 118 27 18 OΚ ·ÖK 60,000 1219,200 100 OK 12,192 9.525 32.0 219.1 510 08107318 390 8521 1,7 0.4 OK 126 19 25. OK OΚ 90.000 1828.800 18.288 100 OK 9,525 32.0 219.1 3 525 08107327 400 8521 0.6 129 2.4 ÓΚ 27 11 ΘK .OK 147 000 2438.400 12.192 200 OΚ 9,27 31.0 .3 273.1 515 2-00006 390 8521 0.7 2.3 OΚ 25 127 17 OK · OΚ 147:000 2438.400 200 OK 12.192 9.27 32,5 273.1 3 520 2-00007 405 8521 0.5 2.3 OΚ 125 27 11 OK: ÖΚ 184.000 3048,000 200 ÓΚ 15/240 9.27 30.5 273.1 3 515 1-00006 395 0.2 8521 1.6 24 118 ΟK 18 ОK ÐΚ 220,600 3657.600 200 OK 18,288 9.27 273.1 32.0 . 3 510 08107318 390 8521 1.7 0.4 126 ΟK 26 19 OΚ OΚ 275.750 4572,000 250 ΟK 18.288 9.27

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16 13

OΚ

96,300

1304.544

107

12.192

9.525

Po# 4887136

21/150th RFSO-LFZ /346



SAN ENG STEEL FORGING CO LTD 311, Jen Hsin Road, Jen Wu Hsiang Kaohsiung Hsien, Taiwan, R.O.C. TEL: 07-3724249; FAX:07-3712923 URL: www.saneng.com.tw e-mail: saneng@ksts.seed.net.tw

#### (MILL TEST CERTIFICATE)

EN10204-3.1.B(DIN50049/3.1.B)

Customer: SEYBOLD INTERNATIONAL CORP.

Order No.: 7001945-CCTF

Certificate No.: SE-1945B
Date: 02/10/2010

Page: 1 <u>OF</u> 3

		PR(	ODUCT					MATERI	AL SP	ECIFI	CATI	ONS	75.5			DIME	NSIO	NAL	SPE	CIFIC	ATIC	DNS
	, FORGED	CARB	ON STEEL F	FLANGES				ASTM A350 I	_F2-07 CL	1/ ASMI	E SA350	LF2-07				·			E B16.5 Z245.1			
		1					011.0	NTITY				С	HEMIC	CALC	ОМР	OSIT	FION	(%)				
Item No.	CODE NO		DE	SCRIPTI	0 <b>N</b>		Q D A	Min		Si 0.150	Mn 0.600	P -	S -	Сu -	Cr -	Ni -	Mo -	V	Nb -	N -		CE(*3
<u> </u>								Max		0.300	1.350	0.035	0.040		0.300		0.120					-
1	7580034		NRF S160 2					10 PCE	0.222	0.240	1.010	0.015	0.014		0.063	II.		0.015				0.414
2	7580040	1	NRF S160 3					9 PCE	0.200	0.220	1.160	0.019	0.013	1	0.080		0.005	ı	1.	1		0.422
3	7580040	1	NRF S160 3					1 PCE	0.210	0.200	1.170	0.009	0.010		0.070	1	1	0.003		1 '		0.427
4	7580038	1	/NRF S160 4					10 PCE	0.210	0.200	1.110	0.007	0.010	1	0.060	1		0.003				0.415
5			NRF XS 11				Ì	25 PCE	0.209	0.220	1.020	0.014	0.008	1		0.054	1	0.005	1	,	Ì	0.386
1	7580223	l .	LRF 1 1/2" L					6 PCE	0.210	0.190	0.990	0.013	0.006		0.080		0.030			0.008		0.403
7	7580223	1	LRF 1 1/2" L	F2		•		4 PCE	0.230	0.270	1.010	0.012	0.009	1	0.110	1	0.020		L	-		0.434
_ <del></del> 8	7586504	ł	ORF 2" LF2				•	40 PCE	0.209	0.250	1.010	0.013	0.014	1	0.014	1	0.002	1		1		0.385
	7580226		HRF 1 1/2" L	.F2				25 PCE	0.212	0.240	1.010	0.015	0.017	0.005	0.019	I	0.002	1	0.001	0.004		0.388
10	7586501	150 T	HRF 4" LF2			į		15 PCE	0.209	0.250	1.010	0.013	0.014	0.010	0.014	0.055	0.002	0.005	0.005	0.004		0.385
	Heat No.	7	T.S.(*1)	Y.S.(*1)	E.L.(*1)		iness	R.A.(*1)	<del></del>	Impact 7				<u> </u>	*	В	EAT TR	REATME	NT(*2)	<del></del>		<del></del>
Item No.		Min	(MPA) 485.0	(MPA) 250.0	(%) 22.0	(1	iB)	(%) 30.0	Min	Temp: -4	16°C		Mate	rial Sup	plier		N					
.   140.	1	Max	655.0	-	~	1	97	50.0	1	2	7.0 Douie	3					EMARK					
1	931232		517.8	339.3	32.2	1:	57	64.0	35.0	3	B.0	27.0	NTMK				10 C X 31					
2	48960 (; )		508.0	311.9	35.4	1:	55	69.5	35.0	3	3.0	25.0	OEMK			CC	ONFOR R0175/I	MS WIT	TH NAC	E MR0	103-07	AND NACE
3	41369 \		539.4	379.5	34.0	1:	53	65.9	22.0	2.	2.0	23.0	RED OC	TOBER						5 12 C∆	TIIGR	.248 SOUR
4	13176	レー	523.7	354.0	35.0	1:	57	65.9	21.0	2	3.0	24.0	OEMK			SE	ERVICE	-05		). 12 OA	1 11 010	.240 0001
5	921027	<b>\</b> 1	511.9	343.2	32.6	1.	55	56.0	32.0	5	7.0	28.0	NTMK				ST SPI					
6	34245	)\	491.0	303.8	38.0	1.	47	68.6	19.0	2	в.о	26.0	OEMK				EST SPI IPACT 1				N: TRA	NSVERSE
7	43448		537.6	330.8	35.0	1	79	60.0	28.3	4	0.1	19.7	OEMK			1101	IF AC I	iLOI II	_IVIF ~	40 C		
8	931274	K)	509.9	325.6	34.8	1:	54	65.0	27.0	21	5.0	37.0	NTMK									
9	920952	1	513.9	349.1	32.6	1:	58	66.0	35.0	3.	4.0	27.0	NTMK			بسيرا	ONLINGO	CO				
10	931274		509.9	325.6	34.8	1	54	65.0	27.0		5.0		NTMK		75.	STER	ALTINODA	10	1			
*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.												13		70 6		*						
*2:	N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furance Cooled, W.C=Water Cooled, O.C=Oil Cooled.														*	15		NCE 1				
*3:	C.E. Value = C + (	. Value = C + (Mn /6) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15														111	ASSURA					
		y certify that the material has been tested in accordance with the above specification and the requirements called for by the above order.													Ŋ	Manage	r of Qua	lity Ass	urance	Dep't		<del></del>



SAN ENG STEEL FORGING CO LTD 311, Jen Hsin Road, Jen Wu Hsiang Kaohslung Hsien, Talwan, R.O.C. TEL:07-3724249; FAX:07-3712923 URL: www.saneng.com.tw

(MILL TEST CERTIFICATE)

EN10204-3.1.B(DIN50049/3.1.B)

W.F.F.FITTINGS & FLANGES (CANADA) Customer: LTD.

DIMENSIONAL SPECIFICATIONS

Certificate No.: SE090263

Date: 04/29/2009

Page: 10F2

PRODUCT FORGED CARBON STEEL FLANGES

e-mail: saneng@ksts.seed.net.tw

ASTM A350 LF2-07 CL.1/ ASME SA350 LF2-07

MATERIAL SPECIFICATIONS

Order No.: EO5179KD/WS

ASME B16.5-03 CSA Z245.12

1		1							<del></del> .	OMB	0.517	IAN	1943				
-			QUANTITY		l ei	Mn	. G1	TÉMIC Is	Cu	Cr	NI	Mo	V	Nb	N		CE(*3)
Item No.	CUSTOMER P/N	DESCRIPTION	M		0.150 0.300	0.600	0.035	0.040	0.400	0.300	0.400	0.120	0.080	0.080	- 0.040		0.422
1		150 SORF 2" LF2 -	40 PCE	0.200	0.220 0.140	1.160 1.120	0.019 0.010	0.016	0.100	0.110	0.050	0.005	0.003	0.005	0.009		0.410
² √3	•	150 THRF 2" LF2" 150 WNRF XS 2" LF2	40 PCE 240 PCE	0.190	0.140	1.120	0.010	0.016	0.100	0.110	0.050	0.005	0.003	0.005	0.009 0.010	1	0.410 0.409
14		150 WNRF XS 3" LF2	120 PCE 2 PCE	0,210 0,190	0.220	1.070 0.900	0:010	0.011	0.180	0.270	0.220	0.020	-	0.001	0.008		0.425
5		300 BLRF 8" LF2 + 300 WNRF STD 8" LF2 +	25 PCE 50 PCE	0.181 0.200	0.260	0.880 1.060	0.011	0.025	0.070	0.080	0.040	0.005	0.003	0.005	0.006		0.40
7		150 BLRF 4" LF2 ; 300 BLRF 4" LF2 ;	15 PCE	0.200	0.170	1.080	0.011	0.013	0.080	0.050	0.050	0.005	0.003	0.005	0.008		0.40
9		300 WNRF STD 6" LF2 &	20 PCE 100 PCE	0.190	0.210	1,180	0.012	0.015	0.120	0.080	0.070	0.005	0.003	0.005	0.010		0.42
10		300 WNRF XS 2" LF2			Impact	Test						EAT T	REATM	ENT(*2	<u> </u>	<u></u>	
Item	Heat No.	T.S.(*1) Y.S.(*1) E.L.(*1) (MPA) (MPA) (%) 485.0 250.0 22.0	Hardness R.A.(*1) (HB) (%) - 30.0	M	Temp: - nimum: 2	48°C	3	Mate	erial Sur	oplier	₩	N REMAR					

Item No.	Heat No.	Min	T,S.(*1) (MPA) 485.0	Y.S.(*1) (MPA) 250.0	E.L.(*1) (%) 22.0	Hardness (HB)	(%) 30.0	1	emp: -48°C sum: 20.0 Jou	ule 3	Material Supplier
No. 1 2 43 4 5 6 7 8 9	48960 29572 29572 31045 50724 728759 34185 21784	Max	1	311.9 300.1 300.1 348.1 334.4 311.9 315.6 339.1 311.9	35.4 38.0 36.0 35.4 34.0 37.0 34.6 37.4 35.0	197 155 150 150 153 152 149 147 157	69.5 67.7 67.7 67.7 70.0 67.0 68.6 68.6 66.8	1 35.0 45.0 45.0 29.0 60.0 49.0 33.0 24.0 25.0 35.0	2 33.0 32.0 32.0 25.0 56.0 47.0 23.0 25.0 24.0 33.0	35.0 35.0 49.0 60.0 29.0 35.0 25.0 22.0	OEMK OEMK OEMK RED OCTOBER NTMK OEMK OEMK OEMK
10	48960		508.0	311.9	35.4	155	69.5	30.0	. 00.0		

910 CX5HRS CONFORMS WITH NACE MR0175-03 AND MR0103-07/ISO15156.2

CONFORMS WITH Z245.12 CAT II GR.290 SOUR SERVICE-05

TEST SPECIMEN SIZE: 10X10

TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP.: -46°C

1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.

2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved. A.C=Air Cooled, F.C=Furance Cooled, W.C=Water Cooled, O.C=Oll Cooled.

*3: C.E. Value = C + (Mn /6) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and alen with the requirements called for by the above order.

Manager of Quality Assorance Dep't

CLIENTE / Customer / Clien

ALLIED FITTING CANADA 172 TURBO DRIVE SHERWOOD PARK, ALBERTA **CERTIFICADO DE INSPECCION** 

30/04/201D

Inspection Certificate - Certificat de Réception ISO 19474 / 3.1

No.

DIN EN 10204 / 3.1

HOJA: 131099 Page: 2 BG8 1932194



ULMA FORJA, S.COOP.

Bº Zubillega, 3 - Apdo. 14

76777

**PRODUCTO** Article - Produit

NORMAS APLICABLES

MODO DE FUSION (7)

Requirements - Normes Applicables

Muterial Correspondent - Quality

FLANGES

MATERIAL CORRESPONDIENTE A/8A380LF2CL1-07

ASME B16.5-09

**ASTM/ASME** 

SU PEDIDO N.º

021210AES - EDMONTON Your Order No.

Votre Cde. N.ª

FECHA:

Date:

DE of. - de 12/02/2010

Corffled acc. PED 97/23/EC by TOV Rheinland N.º 01 202 E/Q 02 7445

MARCA DEL FABRICANTE Mark of factory

20560 ORATI (Gipuztion) SPAIN Tel.: 34~943.780652 Fax: 34 - 943 781806 E-mail: uima@uimapiping.com

Marque du fabricars

DEPARTAMENTO QUALITY ASSURANCE Section

NACE MR-01-75/ISO15156-2-05 & MR-01-03/03 CAN/CBA-2246.12

Steel Me	king - Elaboration d ic. Y = Oxigeno b		CAN/CBA-2246.12 Gr.248 CAT II		<u>'</u>	) gra	-		artement	ESTRICCION	RESILIE	TNCIA	/400	TA - projectado	DUREZA
	PARTIDA Nem Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	LOTE	OBSERVACIONES Remerks Observations	Heat No N.*Coulée	T.Shangth	Y. Streeter	Elongation Altongement La: 4 d %	احده سم ا	Impact I Résilen Joules	lest.	MEDIA Averego Moyente	°C	Hardness Durett HB
76 83 83 82		53	SO 2 150LB RF A350LF2 BLIND 3 150LB RF A350LF2 BLIND 3 150LB RF A350LF2 WN 6 600LB XS/80 RF A350LF2	1080 1050 830 1030	NE NE NE NE	28V0 159V0 362V9 104V0	523 503 506 507	331 311 311 306	30,50 35,40 34,30 35,00	58,80 63,40 60,40 62,30	40 38	52 78 51 48 53 46 54 40	68 48 45 45 45	\$9 \$9 \$9 \$	152 156 145 155 148 156 148 156

	С	OMPOS	ICION C	MINICA	-SIEE	LMAKI	EKSL	ADLE AL	WE I OF					
C %	S/ %	Mn %	P %	s %	Cr%	Nł %	Mo %	Nb %	V %	Cu %	AI %	T1 %	N %	CEq X
0,200 0,200 0,210 0,190	0,270 0,220 0,250 0,210	0,840 0,840 0,870 0,980	0,010 0,013 0,007 0,004	0,001 0,001 0,007 0,009	0,080 0,090 0,030 0,070	0,100 0,090 0,060 0,140	0,040 0,040 0,010 0,040	0,005 0,006 0,001 0,001	0,004 0,001 0,001 0,002	0,280 0,240 0,190 0,140	0,028 0,030 0,035 0,021	0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000	0,390 0,388 0,380 0,391
		1												
	0,200 0,200 0,210	C % S/ % 0,200 0,270 0,200 0,220 0,210 0,250	C % S/ % Mn %  0,200 0,270 0,840 0,200 0,220 0,840 0,210 0,250 0,670	C % S/ % Mn % P %  0,200 0,270 0,840 0,010 0,200 0,220 0,840 0,D13 0,210 0,250 0,870 0,007	C% S/% Mn % P% S%  0,200 0,270 0,840 0,010 0,001 0,200 0,220 0,840 0,013 0,001 0,210 0,250 0,870 0,007 0,007	C% S/% Mn % P% S% Cr%  0.200 0,270 0,840 0,010 0,001 0,080  0,200 0,220 0,840 0,013 0,001 0,090  0,210 0,250 0,870 0,007 0,007 0,030	C %         S/ %         Mn %         P %         S %         Cr %         N/ %           0,200         0,270         0,840         0,010         0,001         0,080         0,100           0,200         0,220         0,840         0,013         0,001         0,090         0,090           0,210         0,250         0,870         0,007         0,007         0,030         0,080           0,200         0,250         0,870         0,007         0,007         0,030         0,080	C %         SI %         Mn %         P %         S %         Cr %         NI %         Mo %           0.200         0,270         0,840         0,010         0,001         0,080         0,100         0,040           0,200         0,220         0,840         0,013         0,001         0,090         0,090         0,090           0,210         0,250         0,870         0,007         0,007         0,030         0,040         0,040           0,210         0,250         0,870         0,007         0,007         0,400         0,040	C %         SI %         Mn %         P %         S %         Cr %         Ni %         Mo %         Nb %           0.200         0,270         0,840         0,010         0,001         0,080         0,100         0,040         0,005           0,200         0,220         0,840         0,013         0,001         0,090         0,090         0,040         0,006           0,210         0,250         0,870         0,007         0,007         0,030         0,040         0,040         0,001           0,210         0,250         0,870         0,007         0,007         0,007         0,007         0,000         0,000	C %         S/ %         Mn %         P %         S %         Cr %         All %         Mo %         Nb %         V %           0.200         0,270         0,840         0,010         0,001         0,080         0,100         0,040         0,005         0,004         0,005         0,004         0,006         0,000         0,000         0,000         0,000         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002         0,002	C %         S/%         Mn %         P %         S %         Cr %         Ni %         Mo %         Nb %         V %         Cu %           0.200         0,270         0,840         0,010         0,001         0,080         0,100         0,040         0,005         0,004         0,005         0,001         0,240           0,200         0,220         0,840         0,013         0,001         0,090         0,090         0,040         0,000         0,001         0,240           0,210         0,250         0,870         0,007         0,030         0,060         0,010         0,001         0,001         0,010         0,001         0,001         0,180           0,240         0,250         0,870         0,007         0,007         0,440         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,002         0,040         0,004         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001         0,001 <td>C %         S/ %         Mn %         P %         S %         Cr %         N# %         Mo %         Nb %         V %         Cu %         Al %           0.200         0,270         0,840         0,010         0,001         0,080         0,100         0,040         0,006         0,004         0,280         0,028           0,200         0,220         0,840         0,013         0,001         0,090         0,090         0,040         0,006         0,001         0,280         0,050           0,210         0,250         0,870         0,007         0,030         0,040         0,041         0,001         0,001         0,035           0,210         0,250         0,870         0,007         0,007         0,140         0,041         0,001         0,002         0,140         0,002           0,240         0,250         0,870         0,007         0,007         0,140         0,041         0,001         0,002         0,140         0,002           0,240         0,025         0,870         0,007         0,007         0,140         0,040         0,001         0,002         0,140         0,002</td> <td>C% S/% Mn % P% S% Cr% N/% Mo % Nb % V % Cu % A/% T/%  0.200 0,270 0,840 0,010 0,001 0,000 0,000 0,000 0,000 0,000 0,240 0,280 0,050 0,000 0,240 0,000 0,240 0,050 0,000 0,240 0,050 0,000 0,240 0,050 0,000 0,240 0,050 0,050 0,000 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 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    Mn %         Mn %         P%         S%         C/%         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %</td>	C %         S/ %         Mn %         P %         S %         Cr %         N# %         Mo %         Nb %         V %         Cu %         Al %           0.200         0,270         0,840         0,010         0,001         0,080         0,100         0,040         0,006         0,004         0,280         0,028           0,200         0,220         0,840         0,013         0,001         0,090         0,090         0,040         0,006         0,001         0,280         0,050           0,210         0,250         0,870         0,007         0,030         0,040         0,041         0,001         0,001         0,035           0,210         0,250         0,870         0,007         0,007         0,140         0,041         0,001         0,002         0,140         0,002           0,240         0,250         0,870         0,007         0,007         0,140         0,041         0,001         0,002         0,140         0,002           0,240         0,025         0,870         0,007         0,007         0,140         0,040         0,001         0,002         0,140         0,002	C% S/% Mn % P% S% Cr% N/% Mo % Nb % V % Cu % A/% T/%  0.200 0,270 0,840 0,010 0,001 0,000 0,000 0,000 0,000 0,000 0,240 0,280 0,050 0,000 0,240 0,000 0,240 0,050 0,000 0,240 0,050 0,000 0,240 0,050 0,000 0,240 0,050 0,050 0,000 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 0,001 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      S/%         Mn %         P%         S%         C/%         Mn %         Mn %         P%         S%         C/%         Mn %         Mn %         P%         S%         C/%         Mn %         Mn %         P%         S%         C/%         Mn %         Mn %         Mn %         P%         S%         C/%         Mn %         Mn %         Mn %         P%         S%         C/%         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %         Mn %

- « Les dimensiones y le condición superficial se hallaron satisfactoria
- Dimension and surface condition were found acceptable - Les climensions et étals de surface sont satisfalsants
- Los meteriales citados cumpten les normas aplicables
- Manufacturing requirements are setisfied
- Les normes applicables sont respectées

**EL INSPECTOR** 

Doto de Gafantia de calidad Quality Assurance Doot

(*) OBSERVACIONES: Remarks Observations

N_NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR

FLANGE COMPLIES TO CSA Z245.12 GR.248 CAT.II

SOUR SERVICE ISO15156.2

**VERIFIED** 

WESTLUND (

CLIENTE / Customer / Clien

CCTF CORPORATION (EDMONTON) 5407 - 53 AVENUE NW **EDMONTON, AB T6B 3G2** CANADA

#### **CERTIFICADO DE INSPECCION**

Inspection Certificate - Certificat de Réception

N.º

No.

DIN EN 10204 / 3.1 ISO 10474 / 3.1



Certified acc. PED 97/23/EC+AD2000-Wt



FECHA: Date:

07/06/2011

139014

HOJA: Page: 1

PRODUCTO Article - Produi. **FLANGES** 

SU PEDIDO N.º Your Order No.

Votre Cde. N.5

4888716-00

of. - de 01/10/2010

by TÜV Rheinland N.º 01 202 E/O 02 744 MARCA DEL FABRICANTE 26560 OÑATI (Gipuzkoa) SPAIN Tel. 34 - 943 780552 Fax: 34 - 943 78180£ E-mail: ulma@ulmapiping.con

Bº Zubiliaga, 3 - Apdo. 14

Mark of factory Marque du fabricam

DEPARTAMENTO QUALITY ASSURANCE

Section Département

MATERIAL CORRESPONDIENTE A/SA350LF2CL1-07 ASTM/ASME

Material Correspondent - Quality MODO DE FUSION (*)

Requirements - Normes Applicable:

NORMAS APLICABLES

Steel Making - Elaboration de l'acie E = Elec. Y = Oxigeno básicx

ASME B16.5-09

NACEMR0175/ISO15156-2 Region 3-2003 NACE MR0103: 2007 CSA-Z245.12-09 GR248 CAT II - SS

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	LOTE	<b>b</b>	COLADA N.º Heat No N.ºCoulée	T.Strength	Y.Strength	ALARGAM, Elongation Allongement Lo: 4 d	lmp	SILIENCIA pact test silience	СН	ARPY V	*C	DUREZA Hardness Dureté HB
121 7586504	40	SO 2 150LB RF A350LF2	1401	NE NE	16V1	517	321	32,00	 	59	55	Moyenne 58	-50	150 157
					A 1444-1-1-1-1									

	COLADA N.º		C	OMPOS	ICION (	ZUIMICA	A - STEE	L MAKE	R'S LAI	DLE AN	ALYSIS	- ANAL	SE CHI	MIQUE		
	Heat No N.ºCoulée	C/%	Si %	Mn %	P %	S %	Cr%	Ni %	Mo %	Nb %	V %	Cu %	AI %	Tī %	N %	CEq %
r	16V1	0,210	0,230	0,850	0,015	0,001	0,110	0,120	0,050	0,001	0,002	0,290	0,034	0,000	0,000	0,411
Ì																
4																

(") OBSERVACIONES:

Remarks Observations N_NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR

- Las dimensiones y la condición superficial se hallaron satisfactoria

- Dimension and surface condition were found acceptable

- Les dimensions et états de surface sont satisfaisants

- Los materiales citados cumplen las normas aplicable:

- Manufacturing requirements are satisfied

- Les normes applicables sont respectées

**EL INSPECTOR** Works Inspector - L'Inspecteur



2" 150# R.FBF. BLIND FLG. 1576



SEDE AMMINISTRATIVA E STABILIMENTO: 23861 CESANA BRIANZA (LC) - Haly

BLONGATION

30,0

Via G. Parini, 28 Tel. +39 031.655441 Fax +39 031.655149 mozemei@iamas.com

579.0

COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DW = 150 9001:2008 =

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

Del/Dated 21.07.2010 Certif. N. 2997 FORGED FLANGES & FITTINGS LTD Del/Dated 20.07.2010 Fattura / Invoice N. 2121 Del/Dated 20,07,2010 DDT / Del Note N. 3997 CASTLE HOUSE - STATION ROAD Dei/Dated Ns.Ord. / Our ref. N. G8 EN6 1PE NEW BARNET/HERTFORD..

70

70

Pag. 4 - 15

VISIVO E DIMENS.

SATISFACTORY

NE.RH. OUR REF.

VIS. & DIMENS.

7585566 DIM.IN ACC. A /DESCRIZIONE VS.ORDINE CÓD. COL. COLATA DIM ACCORDANCE TO DESCRIPTION Q.TY HEAT CODE HEAT YOUR REFERENCE ITEM ASMEJANSI B16.5 BLIND 150 RF 2" LF2CL1 200.00 73869 3626 N% Al% C.E.% Nb % Cr% Mo% Mn% S% MATERIALE / MATERIAL C% SPA 0,026 0,427 0.001 0,000 0,010 0.020 0,160 1,100 0,090 0,011 0.012 ASTM A350 LF2 (2)(1/2 0.205 0,220 DUREZZA CONTRAZION ROTTURA TEXALE STRENGHT ALC UNIONSENTO **EMERVAMENTO** PROVETTA / TEST AFECAGEN

REDUCTION OF AREA

56.0

378,0 50.80 126.60 MATERIALE IN ACCORDO A / MATERIAL IN ACC. TO ASTM/ASME A 350/SA 350 M - 07

LENGHT ....

YIELD POINT

TRATTAMENTO TERMICO / HEAT TREATMENT NORMALIZED AT 930 C - COOLED IN STILL AIR

174,0 - 178,0

ΚV

FORNO / FURNACE **ELECTRIC FURNACE** 

SHERVAMENTO YIELD POINT

Manual >-1,8%

0.0

ORIGINE / ORIGIN **EUROPE** 

VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED

MARCHIO PRODUZIONE ENTE UFFICIALE DI COLLAUDO UFFICIO CONTROLLO QUALITA' NOTE LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm MANUFACTURER'S SYMBOL QUALITY CONTROL DEPARTEMENT INSPECTION AUTHORITY NOTES MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 ISO 15156 2010

150-172 RT EUN D. 9115704-00 Dage 4075



SANLENG STEEL FORGING CO LTD 311; Jen Hsin Road, Jen Wu District Kaohsiung, Taiwan, R.O.C. TEL:07-3724249 ; FAX:07-3712923

## (MILL TEST CERTIFICATE)

EN10204-3.1.B(DIN50049/3.1.B)

Customer: WFF.FITTINGS & FLANGES (CANADA)

		TEL:07-3724249 ; FAX:07-3712923 URL: www.saneng.com.tw e-mail: saneng@ksts.seed.net.tw	Order No.: D		CATIONS		DIME	NSIONAL	SPECIFIC	ATIONS	
F		PRODUCT  ED CARBON STEEL FLANGES		LF2-07/ASME SA	350 LF2-07		COMPOSI	CS	Nb N		CE(*3)
	Item CODE N	O DESCRIPTION	QUANTITY Min Max	C Si - 0.150 0.360 0.300 0.210 0.200	Mn P 0.600 - 1.350 0.035	0.040 0.44		0.120 0.08	0 0.080 -	3 8	0.415 0.407

FOR	GED CARBON STEEL STORM					HEMIC	AL C	OMPO	SITI	ON	(%)	N.I.	N T	 CE(*3)
		QUANTITY	C Si	Mn 0,600	P -	S	Cu 0.400	Cr	Nel	- NAC		Nb 0.080	-	
1750682 2756682 3758532 4758526 5758526 6759650 7758550 875855	150 WNRF STD 4" LF2 150 WNRF STD 4" LF2 150 WNRF STD 10" LF2 150 WNRF XS 4" LF2 150 WNRF XS 4" LF2 150 SORF 4" LF2 150 BLRF 2" LF2 150 BLRF 4" LF2	37 PCE 13 PCE 6 PCE 122 PCE 28 PCE 10 PCE 50 PCE 50 PCE	0.300 0.30 0.210 0.21 0.200 0.2 0.206 0.2 0.200 0.2 0.210 0.2 0.198 0.2 0.209 0.2 0.209 0.2 0.211 0.2	00 1.350 00 1.110 10 1.100 40 1.080 10 1.100 00 1.110 00 1.100 1.060 1.080 1.080 1.080	0.011 0.007 0.010 0.009 0.009 0.013	0.010 0.003 0.010 0.003 0.010 0.014 0.009 0.009	0.060 0.100 0.023 0.100 0.060 0.013 0.011	0.060 0.060 0.045 0.060 0.060 0.019 0.046 0.039	0.050 0.040 0.053 0.040 0.050 0.048 0.045 0.045	0.005 0.010 0.002 0.010 0.005 0.005 0.005	0.003 0.009 0.033 0.009 0.003 0.007 0.037 0.029	0.005 0.005 0.005 0.005 0.005 0.005 0.005	0.008 0.004 0.008 0.008 0.006 0.004 0.004	0.415 0.407 0.400 0.401 0.384 0.400 0.39 0.400 0.38
9 75855	)	, JOFOL		pact Test		<del> </del>		1	н	EATT	REATA	ENT("	2)	

· · · · · ·	- 1	1903-U- 1200 W	MOC YC 67 1 F2		1		<b>1</b> 1			
1	10	7581210 300 W	NRF XS 6" LF2			DA (94)	Impa	i Test		
}=	. 1	Heat No.		PA) (%)	Hardness (HB)	R.A.(*1) (%) 30.0	Temp: Minimum:	-45°C	e	Material Supplier
	1 2 3 4 5 6 7 E	13176 80399 920973 80399 13176 31240 21382	485.0 250 655.0 35 523.7 35 539.4 37 511.9 33 539.4 37 523.7 35 511.9 37 525.6 37 509.9 36 523.7 36	0.0 22.0 	197 157 155 157 155 157 155 157 152 156 153 154	65.9 71.3 71.0 71.3 65.9 68.6 69.5 70.4 68.6 67.0	1 21.0 30.0 57.0 30.0 21.0 74.0 64.0 50.0 52.0 40.0	2 23.0 61.0 70.0 61.0 23.0 70.0 73.0 43.0 56.0 46.0	3 240 101.0 59.0 101.0 24.0 76.0 57.0 66.0 49.0	OEMK WEI CHIH STEEL NTMK WEI CHIH STEEL OEMK NTMK NTMK NTMK NTMK NTMK
	10	931228	300.0		DA =Redu	tion of Area.	L		1	1

*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Salution Treated, S.R=Stress Relieved; A.C=Air Cooled, F.C=Furance Cooled, W.C=Water Cooled, O.C=Oil Cooled.

3; C.E. Value = C + (Mn /6) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

CONFORMS WITH NACE MR0103-07 AND NACE MR0175/ISO15156.2 CONFORMS WITH Z245.12 CAT II GR.248 SOUR SERVICE-05

⊠ N REMARKS 890 CX3HRS

> TEST SPECIMEN SIZE: 10X10 TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP .: -46°C



Manager of Quality Assurance Dep't

ERIFIED

P0#9115604

SAN ENG STEEL FORGING CO LTD 311, Jen Hsin Road, Jen Wu Hsiang Kaohsiung Hslen, Taiwan, R.O.C. TEL:07-3724249; FAX:07-3712923

(MILL TEST CERTIFICATE)

EN10204-3.1.B(DIN50049/3.1.B)

Customer: SEYBOLD INTERNATIONAL CORP.

Certificate No.: \$E2986C2

- Date: 12/29/2010

Page: 1 QF 2

			aneng.com				Order No.:									1010	N A I	e B E r	IFIC.	ATIC	INS	
		PROD					MATERI	AL SP	ECIF	CATI	DNS				IMEN	1510	MAL	3 F L.C	,,,,,			
	FORGED		STEEL FL	ANGES			ASTM A35	60 LF2-07	ASME S	A350 LF							CSA	B16.5- Z245.1			÷	-
											CH	EMIC	AL C	MPC	SITI	ON	(%)					Tor.
						QUA	YTITA	c	Si	Mn	P	S	Cu	Ct	Ni	Мо	٧	ΝĐ	N		l	CE(
em (	CUSTOMER P/N		DES	CRIPTI	ON		Min	1 -	0:150	0.600	0.035	0.040	0.400	0 300	0.400	- 0.120	0.080	0.080	-			
							Max	0.300	0.300	1.350	0.018	0.020		0.017		0.004	0.012	0.005	0.007		1	0.39
1	11	150 W	NRF XS 8"	LF2	_	1	10 PCE	0.210	0.250		0.009	0.008	0.026			0.005	0.007	0.005	0.007	ı	·	0.40
2	$\sim R$	150 SC	RF 3" LF2	7.58	507		20 PCE	0.214	0.300	1.080	0.009	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.006			0.38
3	- T	150 SC	RF 4" LF2		•		10 PCE	0.198	0.270	1.060	ı	0.014	0.013	0.010	0.048	0.005	0.007	0.005	0.006		1	0.38
4	( / V	150 SC	RF 6" LF2			1	10 PCE	0.198	0.270	1.060	0.010	1	0.050	0.015	0.040	0.005			0.010	i	ļ	0.40
5	V	300 W	NRF STD 2	LF2		4	49 PCE	0.210	0.220	1.070	0.010	0.011		0.070				0.005		1		0.38
6			VRF STD 2			1	26 PCE	0.209	0.220	1.020	0.014	0.008					0.015	1			1	0.41
7			NRF STD 3			1	75 PCE	0.222	0.240	1.010	0.015	0.014	0.022	0.063					0.008	Į.	1	0.42
a l		1	NRF XS 8"			1	25 PCE	0.190	0.250	I_120	0.017	0.004	0.130				0.008	0.005	1 1			0.40
-1			RF 2" LF2			İ	25 PCE	0.211	0.260	1.090	0.013	0.014	0.012			1	1		0.006	I	1	0.38
9			RF 3" LF2			}	10 PCE	0,19B	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.000	i		0.5
10	No V	ASON PL	TL 2 LLZ			1			<u> </u>		<u></u>						<u> L</u>		<u></u>		<del></del>	<del></del>
<del></del> +	-(	<u> </u>	T.S.(*1)	Y.S.(*1)	E.L.(*1)	Hardness	R.A.(*1)		Impact						H H	EAT TF	REATME	NT("2)	ı			
tem	Heat No.	U	(MPA)	(MPA)	(%)	(HB)	(%)		Temp:	46°C 20.0 Joul	•	Mate	rial Supp	dier		N						
No.	4	Min	485.0	250.0	22.0	-	30.0	1	2 imum: 2		3	İ			R	EMAR	(S					
	<u> </u>	Max	655.0			197		· 61.0		49.0		NTMK			89	O.C.X3I	HRS.				4415	
_1	915541	}	508.0	333.4	35.4	150	66.8	70.0		54.0		NTMK			C	ONFOR	MS WI	TH NAC	E MR01	103-07	AND	
( 2	31243	<i>J</i>	533.5	363.8	35.8	155	69.5	74.0		70.0	76.0	NTMK			N/	A89UCE	MKUI	/3/13U1	15156.2 5,12 CA	TRGE	₹.248 S	OUR
~3	31240		511.9	371.7	31.8	152	68.6		1	70.0	76.0	NTMK			SF	RVICE	-05					
4	31240		511.9	371.7	31,.8	152	68.6	74.0			49.0				TE	ST SP	ECIME	N SIZE	10X10			
5	31045		517.8	348.1	35.4	153	67.7	29.0	i	25.0		NTMK			I TE	STSP	ECIME	N ORIE	NTATIO	N: TR/	ANSVE	RSE
6	921027	-	511.9	343.2	32.6	155	66.0	32.0		57.0							TEST T	EMP.: -	46 C			
7	931232	}	517.8	339.3	32.2	157	64.0	35.0	1	38.0		NTMK	~~~~		ORG1NG	~						
В	951412	İ	531.5	383.4	33.2	153	69.5	123.0	1	42.0	110.0	GODO!	SIEEL	6488PT	AKO TUO	<i>Ψ</i> . Σ						
9	21303		523.7	359.9	35.6	154	68.6	52.0	)   .	56.0		NTMK	Sep.	N.	1	~42	<b>&gt;</b> \					
10	31240	i	511.9	371.7	31.8	152	68.6	74.0	)	70.0	76.0	NTMK	13×1		8.0	7	★)					
		1					<u> </u>						C	15 0	<b>D.</b>		<del></del>					
*1:	T.S. = Tensile Str	ength, Y.S	s.=Yield Str	ength, E.L.=	Elongation, F	I.A.=Reduct	ion of Area.					f	1.3	_	_	18						
•2.	N≃Normalized, A= A.C≖Air Cooled, F	- Annaalac	t ∩⇔Ouenr	ned T=Tem	noered, S.T=S	Solution Trea	ated, S.R=Stres	s Relieve	ed,				NEW YEAR	TY A	SSIE A	CR	r					
	C.E. Value = C +									·						(0:	ality As	- Lurana	Dec'			
e he	reby certify that thith the requiremen	e materia	I has been for by the a	tested in acc	cordance with	the above s	specification an	d				<u> </u>	->		manage	or Utu	any AS	ou and	- Deh (			
~												1	VEDI			<b>7</b> \/		1				

**VERIFIED** 

LR. 90° ECB.

PURCHASER: SEYBOLD

**ASTM A234 WPB-07** 

STANDARD :

MATERIALS :

ASME SA234 WPB-04

CSA Z245/11-05/Gr.241 Cat I Sour Service

ASTM A106 Gr.B (SEAMLESS PIPE)

ASME B16.9 - D3 INSP. SPEC. :

INSPECTION CERTIFICATE PO\$ 9115602-00

INDUSTRIES CO., LTD.

8. MEI-CHUNG RD, NIAO-SONG, KAOHSIUNG HSIEN, 83301 TAWAN

TEL: 886-77310527~8 FAX: 886-77315887

ACCORDING TO EN10204/DIN50049/3.1

CERTIFI. NO: 545

DATE: 2010 - 12 - 14

ORDER NO: 7002939/911560200

P.I. NO: 0G05-1

ITEM NO.		EDUCT &	. SIZE		QUANTI PCS	TY N	1FG NO.		VISUA DIMENT INSPE	TIONAL		ARDNESS MAX. 197 HB		HEAT TREATMENT (NOTE)	PA	GNETIC RTICLE MINATION		MPACT EST (J)
19		1*		STD	600	)   01	1563	(01)	GO	OD	11	1 - 116	3	A ~	751-0	2276		
20	ELL 90 LR	1.1/4"		STD	400	)   9k	3585	(9K)	GO:	OD	12	4 - 127		A -	1 '			
21		1.1/2"		STD	400	OF	6283	(OF)	GO:	OD	12			A		292		18
22		2*		160	30	1   9L	3556		GO	OD	1	3 - 14		A		3/4	104	1100
23	ł	2*		STD	300	) OH	6200		GO	OD	13	3 - 134		A -	1 .	346	#1	51.0381
24	l	2.1/2"		STD	200	0.0	3177		GO	OD		2 - 139		Α		346	Hi	
-25	ELL 90 LR	3"		STD	600		12701		GO	OD	13	1 - 134	4	A		365		147
26		6"		STD	300		6109	}	GO	OD	14	4 - 149	3	A	151-6	1262	//	\/ \
27		6"		ХH	30	1	4960		GO	OD	14	9 - 153	3	Α ~	757-	1025		·
28	ELL 90 LR	10"		STD	60	DE	3915		GO	OD	153	3 - 160	)	A ~ ′	757-0	5/3		
	MATER					C	HEMICA	T COM	<b>MPOSITI</b>	ON %						YSICAL TE	ST	
ITEM	CHARGE		C	Si	Mn	Р	S		Cu	Ni	Cr	Mo	V	Nb	YS	TS	Ē	C.E.
NO	J	- 110.	x100	x100	x100	x1000	x1000	x1	100	x100	x100	x100	x100	x1000	KSI	KSI	%	X100
NO.	CTANDADD	MIN.		10	29		-							<del>-</del>	35.0	60.0	/0	
	STANDARD	MAX.	30		135	50	58	<del>                                     </del>	10	40	40	15			33.0			
19	110963		20	21	50	14	4					15	8	20		95.0		50
20	210785		21	23	53	14	10	- 1	4	2	3	1	1	<1	<b>4</b> 5.1	68.0	35.6	29
21	210783		21	27	53	19	5	-	2		1	1	1	<1	48.6	68.2	33.0	30
22	305156		13	19	76	15 8	3		7	1	1	1	1	<1	46.4	66.7	3B.0	30
23	908300	1	19	26	47	20	9		<u> </u>	4	2	]	<1	<1	44.7	66.2	40.0	27
24	308577		13	19	76	10	2	1	2 6		2	1 1	1	<1	66.2	77.0	36.2	27
25	309301		18	24	55	10	2	1	6	3	4 3	2	<1	<1	46.2	66.0	35.0	27
26	501309		17	24	96	9	2		7	2	3	1	<1	<1	41.1	61.7	35.9	28
27	191260	1	17	24	99	13	1		9	3	/	3	<1	<1	42.8	64.4	35.1	35
28	000615		17	21	95	15	7		0	3	4 5	2	<1	<1	44.2	67.4	36.5	35
J	(NOTE): A: HO	1					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	_1.	- 1					2	38.4	62.B	36.0	34

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-980°C, AIR COOLING ERIFIED N: NORMALIZING AT TEMPERATURE 880 CX 0.5HR, AIR COOLING.

NACE MR-01-75-03/ISO15156.2 & NACE MR 0103-03 : SATISFACTORY

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANG WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUI TEST RESULTS SHOWN HEREIN ARE CORRECT.

Ou & Lan

MANAGER OF Q.A. DEPT.

BY

41150-LFZ RFSO PO#915604

SAN ENG STEEL FORGING CO LTD 311, Jen Hsin Road, Jen Wu Hsiang Kaohsiung Hsien, Taiwan, R.O.C. TEL:07-3724249; FAX:07-3712923 URL: www.saneng.com.tw

*3: C.E. Value = C + (Mn /6) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15

also with the requirements called for by the above order.

We hereby certify that the material has been tested in accordance with the above specification and

MILL TEST CERTIFICATE

EN10204-3.1.B(DIN50049/3.1.B)

Customer: SEYBOLD INTERNATIONAL CORP.

Order No : 7002086/31-411 JED

Certificate No.: §E2986C2

Date: 12/29/2010

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							_											~==		TION	
.,	# MATERIAL SPECIFICATIONS PRODUCT ASME 8A350 LF2-07 ASME 8A350 LF2-07 CHEMICAL COMPOSITION (%)    CUSTOMER   DESCRIPTION   Min   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.400   0.120   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.00		3																		
				ANGES			ASTM AS	 150 LF2-07	ASME S	SA350 LF							CSA				
				12.00							CI	TEMIC	AL C	OMP	OSIT	ION	(%)				
						QUA	ANTITY	C	Si	Mn					Ni	Мо	V	NB	N		CE(*3
Item			DES	CRIPTI	ON	ł.	Mir				-	] -	-	-	-	- 1	-		-		ĺ
No.	P/N					Ì				1.350	0.035		0.400	0.300	0.400				2 22		0.200
		4501	AIDE VC 6"	152			10 PCE	0.210	0.250	1.030	0.018	0.020	0.009	0.017	0.051		1			ļ	
1						l		0.214	0.300	1.080	0.009	0.008	0.026	0.033	0.051	0.005				1	1
2	1			760	1-500	Ì		1	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005		1			
$\rightarrow$ 3					MOULO				0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005				1	
4		### PRODUCT   MATERIAL SP  FORGED CARBON STEEL FLANGES   ASTM A350 LF2-07  ### P/N   DESCRIPTION   QUANTITY   C   Min   Max   0.300    ### 150 WNRF XS 8" LF2   10 PCE   0.210    ### 150 SORF 3" LF2   10 PCE   0.198    ### 150 SORF 6" LF2   300 WNRF STD 2" LF2   49 PCE   0.210    ### 300 WNRF STD 2" LF2   26 PCE   0.210    ### 300 WNRF STD 3" LF2   25 PCE   0.210    ### 300 WNRF STD 3" LF2   25 PCE   0.210    ### 300 WNRF STD 3" LF2   25 PCE   0.210    ### 300 WNRF STD 3" LF2   25 PCE   0.210    ### 300 BLRF 3" LF2   25 PCE   0.210    ### 300 BLRF 3" LF2   25 PCE   0.211    ### 300 BLRF 3" LF2   25 PCE   0.211    ### 300 BLRF 3" LF2   30.0   Min    ### 485.0   250.0   250.0   333.4   35.4   150   68.6    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   517.8   348.1   35.4   153   67.7   29.0    ### 31240   517.8   348.1   35.4   153   67.7   29.0    ### 31240   517.8   339.3   32.2   157   64.0   35.0    ### 31240   517.8   339.3   33.2   153   69.5   123.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   52.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.6   74.0    ### 31240   511.9   371.7   31.8   152   68.									1	0.011	0.050	0.070	0.040	0.005	0.003	0.005	0.010	1	0.409
5	### ATTEMNED TO LETT CONTRICT STORY OF THE PROPUS TO LETT CATTONS    PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS   PROPUS				0.386																
6	### PRODUCT    FORGED CARBON STEEL FLANGES			0.414																	
7	1 (1)							1 -	ı	1		1					0.005	0.001	0.008	-	0.420
8	1 1/							1	1	1		1								1	0.402
9		600 E	BLRF 2" LF2			1				i i		i	0.013	0.019						Ì	0.384
10	1 ~ 1841 ~	600 E	BLRF 3" LF2			ł	10 PCE	0.198	0.270	1.000	0.010	0.014	0.5.5	0.0.0			1				
L		17					[ D A (#4) ]		Impact	Tost		<del>'</del>		<del></del>		EATTE	DE ATMA	= NIT(=2)			
	Heat No	T										١	- 10	-11			(EV ) (A)	_141( 2)	,		
Item		1				(116)		Mir			le	Mate	mai Sup	bitei	1				<u> </u>		
No.	### PRODUCT ### ASTM A350 LF2-07 ASME SA350 LF2-07  FORGED CARBON STEEL FLANGES ### ASTM A350 LF2-07 ASME SA350 LF2-07  **CUSTOMER**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRIPTION**  **DESCRI																				
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	FORGED CARBON STEEL FLANGES  ASTM A350 LF2-07 ASME SA350 LF2-07  CU STO MER  DESCRIPTION  QUANTITY  C SI MM D S SO COMBON STEEL FLANGES  TO SOR 3" LF2  150 WNRF XS 8" LF2  10 POE 0.210 0.250 0.300 0.300 0.300 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0																				

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Manager of Quality Assurance Dep't

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LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm MATERIAL IN ACCORDANCE WITH NACE MR-0175/2005 2008

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WESTLUND QUALITY CONTROL DEPARTMENT INSPECTION AUTHORITY MANUFACTURER'S SYMBOL UFFICIO CONTROLLO QUALITÀ MARCHIO PRODUZIONE BRACCHI /FLAVIO MFF

& DIMENSIONAL

ORIGIN

ORIGINE



SAN ENG STEEL FORGING CO LTD 311, Jen Hsin Road, Jen Wu District Kaohsiung, Taiwan, R.O.C. TEL:07-3724249; FAX:07-3712923 URL: www.saneng.com.tw e-mail; saneng@ksts.seed.net.tw

EN10204-3.1.B(DIN50049/3.1.B)

Customer, SEYBOLD INTERNATIONAL CORP.

Order No.: 7003036(6)-ALLIED

Certificate No.: SE-3036F

Date: 05/02/2011 Page: <u>1 OF 1</u>

FORGED CARBON STEEL FLANGES  ASTM A350 LF2-10/ASME SA350 LF2-10  ASME 816.5-09 CSA Z245.12    Item No.			PRODUCT	JOCU. HCC.CV		,		order No.:														
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1   150 WNRF STD 2" LF2		CODE NO	DE	SCRIPT	1 O N	-	Q-U-A N-I	1 F Y	Ç.	Si	Mn	ΙP							Nh	I N	<del></del>	CE(*
150 WNRF xS 3" LF2								Max	0.300			0.035	0.040		١.	-	-		_	_		02(
19.5 SOFF   20.5 Poc   0.216   0.216   0.216   0.206   0.002   0.007   0.002   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.007   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005   0.005					•	- 1			0.222	0.240	1.010	0.015	0.014			0.122	0.009	0.015				0.41
4 500 WNRF XS 4" LF2			6				;				1.140	0.014	0.002	0.007	0.030				0.001	1 1		0:41
## Heat No.   T.S.(*!)   Y.S.(*!)   Hatriness   R.A.(*!)   Impact Test   Tempor 46°C   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier   Material Supplier	4									1.	1.080	0.009	0.008									0.40
Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min	. "		OUU WNRF XS 4"	LF2			8	PCE	0.198	0.270	1.060	0.010	0.014	0.013								0.38
2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furance Cooled, O.C=Oil Cooled.	1 2	931232 4390797 31243	(MPA) 485,0 655,0 517.8 513.9 533.5	(MPA) 250.0 - 339.3 345.2 363.8	32,2 35.4 35.8	197 157 149 158	3) ( 7 3 7 6 9 6 5 6	%) 0.0 - 4.0 9.5 9.5	35,0 90,0 70,0	Temp: 4 mum: 20 2 3 6 6	9.0 Joule 1.0 Joule 1.0	3 27.0 88.0 74.0	NTMK ACOMIN		oller	R 89 CC MF CC SE TE	N EMARK O'CX3F ONFORI R0175/II ONFORI ERVIÇE ST SPE	IS IRS MS WIT SO 1515 MS WIT -05 ECIMEN	H NAC 66.2 H Z245 I SIZE:	E MR01 .12 CAT 10X10	II GR.24	SOUR
te hereby certify that the material has been tested in accordance with the above specification and	*2: N A *3: C	l=Normalized, A=A LC=Air Cooled, F. C.E. Value = C + (M	Annealed, Q=Quenc C=Furance Cooled, Mn /6) + (Cr + Mo +\	ched, T≔Tem W.C≃Water v) / 5 + (NI ∔	ipered, S.T=: Cooled, O.C Cu) / 15	Solution COII Co	Treated, S ioled.	.R=Stress	Relieved						Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Contro	SAL DE	7 <u>70</u>	. O. E				

PRODOTTI INDUSTRIALI S.P.A.

SEDE AMMINISTRATIVA E STABILIMENTO

23861 CESANA BRIANZA (LC) - Italy Via G. Parini, 28

Mn%

1,120

Tel. +39 031,655441 STAMPAGGIO A CALDO DI ACCAI COMUNI - LEGATI E INOSSIDABILI QUALITY. ITHI GIATTIAS.COM
SALA PROVE ANALISI MATERIALI / MATERIAL TEST DEPARTMENT quality.mff@farmas.com COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DWY = ISO 9001:2008 =

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

FORGED FLANGES & FITTINGS LTD

CASTLE HOUSE - STATION ROAD EN5 1PE NEW BARNET/HERTFORD.

Certif, N. 4911 Fattura / Invoice N. 3455 DDT / Del Note N. 6485 Ns.Ord. / Our ref. N.

SNERVAMENTO

N/mm2 >=1.04

Del/Dated 03.12.2010 Del/Dated 03.12.2010 Del/Dated 03.12.2010 Del/Dated

Pag. 6 - 15

COD. COLY COLATA IPOS. HEAT CODE HEAT ITEM 10/31378 ⁷038 MATERIALE T MATERIAL

VS.ORDINE YOUR REFERENCE 3661

C%

0.180

Q.TA' DESCRIZIONE Q.TY DESCRIPTION 147,00 BLIND 150 RF 4" 5%

0,010

0,070 0,060/ 0,010

0,019

Cu% V% Nb% 0,140 0,003 0.000

ASME/ANSI B16.5 N% A1% C.E.% 0,000 0,030 0,397 RESILIENZA / IMPACT TEST - JOULE/cm2

66

DIM.IN ACC, A

DIM. ACCORDANCE TO

PO#9115766

64

VISIVO E DIMENS. VIS. & DIMENS. SATISFACTORY

PROVETTA / TEST SPECIMEN FORMA SEZ. mm2 LUNG. mm SECT. mm2 LENGHT mm 1= O 2= [] 126,60 50,80

ASTM A350 LF2 CL1/2

SNERVAMENTO YIELD POINT N/mm2 >=0,2% 352,0

ROTTURA TENSILE STRENGHT 522,0

Si%

0,230

ALLUNGAMENTO ELONGATION 30.0

CONTRAZIONE REDUCTION OF AREA 58.0

0.010

Cr%

DUREZZA HARDNESS 159,0 - 163,0

TIPO / TYPE 10x10mm ΚV -50

62 0.0 FORNO / FURNACE **ELECTRIC FURNACE** 

Ne.Rif. OUR REF. ORIGINE / ORIGIN

EUROPE

MATERIALE IN ACCORDO A / MATERIAL IN ACC. TO ASTM/ASME A 350/SA 350 M - 07

TRATITAMENTO TERMICO / HEAT TREATMENT NORMALIZED AT 930 C - COOLED IN STILL AIR

> VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES &

FITTINGS LIMITED

VERIFIED

NOTE LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm NOTES MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 ISO 15156 2000 2010

UFFICIO CONTROLLO QUALITA' QUALITY CONTROL DEPARTEMENT

ENTE UFFICIALE DI COLLAUDO INSPECTION AUTHORITY

MARCHIO PRODUZIONE MANUFACTURER'S SYMBOL

HSUL \$12-0920 INSPECTION CERTIFICATE

Purchaser: WESTLUND INDUSTRIAL SUPPLY

Thai Benkan Co., Ltd.

E-No.	-339		Purch	ase Ord	ler No.		Ĵob	No.	ζ	10C	003	TO EI	N1020	4 3.1 20.	Au&i	19-00	D	Samutprakam, 1 M Y (	ertificate No.
		λ	ÆG. N					Made i	ication for	for Mate amless I	rial Pipe			1	Specification	for Inspection	Vi		2011140328 Dimensional Inspecti
No.		14	A O. N		BA ZOHI	F.11-09 G	F.241 CA	TISSN	ACE MRI	294-07 G	5156-2:2	2003£MFE	2183-07		ASME B	8.9-2007,818.25-2	2007	Good	Good
					<u> </u>		Prod	uct &	Size			(T:≜1)	,	Quanti	ty	Heat Treatment (Note 1)		Handness Actual Date	llem No.
1	1510462	1	10000	187 	90 E	L WP	B 6 \$4	0						180	0/200	A		HB: 115 - 145	41060022
2	7510462	1	1D000	01	90 E	L WP	B 6 S4	٥						40.	7200	· A		HB : 115 - 145	41060022
	7510489		18000		ļ	1 WPI								3	30	A		HB: 115 - 145	41980022
4	7510420	1	1D000	12	90 E	L WPI	3 <b>4 S</b> 4	0						89,	300	A		HB: 115 - 145	41049022
5	7510420	1	10000	86 ,	90 E	L WP	3 4 54	0						161	/300	A		HB : 115 - 145	41040022
M	Specification		C	Si	í íMn	P			position 9		,	·····	J			Teasion Test *2		1	
*//	Min .		X 100	x	X	X	S X	Cu X	Ni x	Cr X	Mo	V	Nb	C.E.	YS	TS	E		
* //			100	100	100	1000	1000	100	100	100	100	1000	1000	100		MPa.	%	HARDNESS MAX	
	Max.			10	29										240	415	30	197 HB: GOO	ND.
	aterial Heat No.	1	30		106	50	58	40	40	40	15	80	20			665			
1	08428	_	18	20	79	11	3	3	3	8	1	0	0	33	297	477	38		
2	06426	11	18	20	79	11	3	3	3	6	1	0	0	33	297	477	38		···
3	J0L2773	$\prod$	19	22	86	15	7	1	2	4	7	0	0	36	311	492	40		
4.	J0L8102	1	20	25	87	11	5	2	2	5	10 -	0	0	38	359	523	36		
5	2-70387		20	23	83	7	4	1	1	2	<1	<1	<1	34	^^^	<u> </u>			
<del>z-1)∧</del>	··· Hot formed with fix	nd teny	perature b	ctwcca 62	0°C-9801	C, Air Coo	ling N:	Normaliz	ing 910°C	0.5 HR. A	ir Cooli=e	· ·N · Nh	maliria-	,LVE	JIFIED-	BY	7		ing 675" Cx0.5 HR. Air Cool

C.E. = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cn)/15MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY:

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

WESTLUND Quality Assurance Manager

Thai Benkan Co., Ltd.

^{*1: &}quot;T" symbolized wall thickness in mm. *2: YS Yield strength TS = Tensile strength E = Elongation

# 611-150-Liz-RFSO



SAN ENG STEEL FORGING CO LTD 311, Jen Hsin Road, Jen Wu Hsiang Kaohsiung Hsien, Taiwan, R.O.C. TEL:07-3724249; FAX:07-3712923

(MILL TEST CERTIFICATE)

EN10204-3.1.B(DIN50049/3.1.B)

Customer: SEYBOLD INTERNATIONAL CORP.

+0#9115604

Certificate No.: ŞE2986C2

Date: 12/29/2010

Page: 1 QF 2

	URI	: www.saneng.com	tw			Order No.:	7002986(3	)-ALLIE	Ω.									1510	ATIO	N C	
•	e-im		ed.net.tw							ZNC			D	IMEN	ISIO	AAL :	SPEC	IFIC.	<u> </u>	143	+
	FORGED		ANGES						_	2-07			-			CSA			· · · · · · · · · · · · · · · · · · ·		
							7			CF	EMIC	AL C	OMP	SITI	ON					· T	CE(*3)
		Max   0.300   0.300   1.350   0.035   0.040   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.300   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000																			
Item No.	CUSTOMER	Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries   Dries No. 1902/38619-ALLED   Dries   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED   Dries No. 1902/38619-ALLED																			
NO.	, , .,											0.009	0.017	0.051	0.004	0.012	0.005		1		
1		150 WNRF XS 8"	LF2				1	1	1		0.008	0.026	0.033	0.051	0.005	0.007	0.005	0.007			
2		WRI: www.saeneg.com.lw																			
3		URI: www.saneng.com.lw																			
-\4		PRODUCT				1 1															
5					1		' 1		1,020	0.014	0.008	0.008	0.012	0.054	0.002	0.005	0.005	0.006	1	, 1	
6					Ì			1	1.010	0.015	0.014	0.022	0.063	0.122	0.009	0.015	0.005	0.003	) ]	, J	1 1
7					1		1	0.250	1.120	0.017	0.004	0.130	0.110	0.130	0.020	0.005	0.001	0.000		, 1	1 1
8								0.260	1.090	0.013	0.014	0.012	0.023	0.047	0.005	0.008	0.005	0.006		, !	1
9							0.198	0.270	1.060	0.010	0.014	0.013	0.019	0.048	0.005	0.007	0.005	0.000	]	, !	0.50
10		600 BLRF 3-LF2								<u> </u>		<u></u>	<u> </u>	<del></del>	<del></del>	<u> </u>	<u> </u>	<del></del>	<del></del>		
	L	T TS (*1)	Y.S.(*1)	E.L.(*1)	Hardness									L		(EA I MI	ENI("Z	,			1
Item	Heat No.	(MPA)			(HB)		NA:-	Temp:	-45°C 20:0 Joul	e	Mate	erial Sup	plier								
No.	1	[ [	250.0	22.0	107	30.0	1			3	1			■ R	EMARI	(S					
				25.4		66.8	· 61.0	T	49.0					85		nks. MS WI	TH NA	CE MRO	103-07	AND	1
1	1 - 11/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1	'A I		1	l	1 - 1	70.0		64.0					i N	A ROOM	= MR01	75/ISO	15156.2	<u> </u>		2110
2	1 1 '	\ 1		1	1		74.0		70.0					C	ONFOR	MS W	TH Z24	5.12 CA	IT II GR	248 50	SUR
) 3	-	/ 1		1		68.6	74.0		70.0					-   S	ERVICE	:-05 ECME	N SIZE	· 10X10	,		
4					1	67.7	29.0	)	25.0					l TI	EST SE	ECIME	N ORIE	ENTATIO	ON: TR/	<b>NSVE</b>	RSE
1 5	31045					66.0	32.0	)	57.0					IN.	<b>APACT</b>	TEST T	EMP.:	-46°C			,
6			1	į.	4	64.0	35.0		38.0		1			POLINO							,
	1		1	L	1	69.5	123.0	- 1	ı			STEEL	098BL	MARGING	00,		•				
'	-			1		68.6	52.0	- 1				4	3 812	1	74	<b>&gt;</b> \					
	_				1	68.6	74.0	이	70.0	76.0	NTMK		م سوي	18 0	$(\mathcal{J})$	*					
111	-										+	14	15	91,1							
1:	T.S. = Tensile Str	ength, Y.S.=Yield St	rength, E.L.	=Elongation,	R.A.=Reduc	tion of Area.						19			100 0	<i>'</i>					

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved, A.C=Air Cooled, F.C=Furance Cooled, W.C=Water Cooled, O.C=Oil Cooled.

*3: C.E. Value = C + (Mn /6) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

Manager of Quality Assurance Doo



SAN ENG STEEL FORGING CO LTD 311, Jen Hsin Road, Jen Wu Hsiang Kaohsiung Hsien, Taiwan, R.O.C. TEL:07-3724249; FAX:07-3712923 URL: www.saneng.com.tw

# (MILL TEST CERTIFICATE)

EN10204-3.1.B(DIN50049/3.1.B)

W.F.F.FITTINGS & FLANGES (CANADA)

Customer. LTD.

109114725-00

Certificate No.: SE090102

Date: 02/16/2009 Page: 1 OF 2

TEL:07-3724249; FAX:07-3/12923	Customer LTD.	40411412500	FOULLCATIONS
LIDI - MAMAN SARRIG.COM.IW	Order No.: EO5138KD/MS	DIMEN	SIONAL SPECIFICATIONS
e-mail: saneng@ksts.seed.net.tw	MATERIAL SPECIFICAT	TIONS	
PRODUCT			ASME B16.5-03 CSA Z245.12
	ASTM A350 LF2-07 CL.1/ ASME SA3	350 LF2-07	CSA 2245.12
TARRON CTEEL ELANGES	ASIM ASSULFZ-07 OL: 17 TO INC.		

	FORGED C	ARBON STEEL FLANGES	ASTM A350 LF2	2-07 CL.	1/ ASME	3/330 2				0.14.0.0	SEITI	O N	(%)	·		IOE (\$2)
	CUSTOMER P/N 758-5208 758-5232 758-536 758-5577 758-5577 758-669		QUANTITY  Min Max  210 PCE 160 PCE 50 PCE 50 PCE 42 PCE 8 PCE	C - 0.300	Si	Mn 0.600 1.350 1.120	0.035 0.010 0.010	0.013 0.010 0.010 0.011 0.008 0.010	Cu - 0.400 0.100 0.050 0.100 0.060 0.070 0.050 0.090 0.160	0.300 0.110 0.070 0.080 0.060 0.080 0.070 0.080 0.090	0.400 0.050 0.040 0.070 0.050 0.040 0.040 0.030 0.120	0.120 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.010	0.080 0.003 0.003 0.003 0.003 0.003 0.003 0.004 0.001 0.001	0.005 0.005 0.005 0.005 0.005 0.001 0.001 0.005	N	0.410 0.409 0.422 0.415 0.401 0.409 0.413 0.374 0:415 0.427
- 1	8 758 - 1490 9 758 - 0233	1500 THRTJ 2" LF2 1500 THRTJ 2" LF2	1 PCE	0.210	0.200	1.170	0.009	0.010	0.060	0.070	<u> </u>	<u></u>	<u> </u>	ENT(*2	<u> </u>	 

	10	758-0253	1500	1111102	_				<del></del>	impact Test		
-		Heat No.	) ]	T.S.(*1) (MPA)	Y.S.(*1) (MPA)	E.L.(*1) (%) 22.0	Hardness (HB)	R.A.(*1) (%) 30.0		emp: -46°C num: 20.0 Jo	oule	Material Supplier
	em 1 2 3 4 5 6 6 8 7 8 8	13176 34185 31045 802220 58091 13176	Min Max	485.0 655.0 505.0 517.8 508.0 523.7 521.4 517.8 508.0 511.9 523.7 539.4	250.0 - 300.1 348.1 311.9 354.0 315.6 348.1 360.9 315.8 354.0 379.5	36.0 35.4 35.4 35.0 34.6 35.4 35.0 31.4 35.0 34.0	197 150 153 155 157 147 153 155 148 157 153	67.7 67.7 69.5 65.9 68.6 67.7 70.0 67.7 65.9 65.9	1 45.0 29.0 35.0 21.0 33.0 29.0 53.0 26.0 21.0 22.0	2 32.0 25.0 33.0 23.0 25.0 79.0 29.0 23.0 22.0	49.0 25.0 24.0 35.0 49.0 74.0 32.0	
1	10	41309		1			1 . 5	tion of Area	1			1 1

■ HEAT TREATMENT(*2)

 $\boxtimes$  N

REMARKS 910 CX5HRS CONFORMS WITH NACE MR0175-03 AND

MR0103-07/ISO15156.2 CONFORMS WITH Z245.12 CAT II GR.290 SOUR SERVICE-05

TEST SPECIMEN SIZE: 10X10

TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP : -46°C

*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.

*2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieve A.C=Air Cooled, F.C=Furance Cooled, W.C=Water Cooled, O.C=Oil Cooled.

*3: C.E. Value = C + (Mn /6) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

VERIFIED BY

Manager of Quality Assurance Dep't

WESTLUND C1-304 of 486

11-150#LF BORFSC

BAFT

1,624

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SAN ENG STEEL FORGING CO LTD 311, Jen Hsin Road, Jen Wu District Kaohsiung, Taiwan, R.O.C. TEL:07-3724249; FAX:07-3712923 URL: www.saneng.com.tw e-mail: saneng@ksts.seed.net.tw

EN10204-3.1,B(DIN50049/3.1.B)

Customer: SEYBOLD INTERNATIONAL CORP.

Order No.: 7003036(6)-ALLIED

Date: <u>05/02/2</u>01<u>1</u> Page: <u>1 OF 1</u>

7		nail can	eng@ksts.se	sed net.tw			Order No.								= .	. 6 . 6 .	1 6 1	CDEC	IFICAT	IONS	
			DUCT				MATER	IAL SP	ECIFI	CATIC	NS			D	IMEN	15101	NAL	3 7 6 0	HIONI	10110	
	FORGED		N STEEL FL	ANGES			ASTM AS	50 LF2-10.	ASME S	A350 LF2					,,			B16.5-4 Z245.12			
											CI	HEMIC	ALC	OMP	OSIT	ION	(%)				Torse
T						QUA	NTITY	c	I Si	Mn	P	Ś	Cu	Ct	Ni	Mo	V	Νb	N	1	CE(
m	CODE NO	]	DES	CRIPTIC	NC	İ	Mi	n -	0.150	0.600	٠.	-	-			- 400		0.080	-		
ю.							Ma		0.300	1.350	0.035	0.040		0.300	0.122	0.120		0.005	0.003		0.4
1		150 W	NRF STD 2"	LF2			10 PCE	0.222	0.240	1.010	0.015	0.014	0.022	ł				0.003	l 1		0.4
2			RF 6" LF2				50 PCE	0.220	0.210	1.140	0.014	0.002	1	1	0.010		0.003			l	0.41
3			NRF XS 3" L	F2			100 PCE	0.214	0.300	1.080	0.009	0.008						0.005		1	0.3
4		1 '	NRF XS 4" L				8 PCE	0.198	0.270	1.060	0.010	0.014	0.013	0.019	U,048	0.005	0.007	0.003	0.000	ļ	3.0
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-	Heat No.		T.S.(*1)	Y.S.(*1)	E.L.(*1)	Hardness	R.A.(*1)		impact Temo:					- P	1		KEAIM	ENT(*2	)		
em	neat No.		(MPA)	(MPA) 250,0	(%) 22.0	(HB)	(%)	Mi		20.0 Joul	0	Mat	erial Su	ppuer		N					
٧o.		Min Max	485.0 655.0	250.0	22.0	197	3 -	1	2		3					REMAR 90°CX3					
	931232	/	517.8	339.3	32.2	157	64.0	35.0	0	38.0		NTMK			Ö	ONEO	RMS W	ITH NA	CE MR0103	-07 AND	NACE
1	4390797	TH	513.9	345.2	35.4	149	69.5	90.0	-	61.0		ACOM	NAS		1 1	中の175	ለፍጠተና	156.2			
2	31243	SOF	533.5	363.8	35.8	155	69.5	70.	o	64.0		NTMK						1TH Z24	5.12 CAT 1	GR.248	SOUP
۵	31243	7(/	511.9	371.7	31.8	152	68.6	74.	0	70.0	76.0	NTMK			1 7	ERVIC	DECIME	N 517F	: 10X10		
4	31240	<i>J</i> 0	5,1.5	1		ł	1			- 1		1			1 7	EST SI	PECIME	IN ORII	ENTATION:	TRANS	VERSE
	į				1		1	1.							l n	MPACT	TEST	TEMP.:	-46°C		
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	Ì			1			<u> </u>								1000	CLANT T	ONOTHO	V /2			
1:	T.S. = Tensile St	trength,	Y.S.=Yield S	trength, E.L.	=Elongation,	R.A.=Reduc	tion of Area.								1-37	_			$\Lambda$		
								ress Reliev	æd.			1		9	$ \gamma _{c^2}$		3 <u>.O</u>	(J).	<b>X</b> )		
•2:	N=Normalized, A A_C=Air Cooled,	A≓Annea - CE	nied, Q=Quei	ncneα,i≃i8i d W.C=Weta	mpereα, ο. ι≃ er Cooled. Ο (	C=Oil Coole	:d.					1		1	1-St.   ==			R	7		
												1			$\mathcal{N}(\mathcal{G})$	100		1 UN	/		
*3:	C.E. Value = C	+ (Mn /6	+ (Cr + Ma	+V) / 5 + (Ni	+ Cu) / 15							1			To war	III	SUKAR	ممسم			
	ereby certify that						10					<del></del> -			Mana	ger of C	tuality A	rsentan	oe Dep't		

CLIENTE / Customer / Client

ALLIED FITTING CANADA 172 TURBO DRIVE SHERWOOD PARK, ALBERTA T8H 2J6 - CANADA

#### CERTIFICADO DE INSPECCION

Inspection Certificate - Certificat de Réception ISO 10474 / 3.1

DIN EN 10204 / 3.1

FECHA: Date:

30/04/2010 No. 131099

HOJA: Page: 2







Bª Zublitaga, 3 - Apdo. 14

Tel.; 34 - 943 780552

Fax: 94 - 943 781806

ULMA FORJA, 8.COOP.

PRODUCTO Article - Produit **FLANGES** 

SU PEDIDO N.º

Your Order No. 021210AES - EDMONTON Votre Cde. N.º

DE of. - de 12/02/2010

Certified acc. PED 97/23/EC by TÜV Rheinlenc N.º 01 202 E/Q 02 7445

MARCA DEL FABRICANTE Mark of factory Marque du fabricans

E-mail: utma@ulmapiping.con 76777

20580 OÑATI (Gipuzkoa) SPAIN

MATERIAL CORRESPONDIENTE A/8A350LF2CL1-07 Material Correspondent - Quality MODO DE FUSION (*) Steel Making - Elaboration de l'acie

E = Elec. Y = Oxigeno básico

Requirements - Normes Applicable:

NORMAS APLICABLES

**ASME B16.5-09** 

ASTM/ASME NACE MR-01-75/ISO15156-2-05 & MR-01-03/03

CAN/CSA-2245,12 Gr.248 CAT II

DEPARTAMENTO QUALITY ASSURANCE Section

Département

PARTIDA Item	CANTIDAD Quentity	DESCRIPCION Description	LOTE	OBSERVACIONES Remerks	COLADA N.º	RESISTENCIA T.Shangth		ALARGAM. Elongation Allongemen			SILIENCI.	A	ARTON	TA · SPECHEN	DUREZA Hardness
Poste	Quantife	Description		Observations (*)	N.*Coulée	Resist Rupt Namen2	0.2 % N/mm2	Lo: 4 d	Striction %	Rés Jour	Hence es		MEDIA Average Moyerure	•c	Du <del>rató</del> HB
76 83 83 → 92	75 53 47 38	SO 2 150LB RF A350LF2 BLIND 3 150LB RF A350LF2 BLIND 3 150LB RF A350LF2 WN 6 600LB XS/80 RF A350LF2	1050 1050 630 1030	NE NE NE NE	28V0 159V0 382V9 104V0	523 503 508 507	331 311 311 308	30,60 35,40 34,30 35,00	56,80 63,40 60,40 62,30	64 40 38 40	62 51 53 54	7B 48 46 40	88 48 45 45	-50 -50 -50 -50	152 156 145 155 148 156 148 156
											•				

	COLADA N.ª		1	C	OMPOS	SICION	QUIMICA	- STEE	L MARK	KER'S L	ADLE A	NALYSI	S - ANA	LYSE C	HIMIQUI		
\	N. Coulde		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	AI %	Ti %	N %	CEq %
>	104V0 ( 159V0 ( 28V0 ( 382V9	1	0,200 0,200 0,210 0,190	0,270 0,220 0,250 0,210	0,840 0,840 0,870 0,960	0,010 0,013 0,007 0,004	0,001 0,001 0,007 0,009	0,080 0,090 0,030 0,070	0,100 0,090 0,080 0,140	0,040 0,040 0,010 0,040	0,005 0,006 0,001 0,001	0,004 0,001 0,001 0,002	0,280 0,240 0,190 0,140	0,028 0,030 0,035 0,021	0,000 0,000 0,000 0,000	0,000 0,000 0,000 0,000	0,390 0,388 0,380 0,391

(*) OBSERVACIONES: Remarks Observations

N_NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR

- Las dimensiones y la condición superficial se hallaron satisfactoria

- Dimension and surface condition were found acceptable - Les timensions et états de surface sont satisfaisants

- Los materiales citados cumplen les normes aplicables

- Manufacturing requirements are satisfied

- Les normes applicables sont respectées

**EL INSPECTOR** Works Inspector - L'inspecteur

Dp.o. de Garantia de calidad Quality Assurance Cont

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE METALFAR 23861 CESANA BRIANZA (LC) - haly Via G. Parini, 28 COMPANY WITH QUALITY MANAGEMENT FORGED FLANGES & FITTINGS LTD Certif. N. 50 Del/Dated 05.01.2011 PRODOTTI INDUSTRIALI S.P.A. Tel. +39 031.655441 SYSTEM CERTIFIED BY DNY Fattura / Invoice N. 21 Fax +39 031.655149 Del/Dated 05.01.2011 = ISO 9001:2008 = CASTLE HOUSE - STATION ROAD STAMPAGGIO A CALDO DI ACGIAI COMUNI - DEGATI E INOSSIDABILI quality.mff@farmas.com DDT / Del Note N. 34 Del/Dated 05.01.2011 EN5 1PE NEW BARNET/HERTFORD., SALA PROVE E ANALISI MATERIAL! / MATERIAL TEST DEPARTMENT Ns.Ord. / Our ref. N. Del/Dated D# 9115766 Pag. 8 - 11 COD. COL. COLATA VS.ORDINE Q.TA' DESCRIZIONE HEAT CODE HEAT ITEM YOUR REFERENCE DIMJIN ACC. A Q.TY DESCRIPTION VISIVO E DIMENS. 555299 ∕026 3677 DIM. ACCORDANCE TO 150,00 VIS. & DIMENS. W/N 150 RF 6" STD LF2CL1 ASME/ANSI B16.5 MATERIALE / MATERIAL SATISFACTORY C% Si% Mn% S% Cr% Mo% ASTM A350 LF2 CL1/2 Nb% N% AI% C.E.% 0,180 0,240 1,030 0,005 0,009 0.090 0,070 0,020 0,022 0,100 0.010 0,002 0,000 0,032 0,387 PROVETTA TEST SPECIMEN SHERVAMENTO ROTTURA TENSILE STRENGHT SECT. mm2 LUNG, mm SHAPE SECT, mm2 LENGHT mm 1=0 2= D **ALLUNGAMENTO** CONTRAZIONE DUREZZA YIELD POINT N/mm2 >=0,2% RESILIENZA / IMPACT TEST ELONGATION REDUCTION OF AREA HARDNESS HS SNERVAMENTO 126,60 YIELD POINT 50,80 TIPO / TYPE 10x10mm Ns.RH. OUR REF. 317,0 524,0 30,0 56,0 N/mm2 >=1.0% 159,0 - 163,0 ΚV -50 69 70 65 MATERIALE IN ACCORDO A / MATERIAL IN ACC. TO 0.0 TRATTAMENTO TERMICO / HEAT TREATMENT ASTM/ASME A 350/SA 350 M - 07 FORNO / FURNACE ORIGINE / ORIGIN NORMALIZED AT 930 C - COOLED IN STILL AIR **ELECTRIC FURNACE** EUROPE

1616

VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED /ERIFIED BY

WESTLUND BURNER

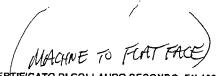
NOTE LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm
NOTES MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003 ISO 15156

UFFICIO CONTROLLO QUALITA'
QUALITY CONTROLLO QUALITA'
ENTE UFFICIALE DI COLLAUDO
INSPECTION AUTHORITY

MARCHIO PRODUZIONE
MANUFACTURER'S SYMBOL

MFF

6 R.F. B.L.





SECE MANIBETTHATIVA E STABLUMBATO; 23P61 CESANA BRIANZA (LC) - Rely Wa G. Parini, 28

Via G. Parini, 28 Tel. +39 031,855441 Fax +39 031,655149 olusiby.srif@farmes.com COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DINV
= ISO 9001 ; 2000 =

CERTIFICATO DI COLLAUDO SECONDO EN 10204 - 3.1 INSPECTION CERTIFICATE

Certir, N. 5814 Del/Dated 02,12,2009

Pattura / Invoice N. 3299 Del/Dated 30,11,2009

DDT / Del Note N. 5706 Del/Dated 30,11,2009

MFF

AMOSIO A CALDO DI ACCIAI COMUNI - LECATI E BALA PROVE E ANALISI MATERIA	LI / MATERIAL TEST DEPARTMENT	= ISO 9001 ; 2000 =		DDT / Del Note Hs.Ord. / Out ref.	
Certificato generato da un sistema	informatico secondo la norma EN10294, velido s	selva firms / This certificate has been pen	erated by computer and need not to b	e signed for validity acc. to EN10204	Pag.7 - 8
COD. COL. COLATA POS. HEAT COOP HEAT TEM 09/35040 0031	VS.ORDINE         0.TA*           YOUR REFERENCE         0.TY           PI-09-35088         2,00	DESCRIPTION  BLIND 150 RF 6" A105		DM.IN ACC, A DM. ACCORDANCE TO ASMEJANSI B16,5	VISIVO E DIMENS. VIS. & DIMENS. SATISFACTORY
MATERIALE / MATERIAL ASTM A106	С% S7% млж S% 0,185 0,250 0,950 0,915	0,011 0,130 0,060 0,020	Ti% Cu% V% No% 0,010 0,160 0,001 0,000	N% A% C.E.% 0 0,000 0,005 0,388	•
PROVETTA/TEST SPECIMEN FORMA SEC winz LLMSS, spin SHAPE SECT. minz LEMONT com 1+0 z+0 128,50 50,80 1	SHERVAMENTO ROTTURA ALLIMGAMENTO YELD POINT TENSILE BIRENOHT ECONGATION WINDLY FOR 359,0 30,0	REDUCTION OF AREA HANDNESS	PERCENCA/RAPACT TEXT - JOULEJam / TYPE leathers to 1 2 KV 20 81 87		Hejeri, Ogen størr,
MATERIALE IN ACCORDO A / MAII ASTM/ASME A 105/SA 105 M -		IRATTAMENTO I ERMICO / NORMALIZED AT 820 C		FORNO / FURNACE ELECTRIC FURNACE	ONKINE / ORIGIN E EUROPE
COD, COL COLATA POS. HEAT CODE HEAT ITEM 09/77216 0033	VS.ORDINE 0.TA* YOUR REFERENCE 0.TY PI-09-35088 4,00	DESCRIZIONE DESCRIPTION BLIND 300 RF 3" A105		DIM, IN ACC, A DIM. ACCORDANCE TO ASME/ANSI B16.5	VISIVO E DIMENS. VIS. & DIMENS. 8 ATISFACTORY
MATERIALE/MATERIAL ASTM A105	C% 57% Mn% 5% 0,195 0,250 1,040 0,012	P% Cr% NF% Mo% 0,014 0,110 0,050 0,010	Ti% Cu% V% Nb% 0,006 0,200 0,001 0,001	N% A% C.E.% 0,000 0,022 0,409	SATISFACTORY
PROVETTA / TERT SPECIMEN FORMA SEZ menz Lung, nos Shame SECT, rome Lunght from 1=0 2=0 128,60 50,80 1	PRED PORT TEMPLE TRENCHT ELONGAMENTO FLORATION WHITE STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRENCHT STRE	REDUCTION OF AREA HARDNESS	PERCENCE / MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOULER MARKET TEBT - JOUR MARKET TEBT - JOUR MARKET TEBT - JOUR MARKET TEBT - JOUR MARKET TEBT - JOUR MARKET TEBT - JOUR MARKET TEBT - JOUR MARKET TEBT - JOUR MARKET TEBT - JOUR MARKET TEBT - JO		Nu.NV. Dun ref
MATERIALE IN ACCORDO A / MATE ASTM/ASME A 105/SA 105 M -		TRATTAMENTO TERMICO / ) NORMALIZED AT 920 C	EAT TREATMENT	FORNO / FURNACE ELECTRIC FURNACE	ORIGINE / ORIGIN
COD, COL. COLATA POS. HEAT CODE HEAT ITEM 09/34166 0034	VS.ORDINE Q.TA' YOUR REFERENCE Q.TY P1-09-J5088 25,00	DESCRIZIONE DESCRIPTION BLIND 300 RF 4" A105	·	DIM.IN ACC, A DM. ACCORDANCE TO ASMEJANSI 818.5	VISIVO E DIMENS. VIS. IL DIMENS. SATISFACTORY
MATERIALE/MATERIAL ASTM A105	C% S% Mn% 5% 0,185 0,250 0,990 0,011	P% Cr% NI% Mo% 0,012 0,130 0,070 0,010	71% Cu% V% Nb% 0,007 0,150 0,003 0,000	N% A/% C.E.% 0,000 0,007 0,393	SANSFACIORY
ROYETTA ) TERT EPECIMEN FORMA SEZ, med LLING, men BHAPE LECT, med LENGHT men 1=0 2=(1 126,60 50,80 1	ALLIMOAMENTO YELD POINT TENSEL STREMENT ELONGATION NOTICE 361,0 516,0 30,0	CONTRACTIONS CLUBEZZA NO RECHICTION OF ARFA HARDNESS TPO/	PEHLEAZA/MPACT TEST - JOLLEGAS  TYPE 18115mm 10 1 3  KV 20 86 86	BMERYAMENTO YTELD POWT	Majay, Oler Argr _i
MATERIALE IN ACCORDO A / MATE ASTM/ASME A 106/SA 105 M -		TRATTAMENTO TERMICO / F NORMALIZED AT 920 C -	EAT TREATMENT	81 0,0 FORHO / FURNACE ELECTRIC FURNACE	ORIGINE / ORIGIN EUROPE
NOTE MATERIAL IN ACCORDAN	CE WITH NAGE MR-0176/2003 ISO 15166		CHO CONTROLLO QUALITA' E Y CONTROL DEPARTEMENT	INTE UFFICIALE DI COLLAUDO INSPECTION AUTHORITY	MARCHIO PRODUZIONE MANUFACTURER'S SYMBOX

S. Corti

# 11-150-LiZ BUND -COOTZIS, P.O. 9115704-00 Days 4075



SANLENG-STEEL FORGING COLTD 311; Jen Hsin Road, Jen Wu District Kaohsiung, Taiwan, R.O.C. TEL:07-3724249 ; FAX:07-3712923 URL: www.saneng.com.tw

#### (MILL TEST CERTIFICATE)

EN10204-3.1.B(DIN50049/3.1.B)

Customer: WF.F.FITTINGS & FLANGES (CANADA)

Order No.: D000168(2)

Certificate No.: SE100734 Date: 03/28/2011 Page: 10F2

DIMENSIONAL SPECIFICATIONS e-mail: saneng@ksts.seed.net.tw MATERIAL SPECIFICATIONS PRODUCT **ASME B16.5-09** ASTM A350 LF2-07/ASME SA350 LF2-07 CSA Z245.12 FORGED CARBON STEEL FLANGES

- 1	10,000	<b></b>															
					211		CF	HEMIC	AL C	OMP	OSIT	ION	(%)				CE(*3)
			QUANTITY	c 1	Si	Mn	Р	S	Cu	Cr	Ni	Mo		Mb	N	- 1	OL ( 3)
iten No.	T LUDE NO	DESCRIPTION	Min Max	0.300	0.150 0.300 0.200	0.600 1.350	0.035 0.007	0.010	0.060	0.060	0.050	0.005	0.003	0.080 0.005	1 800.D	_	0.415 0.407
	7586824	150 WNRF STD 4" LF2 150 WNRF STD 4" LF2 150 WNRF STD 10" LF2	37 PCE 13 PCE 6 PCE	0.200 0.206	0.210 0.240 0.210	1.100 1.080 1.100	0.011 0.015 0.011	0.010	0.023	0.045 0.060	0.053	0.002 0.010	0.033	0.001 0.005 0.001	0.004		D.400 D.407 D.415
	7585321 7585267 7585267	150 WNRF XS 4" LF2 150 WNRF XS 4" LF2	122 PCE 28 PCE 10 PCE	0.200 0.210 0.198	0.200	1,110 1,060	0.007 0.010	0.010 0.014	0.060	0.060	0.050	0.005 0.005	0.003	0.005	0.008 0.006 0.004		0,38
- 1	77585566	150 SORF 4" LF2 150 BLRF 2" LF2 150 BLRF 4" LF2	50 PCE 50 PCE	0,209	0.240 0.270 0.260	1.090 1.050 1.090	0.009	0.009	0.009	0.039	0.045 0.047	0.005 0.005	0.029	0.005	0.004	1	0.39 0.40 0.38
<b>&gt;</b>	87585577 97585585 07581210		10 PCE 10 PCE	0.211	0.280	0.990	0.014	0.012	0.007	0.015	0.053	0.002	0.002	0.005	0.003		0.30
/\	150.5	1				Tank		ı				EAT T	REATM	ENT("2)	)		

1	,	100					1					
ĺ			<del>- 7</del>	T C (74)	Y.S.(*1)	E.L.(*1)	Hardness	R.A.(*1)	in the	ripact Test	· 1	
ſ		Heat No.	1	T.S.(*1) (MPA)	(MPA)	(%)	(HB)	(%)	Te	элир: -48 ⁰ С		Material Supplier
١	Item	1.02.			250,0	22.0	'-'	30.0	Minimi	im: 20.0 Jo	URE	
١	No.		Min	485.0	250,0	22.0	197	- 1	1	2	3	
-			Max			1 050	157	65.9	21.0	23.0	24.0	OEMK
Ì	1	13176		523.7	354.0	35.0		71.3	30.0	61.0	101.D	WEI CHIH STEEL
١	2	1		539.4	379.5	36.6	155	1	57.0	70.0		NTMK
ı	_	1		511.9	331.5	35.8	157	71.0	1	61.0	101.0	WEI CHIH STEEL
	3			539.4	379.5	36.6	155	71.3	30.0			
Į	4	80399		1		35.0	157	65.9	21.0	23.0		OEMK
	5	13176		523.7	354.0	1	152	68.6	74.0	70.0		NTMK
	6	31240		511.9	371.7	31.8	1		64.0	73.0	57.0	NTMK
٠	1 -	21382		525.6	375.6	36.0	156	69.5	1	43.0	ດຂອ	NTMK
	\ '	l []		509.9	354.0	32.4	153	70.4	50.0	1		NTMK
	8	21380				35.6	154	68,5	52.0	56.0		
_		21303		523.7	359.9	1		67.0	40.0	46.0	57.0	NTMK
	10	931228		505.0	333.4	37.4	156	07.0	1	ì		\
	1	/ 50,220		1	1	1	1	1	<u> </u>			

HEAT TREATMENT(*2)

REMARKS

890 CX3HRS CONFORMS WITH NACE MR0103-07 AND NACE MR0175/ISO15156.2 CONFORMS WITH Z245.12 CAT II GR.248 SOUR

SERVICE-05 TEST SPECIMEN SIZE: 10X10

TEST SPECIMEN ORIENTATION: TRANSVERSE IMPACT TEST TEMP .: -46°C

*1: T.S. = Tensile Strength, Y.S.=Yield Strength, E.L.=Elongation, R.A.=Reduction of Area.

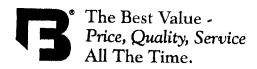
2: N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.R=Stress Relieved; A.C=Air Cooled, F.C=Furance Cooled, W.C=Water Cooled, O.C=Oil Cooled.

"3: C.E. Value = C + (Mn /6) + (Cr + Mo +V) / 5 + (Ni + Cu) / 15

We hereby certify that the material has been tested in accordance with the above specification and also with the requirements called for by the above order.

ERIFIED

Manager of Quality Assurance Dep't



**LOG NO.** F0000000014300

Page 13 of 27

**BONNEY FORGE CORPORATION** 

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

**DATE** 05/10/2011

**CUSTOMER** 

ORDER NO.: 9115923-00

SHIP TO: WESTLUND INDUSTRIAL SUPPLY

4103-84 AVENUE

**EDMONTON AB T6B2Z3** 

**CANADA** 

BONNEY ORDER NO. B000096865

	-		·
ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
53	48	( 4773 )	11/2 3M A105N COUP T SA/A105N
7523661		Cyll	Al 0.024 C 0.190 Cb 0.000 Co 0.004 Cr 0.040 Cu 0.090 Mn 1.020 Mo 0.010 N 0.004 Nb 0.016 Ni 0.030 P 0.007 S 0.021 Si 0.250 V 0.004 CE(Long Formula) = 0.38
		V	T/S(PSI) 74,375 Y/S(PSI) 48,125 EL(%) 28.55 RA(%) 63.75 Brinell 135 BHN 132 BHN
54	250	4785	1/2 3000 A105N HCP T SA/A105N
7523726			Al 0.023 C 0.220 Co 0.004 Cr 0.040 Cu 0.070 Mn 1.030 Mo 0.000 N 0.004 Nb 0.012 Ni 0.020 P 0.008 S 0.019 Si 0.260 V 0.004 CE(Long Formula) = 0.41
			T/S(PSI) 75,000 Y/S(PSI) 48,750 EL(%) 32.90 RA(%) 66.30
			Brinell 137 BHN 139 BHN
57	25		3/8 3M A105N UNAR T SA/A105N
7523971		MALE	Al 0.025 C 0.200 Co 0.004 Cr 0.090 Cu 0.170 Mn 0.990 Mo 0.010 N 0.004 Nb 0.013 Ni 0.040 P 0.014 S 0.017 Si 0.200 V 0.004 CE(Long Formula) = 0.40
			T/S(PSI) 74,375 Y/S(PSI) 51,875 EL(%) 33.05 RA(%) 65.40 Brinell 137 BHN 139 BHN
		4811	3/8 3M A105N UNAR T SA/A105N
7523971		FEMALE	A1 0.025 C 0.200 Co 0.004 Cr 0.090 Cu 0.170 Mn 0.990 Mo 0.010 N 0.004 Nb 0.013 Ni 0.040 P 0.014 S 0.017 Si 0.200 V 0.004 CE(Long Formula) = 0.40
			T/S(PSI) 74,375 Y/S(PSI) 51,875 EL(%) 33.05 RA(%) 65.40 Brinell 137 BHN 139 BHN

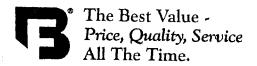
VERIFIED

We certify that the data on this sheet is a true copy taken from our records of material ished us by the production mill, or as obtained by additional laboratory checks.

by .

Kylee Ruiz

QUALITY PROCESS MANAGER



**LOG NO.** F0000000014300

Page 27 of 27

BONNEY FORGE CORPORATION

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

**DATE** 05/10/2011

**CUSTOMER** 

ER

ORDER NO.: 9115923-00

SHIP TO: WESTLUND INDUSTRIAL SUPPLY 4103-84 AVENUE

**EDMONTON AB T6B2Z3** 

CANADA

BONNEY ORDER NO. B000096865

1/2" CPLG. 1576

ITEM QUANTITY

LOT NO.

GRADE OR SPECIFICATION NO.

CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

- 1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
- 2. CERTIFYING TO ASTM A350 LF2 07 REVISION.
- 3. THE MATERIAL SUPPLIED IDENTIFIED AS A 105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A 105 HEAT TREATING REQUIREMENTS.
- 4. THE MATERIAL SUPPLIED AS A105N MEETS THE REQUIREMENTS OF BOTH NACE MRO103-2007 AND NACE MRO175/ISO 15156-2.
- 5. CERTIFYING ASTM A105-09 / ASME SA105-07 EDITION.
- 6. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
- 7. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
- 8. THE MATERIAL SUPPLIED AS A350 LF2 CL1 MEETS THE REQUIREMENTS OF BOTH NACE MRO103-2007 AND NACE MRO175/ISO 15156-2.
- 9. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
- 10. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
- 11. THE UNIT OF MEASURE FOR TENSILE AND YIELD (0.2%) STRENGTH ARE IN REPORTED IN PSI.

12. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN.

2 INCH OR 50 MM GAGE LENGTH.

**VERIFIED** 

RV

WESTLUND Copyrige

We certify that the data on this sheet is a true copy taken from our records of material ished us by the production mill, or as obtained by additional laboratory checks.

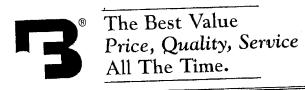
by

Kvlee Ruiz

**QUALITY PROCESS MANAGER** 

CMTR: REV2

#### **REPORT** CERTIFIED MILL TEST



PAGE 23 LOG NO. 325092

BONNEY FORGE

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906 www.bonneylorge.com

CUSTOMERWESTLUND INDUSTRIAL SUPPLY

Date 08/27/08

CUSTOMER'S Order No2114712-00

Bonney Order No.

SHIPPED TOJESTLUND INDUSTRIAL SUPPLY 4103 - 84 AVENUE

B000040088

EDMONTON, ABT6B2Z3 Canada

	EDMONTON	ABT6B2Z3	Canada 			NIA	
ITEM	QUANTITY	LOT NO.		GRADE CHEMICAL ANALYSIS	OR SPECIFICATION, PHYSICAL PROP	PERTIES, REMARKS	
			•	SA/A350-LF2	CL 1	Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Compan	
113	<b>.</b> ⊉ 4072	7680022	11/2 3000 LF2 C .210 MN NI .030 CU V .000 AL CE(LONG FORMU T/S 75375 Y/S	1.080 P .090 CO .025 NB LA) = 0.41 51125 EL 33	.005 S .003 CR .016	.040 MO	.250 .010
			BRINELL HARDN CHARPY: -50F	ESS1: 135 HA 17.0, 31.(	JK DME 225:	125	
1.4	32 4183	7680023	2 3000 LF2 C0 C .210 MN NI .050 CU V .000 AL CE(LONG FORML	1.020 P .140 CO .025 NB	.008 S .004 CR .014	.020 SI .060 MD	. 200
s	41		T/S 72895 Y/S BRINELL HARDN CHARPY: -50F	3 48254 EL 3 NESS1: 139 H 47.0, 81.	3.70 RA 60 ARDNESS2: 0, 33.0 () AGE 53.6	1 37	
115	<b>2</b> 5 5600	8 768003 <b>1</b>	3/4 3000 LF2 C .220 MN NI .020 CU AL .001 NB CE(LONG FORM T/S 83000 Y/ BRINELL HARD CHARPY: -50F	1.150 P .070 CR .001 JLA) = 0.43 6 49800 EL 3 NESS1: 159 F 23.0, 16.	.010 S .040 MO 31.00 RA 6 HARDNESS2: 0, 15.0 ( RAGE 18.0	.005 V .0.00 159	. 250 . 016

**** CONTINUED ON NEXT PAGE ****

reduction mill or as obtained by additional laboratory checks. We certify that the data on this sheet is a true copy taken from, our records of material furnished

VERIFIED BY

Cris Boozel

QUALITY PROCESS MANAGER

LOG NO. 325092

_ PAGE <u>27_</u>

BONNEY FORGE

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www.bonneyforge.com

CUSTOMERWESTLUND INDUSTRIAL SUPPLY

CUSTOMER'S Order Not 14712-00

SHIPPED TOJESTLUND INDUSTRIAL SUPPLY 4103 - 84 AVENUE Date 08/27/08

Bonney Order No.

B000040088

ZOFZ

EDMONTON, ABT6B2Z3 Canada

ITEM QI

QUANTITY LOT NO.

GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

THE MATERIAL SUPPLIED IDENTIFIED AS A105QT WAS QUENCHED AND TEMPERED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.

THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.

THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.

CERTIFYING ASTM A105-05 / ASME SA105-04 EDITION.

THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.

THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.

CERTIFYING TO ASTM A350 LF2 04A REVISION.

THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.

THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204: 2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)

THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-2005 AND NACE MR0175-2002.

ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.

**** END OF CERTIFICATION ****

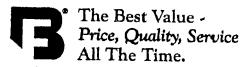
We certify that the data on this sheet is a true copy taken \$

OVER [FCPEID of material furnished us by the production mill, or as obtained by additional laboratory checks.

WESTLUND (Tris Boozel

CMTR: REV 1

**QUALITY PROCESS MANAGER** 



LOG NO. F00000000000705

Page 3 of 4

**BONNEY FORGE CORPORATION** 

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17068-0330

(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4908

BONNEY ORDER NO. B000072045

www.bonneyforge.com

**CUSTOMER: CCTF CORPORATION** 

**DATE 03/31/2010** 

CUSTOMER

ORDER NO.: 4887821-00

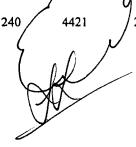
SHIP TO: CCTF CORPORATION (EDMONTON)

5407 - 53RD AVE.

**EDMONTON AB T6B 3G2** 

Canada

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO CHEMICAL ANALYSIS PHYSICAL PROPERTIES, REMARKS	5
6 7680018	250	4272	1/2 3000 LF2 COUP T SA/A350 LF2 CL1  Al 0.020 B 0.000 C 0.200 Co 0.003 Cr 0.040 Cu 0.130 Mn 1.010 Mo 0.01  Nb 0.017 Ni 0.030 P 0.009 S 0.019 Si 0.210 V 0.000  CE(Long Formula) = 0.39  T/S 72,500 Y/S 51,250 EL 32.90 RA 65.85  Brinell 130 BHN 130 BHN  Charpy -50 F 30/86/53 (Ft/Lbs)  Average 56.30	10
7/680023	240	4421	2 3000 LF2 COUP T SA/A350 LF2 CL1 A10.022 C 0.200 Co 0.003 Cr 0.030 Cu 0.070 Mn 1.000 Mo 0.005 Nb 0.0	018



Ni 0.020 P 0.010 S 0.022 Si 0.180 V 0.004

CE(Long Formula) = 0.38

T/S 73,744 Y/S 49,633

EL 32.80

Brinell

132 BHN

132 BHN

Charpy

-50 F 24/12/36

(Ft/Lbs)

Average

24.00

7680031

250

57546

3/4 3000 LF2 90EL S

SA/A350 LF2 CL1

RA 58.84

RA 67.50

Al 0.027 C 0.190 Co 0.004 Cr 0.060 Cu 0.150 Mn 1.020 Mo 0.010 Nb 0.018 Ni 0.060 P 0.008 S 0.022 Si 0.220 V 0.000

CE(Long Formula) =

0.39

Y/S 47,295

EL 35.00

Brinell

T/S 72,428

139 BHN

139 BHN

Charpy

-50 F 46/47/70

(Ft/Lbs)

54.30 Average

'e certify that the data on this sheet is a true copy taken from our records of material mished us by the production mill, or as obtained by additional laboratory checks.

BRENDA GARLOCK

QUALITY PROCESS MANAGER

**CMTR: REV2** 

The Best Value -Price, Quality, Service All The Time.

LOG NO. F000000000000705

Page 4 of 4

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www.bonneyforge.com

**CUSTOMER:** CCTF CORPORATION

**DATE 03/31/2010** 

CUSTOMER

ORDER NO.: 4887821-00

BONNEY ORDER NO. B000072045

SHIP TO: CCTF CORPORATION (EDMONTON)

5407 - 53RD AVE.

**EDMONTON AB T6B 3G2** 

Canada

HEM QUANTITY

LOT NO.

GRADE OR SPECIFICATION NO.

CHEMICAL ANALYSIS PHYSICAL PROPERTIES REMARKS

- 1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
- 2. CERTIFYING TO ASTM A350 LF2 07 REVISION.
- 3. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MRO103-2007 AND NACE MRO175/ISO 15156.
- 4. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
- 5. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
- 6. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
- 7. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204;2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
- 8. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

CMTR: REV2

**BRENDA GARLOCK** 

QUALITY PROCESS MANAGER

C1-316 of 486

											Į.			TO VOLUME		Certificate	Certificate Nr 15929		07,11,2005
	<u>-</u>					INSPE	CTION CE	RTIFICATE	INSPECTION CERTIFICATE EN 10204:2004 / 3.1	2004 / 3.1	<u>-</u> -	RACO LIMIT	RACO LIMITED- CASTLE HOUSE	E HOOSE			knyolce Nr 1274	Darbard	07.11.2005
	<u>:</u>					. COM	PANY WITH	OUALITY SI	COMPANY WITH QUALITY SYSTEM ISO 8001-2000	0007-100		STATION ROA HERTI	STATION ROAD - NEW BARNET HERTFORDSHIRE ENS 1PE - UNITED KINCLEDM	4ET 45 1PE - UNITI	ED KONGOOD		Del. Note Nr. 1906	1	
JSTRU	A MEC	CAN	CALK	JSTRIA MECCANICA LIGURE SPA	SPA		J					n generated b	This centificats has been penerated by computer and need not to be signed for validity according to DRN EN 10264.	n tou pasu bi	t pengia eq	x validity acc	ording to Di		Page 5 - 9
BOSO CASARZA	LICURE - C	nova - Kaly -	P.zza Marco C	Sappelit,4 - Tel.	SCO CASARZA LIGURE - Genova - Haby - P.zza Masco Cappell, 4 - Tel. 0185.467661 - Fax 0185.466610 / MATERIAL, 1551 LICHARI MENI	ax 0185.4666	10/MATER	AL TEST DE	- WAY							٥	DIM. ACC. TO	TO VISUAL	VISUAL & DIMENS.
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	73509	915	16946	2005-2E20	2005-2E201-0001180-015			5 40 ELD.		AM 1/4" A	105N	7523114	<u> </u>	7520+95		ַ בּע	SEE NOTE		VALUELACTORY
	<u> </u>	918	16946	2005-2E20	2005-2E201-0001180-018			<u> </u>	FITTING IEE IHRU NY I ZOM IN ANEON		2500 52	750				S	SEE NOTE		NO LOT
	_	2 2	16946	2005-2E20	2005-2E201-0001180-054			3 90 ELB.	FITTING 90 ELB. THRD NPI 3M Z. ASSOCIA	2 W.C.	יייייייייייייייייייייייייייייייייייייי	000	)  -			S	SEE NOTE		SATISFACIORI
	\ 2000'	, <u>2</u>	16946	2005-2E20	2005-2E201-0001180-058	3 240		3.TEE TH	FITTING TEE THRO NPT 3M 1" ASSOCIA	7 A 33	2000 2000 E	768000	-00			S	SEE NOTE		SATISFACIORY
*		3 9	16046	2005-2E20	2005-2E201-0001180-063	3 150		SHEXTE	FITTING HEX.H. PLUG THRD NP1 Z ASSULT	DNPIZ	A35WLT	י פול פול	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			S.	SEE NOTE		SATISFACTORY
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Soco/	3 5	16946	2005-2E20	2005-2E201-0001180-016	120		3 45 ELB.	FITTING 45 ELB. THRD NPT 3M 1/4" A105N	T 3M 1½"	A105N	7,000,007				S.	SEE NOTE		SATISFACTORY
	74285	53	16946	2005-2E20	2005-2E201-0001180-053			3 90 ELB.	FITTING 90 ELB. THRD NPT 3M 1" A350/LFZ	T 3M 1" A	350/LF2	7,000,007	ر د ر			S	SEE NOTE	-	SATISFACTORY
95	79905	057	16946	2005-2E20	2005-2E201-0001180-057	7 44		3 TEE IH		200 × 100	A Land	1	3	Š	NDX	N'X AIX	C.E.Y	-	OTHER ELEMENTS
IFAT CODE	HEAT	TEN	¥	MATERIAL	B	SIX	Mn%	2%	_	-		-	+	12	0 000 0	0,000 0,005		5	
5	25.5	24.5	ASTM A105	0.5	0,195	0,210	0,960				0,060 0,010	10,0,013						<b>80</b>	
	7.4884	98	ASTM A105	8	0,185		0,910			0.090	0,070			0,022					
	75818	75	ASTM A3	ASTM A350 LF2 d.1	0,210		5. 25.							0,003	0000				
) v	70278	920	ASTM A3	ASTM A350 LF2 d.1	0,180		086							0,023				<b>9</b> (9	
3 5	76569	83	ASTM A3	ASTM A350 LF2 d.1			8			2 5				0,030				7	
£ 69	39700	016	ASTM A105	95			96,							0,002					
H52	74285	053	ASTM A3	ASTM A350 LF2 d.1			96.0	0,024	0 020				3 0,250	0,003	0,001	0,000 0,006	06 0,421	_	DWOd G ISIA
951	79905	057	ASTM A2	ASTM A350 LF2 d.1	0,77	0,2,0	Ķ	. r		- 1	_	BEND TEST   FL	PLATTENING TEST		IMPACT TEST	T - JOULEUM	-		Minute 21.05
TOO TATE	i		TEST &	TEST SPECIMEN		TENSILE STRENCH	-	ě	REDUCTION OF AVEA					TYPE 10x18mm	-	_	1	-+-	C
HEA! COUR		:	SECT. mm2	LENGHT mm	Miner 2 >= 8,276	Man 7	_	4		45	2	00	00	≩	2				0 0
	73509	915	122,65	20,00	329,0	529,0		33,5	y v	5 5	152 - 158	0.0	0,0	≩	2	90 1	105 100		2 0
TAT.	74884	018	122,65	20,00	320,0	515,0		<b>5</b> C	5.50	1 13	163 - 165	0,0	0'0	≩	4				0.0
CAO	75818	95	122,65		325,0	533,0		2, 4	2 6	157	157 - 162	0,0	0,0	≩	4				0.0
TG5	70278	950	122,65		305,0	520,0		٠ د د د	2 7	169	169 - 174	0,0	0,0	≩	4	3 5	110	- 7-	0.0
NZ4	76569	883	122,65		367,0	227.0		2,5	, <u>c</u>	9	160 - 162	0,0	0,0	≩	₹ '	3 5			0.0
GRZ	39700	910	122,65		366,0	0,109		5 6	3 3	55	50 - 158	0,0	0,0	≩ '	 	3 2	200	3 5	0.0
H52	74285	053	122,65		305,0	2,00		32.0	26.0	152	- 158	0,0	0'0	≩	7	3	$\int$		Our Ref.
138	79905	. 057	122,65	200	10,000	25		-			HEA	HEAT TREATMENT	<b>5</b>			FURNACE		1	,
HEAT CODE	HEAT	TEM		[A]	MATERIAL IN ACCORDANCE I	CORDANCE	2			1	1 00000	Air Cool			ELEC	ELECTRIC FURNACE		RIVA ACCIAI	) (S) (S) (S) (S) (S) (S) (S) (S) (S) (S
	1	21.5	ASMES	ASME SA ASTM A105-03	105-03				Normal	Normalized at 600 -920 C / Air Cool	7 076-	Air Cool			ELEC	ELECTRIC FURNACE		RIVA ACCIA	052062
Ĭ	74884	919	ASMES	ASME SA ASTM A105-03	105-03				Normali	Normalized at 600 -520 C 1 :::					ELEC	ELECTRIC FURNACE		KIVA ACCIA	041328
- C	75818	0.54	ASMES	SA ASTM A:	ASME SA ASTM A350-04a Gr. LF2 d.1	LF2 d.1			TELLION .	Normalized at 300 (7) At Cool		5 5			ELEC	ELECTRIC FURNACE	MACE	KIVA ACCIA	3
3 6	70278	3 2	ASMES	SA ASTM A:	ASME SA ASTM A350-04a Gr. LF2 d.1	LF2 d.1			Normalia:	Normalized at 900 C. / Air Cool		5 5			EFEC	ELECTRIC FURNACE	NACE.	KIVA ACCIA	051005
2 2	76560	8 8	ASMES	SA ASTM A	ASME SA ASTM A350-04a Gr. LF2 cl.1	LF2 d.1			Normal	Normalized at 900 C17th CCC.	7 1,000	Air Cool			ELEC	ELECTRIC FURNACE	NACH SACH	KIVA ACCIA	
, CO	39700	016	ASME S	ASME SA ASTM A105-03	105-03	-			Norman	On at position	Jo / Air C	100			HH	ELECTRIC FURNACE	S C	KIVA ACCIDI	
ביי פרל	74785		ASME	SA ASTM A	ASME SA ASTM A350-04a Gr. LF2 d.1	LF2 d.1	֡֝֞֝֝֝֞֝֝֟֝֝֝֝֓֞֝֝֝֓֓֓֓֓֝֝֡֝֝֡֝֡֝֝֡֝֝֡֡֝֡֝֡֝֡֡֝֡֝֡֝֡֝	נו	E X	DV - 1 - 4 000 C / Air Cool	7 / C	<u> </u>			ELEC	ELECTRIC FURNACE		KIVA ACLIA	20.00
76 F	79905	057	ASME	SA ASTM A	ASME SA ASTM A350-04a Gr. LF2 d.1	LF2 d.1	Z Z	VERIFIED	Normal	Zeo el so		700	ALIST TO CONTROL DEPARTMENT MANUFACTURER'S SYMBOL	RIMENT	AANUFACT	URER'S SY		MANUFACTURER'S SYMBOL	R'S SYMBOL
	4 OF C. L.	100	3700 ANS	31 B31 1/B3	STO - ANSI B31 1/B31.3 - IML STD - ANSI	J-ANSI			INSPECTION AUTORITY	TOK	5								
NOTES	SME BID.1		100175 15C	7 15156/1	ASME BIB.11/01 - BS:3/93 - 7410 BD 15156/1 - SUPPLIED MATERIA	MATERIA	MEETS		Z										(
in t	7.7.018-1.1	TONO ANI	A D O A E	B1.1-B16.2.2 - PACE MINOTO 150 150 150 150 150 150 150 150 150 150	15			Ī	7 70	3	7	1			FITTINGS	SIMI		STUDBOLTS	3
ñ 	ילייוים	: 2	·	! :			<b>NE</b> ₽	<u> </u>	WEST CONDY FOR I			Š	BORIS FIZZOI II						}

C1-317 of 486



### **INDUSTRIA MECCANICA LIGURE SPA**

VERIFIED N CERTIFICATE EN 10204:2004 / 3.1

COMPANY WITH QUALITY SYSTEM ISD 9001-2000 CERTIFIED BY RINA

IRACO LIMITED- CASTLE HOUSE

STATION ROAD - NEW BARNET HERTFORDSHIRE EN5 1PE - UNITED KINGGROW

Certificate Nr 17279 Invoice Nr 201

Dated 21,02,2007 20.02.2007 Dated Del. Note Nr 315 Dated 20.02.2007

16030 CASAR	ZYNGUKE - G	nova - Italy	- P.zza Marco	Cappelli,4 -	Tel.0185,46766	WES ax 8 835.46	ľ'n	D A	POR ARTH	egt t	his certificate	has been g	enerate:	d by computer	and need n	ot to be sign	ed for valid	lity accor	ding to DIN	EN 10204	Page 3 - 3
HEAT CODE	HEAT	ITEM	YOUR P.C	OUR	REFERENCE	Q.TY		~		DESC	RIPTION						<u> </u>	DIN	. ACC. TO	VISUA	& DIMENS.
H14 H96 GP8 TN4 GM6 GU9	79376 77285 70200 78877 70202 75349 72435	90 90 91 93 103 104 110	17025 17025 17025 17025 17025 17025 17025	2006-2E 2006-2E 2006-2E 2006-2E 2006-2E	201-000843-( 201-000843-( 201-000843-( 201-000843-( 201-000843-( 201-000843-( 201-0000843-(	977 6 978 4 980 10 990 10	3 FITT 8 FITT 5 FITT 0 FITT 0 FITT	TING 45 E TING 45 E TING TEE TING 90 E TING 90 E	LB. THRD LB. THRD THRD NP LB. SW 31 LB. SW 31	NPT 3 NPT 3 T 3M 3 M 3/4" M 1" A:	M 1" A350. M 1" A350. M 2" A350/L /4" A350/LF2 A350/LF2 NPT 2" A3	/LF2 /LF2 F2		08-0008 08-0008 168-001 768-001 768-00 768-00	5 31 02			SEI SEI SEI SEI	E NOTE E NOTE E NOTE E NOTE E NOTE E NOTE E NOTE	SATIS SATIS SATIS SATIS	FACTORY FACTORY FACTORY FACTORY FACTORY FACTORY
HEAT CODE	HEAT	ITEM	MA	TERIAL	C%	Si%	Mn%	5%	P%	Cr%	Ni%	Mo%	Ti%	Cu%	V%	Nb%	N%	Al%	C.E.%	OTHER	ELEMENTS
H14	79376	90	ASTM A3			0.210	0.870		0.020	0,140		0.010	0.01		0.003	0.000	0.000	0.006	0,389		
H96	77285	90	ASTM A3			1 7 1	0.850		0.017	0.070		0.010	0.00	, .	0,003	0,000	0.000	0,000	0.363		
GP8	70200	91	ASTM A3			1	0,860	( -,	0.012	0,080		0,010	0.00		0.002	0,001	0,000	0.006	0,386		
TN4	78877	93	ASTM A3			1 ' 1	0,960	1 ,	0.018	0,120	1 '	0,010	0.00		0.002	0,000	0.000	0,016	0,399		
GM6	70202	103	ASTM A3			1 ' 1	0,930	1 7	0,017	0,130	1 2	0,020	0,01	1 '	0,002	0,000	0.000	0,005	0,388		
GU9	75349	104	ASTM A3			1 ' 1	0,910		0,027	0,150		0.010	0.00	1 .	0.002	0,000	0,000	0,014	0.391		•
48K	72435	110	ASTM A3	50 LF2 d.		1. 1	0,940	1 -	0,013	0,090		0,010	0,00		0,001	0,000	0,000	0,012	0,396		• .
HEAT CODE	HEAT	ITEM	TEST SP	ECIMEN	YIELD POINT	TENSILE STREN	GHT E	ONGATION	MEDUCTION O	F AREA	HARDNESS Ho	BENO TE	ST FL	ATTEMING TEST		IMPACT	TEST - JOUL	E/cm2		SHAPE	YIELD POINT
	ļ Ļ	ļ	SECT. mm2	LENGHT mm	N/mm2 >=0,2%	N/mm2 >=		%> <del>-</del>	%>=						TYPE 10x1	Oenen *C	1	2	<del></del>	-O 2-0	N/mm2 >=1,0%
H14	79376	90	122,65	50,00	323,0	520,0	}	34,5	58,5	•	153 - 160	0,0		0,0	KV	-4	16 59	62	57	1	0,0
H96	77285	90	122,65	50,00	309,0	546,0		35,0	60,0	1	156 - 166	0,0	1	0,0	KV		16 64		60	1	<b>0</b> ,0
GP8	70200	91	122,65	50,00	316,0	528,0		33,5	54,5	i	156 - 160	0,0		0,0	ΚV	-4	16 64	1		1	.0,0
TN4	78877	93	122,65	50,00	321,0	566,0	1	31,0	54,0	1	156 - 168	0,0	4	0,0	ΚV			3		1	0,0
GM6	70202	103	122,65	50,00	320,0	522,0	- 1	33,5	58,5	i	152 - 160	0,0		0,0	ΚV	L	16 52	1	f I	1	0,0
GU9	75349	104	122,65	50,00	318,0	520,0	1	34,0	56,0		152 - 158	0,0		0,0	ΚV	l l	16 63			1	0,0
48K	72435	110	122,65	50,00	309,0	533,0		30,0	56,0	)	160 - 166	0,0		0,0	κν		16 52	2 56	56	1	0,0
HEAT CODE	HEAT	ITEM	ļ l	MA	TERIAL IN AC	CORDANCE	TO		-		<b>}</b>	EAT TRE	ATMEN	(T	ł		FURNAC	E	ST	EEL MILL	Our Ref.
H14	79376	90	ASME SA	ASTM A	350-04a Gr.	LF2 cl.1			Nomi	alized a	t 900°C / A	ir Cool				ELE	CTRIC F	URNAC	E RIVA	ACCIAI	041298
H96	77285	90	1		350-04a Gr.						t 900°C / A					ELE	CTRIC F	URNAC	E RIVA	ACCIAL	051354
GP8	70200	91	1		350-04a Gr.						t 900°C / A					ELE	CTRIC F	URNAC	E RIVA	ACCIAI	041384
TN4	78877	93	ASME SA	ASTM A	350-04a Gr.	LF2 cl.1			Norma	alized a	ıt 900°C / A	ir Cool				ELE	CTRIC F	URNAC	E RIVA	ACCIAI	061083
GM6	70202	103	ASME SA	ASTM A	350-04a Gr.	LF2 cl.1			Norma	alized a	it 900°C / A	ir Cool				ELE	CTRIC F	URNAC	E RIVA	ACCIAI	031508
GU9	75349	104	ASME SA	ASTM A	350-04a Gr.	LF2 cl.1			Norm	alized a	t 900°C / A	ir Cool				ELE	CTRIC F	URNAC	E RIVA	ACCIAI	051212
48K	72435	110	ASME SA	ASTM A	350-04a Gr.	LF2 cl.1			Norma	alized a	t 900°C / A	ir Cool				ELE	CTRIC F	URNAC	E RIVA	ACCIAI	061490
1					ITD - ANSI B		1-	41	SPECTION	AUTOR	dTY Y	QUALITY	CONT	ROL DEPAR	TMENT I	MANUFAC	TURER'S	SYMBOL	MANU	ACTURE	R'S SYMBOL
i	CE MR017! ECIFICATIO				UPPLIED M TS	ATERIAL M	EETS						BORIS	S FIZZOTTI		FITTING	ss	ML	STU	IDBOLTS	$\otimes$



The Best Value Price, Quality, Service All The Time.

336425 LOG NO. _

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www.bonneylorge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 09/22/09

CUSTOMER'S Order No.:9115164-00

Bonney Order #600061033

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY

4103 - 84 AVENUE

EDMONTON, ABTABZZ3 Canada

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS. PHYSICAL PROPERTIES, REMARKS:
	<i>\\</i>		SA/A350-LF2 CL 1
044	25 5634	7690117	10 -6 X 1 3000 LF2 SBCK S C .220 MN 1.150 P .009 S .024 SI .190 NI .020 CU .002 CD .002 CR .040 MO .008 V .015 AL .018 NB .000 CE(LONG FORMULA) = 0.43 T/S 78518 Y/S 54271 EL 33.31 RA 68.19 BRINELL HARDNESS1: 141 HARDNESS2: 139 CHARPY: -50F 42.0, 78.0, 87.0 (FT/LBS) AVERAGE 69.0
	5677	29 7690117	10 -6 X 1 3000 LF2 SUCK S C

**** CONTINUED ON NEXT PAGE ****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks. Cris

Boozel

QUALITY PROCESS MANAGER

CMTR: REV 1



LOG NO. 336425 PAGE 18

BONNEY FORGE

P.O. BOX 330 • 14498 CROGHAN PIKE • MOUNT UNION, PA 17066-0330 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906 www.bonneylorge.com

Date 09/22/09

CUSTOMER'S Order No.:9115164-00

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY

4103 - 84 AVENUE

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Bonney Order \$600061033

QUALITY PROCESS MANAGER

EDMONTON, ABT6B2Z3 Canada

ITEM

QUANTITY LOT NO.

GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

- THE MATERIAL SUPPLIED IDENTIFIED AS A105GT WAS GUENCHED AND TEMPERED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REGUIREMENTS.
- 2. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
- 3. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
- 4. CERTIFYING ASTM A105-05 / ASME SA105-07 EDITION.
- 5. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REGUIREMENTS OF ASME SA350-LF2.
- 6. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
- 7. CERTIFYING TO ASTM A350 LF2 O7 REVISION.
- 8. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
- 9. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204: 2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
- 10. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-2007 AND NACE MR0175/ISO 15156.
- 11. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.

**** END OF CERTIFICATION ****

We certify that the data on this sheet is a true copy taken from our records of much and mished by the production mill, or as obtained by additional laboratory checks.

WESTLUND

Cris Boozel

CMTR: REV 1



LOG NO. 335892 PAGE 35

**BONNEY FORGE** 

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906 www.bonneytorge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 09/04/09

CUSTOMER'S Order No.:7823030

1 -

Bonney Order NGQ0059951

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY

4103 - 84 AVENUE

Sock-O-LET

EDMONTON, ABTAB273 Canada

	EDMONTO	N, ABT6B2Z3	Canada :
ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
2			SA/A350-LF2 CL 1
880	19 5744	1 7690128	12 -6 X 3/4 3000 LF2 SOCK S C .200 MN 1.030 P .011 S .023 SI .200 NI .040 CU .160 CO .004 CR .100 MO .010 V .000 AL .026 NB .018 CE(LONG FORMULA) = 0.41 T/S 76875 Y/S 54375 EL 30.45 RA 61.55 BRINELL HARDNESS1: 141 HARDNESS2: 139 CHARPY: -50F 56.0, 64.0, 41.0 (FT/LBS) AVERAGE 53.6
,	4 5743	7690117	10 -6 X 1 3000 LF2 SUCK S C .200 MN 1.030 P .011 S .023 SI .200 NI .040 CU .160 CD .004 CR .100 MD .010 V .000 AL .026 NB .018 CE(LONG FORMULA) = 0.41 T/S 76875 Y/S 54375 EL 30.45 RA 61.55 BRINELL HARDNESS1: 141 HARDNESS2: 139 CHARPY: -50F 56.0, 64.0, 41.0 (FT/LBS) AVERAGE 53.6
090	5 5744	1 7690128	12 -6 X 3/4 3000 LF2 SOCK S C .200 MN 1.030 P .011 S .023 SI .200 NI .040 CU .160 CD .004 CR .100 MD .010 V .000 AL .026 NB .018 CE(LONG FORMULA) = 0.41 T/S 76875 Y/S 54375 EL 30.45 RA 61.55 BRINELL HARDNESS1: 141 HARDNESS2: 139 CHARPY: -50F 56.0, 64.0, 41.0 (FT/LBS)

**** CONTINUED ON NEXT PAGE ****

We certify that the data on this sheet is a true copy taken from our North of hate ial fur portion mill, or as obtained by additional laboratory checks.

WESTLUND

Cris Boozel

AVERAGE 53. 6

CMTR: REV 1 QUALITY PROCESS MANAGER

10×2

LOG NO. F0000000005497



The Best Value -Price, Quality, Service All The Time.

BONNEY FORGE CORPORATION

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(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

**DATE** 08/24/2010

CUSTOMER

BONNEY ORDER NO. B000080442

ORDER NO.: 9115620-00

SHIP TO: WESTLUND INDUSTRIAL SUPPLY

4103-84 AVENUE

EDMONTON AB T6B2Z3

CANADA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
44 7692070	25	57990	31/2-3 X 1 3000 LF2 THRD T SA/A350 LF2 CL1  A1 0.022 C 0.220 Cb 0.000 Co 0.030 Cr 0.030 Cu 0.070 Mn 1.020 Mo 0.010  Nb 0.014 Ni 0.020 P 0.008 S 0.023 Si 0.290 Sn 0.010 V 0.004  CE(Long Formula) = 0.40  T/S 75,000 Y/S 53,750 EL 27.15 RA 56.75  Brinell 130 BHN 132 BHN  Charpy -50 F 40/31/67 (Ft-Lbs)
46 ··· ) 0117	25	58038	Average 46.00  10 -6 X 1 3000 LF2 SOCK S SA/A350 LF2 CL1  Al 0.021 C 0.210 Cb 0.000 Co 0.004 Cr 0.040 Cu 0.140 Mn 1.000 Mo 0.010 N 0.005 Nb 0.013 Ni 0.040 P 0.008 S 0.018 Si 0.210 Sn 0.010 V 0.004  CE(Long Formula) = 0.40  T/S 72,500 Y/S 49,375 EL 33.65 RA 65.85  Brinell 137 BHN 135 BHN  Charpy -50 F 45/19/36 (Ft-Lbs)  Average 33.30

VERIFIED BY

We certify that the data on this sheet is a true copy taken from our records of material rnished us by the production mill, or as obtained by additional laboratory checks.

Trudy Smith by

TRUDY SMITH

**QUALITY PROCESS MANAGER** 

CMTR: REV2

### CERTIFIED MILL TEST REPORT

**LOG NO.** F0000000005497

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(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

**CUSTOMER: WESTLUND INDUSTRIAL SUPPLY** 

**DATE** 08/24/2010

**CUSTOMER** 

BONNEY ORDER NO. B000080442

ORDER NO.: 9115620-00

SHIP TO: WESTLUND INDUSTRIAL SUPPLY

4103-84 AVENUE

**EDMONTON AB T6B2Z3** 

CANADA

QUANTITY LOT NO. ITEM

GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

- 1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
- 2. CERTIFYING TO ASTM A350 LF2 07 REVISION.
- 3. THE MATERIAL SUPPLIED IDENTIFIED AS A 105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
- 4. THE MATERIAL SUPPLIED AS A105N MEETS THE REQUIREMENTS OF BOTH NACE MRO103-2007 AND NACE MRO175/ISO 15156-2.
- 5. CERTIFYING ASTM A105-09 / ASME SA105-07 EDITION.
- 6. THE MATERIAL OF THE FITTINGS SUPPLIED IS ASTM A350-LF2 BUT MEETS THE REQUIREMENTS OF ASME SA350-LF2.
- 7. THE CHARPY V-NOTCH IMPACT TEST WAS PERFORMED AT -50 DEGREES FAHRENHEIT IN ACCORDANCE WITH A350-LF2.
- 8. THE MATERIAL SUPPLIED WAS NORMALIZED IN ACCORDANCE WITH ASTM A350 HEAT TREATING REQUIREMENTS.
- 9. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
- 10. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.
- 11. ITEM 22, 23 -THE MATERIAL SUPPLIED IDENTIFIED AS A105QT WAS QUENCHED AND TEMPERED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.

/ERIFIED BY

We certify that the data on this sheet is a true copy taken from our records of material urnished us by the production mill, or as obtained by additional laboratory checks.

TRUDY SMITH

QUALITY PROCESS MANAGER

rudy Smith

CMTR: REV2





#### 5.3 CWB Letter of Validation



# LETTER OF VALIDATION

SEP 2 2 2019

The CWB acknowledges that

### Gem Steel Edmonton Ltd.

9060 24 Street, Edmonton, AB T6P1X8

is certified to CSA Standard W47.1
"Certification of Companies for Fusion Welding of Steel"

in DIVISION 3

for the period September 13, 2010 to October 18, 2011

Company Code: GEMST1

Scope: Fabrication of above ground steel storage tanks.

Registrar





8260 Parkhill Drive, Milton, Ontario L9T 5V7 1-800-844-6790 | Int: 905-542-1312 | Fax: 905-542-1318 Email: Info@cwbgroup.org | Web: www.cwbgroup.org





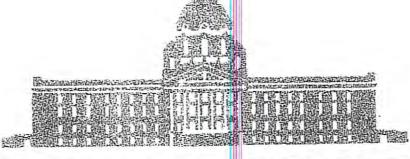




#### 5.4 Welder Certification

012/840246

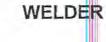
86558A



THIS IS TO CERTIFY THAT

### ALLAN COLIN GARSIDE

HAS COMPLETED AN ALBERTA APPRENTICESHIP PROGRAM AND HAVING ACHIEVED THE STANDARDS ESTABLISHED UNDER THE ALBERTA APPRENTICESHIP AND INDUSTRY TRAINING ACT, IS HEREBY AUTHORIZED TO WORK IN THE TRADE AS A JOURNEYMAN AND TO USE THE TITLE CERTIFIED JOURNEYMAN



October 4th, 2007

ISSUE DATE October 17th, 2007



Honourable Doug Horner, Minister of Advanced Education and Technology Shirley Dul, Executive Director of Apprenticeship & Industry Training

C1-331 of 486





Welder Qualification
This card to vasid only white employed by a GWB certified company.
Transferable Welder

Name: ALLAN C. GARSIDE Exp. Date: Feb 25, 2013
Employer: Gem Steel Edmonton Ltd., Edmonton, AB
Thickness Range: 3mm & above Malerial: Garbon Steel
Process: SMAW
Wode: MANUAL Standard: GSA W47.1
Classification: S
Electrodes F4



petroleum Safety Training e



Brian Nielsen Expires: Sep 16, 2007

2007 PST

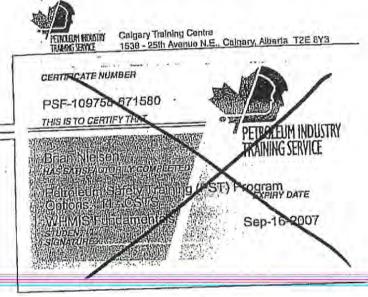
Petrole in Industry Galning Service

Re: Certification for Class Number 109758

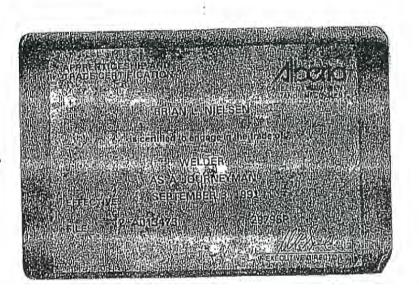
Attached is a certificate for Brian Nielsen for the Petroleum Safety Training (PSF) taken on September 23, 2084.

The Certificate number is PSF-109758-671580

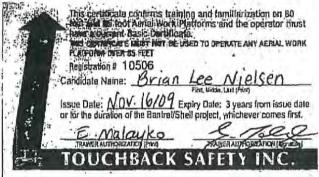
FINE IMPORTANT: TERMS OF CERTIFICATE ON REVERSE • PLEASE SIGN CERTIFICATE

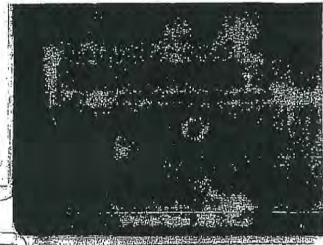


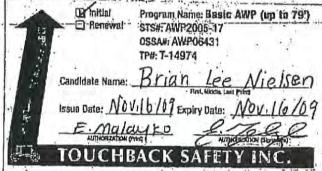




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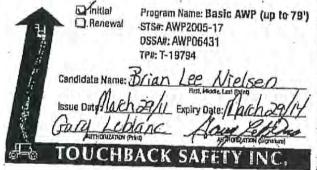


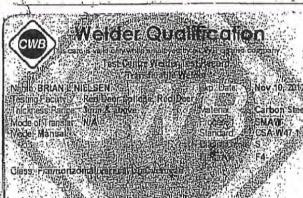




Alberta Construction Safety Association This is to certify that Construction Safety Tra 2062085

Brent Schweider Program Coordinator, ACSA





att

ACT 17116 201-55-5018 (141) 12-14

JÚL-2010 17:51 FROM: A&J MINI MART 7096622322

Newfinisialand Labrador

Odvintensky of Mendacidatis and Lestoner Department in Edwardan Soduction Forting Cestion

This is to CENTIFY that. Bruce W. McCarthy

la inatioidat of a CERTIFICATE OF QUALIFICATION

hine Welder

(Trada Depubation)

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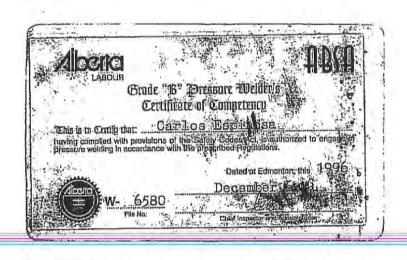
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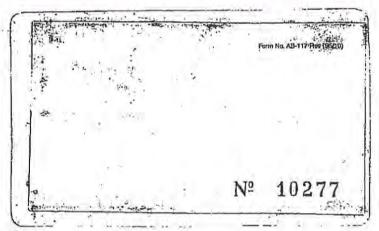
I.H.No. A-22-31006

Original Insubs06/23/2018

Esping 12/31/2011

-6 SH MUSICAL Director





Carlos Espinosa # CB 6870 jouneyman ticket#





This Certifies That Gaudet. Christopher

Has Successfully completed WHMIS Training

April 26,2010 Certification Date

Employee Sighature

April 26,2013 Next Training Date

Employer Signature



# ly while employed by a CWB ce Transferable Welder

Name: LEO M. PARADIS

Exp. Date: Feb 12, 2013

Employer: Gem Steel Edmonton Ltd., Edmonton, AB

Material: Carbon Steel

3mm & above Thickness Range:

Process: FCAW/MCAW

Mode: SEMI-AUTO

Single Electrode Mechanized

Standard: CSA W47.1 Classification: S

Single Electrode Automatic

Class: FLAT/HORIZONTAL/VERTICAL UP

See Reverse for Conditions



# Welder Qualification This part is void only white employed by a CWA certified company Transferable Welder

Name: LEO M. PARADIS

Exp. Date: Feb 12, 2013

Employer: Gem Steel Edmonton Ltd., Edmonton, AB Thickness Range:

Material: Carbon Steel

3mm & above

Process: SMAW

Mode: MANUAL

Standard: CSA W47.1

Classification: S Electrode: F4

Class: FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD

See Reverse for Conditions

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# **Welder Qualification**

Transferable Welder

Name: MARK L. KINZEL

Exp. Dele Feb 12, 2013 Employer: Gem Steel Edmonton Ltd., Edmonton, AB

Malerial: Carbon Steel

Thicknes Range: 3mm & above

Process: FCAW/MCAW

Slandard: CSA W47.1 Classification: S

Mode: SEMI-AUTO

Single Electrode Mechanized : Single Electrode Automatic

Class: FLAT/HORIZONTALIVERTICAL UP

See Reverse for Conditions



Mode: MANUAL

# Welder Qualification This card is valid only while concluyed by a CWG cordinal company Transferable Welder

Name!" MARKIL KINZEL

Exp. Dale: Dec 29, 2012

Employer: Gem Steel Edmonton Ltd., Edmonton, AB Thickness Range:

3mm & above

Malenal: Carbon Steel Process: SMAW

Slandard: CSA W47.1 Classification: S

Electrode: F4

Class. FLAT/HORIZONTALIVERTICAL UP/OVERHEAD

See Reverse for Conditions



### Welder Qualification

This card is valid only while employed by a CWB-certified compl Transferable Welder

Name MARK L KINZEL

Exp. Date:

Feb 25, 2013

Employer: Gen Steel Edmonton Ltd., Edmonton, AB Thickness Range: 3mm & above Mater

17-1

Material Carbon Steel

3mm & above

Mode: SEMI-AUTO

Process: FCAW/MCAW

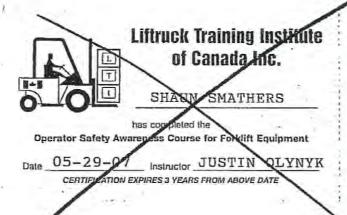
Single Electrode Meghanized Single Electrode Automatic

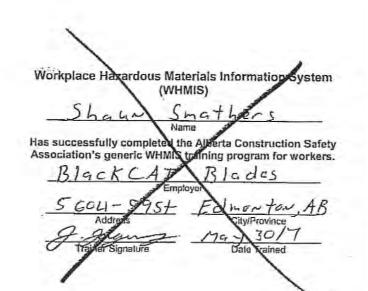
Standard: CSA W47.1

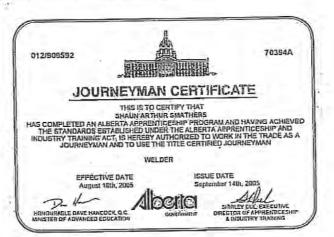
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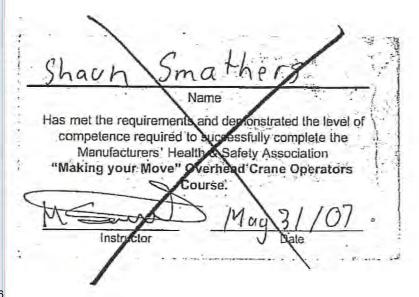
Class: FLAT/HORIZONTAL/VERTICAL UP/OVERHEAD

See Reverse for Conditions











# WELDING SUPERVISOR CERTIFICATE

Presented to

### STEVE F DAVIES

For successfully completing the Welding Supervisor Examinations as required by CSA Standard W47.1

Valid while employed with

Gem Steel Edmonton Ltd.

Authorized Signature



# Certificate of Qualification

# This is to certify that

### Steven Pred Davies

having complied with the Apprenticeship, Trade and Occupations Certification Act and regulations, has qualified at the Journeyman Level in the Trade of

# Welder

Transfer from Alberta Certificate of Qualification #CA5655 Issued July 4, 1978 ate: November 14, 2000

Certificate No: 1364-12

Apprenticeship, Trade and Occupations Certification Board

C1-349 of 486 are Dotte

APPROXIMENTATION



STEVE F. DAVIES

CRAME AND HOISTING EQUIPMENT
OPERATOR (MOBILE CRAME OPERATOR)
AS A JOURNEYMAN

EFFECTIVE:

JULY 13, 1987

FILL

34-1J000336C

22185P

Action Town

weep drawn as he with



STEVE F DAVIES

re-ambled to originge to the trade of

AS A JOURNEYMAN

JULY 13, 1967

SFELT.TIVE

FAL

Steve Thuies

34-3600335C

54730

A character

Alberta

APPRENTICESHIP AND TRACE CERTIFICATION ERMAN

THIS IS TO CERTIS THAT

Steven Fredrick DAVIES

HOLDS A CERTIFICATE OF PROFESSION OF AS A AM Welder - First Class DATE July 4th, 1978, CA5655 FRE 3543/12

C1-351 of 486

THE PARTY OF STATE AND ADDRESS OF STREET



STEVE F. DAVIES

is certified to engage in the trade of
CRANE AND HOISTING EQUIPMENT
OPERATOR (TOWER CRANE OPERATOR)
AS A JOURNEYMAN

EFFECTIVE:

JULY 13, 1987

FA.C 34-2J000336C

221869

May an

26.54188

m74J

THIS IS TO CERTIFY THAT

STEVE P DAVIES
HAVING ADHIEVED THE STAIDAING ESTABLISHED UNDER THE ALBERTA APPRENTICESHIP AND INCUSTRY TRAINING ACT, IS REFEEY AUTHORIZED TO ENSAGE IN THE TRADE AS A CERTIFIED JOHRNEYMAN

EFFECTIVE DATE ISSUE DATE
AUGUST 10TH, 199) SEFTEMBER 16TH, 1993

J. W. Say

MACK WHIT MASSILLER ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED TO THE ASSESSED T

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TALE NO SEASOT

FOR THE TRADE OF Welder

HOLOŞ A CARTIFICATION OF APPRENTICESHIP

THIS IS TO CERTE'S THE STEEL DAVIES

BHANCH

957.75 PS

Agreement of a

1 6 77.23

SRAISCH ...

AWARDED CERTIFICATE PROFICIENCY # CA5665

NADIAN INTERPROVINCIAL NOT AVAILABL



APPRENTICESHIP AND TRADE CERTIFICATION

THIS IS TO CERTIFY THA

THIS IS TO CERTIFY T Stoven Fredrick DAVIES

HOLDS A CERTIFICATE OF PROFICIENCY AS A/AN Welder - First Class MATE July 4th, T978No. CA565 FUEL 3543/12

DIRECTOR

APPRENTICESHIP AND TRADE CERTIFICATION BRANCH

THIS IS TO CERTIFY THAT Steven Fredrick DAVIES

HOLDS A CERTIFICATE OF COMPLETION OF APPRENTICESHIP FOR THE TRADE OF WORLD' DATE JULY 4, FILE NO. 3543/12

__ DATE JULY 4 1978

FILE NO.

(OVER)





#### 5.5 Tank Traveller

			TANK TE	RAVELL	ER		SECTION 20		
TRAVELLER STARTED BY:					DATE STARTED:			SHOP ORDER NUMBER:	
STANDARD: API 650 latest Edition					SERIAL No.: GEM-2011-4				
SIZE: 84'diameter x 32' high					TANK IDENTIFICATION No.: 7000-Tk001				
CUSTOMER: Baffinland Iron Mines					DRWG No.: 1 Th	HRU 3 F	CRN:		
		No.: H337697-CM0	10	REF. No.:					
COMPONENT MATERIAL & SPECIF			ED THICKNESS COM		MPANY INSPECTOR		ATE CU	CUSTOMER INSPECTOR DAT	
FLOOR 1/4" - 260 WT		Kedl		Hopkins		+11h 4	HATCH SAIL		
FIRST COURSE 5/16" - 260 WT			Kertht	tookin			470/1		
SECOND 1/4" - 260 WT			Kexh H	opkin	Scot 13 H		Arch DIA	16013	
THIRD COURSE 1/4" - 260 WT			Keth Hookin			the			
FOURTH 1/4" - 260 WT		1/4" - 260 WT	Keith				TK		
ROOF 3/16" - 260 WT			Kesi H	lopking	5	121			
OP No.	INSPECTION OR TEST POINTS		DATE	COMPANY (	QC INITIAL	CUSTOMER INSPECTOR	INITIAL		COMMENTS
1	REVIEW DOCUMENTATION		Scot 8	Kenth Hook	~ Kis				
2	EXAMINE DWGS - CALCS		Score	KiHIX					
3	REVIEW FLOOR INPSECTION REPORT		Sastas	Kent Hoo	Ki Kin				
4	FLOOR TO SHELL FIT		SeptB	KithHook	KH	HAELI	the		
5	FLOOR TO SHELL WELD - OIL PENETRENT TEST		Sent 14	K. H. Hop	Cor No.	Hatch	WA	WC.	
6	FIRST TO SECOND COURSE ASSEMBLY		5-+14	Kithto	Kny KH	THULL			
7	CECOND TO THIRD COURCE		Scotle	Kith Hook	Led .				
8	THIRD TO FOURTH COURSE		Spot 19	Y WHAV	in KN				
9	_ ^		50323	Kand Hod	KY City	-		M,C.	
12	NDT FIRST COURSE		Den 18	94.0	12.	HAtch		MC	
13	NDT SECOND COURSE INCLUDING FIRST HORIZONTAL		Sep 185	It is	32	Hotch		mc	
14	NDT THIRD COURSE INCLUDING SECOND HORIZONTAL		1/20/18	Stone	67	Hatch		mc	
15	NDT FOURTH COURSE INCLUDING THIRD HORIZONTAL		HOOKS"	20	017	Itatch		m.C.	
18	LAYOUT & CUT OPENINGS		2	Vanillar	. Vh	1 alch		III. C	
19	TACK WELD FITTINGS AIR TEST REPADS		5+23	Keith Hope		Hatch		MC	
20	ROOF FITTING ORIENTATION		50+22	KANTON		Hicke		MI	
21	LADDER/STAIRS/LANDINGS		22.33	Keth Hook	VII	Latel		m.C	
22	INTERIOR SURFACE PREP FOR LINING (GRINDING ETC.)		501 20	Kahlla	600 101	Hatec		m.C	
23		un Shell	50t 21	Kodi Holis	KA	Hatch		M.C	
24		NTATION PREPARED	Supper	The Do		1-1-1-	THE STATE	7.11.10	
25	OVERALL	VISUAL	Sec 27	3020	r.	Hatch		m.c	
26	INSTALL	NAMEPLATE	Sofay	Kethlook	KA ch	Hatch		mc.	
REMARKS:			Kedhtkopki	VA	HOEL	PTED COMPLE	TE: HATC	H	
	ANY REVIE	WBY: Marlon	Coally		DATE: Sup		CLOSED OUT		





### 5.6 Inspection Reports

		FLOOI	R INSI	PECTI	ON	REP	ORT		SH	IOP C		TON 20 NUMBER:
OD	E OR STANI	DARD: API 6	50 latest Ec	lition		TANK	lo.: GEM-2	.008-3			THE LITT	TOTALDER
IAI	METER: 84' -	- 6"				IDENTII	FICATION N	lo.: 7000-T	k001			***************************************
US	гомек: Baf	finland Iro	n Mines			DRWG	No.; 1 THRU	3 REV.	: В		CRN:	
US	TOMER'S P.C	No.: H3376	97-CM010	)		REF. No	.:					
	RT/ITEM	MATERIA 260 WT	77	SPECIFIED THICKNES		2000	KNESS	FLOOR IN REPORT I			Van	Hankin
		260 VV I		*/4			/4					
								REV, DAT	E			
								REV DAT	E			
0		ON OR TEST INTS	DATE	INITIAL		MPANY C INSP.	INITIAL					COMMENTS
-	MATERIAL CO		Sept 11	KN	9.1	Adr	State					
+	CHECK FLOO	OMPONENTS,	Se4.15	N.A.	8 4	ATCh	DA			-	-	
-	CHECK ALL V	DEST EXTENSIVE.	DeptH	KH	712	alch	04			-		
+	VACUUM TES		25432	KN	LIA	TCh	M.C			-		
	SURFACE PRI LINING (GRIN		2431	)(h		ATCH	M.C					
-	OVERALL VIS		Sepas	K#		ATCh	MC					
)												
2										-		
3					-					-		
4												
5												
6							- 1					
ЕМ	ARKS:					c	USTOMER A	ACCEPTED (	COMPLET	re:_ <b>/</b> -/	ATO	Н

EPORTAN		I 650 latest Ec	lition	SHELL COURS	E Na d					
AMETER: 84'	And the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s		шоп	and the second second second		.: 7000-Tk001				
		ron Mines	-	DRWG No.: 1 T	_	1		CRN:		
The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s		7697-CM010	)	REF. No.:	111100	1,0,00		Citati		
DMPONENT	MATERIA	SPECII	FIED	THICKNES	S	James Co. Carley	0.35			
ART/ITEM	260 WT	THICK		5/16"	N	SHELL INSPECT		Keith	Hopkins	
						ISSUE No.		REV	/	
						REV. DATE				
VERTICALS	ASSEMBLY	FIT UP APPROVED	DATE	WELD INSIDE APPROVED BY	DATI	OUTSIDE AP		DATE	WELD OUTSIDE	DA
VERTIC	CAL # 1	KeithHopkin	Se 18	Kathtopkins	Settle		1	Sofia		Scott
VERTIC	CAL # 2	A	1			14		1		M
VERTIC	CAL #3					1				1
VERTIC		1	1					1		
VERTIC	CAL # 5	Kithtoplin	Septi	Keithtykin	Senti	Y Kin Hox	-1	Septia		Sept
VERTIC	CAL#6	Arani Lyans	141	Ve is to I was		4. Ventri pite	`	21.7		Sedi
VERTIC	CAL # 7							-		
VERTICAL	TESTING &	SWEEP	DATE	FINAL FINISH	DATE	s NDT		Dim		
INSPE	CTION	BOARD	0.100	APPROVED BY	DATI	APPROVE	ED BY	DATE	APPROVED BY	DA
VERTIC		Koth Hogkin	Sopt 18	Koith Hopkins	Seat Y	& Stre le	>	4145	M.C	70
VERTIC	CAL # 2	1	1	1	1					
VERTIC	CAL #3									
VERTIC	CAL # 4									$\Box$
VERTIC	CAL # 5	Kay Hopen	CUICA	Keith Hookins	CAR	4				Ħ
VERTIC	AL#6	VCH Della	XQ117	Keitz Haglen	Sout 19	J		1	1 2	
VERTIC			-		-			-	DO	+
VEKTIK	-AL# /							85027	m'c.	Sci
FIRST CO		ROUNDNESS	DATE	GAP	DATI	SWEEP FOR		DATE	CHECK FLOOR	DA
FLOOR A	SSEIVIBLY	APPROVED	Sam	APPROVED BY	( )	APPROVE	1-4	Sila	ELEVATION	
MARKS:		Kithtophia	Septh	Krith Hogkin	Scot F			7/2 /2	Kithyloxia	Sag
HATCE					C0310	OMER ACCEPTE	D COMI	reie:		

#### SECOND SHELL COURSE INSPECTION SECTION 20 SHOP ORDER NUMBER: REPORT CODE OR STANDARD: API 650 latest Edition SHELL COURSE No.:2 DIAMETER: 84'diameter x 32' high IDENTIFICATION No.: 7000-Tk001 CUSTOMER: Baffinland Iron Mines DRWG No.: 1 THRU 3 REV.: B CRN: CUSTOMER'S P.O No.: H337697-CM010 REF. No .: COMPONENT SPECIFIED MATERIAL THICKNESS PART/ITEM THICKNESS SHELL INSPECTION REPORT PREPARED BY: Ke. IL Hoghin 1/4" 260 WT 1/4" ISSUE No. _____ REV. ____ REV. DATE ____ REV DATE FIT UP WELD INSIDE DATE GOUGE WELD OUTSIDE VERTICALS ASSEMBLY DATE DATE DATE DATE APPROVED BY APPROVED OUTSIDE APPROVED APPROVED BY VERTICAL # 1 Sept 14 2014 KethHapkin Kuti Hooks VERTICAL # 2 VERTICAL #3 VERTICAL #4 **VERTICAL #5 VERTICAL #6** Kathleyn. Sopt 14 Keith Hon VERTICAL # 7 Scott Kethadh Kash Hogk Seatty VERTICAL TESTING & SWEEP FINAL FINISH DATE DATE DATE DATE APPROVED BY INSPECTION BOARD APPROVED BY APPROVED BY VERTICAL # 1 Sopt 14 Ket Hooking Keith Hogking cot Hopkin Scot 14 VERTICAL # 2 VERTICAL #3 VERTICAL #4 VERTICAL #5 VERTICAL # 6 VERTICAL #7 KithHadle Soft KethHadlen Soft 14 SECOND COURSE TO ROUNDNESS SWEEP FOR PEAKS GAP DATE DATE DATE DATE APPROVED BY FIRST COURSE APPROVED APPROVED BY APPROVED BY CUSTOMER ACCEPTED COMPLETE: REMARKS: 27 /26 // CLOSED OUT BY:

# THIRD SHELL COURSE INSPECTION REPORT

SHOP ORDER NUMBER:

and the second second second		650 latest Ed	lition	SHELL COURS	SE No.:3				
DIAMETER: 84'				The second second second second		.: 7000-Tk001			
customer: Ba				DRWG No.: 17	THRU 3	REV.: B	CRN:		
CUSTOMER'S P.	O No.: H33'.			REF. No.:					
COMPONENT PART/ITEM	MATERIAL	THICK	NESS	THICKNES	s	SHELL INSPECTION REPORT PREPARED BY	. V .w	Mak'	
	260 WT	1/4"		1/4"					
						ISSUE No.	RI	BV	
						REV. DATE			
					-				
						REV DATE			
VERTICALS	ASSEMBLY	FIT UP APPROVED	DATE	WELD INSIDE APPROVED BY	DAT	DATE GOUGE OUTSIDE APPROVED	DATE	WELD OUTSIDE APPROVED BY	DAT
VERTIO	CAL#1	Keth Hapkin -	50016	Kith Hopkins	Sorth	KithHopkin	Sooth	KeilhHopkins	Sort
VERTIC	CAL # 2	1	A.	A	1	1	7	1	T
VERTIC	CAL#3								++
22.7.7			-		11		-		++
VERTIC	CAL # 4								
VERTIC	CAL # 5	+ 1		<b>S</b>					
VERTIC	CAL # 6				-		11		11
		1	1	1	1	1	4	1	V
VERTIC	CAL # 7	KethHopkin	Scottle	KC.ALHOZVIV	Seatil	Keith Hopkin	Soot 16	Keith Hookin.	Scy
	TESTING &	SWEEP BOARD	DATE	FINAL FINISH APPROVED BY	DAT	E NDT APPROVED BY	DATE	APPROVED BY	DA'
	CAL#1					MA -	the set of the	M A C	2 . 4
		Kathtopkin	Septe	Kishtopkin	Je411	o Ster Doris	Mari	Madring	Pay
VERTIC	CAL # 2		1	1	1				N
VERTIO	CAL # 3								
VERTIC	CAL # 4								
VERTIC	CAL # 5								
	CAL # 6		-		1		x /	21 21	201
		4	1	1	1		-46	Mailorteg	Sylt
VERTIO	CAL#7	KethHopkin	Sept 16	Ko-Hiltopkii.	South			100	1
TUIDO	OURSE TO	ROUNDNESS		CAR		SWEEP FOR PEAKS			
	COURSE	APPROVED	DATE	GAP APPROVED BY	DAT	APPROVED BY	DATE	APPROVED BY	DA'
		KeitHeth	Scatile	Kethwels	Sort	6 Kith Hepkin	Scale		
	-	- Autor	-191.0	CALINA	1	- Marian -	-0/114		-
REMARKS:  HATCE			D	ATE: Softs		OMER ACCEPTED COM			

DE ORSTAN	DARD: AP	I 650 latest Ed	lition	SHELL COURS	E No.:4				
ameter: 84'	diameter >	32' high		IDENTIFICATI	ON No	:: 7000-Tk001			
JSTOMER: Ba	ffinland l	ron Mines		DRWG No.:1 T	HRU 3	REV.: B	CRN:		
	0 No.: H33	7697-CM010		REF. No.:					
OMPONENT PART/ITEM	MATERIA	L SPECIF		THICKNES	0.	SHELL INSPECTIO	N I	75 V	
	260 WT	1/4"		1/4"		REPORT PREPARE	DBY: Kent	Hoskin	
						ISSUE No.	R	EV	
						REV. DATE			
					-				
						REV DATE		T	,
VERTICALS	ASSEMBLY	FIT UP APPROVED	DATE	WELD INSIDE APPROVED BY	DAT	E DATE GOUGI OUTSIDE	DATE	WELD OUTSIDE APPROVED BY	DAT
VERTIC	CAL # 1	Keith Hopkin	50019	Korth Hopkins	Sept		P145	Keithttopkin	Scot
VERTIC	AL#2	Very upbew	-Cári	ACRES I OFFINA	V.	1 Sent Hopein	XIII	VENDIEBEW	1
VERTIC				1	1		1		
1,000,000	73- 23		+		++	-			++
VERTIC			$\perp$		1				11
VERTIC	CAL # 5								
VERTIC	CAL#6	1	1	7	1	1	1	1	1
VERTIC	CAL # 7	KethHajkin	SCAR	Koth Hopkin	Soft	9 Keth Hopkin	Sentia	KeithHopkins	Scott
VERTICAL INSPE		SWEEP BOARD	DATE	FINAL FINISH APPROVED BY	DAT	E NDT APPROVED B	y DATE	APPROVED BY	DAT
VERTIC	CAL # 1	KeakHopkins	Scott 9	Keth Hopkins	Sort	Toler Davi	240+25	Marly Cart	Sil
VERTIC	AL#2	1	1	1	1			0	1
VERTIC	AL#3								1
VERTIC	A1 #4				++			1	+
VERTIC	7 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		1		++	-			+
			1		+		1/	Δ1 a b	6
VERTIC	CAL # 6	V	1	1	1		W	Mark Cus	Seff
VERTIC	CAL # 7	Keth Hopkins	Sex19	Keth Hopkins	Sestl	4			,
FOURTH C		ROUNDNESS APPROVED	DATE	GAP APPROVED BY	DAT	SWEEP FOR PEA APPROVED B		APPROVED BY	DAT
Keth Hook	7	KH	Sept 19	SE KHIHON	Seat	1.0	50019		
EMARKS: HATCH		on Coal		011		OMER ACCEPTED			

to the second state of		272-212	100000000000000000000000000000000000000	REPORT	L'		SHO		NUMBER:	
ODE OR STAN	dard: AP	I 650 latest Ed	lition	1111111111111						
DIAMETER: 84'	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s			IDENTIFICATI			001			
ustomer: Ba				DRWG No.: 1 T	HRU 3	REV.:	В	CRN:		
USTOMER'S P.	O No.: H33	7697-CM010		REF. No.:						
COMPONENT PART/ITEM	MATERIA	L SPEC		THICKNESS	5	SHELL INS	DECTION			
ANGLE IRON	A36 / 44W			3/8"	_	REPORT PI	REPARED I	BY: KON	of Hooking	
WOLL WOLL	12 50004, 1205,177		2	,57 = ,					12.00	
		-			-	ISSUE No.		F	REV	
				-	-	REV. DATE				
		_	-		-					
						REV DATE		,	T	
INSPECTIO POI		APPROVED	DATE	OTHER INSPECTIONS	DA		THER ECTIONS	DATE	OTHER INSPECTIONS	D
HORIZO	ONTAL	IZ A A A A	0	INOI DETICINO		11451	Lenons		M · C	1
ASSEMBLY		Bethlopkin	Dorte		-	-		-	I'lack lyg	Ap
JOINT AS		Keth Hopkins	Scotab						0	\
WELDING		Kallellar	Scotio							
WELDING	OUTSIDE	Variables	0							
HORIZO		Kerth Hopker	7 470					-		-
WELDING		Keith Hopkin	5050							
ROUNI		KithHapkin	Segrao						Marklow	. Do
ROOM	. 1200	Vetriens	3,00						Many A	1
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ECTION OR TEST POINTS IAL CONDITION FIT-UP WELDING	on Mines 697-CM010 SL STI		IDENTII DRWG N REF. No SIZ THIC	No.: 1 THRU	lo.: 7000-Tk00	TION PARED BY	REV	
Baffinland Ir S P.O No.: H337 M MATERIA 260 W  ECTION OR TEST POINTS IAL CONDITION  FIT-UP  WELDING	DATE	PECIFIED HICKNESS 3/16"	DRWG N REF. No SIZ THIC	No.: 1 THRU .: TE OR TKNESS	REV.: B  ROOF INSPECT REPORT PREFINANCE ISSUE No  REV. DATE	TION PARED BY	Y: Korth	
S P.O No.: H337  MATERIA  260 W  ECTION OR TEST POINTS  IAL CONDITION  FIT-UP  WELDING	DATE	PECIFIED HICKNESS 3/16"	REF. No SIZ THIC 3/	E OR KNESS	ROOF INSPECT REPORT PREFORM ISSUE No REV. DATE	ARED BY	Y: Korth	
AT MATERIA  260 W  260 W  ECTION OR TEST POINTS IAL CONDITION  FIT-UP  WELDING	DATE	PECIFIED HICKNESS 3/16"	SIZ THIC 3/	E OR KNESS	REPORT PREF ISSUE No REV. DATE _	ARED BY	REV	- 1
260 W' 260 W' 260 W' ECTION OR TEST POINTS IAL CONDITION FIT-UP WELDING	DATE	HICKNESS 3/16"	THIC 3/	KNESS	REPORT PREF ISSUE No REV. DATE _	ARED BY	REV	- 1
260 W' ECTION OR TEST POINTS IAL CONDITION FIT-UP WELDING	DATE	3/16"	3,		REPORT PREF ISSUE No REV. DATE _	ARED BY	REV	- 1
ECTION OR TEST POINTS IAL CONDITION FIT-UP WELDING	DATE			10	ISSUE No		REV	- 1
POINTS IAL CONDITION FIT-UP WELDING	50401	INITIAL	COMPANY		REV. DATE _			-
POINTS IAL CONDITION FIT-UP WELDING	50401	INITIAL	COMPANY					
POINTS IAL CONDITION FIT-UP WELDING	50401	INITIAL	COMPANY		PEVDATE			
POINTS IAL CONDITION FIT-UP WELDING	50401	INITIAL	COMPANY		KEY DATE			
IAL CONDITION FIT-UP WELDING	25		OC INSP.	INITIAL				COMMENTS
WELDING	25	KH	Hatch	M.C				
7	Deat 25	KH		MC.				
and a second second of the second second	5-124	44		m.C				
IM TEST WELD	MA			m.c				
R LAYOUT & LATION	500+21	KH		MC				
GLAYOUT	Scot 23	KH		MC				
LL VISUAL WELD TION	YERR	KH	17	M.C				
LL VISUAL	50+24	KA	A	M.C				
R/STAIRS/PLATE	5,00	KH	Hatch	MC				
	7,3000							
						-		
		*		A	ACCEPTED COM	IPLETE:_	HA TO	H
	M	By. Maila Call	By. Marla Cally DAT	Marla Calle Date	BY: Marla Coolly DATE: Latt 27/20/			BY: Mala Coolly DATE: Latt 27/20// CLOSED OUT BY:





### 5.7 Fuel Storage Tank Installation Check List

C1-367 of 486





BAFFINLAND IRON MP - MARY RIVER IRON ORE PROJECT/MIL CONTRACT	NE INLET ! H337697	FUEL SYS				
QUIPMENT: API 650 Storage Tank DATION: Baffin Island, Nunavut D. NO.: T-001	MANUF/ MODEL: PRODUK		t:	Gem - Steel N/A DIESEL		
EM# DESCRIPTION	CHECK	DATE	INITIALS	CONTRACTOR	CONSULTANT	COMMENTS
Name plate details as per API 650 data sheet & specifications.	14,					111.0
2 Tank internals are clean, free of debris and water.	W	1		1		m.c
3 All access stairs and platforms are complete.	W	1				/II.C
All required external and internal welding to tank shell, floor plates, roof plates have been completed and tested as per API 650 requirements.	1	1		X		m.c.
5 All internal bolting and torque completed to specification.	2	1		100		M.C
All external boiling and torque completed to specification.	V	W		1		M. C
7 All internal piping installed as per engineering drawings and specifications.	1/	1				m.c
8 Water draw off piping / unobstructed.	1/	1				m.c
All Internal flanged connections have the correct nuts, bolts and gaskets as per the engineering drawings and specifications.	V	8		-		M.C
10 Roof vent, level transmitters and roof gauge hatches installed		M.		de		111, 0
11 All required NDE has been complete and back up documentation has been received/approved.	V		,	7,		M.C.
12 Pipe connections aligned and supported as per engineering drawings.		1448		Adco	mile	-1/0
All tank trim installed as per engineering drawings and manufacturer's instructions.	N/A	70/9	NA	N/A	N/A	20/14
14 Valve inspection / lockout on all connections.						
All internal and external tank instrumentation installed as per engineering drawings & specifications.		1		1.		1
All external flanged connections have the correct nuts, bolts and gaskets as per the engineering drawings and specifications.	1	19		8 0		ett
17 Clearance lights installed on Tank as per engineering drawing and specifications.		4		3 2		
18 Confirm grounding connections		S		1 (5		Brog
ITEM DATE	INITIAL			Eau	ipment Ch	nacklist#





### 5.8 Radiographic Testing Report

	ISO 900	1:2000							-		<del>-</del>									
ACUID					RAE	) 00	3RA	PHIC	TE	STI	NG	RE	PORT	Т			R.	- 1701,	13	
ACUR CLIENT	EIN G	sen S	teel				Date	=	•	<b>C</b> 3.4	4 ~	٠١,						OF		
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### 5.9 Certification of Welding Inspectors

C1-377 of 486



## OSMOND, BRAD RT2



Name

APPLICANT SECTION

Initial Examination Q

VISION REQUIREMENT

Q-016

#### VISION EXAMINATION FORM

In accordance with SNT-TC-1A 2001 edition the following eye examination report is evidence that technician's vision acuity has been checked. The evidence of satisfactory vision has been carried out by either the certified SNT level III or a representative trained by the Level III to administer the examination.

Renewal @

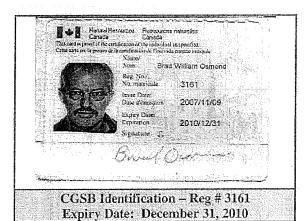
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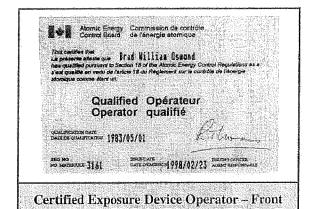
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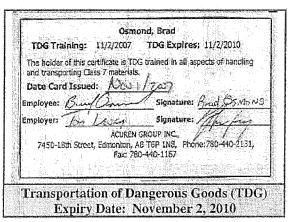


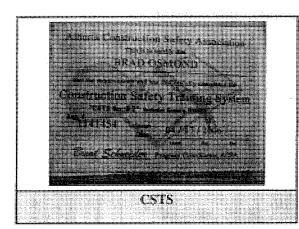
## OSMOND, BRAD RT2

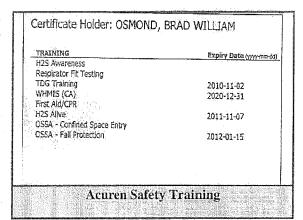








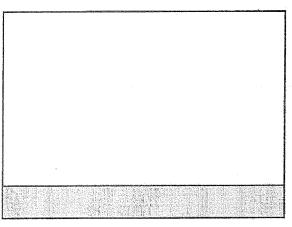


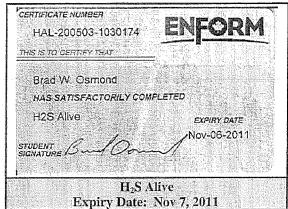


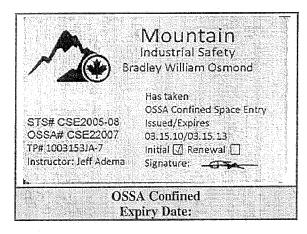
Page 1 of 3

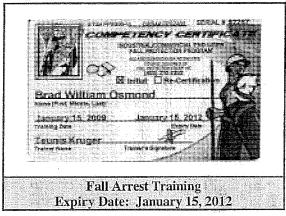


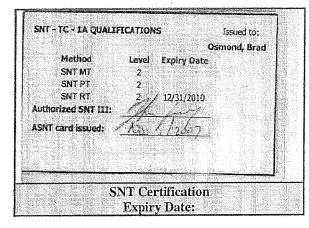
## OSMOND, BRAD RT2

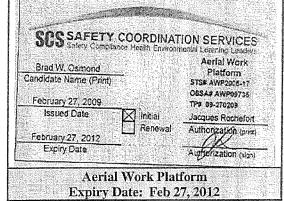












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prevent to Section 18 of the Alome Energy Cowney Regulation, for the Repose of operating an expesses ded-torizating a rescribed autolonic unalified Operator

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Natural Resources Canada

Ressources naturelles Canada

Non

Marie-Helene Lederer

Reg. No. /

10288

Issue Date/ Dute d'emission

2009/11/24

Corrective tenner for [X] near [ ] for vision. Verres correctifs pour la vision de [X] près [ ] distance.







### 5.10 Welder WPS Qualification Statement and Welder Numbers



## Welder WPS Qualification Statement - Mary River Project 2011

The Gem Steel employees listed below have been qualified and are current to Gem Steel WPS Gem-85-200, Gem-85-300, Gem-85-400 and Gem-85-500 as per Gem Steel Quality Control Manual Section 11.

Steve Davies - Welder Symbol # 3

Carlos Espinosa – Welder Symbol # 2

Allan Garside - Welder Symbol # 13

Chris Gaudet - Welder Symbol # 12

Keith Hopkins - Welder # 5

Mark Kinzel - Welder Symbol # 4

Bruce McCarthy - Welder Symbol # 9

Brian Nielsen - Welder Symbol # 7

Leo Paradis - Welder Symbol # 6

Shaun Smathers - Welder Symbol # 11

Wes White - Welder Symbol # 10

Signed on behalf of Gem Steel

Steve Davies

Date: Oct 5/11

## WELDER NUMBERS

verts

5 Shots total

## Mark K #4

Brian N #7

Door Plate

Bruce #9

Zar Kan

Wes #10

2 verts 1 Horizontal

Shaun #11

Chris #12

Al Garside #13

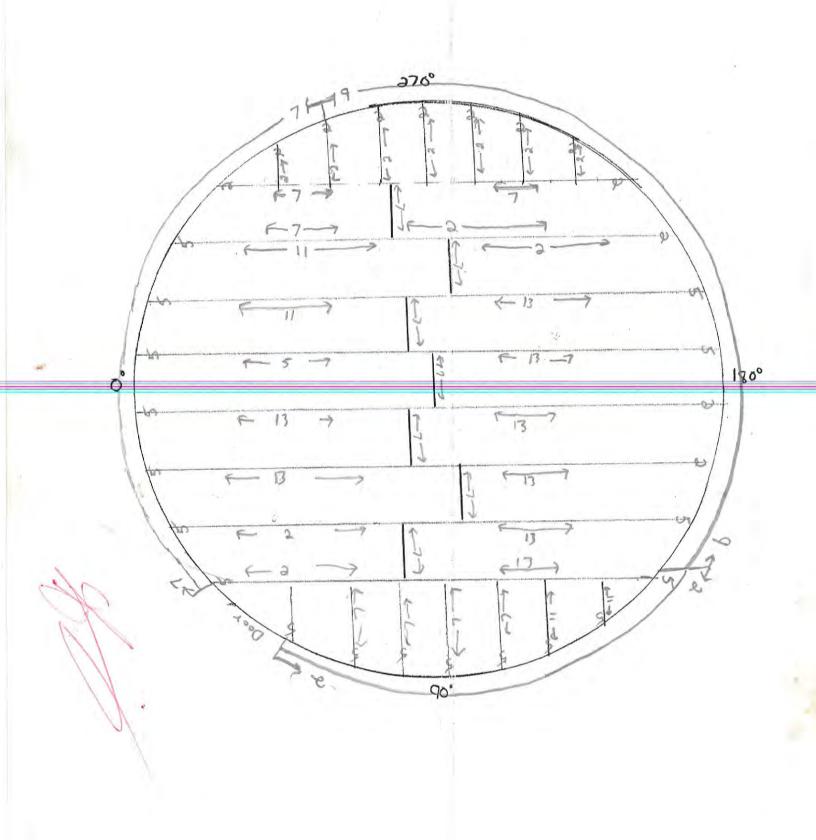




### 5.11 Tank Shell and Floor Weld Map

C1-389 of 486

# Floor Map 5M Lt Tonk







## **Appendix A**



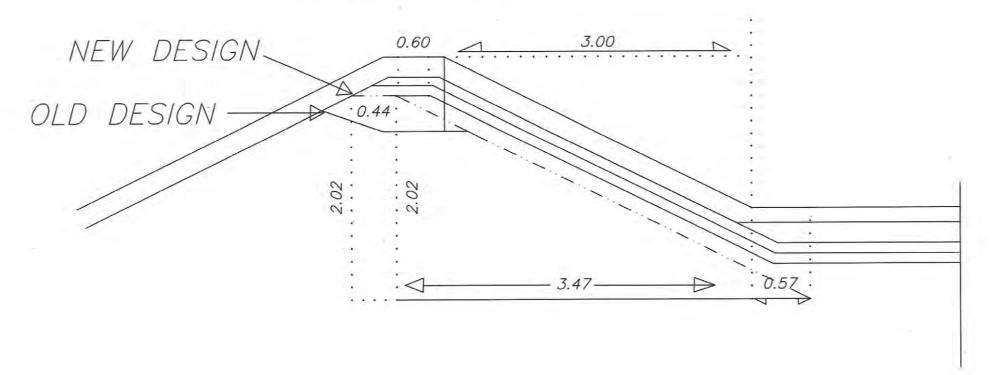


## A.1 RFI's and Correspondance



		Request	or Change	
ORIGINATOR / Company:		Project Stage:	Home Office Site	Supplier Other
Submitted by:	Kyle Kuntz		Submitted to:: I	Iatch
Company:	Nuna Contracting		Tie point #:	
Phone No.:	780-434-9114		Related Doc's:	
Fax No.:	700-151-7111	-	Other inform'n;	
Cell Phone:	780-238-6609		Date Issued:	9-Aug-11
E-mail:	kylek@nunalogistics.com		Date Req: 2	20-Aug-11
Proposed Corrective Action  A) Key Trench can be removed place, it would be backfilled Current material being used extremely well as demonstrately selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for proposed slopes and the selected for	ad above "Type-4" material er will arrive on sea lift. a 2:1 slope. ad calls out for Insulation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the continuation of the con	to sit on 100mm of the order over the top of the dyke. Pery close to the service required.	of Type-6 Sand.  of the dyke onto our	B) Dyke requires as per spec, which would hold "Type-4" subbase requires 2:1 side. To hold liner securely in B) erial. It has proven to compact C) See attached D) Place Insulation
directly ontop of Geotextile.	This will gain more materia	al above Insulation	n, which will allow	
during construction.	s No	Originato		for more protection of materia
Attachments: Ye	CORRECTIVE ACTION A	Originator	: CORRECT	AS FOLLOWS
Attachments: Ye  RESPONSE:  A - HMM will allow this de outside toe of dyke are bore is an acceptible means of ba B - Granular Type-2 substitt Hatch site staff indicating it C - Revised dyke wall grant construction. D - Insulmaterial (Type-2 Substitute  Name (print)  Estimation required from Con	CORRECTIVE ACTION All sign change provided the coby the contractor. Docume ckfilling. Intion with Bank Material or a sadequacy for use within the configuration with Grant ation location shall remain noted in point B) could dan Signaturactor:	Originator  PPROVED  osts associated we entation from the ut of Km2 Borrow he dyke construct nular Type-4 slop as per current desmage the insulation	CORRECT And the additional lift liner manufacturer we Pit is approved position.  Sing as per attached sign. Relocating in an anglayer.	AS FOLLOWS  ner required to extend to the shall be provided indicating the ending documentation from
Attachments: Ye  RESPONSE:  A - HMM will allow this de outside toe of dyke are bore is an acceptible means of ba B - Granular Type-2 substitt Hatch site staff indicating it C - Revised dyke wall grant construction. D - Insulmaterial (Type-2 Substitute  Name (print)	CORRECTIVE ACTION All sign change provided the coby the contractor. Docume ckfilling. Intion with Bank Material or a sadequacy for use within the configuration with Grant ation location shall remain noted in point B) could dan Signaturactor:	Originator  PPROVED  osts associated we entation from the ut of Km2 Borrow he dyke construct nular Type-4 slop as per current desmage the insulation	CORRECT Anith the additional liner manufacturer we Pit is approved position.  Joing as per attached sign. Relocating insign layer.	AS FOLLOWS  ner required to extend to the shall be provided indicating the ending documentation from sketch is approved for sulation below a layer of bank

# propose design





	Request For Change
	Project Home Office Supplier
ORIGINATOR / Company:	Stage: Site Other
Submitted by: Kyle Kuni	z Submitted to:: Hatch
Company: Nuna Contra	
Phone No.: 780-434-91	
Fax No.:	Other inform'n;
Cell Phone: 780-238-66	Date Issued: 24-Aug-11
E-mail: kylek@nunalogis	tics.com Date Req: 24-Aug-11
Proposed Corrective Action:  A) There is Insulation on site that we would like Specifications call for Compressive Strength - Ordered Product - FOAMULAR 600 2" X24" X96" B.C.	60 psi, the proposed insulation is 40 psi.  K96" B.C. Proposed
The first of the first of the	
Attachments: Yes No	Originator:
600	Originator:  TION APPROVED CORRECT AS FOLLOWS
600	



			Request F	or Change		
			Project Stage:	Home Office Site	Supplier Other	
ORIGINATOR / Company:					- 1905/11	
Submitted by:		Kyle Kuntz		Submitted to:: Tie point #:	Haten	
Company:		ina Contracting		Related Doc's:		-
Phone No.:	1	780-434-9114		Other inform'n;		
Fax No.:	-	780-238-6609		Date Issued:	26-Aug-11	
Cell Phone: E-mail:		@nunalogistics.co	m	Date Req:		
Description of Issue:			e attached for further		27,748	
Proposed Corrective A A) Produce a modified ' this is the best solution t the drawings for the top	"Type 3" mat to reach the c	compaction nece	ssary. We would the	n combine the "Ty	pe 2" and "Type 3"	called out or
Attachments:	Yes	No	Originator			
RESPONSE:	CORF	RECTIVE ACTION	APPROVED		AS FOLLOWS	
Modified' Type 3 Mater and thicknesses indicate not exceed 200mm. Co verification of grain siz	ed. Required entractor shal	l compaction der Il provide typical	sity shall be 100%	by standard procto	r. Maximum iiit thic	or an appearance
Name (print)		Sign	ature		Title	ckness snan
Name (print) Estimation required from		Sign	ature 'es	No		ckness snan
	Contractor:	Sign				ckness snan
Estimation required from	Contractor:	Sign	es	No		ckness snan



		Request F	or Change	and the second second
TOTAL AND DESIGNATION OF		Project Stage:	Home Office Site	Supplier Other
RIGINATOR / Company:				Uatala
Submitted by:	Kyle Kuntz		Submitted to::	Haten
Company:	Nuna Contracting		Tie point #: Related Doc's:	
Phone No.:	780-434-9114			
Fax No.:	700 200 5500		Other inform'n; Date Issued:	28 Aug-11
Cell Phone:	780-238-6609			30-Aug-11
E-mail:	kylek@nunalogistics.com  If required, a sketch should be at			30-Aug-11
Proposed Corrective Act  A) While creating the modern or a control of the modern or a control of the modern or a control of the modern or a control of the modern or a control of the modern of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the contr	tion: dified "Type 3" as mentioned i ility holding up to the elements	n RFI-003, the s s. It will also pro	plit produces a 75n	nm plus. This material will pleasing final layer.
Attachments:	Yes No	Originato	r:	
DESDONSE:	CORRECTIVE ACTION AP	PPROVED	CORRECT	AS FOLLOWS
RESPONSE: The material to be used in graded 75mm minus mate	CORRECTIVE ACTION AP n place of 200mm of Type 3 (5 erial produced from the screens 03. This material shall have li al compaction following placer  Signatur Contractor:	PPROVED  Omm Minus) dress resulting from the street to no fines when the street is required to the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the s	correction of the production of 'I'rith any/all stones I	lyke/berm walls shall be a loos Modified' Type 3 (50-65mm arger than 75mm removed pri
RESPONSE: The material to be used in graded 75mm minus mate Minus) outlined in RFI-0 to placement. Mechanica required.  Name (print) Estimation required from C	CORRECTIVE ACTION AP n place of 200mm of Type 3 (5 erial produced from the screens 03. This material shall have li al compaction following placer  Signatur Contractor:	PPROVED  Omm Minus) dress resulting from the street to no fines when the street is required to the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the s	correct esser stone on the othe production of 'I' with any/all stones I only to ensure stab	lyke/berm walls shall be a loo Modified' Type 3 (50-65mm arger than 75mm removed pri ility with no density testing



Request For Information / Clarification

Request For Change

		Project	Home Office	Supplier	
ORIGINATOR / Company:		Stage:	Site	Other	
Submitted by:	Terry Oszust		Submitted to::	Hatch	
Company:	Adco Ikpiaryuk		Tie point #:		
Phone No.:	780-465-3265		Related Doc's:		
Fax No.:			Other inform'n;		
Cell Phone:	780-984-2640		Date Issued:	28-Aug-11	
E-mail:	terry.oszust@adcopower	.com	Date Req:	30-Aug-11	
to be installed on top of the shown on the drawings we the thpought was that the a	lded flat and securely at the	hese three anchor po	oints, the rest of th	e pipe allows fo	r movement and
We would propose that the	e shoes at these anchor po	oints be stitch welder	to the I beam sup	pports. The wear	bars should be
eliminated. Anchor points	are at PS-001, PS-013, P.	S-030		i)	
eliminated. Anchor points	are at PS-001, PS-013, P	S-030 Originato	r:		
eliminated. Anchor points  Attachments:	Yes No CORRECTIVE ACTION	Originato N APPROVED	CORRECT	r AS FOLLOWS	o the support sie
Attachments:  RESPONSE: The wear bars shall not be with a continuous weld.  Patrick Cashin Name (print)  Estimation required from C	CORRECTIVE ACTION c installed at the pipe anch Sign	Originato N APPROVED hor locations. The pi	CORRECT  pe shoe shall be well  Project		
Attachments:  RESPONSE: The wear bars shall not be with a continuous weld.  Ratrick (ashin)	CORRECTIVE ACTION c installed at the pipe anch Sign	Originato N APPROVED hor locations. The pi	CORRECT  ipe shoe shall be well  Project	velded directly t	



Request For Information / Clarification

Request For Change

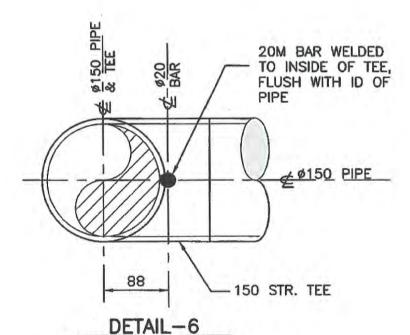
		Project	Home Office	Supplier	
DICINATOR / Company	-	Stage:	Site	Other	
ORIGINATOR / Company:			Submitted to::	Hatch	
Submitted by:	Terry Oszus		Tie point #:		
Company:	Adco Ikpiary 780-465-326		Related Doc's:		
Phone No.:	/80-403-320		Other inform'n;		
Fax No.:	780-984-264	10	Date Issued:		
Cell Phone:	terry.oszust@adcopo			30-Aug-11	
E-mail: Description of Issue:	(If required, a sketch sho			o me	
Proposed Corrective A We would propose that eliminated. Anchor point	ction: the shoes at these ancho	or points be stitch weld	led to the I beam sup	pports.The wear t	oars should be
Attachments:	Yes No	Origina	tor:		
				r as follows	
Attachments:  RESPONSE: See RFI # AP-RFI-005	Yes No CORRECTIVE AC			AS FOLLOWS	
RESPONSE:				AS FOLLOWS	
RESPONSE:	CORRECTIVE AC		Project	Enginess	
RESPONSE: See RFI # AP-RFI-005	CORRECTIVE AC	TION APPROVED	CORRECT		
Patrick Cashia Name (print) Estimation required from	CORRECTIVE AC	TION APPROVED  Signature	Project		
RESPONSE: See RFI # AP-RFI-005  Patrick Cashia Name (print)	CORRECTIVE AC	TION APPROVED  Signature  Yes	Project		



Request For Information / Clarification

Request For Change

Submitted by: Terry Oszust Submitted to:: Hatch Company: Adco Ikpiaryuk Tie point #: Phone No.: 780-465-3265 Related Doc's: Fax No.: Other inform'n; Cell Phone: 780-984-2640 Date Issued: 29-Aug-11 E-mail: terry.oszust@adcopower.com Date Req: 30-Aug-11  Description of Issue: (If required, a sketch should be attached for further clarification) As shown on drawings H337697-4020-60-013-0001 Rev 0, at coordinates A6 and E6 there is note: "Bars tee for pigging". Please provide detail of what, if anything, is required.  Proposed Corrective Action:  Attachments: Yes No Originator:  RESPONSE: CORRECTIVE ACTION APPROVED CORRECT AS FOLLOWS			riequesti	or onlinge		
Submitted by:  Submitted by:  Terry Oszust Submitted to:: Hatch Company: Adco IRpiaryuk Tie point #: Phone No.: Phone No.: Fax No.: Cell Phone: T80-465-3265 Related Doc's: Fax No.: Cell Phone: T80-984-2640 Date Issued: Description of Issue: Iterry Oszust @ adcocower.com Date Req; 30-Aug-11  Description of Issue: (If required, a sketch should be attached for further clarification) As shown on drawings H337697-4020-60-013-0001 Rev 0 , at coordinates A6 and E6 there is note: "Bars tee for pigging". Please provide detail of what, if anything, is required.  Proposed Corrective Action:  RESPONSE: CORRECTIVE ACTION APPROVED CORRECT AS FOLLOWS Detail for tee branch bars is attached. Add additional branch bars at on the branch of the tees for the future tan connections. (4 locations)  Pake: Name (print) Signature Titled  Estimation required from Contractor: Yes No No No No			Project	Home Office	Supplier	
Company: Adco Ikpiaryuk  Phone No.: 780-465-3265 Related Doc's: Fax No.: Other inform'n; Cell Phone: 780-984-2640 Date Issued: 29-Aug-11  B-mail: lerrv.cszust@adcopower.com  Description of Issue: (if required, a sketch should be attached for turther clarification) As shown on drawings H337697-4020-60-013-0001 Rev 0 , at coordinates A6 and E6 there is note: "Bars tee for pigging". Please provide detail of what, if anything, is required.  Attachments: Yes No Originator:  Proposed Corrective Action:  RESPONSE: CORRECTIVE ACTION APPROVED CORRECT AS FOLLOWS  Detail for tee branch bars is attached. Add additional branch bars at on the branch of the tees for the future tan connections. (4 locations)  Patrick Caster Name (print) Signature  Estimation required from Contractor: Yes No No No	IGINATOR / Company:		Stage:	Site	Other	
Company: Adoo Ikpiaryuk  Phone No.: 780-465-3265 Related Doc's: Fax No.: Other inform'n; Cell Phone: 780-984-2640 Date Issued: [29-Aug-11]  B-mail: lerry.oszust@adcopower.com  Description of Issue: (if required, a sketch should be attached for turther clarification) As shown on drawings H337697-4020-60-013-0001 Rev 0 , at coordinates A6 and E6 there is note: "Bars tee for pigging". Please provide detail of what, if anything, is required.  Attachments: Yes No Originator:  Proposed Corrective Action:  RESPONSE: CORRECTIVE ACTION APPROVED CORRECT AS FOLLOWS  Detail for tee branch bars is attached. Add additional branch bars at on the branch of the tees for the future tan connections. (4 locations)  Patrick Caster Patrick  Name (print) Signature  Froject Engineer  Titled  Patrick Caster No No No	Submitted by:	Terry Oszust		Submitted to::	Hatch	
Phone No.: Fax No.: Cell Phone: T80-984-2640 Date Issued: 29-Aug-11 Description of Issue: (if required, a sketch should be attached for further clarification) As shown on drawings H337697-4020-60-013-0001 Rev 0, at coordinates A6 and E6 there is note: "Barstee for pigging". Please provide detail of what, if anything, is required.  Proposed Corrective Action:  Attachments: Yes No Originator:  RESPONSE: CORRECTIVE ACTION APPROVED CORRECT AS FOLLOWS Detail for tee branch bars is attached. Add additional branch bars at on the branch of the tees for the future tan connections. (4 locations)  Patrick Cash: Name (print) Signature Title  Estimation required from Contractor: Yes No No No						
Fax No.:  Cell Phone:  B-mail:    Berny to Several & Addopower.com						
Cell Phone: 780-984-2640 Date Issued: 29-Aug-11 E-mail: 1etry.oszust@acopower.com Date Req; 30-Aug-11  Description of Issue: (If required, a sketch should be attached for further clarification) As shown on drawings H337697-4020-60-013-0001 Rev 0, at coordinates A6 and E6 there is note: "Bars tee for pigging". Please provide detail of what, if anything, is required.  Proposed Corrective Action:  RESPONSE: CORRECTIVE ACTION APPROVED CORRECT AS FOLLOWS  Detail for tee branch bars is attached. Add additional branch bars at on the branch of the tees for the future tank connections. (4 locations)  Patrick Cash: Patrick Gallery Signature  Signature Title O  Estimation required from Contractor: Yes No No						
B-mail: terry.oszust@adcopower.com		780-984-2640			29-Aug-11	
Description of Issue: (If required, a sketch should be attached for further clarification)  As shown on drawings H337697-4020-60-013-0001 Rev 0, at coordinates A6 and E6 there is note:" Bars tee for pigging". Please provide detail of what, if anything, is required.  Proposed Corrective Action:  Attachments: Yes No Originator:  RESPONSE: CORRECTIVE ACTION APPROVED CORRECT AS FOLLOWS  Detail for tee branch bars is attached. Add additional branch bars at on the branch of the tees for the future tank connections. (4 locations)  Patrick Cash:  Name (print) Signature Title O  Estimation required from Contractor: Yes No  No  No		v.oszust@adcopower.com	n.	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon		
Patrick Coshin Name (print)  Estimation required from Contractor:  CORRECTIVE ACTION APPROVED  CORRECT AS FOLLOWS  CORRECT AS FOLLOWS  CORRECT AS FOLLOWS  CORRECT AS FOLLOWS  CORRECT AS FOLLOWS  Project Engineer  Title  No  No  Change Order to Contract Required  Yes  No						
Patrick Coshin Name (print)  Estimation required from Contractor:  CORRECTIVE ACTION APPROVED  CORRECT AS FOLLOWS  CORRECT AS FOLLOWS  CORRECT AS FOLLOWS  CORRECT AS FOLLOWS  CORRECT AS FOLLOWS  Project Engineer  Title  No  No  Change Order to Contract Required  Yes  No						
Patrick Costin   Patril 9 Cost   Project Engineer   Name (print)   Signature   Title   Estimation required from Contractor:   Yes   No   Change Order to Contract Required   Yes   No   No   No   No   No   No   No   No   No	tachments: Yes	No	Originator	:		
Patrick Cashin Patril G. Project Engineer  Name (print)  Estimation required from Contractor:  Change Order to Contract Required  Project Engineer  No  No  No	ESPONSE:	ORRECTIVE ACTION AP	PROVED	CORRECT	AS FOLLOWS	
	Patrick Cashin Name (print) timation required from Contract	Patril 9 Cool Signature or: Yes		Project No		
Site Instruction #: Date Assured.		d Yes				
Addo Project Representative: Name: Terry Oszust Signature: Date: August 2				Date Issued:	Date: August 29	



TYPICAL Ø150 PIGGING TEE REFER H337697-4020-60-013-0001 SCALE: 1:5

> 0 50 100 150 200 250 SCALE: 1:5 IN MILLIMETRES

> > 18/30, 2011 DWG No. 4020-60-035-0001 DETAIL-6 ADDED



		Request F	or Change		
ODIOWATOD / C		Project Stage:	Home Office Site	Supplier Other	
ORIGINATOR / Company:	<b>—</b>				
Submitted by:	Terry Oszust		Submitted to::	Hatch	
Company:	Adco Ikpiaryuk		Tie point #:		
Phone No.:	780-465-3265		Related Doc's:		
Fax No.:	700 004 0640		Other inform'n;	20. Apr. 11	
Cell Phone: E-mail:	780-984-2640 terry.oszust@adcopower.com	n	Date Issued:	30-Aug-11	
THE RESERVE AND ADDRESS OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE	If required, a sketch should be a			JO-Aug-11	
method would entail cost	This would allow for a 4m aimplications.	and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M and 4M an		s. Please advise.	The second
Attactiments.	ies in the	Oliginator			
RESPONSE:	CORRECTIVE ACTION AP	PROVED	CORRECT	AS FOLLOWS	
Patrick Cashin Name (print) Estimation required from Co Change Order to Contract R	PER STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE STEAR OF THE S	9	Project No No	t Engine	er
Site Instruction #:			Date Issued:		
Adco Project Representat	ive: Name: Terry Osz	ust Signature:		Date: Augus	st 29, 2011



		Request F	or change		
		Project	Home Office	Supplier	
25101114705 / 0		Stage:	Site	Other [	=
ORIGINATOR / Company:			A section of the second		
Submitted by:	Terry Oszust		Submitted to::	Hatch	
Company:	Adco Ikpiaryuk		Tie point #:		
Phone No.:	780-465-3265	-	Related Doc's:		
Fax No.:	780-466-8086		Other inform'n;	88 1 711	
Cell Phone:	780-984-2640		Date Issued:		
E-mail:	terry.oszust@adcopower.com  If required, a sketch should be attached.			30-Aug-11	
install this outside the mod	ule as it doesn't appear elsewher lule and is it supplied.				
Proposed Corrective Act	ion:				
Attachments:	Ves No	Originator			
RESPONSE:	CORRECTIVE ACTION APPRO	OVED	CORRECT	AS FOLLOWS	
RESPONSE.	CORRECTIVE ACTION AFFRO	OVED	CORRECT	ASTOLLOWS	
Name (print)	Signature			Title	~
Estimation required from Co	ntractor: Yes		No		
Change Order to Contract R			No		
Site Instruction #:			Date Issued:		
Adco Project Representat	ve: Name: Terry Oszust	t Signature:		Date: August 2	9, 2011



#### Request For Information / Clarification

Request For Change

		Project	Home Office	Supplier	
ORIGINATOR / Company:		Stage:	Site	Other	
Submitted by:	Tyler Bruce		Submitted to::	Hatch	
Company:	Nuna Logistics		Tie point #:		
Phone No.:	780-434-9114		Related Doc's:	DWG# H337697-40	020-10-035-0001
Fax No.:			Other inform'n;		
Cell Phone:	780-893-0832		Date Issued:	3-Sep-11	
E-mail:	tylerb@nunalogistics.com		Date Req:	4-Sep-11	
achieveable from the borrov	v available at site.				
Attachments: Y	es No	Originator:			
RESPONSE:	CORRECTIVE ACTION APPRO	VED	CORRECTA	S FOLLOWS	
Name (print)	Signature			Title	
Estimation required from Cont	ractor: Yes	1	No		
			Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Marine Ma	301	
Change Order to Contract Requirement	uired Yes		No	N. Carlotte	
Site Instruction #:					
Sitte Histituction in			Date Issued:	and a	

#### Coakley, Marlon

From:

Butts, Floyd [Floyd.Butts@hatchmott.com]

Sent:

Friday, September 09, 2011 5:42 AM

To:

Tyler Bruce

Cc:

Tucker, Shawn; Coakley, Marlon

Subject:

FW: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]

Tyler

I see you were CC'd on this, let me know if there are any other issues. There is some field set up requirements for this gauge please ensure you electrical personnel are aware.

Regards

Floyd

#### Floyd Butts, P. Eng

From: MacLean, Michael

Sent: Friday, September 09, 2011 8:32 AM

To: Butts, Floyd

Cc: MacLean, Joseph; Tyler Bruce

Subject: RE: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]

#### Option C1 is not required on the Level display unit.

Michael MacLean P.Eng. | Electrical Project Engineer Hatch Mott MacDonald | michael.maclean@hatchmott.com 325 Vulcan Ave., Sydney, Nova Scotia, B1P5X1 T 902.564.5583 x239 C 902.578.0691 F 902.564.9158

From: Butts, Floyd

Sent: Friday, September 09, 2011 7:28 AM

To: MacLean, Michael

Cc: MacLean, Joseph; Tyler Bruce

Subject: FW: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]

Importance: High

Mike

Can you resolve this morning.

Thanks

#### Floyd Butts, P. Eng

From: Tyler Bruce [mailto:tylerb@nunalogistics.com] Sent: Thursday, September 08, 2011 9:09 PM

To: Butts, Floyd

Subject: FW: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]

Importance: High

#### As per my previous email

From: Terry Oszust [mailto:Terry.Oszust@adcopower.com]

Sent: Tuesday, September 06, 2011 12:34 PM

To: Tyler Bruce

Cc: Kyle Kuntz; mcoakley@hatch.ca

Subject: FW: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]

Importance: High

Tyler,

I still have not ordered E and H gauge pending information from Client as per below.

Need soon if we are to install.

Thanks! Terry

#### Adco Group of Companies

Terry Oszust

Vice President - Operations

Phone: (780) 465-3265 Cell: (780 984-2640 Fax: (780) 466-8086

E-mail terry.oszust@adcopower.com

www.adcopower.com

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If you received this in error, please contact the sender and delete the material from any computer.

From: debbie.ziegert@ca.endress.com [mailto:debbie.ziegert@ca.endress.com]

Sent: September-06-11 10:14 AM

To: Terry Oszust

Cc: Mark.McDowell@ca.endress.com; Angelika.Guggenbuhler@ca.endress.com

Subject: Fw: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required [virus checked]

Importance: High

Good Morning Terry;

The above order is still on Technical Hold pending the clarification requirement below. Please advise as soon as possible to avoid shipping delays.

Thanks!

Best regards

Debbie Ziegert | Inside Sales | Sales

Endress + Hauser Canada | #318, 8925 - 51 Ave | T6E 5J3 Edmonton | AB | Canada

Phone: 780 486 3222 | Mobile: | Fax: 780 486 3166 debbie.ziegert@ca.endress.com | www.ca.endress.com

--- Forwarded by Debbie Ziegert/EHCA on 09/06/2011 10:12 AM ----

Subject Fw: E & H - SO#; 46593076 / PO#: 3266-00018 - Clarification Required

#### Good Morning Terry;

The Factory has contacted me for clarification on the RIA46.

You ordered one piece of RIA46-E1C2B+B1C1D1E1Z1 and you choose the "C1" and that is for customised preconfiguration.

Please see below on the print the explanation of the order code you ordered, and advise what requirements your customer has for the preconfiguration.

RIA46		71073510 0004 FIELD METER WITH CONTROL UNIT RIA46
010		EN Approval:
D.	1	E1 CSA AIS, NI/I/2/ABCDEFG/T4
020		EN Input; Output:
		C 1x Universal; 1x analog + 2 relay
030		EN Housing:
CI.	1	2 Field, Alu
040		EN Thread:
CI.	2	B 5x NPT 1/2"
510		EN >Mounting:
		B1 Mounting set wall+pipe
520		EN >>Additional Option:
		C1 Customised pre-configured
530		EN >>Additional Approval:
		D1 SIL
540		EN >>Accessory:
		E1 Configurations kit TXU 10
895		EN >>Marking:
		Z1 Tagging (TAG), metal

#### Best regards

Debbie Ziegert | Inside Sales | Sales | Endress + Hauser Canada | #318, 8925 - 51 Ave | T6E 5J3 Edmonton | AB | Canada | Phone: 780 486 3222 | Mobile: | Fax: 780 486 3166 | debbie.ziegert@ca.endress.com | www.ca.endress.com

⁻⁻⁻⁻ Forwarded by Debbie Ziegert/EHCA on 08/28/2011 11:10 AM ----

#### Debbie Ziegert/EHCA

08/23/2011 10:28 AM

#### To Terry.Oszust@adcopower.com cc Mark McDowell/EHCA@EHCA

Subject E & H - PO#: 3266-00018 - Order AcknowledgementLink

Hi Terry:

I've received the above PO and will process it immediately. A Factory Order Confirmation with an ETA will be forwarded as soon as it has been received. Thanks for the order and have a great day!

Best regards

Debbie Ziegert | Inside Sales | Sales Endress + Hauser Canada | #318, 8925 - 51 Ave | T6E 5J3 Edmonton | AB | Canada Phone: 780 486 3222 | Mobile: | Fax: 780 486 3166 debbie.ziegert@ca.endress.com | www.ca.endress.com

"Terry Oszust" <Terry.Oszust@adcopower.com>

To <debbie.ziegert@ca.endress.com>

CC

08/18/2011 12:09 PM

Subject E & H

Debbie, See attached PO for items on your quote 80665907 Revision as per the Purchase Order Model #'s. Please advise delivery. Thanks! Terry

Adco Group of Companies

Terry Oszust

Vice President - Operations

Phone: (780) 465-3265 Cell: (780 984-2640 Fax: (780) 466-8086

E-mail terry.oszust@adcopower.com

www.adcopower.com

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----Original Message----

From: adminsm@simmax.com [mailto:adminsm@simmax.com]

Sent: August-18-11 10:50 AM

To: Terry Oszust

Subject:

This E-mail was sent from "RNPO64A84" (Aficio MP 5001).

Scan Date: 08.18.2011 10:49:35 (-0600)

Queries to: adminsm@simmax.com

[attachment "20110818104935805.pdf" deleted by Debbie Ziegert/EHCA]

This email has been scanned by the MessageLabs Email Security System. For more information please visit http://www.messagelabs.com/email

#### Attention:

This e-mail and any files transmitted with it from Hatch Mott MacDonald are confidential and intended solely for use of the individual or entity to whom they are addressed. If you have received this e-mail in error please immediately notify the sender.





Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

#### A.2 Hatch Record Drawings

- 1. H337697-4020-10-014-0001 Milne Inlet Fuel System Upgrade Site Grading.
- 2. H337697-4020-10-017-0001 Milne Inlet Fuel System Upgrade Location Plan.
- 3. H337697-4020-10-035-0001 Milne Inlet Fuel System Upgrade Dyke Sections.
- 4. H337697-4020-10-035-0002 Milne Inlet Fuel System Upgrade Dyke Sections and Details.
- 5. H337697-4020-10-035-0003 Milne Inlet Fuel System Upgrade Sections Thru Truck Loading Area.
- 6. H337697-4020-10-042-0001 Milne Inlet Fuel System Upgrade General Arrangement.
- 7. H337697-4020-30-035-0001 Milne Inlet Fuel System Upgrade Pipe Support Details.
- 8. H337697-4020-30-035-0002 Milne Inlet Fuel System Upgrade Marine Offload Spill Containment, Plan and Sections.
- 9. H337697-4020-50-035-0001 Milne Inlet Fuel System Upgrade 5M Litre Diesel Storage Tank
- 10. H337697-4020-50-035-0002 Milne Inlet Fuel System Upgrade Typical Section, Details and Trim Identification.
- 11. H337697-4020-60-012-0001 Milne Inlet Fuel System Upgrade Ø150 Pipeline Profile.
- 12. H337697-4020-60-013-0001 Milne Inlet Fuel System Upgrade Flow Sheet.
- 13. H337697-4020-60-035-0001 Milne Inlet Fuel System Upgrade Miscellaneous Piping Details.
- 14. H337697-4020-60-042-0001 Milne Inlet Fuel System Upgrade Piping General Arrangement.
- 15. H337697-4020-70-035-0001 Milne Inlet Fuel System Upgrade Electrical Sections and Details
- 16. H337697-4020-70-042-0001 Milne Inlet Fuel System Upgrade Electrical General Arrangement.
- 17. H337697-4020-70-042-0002 Milne Inlet Fuel System Upgrade Electrical Grounding Plan.
- 18. H337697-4020-70-082-0001 Milne Inlet Fuel System Upgrade Power Single Line Diagram

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1 2 3 4 5 6 7



# MARY RIVER IRON ORE PROJECT

# MILNE INLET FUEL SYSTEM UPGRADE

**RECORD DRAWINGS** 

BAFFIN ISLAND, NUNAVUT

**DESIGN ENGINEERS** 

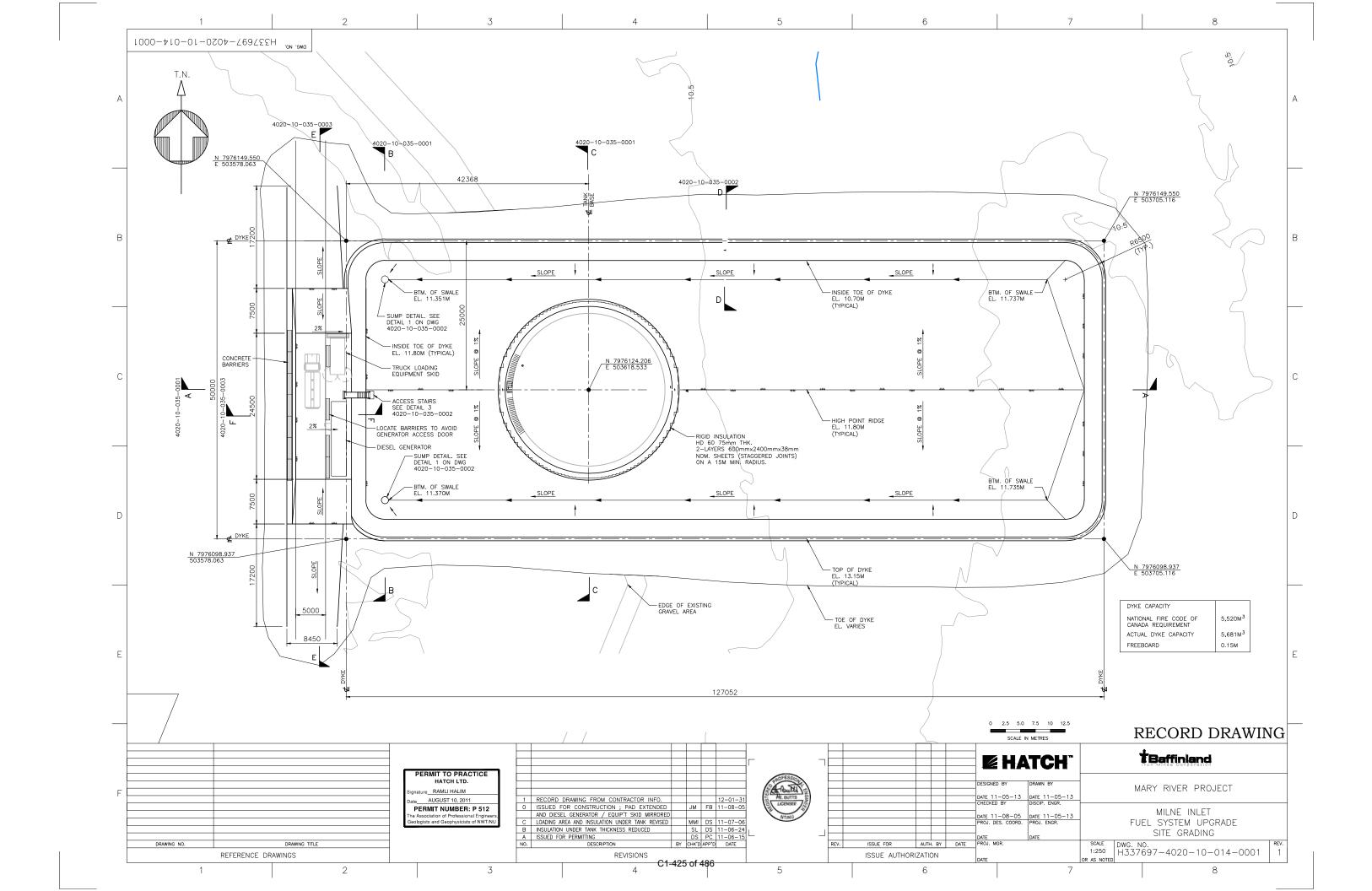


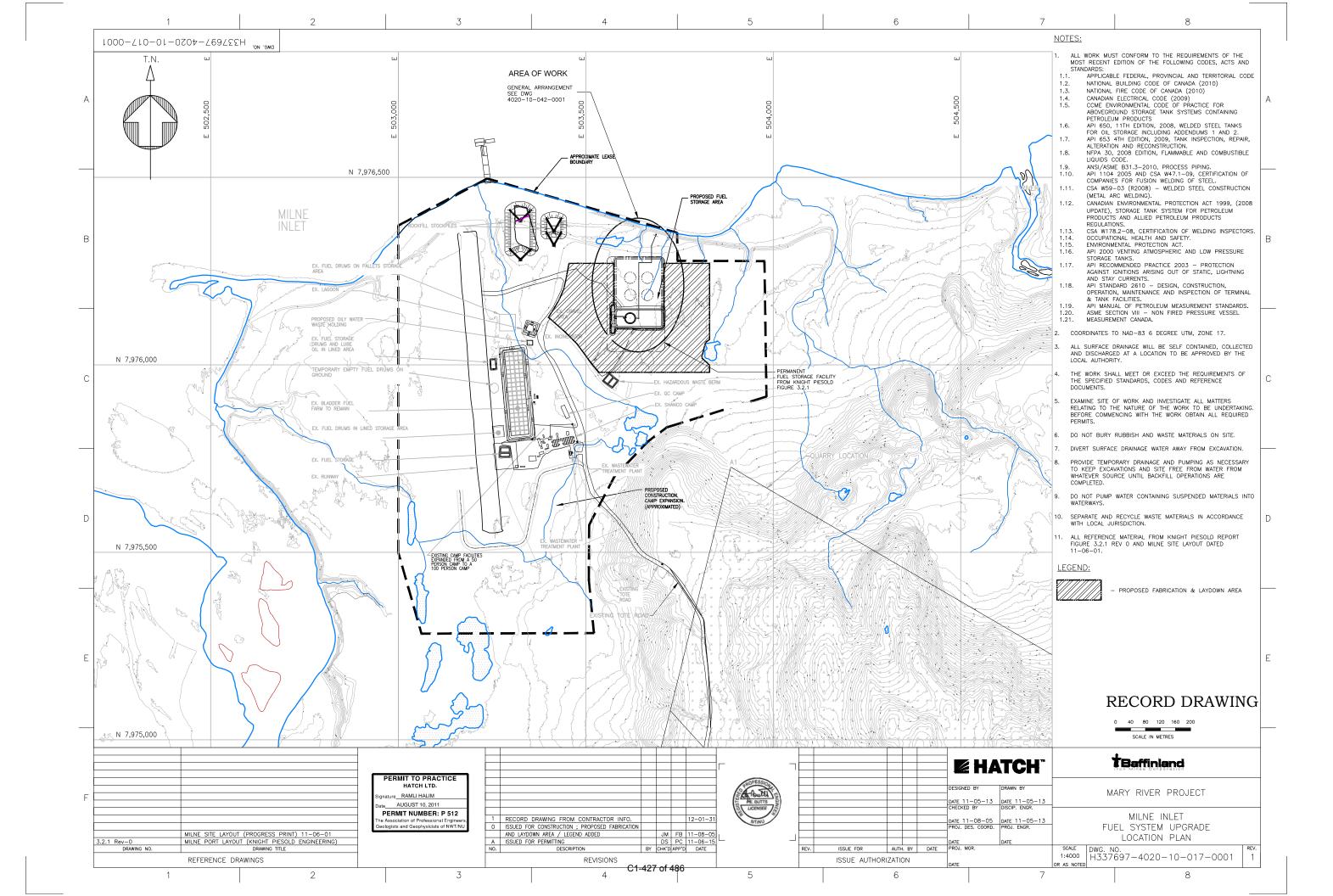
PROJECT NO. H337697 AUGUST, 2011

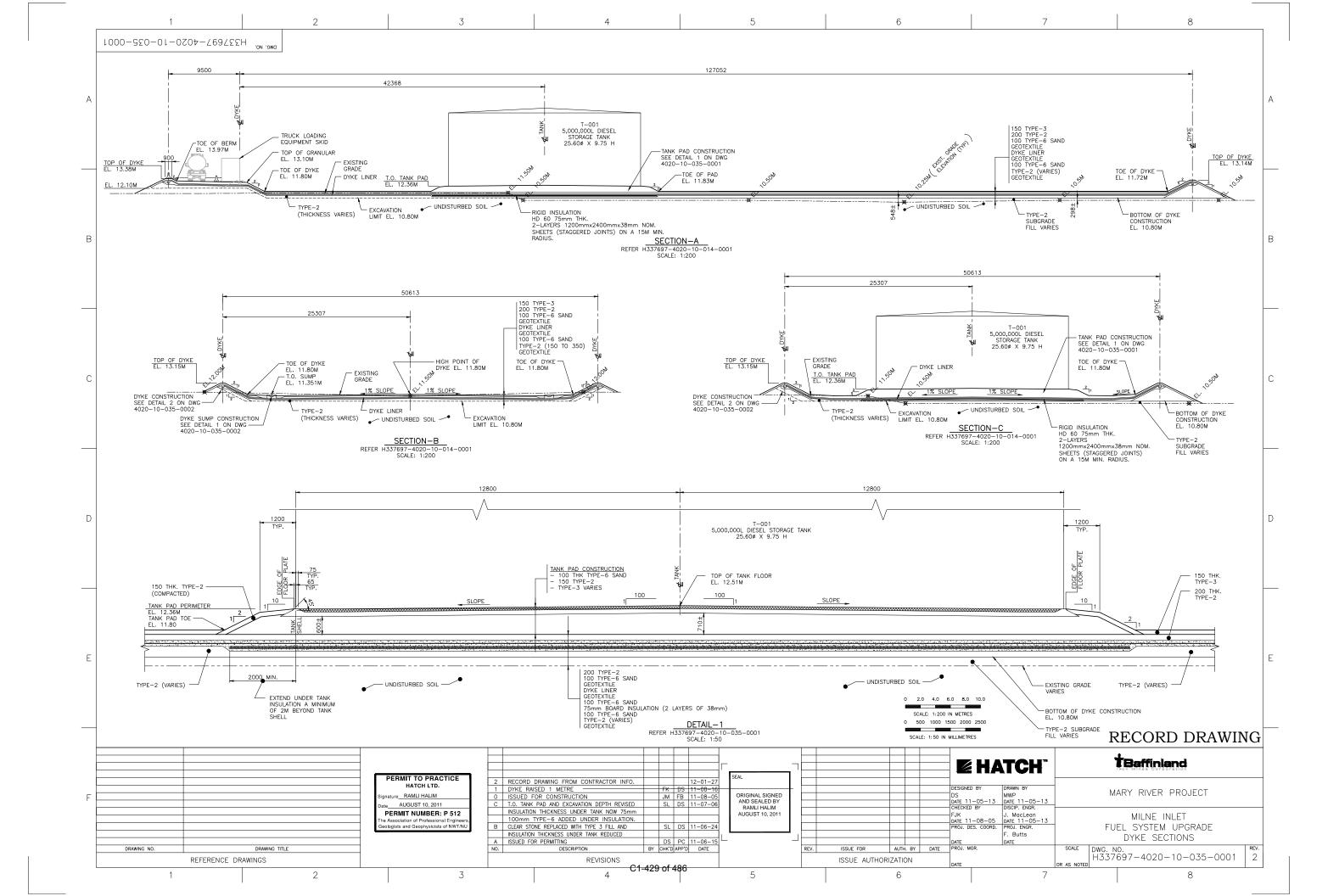
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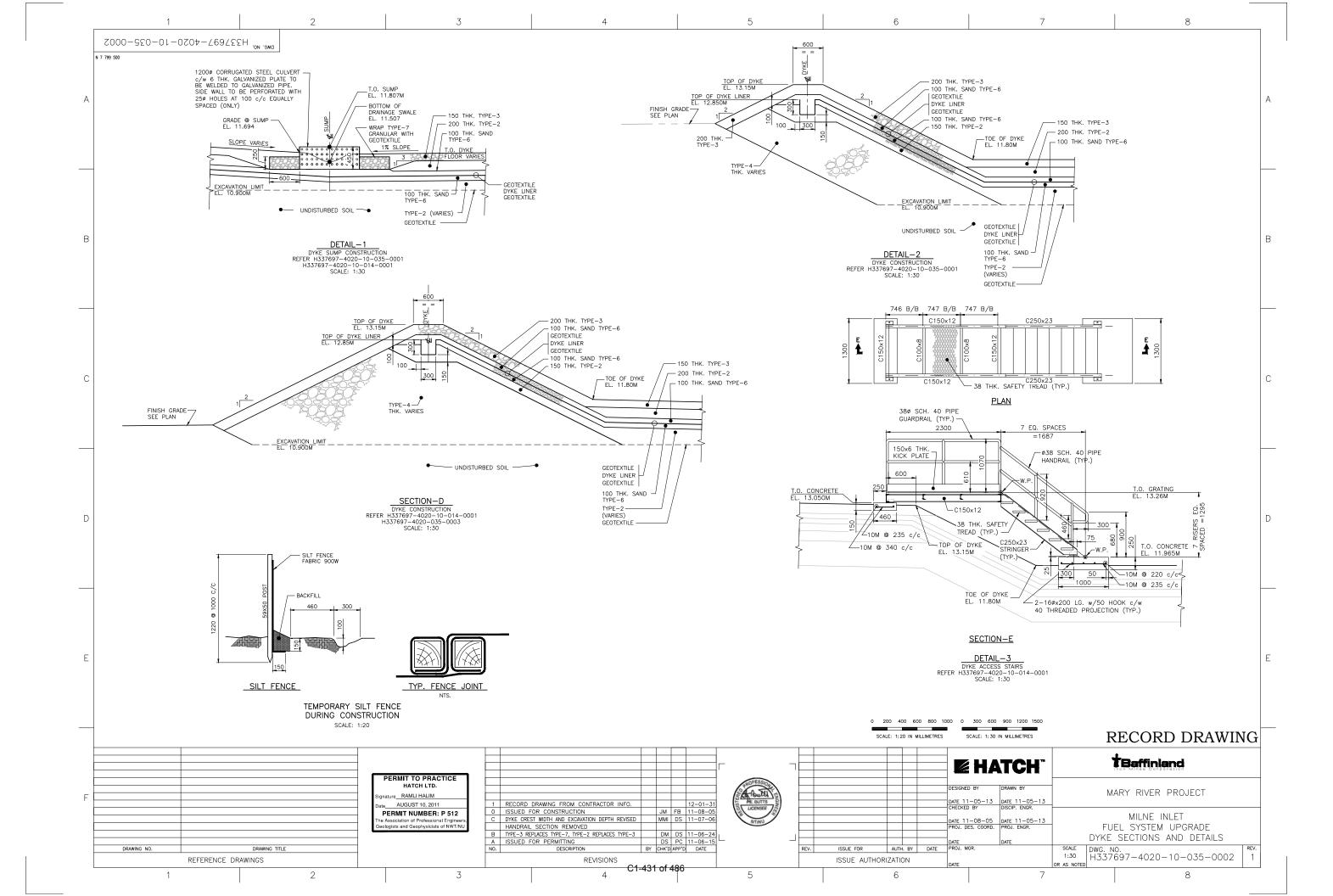
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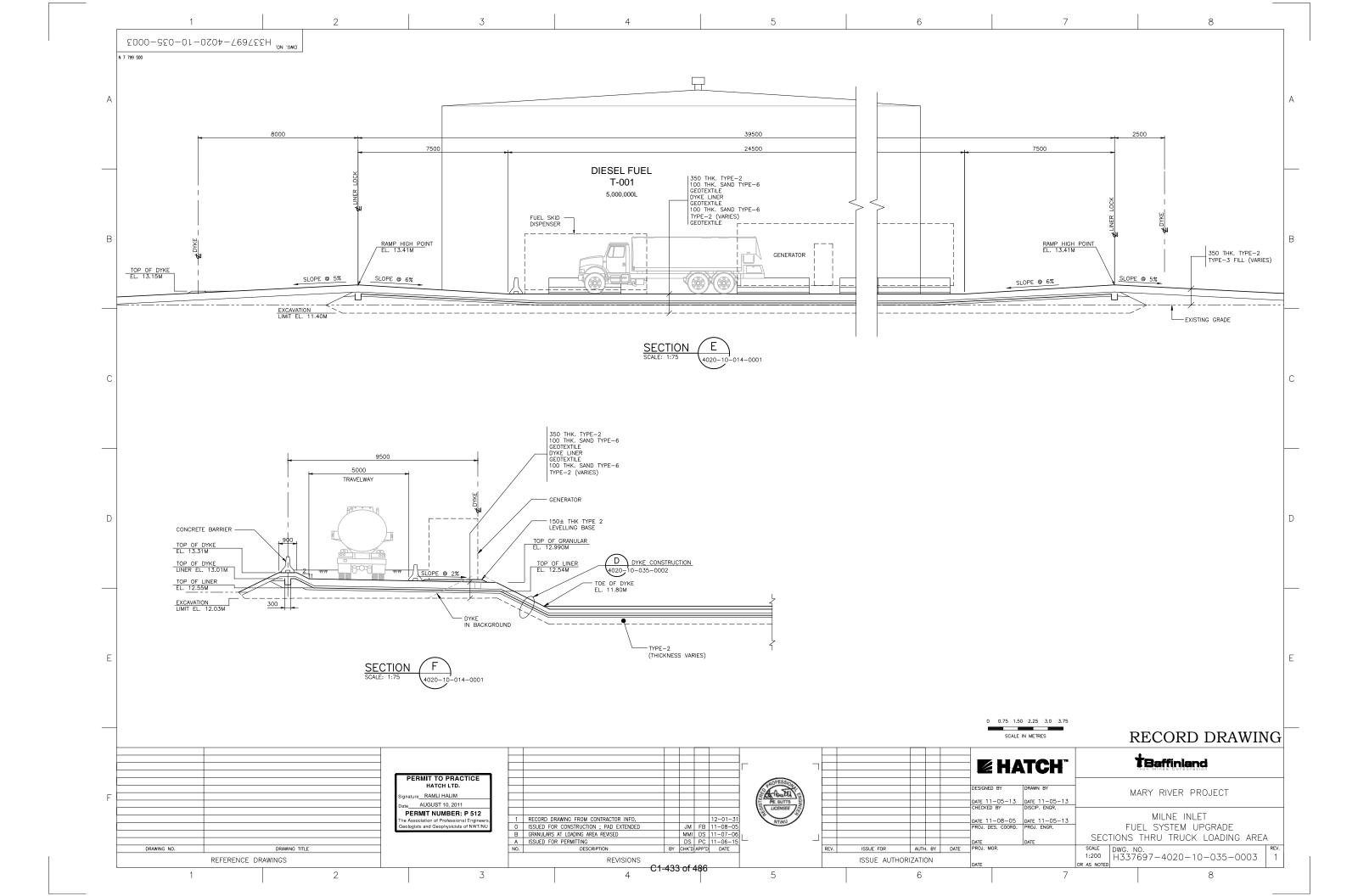
C1-423 of 486

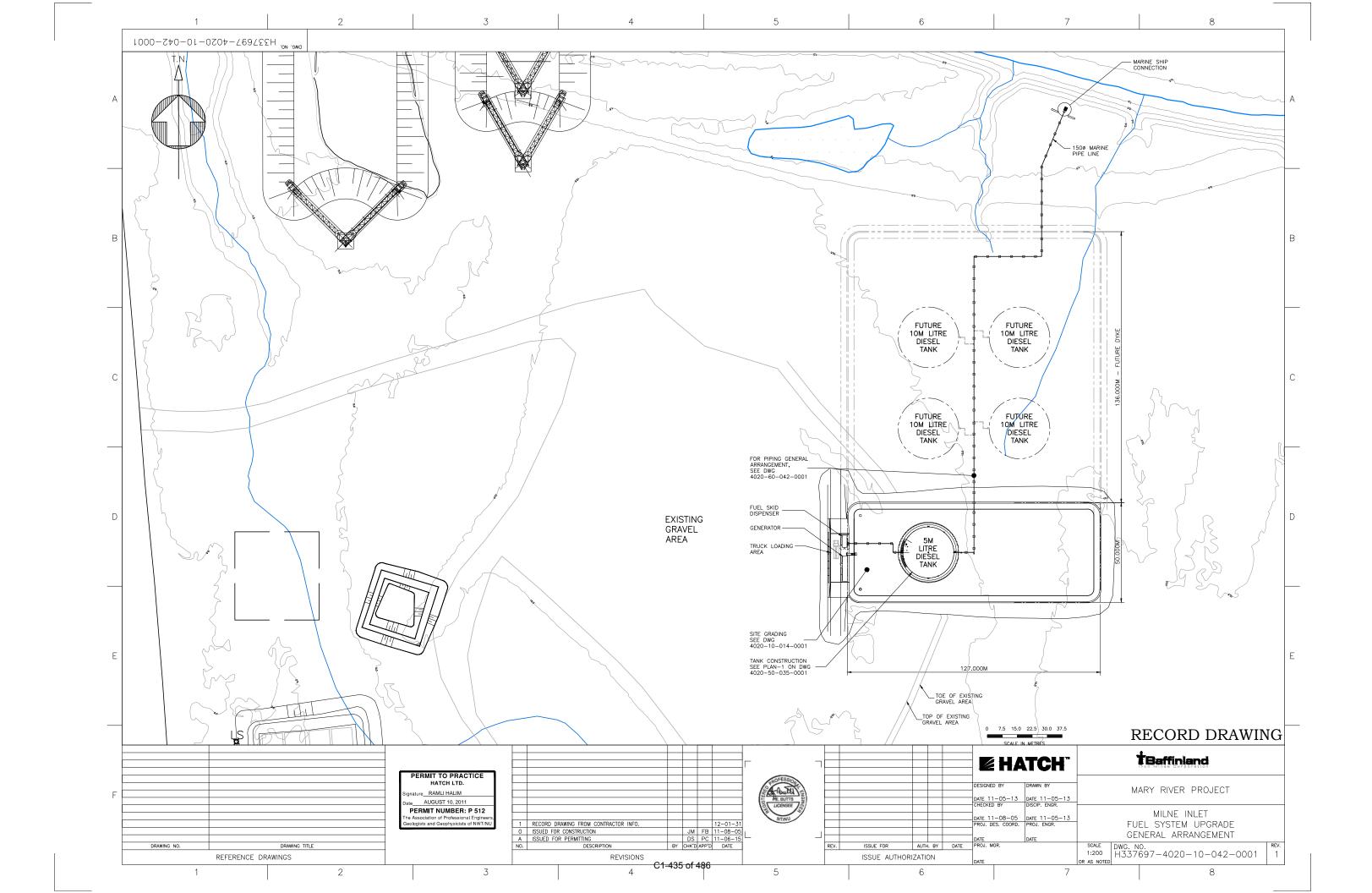


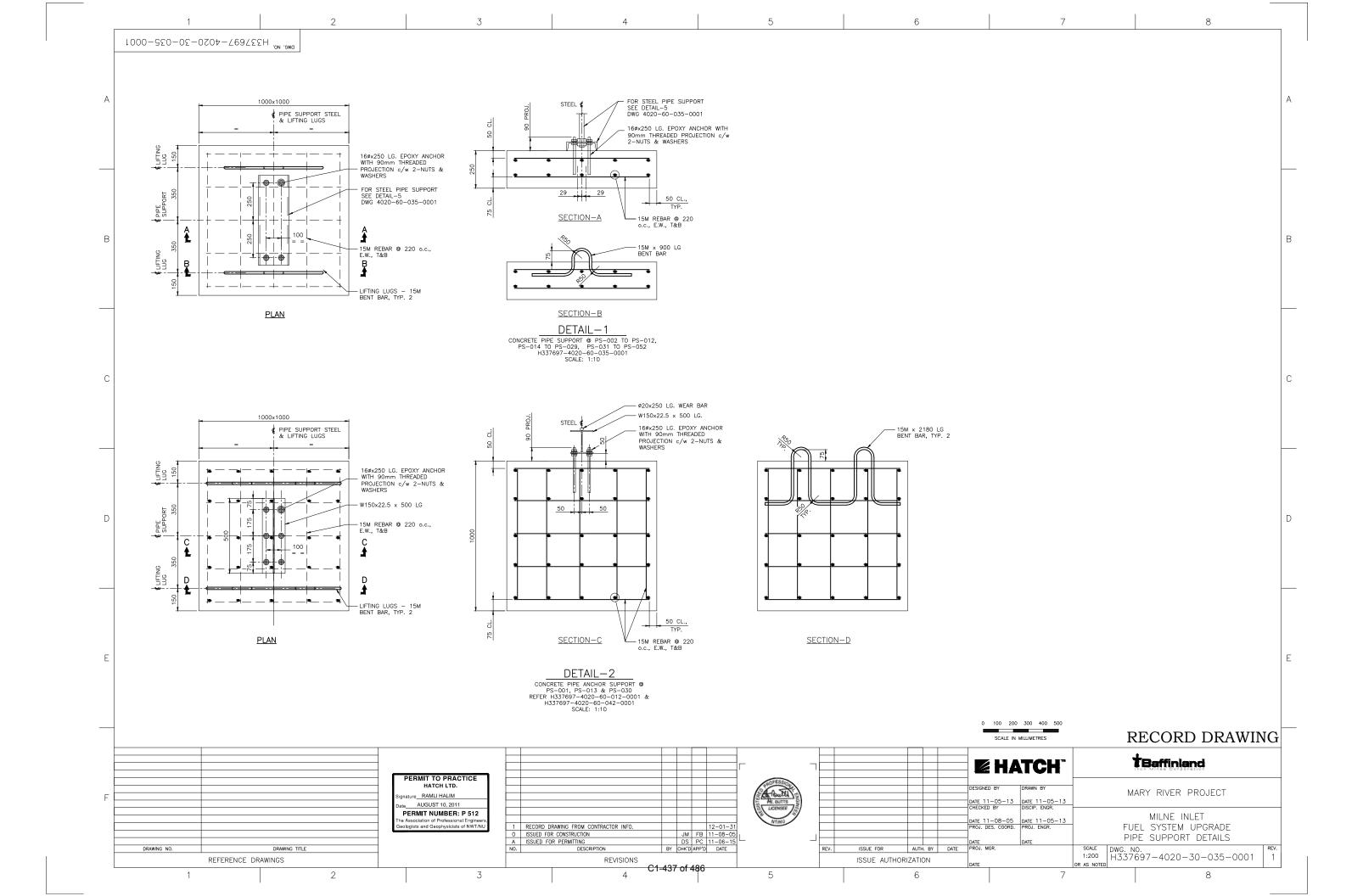


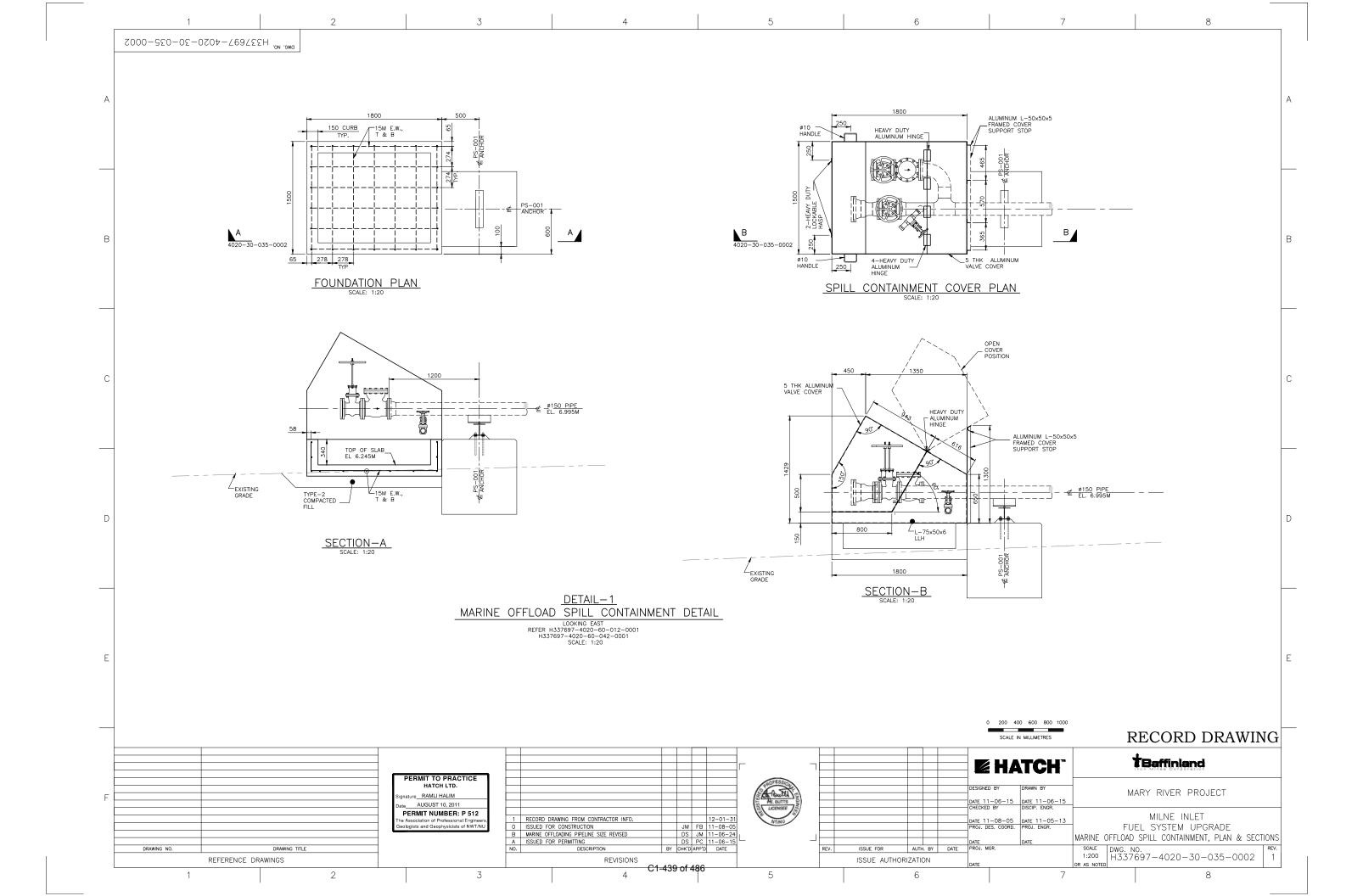


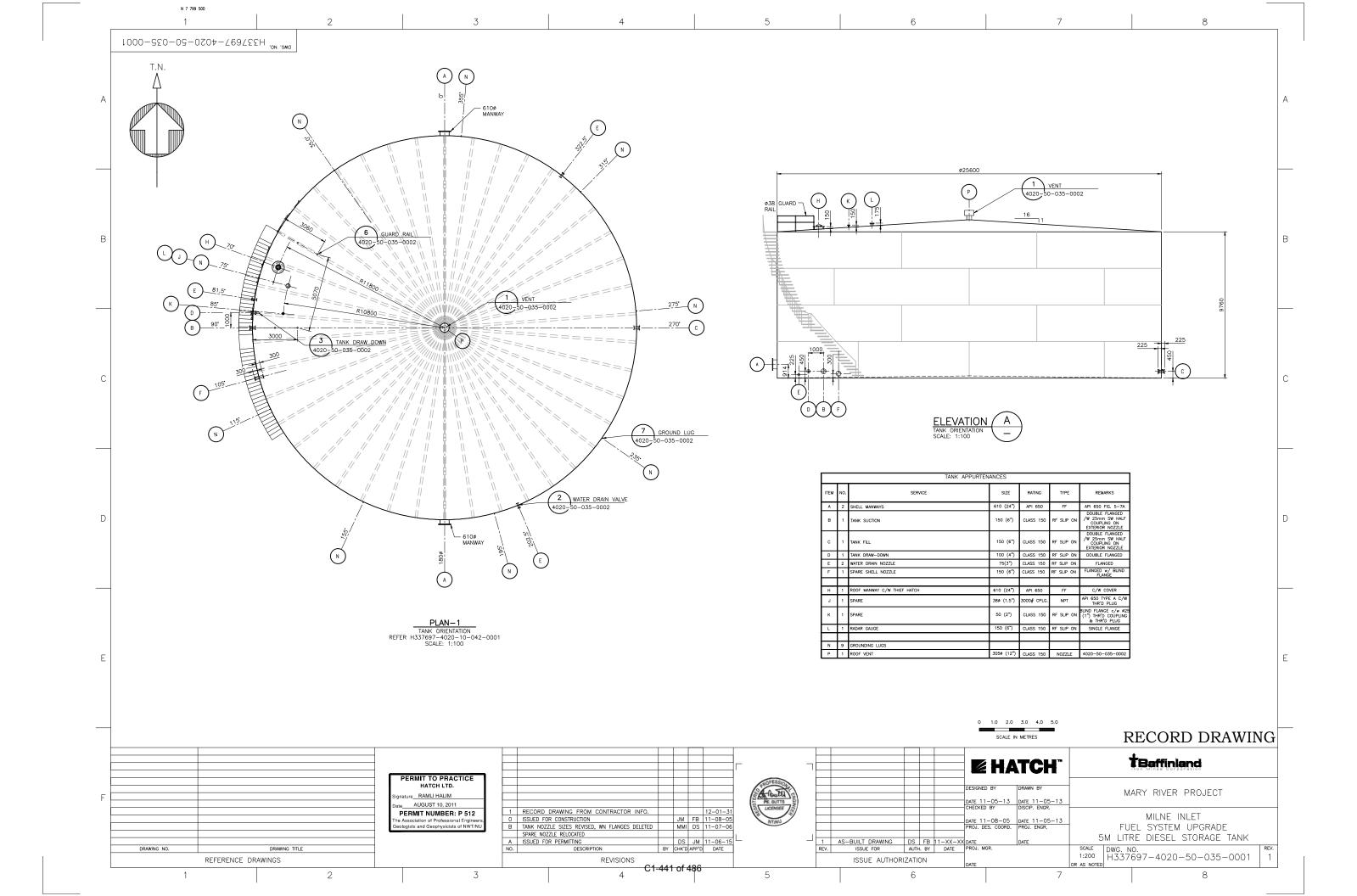


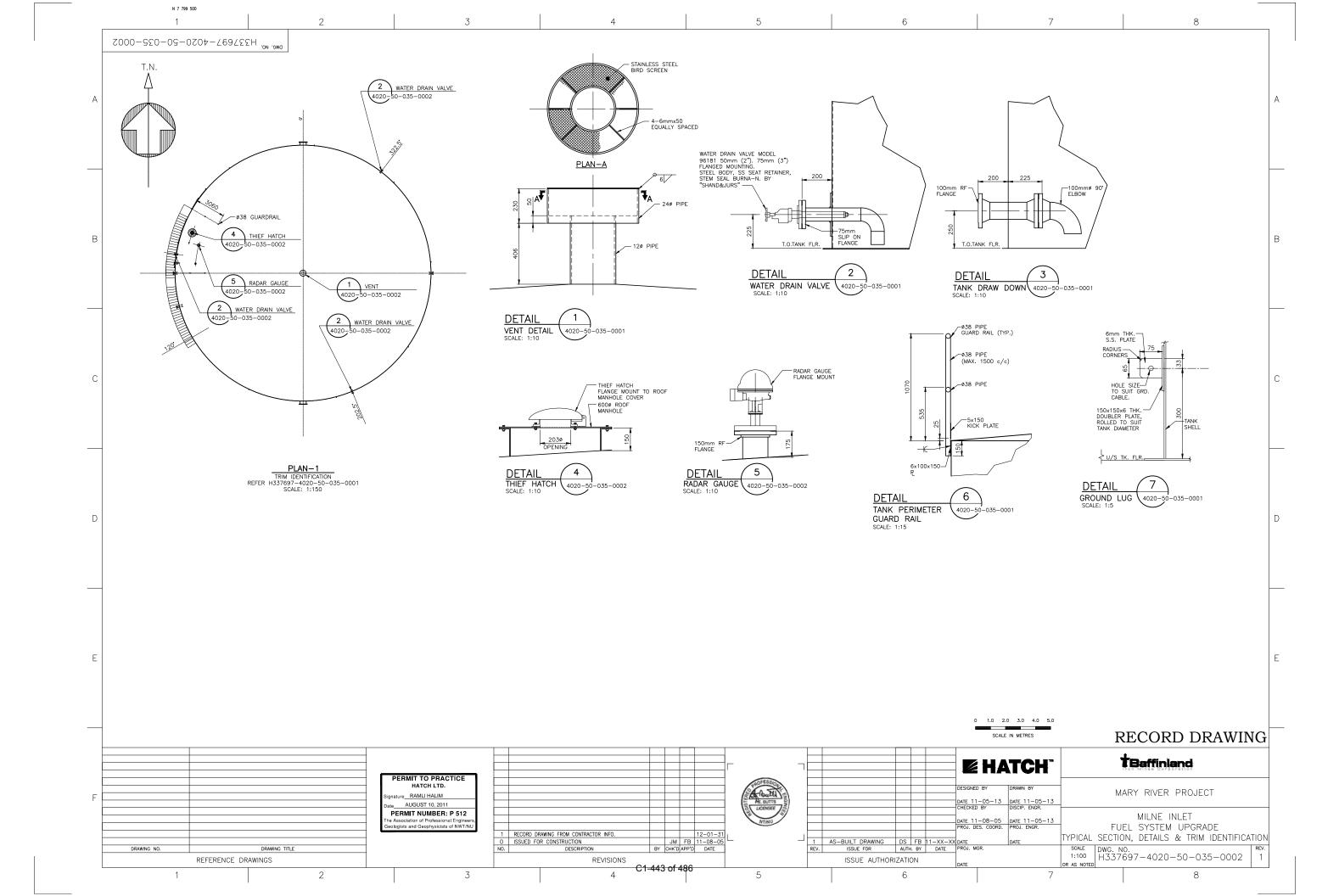


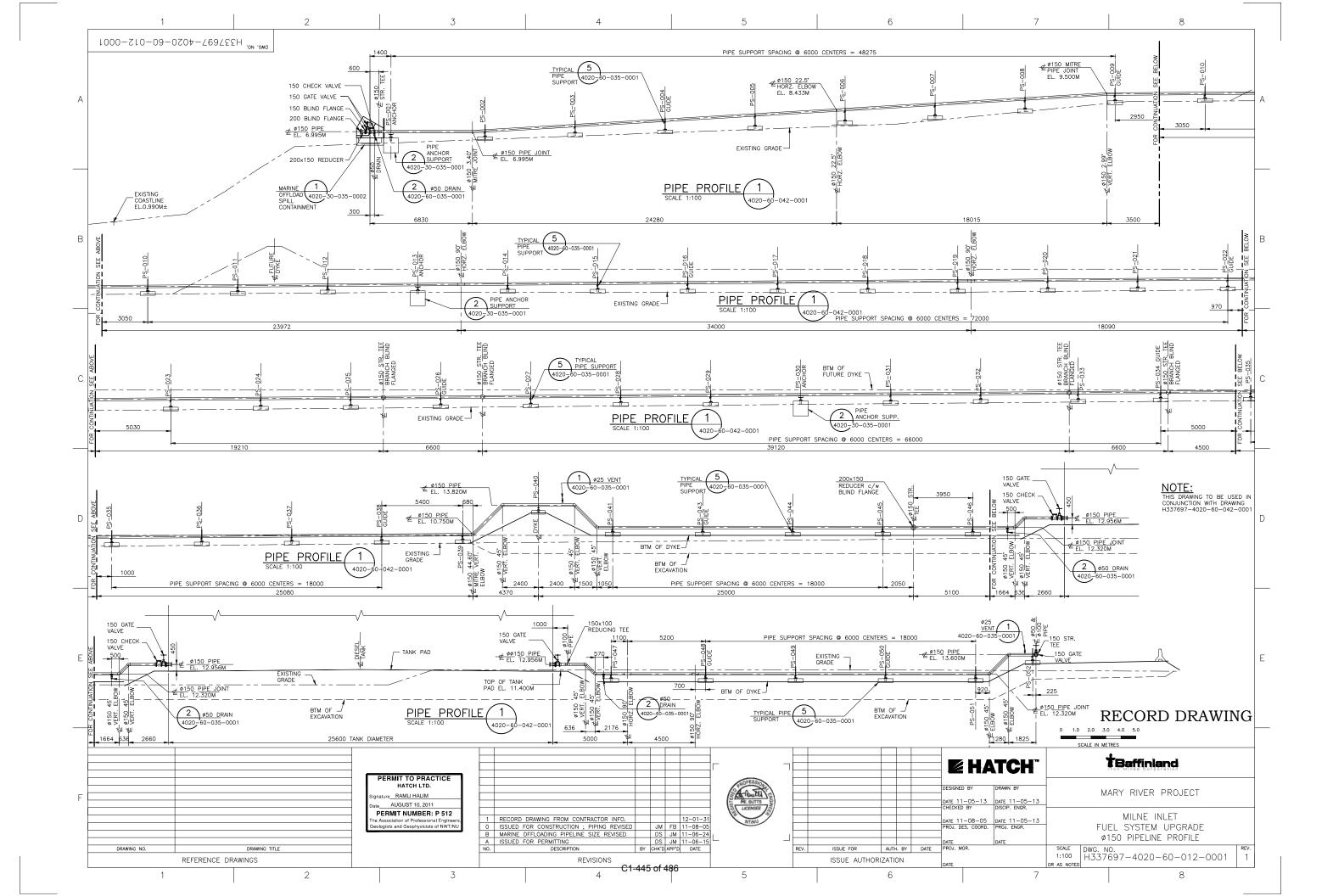


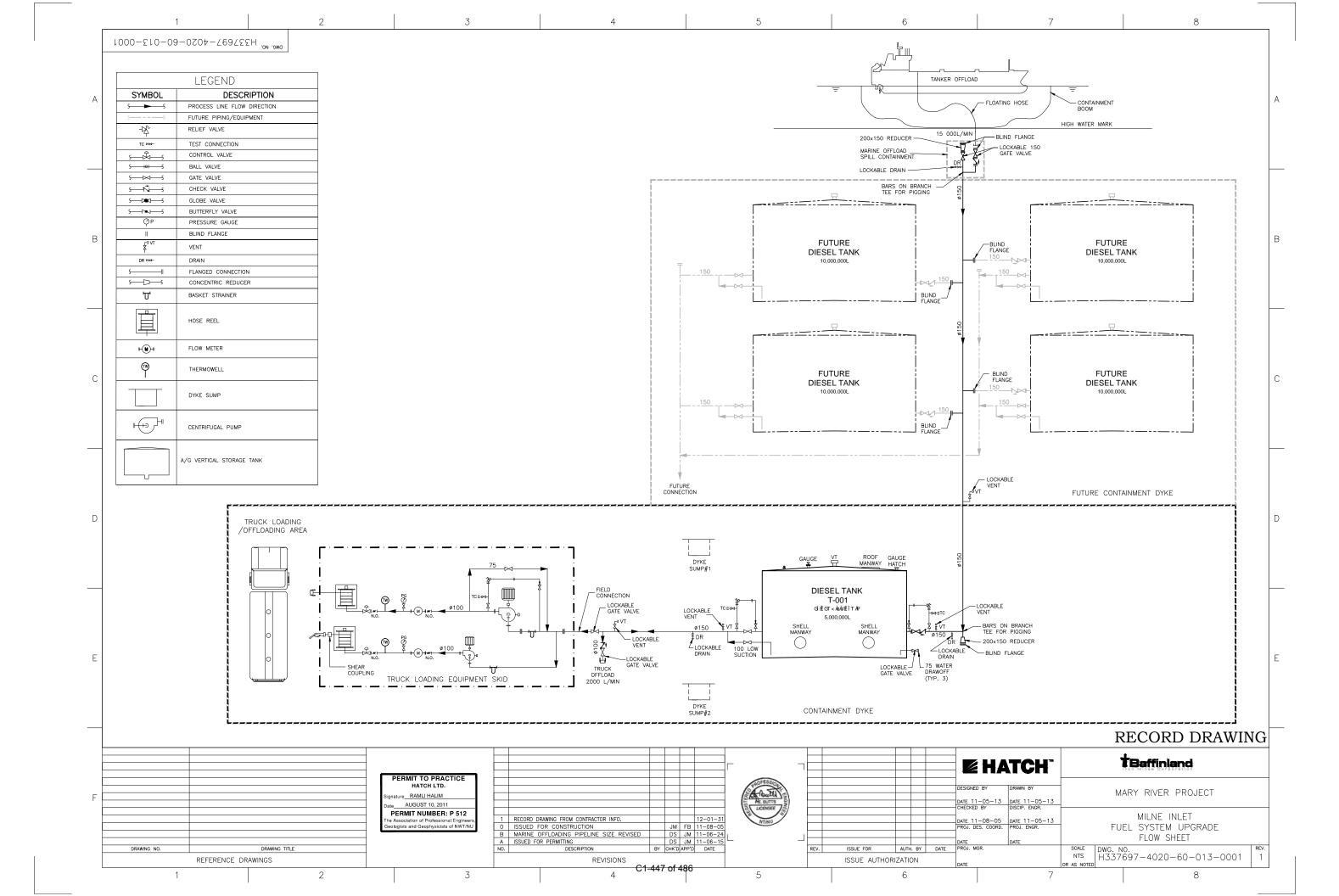


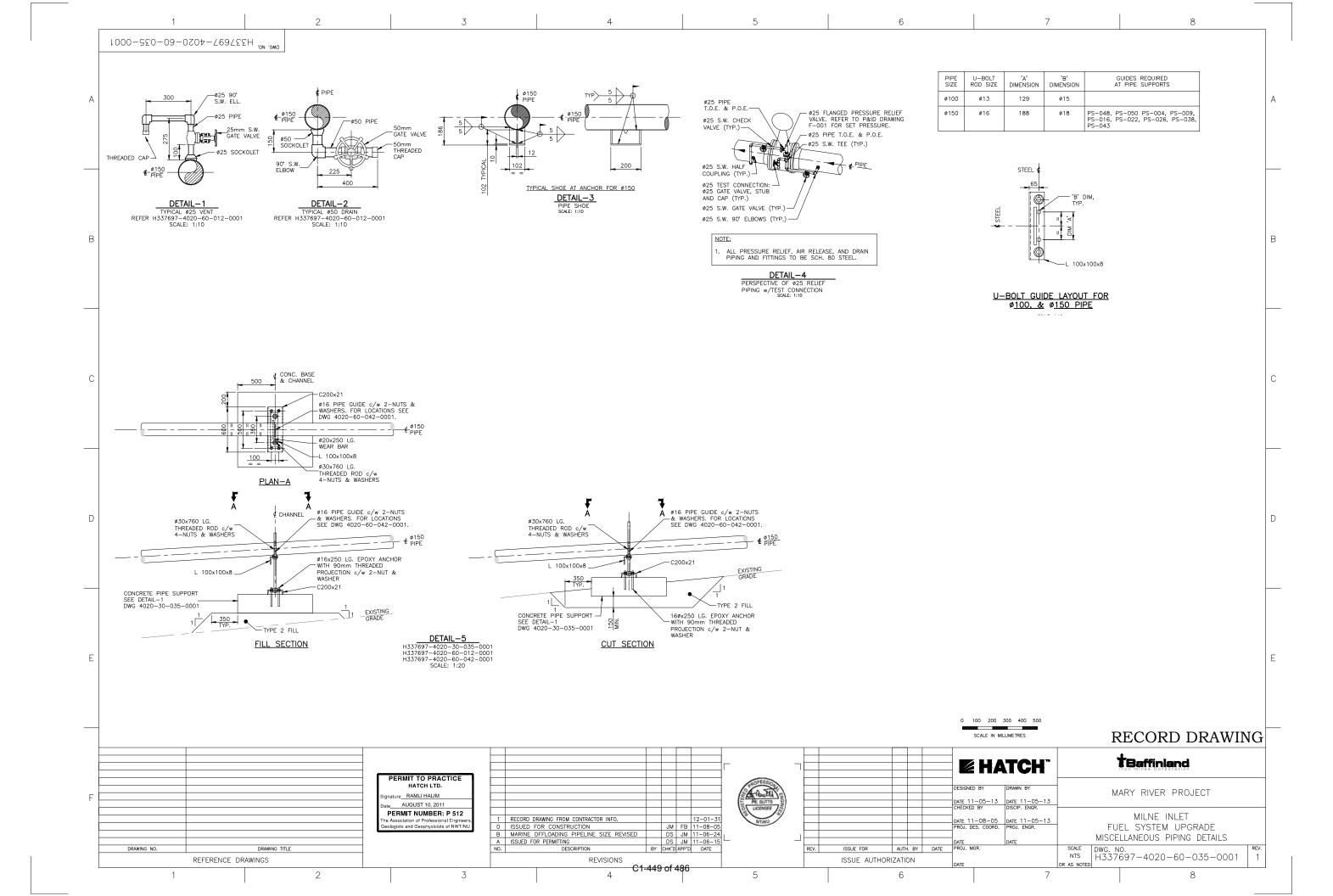


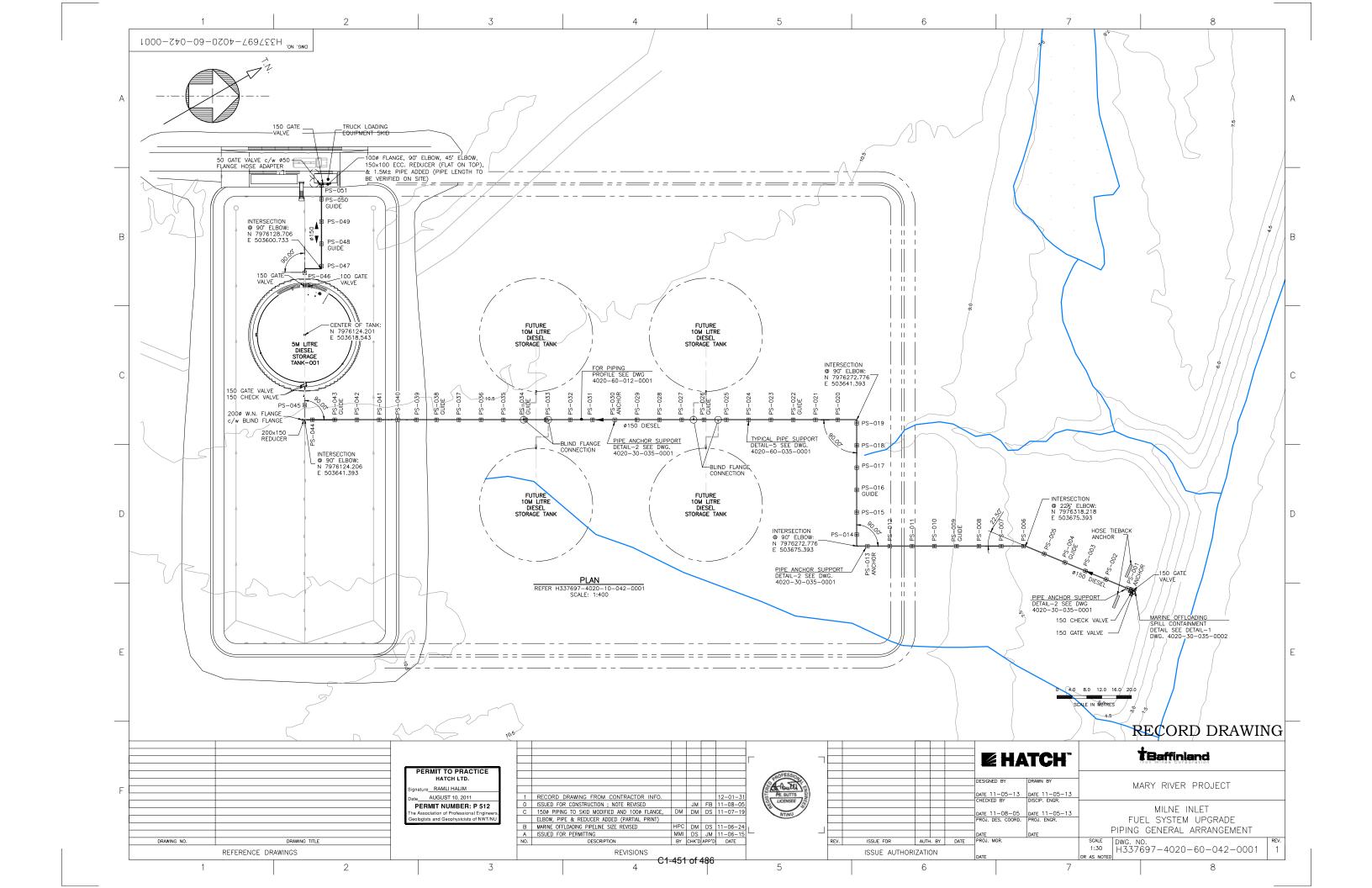


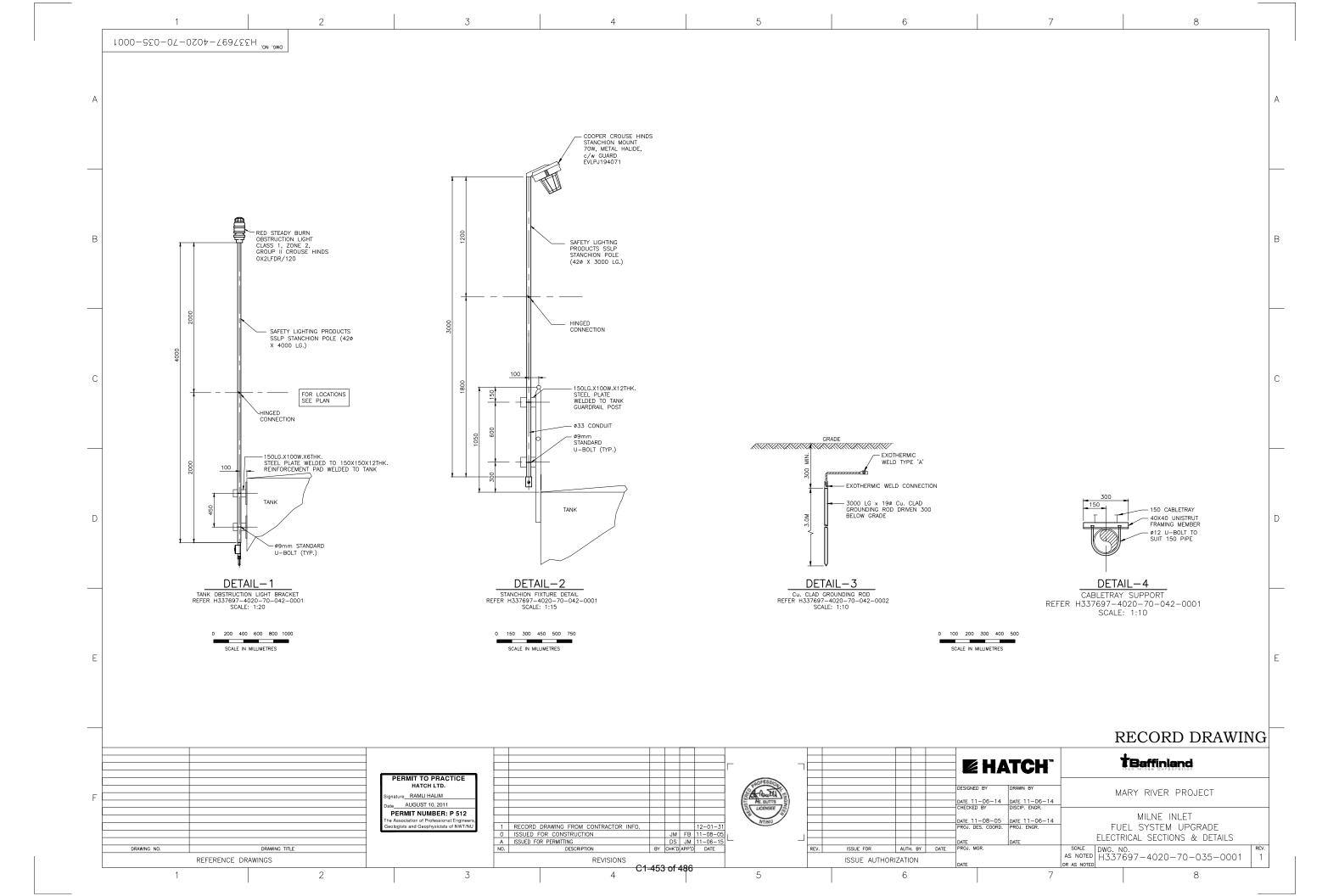


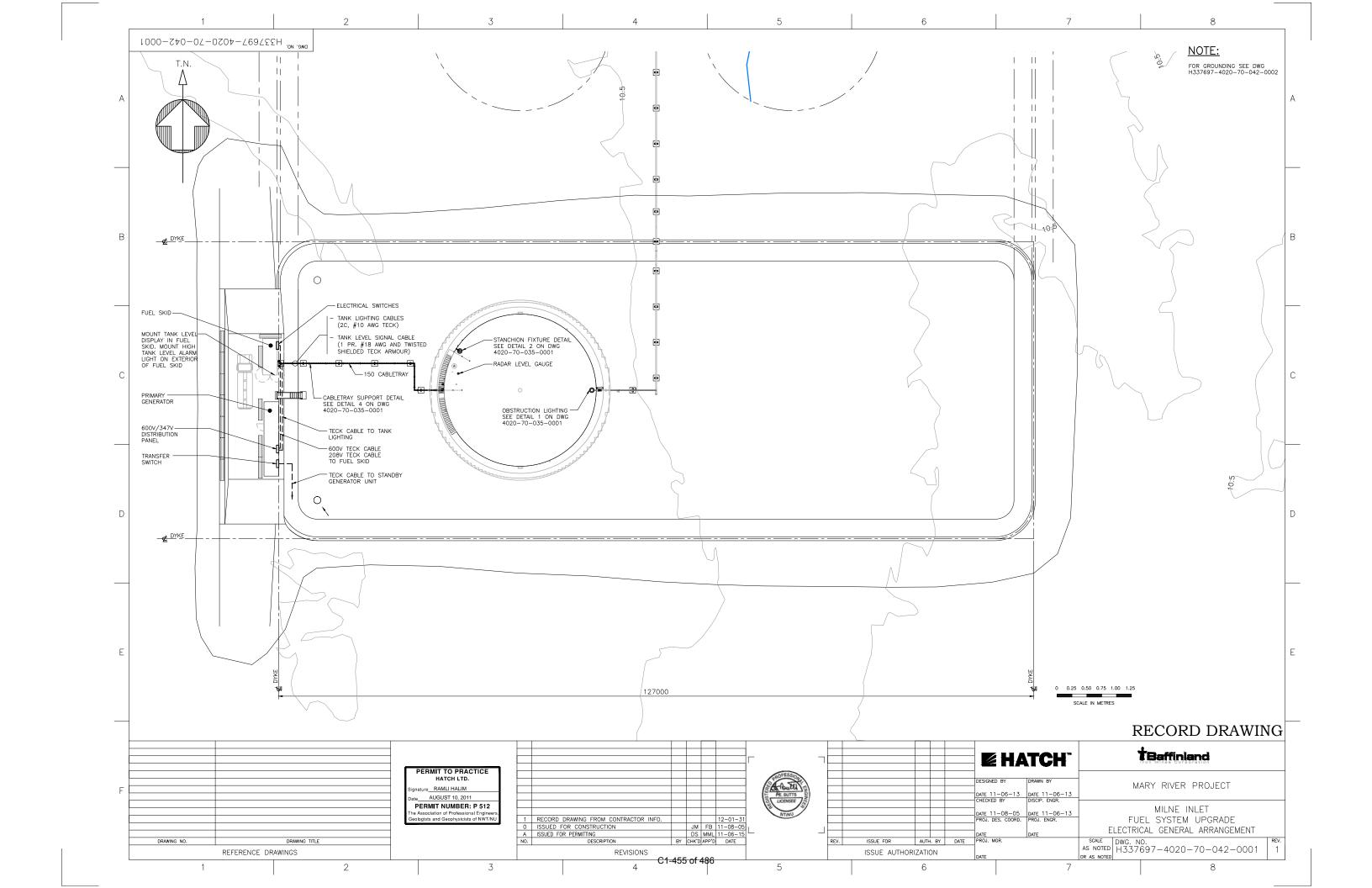


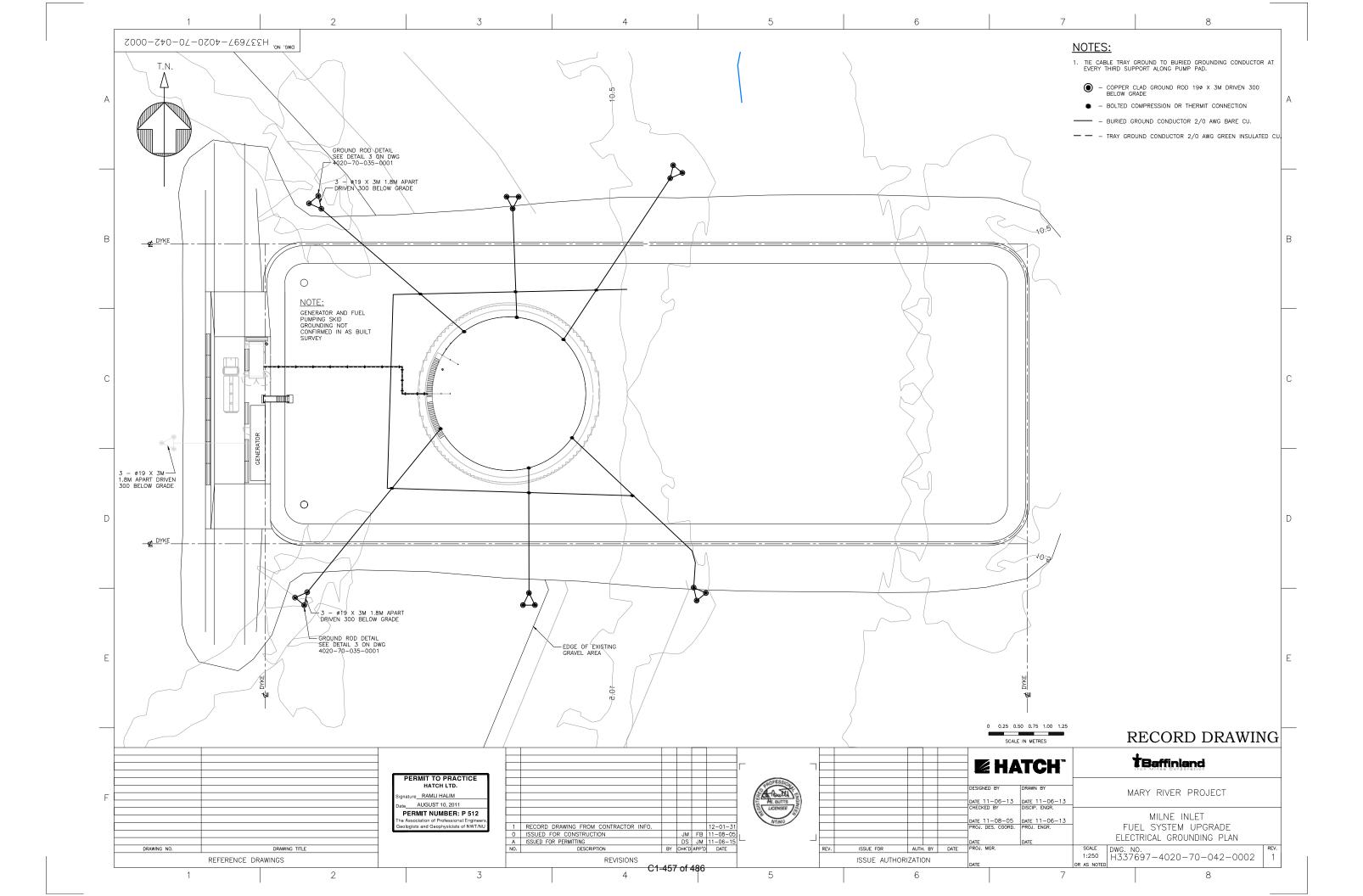


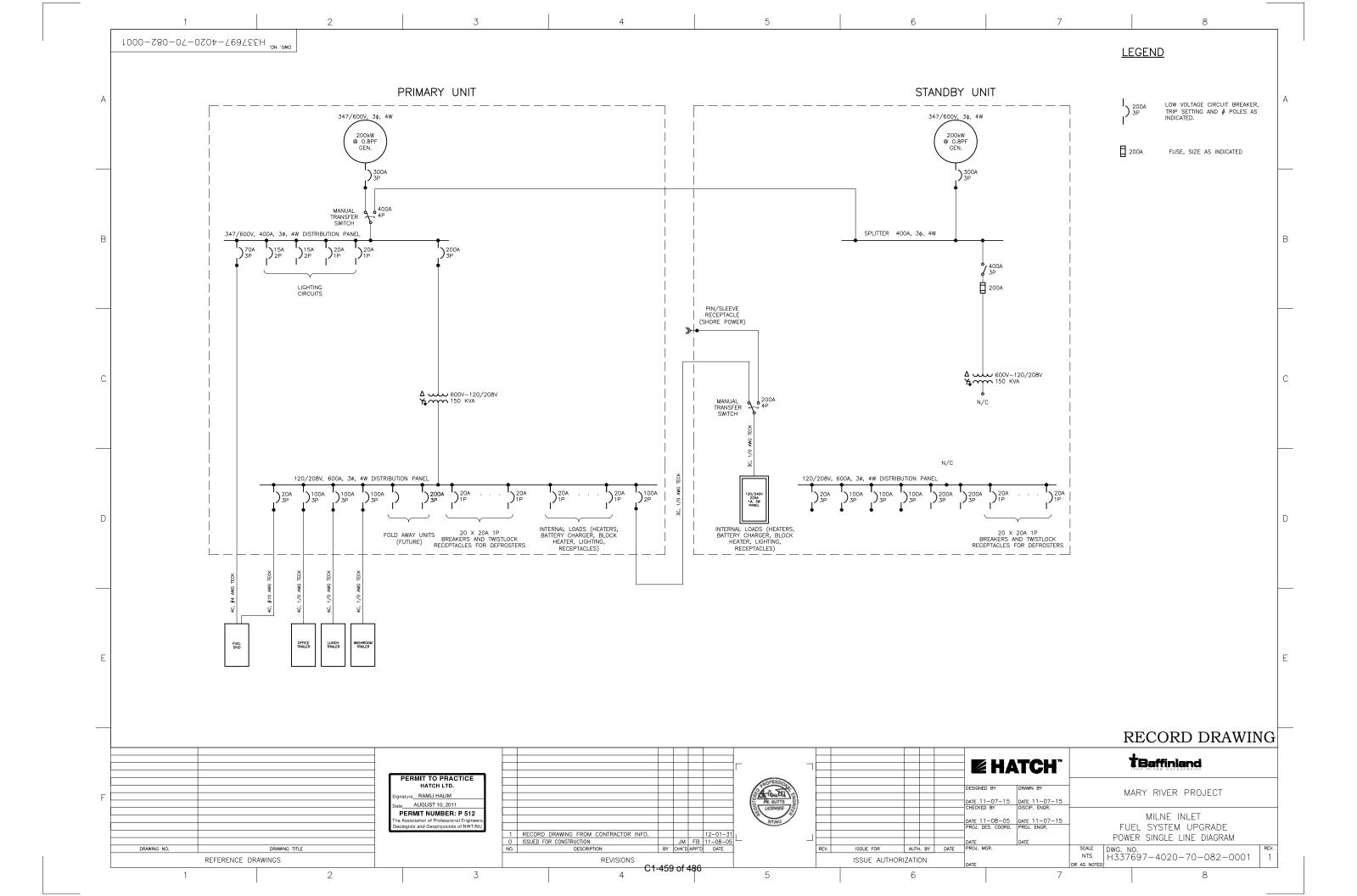
















Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

# A.3 Daily Inspection Reports

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#### Nuna Contracting Baffinland, Milne Inlet 5 M Liter Fuel Tank Project Daily Report

Date	18-Aug-11	Contract No.			
Name of Contractor: Nuna Logistics			Project: Baffinland - Milne 5M Liter Tank Farm		
Hours Worked: 7am	•			_	
Weather Report	Time: 7:00 AM	Temp: Low 4°C High 11°C	Wind Speed: 5 km/hr Commer	nts: Sunny	

**Safety Performance** 

Contractor	First Aid	Medical Aid	Property Damage	Equipment Damage	Spills	Restricted Duties	Near Misses	Yearly Total
Nuna	0	0	0	0	0	0	0	0
Adco	0	0	0	0	0	0	0	0
Layfield	0	0	0	0	0	0	0	0

Incident: No incidents have been reported in the last 24hrs

**Corrective Action:** 

**Daily Safety Topics** 

Bully Surety Topics					
Contractor	Торіс				
Nuna & All Sub Contractors	1) Discussed which areas are out of bounds 2) Discussed the importance of 3 point contact with all the machines, including the small ones.				

**Description of Work Preformed Today** 

Volume Place (ECM)		# of Loads	Daily Total	YTD Total	Screening				
Material Type	From	To	# OI LOAUS	(ECM)	(ECM)	Product	Location	Qty	To Date
Sand/Gravel	Km 2 Borrow	Tank Farm	126	1087	1769				
							Grand Total	0	
	Grand Total		126	1087	1769				

# **Daily Activities**

Major Project Updates











345 Excavator loading Haul Truck at Km2 Borrow Pit

### **Daily Activities**

Contractor	Daily Activities					
Niina	Material pushed up in Km2 Borrow Pit	Placed, Leveled and Rolled material at Tank Farm				
	Loading and Hauling from Km2 Borrow Pit	Road from Km2 borrow pit graded				
Adco	Not onsite					
Layfield	Not onsite					

### **Contractor Remarks**

Hatch inspected lift one and and approved.

Baffinland confirmed that Nuna can use 20 m3 of water for soil compaction per day.

Hatch inspected onsite geotextile and approved for use. This will allow Nuna to begin on berm construction before Sea Lift arrives.

New survey elevations marked out on steaks for toe of berm.

Man Power: Daily

man rower bany							
Company	Personnel	Daily M/H					
Nuna	9	108					
Adco	0	0					
Layfield	0	0					
Underhill	1	12					
Total	10	120					

Man Power: YTD

IVIGIT I OVECT			
Company	YTD Man Hours		
Nuna	216		
Adco	0		
Layfield	0		
Underhill	48		
Total	264		



Date: September 21/2011

Daily Report No.: 17-09

# **DAILY INSPECTION REPORT**

**Marlon Coakley** 

#### Contract H337697

# **General Information**

Conditions	Workforce	Equipment	Sub Contractor	Other
Temperature: 05-	6	Crane & Support Equipment	Nuna	
Weather: overcast	4		ADCO	
Location: Milne Inlet	13		Gem steel	

#### Testing:

X-RAY set to start on Friday Sept.23

# **Activities:**

6:45 Safety meeting. Discussed weather conditions ,working at heights ,proper crane signals ,winds speeds , need to insure that that welders use their face shields while using the grinder

Gem Steel Night shift crew will be welding roof plates and removing wind braces

Gem Steel Day shift crew set all roof sheets in place and eight inch nozzle in east side of tank

Gem Steel Day shift crew completed vacuum testing of tank shell

ADCO continues to use the Nuna shop ,to weld pipe sections

ADCO continue to prepare pipe stands for pipe installation

**ADCO installing Pig Catchers** 

ADCO placing and welding pipe ,the pipe is completely weld from the shore line heading south toward containment berm

Ongoing Bears monitoring days and night.

We are now trying to conserve water, due the fact that we have problems with the water truck; the water truck is down due to a mechanical issue. We are excepting the water truck in Mary River to sent to Milne Inlet in the morning

#### Instructions:































Date: September 24/ 2011

Daily Report No.: 17-09

# DAILY INSPECTION REPORT

**Marlon Coakley** 

#### Contract H337697

## **General Information**

Conditions	Workforce	Equipment	Sub Contractor	Other
Temperature: 02+	3	Crane & Support Equipment	Nuna	
Weather: overcast &light rain	4		ADCO	
Location: Milne Inlet	13		Gem steel	

#### Testing:

X-RAY testing is scheduled to start Sunday morning, the two X-ray tech are set to arrive from Iqaluit of this evening charter .

#### **Activities:**

6:45 Safety meeting. Safety topic discussed with group (look before you leap) weather & wind conditions to be monitor ,working at heights ,100% tie off required hours for man lifts & scissor lifts need to be logged daily on equipment check list

Gem Steel Day shift crew have completed welding all roof plates ,hand rails on top of tank

Gem Steel Day pressure checking all flanges on the tank

Gem Steel Day shift crew completed vacuum testing of floor plates

ADCO continues to use the Nuna shop ,to weld pipe sections

ADCO continue to prepare pipe stands for pipe installation

ADCO placing concrete pipe stands inside containment berm at east end of tank.

ADCO installed lights on top of tank and burying the cable running from the tank to electrical panel

Nuna starting clean work face and move sea cans to lay down area for winter storage

Ongoing Bears monitoring days only

Gem Steel as started to demobe and pack gear into sea cans and cleanup work face

Gem Steel prepare inventory list of the remaining steel for the future five million liter tank

Gem Steel will be sending four of their crew off site today ,excepting to have the remainder of the crew offsite by Wednesday September 28th

#### Instructions:





















Date: September 27/ 2011

Daily Report No.: 17-09

# **DAILY INSPECTION REPORT**

**Marlon Coakley** 

## Contract H337697

General	Information
---------	-------------

Conditions	Workforce	Equipment	Sub Contractor	Other
Temperature: 03-	3	Crane & Support Equipment	Nuna	
Weather: Heavy Snow Mixed With Light Winds	3		ADCO	
Location: Milne Inlet				

# Testing: ADCO will be setting up to air test the pipe line from the shore line to east side of five million liter tank

6:45 Safety meeting. The morning safety meeting will ne be hold in the main camp and it include ADCO Nuna
and Site Service Weather conditions and proper clothing ,slip trip and falls ,review minutes of the JOHS
committee meeting
Gem Steel finished cleanup around tank and moved remaining sea cans to winter lay down area
Gem Steel cleaned inside of the tank and vacuum checked floor plate at the entrance of the man way
ADCO continues setting and welding pipe on east side of tank
Nuna continues to move sea cans and prepare lay down area for winter shut down
Toured the site with the Joint Occupational Health and Safety Committee ,tour completed site with all the committee members .



Date: August 11/2011

Report No.: 1

# **INSPECTION REPORT**

#### Contract H337697

#### **General Information**

Conditions	Workforce	Equipment	Sub Contractor	Report By
Temperature: 20C		Milne Fuel Skid	Bryant	J. MacLean
Weather: cloudy				
Location: Valley Field Port - Montreal				

#### Testing:

No testing performed

## **Equipment Review:**

- 1. Fire suppression system is liquid based with a note on it to use anti freeze in system? We had required nitrogen fire suppression for the cold climate.
- 2. No API dry break coupling cam lock with cover has been provided, API dry break required.
- 3. Solenoid control valve is equipped with rate of flow, wasn't really required for a PD pump, make valve a little more complicated. I might be acceptable if the pump bypass had not been deleted.
- 4. No pump by pass system only internal relief for pump maybe OK if the operators remember to shut it off an, however pump is going to be constantly relieving.
- 5. No plugs on vents and drains ball valves are brass, should be steel.
- 6. A 40 mesh strainer before pump no strainer before meter. This is a bit too fine for the pump suction.
- 7. No strainer before meter, the 40 mesh was to go here
- 8. No evidence that pumps were aligned no shims Base did not appear to be machined, most likely not flat.
- 9. Bolts loose and nuts falling off gear reducer for small pump check of fasteners will be required on site
- 10. Doors cut in end of container to access hose reels are very heavy and have no handle or decent latch system
- 11. Insulation has come off inside access doors
- 12. System was tested with diesel fuel I assume, should be OK until some Arctic grade can be run through it. It is heat traced and insulated
- 13. Labeling on electrical panel not correct labeled as foreign voltage which is incorrectly spelt
- 14. Pump base is light, because the there is no pump by pass; this pump is going to vibrate when the internal relief starts chattering.
- 15. The meter displays are in gallons, should be in litres
- 16. Labeling for switches i. e. hose reel start missing, pump stop/ start

- 17. Only 800 watts of heat for pump area, probably will not keep up, however the roll up door is not insulated, there is an insulation piece provided to cover the opening. Has to be put in place.
- 18. The loading section only has one 400 watts heater
- 19. Recommend to either use a flexible connection to hook up to it or an anchor just outside the cabinet. This is a spot where if we have any pipe stress it is going to translate into the pump.

## Photos:





















Baffinland Iron Mines Corporation - Mary River Project Milne Inlet Fuel Storage Facility As-Built Documentation – January 31, 2012

# A.4 CCME Code Compliance Review

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Part 3 Design and Installation of Aboveground Stora	age Tank Systems
3.1.1 (1) This Part applies to the design and installation of a new aboveground storage tank	
system	
3.1.1 (2) A storage tank installed in a concrete vault located below grade with the interior of	N/A
the vault not filled with backfill material shall be	
considered an aboveground storage tank for the purpose of this Code.	
Section 3.2 General Requirements	
3.2.1 Except as provided in this Part, the	The new tank farm 5M A/G tank
design, fabrication and installation of an	components have been installed in conformance with Section 4 of
aboveground storage tanks system shall be in conformance with NFCC.	the NFCC.
3.2.2 Except as provided in this Part, the	N/A
design and installation of an aboveground storage tank system connected to an oil-	
burning appliance and equipment that comes	
within the scope of CAN/CSA-B139-00,  "Installation Code for Oil Burning Equipment"	
shall be in conformance with that Code.	
3.2.3 An aboveground storage tank, components, and accessories, for which there	All components, accessories and
is a recognized standard, shall be approved	trim comply to this section.
only for the uses indicated under the standard.	
3.2.4 A company or individual that is	Hatch has reviewed the As-Builts,
authorized by the authority having jurisdiction shall verify that the design and installation of	as constructed status of the facility and confirms it meets the
an aboveground storage tank system meets	applicable requirements of this
the requirements of this Code or other requirements as specified by the authority	code.
having jurisdiction.	
3.2.5 An aboveground storage tank system shall be installed by a company or individual	Hatch is registered to practice engineering in Nunavut and has
that is authorized by the authority having	completed the design, managed
jurisdiction.	the construction and reviewed all
	As-Built documents pertaining to this tank system. All drawings
	have been stamped by
	Registered Professional Engineers.

3.2.6 An aboveground storage tank shall be equipped to control emissions of volatile organic compounds in conformance with CCME PN 1180, "Environmental Guideline for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks". (See Appendix B, note B.3.2.6)  3.2.7(1) The Owner of an aboveground storage tank system shall provide an as-built drawing to the authority having jurisdiction in the manner and time frame as specified by the authority having jurisdiction.	Stored fuel is Arctic Grade Diesel with a vapour pressure less than 10kPA, N/A  As-Built Drawings form part of this report.
3.2.7(2) As-built drawings for an aboveground storage tank system shall include, as a minimum:  a) The outline of all storage tanks; b) The centerline of all piping or piping groups; c) The centerline of all underground electrical power and monitor sensor conduit; d) Building foundation outlines; e) Secondary containment systems; and Property lines.	As-Built Drawings forming part of this report meet the minimum requirements as stated in this section.
3.2.8(1) No person shall install an aboveground storage tank system unless:  a) Required permits or approvals have been obtained from the authority having jurisdiction; b) Plans, drawings and specifications of the system or equipment have been examined by the authority having jurisdiction; and The plans, drawings and specifications referred to in Clause (b) bear the stamp and signature of a professional engineer licensed to practice in the province/territory.	<ul> <li>a) Permit for the Tank construction and containment dyke was obtained from the Nunavut Water Board and the Qikiqtani Inuit Association.</li> <li>b) Drawings were submitted to the above authorities.</li> <li>c) Submitted Drawings to the Authorities bear stamp and signatures of Registered Professional Engineers.</li> </ul>
3.2.9 An aboveground storage tank system shall be designed and installed in accordance with the manufacturer's instructions, the appropriate standards, and this Code.	The aboveground tank has been constructed in conformance with API 650. The aboveground piping has been constructed in accordance with the NFCC and ANSI 31.3 Process Piping. The Secondary Containment has been constructed in conformance with this code and NFCC.
Section 3.3 Field-erected Storage Tanks Systems	
3.3.1(1) A field-erected storage tank system shall:  a) Have corrosion protection in conformance with Section 3.8;  b) Have a secondary containment system in	a) No underground steel piping or tanks at this facility. The use of secondary containment liner and low corrosion rates preclude the use of CP on the A/G tank floor.

conformance with Continue 2 0:	h) Conforms to Costian 2.0
conformance with Section 3.9; c) Have leak detection in conformance with Part	b) Conforms to Section 3.9. c) Conforms, see Section 6 in this
6;	table.
d) Have containment sumps, as applicable;	d) N/A
e) Be provided with overfill protection;	e) i) N/A
i. For pipeline delivery, in the form of an	ii) Conforms, radar gauge and
alarm system that will automatically	alarm.
alert pipeline or terminal personnel so	
• •	f) Conforms.
that action can be taken to prevent the storage tank from being overfilled;	
ii. For truck, rail, ship, or barge delivery, in the form of a visual and audible	
alarm system for detecting a high level	
that will activate and alert personnel in	
enough time to terminate the flow of	
the product to the storage tank and	
prevent an overfill (See Appendix B,	
note B.3.3.1(1)(e)(ii)), or	
iii. In conformance with API RP 2350-96,	
"Overfill Protection for Storage Tanks	
in Petroleum Facilities"; and	
f) Have piping in conformance with Part 5, as	
applicable.	
a la la companya di managana di managana di managana di managana di managana di managana di managana di managan	
3.3.2 If vapour balancing or vapour recovery	N/A
systems are required, they shall be designed	
and built in conformance with CCME PN 1057,	
"Environmental Code of Practice for Vapour	
Recovery in Gasoline Distribution Networks".	
Section 3.5	
3.5.1(1)	N/A
2.5.4(2)	N/A
3.5.1(2)	N/A
Coation 2.0 Design Obandards	
Section 3.6 Design Standards	
3.6.1(1) Based on the design, an aboveground	The tank has been designed and
storage tank shall be designed, built, and	constructed in conformance with
approved in conformance with the following, as	API 650 – 11 th Edition and all
applicable:	issued Addenda .
API Std 650-98, "Welded Steel Tanks for Oil	
Storage";	
3.6.2 An overfill protection device shall be	The tank is equipped with an
designed, built, and approved in conformance	electronic radar gauge which has
with ORD-C58.15-1992, "Overfill Protection	over fill set points established and
Devices for Flammable Liquid Storage Tanks."	external alarm. All product transfer
	occurs by marine delivery and
	pipeline for which there is on site
	monitoring during all operations.

3.6.3 A containment sump shall be designed, built, and approved in conformance with ORD-C107.21-1992, "Under-Dispenser Sumps".	N/A
3.6.4 A liner shall be designed, built, and approved in conformance with ORD-C58.9-1997, "Secondary Containment Liners for Underground and Aboveground Tanks".	The secondary containment dyke has been constructed with a Layfield Hazguard 535 synthetic liner installed and tested in conformance with this code and in accordance with manufacturers instructions.
3.6.5 An aboveground storage tank designed to contain an allied petroleum product shall be designed, built, and approved for use with that product.  3.6.6(1)	N/A
Section 9	
<ul> <li>3.9.1(3) A secondary containment system for a field-erected aboveground storage tank shall be:</li> <li>a) A single-wall and single-bottom storage tank placed entirely within a dyked area, with an impermeable barrier in the floor of the containment area and in the dyke walls;</li> <li>b) A single wall, double-bottomstorage tank placed entirely within a dyked area, with an impermeable barrier in the floor of the containment area and in the dyke walls, sealed to the perimeter of the storage tank or pad when the liner is not installed under the tank.</li> </ul>	Construction conforms to 3.9.1(3) a) A synthetic membrane liner has been installed in the granular construction of the dyke.
3.9.2(1) Except as provided in Sentence (2), a secondary containment impermeable barrier shall be:  a) Designed, built, and approved in conformance with:  iv. ORD- C58.9-1997, "Secondary Containment Liners for Underground and Aboveground Tanks", or  v. ORD-C142.20-1995, "Aboveground Secondary Containment Tanks"; and b) Installed so that:  i. The liner is sealed to the perimeter of the storage tank or pad when the liner is not installed under the tank;  ii. The liner extends to the top of the dyke wall;	The liner for this facility is in conformance with ORD-C58.9-1997, the liner extends to the top of the dyke wall and is placed entirely under the tank floor. The liner is covered with a minimum of 450mm of granular material and placed between layers of geotextile and sand for protection.
The liner is covered with a non-combustible material of such nature and thickness that it	The liner is covered with a minimum of 450mm of granular material.

will not fail when the secondary containment is exposed to fire; and	Conforms
3.9.2(2) A secondary containment impermeable barrier that does not conform to Sentence  (1) Shall:	N/A
a) Use material compatible with the product being stored and acceptable to the authority having jurisdiction (See Appendix B, note 3.9.2(2)(A)); and	N/A
b) Be designed, constructed, and maintained to ensure a maximum hydraulic conductivity of 1x10 ⁻⁶	N/A
3.9.3(1) Liner penetrations shall be located at the high point or in a raised part of the dyke floor. (See Appendix B, note B.3.9.3(1))	No liner penetrations are incorporated in the construction of dyke.
Section 3.10 Spill Containment and Runoff Collection	
3.10.1 Spills, overfills, and storm water from product transfer areas shall be contained, treated and disposed of in conformance with the applicable provincial or territorial regulations, guidelines or policies.	The fuel transfer area is incorporated in the design of the secondary containment such that all run-off is collected into the containment area.
3.10.2 Containment area floors within dykes shall slope away from the tank base towards a sump at a slope greater than 1%.	Dyke floor slope is a minimum of 1% from the tank to collection sumps.
3.10.3(1) An oil-water separator used to treat storm water runoff, overfills, or a spill from the product transfer area shall be sized for a minimum hydraulic flow rate of a ten year return, one hour storm event, with the one hour rainfall intensity data obtained for the nearest weather station, and:  Be designed, built, and approved in conformance with ULC-S656-2000, "Oil-Water Separators";or	An OWS will be purchased in 2012 as a mobile unit sized and conforming to this section for this tank farm facility. Currently the existing OWS and treatment system for the Bladder Tank Farm can/will be used in the event of a hydrological occurrence or spill.
Part 5 – Design and Installation of New Piping Systems	S
Section 5.1 Scope	
5.1.1 This Part applies to the design and installation of piping associated with a storage tank system.	
Section 5.2 General Requirements	
5.2.1(1) Piping materials shall, as applicable, be designed, built, and approved in conformance with	Conforms

the following:	
a) ASTM A 53, "Pipe, Steel, Black and Hot-	
Dipped, Zinc-Coated, Welded and Seamless",	
	Conforms
5.2.2 Except as provided in this Part, the design and	Conforms
installation of piping shall be in conformance with the	
NFCC.	
5.2.4 Piping material shall be installed and	As per operators Operations and
maintained in accordance with an approved	Maintenance Manual.
standard, code, or in a manner acceptable to the	
authority having jurisdiction.	
5.2.5 Single-wall piping shall not have buried or	No buried piping. N/A
concealed mechanical joints. (See Appendix B, note	, , , ,
B.5.2.5)	
5.2.6 Leak detection testing and monitoring of piping	Visual leak detection on A/G piping-
shall be in conformance with Part 6.	conforms.
5.2.7 A thermal relief valve shall discharge into the	Conforms.
low pressure side of the piping.	
5.2.8(1) Piping located below the maximum product	Inlet valving to the A/G tank from the
level in a tank shall be provided with a means to	marine pipeline has check and gate
prevent the release of liquid from the tank by syphon	valves installed on the tank inlet nozzle.
flow.	
5.2.8(2) Except as provided in Sentence 5.2.8(3), a	Conforms.
manual shut-off valve shall be lockable or have a	
method of locking.	
5.2.8(3) A manual shut-off valve on the piping	N/A
connecting a storage tank and a heating appliance or	14/11
a stationary combustion engine does not need to be	
lockable or have a method of locking.	
lockable of flave a filethod of locking.	
Section 5.3 Product Transfer	
5.3.1 The fill pipe on a storage tank with a capacity of	All piping systems are sealed on the
5 000 L or more shall be equipped for the attachment	inlet and outlet connection ends with
of a liquid and vapour-tight connection at the time of	liquid and vapour tight cap and
filling and shall be sealed with a liquid- and vapour-	connections Conforms.
tight cap when not in use.	Commodiana Commonnia.
5.3.2	N/A
0.0.2	7471
Section 5.4 Design Standard for Underground Piping S	Systems
Section 5.5 Installation	
COSMOTI O.O ITIOIGNIGNOTI	
5.5.1 Piping shall be installed by a company or	Piping was installed by Certified
individual that is authorized by the authority having	Contractor with Certified Welders and
jurisdiction.	procedure for same.
5.5.2 Piping shall be located and maintained to	Conforms
permit the eventual removal of the piping when the	
storage tank system is permanently withdrawn from	
service.	
301 V100.	

	T =
5.5.3 Piping shall be located in a manner that will	Piping is designed and constructed in
prevent allowable design stress from being	conformance with B31.3-Process Piping
exceeded.	Conforms.
5.5.4 Piping located aboveground shall be protected	Conforms
from physical damage due to impact.	
Section 6.2 General Requirements	
6.2.1(1) A storage tank system shall be tested for	Tank has been tested in conformance
leaks in conformance with Sections 6.2 and 6.3	with API 650 and 653. Additional
(ii) for an aboveground storage tank system,	Radiographic testing has been
final installation shall be before the storage tank	performed in lieu of hydrostatic tank
system is put into service; and	testing.
	Conforms.
6.2.3 Manual or electrical dip or inventory	Comorns.
reconciliation shall be in conformance with Section 8.3.	
6.2.8 Visual leak detection procedures shall be	Conforms
performed in conformance with Sentence 8.4.1(3).	
6.2.11(1) A high-pressure inert gas or vacuum leak	All piping has been tested in
detection test for piping shall be in conformance with	conformance with 31.3 Process Piping.
the following procedures, as applicable.	comornance war error recess riping.
d) a test pressure or vacuum shall, as applicable:	Conforms.
(ii) not exceed 700 kPa (gauge), except when	Comornis.
the piping system is designed for such	
pressures; and	
Section 6.3 Leak Detection Interlocks and Alarms	N/A
Section 6.4 Monitoring Wells	N/A
Section 6.5 Groundwater Monitoring Wells	N/A
Section 6.6 Vapour Monitoring Wells	N/A
Tooligh and vapour morning voing	
Section 6.7 Frequency and Method	N/A
6.7.1 The reference letters in Table 2 represent the	
leak detection and monitoring methods specified in	
Tables 3 through 9.	
6.7.2(1) Tables 3 through 9 specify the frequencies	a) Conforms
and methods of leak detection and monitoring that	b) Conforms
shall be used upon installation and, as applicable	c) N/A
·	O) IVA
(See Appendix B, note B6.7.2(1)):	
a) For in-service monitoring;	
b) For periodic leak detection testing; or	
c) If a leak is suspected	

Table 4 – Aboveground Storage Tanks				
Containment	Final Installation Leak Detection	In-service Monitoring	Periodic Leak Detection	Leak Suspected
API Std 650-98 (within approved secondary containment)	API 650 Standard	IR and VLD; or HTSCM	API 653	PLDT; or API 653
Table 6 – Aboveground Piping				
Containment	Final Installation Leak Detection	In-service Monitoring	Periodic Leak Detection	Leak Suspected
All types	PLMLDT; HPVLDT	VLD	Not required	PLMLDT; or HPVLDT



## **APPENDIX C2**

ANNUAL GEOTECHNICAL INSPECTIONS

(Pages C2-1 to C2-25)



October 5, 2011

Baffinland Iron Mines Corporation 120 Adelaide Street West, Suite 1016 Toronto, Ontario M5T 1T1

Attention: Dave McCann dave.mccann@baffinland

**RE:** ANNUAL GEOTECHNICAL INSPECTION 2011-08-16

**BAFFINLAND IRON MINES CORPORATION** 

**OUR REFERENCE #10-098** 

#### 1.0 Introduction

GENIVAR Consulting Engineers, completed the 4th annual water license geotechnical inspection of the on-site containment structures at Baffinland Iron Mines Corporation (BIM) Mary River Project. The containment structures for the operation are located at two main campsites known as the Mary River Project.

The soil structures reviewed are as per the following:

#### **Mary River Mine Site**

- Bulk Fuel Storage Facility Containment
- Generator Fuel Storage Facility Containment
- Polishing/Waste Stabilization Pond No. 1
- Polishing/Waste Stabilization Ponds No. 2 and No. 3 (Constructed as a 2 cell structure)
- Helicopter Fuel Cell Containment
- Barrel Fuel Containment (Constructed as a 2 cell structures)
- Stove Oil Storage
- Enviro-Tank Storage (Constructed contiguous with hazardous waste storage).
- Hazardous Waste Storage
- Jet fuel Tank and Pump Containment

#### Milne Inlet Site

- Bulk Fuel Storage Facility Containment
- Polishing/Waste Stabilization Pond
- Barrel Fuel Storage (Constructed as a 2 cell structure)
- Hazardous Waste Storage
- Oil and Antifreeze Containment



This report presents the findings.

#### 2.0 Methodology for Inspection

The geotechnical inspector was Mr. Barry H. Martin, P. Eng., who reviewed the sites on August 10, 11 and 12, 2011. The inspections were focused principally on the following aspects.

- 1. The structures were inspected for conformance with the design basis as presented in as-constructed and as-built drawings (provided in the first report).
- 2. The structures were specifically inspected for settlement, cracking, and seepage through the berms.
- **3.** The areas around the sites were examined for evidence of seepage.

Photographs were taken to document observations made during the inspection and are attached.

## 3.0 Mary River Camp

#### 3.1 Bulk Fuel Storage Facility

#### **General Conditions**

The containment structure has not varied from its use as noted in the 2009 report. Some bladders are empty and some bladders are currently full.

#### Stability

At the time of our review the water had recently been removed from the containment and treated for release. There was a small amount of water ponding in a depression or sump in the gravel from which water was removed.

The structure was visually inspected for any signs of cracking or subsidence. There was no indication of any settlements, seepage, or cracking in the soil structures that formed the dykes. As well, there was no indication of seepage at the base of the structure around the exterior. The soil structure is considered to be stable in the present condition and is in conformance with the design basis for the facility.

#### Recommendations

There are no recommendations to be made at this time.



#### 3.2 Generator Fuel Storage Facility Containment

#### **General Conditions**

The containment structure has not varied from its use since our 2010 inspection. At that time our recommendation was to limit the fuel contained in this containment facility to 77.376 litres.

There is currently one bladder in this containment facility that has a capacity when full of 120,000 litres. This particular bladder contains 77,376 litres when the bladder is 32" high. The guideline for BIM is to fill this bladder to no more than 76 cm (30") which represents 70,097 litres.

A sign is posted to limit the bladder height at 30".

At the time of our visit on August 12, 2011, the bladder height was measured at 30" (recently filled).

#### Stability

The structure was visually inspected for any signs of subsidence or cracking. There was no sign of seepage at the base of the structure noted. The soil structure is considered to be stable in its present condition and is in conformance with our design principles.

#### Recommendation

We recommend that BIM control the fuel in the bladder at 70,097 litres (30" high).

#### 3.3 Polishing/Waste Stabilization Pond No. 1

#### **General Conditions**

PWSP No. 1 continues to be utilized as a holding facility for sewage plant effluent that does not meet water effluent quality criteria.

Water is pumped from the RBC unit to PWSP No. 1 where it is held in the pond at times when effluent does not meet release criteria.

When it does not meet release criteria it is pumped over to PWSP's No. 2 and 3 where it is treated for turbidity removal and pH adjustment.

At the time of our visit there was considerable freeboard to accommodate further sewage and the structure readily conforms to its design intent.



#### Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing sewage and there are no tears or ruptures in the membrane.

A review of the top of the dyke showed no indication of cracking or settlement which would indicate stresses within the structure.

Tears that had occurred in the liner on the top of the dyke and have been patched during the period between reviews in 2008 and 2009 are holding well. As well there are no signs of weather related deterioration of the liner where it is exposed.

Monitoring points have been set up on the top of the dyke and have been monitored since 2009. Settlements of up to 17 cm have occurred since that time. These settlements have not led to any stress cracks in the structure.

There appears to be no sign of erosion of the dykes. This phenomena appears to be due to the minimal precipitation in this area of the island.

#### Recommendations

We recommend that monitoring of the top of the berm continue on an annual basis through 2012. With the excellent condition of the dyke construction, we see no reason to complete this function other than annually prior to the next inspection.

#### 3.4 Polishing Ponds/Waste Stabilization Ponds #2 and #3

#### **General Conditions**

This structure was designed and constructed as a 2 cell structure.

Water is currently being treated for turbidity removal and pH adjustment and when the release criteria are met, the water shall be released to the environment.

At the time of our visit there was considerable freeboard to accommodate further sewage and the structure readily conforms to its design intent.

#### Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing the sewage and there are no tears or ruptures in the membrane.

Longitudinal cracking which appeared in the dykes of PWSP#3 due to the melt of permafrost wedges in 2009 have not reoccurred and we consider this structure to be stable in its present condition.



Monitoring points have been set upon the top of the dyke and have been monitored since 2009. Settlements in the order of up to 9cm have occurred since that time. These settlements have not led to any stress cracks in the structure.

There appears to be no sign of erosion of the dykes and plants are only just now beginning to seed themselves on the dykes.

#### Recommendations

We recommend that monitoring of the top of the dyke continue on an annual basis through 2012. With the excellent condition of the dyke construction we see no reason to complete this function other than annually prior to the next inspection.

## 3.5 Helicopter Fuel Tank Containment

#### **General Conditions**

The structure was designed and constructed as a single cell structure that contains a 1000 gal fuel storage tank.

The structure currently conforms to its design intent.

Recently a liner clad wood curb has been added to the top of the berm to prevent the erosion of gravel off the berm, caused by pulling the fuelling hose from within the dyke out to the helicopters to provide them with fuel.

#### Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage. Water that was ponding in this containment during our 2010 review is no longer present as there has been little or no precipitation this summer season.

A review of the exterior and the top of the berms showed no sign of cracking or settlement which would indicate stress within the structure.

The structure is considered to be stable in its present condition.

#### Recommendation

We have no recommendations with respect to this structure.



#### 3.6 Barrel Fuel Containment

#### **General Conditions**

This particular structure which we called "Barrel Fuel Containment" in our 2010 inspection report is a two cell structure which is currently used to accommodate barrels of Jet A fuel in one cell including a number of fuel dispensing tanks and a number of stove fuel barrels on skids and a large number of empty drums in the other cell.

These two cells were constructed in accordance with a standardized drawing provided by this office utilizing a one piece liner.

#### Stability

Our review of the area around this containment structure showed no sign of seepage. This shows that there is reasonably little chance of tearing or rupture of the membrane.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses within the structure.

The structure is considered to be stable in its present condition.

#### Recommendations

We have no recommendations with respect to this structure.

#### 3.7 Hazardous Waste Storage

#### **General Conditions**

This particular cell was constructed contiguous with an existing cell which is referred to on site as the "Enviro Tank Storage" from drawings provided by our office in 2010 and conforms to our drawings.

This structure was empty during our review in 2010 but now is used as a containment for skids of barrels containing stove fuel.

#### Stability

Our review of the area around this cell at the base of the slopes, showed no sign of seepage.

The structure appears stable in its present condition.

#### Recommendation

There are no recommendations at this time.



#### 3.8 Enviro Tank Storage

#### **General Conditions**

This particular structure is constructed contiguous with the Hazardous Waste Storage constructed in 2010. It originally contained a fuel tank but now contains lubricants and antifreeze.

Our review of the area around this cell at the base of the slopes showed no sign of seepage.

The structure is stable in its present condition.

#### Recommendations

There are no recommendations at this time.

#### 3.9 Stove Oil Storage

#### **General Conditions**

This particular structure has not been reported on before. This particular structure is being used to store barrels of stove fuel on pallets.

This structure was constructed in accordance with a standardized drawing provide by this office utilizing a one piece liner.

#### Stability

Our review of the area around the containment structure shows no signs of seepage. This shows that there is reasonably little chance of tearing or rupture of the membrane.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses with the structure.

The structure is considered to be stable in its present condition.

#### 3.10 Jet Fuel Tank and Pump Containment

This particular containment structure has not been reported on before and is utilized as the containment for a 1000 gallon fuel tank and pump for the Dornier aircraft operated by Summit Air.



A review of the cell construction showed that it was constructed with what appears to be a one piece membrane similar to the membrane used in the other soil structures containing fuel.

There is no geotextile protection on top of the membrane and it is assumed that there is no geotextile protection on the bottom.

However, the traffic within the cell is restricted to foot traffic and it is assumed that there shall only ever be foot traffic in this small cell.

#### Stability

Our review of the area around the containment structure shows no sign of seepage.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses within the structure.

#### Recommendations

We recommend that the following sign be posed at this containment structure "No traffic other than foot traffic within this containment area".

We recommend that a curb similar to that at the helicopter fuel containment be placed where the hose slides over the containment dyke when placing fuel in an aircraft.

#### 4.0 Milne Inlet

#### 4.1 Bulk Fuel Containment Facility

#### **General Conditions**

The structure around the fuel farm currently conforms to the design of the facility. A review of the interior of the dyke showed only minor ponding of water although the oil stains on the interior sand layer indicates that the water on the interior of the dyke has been higher in the past as viewed during our review in 2009.

The treatment system used to treat the water prior to release to the environment remains in place.

The ponding of water, although minor, continues to confirm the integrity of the liner.

#### Stability

Our review of the area around the ponds at the base of the slopes showed no signs of oil, water or oil/water mixtures and hence we conclude that the integrity of the liner has been maintained. Tears or ruptures in the liner were not observed.



There was no sign of any settlements, seepage, or cracking at the soil structures forming the dykes.

The structure is considered to be stable in its present condition.

#### Recommendations

The performance of the structure in the past (2009) has been tested with ponded water within the structure. The observation noted during our past inspections have supported the conservative design of the structure. We have no recommendations at this time.

#### 4.2 Polishing Pond/Waste Stabilization Pond

## **General Conditions**

The PWSP was designed as storage for sewage effluent from the RBC sewage plant installed at the site during the start-up phase of the operation. At the time of this inspection, the camp was reopening for a small construction crew to build the new fuel storage facility.

There was considerable capacity remaining in the storage facility to accommodate the camp during the start-up of the RBC plant until release criteria are met for the sewage plant.

Currently the Milne PWSP structure conforms to the design basis for the facility.

#### Stability

With the PWSP constructed as it is, the structure is considered stable for long term use.

There was no sign of seepage at the bottom of the dyke. There was no sign of settlement or cracking which are signs of stress in the structure.

#### Recommendations

Currently, the Milne Inlet PWSP conforms to the design intent and we have no recommendations.

#### 4.3 Barrel Fuel Storage

#### **General Conditions**

This particular structure is constructed as a two cell structure.

The structure around these two cells conforms to standardized drawings prepared by our office for such a facility.

#### Stability



Our review of the area around the ponds at the base of the slopes showed no signs of seepage.

The structures are considered stable in their present condition.

#### Recommendations

There are no recommendations to be made with respect to this structure at this time.

#### 4.4 Hazardous Waste Storage

#### **General Conditions**

This particular structure is constructed as a 2 cell lagoon.

This structure conforms to the design basis for the facility.

I note that during our inspection there were two tears noted in the liner on one cell. This was brought to the attention of administration.

Repairs to these two minor tears were subsequently made, prior to issuing of this report in final format, by replacing the liner in one cell.

This was confirmed to us by Baffinland. Hence we confirm that this structure is acceptable.

#### Stability

Our review of the area around the dykes at the base of the slopes showed no signs of seepage. There were no signs of settlement of cracking which are signs of stress in the structure.

#### Recommendations

Currently this containment structure conforms to the design intent and we have no recommendations.

#### 4.5 Oil and Antifreeze Containment

#### **General Conditions**

This particular structure which is located between the air strip and the Bulk Fuel Storage area has not been reported on in the past.

The structure around this containment area conforms to standardized drawings prepared by our office.



## Stability

Our review of the area around the ponds at the base of the slopes showed no signs of seepage.

There is no cracking or settlement observed in the dyke structures which are signs of stress in the structure.

#### Recommendations

We have no recommendations to be made with respect to this structure.

We trust that the foregoing report is acceptable for inclusion into your report for the Nunavut Water Board.

Respectfully submitted,

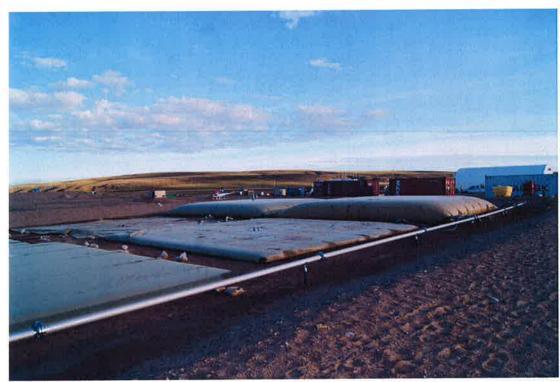
**GENIVAR** 

Barry H. Martin, P. Eng., MRAIC

BHM/cb

...d. / Jim Millard





Mary River Bulk Fuel Containment



Typical dyke – Bulk Fuel Containment – Mary River





Generator Fuel Storage Facility – Mary River



PWSP #1 – Mary River



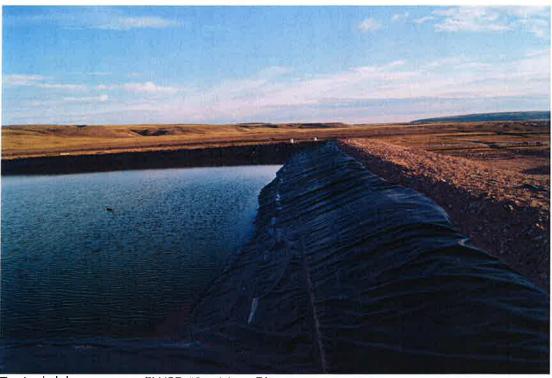


Typical dyke PWSP #1 – Mary River



PWSP #2 – Mary River



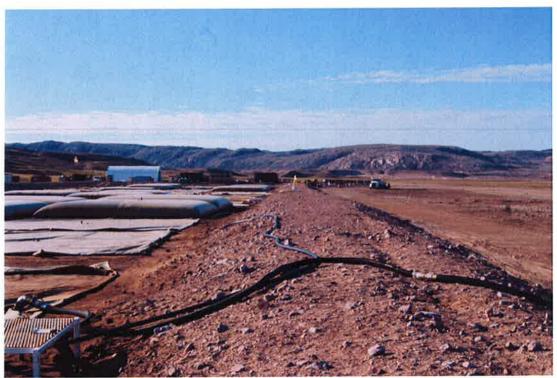


Typical dyke structure PWSP #2 – Mary River



Top of dyke PWSP #2 – Mary River



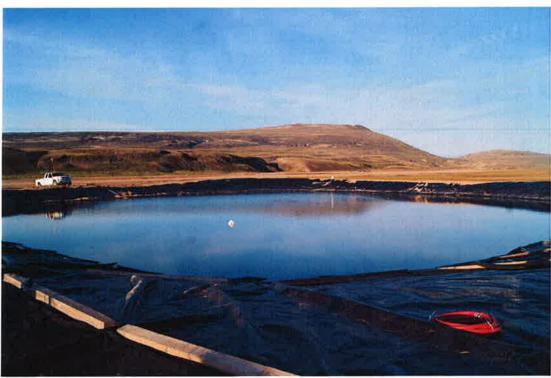


Typical dyke Milne Inlet Bulk Fuel Containment

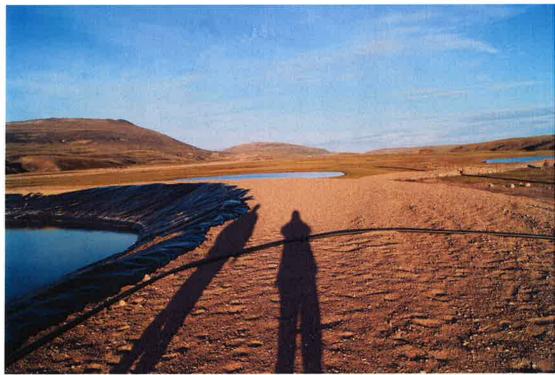


Milne Inlet PWSP



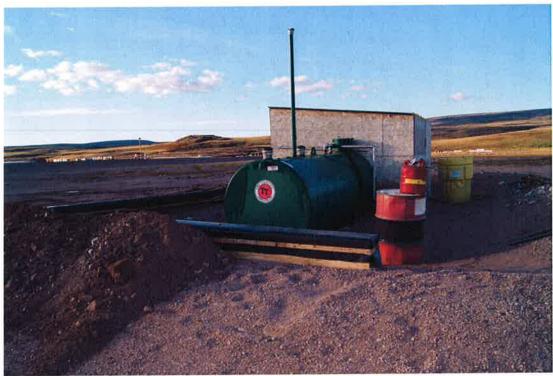


PWSP #3 – Mary River



Top of dyke PWSP #3 – Mary River





Helicopter Fuel Cell Containment – curb sits above dyke – Mary River



Barrel Fuel Containment cell #1 – Mary River





Barrel Fuel Containment cell #2 - Mary River

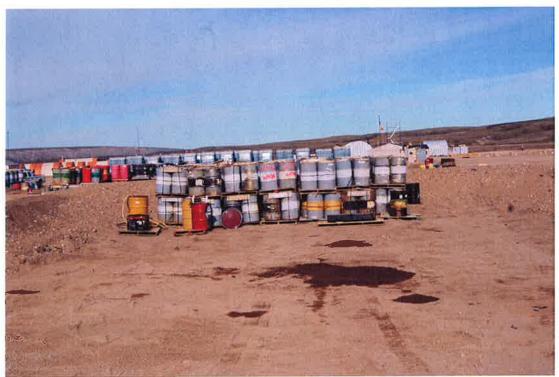


Stove Oil Storage - Mary River





Enviro Tank Storage Containment – Mary River



Hazardous Waste Storage – Mary River





Milne Inlet showing Bulk Fuel Containment and PWSP

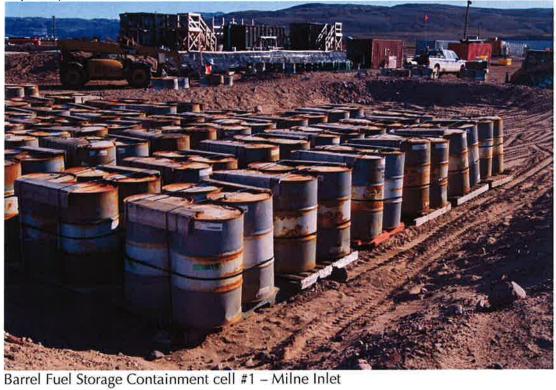


Milne Inlet Bulk Fuel Containment





Top of dyke at Milne PWSP





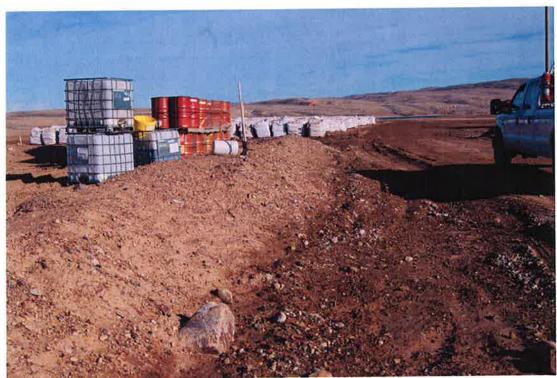


Barrel Fuel Storage Containment cell #2 - Milne Inlet



Typical Dyke Barrel Fuel Containment - Milne Inlet





Oil and Antifreeze Containment - Milne Inlet



Hazardous Waste Storage - Milne Inlet





Dyke at Hazardous waste storage



#### **APPENDIX C3**

PHOTOGRAPHIC RECORDS

(Pages C3-1 to C3-11)



**Photo 1:** Mary River Camp Overview. לרש 1: שלר שם לרער (ነት) ነት.



Photo 4: Off loading waste at the Non-Hazardous Waste Landfill. ፈናት ህ ላ* 4: ላ*(ሪታ ታ ፦ ታ የልተና ህ ላ* ኒ ህ ላ* ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ ተ ነ ላ







**Photo 3:** Mary River Camp Overview. ליב ש אוי אינים אוי אינים ארייט אינים איני אינים איני אינים איני אינים איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט איניט



# 





Photo 4: Milne Inlet 5-million litre tank - almost complete.

ላዮ ህላኈ 4: ቴውΔጋጌታ የህላጌታ ኦንላሷቴ አኦቦኒ

Δ៤ የንሬንጌቴ 5 ୮ር ላጌ - ለላታር ነገ ጋ J.







**Photo 3:** Milne Inlet 5-million litre tank overview. ላጐ ህላኈ 3: የህላጐ የህላጐ እናላሷ የእስግህ ል∟የእልነንኈ 5 Γርላ° ርርጐ.



# Baffinland

MARY RIVER PROJECT

MILNE INLET SITE PHOTOS ላ'ት ህላ' Γ∩L(~Þ' የህላ' σ

SHEET 1 OF 1

P/A NO. REF. 1

FIGURE C.3.2













Photo 6: Barreled Fuel Lined Containment Storage Area & Grey-water Sump overview.

ላ'ት ህላጐ 6: ጐ(ኮኦት ታ Δርተ/ Lልጐ (Lኦጌ) Δሬጐ

ዕለታ ኦዕ በነቴኒ ታ ታ ላ L ጋ Δኒ Γ ኮ ፲ ጋ ፈን በ.

## Baffinland

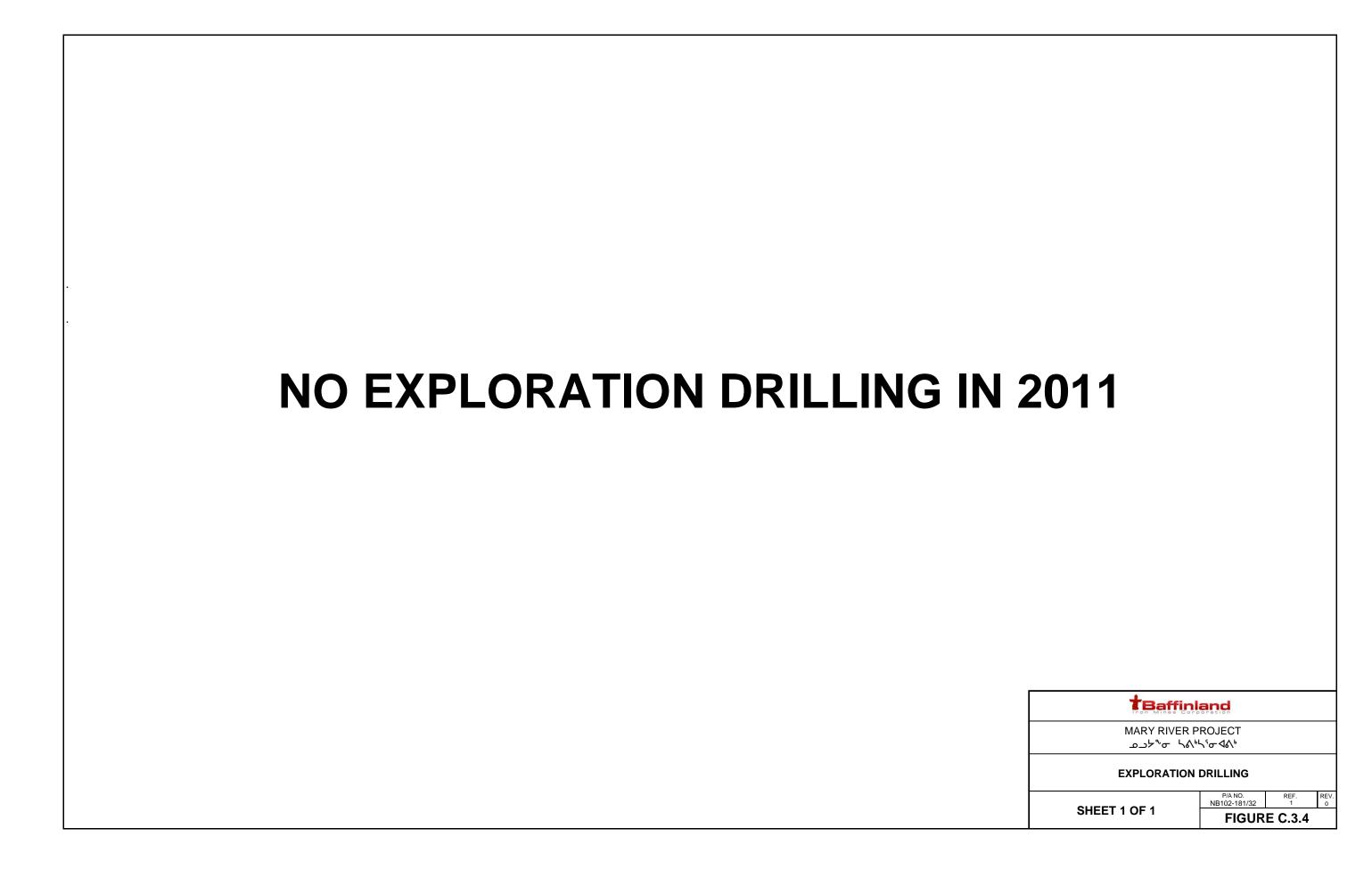
MARY RIVER PROJECT ചച৮[∿]৮ \አስ^ኑ\ናታላለ^ኑ

STEENSBY INLET PHOTOS Δ¹ΛΡጋ¹ປ⁴Γ ላ¹ጉ ¹J⁴¹

SHEET 1 OF 1

P/A NO. REF. 1

FIGURE C.3.3











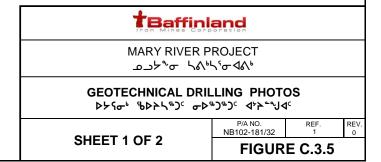








Photo 3: Drill Hole along Proposed Rail Alignment During Drilling.

ላጉ ህላጐ 3: △Ძርናር▷균႕ና △Ძርና∩ጔՐና ഛፈ๗▷በᲫርና





Photo 5: Constructing Frames at Mary River Camp for Portable Containment Berms.

4'ትህ4' 5: \¬ትኮኖር ላጚ' ዾጋታጐ ው በ'(ኮላፎነ)'
(Lኮሌ)Δፌቴ ዕለት ኦዕብ.















**Photo 6:** Road Embankment Stabilization at KM82. ፈናትህ ላቴ 6: ላቴብኮና ላዊርት ላየነት ልፈና ኦሮት ን∟ትና.

#### **†**Baffinland

MILNE INLET TOTE ROAD PHOTOS

4540 PHOTOS

SHEET 1 OF 3

P/A NO. REF. R NB102-181/32 1



**Photo 1:** Removal of old culvert at CV078, Km51. ላናት ህላኈ 1: ላናፅ∩▷< ፖርርታ ላና የትረፈና ▷ኖታ \$닎ኒ.











**Photo 6**: Road Embankment Stabilization at KM51. ላ°ት ህላ% 6: ላ'ህባ° ላኖር ታ ላየት ለፈላ ኦኖ ታ \$L°∿.

### Baffinland

MARY RIVER PROJECT ፌጋታ^ኈኇ \ልነ\'ኇ ላልነ

MILNE INLET TOTE ROAD PHOTOS 4%%(೧゚ トイじぐん゚

SHEET 2 OF 3

P/A NO. R NB102-181/32

FIGURE C.3.6













**Photo 6:** Road Embankment Stabilization at KM79. **ላ**ናት ህ**ላ**ዬ 6: ላህበ▷ና ለፈርስ ላየኮለልፈና ኦሮስ ን∟ሴ.

## Eaffinland

MARY RIVER PROJECT

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SHEET 3 OF 3

FIGURE C.3.6



**Photo 1:** Milne Inlet Bulk Fuel Storage Facility prior to Bulk Fuel Transfer.

**ϭʹ**ት ህ**ϭ**ቱ 1: የህላቴው Þ'ሥላጔቴኦበ' ΔΓ'ሥ'ርኦ∟ኦ ዮው ዮቴ.





**Photo 3:** Deploying boom during Spill Exercise. **ላናት ህ**ላች 3: ፊል ላቴ ነ<ና ቴ⊿ል▷ሊ ላቴ ነው ነው ላላ? ውና ነር ነው በነር እላች.



Photo 4: Bulk Fuel Transfer Offshore Pipeline ላጉ ህ 4 4: እና ላ ጋ ዕለን አ ራር ላ ላ ይ ር ጋ ነ ረ ጋ ዕር ዕና.





**Photo 6:** Milne Inlet Bulk Fuel Storage Facility during Bulk Fuel Transfer.

**ላ'ት'ህላ*** 6: 'የ'ህላ'ታ Þ'ረላጔ'\চቦ' ΔΓረ'(Þር'በጔቦ'.

## Baffinland

MARY RIVER PROJECT ചച৮°፦ \ልነ\ና፦বልነ

MILNE INLET BULK FUEL TRANSFER PHOTOS
'የ"ህላው ኦ"ታላሷጐው የሌኙኒኈጋና ላንኦ"ህላና

SHEET 1 OF 1

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FIGURE C.3.7



Photo 1: Community visit to Mary River Site. ላናት ህ ላ ቴ 1: ዾ ሬ ር ይ ጋ ታ ኤ ሪ > ሬ ነበር ኦ በ ጋ ቦ ና.





**Photo 3:** Baffinland Community Tours August 2011 - Pond Inlet.

**4% ህ4** 3: <ኖኄር ውልር ነው >ረናበጋቦ 4DJ 2011 -ΓበL(፫¹.



**Photo 4:** Baffinland Community Tours August 2011 - Igloolik.



**Photo 5:** Baffinland Community Tours August 2011 - Hall Beach.

**4% ህ**4% 5: <ኖኄር ውልር ነው >ረናነበጋቦ ላኦሀረ 2011 -ኒማናታዩ



MARY RIVER PROJECT ചታ^ኑ፦ **ኒ**ልነኒ'፦**ሳ**'ልነ

COMMUNITY CONSULTATION PHOTOS

4'2'U4' _a_-" 6\L\d'4'a_\n_)

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