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AIR COOLED EXCHANGERS, INC.

P.O. BOX 577 - BROKEN ARROW, OKLAHOMA 74013

Ph (918) 251-7477

Fax (918) 258-1833

E-MAIL: MAILHUB@ACE-COOLERS.COM

COOLER PERFORMANCE SPECIFICATION

CUSTOMER	WATERFLOOD	PROPOSAL NUMBER	06120R0.dat
REFERENCE	SSH	DATE	4/13/2006
MODEL	J48A-6	PAGE	1

PERFORMANCE OF ONE UNIT

SERVICE	JW	CLO	AC
FLOW	48.0GPM	35.7GPM	0.90MMSCFD
FLUID	50%GLY	OIL	.65
TEMPERATURE IN, F	190.0	199.0	195.0
TEMPERATURE OUT, F	174.0	180.0	120.0
INLET PRESSURE, PSIG			164.0
PRESSURE DROP, PSI	9.3	6.9	1.3
DUTY, BTU/HOUR	340000	174000	78497
CORRECTED MTD	56.3	81.5	47.7
BARE TUBE RATE	214.1	61.3	56.4
FOULING	0.00050	0.00050	0.00200
BARE SURFACE, SQ. FT.	28	35	29
TOTAL SURFACE SQ. FT.	675	553	464

CONSTRUCTION

NO. SECTIONS	1	1	1
NO. TUBES/SECTION	25	37	31
LENGTH	6.0	6.0	6.0
NO. ROWS	3	3	3
NO. PASSES	4	2	2
COUNTERFLOW			
TUBE O.D. AND BWG	3/4X16BWG	.625X16BWG	.625X16BWG
TUBE MATERIAL	SA214(WLD)	SA214(WLD)	SA214(WLD)
DESIGN PRESSURE, PSI	14	375	375
DESIGN TEMPERATURE, F	350/-20	233/-50	233/-50
NOZZLES-INLET	2-150RF	2-300RF	2-300RF
NOZZLES-OUTLET	2-150RF	2-300RF	2-300RF
HEADER TYPE	RECT TUBE	BOX W/PLUGS	BOX W/PLUGS
HEADER MATERIAL	STEEL	SA-516-70	SA-516-70
ASME CODE STAMP		YES W/NB	YES W/NB
GROOVED TUBE SHEET	YES	YES	YES
CORROSION ALLOWANCE		0.063	0.063
PLUGS, TYPE	TAPER	SHOULDER	SHOULDER
PLUGS, MATERIAL	STEEL	SA-350-LF2	SA-350-LF2
TURBULATORS		TWISTED TAPE	
ACCELERATORS			
LOUVERS	NO	NO	MANUAL
STRESS RELIEVE	NO	YES	YES
NDE		BUTT WELDS	BUTT WELDS
ADDITIONAL CODES			
CANADIAN REGISTRATION		AB,BC,SASK	AB,BC,SASK
ADDITIONAL COUPLINGS			
BYPASS NOZZLE			
FINS	HYPERF MARINE	HYPERF MARINE	HYPERF MARINE

AIR DATA

INLET AIR, F	95.0	ELEVATION, FT.	2200
OUTLET AIR, F	124.8	TOTAL SCFM	18297

MECHANICAL EQUIPMENT

NO FANS	1	HP/FAN		RPM	733	DIA	48
FAN	CROWLEY	FAN MATERIAL	ALUM	NUMBER OF BLADES		PITCH	
V-BELT DRIVE BY OTHERS							
DRAFT TYPE	INDUCED						
EST SHIPPING WEIGHT	3074	WIDTH	6.9	LENGTH	6.2	HEIGHT	5.6
ACCESSORIES	HAILGUARD.	BUGSCREEN.	BOXED IDLER.	FLASHING FRAME.	FLOOR.		
FINISH	ACE standard primer						
82 DBA @ 3'	9212 DBA @ 3'						

Parts List



Air Cooled Exchangers, Inc.

1201 S. 9th Street

Broken Arrow, Oklahoma 74012

Phone: 918-251-7477

Fax: 918-251-7482

Customer: WATERFLOOD

ACE Serial Number(s): 0612001-02

Cooler Model: J48A-6

Fan Make & Model	#####	4 Dia.	8 Blades	34 deg. Pitch at	SET POI	Fan RPM: 733
CROWLEY 48/8-8/34/PAG/6WL		LEFT HAND	1.4375 Bore with	STD Keyway	Special Note:	
Fan Shaft	#####	1.4375 Dia.	49.738 Long with	4.25 in Keyway Fan end	6 in Keyway other end	
### ##						
Idler Shaft	1	1.1875 Dia.	17.313 Long with	6 in Keyway one end		
Fan Bearing ##	2	1.4375 in	REXNORD MODEL ZA-2107			
Idler Bearing	2	1.1875 in	REXNORD MODEL ZA-2103			
Electric Motor	#####	0 HP	0 RPM	0 Volt	0 Phase	0 Cycle
		0 Enclosure	0 Frame Size	WITH SlideBase		
		0				
Motor Sheave		O.D.	Type	Groove	Bore	
Fan Sheave		O.D.	Type	Groove	Bore	
V-Belts						
MURPHY(VS-2-EX) XP VIBRATION SWITCH	0	0				
0	0	0				
0	0	0				
0	0	0				
LOUVER FOR AC	0	17.63 IN X 72 IN ALUMINUM MANUAL				
0	0	0				
0	0	0				
0	0	0				
0	0	0				
0	0	0				

FAN, SHAFT, BEARINGS & V-BELTS ARE RECOMMENDED SPARE PARTS.

ALL INQUIRIES AND ORDERS MUST BE ACCOMPANIED BY COOLER SERIAL NUMBER.

PLAIN RETARDER INSERTS REQUIRED ON CLO,(37) PCS, 6 FT. LONG



RPM= 733
HP= 0
BLADE ANGLE= 34

NOTES

1. WEIGHT: 2830 POUNDS
2. FINISH: RED OXIDE SLX1049-01 PRIMER
3. FAN DRIVEN BY V-BELT DRIVE BY OTHERS
4. ASME CODE ON CLO.AC, WITH CRN'S FOR ALBERTA,BRITISH COLUMBIA,SASKATCHEWAN
5. HAIL,GUARD,BUGSCREEN,BOXED IDLER,FLOOR,FLASHING FRAME.

[illegible]

Drawing No.: 600TIS Rev.8 Rev. No.: 8 AI Review & Initial: _____
AI Date: _____ CRN#: A4060.321 Serial No.: 05119001
(A)Number: _____ Vessel Title: INLET SEPARATOR

OPERATION	QC PERSONNEL	DATE	AUTHORIZED INSPECTOR	Date
*Hold Point - Authorized Inspector to Designate Prior to construction				
1) Material checked against drawing	<i>Chaffin</i>	Feb 8/06		
2) Mill test checked	<i>Ryan Mulhally</i>	Feb 8/06		
3) Heat No's recorded	<i>Ryan Mulhally</i>	Feb 8/06		
4) Shell & head thickness recorded	<i>Chaffin</i>	Feb 9/06		
5) Vessel layout checked	<i>Chaffin</i>	Feb 9/06		
6) Shell head diameter checked	<i>Chaffin</i>	Feb 9/06		
7) Shell & head fit up checked	<i>Chaffin</i>	Feb 9/06		
8) Nozzle & fitting fit up checked	<i>Chaffin</i>	Feb 21/06		
9) Impact test acceptable	N/R			
10) Internals completed	<i>Chaffin</i>	Feb 21/06		
11) Internal inspection	<i>Chaffin</i>	Feb 9/06	<i>N/A</i>	2/14/2006
12) Welders I.D.	<i>Chaffin</i>	March 1/06		
13) Weld sizes	<i>Chaffin</i>	March 1/06		
14) Radiograph	10% requested	March 9/06		
15) Other N.D.E.	10% M.P. requested	March 9/06		
16) Nozzle orientation	<i>Chaffin</i>	Feb 22/06		
17) Flange & fitting rating	<i>Chaffin</i>	Feb 22/06		
18) External after welding complete	<i>Chaffin</i>	March 1/06		
*MANDATORY HOLD POINT * - FOR HEAT TREATED VESSELS DO NOT PROCEED UNTIL EXTERNAL IS SIGNED OFF BY A.I.				
19) Heat treatment chart checked	N/R			
20) Hydrostatic test completed	<i>D. J. Dand</i>	03/10/06	<i>N/A</i>	3/10/2006
21) Name plate attached	<i>Chaffin</i>	Mar 10/06	<i>N/A</i>	3/10/2006
22) Affidavits / data reports	<i>D. J. Dand</i>	03/10/06		
23) Sandblasting complete				
24) Painting complete				

MATERIAL USED IN VESSEL

Item	Material Spec.	Heat No's Plate & Heads	Thickness	Schedule
Shell # 1	SA 106 B	A02954	3/8	STD.
Shell # 2				
Head # 1	SA 516-70 MTC	47549 66898	3/8	STD.
Head # 2	SA 516-70 GT	M00969 A28	3/8	STD.

Piping Inspection Requirements

CUSTOMER: Waterflood
CONTACT: Dave Heier
L.S.D: Stock
AFE / PO#: TBA
WSS JOB#: 1190

PH#: 306-634-7212
FAX#: 306-634-7887
DATE REQUIRED: Mar. 7/06

WSS ENG: Carmon Lindquist

HOLD POINTS TO BE MARKED WITH *

Piping	Vessels	SECTIONS	QI	LEGIBLE INITIAL Personnel	Hold Point
	4.0	SECTION IV - Manual Control			
	4.4	Control Copy of QC manual available for all personnel - Manual is current		cl	
	5.0	SECTION V - Drawing & Design Calculations			
		All piping systems over 0.5 cubic meters (18 cubic feet) must be registered Boilers Branch		cl	
18.3.H					
18.7.C	5.2.2	Design Calculations are done signed and dated		cl	
	5.2.3	The Following are listed on drawings - Title, Drawing# & Rev.#, Date, Job#, Dimensions - Bill of material with material specifications ASME II - Design Pressure & Min/Max metal design temperatures - Code edition, year and addenda - X-ray requirements - heat treatment requirements - Welding procedure specifications for each weld - Weld Detail			
18.3.C					
18.7.d.ii					
18.7.d.ii					
18.3.e					
18.7.d.v					
18.3.d					
18.7.d.iv					
		- Hydro Test Pressure & medium, CRN# - Impact test requirements, Coating requirements - Name plate location, Design Code, Substance retaining - Aggregate volume of piping			
18.10.a	5.4	- stamped issued for construction Signed and dated		cl	
		A Registered Professional Engineer shall stamp all design drawings for pressure piping systems exceeding 0.5 cubic meters in aggregate capacity.		N/A	
18.8					
	5.3	All documents are accompanied by exhibit #2		cl	
18.10.d	5.6	Latest code book are available		cl	
		To ensure the owner's approval is obtained for any revisions and submitting the final "as built" drawing to the owner along with all pertinent records		cl	
18.10.H					
		To ensure a drawing index is maintained listing the drawing title, number and revision, copies issued and the name of the person to whom they were issued		cl	
18.10.e					
	6.0	SECTION VI - Material Control			
18.11.a	6.2	following - PO#/Req#/Material ordering-handling report # - ASME Sec II requirements. I.e. SA105N, SA106B - Request for mill test reports - Statement that all fittings are designs must be registered with Sask. boilers branch. - any other code requirements		R	
18.11.b	6.3	in job file		R	
	6.5	All material received will be check against PO/Req./MOHR for: - All material will be check before received. all material not received will be ejected and returned to supplied. - All material once received that is unacceptable will be tagged with hold tag (Exhibit #18) and shall be considered a nonconformity.		R	
	6.5.3	Recording of all material specification number, grade thickness etc. on a Exhibit#4		R	
	6.6.1	All plate conforms to ASME Sec II Requirements by signing and dating mill test report		R	
	6.6.3				
18.17.a	6.6.6	All material marked with stamps are low impact stamps All material is marked on both pieces before cut.		cl	

Piping Inspection Requirements - Exhibit ISO-11.2

7.0 SECTION VII - Examination Program

18.20.a	7.2.1	A job file is created with all items listed in 15.2 Hold points established. Exhibit 20 for piping All examination list on travel sheet will be signed and dated when each task is complete.	Rm	
18.20.b/c	7.2.2	All applicable material is identified with specifications and/or heat numbers and that these heat numbers are transferred and remain traceable throughout construction	Rm	
18.20.d	7.2.4	The material contains no visible scars or defects and is as specified on the drawings.	CE	
	7.3.1	Alignment tolerances are maintained during construction.	CE	
	7.3.4	Spool length and orientation spools prepped for coating	CE	
	7.3.5	Weld details are correct.	CE	
	7.3.6	Heat-treatment charts comply with instructions.	N/A	
	7.3.7	The correct hydrostatic test pressure is applied.	CE	
18.20.f		Examine each system after completion and prior to test against design specifications and drawings using the Pressure Piping Examination Guide (Exhibit #21)	Rm	
	7.4	Name plates are filled out proper & installed. Exhibit 6C	CE	
18.19.c		Forward the Completion of Construction Declaration Form (AB-81, exhibit #15) to Boiler Branch prior to operation of the piping system	Rm	
18.19.d		Forward the Construction Data Report for piping systems (Exhibit #16, AB-83) to the owner with any additional records required by the contract.	Rm	
	9.0	SECTION IX - Welding		
	9.2.1.	Prior to construct a review of weld procedures	CE	
		Assigning welding tasks based on the qualifications and performance variables on the Welders Qualification /Continuity Log (Exhibit #10) and providing that qualifications in the process remain valid in accordance with the Welders Qualification/Continuity	CE	
	9.4.1	Verifying that welders have valid performance qualification cards	CE	
	9.4.2	Maintaining a Welders Log (Exhibit #10)	CE	
	9.4.3	Ensuring that welding procedure are followed & copies of the procedure are available.	CE	
	9.4.4	Visually examining all completed welds.	CE	
	9.4.5	Verifying that all welds are identified with the welder's symbol	CE	
	9.4.6	Ensuring that all tack welds are completely removed and that tack welds left in place are done by qualified pressure welders.	CE	
	9.4.7	Verifying that purchase orders for welding consumables specify SFA specification and AWS classification.	Rm	
	9.5.1	SFA	Rm	
	9.5.2	Ensuring that low hydrogen electrodes are kept in heated storage at manufacturer recommendations but not less than 150 Deg. F. and not more than 250 Deg. F. after the container seals are broken.	CE	
	9.5.3	Ensuring that welders are issued with sufficient electrodes for a time period no longer than specified by the manufacturer for code work. Electrodes that are removed from the oven for longer than this period will be discarded.	CE	

ing Inspection Requirements - Exhibit ISO-11.2

10.0 SECTION X - Nonconformities

- 10.2 All nonconformities will be tag with hold tags & report will be filled out.
10.7 report will be file in job book and nonconformity report file.

11.0 SECTION XI - Non-destructive Examinations

- 11.2.1 Reviewing the subcontractor's qualifications, certifications, written practices and procedures.
11.2.2 Certifying Statement and Appointment Letter (Exhibit #19) to be kept on file, the NDE subcontractors CGSB SNT-TC-1A level III examiner to act as the level III examiner
11.2.5 Ensuring that all examination/interpretation is done under the supervision of a Level II Examiner or higher.
11.2.7 Ensuring that MT and PT examiners are certified by letter and that their eye examination records are up to date.
11.2.9 Notifying the examiners of NDE requirements.
11.2.10 Identifying the welds to be examined.
11.2.11 Maintaining traceability of NDE reports to their locations on the vessel by stamping the weld number on the vessel or by recording on a weld map or as-built drawing.
11.2.12 Reviewing all NDE reports and radiographic film.
11.2.13 Filing all NDE reports when the job is completed.

12.0 SECTION XII - Heat treatment

- 12.2 Review and accept contractor facilities and wittern procedure
After heat treatment vessel and time chart are reviewed and filed in
12.6 job book

13.0 SECTION XIII - Measurement and Testing Equipment

- 13.2.1 All gauges and recorders are identified with S/N calibration date and records are kept on file
13.2.2/3 Calibration after 12 months or First usage date is write on calibration record and calibration is 12 months for that date.
13.2.6 Gauge to be 1.5 to 4 time hydro test pressure.

14.0 SECTION XIV - Pressure tests

- 14.2.1 To be done with maximum regard to safety and unauthorized personal will stay clear.
14.2.2 A. I to witness hydro unless waved.
14.2.3 Air to be vented for vessel.
14.2.4 Water temp to 30°F above MDMT.
14.2.6 One Gauge and One Pen recorder to be used.
Leak test & hydro test charts are to be completely filled out signed and dated.

15.0 SECTION XV - Record Retention

- 18.24.a/b 15.2.1 Drawings and design calculations.
18.24.c 15.2.2 Material Reports.
18.24.d 15.2.3 Mill Test Reports.
15.2.4 Travel Sheet.
15.2.5 Manufacturer's Specification Sheet.
18.24.h 15.2.6 Heat Treatment Instruction Sheet and Charts.
18.24.e/g 15.2.7 Non-destructive Examination Reports.
18.24.f 15.2.8 Physical Test Reports.
18.24.i 15.2.9 Nonconformity Reports.
15.2.10 Manufacturer's Data Reports with partial Data Reports attached.
15.2.11 A nameplate stamping facsimile.
18.24.j 15.2.12 Welder Qualification (Exhibit #10)
15.2.13 Calibration Chart (Exhibit #17)
18.24.o As built drawings
18.24.k Weld procedures
18.24.l Pressure test procedure and report
18.24.m Material list spools, PO
18.24.n NDE Examiners certificates

Rm
Rm

CR

CR

CR

CR

CR

CR

CR

CR

CR

N/A

N/A

CR

CR

CR

CR

CR

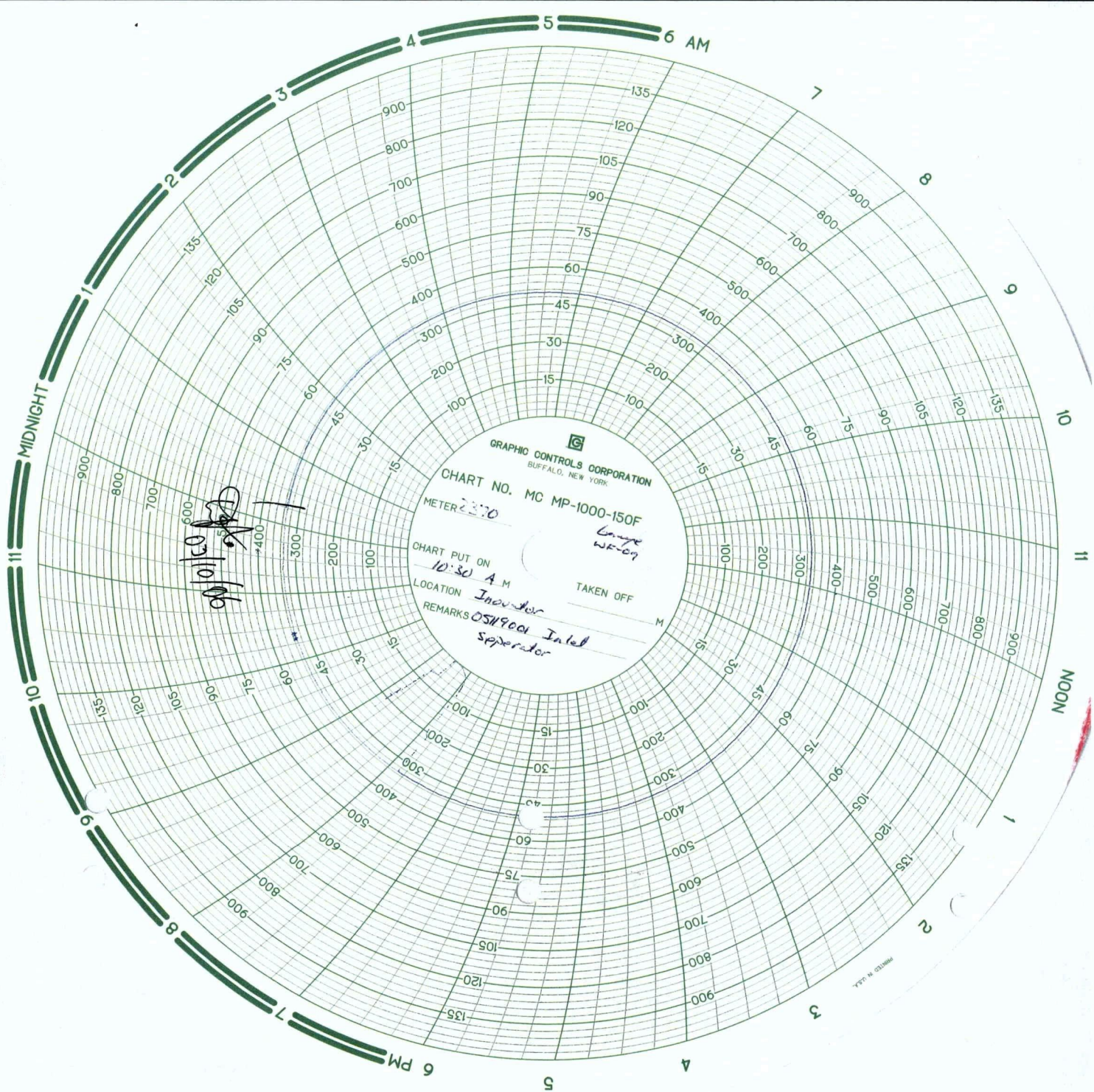
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Revision 0
July 27/04

Leak Test Certificate

Section XVII
Page 17.29

Date: 03/10/06

Customer Name: _____

Customer Location: _____

Job Number: 1190-05119001 ~~02~~

Item Description: Inlet Separator

Time: Start 12:30 Stop 1:30

Recorder Serial Number: 2370

Gauge Serial Number: 1005 WF-09 Expirary Date: May 06 Pressure: 1000psi

Hydro Test Pressure: 338 PSI.

WSS Representative: Dan Amundson

Authorized Inspector: Dan Amundson

Results: Pass ☒
Fail ☐

Reasons if fail:

GAUGE CALIBRATION SHEET

S&M SUPPLY

Box 28, 314 Kensington Ave.
 Estevan, SK S4A 2A2
 306-634-6494 (phone)
 306-634-2599 (fax)

Description of Gauge Clif Mock Pressure Recorder 0-1000 PSI

SN # or Gauge # S/N 2370

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2006)

Master Gauge Used ID 1001 0-1000 PSI

Date Calibration Performed October 3/06

Name of Technician Travis Klatt

Comment _____

Signature of Technician Travis Klatt

Comment _____

Master Gauge Reading	As Found Reading	As Left Reading
100 PSI	101 PSI	100 PSI
200 PSI	202 PSI	200 PSI
300 PSI	302 PSI	300 PSI
400 PSI	402 PSI	400 PSI
500 PSI	502 PSI	500 PSI
550 PSI	552 PSI	550 PSI
600 PSI	602 PSI	600 PSI
700 PSI	702 PSI	699 PSI
800 PSI	802 PSI	799 PSI
900 PSI	902 PSI	899 PSI

GAUGE CALIBRATION SHEET

TS&M SUPPLY

Box 28, 314 Kensington Ave.
 Estevan, SK S4A 2A2
 306-634-6494 (phone)
 306-634-2599 (fax)

Description of Gauge CPW gauge 0-1000 Psi.

SN # or Gauge # 802-1000 W/F-09

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2006)

Master Gauge Used Perma Cal 0-1000 Test gauge # 1001

Date Calibration Performed Oct 31/06

Name of Technician [Signature] Comment Gauge Calibrated Good

Signature of Technician [Signature] Comment

Master Gauge Reading	As Found Reading	As Left Reading
0	+0	0
100	120	100
200	220	200
300	320	300
400	420	400
500	520	500
600	620	600
700	720	700
800	820	800
900	920	900



GB Contract Inspection Ltd.
 Graham Ball
 P.O. Box 66, # 300 Hwy 18 West
 Estevan, Sk. S4A 2A2
 Ph: 634-3476 Cell: 421-2278 Fax: 634-8418
 Regina Ph: 751-0454 Fax: 751-0711

RT UT MP DP Visual



mod/yr: 05 108 106
 Client: Water-Flood Client
 Bill To: Client

Prime Contractor: Water-Flood
 Items Inspected: 16 vessels
 Code: R31.3 ASME F Du 1

Film: 8" 8" 17"x 17" 4.5Wx 7"W x 14"W
 Size: 214 9

ISOPE: IR 192 FOCAL SIZE: 3mm SCREENS: .010"

Location: 32522
 PO#: 1190
 AFE:
 JOB#:

Job Report # 4990
 # of Pages: 1

Hrs. Min.
 Travel Time (HRS) → 3 0
 Site Time (HRS) → 3 0
 Total (Hours) → 3 0

Per diem →

Technician: J. CASBIS
 Technician Signature: J. CASBIS
 Technician: J.E.

Legend:	LF - Lack of Fusion	P - Porosity	C - Crater	UC - Undercut	1 - Slight	SWE - Single Wall Exposure	SFD - Source to Film Dist.	SS - Source Side	This report in no way constitutes any form of guarantee. Final film interpretation is the responsibility of the CLIENT. I am in full agreement with the above details and acknowledge receipt of this form.
	IP - Incomplete Pen	I - Icicles	HL - Highlow	HB - Hollow Bead	2 - Medium	DWE - Double Wall Exposure	CS - Carbon Steel	FS - Film Side	
	S - Slag	LC - Low Cover	W - Windows	GP - Gas Pocket	3 - Severe	SWV - Single Wall Viewing	AL - Aluminum	REJ - rejected	
	CB - Concave Bead	BT - Burn Through	CK - Crack	SB - Suck Back		DWN - Double Wall Viewing	ST - Stainless Steel	ACC - Accepted	

Line #	Film Number	Exposure Location	Size	Wall Thickness	Material	Welder Symbol	Pentrameter Placement	S.F.D.	Film Brand	(A)SWE (B)DWE	SWV(C) DWV(D)	LF	IP	S	CB	P	I	LC	ST	C	HL	W	CK	UC	HB	GP	SB	Remarks	ACCEPT	REJECT	
1	8" Vessel	OS119003																													
2	X 1	3	8	STD	CS		FS	8.6	DS	B	C																			/	
3	X 2	3	2					2.5		B	C																			/	
4	X 3	2	1					12"		B	D																			/	
5																															
6	16" Vessel	OS119001																												/	
7	X 1	4	16	STD	CS		FS	16	DS	B	C																			/	
8	X 2	3	4					4		B	C																			/	
9	X 3	3	3					3.5		B	C																			/	
10	X 4	3	2					2.5		B	C																			/	
11	X 5	2	1					12		B	D																			/	
12																														/	
13	18" Vessel	OS119002																												/	
14	X 1	3	2	XHS	CS		FS	2.5	DS	P	C																			/	
15	X 2	3	3	XHS				2.5		B	C																			/	
16	X 3	1	18	1/2"				9		A	C																			/	
17																															
18																															
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25																															

Inspector (Print):
 Inspector's Signature:

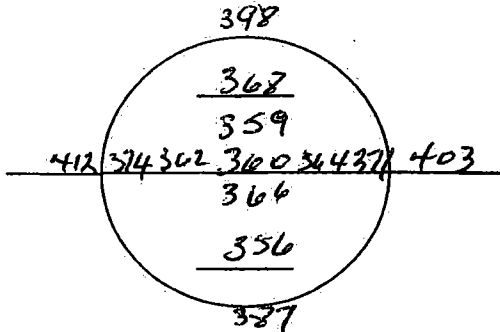
TITLE:		INOVATOR	
		600 SERIES INLET SEPARATOR	
DGN:	B. BLACKBURN	DATE:	11/2/2005
DWN:	LAWRENCE FIEBER	DATE:	11/2/2005
CHKD:	JADE CABLE	DATE:	11/23/2005
APP:	CARMON LINDQUIST	DATE:	11/23/2005
REV: 8	PAGE: 1 OF 1	PART NO:	600TIS-REV8



Contract Inspection LTD
(800) 621-1470 (800) 421-1912 (800) 421-1000
www.contractinspection.ca

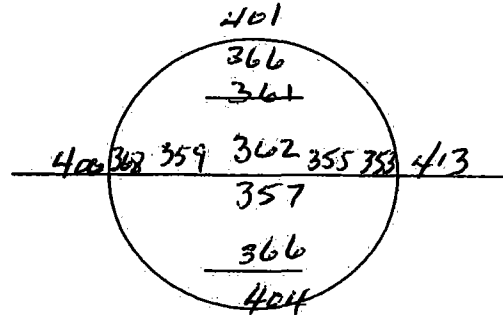
Vessel Head # 1190-2

Size 18" x 375



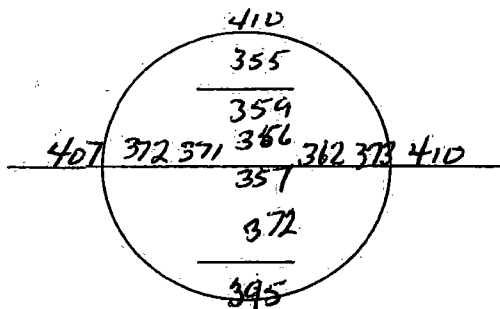
Vessel Head # 1184-2

Size 18" x 375



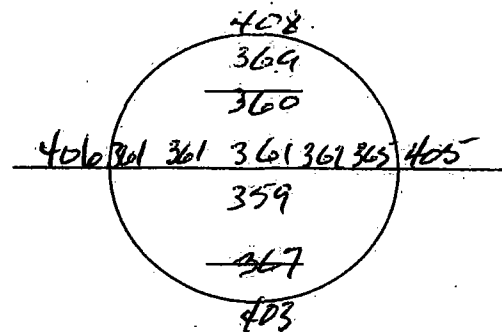
Vessel Head # 1183-2

Size 18" x 375



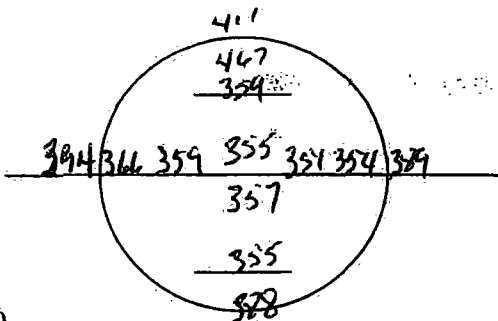
Vessel Head # 1191-2

Size 18" x 375



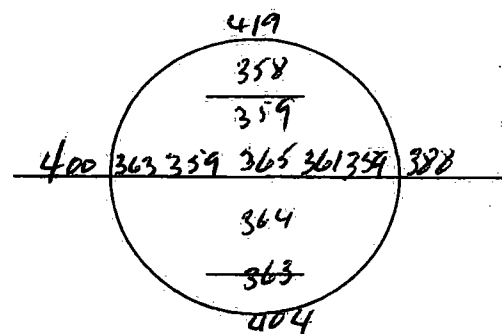
Vessel Head # 1190-1

Size 16" x 375



Vessel Head # 1190-1A

Size 16" x 375





CONTRACT INSPECTION LTD
HEAD OFFICE:
300 Hwy 18 WEST
BOX 66 ESTEVAN, SK S4A 2A2
PH: 306-634-3476 FAX: -634-8418

REGINA OFFICE:
510 Quebec St
Regina, SK S4R 1K9
PH: 306-751-0454 FAX: 751-0454

Job Report # E_0776
of Pages

Date: Dec 12 / 05
Client: WATERFLOOD
Location: WATERFLOOD
PO/AFE: 31571
JOB#:

Prime Contractor: WaterFlood
Items Inspected: VESSEL HEADS 3# 1183/1184/1190/1191

Travel Time:
Site Time: 3
Total Hours: 3

Consumables:
Penetrant ☐ Developer ☐ Contrast ☐ Bath ☐ Cleaner ☐

Kilometres:
Per Diem:

Technician: JP CGSB Level III Reg.# 815

Technician:

Magnetic Particle Inspection

Specifications: ASME Section V, Sub A, Art. 7
Procedures & Techniques, ASME Sec. VIII, Div 1,
App. 6 Evaluation-Acceptance Criteria, CSA W59-
2003 Structural Steel Welding, CSA Z662-Pipeline,
API 650 Tank Steel and Welding, ASTM E1444-
Procedures & Techniques.

Equipment: Portable AC or DC Yoke, High
Intensity White & Black Lighting

Technique Used: Continuous AC

Ultraviolet ☐ Black & White ☐ Powder ☐

Results:

For additional information see attached, if
applicable.

Liquid Penetrant Inspection

Specifications: ASME Sec. V, Sub. A, Art. 6
Procedures & Techniques, ASME VIII Div I, App.8-
Evaluation-Acceptable Criteria, CSA W59-2003
Structural Steel Welding, CSA Z662-Pipeline, API
650-Tanks, ASTM E1417 Procedures &
Techniques.

Equipment: Aerosols- cleaners, penetrant and
powder developer (in medium)

Technique Used: Solvent removable – visible red
dye method, florescent

Results:

For additional information see attached, if
applicable.

Ultrasonic Inspection

Specifications: ASME Sec. V, Sub. A, Art.
4/5-Procedures & Techniques, ASME Sec.
VIII, App. 12-Evaluation-Acceptance Criteria,
CSA W59-2003 Structural Steel Welding,
CSA Z662- Pipeline, ASTM E797
Procedures. & Techniques.

Equipment: Portable Digital Thickness
gauge, 5MHz – 0 degrees split transducer

Technique Used: Straight Beam
(longitudinal Wave), Contact, A-Scan

Results:

1184 - 100% R.R. 100%
1193 - 100% R.R. 100%
1190 - 100% R.R. 100%
1190 - 100% R.R. 100%

For additional information see attached, if
applicable.

Purchaser: CCTP

INSPECTION CERTIFICATE

EN 10204 3.1B

E-No.
M-921Purchase Order No.
4570251-00

Job No.



D M Y Certificate No.

15/11/2004 T- 2004200964

No.	MFG. No. (Heat Identification No.)	Specification for Material		Specification for Inspection		Visual Examination	Dimensional Inspection
		ASTM A654-06 / ASME SA 654 WPB Made from Seamless Pipe		ASME / ANSI B16.9		Good	Good
		CSA Z245.11 GR241 CAT1 NACE MR0175-2000					
		Product & Size (Tol.)		Quantity	Heat Treatment (Note 1)	Symbol No.	
1	04E20026	RC WPB 12 X 6 STD		7/10	N	7513828	
2	04M20019	RC WPB 12 X 6 STD		3/10	N	7513828	
3	04D20086	RE WPB 2 X 1 1/2 S40		10	N	7514476	
4	04B20046	RE WPB 2 1/2 X 2 S40		50	N	7514665	
5	04G00255	90 EL WPB 1 S160		50	A	7515111	

Specification	Chemical Composition %												Tension Test #2			HARDNESS MAX
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E	
Min.	x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa		%	
Max.		10	29										240	415	80	197 HB : GOC1
Material Heat No.	23		106	50	58	40	40	40	15	80	20					
1 15938	16	29	66	7	4	12	6	7	3	0	0	30	321			
2 J4K8196	21	20	68	8	6	1	2	4	0	0	0	33	319			
3 J3K9290	19	21	68	9	8	3	3	6	0	0	0	32	331			
4 45868	18	20	64	10	2	2	1	2	1	1	1	30	378			
5 75714	13	24	63	8	10	24	12	6	8	1	0	28	308	465	50	

Material Control	Sign	Date
Material Received	<i>[Signature]</i>	FEB 08 2006
Heat # / MTR'S	<i>[Signature]</i>	FEB 08 2006
Chemical Analysis	<i>[Signature]</i>	FEB 08 2006
Quantity	1	Job# 1190-1

(NOTE 1) A : HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620 C - 980 C, AIR COOLING.

N : NORMALIZING 910 C X 0.5 HR. AIR COOLING S : STRESS RELIEVING 676 C X 0.5 HR. AIR COOLING

C.E. = C+Mn/6+Cr+Mo-V/5+(Ni+Cu)/15

MAGNETIC PARTICLE EXAMINATION FOR THE 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.

* 1 : 1/2" nominal wall thickness in mm * 2 : YS Yield strength TS = Tensile strength E = Elongation

* A Hot Finished Condition

Quality Assurance Manager
Thai Bankun Co., Ltd.
58 Soi Watkrumai, Bangkok, Prapadaeng.

Edmonton Exchanger & Manufacturing Ltd.

5545-89 Street, Edmonton, Alberta T6E 5W9
Telephone (780) 468-6722 Fax (780) 466-5155

QCC-001
Rev.7
Date: April 1, 2005
Approved By: S.Z.

Certificate of Compliance

1183, 1184, 1192, 1191

Customer WATERFLOOD SERVICE &

Purchase Order 31245

Work Order C60945

Date 2005/11/24

Page 1 of 1

Item#	Description	Qty	Heat#	Certified Min Thk	Form. Proc.
H60945-1	HEAD(S) - Semi-Elliptical 2:1 - 0.3750" NOM (0.3130" MIN) X 14183-12 OD (Material Spec: SA 516-70 Normalized)	12	7382C-05789 71	0.3350"	1
		1190-1 1	MO0969-A28 1	0.3450"	1, 3
		1184-1 2	VO2343-A76 17	0.3330"	1, 3
		1191-1 1	49288-04711 0	0.3430"	1
		1190-1 1	47549-66898 1	0.3130"	1
		1191-1 1	37313-837527-2 1	0.3300"	1

Forming Procedure:

- Hot Formed @ 1650F/899C and Air Cooled
3. Normalized @ 1650F/899C for 25 min/inch and Air Cooled

Supplementary Requirements

The heads listed above comply with the requirements of ASME Code Section I (PG-29 & 81), and Section VIII, Div. 1, including Paragraphs UG-79 and UG-81. Material being supplied conforms to the latest ASME Code Section II, Part A, 2004-07-01 Edition..

Steve Zubrycky (QAM)

Supplementary Examination - Items

OREGON STEEL MILLS

P.O. BOX 2760, Portland, Oregon 97208 • (503) 286-9651 Fax (503) 240-5268

REPORT 0 CHEMICAL/PHYSICAL TESTS

REVISED 10/19/04

CERTIFICATE NO.	DATE
825204	Sep 28, 2004 1
MILL ORDER NO.	DATE
174591	
CUSTOMER ORDER NO.	
E10510-J1010LG	
JOB/REQ. NO.	
SHIPPING NO.	DATE
825204	09/28/2004
CARRIER	
BURLINGTON NORTHERN	
CAR/TRUCK NO.	
TTPX82511	

	SOLD TO	EDMONTON STEEL PLATE
		5545 89TH STREET
		EDMONTON, AB T6E 5W9
		CANADA

EDMONTON STEEL PLATE
5545 89TH STREET
EDMONTON, AB T6E 5W9
CANADA

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
 OSM CARBON PRESSURE VESSEL PLATE ASTM A516-03 GRADE 70 ASME SA516 2001/2003
 ADDENDA NORMALIZED TEST COUPONS: .26 MAX C, .020 MAX P, .15 MIN SI, .40 MAX
 SI, .85 MIN MN, 1.20 MAX MN, .008 MAX S, .10 MAX CU, .08 MAX MO, .25 (continued)

PHYSICAL PROPERTIES

OSM ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
	MAX NI, .25 MAX CR, .03 MAX V, .02 MAX CB, .08 MAX TI, CU + NI + CR + MO = .70 MAX. PLATES FURNISHED IN AS ROLL COND. LCVN 15 FT/LBS AVG @ -50 F (P) 12 FT/LBS MIN. PLUS ADDITIONAL SET NORMALIZED TEST AT 1550 F +/- 25 F HOLD 25 MINS/INCH HOLD 25 MINS MINIMUM. C.E. (CEA FORMULA) .45 MAX AIM FOR C.E. (CEA) .40 MAX. NOTE: HEATS INDICATED WITH (*) ARE THE NORMALIZED TEST COUPON RESULTS DIN 50049 3.1.B/EN 10204 3.1.B. 1 0.3750 X 120.000ME X 480.000 SCHEDULE B: 7208.52.00.00									
	3 PCS 18378 LBS	M00967	A26	535	815	21				
	(*)	M00967	A26	499	755	20				
										LCVN @ -50 DEG F 7.5 mm 54 48 66 /56 ft/lbs
	4 PCS 24504 LBS	M00969	A24	540	805	22				
	(*)	M00969	A24	495	765	22				
										LCVN @ -50 DEG F 7.5 mm 31 56 51 /46 ft/lbs

Material Control	10115	Sign	Date
Material Received	pm	DEC 12	2005
Heat # / MTR'S	pm	DEC 12	2005
Chemical Analysis	pm	DEC 12	2005
Quantity	1	Job#	1133-1

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	Nb	Ca	CE	McQuay Ntn Grain Size
M00967	.24	1.10	.013	.004	.22	<.02	<.02	.002	<.003	.042	<.02	<.02	.003				.43	
CK A21	.24	1.13	.012	.002	.18	.01	.01	.003	<.003	.041	<.02	<.02	.002					
M00969	.23	1.12	.012	.003	.27	<.02	<.02	.002	<.003	.033	<.02	<.02	.004				.42	
CK B22	.23	1.14	.011	.002	.24	.01	.01	<.003	<.003	.034	<.02	<.02	.002					
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.																		

I certify the above to be correct as contained in the records of OREGON STEEL MILLS By

Clint White

OREGON STEEL MILLS

P.O. BOX 2760, Portland, Oregon 97208 • (503) 286-9651 Fax (503) 240-5268

REPORT Q CHEMICAL/PHYSICAL TESTS

REVISED 10/19/04

	SOLD TO	EDMONTON STEEL PLATE 5545 89TH STREET EDMONTON, AB T6E 5W9 CANADA	EDMONTON STEEL PLATE 5545 89TH STREET EDMONTON, AB T6E 5W9 CANADA	CERTIFICATE NO. 825204	DATE Sep 28, 2004	2
				MILL ORDER NO. 174591	DATE	
				CUSTOMER ORDER NO. E10510-J1010LG		
				JOB/REQ. NO.		
				SHIPPING NO. 825204	DATE 09/28/2004	
THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS OSM CARBON PRESSURE VESSEL PLATE ASTM A516-03 GRADE 70 ASME SA516 2001/2003 ADDENDA NORMALIZED TEST COUPONS. .26 MAX C, .020 MAX P, .15 MIN SI, .40 MAX SI, .85 MIN MN, 1.20 MAX MN, .008 MAX S, .10 MAX CU, .08 MAX MO, .25 (continued)				CARRIER BURLINGTON NORTHERN CAR/TRUCK NO. TPX82511		

PHYSICAL PROPERTIES

OSM ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
	MAX NI, .25 MAX CR, .03 MAX V , .02 MAX CB, .08 MAX TI, CU + NI + CR + MO = .70 MAX. PLATES FURNISHED IN AS ROLL COND. LCVN 15 FT/LBS AVG @ -50 F (P) 12 FT/LBS MIN. PLUS ADDITIONAL SET NORMALIZED TEST AT 1550 F +/- 25 F HOLD 25 MINS/INCH HOLD 25 MINS MINIMUM. C.E. (CEA FORMULA) .45 MAX AIM FOR C.E. (CEA) .40 MAX.NOTE: HEATS INDICATED WITH (*) ARE THE NORMALIZED TEST COUPON RESULTS DIN 50049 3.1.B/EN 10204 3.1.B.									
1	0.3750 X 120.000ME X 480.000									
	4 PCS 24504 LBS	^ M00969	A26	535	785	22				
	(*)	^ M00969	A26	484	750	22				
							LCVN @ -50	DEG F	7.5 mm	71 60 62 /64 ft/lbs
	4 PCS 24504 LBS	^ M00969	A28	530	785	21				
	(*)	^ M00969	A28	505	750	22				
							LCVN @ -50	DEG F	7.5 mm	45 51 56 /50 ft/lbs
	4 PCS 24504 LBS	^ M00969	B22	540	795	21				
	(*)	^ M00969	B22	505	760	21				
							LCVN @ -50	DEG F	7.5 mm	28 44 36 /36 ft/lbs

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Co	Al	Cr	Mo	Ti	B	Nb	Ca			CE	McQuay-Norris Grain Size
M00969	.23	1.12	.012	.003	.27	<.02	<.02	.002	<.003	.033	<.02	<.02	.004						.42	
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (*) WERE ROLLED IN THE USA.																				

I certify the above to be correct as contained in the records of OREGON STEEL MILLS By

Ante White

OREGON STEEL MILLS

P.O. BOX 2760, Portland, Oregon 97208 • (503) 286-9651 Fax (503) 240-5268

REPORT OF CHEMICAL/PHYSICAL TESTS

REVISED 10/19/04

	SOLD TO	EDMONTON STEEL PLATE 5545 89TH STREET EDMONTON, AB T6E 5W9 CANADA	EDMONTON STEEL PLATE 5545 89TH STREET EDMONTON, AB T6E 5W9 CANADA	CERTIFICATE NO. 825204 DATE Sep 28, 2004 3
				MILL ORDER NO. 174591 DATE
				CUSTOMER ORDER NO. E10510-J1010LG
				JOB/REQ. NO.
				SHIPPING NO. 825204 DATE 09/28/2004

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
 OSM CARBON PRESSURE VESSEL PLATE ASTM A516-03 GRADE 70 ASME SA516 2001/2003
 ADDENDA NORMALIZED TEST COUPONS. .26 MAX C, .020 MAX P, .15 MIN SI, .40 MAX
 SI, .85 MIN MN, 1.20 MAX MN, .008 MAX S, .10 MAX CU, .08 MAX MO, .25 (continued)

CARRIER
 BURLINGTON NORTHERN
 CAR/TRUCK NO.
 TTPX82511

PHYSICAL PROPERTIES

OSM DEMO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
	MAX NI, .25 MAX CR, .03 MAX V, .02 MAX CB, .08 MAX TI, CU + NI + CR + MO = .70 MAX. PLATES FURNISHED IN AS ROLL COND. LCVN 15 FT/LBS AVG @ -50 F (P) 12 FT/LBS MIN. PLUS ADDITIONAL SET NORMALIZED TEST AT 1550 F +/- 25 F HOLD 25 MINS/INCH HOLD 25 MINS MINIMUM. C.E. (CEA FORMULA) .45 MAX AIM FOR C.E. (CEA) .40 MAX.NOTE: HEATS INDICATED WITH (*) ARE THE NORMALIZED TEST COUPON RESULTS DIN 50049 3.1.B/EN 10204 3.1.B. 19 PCS 116394 LBS TOTALS									



CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cb	Al	Cr	Mo	Ti	B	Nb	Ca		CE	Max Grain Size
.....	END OF REPORT																		

I certify the above to be correct as contained in the records of OREGON STEEL MILLS By

Chris White



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 126452-16.01.04	A08/ Manufacturer's order/ A03 Certificate No. 274790-002	Sheet 1/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 31695 A07.2 No. E10271-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70	SA20-S5			
B03 Specifications ASME-2A:01+A02				



B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
INCH									
01	1	0,3750 x	96,00000 x	480,00000	2223	N	47549	66898-02	ITEM01
01	1	0,3750 x	96,00000 x	480,00000	2223	N	47549	66900-01	ITEM01
**	2				4446				
02	1	0,3750 x	120,00000 x	480,00000	2779	N	48550	66473-01	ITEM02
02	1	0,3750 x	120,00000 x	480,00000	2779	N	48550	66473-02	ITEM02
**	2				5558				
03	1	0,5000 x	96,00000 x	480,00000	2964	N	48552	66460-03	ITEM03
04	1	0,5000 x	120,00000 x	480,00000	3705	N	48552	66455-02	ITEM04
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48554	66433-01	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48554	66433-02	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48554	66433-03	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48554	66434-01	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48554	66434-02	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48554	66434-03	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48554	66435-02	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48554	66435-03	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66429-01	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66429-02	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66429-03	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66430-02	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66431-01	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66431-02	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66431-03	ITEM05

Material Control	Sign	Date
Material Received	Rm	DEC 12 2000
Heat # / MTR'S	Rm	DEC 12 2000
Chemical Analysis	Rm	DEC 12 2000
Quantity	Job#	1183-1

1184-1
1190-1
119-1

A04	201/202 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		A01
 Trademark	QM-System: Certification as per ISO 9001 since 14 March 1990 RECEIVED JAN 19 2001	B. MUELLER Der Werkssachverständige	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department Inspector's stamp Date 16.01.04 KW 1



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 126452-16.01.04	A08/ Manufacturer's order/ A03 Certificate No. 274790-002	Sheet 2/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 31695 A07.2 No. E10271-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70	SA20-S5			
B03 Specifica- tions ASME-2A:01+A02				

B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
			INCH						
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66432-01	ITEM05
05	1	0,6250 x	96,00000 x	480,00000	3705	N	48556	66432-02	ITEM05
**	17				62985				
07	1	0,8750 x	120,00000 x	480,00000	6483	N	48905	71112-03	ITEM07
07	1	0,8750 x	120,00000 x	480,00000	6483	N	48905	71114-01	ITEM07
**	2				12966				
09	1	1,3750 x	120,00000 x	480,00000	10188	N	48901	71089-02	ITEM09
***	26				102812				

B04 Delivery condition / Heat treatment of plates

ITEM NO.: 01-10

N: HT: 1634 GR.F +27 -27 GR.F

SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,5 MIN/MM (25-38 MIN/INCH)

COOLING IN STILL AIR

B06 Marking

ITEM NO.: 01-10

STEEL GRADE SA516 70 MTLTV SA516 60 MTLTV

HEAT NO. / TRADEMARK / ROLLED PLATE NO./TEST NO. / INSPECTOR'S STAMP

A04



Trademark

201/202 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001 since 14 March 1990

B. MUELLER

Der Werkssachverständige



Inspector's stamp

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 16.01.04

KW 1

A01



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

Erläuterungen siehe Rückseite/Explications voir la verso/See reverse for explanations (www.dininger.biz/certificate)				A09 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.		Sheet		
A02 ABNAHMEPRUEFZEUGNIS		3.1.B	DIN EN 10204 - EN 10204 - DIN 50049							
CERTIFICAT DE RECEPTION		3.1.B	NF EN 10204							
INSPECTION CERTIFICATE		3.1.B	BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		126452-16.01.04		274790-002		3/...	
A05 Established inspecting body DH		A06 Purchaser ARCELOR CANADA, BURLI		A07.1 No. 31695		B01 Product HOT ROLLED PLATES				
		Final receiver EDMONTON STEEL, EDMON		A07.2 No. E10271-J1010-LG						
B02/ Steel grade		SA516-70		SA20-S5						
B03 Specifica- tions		ASME-2A:01+A02								

C10-C29 Tensile test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C10 KSI RP02	C11	C12 RM	C13	A % LO=8IN	A % LO=2IN	C14-C15
01	47549	66898		K4	Q	RT	53,2		77,7		24,5	45,7	
01	47549	66900		K4	Q	RT	52,6		76,6		28,9	51,6	
02	48550	66473		K4	Q	RT	53,4		76,7			36,2	
03	48552	66460		K4	Q	RT	49,9		72,8		28,4	51,6	
04	48552	66455		K4	Q	RT	49,9		72,8		27,0	49,6	
05	48554	66433		K4	Q	RT	49,3		72,5		28,4	51,6	
05	48554	66434		K4	Q	RT	50,0		72,9		28,9	47,6	
05	48554	66435		K4	Q	RT	49,7		72,6		28,0	51,6	
05	48556	66429		K4	Q	RT	50,3		73,1		27,5	51,6	
05	48556	66430		K4	Q	RT	50,2		73,1		28,0	51,6	
05	48556	66431		K4	Q	RT	50,6		72,6		28,9	49,6	
05	48556	66432		K4	Q	RT	49,9		72,9		28,9	53,5	
07	48905	71112		K4	Q	RT	49,6		73,7		28,9	57,5	
07	48905	71114		K4	Q	RT	49,4		72,9		28,0	53,5	
09	48901	71089		K4	QV	RT	51,5		77,0			36,3	

C40-C49 Impact test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C41 Specimen width	C40 Type of specimen	C44 Testing method	C48 Energy	C45 C42 Individual values AV=FT.LBF	C43 Average value
01	47549	66898		K4	LV	-51	3/4	CHP-V			AV 125 62 88	92
01	47549	66900		K4	LV	-51	3/4	CHP-V			AV 83 106 45	78
02	48550	66473		K4	LV	-51	3/4	CHP-V			AV 101 102 124	109
03	48552	66460		K4	LV	-51		CHP-V			AV 201 195 175	190
04	48552	66455		K4	LV	-51		CHP-V			AV 210 152 165	176

A04

Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



QM-System: Certification as per ISO 9001 since 14 March 1990

B. MUELLER

Der Werkssachverständige



Inspector's stamp

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

A01

Date 16.01.04

KW 1



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 126452-16.01.04	A08/ Manufacturer's order/ A03 Certificate No. 274790-002	Sheet 4/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 31695 A07.2 No. E10271-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade SA516-70		SA20-S5		
B03 Specifications ASME-2A:01+A02				

C40-C49 Impact test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C41 Specimen width	C40 Type of specimen	C44 Testing method	C48 Energy	C45 C42 Individual values AV=FT.LBF	C43 Average value
05	48554	66433		K4	LV	-51		CHP-V		AV 159	207	192
05	48554	66434		K4	LV	-51		CHP-V		AV 192	207	201
05	48554	66435		K4	LV	-51		CHP-V		AV 125	156	143
05	48556	66429		K4	LV	-51		CHP-V		AV 187	200	174
05	48556	66430		K4	LV	-51		CHP-V		AV 158	176	161
05	48556	66431		K4	LV	-51		CHP-V		AV 162	134	152
05	48556	66432		K4	LV	-51		CHP-V		AV 200	203	203
07	48905	71112		K4	LV	-51		CHP-V		AV 101	138	144
07	48905	71114		K4	LV	-51		CHP-V		AV 131	140	140
09	48901	71089		K4	LV	-51		CHP-V		AV 89	80	80

C70-C99 Chemical composition % - Heat analysis

B08 Heat	C70	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
47549	Y	0,186	0,337	1,12	0,009	0,0007	0,0034	0,034	0,028	0,028	0,079	0,055	0,000	0,000	0,001
48550	Y	0,168	0,315	1,15	0,010	0,0011	0,0075	0,041	0,033	0,008	0,038	0,030	0,000	0,000	0,002
48552	Y	0,161	0,346	1,13	0,008	0,0010	0,0067	0,037	0,020	0,004	0,033	0,026	0,000	0,000	0,002
48554	Y	0,164	0,357	1,12	0,007	0,0008	0,0058	0,032	0,016	0,005	0,033	0,025	0,000	0,000	0,002
48556	Y	0,163	0,349	1,13	0,007	0,0011	0,0064	0,037	0,016	0,041	0,038	0,023	0,001	0,000	0,002
48901	Y	0,181	0,324	1,11	0,007	0,0010	0,0073	0,047	0,020	0,030	0,039	0,048	0,000	0,000	0,001
48905	Y	0,169	0,333	1,12	0,009	0,0013	0,0052	0,053	0,012	0,019	0,028	0,054	0,001	0,000	0,001

A04

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QM-System: Certification as per ISO 9001 since 14 March 1990

B. MUELLER

Der Werkssachverständige



Inspector's stamp

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

A01

Date 16.01.04

KW 1

**DILLINGER HÜTTE**

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 126452-16.01.04	A08/ Manufacturer's order/ A03 Certificate No. 274790-002	Sheet 5/...
A06 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 31695 A07.2 No. E10271-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade	SA516-70 SA20-S5			
B03 Specifica- tions	ASME-2A:01+A02			

C70-C99 Chemical composition % - Heat analysis

B08 Heat	C70	Ti	B
47549	Y	0,002	0,0002
48550	Y	0,002	0,0001
48552	Y	0,002	0,0002
48554	Y	0,002	0,0001
48556	Y	0,002	0,0001
48901	Y	0,002	0,0001
48905	Y	0,002	0,0001

C94 Heat analysis Carbon equivalent / Alloying restrictions

B08 Heat	FO-02=	FO-55=	FO-78=	FO-91=
47549	0,40	0,19	0,08	6,0
48550	0,37	0,11	0,04	6,8
48552	0,36	0,08	0,03	7,0
48554	0,36	0,08	0,03	6,8
48556	0,37	0,12	0,06	6,9
48901	0,39	0,14	0,08	6,1
48905	0,37	0,11	0,07	6,6

C95 Ladle treatment

ITEM NO.: 01-10

HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL

A04



Trademark

Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001 since 14 March 1990

B. MUELLER

Der Werkssachverständige



Inspector's stamp

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Date 16.01.04

KW 1

A01



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 126452-16.01.04	A08/ Manufacturer's order/ A03 Certificate No. 274790-002	Sheet 6/...
A06 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 31695 A07.2 No. E10271-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade SA516-70 SA20-S5				
B03 Specifica- tions ASME-2A:01+A02				

C70-C99 Chemical composition % - Product analysis

B08 Heat	B07 Test No.	C01	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
47549	66899	K4	0,184	0,334	1,11	0,009	0,0010	0,0045	0,030	0,028	0,027	0,078	0,056	0,000	0,000	0,002
48550	66479	K4	0,174	0,292	1,14	0,009	0,0010	0,0081	0,038	0,031	0,009	0,035	0,031	0,000	0,000	0,003
48552	66445	K4	0,163	0,351	1,13	0,007	0,0007	0,0069	0,039	0,018	0,004	0,033	0,022	0,000	0,000	0,001
48552	66459	K4	0,165	0,317	1,14	0,009	0,0011	0,0057	0,041	0,025	0,006	0,035	0,028	0,000	0,000	0,002
48554	66435	K4	0,166	0,340	1,12	0,008	0,0011	0,0054	0,034	0,015	0,004	0,033	0,024	0,000	0,000	0,001
48556	66430	K4	0,170	0,351	1,12	0,007	0,0008	0,0055	0,034	0,016	0,004	0,031	0,023	0,000	0,000	0,000
48556	71294	K4	0,165	0,334	1,12	0,007	0,0009	0,0064	0,038	0,018	0,043	0,039	0,021	0,001	0,000	0,000
48901	71095	K4	0,178	0,356	1,05	0,007	0,0009	0,0057	0,057	0,014	0,019	0,034	0,039	0,000	0,000	0,001
48901	74980	K4	0,180	0,331	1,11	0,007	0,0010	0,0074	0,048	0,021	0,030	0,037	0,049	0,000	0,000	0,000
48905	71111	K4	0,175	0,322	1,13	0,009	0,0008	0,0055	0,050	0,014	0,032	0,033	0,062	0,001	0,000	0,002

B08 Heat	B07 Test No.	C01	TI	B
47549	66899	K4	0,002	0,0002
48550	66479	K4	0,002	0,0001
48552	66445	K4	0,002	0,0000
48552	66459	K4	0,002	0,0002
48554	66435	K4	0,002	0,0001
48556	66430	K4	0,002	0,0001
48556	71294	K4	0,002	0,0001
48901	71095	K4	0,003	0,0000
48901	74980	K4	0,001	0,0000
48905	71111	K4	0,002	0,0000

A04



Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001 since 14 March 1990

B. Mueller

B. MUELLER

Der Werkssachverständige



Inspector's stamp

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

A01

Date 16.01.04

KW 1



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 ABNAHMEPRUEFZEUGNIS 3.1.B DIN EN 10204 - EN 10204 - DIN 50049 CERTIFICAT DE RECEPTION 3.1.B NF EN 10204 INSPECTION CERTIFICATE 3.1.B BS EN 10204 - ISO 10474 MATERIAL TEST REPORT		A09 Advice of dispatch No./ Date of dispatch 126452-16.01.04	A08/ Manufacturer's order/ A03 Certificate No. 274790-002	Sheet 7
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 31695 A07.2 No. E10271-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70		SA20-S5		
B03 Specifications ASME-2A:01+A02				

C94 Product analysis Carbon equivalent / Alloying restrictions

B08 Heat	B07 Test No.	C01
47549	66899	K4 FO-02= 0,39 FO-55= 0,19 FO-91= 6,0
48550	66479	K4 FO-02= 0,38 FO-55= 0,11 FO-91= 6,6
48552	66445	K4 FO-02= 0,36 FO-55= 0,08 FO-91= 6,9
48552	66459	K4 FO-02= 0,37 FO-55= 0,09 FO-91= 6,9
48554	66435	K4 FO-02= 0,36 FO-55= 0,08 FO-91= 6,7
48556	66430	K4 FO-02= 0,37 FO-55= 0,07 FO-91= 6,6
48556	71294	K4 FO-02= 0,37 FO-55= 0,12 FO-91= 6,8
48901	71095	K4 FO-02= 0,37 FO-55= 0,11 FO-91= 5,9
48901	74980	K4 FO-02= 0,38 FO-55= 0,14 FO-91= 6,2
48905	71111	K4 FO-02= 0,39 FO-55= 0,14 FO-91= 6,5

C94 Carbon equivalent formula / Alloying restrictions

FO-02 = $C + (MN/6) + (CR+MO+V)/5 + (NI+CU)/15$
 FO-55 = $CU+MO+NI+CR$
 FO-78 = $CR+MO$
 FO-91 = MN/C

D01 Checking of marking, surface, shape and dimensions

ITEM NO.: 01-10

RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS

SURFACE AS PER ASME-SA20
 THICKNESS AS PER ASME-SA20:01+A02
 LENGTH AND WIDTH AS PER ASME-SA20:01+A02
 FLATNESS AS PER 1/2 ASME-SA20:01+A02



A04



Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

QM-System: Certification as per ISO 9001 since 14 March 1990

B. Mueller
B. MUELLER

Der Werkssachverständige



Inspector's stamp

AG der Dillinger Hüttenwerke
 Postfach 1580, D-66748 Dillingen/Saar
 Inspection department

A01

Date 16.01.04

KW 1

PURCHASER: SEYBOLD
ASTM A234 VPB-02
 STANDARD : ASME SA234 VPB-01
 MATERIALS: ASTM A106 Gr.B
 INSP. SPEC.: ASME B16.9 -01



INSPECTION CERTIFICATE

RIGID INDUSTRIES CO., LTD.

B. MEI CHUANG RD, NAO SONG,
 KAOHSUNG HSEN, TAIWAN
 TEL:(07)791-0627-8
 FAX:(07)791-6887

Material Control	Sign	Date
Material Received	<i>R</i>	FEB 08 2006
Chemical Analysis	<i>R</i>	FEB 08 2006
Quantity <u>1</u>	Job# <u>1190-1</u>	

DATE: 2005-08-20

ORDER NO: 4774

P. I. NO: 4L26-4

CERTIFI. NO: 323

ACCORDING TO EN10204/DIN50040/3.1B

ITEM NO.	PRODUCT & SIZE	QUANTITY PCS	MFG NO.	VISUAL & DIMENSIONAL INSPECTION	HARDNESS MAX. 197 HB	HEAT TREATMENT (NOTE)	MAGNETIC PARTICLE EXAMINATION	
1	ELL 45 LR 2" S160 7514647	20	4L0418	GOOD	132-151	N		
2	ELL 45 LR 6" XH 7511582	15	5F0548	GOOD	132-133	A		
3	ELL 45 LR 10" STD 7511345	8	5B3224	GOOD	127-128	A		
4	ELL 90 LR 2" XH 7510900	2400	5E6059	GOOD	133-134	A		
5	ELL 90 LR 3" XH 7510942	500	5C6579	GOOD	132-133	A		
6	CON-RED 3X2" XH 7513992	160	5A9284	GOOD	142-155	N		
7	CON-RED 4X2" XH 7514140	24	4J2377	GOOD	122-155	N		
8	CON-RED 4X3" S160 7516258	25	2I7011	GOOD	154-161	N		
9	CON-RED 4X3" STD 7513330	150	5A566D	GOOD	120-126	N		
10	CON-RED 6X2" XH 7514026	1	5C1983	GOOD	135-144	N		

ITEM NO.	MATERIAL CHARGE NO.	CHEMICAL COMPOSITION %											PHYSICAL TEST			
		C X100	Si X100	Mn X100	P X1000	S X1000	Cu X100	Ni X100	Cr X100	Mo X100	V X100	Nb X100	Y S KSI	T S KSI	E %	C.E. x100
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MIN.	MIN.	MIN.	MIN.
	STANDARD			10		29							35.0	60.0		
		30		135	50	58	40	40	40	15	8	20		85.0		50

1	J4L8918	11	23	130	16	4	2	2	7	1	0	0	45.0	68.5	64.0	34
2	J5K1248	11	25	131	16	5	3	2	12	1	0	0	44.2	66.6	48.4	35
3	J4L8924	11	21	129	15	5	1	2	5	0	0	0	43.1	64.5	50.0	33
4	J5L2559	12	24	123	14	4	4	2	11	0	0	0	48.2	69.8	56.0	35
5	J4LB279	11	23	126	10	3	3	2	12	1	0	0	46.8	69.0	64.0	34
6	302884	19	24	54	8	1	8	4	5	2	0	1	45.6	67.5	37.5	30
7	48B8377	17	32	77	11	5	16	20	15	6	0	1	50.9	76.7	35.0	36
8	J2K1511	12	27	132	17	1	1	2	7	1	0	0	44.5	66.0	49.9	35
9	20046D3289	20	30	51	20	22	1	1	1	0	0	0	50.1	64.6	40.0	28
10	33-01183	20	22	56	22	5	6	4	4	2	1	0	53.7	72.6	35.0	31

(NOTE): A: HOT FORMED WITH FINAL TEMPERATURE BETWEEN 620°C-680°C, AIR COOLING.

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

NACE MR-01-75: SATISFACTORY

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.

Ou L Lan

MANAGER OF Q.A. DEPT.

HEAT 4A5 SKU: 7530113 DESC: 1 150 RF WN FLG S160 A JN

CLIENTE / Customer / Client

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

CERTIFICADO DE INSPECCION

Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.B
EN 10204 / 3.1.B
ISO 10474 / 3.1.B



ULMA

FECHA:
Date:

22/09/2006

N.º
No.

102558

HOLIA:
Page: 1

N.º: 922184

ULMA FORJA, S.COOP.

PRODUCTO
Article - Produit

FLANGES

SU PEDIDO N.º

Your Order No. 4873413-00
Votre Cde. N.º

DE

of - de 24/08/2006

Certified acc. PED 97/23/EC
by TÜV Rheinland
N.º 01 202 EQ 02 7443

Bº Zubilaga, 3 - Apdo. 14
20690 OIAITI (Gipuzkoa) SPAIN
Tel.: 34 - 943 780552
Tel.: 34 - 943 781808
E-mail: forja@forging.ulma.es

NORMAS APLICABLES
Requirements - Normes Applicables

ASME B16.5-98

MATERIAL CORRESPONDIENTE
Material Correspondent - Qualité
MODO DE FUSION (*)
Steel Making - Elaboration de l'acier
E = Elec. Y = Quileno téscop

ASTMA105N-03
ASME SA105N

NACE MR-01-75/03

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant



47923

DEPARTAMENTO QUALITY ASSURANCE

Section
Department

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No. N.º Coulee	RESISTENCIA T. Strength Résist. Sup. N/mm²	ALARGAMIENTO Elongation Allongement Lo. 4 d %	REDUCCION DE AREA Reduction A Réduction %	RESILENCIA Impact test Résistance Joules	MEC Average Moyenne	DUREZA Hardness Dureté HB
D 7530113	40	WN 1 150LB S160 RF A105N	NE	154A5	518	307	31.80	63.50		150
26 7530248	40	SW 1/2 150LB S80 RF A105N	NE	162A5	502	301	32.40	65.00		149

COLADA N.º
Heat No.
N.º Coulee

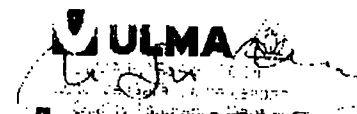
COMPOSICION QUIMICA - STEEL MARKER'S - ANALYSE CHIMIQUE

N.°Coulée	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEO %
154A5	0.210	0.190	0.860	0.017	0.011	0.020	0.010	0.001	0.001	0.001	0.250	0.375
162A5	0.190	0.200	0.840	0.018	0.010	0.020	0.010	0.002	0.001	0.002	0.180	0.348

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et l'état de surface sont satisfaisants

- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées

EL INSPECTOR
Works Inspector - l'Inspecteur



(*) OBSERVACIONES. N.º NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR
Remarks
Observations

Material Control	Sign	Date
Material Received	<i>[Signature]</i>	FEB 08 2006
Heat # / MTR'S	<i>[Signature]</i>	FEB 08 2006
Chemical Analysis	<i>[Signature]</i>	FEB 08 2006
Quantity <u>1</u>	Job# <u>1190-1</u>	

HEAT. 4A5 SKU: 7534337 DESC: 2 150 RF WN FLG XH A1C

CLIENTE / Customer / Client

CCTF CORPORATION (EDMONTON)
8407 - 53 AVENUE NW
EDMONTON, AB T6B 3G2
CANADA

CERTIFICADO DE INSPECCION

Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.B
EN 10204 / 3.1.B
ISO 10474 / 3.1.B

FECHA:
Date:

16/08/2006

N.º
No.

102453

HOJA:
Page: 1



ULMA

N.º: 922164

ULMA FORJA, S.COOP.

PRODUCTO
Article - Produit

FLANGES

SU PEDIDO N.º

Your Order No 4873413-00
Votre Cde. N.º

DE

at. - de 24/05/2005

Certified acc. PED 97/23/EC
by TÜV Rheinland
N.º 01 202 EQ 02 7443

Bº Zubilaga, 3 - Apdo. 14
20580 ORATÍ (Gipuzkoa) SPAIN
Tel.: 34 - 943 780552
Tel.: 34 - 943 781808
E-mail: forja@forging.ulma.es

NORMAS APLICABLES
Requirements - Normes Applicables

ASME B16.5-06

MATERIAL CORRESPONDIENTE
Material Correspondent - Qualité

ASTMA108N-03
ASME SA106N

MODO DE FUSION (*)
Steel Making - Elaboration duacier
E = Elec. Y = Oxygeno básico

NACE MR-01-75/03

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant



47814

DEPARTAMENTO QUALITY ASSURANCE
Section
Department

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations	COLADA N.º Heat No. N.ºCoulée	RESISTENCIA T. Strength Résist. Rept N/mm²	UNIFORME CLAS. Yield Point Limite Elong. N/mm²	ALARGUE Elongation Allongement Lo: 4.0 %	ESTRICCION Reduction A Striction %	RESILIENCIA Impact test Résilience Joules	MEQA Average Me. perve	TEMP. ESTAD. °C	DUREZA Hardness Dureté HB
5 7534337	539	WN 2 150LB S80 RF A105N	Material Control	254A5	510	314	32.00	64.80				148
62 7531080	20	BLIND 1 1500LB RTJ A105N	Material Received	258A5	497	303	31.80	63.80				147
Heat # / MTR'S			Heat # / MTR'S									
Chemical Analysis			Chemical Analysis									
Quantity			Quantity									
Job#			Job#									

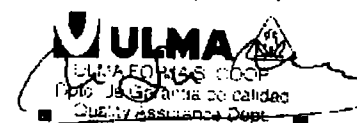
COMPOSICION QUIMICA - STEEL MARKER'S - ANALYSE CHIMIQUE

COLADA N.º Heat No. N.ºCoulée	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
254A5	0.180	0.250	0.840	0.010	0.001	0.080	0.080	0.030	0.007	0.001	0.280	0.388
258A5	0.200	0.230	0.830	0.013	0.023	0.020	0.010	0.002	0.002	0.004	0.180	0.358

Las dimensiones y la condición superficial se hallaron satisfactorias
Dimension and surface condition were found acceptable
Les dimensions et états de surface sont satisfaisants

Los materiales citados cumplen las normas aplicables
Manufacturing requirements are satisfied
Les normes applicables sont respectées

EL INSPECTOR
Works Inspector - L'inspecteur



(*) OBSERVACIONES: N_NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR
Remarks
Observations

HEAT. 5A3 SKU: 7534353 DESC: 3 150 RF WN FLG XH A1C

CLIENT: Customer's Code

CCTF A DIVISION OF EMCO LTD.
5407 - 53 AVENUE NW
EDMONTON, AB T6B 3G2
CANADA

CERTIFICADO DE INSPECCION
Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.8.
EN 10204 / 3.1.8.



REC-A
Date: Oct 20/01/2004

N.º
A.C. N.º 82155

HQJA
Page: 1

N.º 922164

ULMA S.A. S. COOP.
R.º 10.000.000,00
C.º 20.000.000,00
R.º 10.000.000,00
R.º 10.000.000,00
R.º 10.000.000,00

PRODUCTO
Article - Product

FLANGES

STIPES DO N.º
Your Order No.
Votre Cde. N.º

4887832-00

DE
of: 03/10/2003

Certified acc. PEJ 37/23/EC
by TÜV Rheinland
N.º 01 202 EQ 02 7443

MARCA DE FABRICANTE
Mark of factory
Marque du fabricant

DEPARTAMENTO
Department



37877

QUALITY ASSURANCE

MATERIAL CORRESPONDIENTE
Material Correspondent - Qualité

ASME B16.5-88

ASTMA105N-01
ASME SA105N

MODO DE FUSION (M)

Site making - Elaboration de l'acier
F - steel - Y - O - gas - electric

NACE MR-01-7503

PART DA Item Partie	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OTRAS NOTAS Remarks Observations	COLADA N.º Heat No. Coulée No.	QUANTIDAD Weight Poids	DATE Date Date	AREA Area Superficie	PERIMETRO Perimeter Perimètre	RESULTADO Result Résultat	REVISOR Revisor Réviseur	SUBSCRIBIDA Signature Signature
7 7534353	560	WN 3 150LB S80 RF A105N	NE	315A3	516	328	31,40	63,20			
34 7530234	1.200	WN 2 600LB S80 RF A105N	NE	264A3	516	325	30,60	82,00			

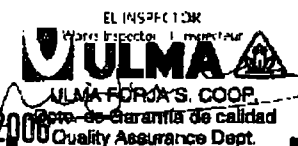
COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE

COLADA Heat Coulée	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
264A3	0.180	0.260	0.900	0.014	0.004	0.050	0.130	0.040	0.001	0.001	0.280	0.376
315A3	0.200	0.300	0.880	0.011	0.005	0.140	0.130	0.040	0.001	0.001	0.340	0.411

Las dimensiones y la condición superficial se hallaron satisfactorias.
Dimensions and surface condition were found acceptable.
Les dimensions et l'état de surface sont satisfaisants.
Los materiales dados cumplen las normas aplicables.
Manufacturing requirements are satisfied.
Les normes applicables sont respectées.

(*) OBSERVACIONES: N NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR
Remarks
Observations

Material Control	Sign	Date
Material Received	<i>h</i>	FEB 08 2006
Heat # / MTR'S	<i>h</i>	FEB 08 2006
Chemical Analysis	<i>h</i>	FEB 08 2006
Quantity <u>1</u>	Job# <u>1190-1</u>	





METALFAR
PRODOTTI INDUSTRIALI S.p.A.
23881 CESANA BRIANZA (Lecce) ITALY
Tel. (031) 685441
Telex 685148
MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI



INSPECTION CERTIFICATE DIN 50048/3.18 - EN 10204/3.18
FORGED FLANGES & FITTINGS LIMITED
CASTLE HOUSE - STATION ROAD
BEN BARNY/HEZTY.

Quantity	Job# 1190-1
Chemical Analysis	2 FEB 08 2006
Heat # / Material	2 FEB 08 2006
Material Received	2 FEB 08 2006
Material Control	Date Sign

M. 3576/ 28/10/2001
S. 27191/ 17/10/2001
NOTE / BOLL: 4856/ 27/10/2001

HEAT CODE COD. CALDA	HEAT CALDA	ITEM POS.	YOUR P.O. VS. ORDRE	OUR REFERENCE NS ORDRE	QUANTITY QUANTITA	DESCRIPTION DESCRIZIONE														DIM. IN ACCORDANCE TO DIM. IN ACCORDO A		VISUAL & DIMENSIONAL VISIVE E DIMENSIONALE	
	36327	0014	2527	01001597 9036	150	N/R 150 RF 4" IS A105 7585267														ASME/ANSI B16.5		SATISFACTORY	
HEAT CODE COD. CALDA	HEAT CALDA	ITEM POS.	MATERIAL MATERIALE		C%	SI%	MS%	S%	P%	Cr%	NI%	Mo%	TI%	Cu%	V%	Nb%	N%	Al%	C.M.%	STEEL MILL ACCIAIERIA			
	36327	0014	ASTM A 105		0.190	0.240	0.970	0.018	0.010	1.080	0.050	0.010	0.000	0.140	1.001	0.001	0.000	0.000	0.562	ACC. CAROXHO			
HEAT CODE COD. CALDA	HEAT CALDA	ITEM POS.	TEST SPECIMEN PROGETTA SPECIMEN Scegli	YIELD POINT Scegli Scegli	TENSILE STRENGTH Scegli Scegli	ELONGATION Allungamento %	REDUCTION OF AREA Riduzione %	HARDNESS Durezza Hv	CHARPY Fuga	IMPACT TEST Scegli	IMPACT TEST - according to Code / cm ²				SHAPE FORMA		YIELD POINT Scegli Scegli		OUR REF.				
	36327	0014	126.60	50.60	319.0	521	57.0	70.0	159-163	0.0	0.0	3	0	3	1				0.5				
HEAT CODE COD. CALDA	HEAT CALDA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A							HEAT TREATMENT TRATTAMENTO TERMICO							FURNACE FORNO						
	36327	0014	ASTM/ASME A 105/SA 105 H - 90							NORMALIZED AT 920 C - FORGED IN CASTLE VERIFIED TRUE COPY OF ORIGINAL FORGED FLANGES & FITTINGS LIMITED							ELECTRIC FURNACE						
NOTE					QUALITY CONTROL DEPARTMENT UFFICIO CONTROLLO QUALITA					INSPECTION AUTHORITY ENTE UFFICIALE COLLAUDO					MANUFACTURER'S SYMBOL MARCHIO PRODUZIONE								
LF2: CHARPY TEST SPECIMEN RESULT AS 10X10mm MATERIAL IN ACCORDANCE WITH NACE MR-0175/99 2001					MUTTI LORENZO										(MFF)								

HEAT: 36327 SKU: 7534361 DESC: 4 150 RF WN FLG XH A10

CERTIFIED MILL TEST REPORT

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LOG NO. 225626 PAGE 2
BONNEY FORGE
P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17088-0330
(814) 842-2848 • (800) 345-7546 • FAX (814) 842-4906
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 01/13/06

CUSTOMER'S Order No.: 4641476-00

Bonney Order No. 026248

SHIPPED TO: CCTF CORPORATION

340318

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM QUANTITY LOT NO.

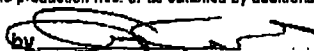
ORDER OR SPECIFICATION NO.
CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, TOLERANCES

SA/A105N

009	25	56352	7551746	3-4X11/4 3M A105N THRD T					
				C .220 MN .980 P .010 S .023 SI .220					
				NI .014 CU .230 CR .100 MO .018 V .034					
				CB .006 AL .006 SN .008					
				CE(LONG FORMULA) = 0.43					
				T/S 83500 Y/S 60750 EL 27.60 RA 62.75					
				BRINELL HARDNESS1: 159 HARDNESS2: 156					
010	25	56297	7550007	4-31/2X2 3M A105N THRD T					
				C .190 MN 1.010 P .013 S .023 SI .250					
				NI .020 CU .090 CO .002 CR .050 MO .008					
				V .022 AL .001 NB .000					
				CE(LONG FORMULA) = 0.38					
				T/S 80500 Y/S 52750 EL 30.05 RA 66.75					
				BRINELL HARDNESS1: 153 HARDNESS2: 150					
011	100	56301	7551894	6 X 2 3M A105N THRD T					
				C .190 MN 1.040 P .013 S .018 SI .190					
				NI .040 CU .140 CO .003 CR .060 MO .020					
				V .001 AL .027 NB .011					
				CE(LONG FORMULA) = 0.39					
				T/S 75127 Y/S 52284 EL 33.15 RA 71.62					
				BRINELL HARDNESS1: 137 HARDNESS2: 135					
012	25	56161	7551916	18-12X2 3M A105N THRD T					
				C .190 MN .970 P .033 S .020 SI .250					
				NI .060 CU .180 CR .080 MO .012 V .024					
				AL .001 NB .001					
				CE(LONG FORMULA) = 0.39					
				T/S 79500 Y/S 54000 EL 31.65 RA 66.55					
				BRINELL HARDNESS1: 144 HARDNESS2: 159					

***** 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 Childers

CMTR: REV 1

QUALITY PROCESS MANAGER

Material Control	Sign	Dst
Material Received	R	FEB 08 2006
Heat # / MTR'S	R	FEB 08 2006
Chemical Analysis	R	FEB 08 2006
Quantity 1	Job#	1190-1

HEAT: 56161 SKU: 7551916 DESC: 2X12TO18 3000 TOL A105N

CERTIFIED MILL TEST REPORT



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LOG NO. 223049 PAGE 1
BONNEY FORGE
P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17088-0330
(814) 542-2545 • (800) 845-7545 • FAX (814) 542-4005
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 10/11/05

CUSTOMER'S Order No.: 4874340-00

Bonney Order No. 018885

SHIPPED TO: CCTF CORPORATION

324685

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM QUANTITY LOT NO. GRADE OR SPECIFICATION NO.
CHEMICAL ANALYSIS PHYSICAL PROPERTIES REMARKS

SA/A105N

009 229 56497 7551584 36 -14 X 3/4 3000 A105N THRD T
C .190 MN 1.200 P .008 S .022 SI .180
NI .030 CU .150 CO .003 CR .050 MO .010
V .000 AL .026 NB .013
CE(LONG FORMULA) = 0.41
T/S 76500 Y/S 52000 EL 39.00 RA 76.00
BRINELL HARDNESS1: 150 HARDNESS2: 150

014 10 56417 7553242 3 X3 3000 A105N THRD T
C .210 MN 1.010 P .012 S .024 SI .220
NI .030 CU .130 CO .004 CR .070 MO .013
V .024 AL .001 NB .000
CE(LONG FORMULA) = 0.41
T/S 78125 Y/S 52250 EL 32.50 RA 64.45
BRINELL HARDNESS1: 137 HARDNESS2: 137

015 35 56046 7559608 3 X 2 6000 A105N THRD T
C .200 MN 1.050 P .009 S .021 SI .260
NI .070 CU .180 CR .060 MO .014 V .024
AL .001 NB .001
CE(LONG FORMULA) = 0.41
T/S 81000 Y/S 55625 EL 29.85 RA 63.50
BRINELL HARDNESS1: 147 HARDNESS2: 147
56123 7559608 3 X 2 6000 A105N THRD T
C .190 MN .980 P .009 S .026 SI .230
NI .100 CU .290 CR .110 MO .025 V .001
AL .005 NB .010 SN .009
CE(LONG FORMULA) = 0.41
T/S 83125 Y/S 57625 EL 29.35 RA 57.00
BRINELL HARDNESS1: 150 HARDNESS2: 147

***** 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 Childers

CMTR: REV 1

Material Control	Sign	Date	QUALITY PROCESS MANAGER
Material Received	<i>R</i>	FEB 08 2006	
Heat # / MTR'S	<i>R</i>	FEB 08 2006	
Chemical Analysis	<i>R</i>	FEB 08 2006	
Quantity <u>1</u>	<i>Job# 1190-1</i>		

HEAT: 56499 SKU: 7551584 DESC: 3/4X14TO36 3000 TOL A105N

CERTIFIED MILL TEST REPORT



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LOG NO. 223315 PAGE 1

BONNEY FORGE
 P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0330
 (814) 542-2545 • (800) 345-7648 • FAX (814) 542-4908
 www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 10/19/03

CUSTOMER'S Order No.: 4874396-00

Bonney Order No: 19261

SHIPPED TO: CCTF CORPORATION

327093

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS	PHYSICAL PROPERTIES	REMARKS
------	----------	---------	----------------------------	-------------------	---------------------	---------

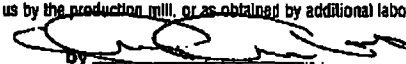
SA/A105N

005	550	56424	7551681	36-12X1 3M A105N THRD T		
				C .210 MN 1.000 P .009 S .026 SI .240		
				NI .040 CU .120 CD .003 CR .070 MO .011		
				V .024 AL .001 NB .001		
				CE(LONG FORMULA) = 0.41		
				T/S 79000 Y/S 53125 EL 33.15 RA 65.60		
				BRINELL HARDNESS1: 141 HARDNESS2: 144		
	56497		7551681	36-12X1 3M A105N THRD T		
				C .190 MN 1.040 P .013 S .018 SI .190		
				NI .040 CU .140 CD .003 CR .060 MO .020		
				V .001 AL .027 NB .011		
				CE(LONG FORMULA) = 0.39		
				T/S 75127 Y/S 52284 EL 33.15 RA 71.62		
				BRINELL HARDNESS1: 137 HARDNESS2: 135		

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
3. CERTIFYING ASTM A105-03 / ASME SA105-04 EDITION.
4. THE MATERIAL SUPPLIED WAS INSPECTED AND MANUFACTURED IN ACCORDANCE WITH EN DIN 10204 3.1.8.
5. 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 material furnished us by the production mill, or as obtained by additional laboratory checks.



Cris Childers

CMTR: REV 1

Material Control	Sign	Date
Material Received	<i>[Signature]</i>	FEB 08 2006
Heat # / MTR'S	<i>[Signature]</i>	FEB 08 2006
Chemical Analysis	<i>[Signature]</i>	FEB 08 2006
Quantity <u>1</u>	Job# <u>190-1</u>	

QUALITY PROCESS MANAGER

HEAT: 56497 SKU: 7551681 DESC: 1X12TO36 3000 TOL A105N

UNITED STATES STEEL

**TUBULAR PRODUCTS
CERTIFIED TEST REPORT
(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049 3.1.b)**

DATE: 08/09/05
TIME: 14:15:18
SERIAL NO:

8/9/2005 14:15

- } **BRENDA**

Page 2 of 5

MILL ORDER/ITEM NO. TT08233 01	SHIPPER'S NO.	P.O. NUMBER 4073365-00	VEHICLE ID.																	
SOLD TO ADDRESS OCTF DIV OF EMCO LTD 5407 - 53 AVENUE NW EDMONTON AB T6B 3G2	MAIL TO ADDRESS 16 STD A106.		VENDOR USS TUBULAR PRODUCTS 2199 EAST 28TH ST. LORAIN, OH 44055																	
SPECIFICATION AND GRADE PIPE CARBON SMLS STD PIPE API 5L-*43RD EDITION DATED 3/84 PSL-2 GRADE B AND GRADE X42 ASTM A53-*02 ASTM A106-*02A GRADE B QUAD STENCIL ASME SA53-*2001 EDITION 2003 ADDENDA ASME SA106-*2001 EDITION 2003 ADDENDA GRADE B BLK REG MILL COAT PE BEV 30 DEG MEETING ALL THE APPLICABLE REQUIREMENTS OF NACE STANDARD MR-01-75 *2002																				
MATERIAL COND: AS ROLLED		QD: 16.000(406.400)	IN (MM) WALL: 0.375 (9.525)																	
PRODUCT IDENTIFICATION	TENSILE TEST TYPE/ORIENTATION	TEST CONNO.	GAUGE WIDTH IN	YIELD PSI		EXT % .50	TENSILE PSI		Y/T	ELONG % ON 2'	HARDNESS SCALE HRB	MIN HYDRO PSI	DWELL TIME							
				MIN	MAX		MIN	MAX												
A02954 F307AA	STRIP/L/B	AR	1.500	42000	45300	.50	70000	73000	0.62	28.0	B 82.3	1670								
A02954 F307AA	STRIP/L/B	AR	1.500	45300	45300	.50	73000	73000	0.62	44.0	B 82.3	1670								
				** END OF DATA THIS SHEET **																
LEGEND: L - LONGITUDINAL U - UPSET T - TRANSVERSE N - NORMALIZED QT - QUENCHED & TEMPERED SR - STRESS RELIEVED AR - AS ROLLED B - BODY W - WELD																				
PRODUCT IDENTIFICATION	TYPE	CHEMICAL ANALYSIS (%)																	CE	
		C	MN	P	S	SI	CU	Ni	CR	MO	AL	N	V	B	Ti	CB	CO			
A02954	HEAT	20	125	008	004	.18	.02	.05	.08	.02	.037		.001	.0001	.002	.006				.4
A02954 F307AA	PROD	20	132	006	006	.16	.02	.05	.08	.03	.040		.002	.0000	.001	.001				.3
A02954 F307AA	PROD	.19	132	007	006	.16	.02	.05	.08	.03	.040		.002	.0000	.001	.001				.3
A02954	HEAT	20	135	008	004	.18	.02	.05	.08	.02	.037		.001	.0001	.002	.006				.4
A02954 F307AA	PROD	20	132	006	006	.16	.02	.05	.08	.03	.040		.002	.0000	.001	.001				.3
A02954 F307AA	PROD	.19	132	007	006	.16	.02	.05	.08	.03	.040		.002	.0000	.001	.001				.3
						** END OF DATA THIS SHEET **														
Control	Sign	Date																		
RECEIVED ON THE FOLLOWING DATE: CE=C+(MN/6)+(CR+MO+V)/5+ (NI+CU)/15																				

Material	Control	Sign	Date
Material	Received	<i>A</i>	FEB 8
Heat # / MTR'S		<i>N/A</i>	FEB 8
Chemical Analysis		<i>N/A</i>	FEB 8
Quantity		Job#	1190-1



UNITED STATES STEEL

TUBULAR PRODUCTS
CERTIFIED TEST REPORT
(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049 2.1.b)DATE: 08/09/05
TIME: 14:15:18
SERIAL NO:

MILL ORDER/ITEM NO. TT08293 01		SHIPPER'S NO.		P.O. NUMBER 4873365-00														
MATERIAL CODE: AS ROLLED		O.D.: 16.000 (406.400)		In (mm) WALL: 0.375 (9.525)														
PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	CHARPY V-NOTCH IMPACT TESTING													
					DR	TEST LOC	TEMP	SIZE	TEST COND.	FT-LBS				% SHEAR				
											1	2	3	AVG	1	2	3	AVG
					DEG F													
A02954 F307AA					T	B	+ 32	2/3	AR	91	90	89	90	100	100	100	100	
A02954 F307AA					T	B	+ 32	2/3	AR	91	90	89	90	100	100	100	100	
*** END OF DATA THIS SHEET ***																		
LEGEND: L - LONGITUDINAL T - TRANSVERSE B - BODY W - WELD HAZ - HEAT AFFECTED ZONE																		
TESTING / INSPECTION INFORMATION																		
TEST / INSPECTION		YES		RESULTS / COMMENTS														
FULL LENGTH VISUAL		X																
FULL LENGTH EMI		X		OD <u>X</u> OD/ID <u> </u> L <u> </u> L/T <u>X</u> 10.0% NOTCH														
FULL LENGTH MPI																		
FULL LENGTH UT		X		OD <u> </u> OD/ID <u>X</u> L <u>X</u> L/T <u> </u> 10.0/10.0% NOTCH														
END AREA INSPECTION (PLAIN END)				MPI <u> </u> UT <u> </u>														
SPECIAL END AREA (SEAL) INSP.				MPI <u> </u> UT <u> </u>														
FULL LENGTH DRIFT				DRIFT MANDREL SIZE: <u> </u>														
ADDITIONAL NOTES/COMMENTS																		
MELTED AND MANUFACTURED IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT. PRODUCT WAS HOT ROLLED HOT FINISHED. PIPE ALSO MEET THE REQUIREMENTS OF ASTM A106 GRADE C & ASME SA106 GRADE C																		

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED,
SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION
AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: J. MAJKRZAK - MANAGER, Q.A.

DATE: 08/09/05

9/27/2004 11:01

- J BRENDA

Page 2 of 3

Material Control	Sign	Date
Material Received	R	FEB 8 2006
Heat # / MTR'S	R	FEB 8 2006
Chemical Analysis	N/A	FEB 8 2006
Quantity	UNITED STATES STEEL	COB# 1190-1

DATE: 09/27/04
TIME: 11:01:10TUBULAR PRODUCTS
CERTIFIED TEST REPORT
(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049 3.1.b)

MILL ORDER/ITEM NO. TT03003 02	SHIPPER'S NO. Y15932	P.O. NUMBER 4869792-00	VEHICLE ID. NW99174															
SOLD TO ADDRESS CCTF DIV OF EMCO LTD. 5407 - 53 AVENUE NW EDMONTON AB T6B 3G2		MAIL TO ADDRESS 4 XH A126																
VENDOR USS TUBULAR PRODUCTS USS FAIRFIELD WORKS P.O. BOX 599 FAIRFIELD ALABAMA 35064																		
SPECIFICATION AND GRADE PIPE CARBON SMLS STD PIPE API 5L-X42ND EDITION DATED 1/00 PSL-1 GRADE B AND GRADE X42 ASTM A53-X02 ASTM A106-X02A GRADE B QUAD STENCIL ASME SA53-X2001 EDITION 2003 ADDENDA ASME SA106-X2001 EDITION 2003 ADDENDA GRADE B BLK REG MILL COAT PE BEV 30 DEG MEETING ALL THE APPLICABLE REQUIREMENTS OF NACE STANDARD MR-01-75 X2002																		
MATERIAL COND: AS-ROLLED		OD: 4.500 (114.300)	WALL: 0.337 (8.559)															
PRODUCT IDENTIFICATION	TEST TYPE/ ORIENTATION	TEST COND	GUAGE WIDTH															
CB7049	STRIP/L/B	AR	1.5															
CB7049	STRIP/L/B	AR	1.5															
** END OF DATA THIS SHEET **																		
LEGEND: L - LONGITUDINAL U - UPSET T - TRANSVERSE N - NORMALIZED QT - QUENCHED & TEMPERED SR - STRESS RELIEVED AR - AS ROLLED B - BODY W - WELD																		
PRODUCT IDENTIFICATION	TYPE	C	MN	P	S	SI	CU	NI	CR	MO	AL	N	V	B	TI	CB	CO	CE*
CB7049	HEAT	25	95	006	005	22	04	01	03	01	030	00	00	00	00	001	003	003
CB7049	PROD	27	97	006	007	23	05	02	03	02	034	00	00	00	00	001	003	003
CB7049	PROD	27	97	006	008	23	05	02	03	01	032	00	00	00	00	001	003	003
** END OF DATA THIS SHEET **																		

*CE IS BASED ON THE FOLLOWING EQUATION(S):

DECIMAL POSITIONS FOR ELEMENTS ARE INDICATED BY THE LEFT MARGIN, VERTICAL DOTTED LINE OR DECIMAL POINT.
408071003 F4Q26B54 0226542004 CAA 2-0-0 PAGE 1 OF 2

84866

8/27/2004 11:01

-> BRENDA

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DATE: 09/27/04
TIME: 11:01:10

UNITED STATES STEEL				TUBULAR PRODUCTS				CERTIFIED TEST REPORT				(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049 3.1.b)						
MILL ORDER/ITEM NO.		SHIPPER'S NO.		P.O. NUMBER														
TT03003 02		Y15932		4869792-00														
MATERIAL COND: AS-ROLLED				O.D.: 4.500 (114.300) in (mm)				WALL: 0.337 (8.559) in (mm)										
PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN. COLLAPSE	CHARPY V-NOTCH IMPACT TESTING													
					DR	TEST LOC.	TEMP	SIZE	TEST COND.	FT-LBS				% SHEAR				
											1	2	3	AVG	1	2	3	AVG
DEG																		
C87049	OK		*** END OF DATA		THIS SHEET				***									
LEGEND: L - LONGITUDINAL T - TRANSVERSE B - BODY W - WELD HAZ - HEAT AFFECTED ZONE																		
TEST / INSPECTION				YES	TESTING / INSPECTION INFORMATION													
FULL LENGTH VISUAL				X	RESULTS / COMMENTS													
FULL LENGTH EMI				X	OD _____ OD/ID _____ X L _____ L/T _____ X 10.0/10.0% NOTCH													
FULL LENGTH MPI					OD _____ OD/ID _____ L _____ L/T _____													
FULL LENGTH UT					MPI _____ X UT _____													
END AREA INSPECTION (PLAIN END)				X	MPI _____ UT _____													
SPECIAL END AREA (SEA) INSP.					MPI _____ UT _____													
FULL LENGTH DRIFT					DRIFT/MANDREL SIZE: _____													
ADDITIONAL NOTES/COMMENTS																		
ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. MANUFACTURED IN AN ISO 9001 CERTIFIED FACILITY - CERTIFICATE #30727. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT. 01 MILL ALSO MEETS THE REQUIREMENTS OF ASTM A106-99/ASME SA106-1998 ED. 1999 GRADE C. MATERIAL WAS HOT FINISHED AND NO HEAT TREATMENT. *** END OF DATA ***																		

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: J.T. CLAYTON - MANAGER, Q.A.

DATE: 09/27/04

408071003

F4026854

0226542004

CAA 2-0-0

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84866A

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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ABNAHMEPRÜFZEUGNIS 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

National-Oilwell Canada Ltd.
7127 - 56 Avenue
EDMONTON, AB T6B 3L3
KANADA

Dokument-Nr.: 65-263335/001/P
Document No.:
No. du document:

Kunden-Bestell-Nr.: 05-5391
Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.: 1124220
Benteler Order No.:
No. de commande Benteler:

Versandanzeigen-Nr.: 6553635
Dispatch Note No.:
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE
Product: SEAMLESS STEEL TUBES
Produit: TUBES D'ACIER SANS SOUDURE

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

Hersteller: Warmrohrwerk Dinslaken
Manufacturer: ISO/TS 18949 (ISO 9001) DNV CERT-13785-2003
Producteur: PED 87/23/EC TÜV Cert 07 202 4111/Z/5001/1/H

Herstellerzeichen:
Manufacturer's brand:
Marque du producteur:

Stempel des Abnahmebeauftragten: WA
Stamp of the inspection representative:
Timbre du contrôleur:

Stahlschmelzungsverfahren: ELEKTROSTAHL
Steelmaking process: ELECTRIC FURNACE
Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

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Lieferbedingungen: CSA Standard Z245.1-02 Category I, API Specification 5L Forty-Third Edition, March 2004, PSL 1, ASTM-A 106-2002a, S5, ASME SA-106, ASME Section II Part A Edition 2004, S5, NACE MR0175-03
Terms of delivery:
Conditions de livraison:

Maße - Toleranzen: ASME B36.10M-1996, ASME SA-530, ASME Section II Part A Edition 2004, ASTM-A 530-2003
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: see attachment product marking
Product marking:
Marquage du produit:

Material Control	Sign	Date
Material Received	R	FEB 8 2006
Heat # / MTR'S	R	FEB 8 2006
Chemical Analysis	N/A	FEB 8 2006
Quantity 1	Job#	1190-1

Pos.	Stück	Maße	Länge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multipli.
			feet	lbs		PSI		
0001	608	2" NPS * Sched. 40 18 FT - 22 FT	12969,26	46740	735198	3000	5	
0002	504	3" NPS * Sched. 40 18 FT - 22 FT	10489,34	78972	526033	3000	5	87666

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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Pos. Item Poste	Stück Number Nombre	Maße Dimensions Dimensions	Länge Length Longueur	Gewicht Weight Poids	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlängen Multiple lengths Longueurs multipli
			feet	lbs		PSI	s	
0003	325	4" NPS * Sched. 40 18 FT - 22 FT	7038,88	77627	735287	3000	5	
0004	1450	2" NPS * Sched. 80 18 FT - 22 FT	28722,90	143783	735455	3000	5	
0005	142	3" NPS * Sched. 80 18 FT - 22 FT	3069,59	31425	735435	3000	5	
0006	141	4" NPS * Sched. 80 18 FT - 22 FT	3084,32	45894	735430	3000	5	
0007	100	2" NPS * Sched. 160 18 FT - 22 FT	2123,79	15823	735452	3000	5	

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

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0001	735198	0,130	0,220	0,83	0,008	0,006	0,11	0,04	0,10	0,14	0,001	0,010	0,004	0,0001
0002	526033	0,130	0,200	0,82	0,006	0,001	0,12	0,04	0,11	0,18	0,001	0,010	0,003	0,0001
0003	735287	0,130	0,200	0,82	0,007	0,007	0,12	0,03	0,07	0,08	0,001	0,010	0,003	0,0001
0004	735455	0,130	0,200	0,83	0,010	0,006	0,09	0,03	0,07	0,12	0,001	0,010	0,003	0,0001
0005	735435	0,135	0,190	0,85	0,006	0,002	0,09	0,02	0,06	0,11	0,001	0,010	0,003	0,0001
0006	735430	0,135	0,190	0,83	0,005	0,002	0,05	0,01	0,05	0,10	0,001	0,010	0,003	0,0001
0007	735452	0,130	0,195	0,82	0,007	0,003	0,12	0,03	0,07	0,10	0,001	0,010	0,003	0,0001

- Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
- Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Nb)/5) + (5*B)) \leq 0,40$
- Formel: $Mn/C \geq 3/1$
- Formel: $Cr+Cu+Mo+Ni+V \leq 1,00 \%$

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Stahl/Rohr

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0001	735198	0,315	0,286	6,385	0,391
0002	526033	0,318	0,288	6,308	0,451
0003	735287	0,307	0,279	6,308	0,301
0004	735455	0,305	0,278	6,385	0,311
0005	735435	0,310	0,292	6,296	0,281
0006	735430	0,296	0,280	6,148	0,211
0007	735452	0,308	0,280	6,308	0,321

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

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0001	735198	0,140	0,190	0,81	0,010	0,008	0,11	0,04	0,09	0,13	0,002	0,010	0,003	0,0003
0001	735198	0,130	0,200	0,81	0,010	0,006	0,11	0,04	0,10	0,13	0,002	0,010	0,003	0,0002
0002	526033	0,130	0,200	0,82	0,009	0,002	0,10	0,04	0,11	0,18	0,001	0,010	0,001	0,0001
0002	526033	0,130	0,200	0,82	0,009	0,002	0,10	0,04	0,11	0,18	0,001	0,010	0,001	0,0001
0003	735287	0,130	0,190	0,83	0,007	0,006	0,13	0,04	0,06	0,08	0,002	0,010	0,002	0,0001
0003	735287	0,130	0,190	0,83	0,007	0,005	0,13	0,04	0,06	0,08	0,002	0,010	0,002	0,0001
0004	735455	0,140	0,190	0,81	0,011	0,005	0,09	0,03	0,08	0,14	0,001	0,010	0,002	0,0002
0004	735455	0,140	0,190	0,82	0,011	0,005	0,09	0,03	0,08	0,14	0,002	0,010	0,002	0,0002
0005	735435	0,140	0,170	0,87	0,007	0,002	0,07	0,02	0,06	0,09	0,001	0,010	0,002	0,0001
0005	735435	0,130	0,170	0,87	0,007	0,002	0,05	0,02	0,06	0,10	0,001	0,010	0,002	0,0001
0006	735430	0,130	0,180	0,80	0,006	0,002	0,05	0,02	0,06	0,09	0,001	0,010	0,002	0,0001
0006	735430	0,130	0,170	0,79	0,006	0,002	0,05	0,02	0,05	0,09	0,001	0,010	0,002	0,0002
0007	735452	0,130	0,180	0,82	0,006	0,001	0,13	0,03	0,07	0,10	0,001	0,010	0,002	0,0001
0007	735452	0,130	0,180	0,81	0,006	0,001	0,13	0,03	0,07	0,10	0,001	0,010	0,002	0,0001

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15) \leq 0,40 \%$
2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr + Mo + V + Nb)/5) + (5 * B)) \leq 0,40$
3. Formel: $Mn/C \geq 3/1$
4. Formel: $Cr + Cu + Mo + Ni + V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr	1. Formel	2. Formel	3. Formel	4. Formel	Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula	Formula
Posita	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule	Formule
0001	735198	0,320	0,301	5,786	0,372	
0001	735198	0,311	0,282	6,231	0,382	
0002	526033	0,314	0,285	6,308	0,431	
0002	526033	0,314	0,285	6,308	0,431	
0003	735287	0,312	0,283	6,385	0,312	
0003	735287	0,312	0,283	6,385	0,312	
0004	735455	0,314	0,296	5,786	0,341	
0004	735455	0,316	0,298	5,857	0,342	
0005	735435	0,313	0,295	6,214	0,241	
0005	735435	0,300	0,273	6,692	0,231	
0006	735430	0,288	0,263	6,154	0,221	
0006	735430	0,285	0,262	6,077	0,211	
0007	735452	0,310	0,281	6,308	0,331	
0007	735452	0,309	0,280	6,231	0,331	

Prüfergebnisse / Test results / Résultats des essais

Die Rohre sind auf Dichtheit geprüft durch:
The tubes have been submitted to a leak tightness test by:
Les tubes ont passé un contrôle d'étanchéité par:

Hydrostatic test: acc. to CSA Z245.1, holding time min 5 seconds, Test
pressure/Time-record

PASSED

Benteler Stahl/Rohr GmbH
 Postfach 13 40
 33043 Paderborn
 Deutschland
 Tel.: +49.5254.81-0 Fax: +49.5254.13666

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Augensichtkontrolle: PASSED
 Visual inspection:
 Examen visuel:

Biegeversuch: PASSED
 Bending test:
 Essai de cintrage:
 Pos. / Item / Poste: 0001, 0004, 0007

Maßkontrolle: PASSED
 Dimensions examination:
 Vérification des dimensions:

Ringfaltversuch: PASSED
 Flattening test:
 Essai d'aplatissement:
 Pos. / Item / Poste: 0002, 0003, 0005, 0006

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

Die Probenahme erfolgte an Vielfachlängen.
 The sampling was carried out on multiple lengths.
 L'échantillonnage était réalisé aux longueurs multiples.

Zugversuch / Tensile test / Essai de traction

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH PSI 42061-71794	Rm PSI 60191-110229	A2° % MIN 30	1. Formel 1. Formula 1. Formule	
0001	000001	735198	19,00 X 3,80	56275	70198	36,00		
0001	000002	735198	19,00 X 3,80	56710	72084	38,00		
0002	000001	526033	25,40 X 5,50	50328	70488	39,00		
0002	000002	526033	25,40 X 5,50	51198	69618	42,00		
0003	000001	735287	25,40 X 6,00	47572	66862	42,00		
0003	000002	735287	25,40 X 6,00	47282	67008	41,00		
0004	000001	735455	19,00 X 5,50	49893	69473	43,00		
0004	000002	735455	19,00 X 5,50	50618	67733	37,00		
0005	000001	735435	25,40 X 7,60	47572	66137	43,00		
0005	000002	735435	25,40 X 7,60	48153	66572	42,00		
0006	000001	735430	25,30 X 8,50	47137	65267	40,00		
0006	000002	735430	25,30 X 8,40	46847	64832	42,00		

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Stahl/Rohr

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
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Zugversuch / Tensile test / Essai de traction

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH PSI 42061-71794	Rm PSI 60191-110229	A2" % MIN 30	1. Formel 1. Formula 1. Formule	
0006	000003	735430	25,30 X 8,30	46122	65702	44,00		
0006	000004	735430	25,30 X 8,50	47572	65557	42,00		
0006	000005	735430	25,30 X 8,30	46847	66282	40,00		
0006	000006	735430	25,30 X 8,50	46702	64687	42,00		
0007	000001	735452	19,00 X 8,70	47717	67878	42,00		
0007	000002	735452	19,00 X 8,70	48008	67298	42,00		

Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté	HRC	HB	HV	HRB
Anforderungen Requirements Exigences							
					MAX 200		
0001	000001	735198			146		
0002	000001	526033			156		
0003	000001	735287			147		
0004	000001	735455			134		
0005	000001	735435			143		
0006	000001	735430			144		
0006	000002	735430			143		
0006	000003	735430			143		
0006	000004	735430			142		
0006	000005	735430			143		
0006	000006	735430			144		

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Stahl/Rohr

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33043 Paderborn
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Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté				
Anforderungen Requirements Exigences			HRC	HB	HV	HRB	
				MAX 200			
0007	000001	735452		136			

Restmagnetismus / Demagnetize / Démagnétiser

residual magnetic field intensity max 3,5 millitesla

Pos. Item Poste	Ihr Zeichen Your reference Votre référence	Kundenmaterial Customer's Material No. No. de matière du client	Kundenbestell-Nr. Purchase Order No. No. de commande du client
0001		P.O. 10674580/6101	05-5391
0002		P.O. 10674580/5717	05-5391
0003		P.O. 10674580/6102	05-5391
0004		P.O. 10674580/6242	05-5391
0005		P.O. 10674580/5987	05-5391
0006		P.O. 10674580/6104	05-5391
0007		P.O. 10674580/6523	05-5391

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0001, 0004, 0004, 0007, 0007, 0004, 0007, 0004

NACE Standard: hardness acc. to NACE Standard MR0175 HRC max 22, The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.; Bend test: mandrel diameter 12D, bending angle 90 degree

Pos. / Item / Poste: 0002, 0006, 0006, 0005, 0005, 0003, 0005, 0003, 0006

NACE Standard: hardness acc. to NACE Standard MR0175 HRC max 22, The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER 
Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

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Beiblatt Produktkennzeichnung / Attachment product marking / Supplément marquage du produit

Pos. Item Poste	Produktkennzeichnung Produktkennzeichnung Marquage du produit
0001	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10674580/6101
0002	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10674580/5717
0003	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10674580/6102
0004	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10674580/6242
0005	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10674580/5987
0006	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10674580/6104
0007	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10674580/6523

FK = Farbkennzeichnung, colour marking, marquage par couleur FS = Farbschablonierung, point stencilling, marquage par peinture FSD = Farbstahldrucker, Colour jet printer, Imprimante à jet d'encre de couleur LS = Längeschablonierung, longitudinal stencilling, marquage longitudinal par peinture PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette PS = Prägestempel, die stamp, marquage par poinçonnage TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimante à jet d'encre

Verkäufer(in) / Salesman/ woman in charge / Personne chargée : Mr Seelbach, Tel.: 05254/81-4281, Fax: 4289

Dinslaken, 11.04.2005, TEL.: 02064.623-571 FAX: 02064.623-575



Abnahmebeauftragter
Inspection representative
Contrôleur
JAN FREERKS / WIL

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
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.

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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EN 10204:2005-01

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

National-Oilwell Canada Ltd.
7127 - 56 Avenue
EDMONTON, AB T6B 3L3
KANADA

Dokument-Nr.: 65-277698/001/P
Document No.:
No. du document:

Kunden-Bestell-Nr.: 05-5440
Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.: 1128357
Benteler Order No.:
No. de commande Benteler:

Versandanzeigen-Nr.: 6562265
Dispatch Note No.:
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE
Product: SEAMLESS STEEL TUBES
Produit: TUBES D'ACIER SANS SOUDURE

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

Hersteller: Warmrohrwerk Dinslaken
Manufacturer: ISO/TS 16949 (ISO 9001) DNV CERT-13765-2003
Producteur: PED 97/23/EC TÜV Cert 07 202 41111/Z/5001/1/H

Herstellerzeichen:
Manufacturer's brand:
Marque du producteur:

Stempel des Abnahmebeauftragten: WA
Stamp of the inspection representative:
Timbre du contrôleur:

Stahlerschmelzungsverfahren: ELEKTROSTAHL
Steelmaking process: ELECTRIC FURNACE
Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

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Lieferbedingungen: CSA Standard Z245.1-02 Category I, API Specification 5L Forty-Third Edition, March 2004, PS1, ASTM-A
Terms of delivery: 106-2004b, S5, ASME SA-106, ASME Section II Part A Edition 2004, S5, NACE Standard MR0175-03
Conditions de livraison:

Maße - Toleranzen: ASME B36.10M-1996, ASME SA-530, ASME Section II Part A Edition 2004, 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: see attachment product marking

Product marking:

Marquage du produit:

Material Control	Sign	Date
Material Received	<i>R</i>	FEB 8 2006
Heat # / MTR'S	<i>R</i>	FEB 8 2006
Chemical Analysis	<i>N/A</i>	FEB 8 2006
Quantity	<i>1</i>	Job# <i>119-1</i>

Pos.	Stück	Maße	Länge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiple
			feet	lbs		PSI		
0002	150	1 1/2" NPS * Sched. 40 18 FT - 22 FT	3100,62	8311	528224	3000	5	
0003	972	2" NPS * Sched. 40 18 FT - 22 FT	20653,38	74375	528224	3000	5	80755

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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Stahl/Rohr

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Pos. Item Poste	Stück Number Nombre	Maße Dimensions Dimensions	Länge Length Longueur	Gewicht Weight Poids	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlängen Multiple lengths Longueurs multiple
		feet	feet	lbs		PSI		
0004	748	3" NPS * Sched. 40 18 FT - 22 FT	15955,68	118397	737483	3000	5	
0009	75	1 1/4" NPS * Sched. 80 18 FT - 22 FT	1575,95	4597	737459	3000	5	
0010	108	1 1/2" NPS * Sched. 80 18 FT - 22 FT	2319,23	8336	737379	3000	5	
0011	1016	2" NPS * Sched. 80 18 FT - 22 FT	19960,17	98172	737398	3000	5	
0012	165	1" NPS * Sched. 160 18 FT - 22 FT	3436,42	9581	737333	3000	5	
0013	50	1 1/2" NPS * Sched. 160 18 FT - 22 FT	1048,49	5044	737367	3000	5	
0014	49	2" NPS * Sched. 160 18 FT - 22 FT	1069,13	7822	737364	3000	5	

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

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0002	528224	0,140	0,190	0,83	0,006	0,003	0,13	0,04	0,07	0,11	0,001	0,010	0,003	0,0001
0003	528224	0,140	0,190	0,83	0,006	0,003	0,13	0,04	0,07	0,11	0,001	0,010	0,003	0,0001
0004	737483	0,125	0,175	0,81	0,008	0,004	0,14	0,05	0,09	0,14	0,001	0,010	0,002	0,0001
0009	737459	0,135	0,205	0,83	0,006	0,004	0,09	0,03	0,08	0,12	0,001	0,010	0,003	0,0001
0010	737379	0,135	0,200	0,82	0,007	0,004	0,11	0,04	0,08	0,14	0,001	0,010	0,003	0,0001
0011	737398	0,135	0,205	0,83	0,006	0,004	0,09	0,03	0,08	0,11	0,001	0,010	0,003	0,0001
0012	737333	0,150	0,235	0,86	0,012	0,004	0,18	0,03	0,11	0,16	0,001	0,010	0,003	0,0001
0013	737367	0,135	0,243	0,84	0,011	0,003	0,16	0,04	0,10	0,19	0,002	0,010	0,004	0,0002
0014	737364	0,145	0,260	0,86	0,013	0,003	0,18	0,05	0,10	0,18	0,002	0,010	0,004	0,0002

88755 A

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15) \leq 0,40 \%$
2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr + Mo + V + Nb)/5) + (5 * B)) \leq 0,40$
3. Formel: $Mn/C \geq 3/1$
4. Formel: $Cr + Cu + Mo + Ni + V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule
0002	528224	0,325	0,305	5,929	0,351
0003	528224	0,325	0,305	5,929	0,351
0004	737483	0,314	0,282	6,480	0,421
0009	737459	0,311	0,293	6,148	0,321
0010	737379	0,317	0,297	6,074	0,371
0011	737398	0,310	0,292	6,148	0,311
0012	737333	0,354	0,338	5,733	0,481
0013	737367	0,335	0,315	6,222	0,492
0014	737364	0,353	0,339	5,931	0,512

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

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0002	528224	0,150	0,180	0,84	0,007	0,003	0,14	0,04	0,08	0,10	0,001	0,010	0,003	0,0002
0002	528224	0,150	0,180	0,84	0,007	0,003	0,14	0,04	0,08	0,10	0,001	0,010	0,003	0,0002
0003	528224	0,150	0,180	0,84	0,007	0,003	0,14	0,04	0,08	0,10	0,001	0,010	0,003	0,0002
0003	528224	0,150	0,180	0,84	0,007	0,003	0,14	0,04	0,08	0,10	0,001	0,010	0,003	0,0003
0004	737483	0,140	0,160	0,82	0,009	0,003	0,12	0,04	0,10	0,14	0,002	0,010	0,002	0,0001
0004	737483	0,130	0,160	0,82	0,009	0,003	0,12	0,04	0,10	0,14	0,002	0,010	0,002	0,0002
0009	737459	0,150	0,180	0,82	0,005	0,003	0,01	0,04	0,08	0,11	0,001	0,010	0,003	0,0001
0009	737459	0,160	0,190	0,84	0,006	0,003	0,14	0,04	0,08	0,10	0,001	0,010	0,003	0,0001

88755B

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0010	737379	0,140	0,200	0,83	0,007	0,002	0,09	0,03	0,09	0,11	0,001	0,010	0,003	0,0003
0010	737379	0,140	0,210	0,84	0,008	0,002	0,09	0,03	0,09	0,11	0,001	0,010	0,003	0,0003
0011	737398	0,140	0,200	0,83	0,007	0,002	0,09	0,03	0,09	0,11	0,001	0,010	0,003	0,0003
0011	737398	0,140	0,210	0,84	0,008	0,002	0,09	0,03	0,09	0,11	0,001	0,010	0,003	0,0003
0012	737333	0,150	0,210	0,82	0,012	0,002	0,19	0,04	0,12	0,16	0,002	0,010	0,002	0,0002
0012	737333	0,150	0,210	0,82	0,011	0,002	0,19	0,04	0,12	0,16	0,002	0,010	0,002	0,0002
0013	737367	0,150	0,260	0,83	0,015	0,002	0,18	0,07	0,12	0,20	0,003	0,010	0,003	0,0006
0013	737367	0,160	0,260	0,83	0,016	0,002	0,17	0,06	0,12	0,20	0,004	0,010	0,003	0,0006
0014	737364	0,150	0,270	0,83	0,015	0,002	0,18	0,06	0,12	0,19	0,003	0,010	0,003	0,0006
0014	737364	0,150	0,260	0,83	0,016	0,002	0,19	0,07	0,12	0,17	0,003	0,010	0,003	0,0006

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
 2. Formel: $CEV = C + F * ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Nb)/5) + (5*B)) \leq 0,40$
 3. Formel: $Mn/C \geq 3/1$
 4. Formel: $Cr+Cu+Mo+Ni+V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr. Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule	Formel Formula Formule
0002	528224	0,338	0,324	5,600	0,361	
0002	528224	0,338	0,324	5,600	0,361	
0003	528224	0,338	0,324	5,600	0,361	
0003	528224	0,338	0,324	5,600	0,361	
0004	737483	0,325	0,304	5,857	0,402	
0004	737483	0,315	0,284	6,308	0,402	
0009	737459	0,310	0,298	5,467	0,241	
0009	737459	0,348	0,342	5,250	0,361	

88755C

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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Formelergebnisse / Formula results / Résultats des formules

Pos. Item Poste	Schmelzen-Nr Heat No. No. de coulée	1. Formel 1. Formula 1. Formule	2. Formel 2. Formula 2. Formule	3. Formel 3. Formula 3. Formule	4. Formel 4. Formula 4. Formule	Formel Formula Formule
0010	737379	0,316	0,298	5,929	0,321	
0010	737379	0,318	0,300	6,000	0,321	
0011	737398	0,316	0,298	5,929	0,321	
0011	737398	0,318	0,300	6,000	0,321	
0012	737333	0,352	0,336	5,467	0,512	
0012	737333	0,352	0,336	5,467	0,512	
0013	737367	0,360	0,347	5,533	0,573	
0013	737367	0,366	0,363	5,188	0,554	
0014	737364	0,358	0,345	5,533	0,553	
0014	737364	0,360	0,347	5,533	0,553	

Prüfergebnisse / Test results / Résultats des essais

Die Rohre sind auf Dichtheit geprüft durch: Hydrostatic test: acc. to CSA Z245.1, holding time min 5 seconds, Test PASSED
The tubes have been submitted to a leak tightness test by: pressure/Time-record
Les tubes ont passé un contrôle d'étanchéité par:

Augensichtkontrolle: Visual inspection: Examen visuel:	PASSED	Biegeversuch: Bending test: Essai de cintrage: Pos. / Item / Poste: 0002, 0003, 0009, 0010, 0011, 0012, 0013, 0014	PASSED	Maßkontrolle: Dimensions examination: Vérification des dimensions:	PASSED
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Ringfaltversuch:
Flattening test:
Essai d'aplatissement:
Pos. / Item / Poste: 0004

PASSED

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

Die Probenahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'échantillonnage était réalisé aux longueurs multiples.

88755L

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

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Stahl/Rohr

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Zugversuch / Tensile test / Essai de traction

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH MPa 290-495	Rm MPa 415-760	A2" % MIN 30	1. Formel 1. Formula 1. Formula	
0002	000001	528224	12,70 X 3,60	379	477	35,00		
0002	000002	528224	12,70 X 3,60	384	476	36,00		
0003	000001	528224	19,20 X 3,80	385	481	36,00		
0003	000002	528224	19,20 X 4,10	373	473	36,00		
0003	000003	528224	19,20 X 4,00	366	470	34,00		
0003	000004	528224	19,20 X 4,00	376	479	36,00		
0003	000005	528224	19,20 X 3,90	380	480	34,00		
0003	000006	528224	19,20 X 3,80	376	478	34,00		
0004	000001	737483	25,30 X 5,80	337	467	42,00		
0004	000002	737483	25,30 X 5,50	332	457	44,00		
0004	000003	737483	25,30 X 5,90	341	457	46,00		
0004	000004	737483	25,30 X 5,80	336	452	44,00		
0004	000005	737483	25,30 X 5,70	339	460	42,00		
0004	000006	737483	25,30 X 5,40	343	460	40,00		
0009	000001	737459	12,70 X 4,70	381	481	35,00		
0009	000002	737459	12,70 X 4,70	369	473	34,00		
0010	000001	737379	12,70 X 5,00	345	473	35,00		
0010	000002	737379	12,70 X 5,00	338	466	34,00		
0011	000001	737398	19,00 X 5,40	350	462	34,00		
0011	000002	737398	19,00 X 5,40	345	471	34,00		
0012	000001	737333	12,70 X 6,20	349	481	34,00		
0012	000002	737333	12,70 X 6,20	350	483	35,00		
0013	000001	737367	12,50 X 7,70	358	500	34,00		

88755 E

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER
Stahl/Rohr

3/15/2006

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 65-277698/001/P
Document No.:
No. du document:

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

Blatt: 7 / 9
Page:
Page:

Zugversuch / Tensile test / Essai de traction

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouvette	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement	Einschnürung Area reduction Coefficient de striction	Re/Rm Re/Rm Re/Rm
Anforderungen Requirements Exigences			mm	ReH MPa 290-495	Rm MPa 415-760	A2° % MIN 30	1. Formel 1. Formula 1. Formule	
0013	000002	737367	12,70 X 7,60	371	514	34,00		
0013	000003	737367	12,70 X 7,60	366	506	34,00		
0014	000001	737364	19,30 X 9,40	356	500	36,00		
0014	000002	737364	19,00 X 9,00	360	510	36,00		

Härteprüfung / Hardness test / Essai de dureté

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Härte Hardness Dureté	HRC	HB	HV	HRB
Anforderungen Requirements Exigences							
					MAX 200		
0002	000001	528224			141		
0003	000001	528224			140		
0004	000001	737483			144		
0009	000001	737459			142		
0010	000001	737379			136		
0011	000001	737398			137		
0012	000001	737333			146		
0013	000001	737367			145		
0014	000001	737364			156		

Restmagnetismus / Demagnetize / Démagnétiser

Pos. / Item / Poste: 0002, 0011, 0009, 0010, 0004, 0014, 0013, 0003, 0012
residual magnetic field intensity max 3,5 millitesla

887551

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
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3/15/2006

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Blatt: 8 / 9
Page:
Page:

Pos. Item Poste	Ihr Zeichen Your reference Votre référence	Kundenmaterial Customer's Material No. No. de matière du client	Kundenbestell-Nr. Purchase Order No. No. de commande du client
0002		P.O. 10706218/6350	05-5440
0003		P.O. 10706218/6101	05-5440
0004		P.O. 10706218/5717	05-5440
0009		P.O. 10706218/8735	05-5440
0010		P.O. 10706218/7447	05-5440
0011		P.O. 10706218/6242	05-5440
0012		P.O. 10706218/10292	05-5440
0013		P.O. 10706218/15637	05-5440
0014		P.O. 10706218/6523	05-5440

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0002, 0010, 0012, 0013, 0003, 0009, 0013, 0011, 0014, 0010, 0009, 0012, 0011, 0014, 0003, 0009, 0013, 0014, 0012, 0010, 0011, 0014, 0013, 0014, 0011, 0013, 0003, 0009, 0011, 0010, 0009, 0010, 0012

NACE Standard: hardness acc. to NACE Standard MR0175 HRC max 22, The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.; Bend test: mandrel diameter 12D, bending angle 90 degree

Pos. / Item / Poste: 0004

NACE Standard: hardness acc. to NACE Standard MR0175 HRC max 22, The material meets the requirements of NACE MR0103; Certificate remarks: This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-02 meets the requirement for micro hardness of max. 248 HV 500.

Beiblatt Produktkennzeichnung / Attachment product marking / Supplément marquage du produit

Pos. Item Poste	Produktkennzeichnung Produktkennzeichnung Marquage du produit
0002	FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/6350

88755 G

Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13668

BENTELER 
Stahl/Rohr

3/15/2006

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
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Page:

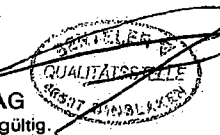
0003	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/6101
0004	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/5717
0009	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/8735
0010	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/7447
0011	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/6242
0012	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/10292
0013	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/15637
0014	FS:	BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS SCHEDULE WA GERMANY P.O. 10706218/6523

FK = Farbkennzeichnung, colour marking, marquage par couleur FS = Farbschablonierung, paint stencilling, marquage par peinture FSD = Farbstrahlmarker, Colour jet printer, imprimante à jet d'encre de couleur LS = Längsschablonierung, longitudinal stencilling, marquage longitudinal par peinture PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette PS = Prägestempel, die stamp, marquage par poinçonnage TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimante à jet d'encre

Verkäufer(in) / Salesman/ woman in charge / Personne chargée : Mr Seelbach, Tel.: 05254/81-4281, Fax: 4289

Dinslaken, 28.06.2005, TEL.: 02064.623-537 FAX: 02064.623-539

Abnahmebeauftragter
Inspection representative
Contrôleur
JAN FREERKS / WAG



Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
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.

887551

Drawing No.: 600TOS Rev.2 Rev. No.: 2 AI Review & Initial: _____
AI Date : _____ CRN#: R2078.231 Serial No.: 05119002
(A)Number: _____ Vessel Title: OIL COALESCING

OPERATION	QC PERSONNEL	DATE	AUTHORIZED INSPECTOR	Date
*Hold Point - Authorized Inspector to Designate Prior to construction				
1) Material checked against drawing	Chaffin	Feb 8/06		
2) Mill test checked	Shane Marshall	Feb 7/06		
3) Heat No's recorded	Shane Marshall	Feb 7/06		
4) Shell & head thickness recorded	Chaffin	Feb 7/06		
5) Vessel layout checked	Chaffin	Feb 7/06		
6) Shell head diameter checked	Chaffin	Feb 7/06		
7) Shell & head fit up checked	Chaffin	Feb 8/06		
8) Nozzle & fitting fit up checked	Chaffin	Feb 10/06		
9) Impact test acceptable	N/R			
10) Internals completed	Chaffin	Feb 10/06		
11) Internal inspection	Chaffin	Feb 14/06	MM	2/14/2006
12) Welders I.D.	Chaffin	Feb 14/06		
13) Weld sizes	Chaffin	Feb 14/06		
14) Radiograph	10% requested	March 9/06		
15) Other N.D.E.	10% M.P. requested	March 9/06		
16) Nozzle orientation	Chaffin	Feb 14/06		
17) Flange & fitting rating	Chaffin	Feb 14/06		
18) External after welding complete	Chaffin	Feb 14/06		
*MANDATORY HOLD POINT * -FOR HEAT TREATED VESSELS DO NOT PROCEED UNTIL EXTERNAL IS SIGNED OFF BY A.I.				
19) Heat treatment chart checked	N/R			
20) Hydrostatic test completed	Shane Marshall	03/10/06	MM	3/10/2006
21) Name plate attached	Chaffin	March 10/06	MM	3/10/2006
22) Affidavits / data reports	Shane Marshall	03/10/06		
23) Sandblasting complete				
24) Painting complete				

MATERIAL USED IN VESSEL

Item	Material Spec.	Heat No.'s Plate & Heads	Thickness	Schedule
Shell # 1	SA 106 B	953698	3/8"	STD.
Shell # 2				
Head # 1	SA 516 70 GR B	M00967-B26	3/8"	STD
Head # 2	SA 516 70 GR B	05204776N	1 7/8"	STD.

CHS 11917

Piping Inspection Requirements

CUSTOMER: Waterflood
CONTACT: Dave Heier
L.S.D: Stock
AFE / PO#: TBA
WSS JOB#: 1190

PH#: 306-634-7212
FAX#: 306-634-7887
DATE REQUIRED: Mar. 7/06

WSS ENG: Carmon Lindquist

HOLD POINTS TO BE MARKED WITH *

Piping	Vessels	SECTIONS	QI	LEGIBLE INITIAL Personnel	Hold Point
	4.0	SECTION IV - Manual Control			
	4.4	Control Copy of QC manual available for all personnel - Manual is current		cl	
	5.0	SECTION V - Drawing & Design Calculations			
18.3.H		All piping systems over 0.5 cubic meters (18 cubic feet) must be registered Boilers Branch		cl	
18.7.C	5.2.2	Design Calculations are done signed and dated		cl	
	5.2.3	The Following are listed on drawings - Title, Drawing# & Rev.#, Date, Job#, Dimensions - Bill of material with material specifications ASME II - Design Pressure & Min/Max metal design temperatures - Code edition, year and addenda - X-ray requirements - heat treatment requirements - Welding procedure specifications for each weld - Weld Detail			
18.3.C					
18.7.d.ii					
18.7.d.ii					
18.3.e					
18.7.d.v					
18.3.d					
18.7.d.iv					
		- Hydro Test Pressure & medium, CRN# - Impact test requirements, Coating requirements - Name plate location, Design Code, Substance retaining - Aggregate volume of piping			
18.10.a	5.4	- stamped issued for construction Signed and dated		cl	
		A Registered Professional Engineer shall stamp all design drawings for pressure piping systems exceeding 0.5 cubic meters in aggregate capacity.		N/A	
18.8	5.3	All documents are accompanied by exhibit #2		cl	
18.10.d	5.6	Latest code book are available		cl	
		To ensure the owner's approval is obtained for any revisions and submitting the final "as built" drawing to the owner along with all pertinent records		cl	
18.10.H		To ensure a drawing index is maintained listing the drawing title, number and revision, copies issued and the name of the person to whom they were issued		cl	
18.10.e					
	6.0	SECTION VI - Material Control			
18.11.a	6.2	following - PO#/Req#/Material ordering-handling report # - ASME Sec II requirements. I.e. SA105N, SA106B - Request for mill test reports - Statement that all fittings are designs must be registered with Sask. boilers branch. - any other code requirements		R	
18.11.b	6.3	in job file		R	
	6.5	All material received will be check against PO/Req./MOHR for: - All material will be check before received. all material not received will be ejected and returned to supplied. - All material once received that is unacceptable will be tagged with		R	
	6.5.3	hold tag (Exhibit #18) and shall be considered a nonconformity.		R	
	6.6.1	Recording of all material specification number, grade thickness etc. on a Exhibit#4		R	
	6.6.3	All plate conforms to ASME Sec II Requirements by signing and dating mill test report		R	
18.17.a	6.6.6	All material marked with stamps are low impact stamps All material is marked on both pieces before cut.		cl	

Piping Inspection Requirements - Exhibit ISO-11.2

7.0 SECTION VII - Examination Program

18.20.a	7.2.1	A job file is created with all items listed in 15.2	Rm
		Hold points established. Exhibit 20 for piping	
18.20.b/c	7.2.2	All examination list on travel sheet will be signed and dated when each task is complete.	Rm
		All applicable material is identified with specifications and/or heat numbers and that these heat numbers are transferred and remain traceable throughout construction	
18.20.d	7.2.4	The material contains no visible scars or defects and is as specified on the drawings.	OK
	7.3.1	Alignment tolerances are maintained during construction.	OK
	7.3.4	Spool length and orientation spools prepped for coating	OK
	7.3.5	Weld details are correct.	OK
	7.3.6	Heat-treatment charts comply with instructions.	OK
	7.3.7	The correct hydrostatic test pressure is applied.	N/A
		Examine each system after completion and prior to test against design specifications and drawings using the Pressure Piping Examination Guide (Exhibit #21)	OK
18.20.f	7.4	Name plates are filled out proper & installed. Exhibit 6C	Rm
		Forward the Completion of Construction Declaration Form (AB-81, exhibit #15) to Boiler Branch prior to operation of the piping system	OK
18.19.c		Forward the Construction Data Report for piping systems (Exhibit #16, AB-83) to the owner with any additional records required by the contract.	Rm
18.19.d			Rm
	9.0 SECTION IX - Welding		
	9.2.1.	Prior to construct a review of weld procedures	OK
		Assigning welding tasks based on the qualifications and performance variables on the Welders Qualification /Continuity Log (Exhibit #10) and providing that qualifications in the process remain valid in accordance with the Welders Qualification/Continuity	
	9.4.1	Verifying that welders have valid performance qualification cards	OK
	9.4.2	Maintaining a Welders Log (Exhibit #10)	OK
		Ensuring that welding procedure are followed & copies of the procedure are available.	OK
	9.4.4	Visually examining all completed welds.	OK
	9.4.5	Verifying that all welds are identified with the welder's symbol	OK
	9.4.6	Ensuring that all tack welds are completely removed and that tack welds left in place are done by qualified pressure welders.	OK
	9.4.7	Verifying that purchase orders for welding consumables specify SFA specification and AWS classification.	OK
	9.5.1	SFA	Rm
	9.5.2	Ensuring that low hydrogen electrodes are kept in heated storage at manufacturer recommendations but not less than 150 Deg. F. and not more than 250 Deg. F. after the container seals broken.	Rm
	9.5.3	Ensuring that welders are issued with sufficient electrodes for a time period no longer than specified by the manufacturer for code work. Electrodes that are removed from the oven for longer than this period will be discarded.	OK
	9.5.4		OK

ing Inspection Requirements - Exhibit ISO-11.2

10.0 SECTION X - Nonconformities

- 10.2 All nonconformities will be tag with hold tags & report will be filled out.
10.7 report will be file in job book and nonconformity report file.

Rm
Rm

11.0 SECTION XI - Non-destructive Examinations

- 11.2.1 Reviewing the subcontractor's qualifications, certifications, written practices and procedures.
11.2.2 Certifying Statement and Appointment Letter (Exhibit #19) to be kept on file, the NDE subcontractors CGSB SNT-TC-1A level III examiner to act as the level III examiner
11.2.5 Ensuring that all examination/interpretation is done under the supervision of a Level II Examiner or higher.
11.2.7 Ensuring that MT and PT examiners are certified by letter and that their eye examination records are up to date.
11.2.9 Notifying the examiners of NDE requirements:
11.2.10 Identifying the welds to be examined.
11.2.11 Maintaining traceability of NDE reports to their locations on the vessel by stamping the weld number on the vessel or by recording on a weld map or as-built drawing.
11.2.12 Reviewing all NDE reports and radiographic film.
11.2.13 Filing all NDE reports when the job is completed.

CR

CR

CR

CR

CR

CR

CR

CR

CR

12.0 SECTION XII - Heat treatment

- 12.2 Review and accept contractor facilities and wittern procedure
After heat treatment vessel and time chart are reviewed and filed in
12.6 job book

N/A

N/A

13.0 SECTION XIII - Measurement and Testing Equipment

- 13.2.1 All gauges and recorders are identified with S/N calibration date and records are kept on file
13.2.2/3 Calibration after 12 months or First usage date is write on calibration record and calibration is 12 months for that date.
13.2.6 Gauge to be 1.5 to 4 time hydro test pressure.

CR

CR

CR

14.0 SECTION XIV - Pressure tests

- 14.2.1 To be done with maximum regard to safety and unauthorized personal will stay clear.
14.2.2 A. I to witness hydro unless waved.
14.2.3 Air to be vented for vessel.
14.2.4 Water temp to 30°F above MDMT.
14.2.6 One Gauge and One Pen recorder to be used.
Leak test & hydro test charts are to be completely filled out signed and dated.

CR

CR

CR

CR

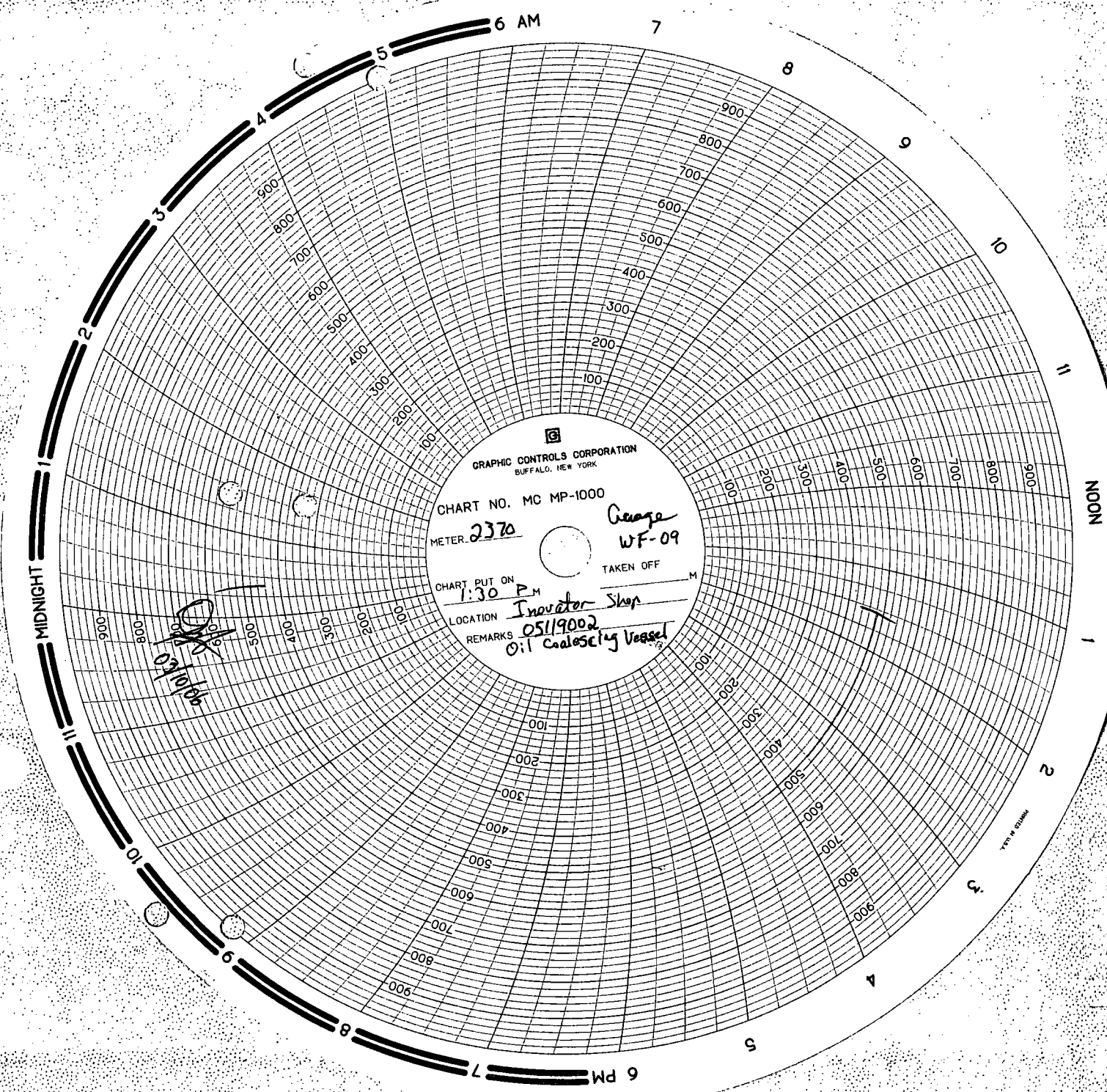
CR

CR

15.0 SECTION XV - Record Retention

- 18.24.a/b 15.2.1 Drawings and design calculations.
18.24.c 15.2.2 Material Reports.
18.24.d 15.2.3 Mill Test Reports.
15.2.4 Travel Sheet.
15.2.5 Manufacturer's Specification Sheet.
18.24.h 15.2.6 Heat Treatment Instruction Sheet and Charts.
18.24.e/g 15.2.7 Non-destructive Examination Reports.
18.24.f 15.2.8 Physical Test Reports.
18.24.i 15.2.9 Nonconformity Reports.
15.2.10 Manufacturer's Data Reports with partial Data Reports attached.
15.2.11 A nameplate stamping facsimile.
18.24.j 15.2.12 Welder Qualification (Exhibit #10)
15.2.13 Calibration Chart (Exhibit #17)
18.24.o As built drawings
18.24.k Weld procedures
18.24.l Pressure test procedure and report
18.24.m Material list spools, PO
18.24.n NDE Examiners certificates

R



Revision 0
July 27/04

Leak Test Certificate

Section XVII
Page 17.29

Date: 03/10/06

Customer Name: _____

Customer Location: _____

Job Number: 1190 0519002

Item Description: Oil Coalescing Vessel

Time: Start 1:30 PM Stop 2:00 PM

Recorder Serial Number: 2370

Gauge Serial Number: WF-09 Expirary Date: May 06 Pressure: 1000 psi

Hydro Test Pressure: 488 psi

WSS Representative: Dan Amundson

Authorized Inspector: Dan Amundson

Results: Pass ☒
Fail ☐

Reasons if fail:

GAUGE CALIBRATION SHEET

TS&M SUPPLY

Box 28, 314 Kensington Ave.
Estevan, SK S4A 2A2
306-634-6494 (phone)
306-634-2599 (fax)

Description of Gauge CPW gauge 0-1000 Psi.SN # or Gauge # 802-1000 W/F-09

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2006)

Master Gauge Used Perma Cal 0-1000 Test gauge # 1001Date Calibration Performed Oct 31/06Name of Technician [Signature] Comment Gauge Calibrated GoodSignature of Technician [Signature] Comment

Master Gauge Reading	As Found Reading	As Left Reading
0	+0	0
100	120	100
200	220	200
300	320	300
400	420	400
500	520	500
600	620	600
700	720	700
800	820	800
900	920	900

GAUGE CALIBRATION SHEET

S&M SUPPLY

Box 28, 314 Kensington Ave.
 Estevan, SK S4A 2A2
 306-634-6494 (phone)
 306-634-2599 (fax)

Description of Gauge Clif Mock Pressure Recorder 0-1000 PSISN # or Gauge # S/N 2370

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2006)

Master Gauge Used ID 1001 0-1000 PSIDate Calibration Performed October 3/06Name of Technician Travis Klatt Comment _____Signature of Technician Travis Klatt Comment _____

Master Gauge Reading	As Found Reading	As Left Reading
100 PSI	101 PSI	100 PSI
200 PSI	202 PSI	200 PSI
300 PSI	302 PSI	300 PSI
400 PSI	402 PSI	400 PSI
500 PSI	502 PSI	500 PSI
550 PSI	552 PSI	550 PSI
600 PSI	602 PSI	600 PSI
700 PSI	702 PSI	699 PSI
800 PSI	802 PSI	799 PSI
900 PSI	902 PSI	899 PSI



CONTRACT INSPECTION LTD
HEAD OFFICE:
300 Hwy 18 WEST
BOX 66 ESTEVAN, SK S4A 2A2
PH: 306-634-3476 FAX: -634-8418

REGINA OFFICE:
510 Quebec St
Regina, SK S4R 1K9
PH: 306-751-0454 FAX: 751-0454

Job Report # E 0853

of Pages

Date: 03/02/06

Client: WaterFlood

Location: _____

PO/AFE: 32522

JOB#: 1190

Prime Contractor: WaterFlood

Items Inspected: 18" Vessel OS 119002

2-1" Tol 2-2" Tol 7-3" fillet weld

Consumables: Top Flange

Penetrant Developer Contrast Bath Cleaner

☐☐☐☐☐

Travel Time: _____

Site Time: _____

Total Hours: _____

Kilometres: _____

Per Diem: _____

Technician: Shawn Davis CGSB Level II Reg.# 9777 Technician: _____

Magnetic Particle Inspection

Specifications: ASME Section V, Sub A, Art. 7
Procedures & Techniques, ASME Sec. VIII, Div 1,
App. 6 Evaluation-Acceptance Criteria, CSA W59-
2003 Structural Steel Welding, CSA Z662-Pipeline,
API 650 Tank Steel and Welding, ASTM E1444-
Procedures & Techniques.

Equipment: Portable AC or DC Yoke, High
Intensity White & Black Lighting

Technique Used: Continuous AC

Ultraviolet ☐ Black & White ☒ Powder ☐

Results:

All welds inspected
acceptable at time of
inspection with abate
noted spars.

For additional information see attached, if
applicable.

Liquid Penetrant Inspection

Specifications: ASME Sec. V, Sub. A, Art. 6
Procedures & Techniques, ASME VIII Div I, App.8-
Evaluation-Acceptable Criteria, CSA W59-2003
Structural Steel Welding, CSA Z662-Pipeline, API
650-Tanks, ASTM E1417 Procedures &
Techniques.

Equipment: Aerosols- cleaners, penetrant and
powder developer (in medium)

Technique Used: Solvent removable – visible red
dye method, florescent

Results:

For additional information see attached, if
applicable.

Ultrasonic Inspection

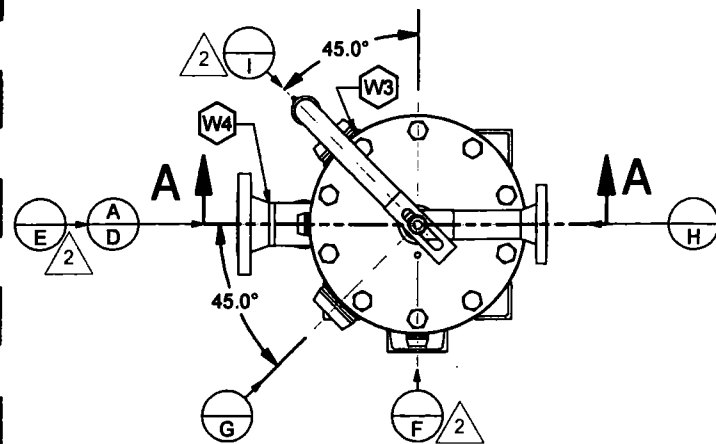
Specifications: ASME Sec. V, Sub. A, Art.
4/5-Procedures & Techniques, ASME Sec.
VIII, App. 12-Evaluation-Acceptance Criteria,
CSA W59-2003 Structural Steel Welding,
CSA Z662- Pipeline, ASTM E797
Procedures. & Techniques.

Equipment: Portable Digital Thickness
gauge, 5MHz – 0 degrees split transducer

Technique Used: Straight Beam
(longitudinal Wave), Contact, A-Scan

Results:

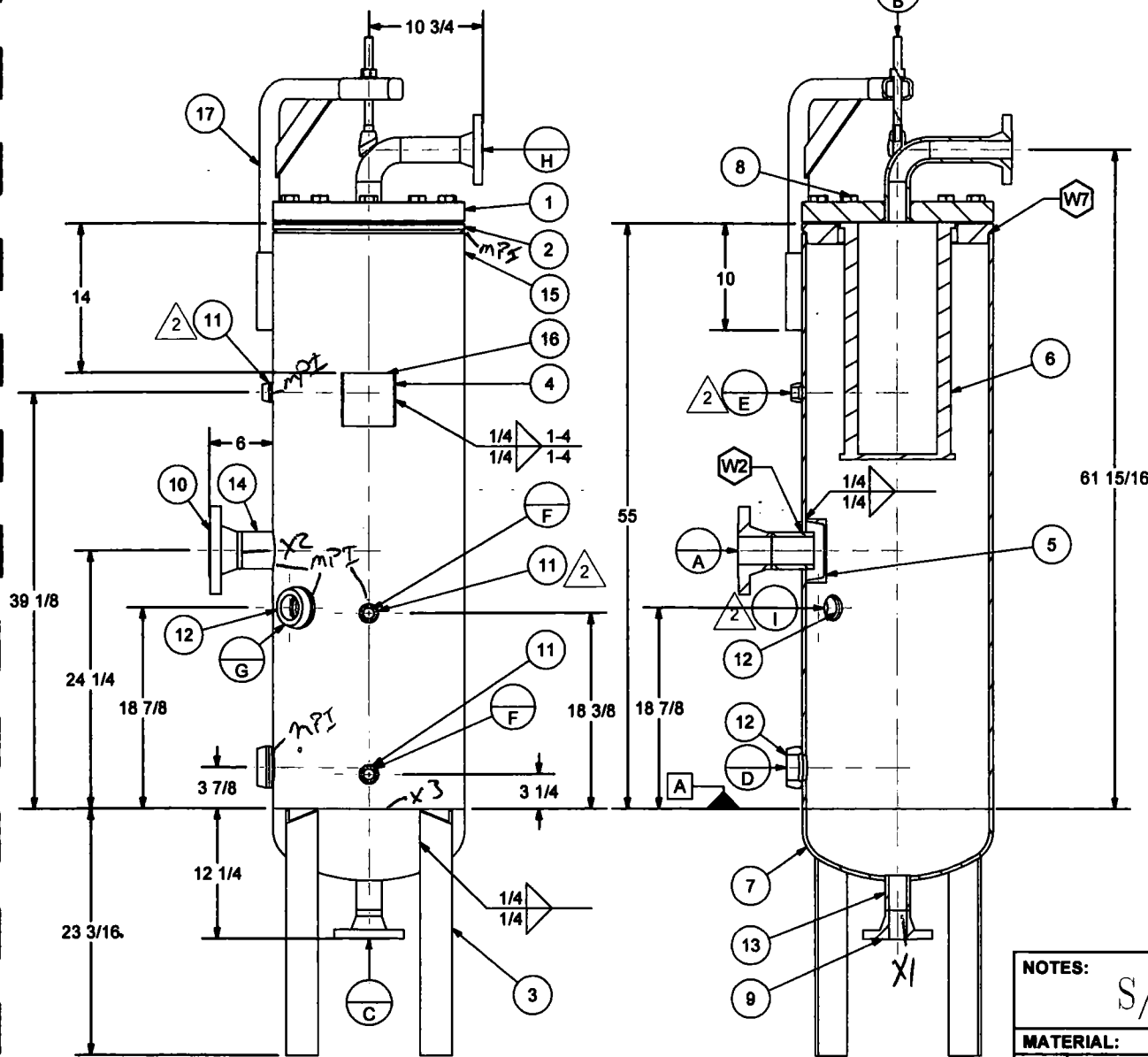
For additional information see attached, if
applicable.



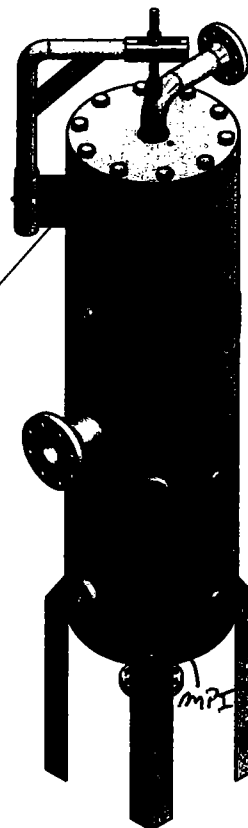
ISSUED FOR CONSTRUCTION

PER 02/03/06

1/4 2-3
1/4 2-3



SECTION A-A
SCALE 1/16



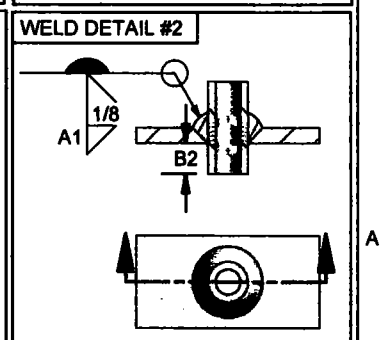
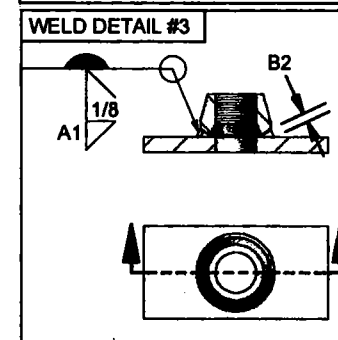
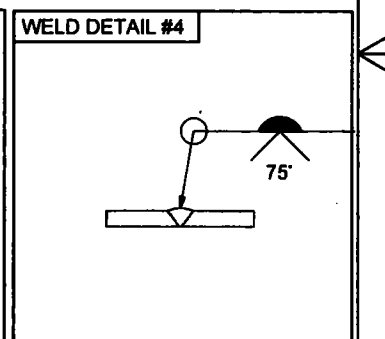
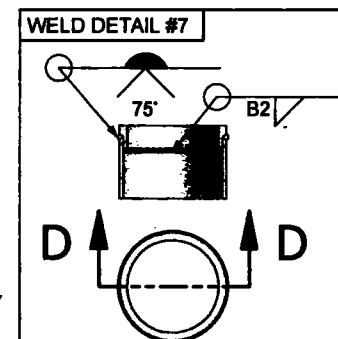
BILL OF MATERIAL						
ITEM	QTY	PART NUMBER	REV#	DESCRIPTION	MATERIAL	ID
1	1	600TOSTFX	0	600TOS TOP FLANGE ASSEMBLY	SA516G70N	M
2	1	600TOSTR	0	600TOS TOP RING	SA516G70N	M
3	92.000 in	A3.000X.250		3" X 3" X 1/4" ANGLE	44W	R
4	5.000 in	C5.000@8.7	0	5"@8.7# CHANNEL	44W	R
5	6.500 in	C6.000@8.2		6"@8.2# CHANNEL	44W	R
6	1	EAQ80105		600 SERIES COALESCING FILTER	FILTER	P
7	1	EDEX18X.375	0	18" X 3/8" - 2:1 - SEMI ELLIPTICAL HEAD	SA516G70N	P
8	10	FB78X312		7/8" X 3 1/2" NC HEAVY HEX BOLT	A354BC	P
9	1	FLCACAEC		2"-300# ANSI RF WN SCH 160 FLANGE	SA105N	P
10	1	FLDACAEC		3"-300# ANSI RF WN SCH 160 FLANGE	SA105N	P
11	3	OTAMKBAAAC		3/4"-3000# THD REG OLET ON 1" TO 36" RUN	SA105N	P
12	3	OTCAKBAAAC		2"-3000# THD REG OLET ON 2 1/2" TO 36" RUN	SA105N	P
13	3.250 in	PICAEA		2" SCH 160 SMLS PIPE	SA106B	P
14	4.000 in	PIDAEA		3" SCH 160 SMLS PIPE	SA106B	R
15	54.125 in	PIOABA		18" SCH STD SMLS PIPE	SA106B	P
16	1	S/N TAG	0	SERIAL NUMBER TAG	Stainless Steel	P
17	1	TOS-DAVIT	0	COALESCING VESSEL DAVIT ARM	44W	M
						MASS
						145.90
						72.16
						9.24
						2.79
						3.80
						42.57
						48.54
						0.90
						8.41
						17.12
						0.36
						2.79
						2.03
						4.79
						319.13
						0.42
						20.73

DESIGN NOTES:

1. TYPICAL BUTT WELDS PER UW-12 TYPE 1
2. DESIGN TEMPERATURE 233F, (112C)
3. FABRICATE TO A.S.M.E. CODE FOR PRESSURE VESSELS, SECTION 8, DIVISION 1, 2004 EDITION AND 2005 ADDENDUM
4. TOP HEAD THICKNESS MIN 1.875", NOM 2.000"
BOTTOM HEAD THICKNESS MIN 0.3125", NOM 0.375"
TOP RING THICKNESS MIN 1.875", NOM 2.000"
5. HYDROSTATIC TEST PRESSURE 488 PSIG
6. MAWP (DESIGN PRESSURE) SHALL BE 375 PSIG
7. 0% X-RAY REQUIRED AS PER UW-12(C,D)
8. POST WELD HEAT TREATMENT AS PER CUSTOMER REQUEST
9. REGISTERED WELD PROCEDURE REG. NO.: WP542.3
10. MIN. DESIGN METAL TEMPERATURE 20 DEGREES F @ 375 PSIG
11. CORROSION ALLOWANCE FOR VESSEL IS 1/16"
12. CRN # R2078.231
13. TYPE OF SUBSTANCE IS NATURAL GAS / ISO 100 OIL
14. VESSEL IS TO BE INSTALLED VERTICALLY
15. IMPACT TESTING NOT REQUIRED AS PER UG-20
16. 1/8" RADIUS ON ALL INTERNAL OPENINGS
17. ALL FITTINGS SHALL BE LOCATED AT THE SAME ELEVATION AROUND THE SHELL UNLESS OTHERWISE DIMENSIONED
18. FITTINGS LOCATED AT ANY POINT AROUND PERIMETER OF SHELL (AT ELEVATION HEIGHT) WITH OPPOSING FITTINGS ROTATING EQUALLY
19. ALL DIMENSIONS IN INCHES UNLESS OTHERWISE STATED

CUSTOMER REQUESTED:

1. 10% X-RAY
2. 10% M.P.
3. UT TESTING ON ALL ROLLED PLATE HEADS
4. WELD MAP - DO NOT STAMP WELDS



NOZZLE SCHEDULE						
ITEM	QTY.	A1	B2	C3	DESCRIPTION	
A	1	0.375	0.250	-	3"-300# RF ANSI OIL/GAS INLET	
B	1	-	0.375	-	18" FILTER CHANGE / INSPECTION	
C	1	0.375	0.0	-	2"-300# RF ANSI OIL OUTLET	
D	1	0.375	0.300	-	2"-3000# NPT LEVEL SWITCH	
E	1	0.250	0.300	-	3/4"-3000# NPT PRESSURE INDICATOR	
F	2	0.250	0.300	-	3/4"-3000# NPT SIGHT GLASS	
G	1	0.375	0.300	-	2"-3000# NPT OIL FILL	
H	1	-	-	-	2"-300# RF ANSI GAS OUTLET / RELIEF	
I	1	0.375	0.300	-	2"-3000# NPT HIGH LEVEL SWITCH	

NOTES:

S/N 05119002 E9-10932

MATERIAL:		WEIGHT	740.7 lbmass
NO.	REVISION DESCRIPTION	BY:	DATE:
1	DESIGN NOTES, BOM & WELD DETAILS	BB	02/21/03
2	CHANGED OLET SIZES & ADD NOZZLE I	JC	11/21/05



BOX 1490
ESTEVAN, SASKATCHEWAN - S4A 2L7
Phone (306) 634-7212 - Fax (306) 634-7887
PUMPS, ENGINES, AND COMPRESSOR SERVICES



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TITLE:

INOVATOR

COALESCING VESSEL

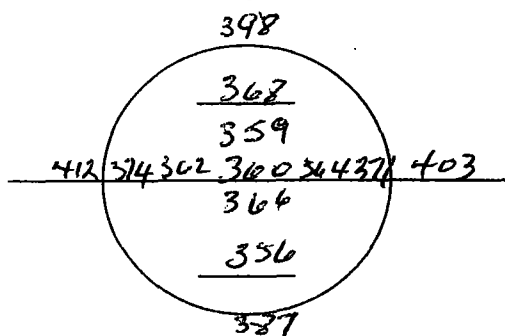
DGN: B. BLACKBURN	DATE: 11/3/2005
DWN: LAWRENCE FIEBER	DATE: 11/19/2005
CHKD: JADE CABLE	DATE: 11/23/2005
APP: CARMON LINDQUIST	DATE: 11/23/2005
REV: 2	PAGE: 1 OF 1
PART NO:	600TOS-REV2



Contract Inspection LTD
(800) 671-3670 (800) 421-1912 (800) 421-1999
www.cibcontractinspection.ca

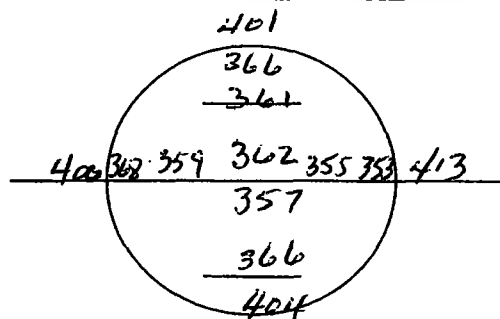
Vessel Head # 1190-2

Size 18" x 375



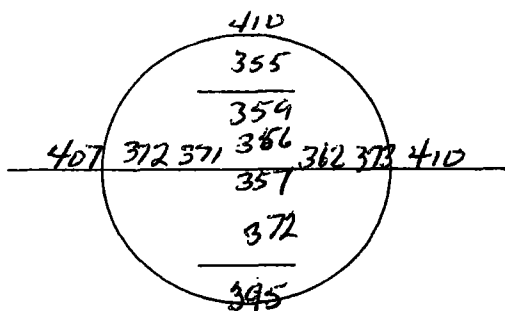
Vessel Head # 1184-2

Size 18" x 375



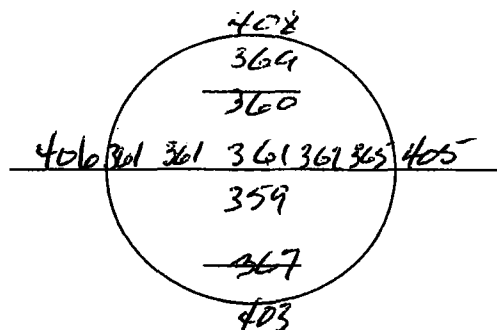
Vessel Head # 1183-2

Size 18" x 375



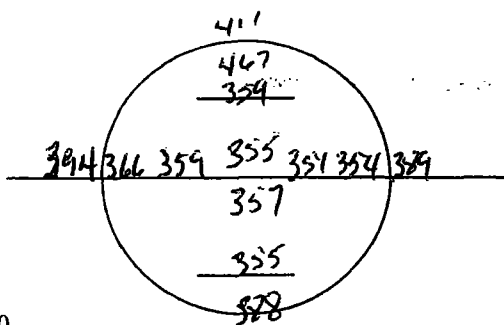
Vessel Head # 1191-2

Size 18" x 375



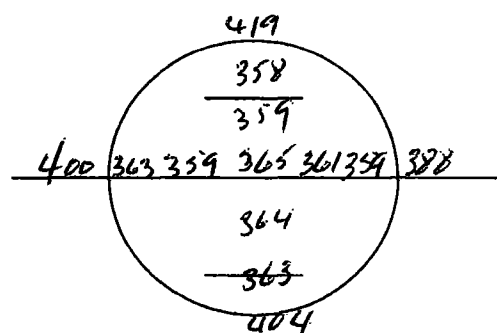
Vessel Head # 1190-1

Size 16" x 375



Vessel Head # 1190-1A

Size 16" x 375

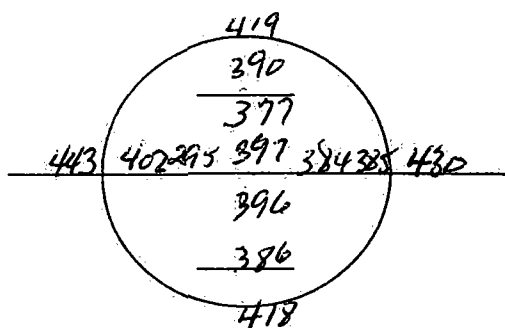




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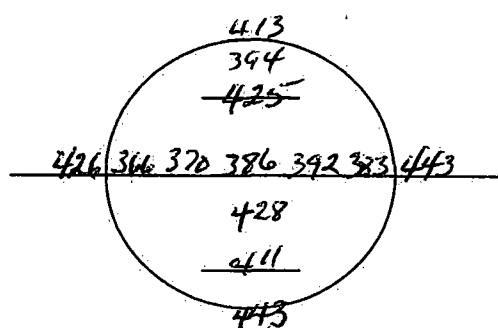
Vessel Head # 1191-1B

Size 16 x .375



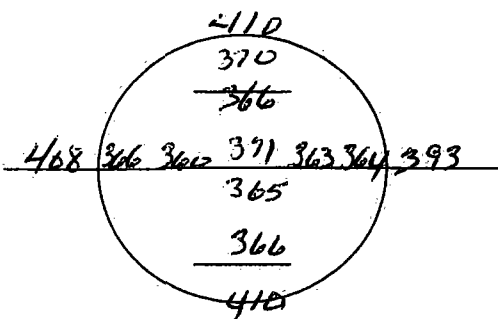
Vessel Head # 1191-1A

Size 16" x .375



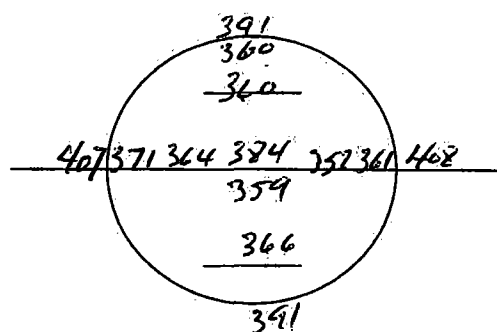
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Size 16 x .375



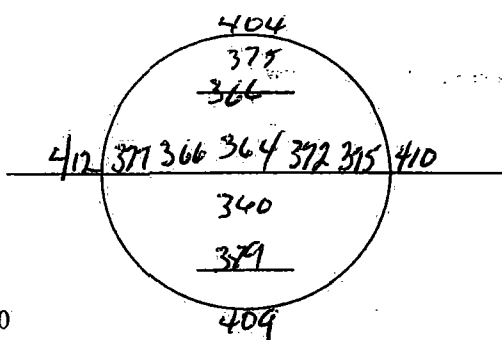
Vessel Head # 1184-1A

Size 16" x .375



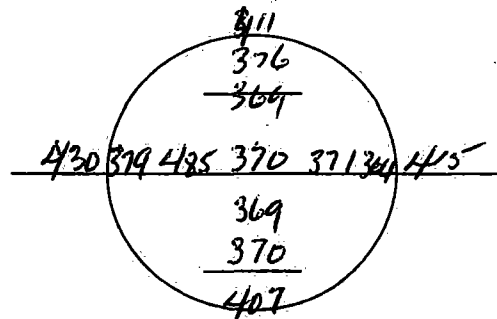
Vessel Head # 1183-1

Size 16 x .375



Vessel Head # 1183-1A

Size 16 x .375



Edmonton Exchanger & Manufacturing Ltd.

5545-89 Street, Edmonton, Alberta T6E 5W9

Telephone (780) 468-6722 Fax (780) 466-5155

QCC-001

Rev.7

Date: April 1, 2005

Approved By: S.Z.

Certificate of Compliance

Customer WATERFLOOD SERVICE &

Purchase Order 31248

Work Order C60972

Date 2005/11/24

Page 1 of 1

Item#	Description	Qty	Heat#	Certified Min Thk	Form. Proc.
50972-1	HEAD(S) - Semi-Elliptical 2:1 - 0.3750" NOM (0.3130" _MIN) X 18" OD (Material Spec: SA 516-70 Normalized)	4	MO0967-B26	0.3240"	1, 3

Forming Procedure:

1. Hot Formed @ 1650F/899C and Air Cooled
3. Normalized @ 1650F/899C for 25 min/inch and Air Cooled

Supplementary Requirements

The heads listed above comply with the requirements of ASME Code Section I (PG-29 & 81), and Section VIII, Div. 1, including Paragraphs UG-79 and G-81. Material being supplied conforms to the latest ASME Code Section II, Part A, 2004-07-01 Edition.

Steve Zubryckyj (QAM)

Supplementary Examination - Items

1183-2
1184-2
1190-2
1191-2

OREGON STEEL MILLS

P.O. BOX 2760, Portland, Oregon 97208 • (503) 286-9651 Fax (503) 240-5268

REPORT OF CHEMICAL/PHYSICAL TESTS

REVISED 10/19/04

CERTIFICATE NO.	DATE	PAGE
825401	Sep 29, 2004	1
MILL ORDER NO.	DATE	
174591		
CUSTOMER ORDER NO.		
E10510-J1010LG		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
825401	09/29/2004	
CARRIER		
BURLINGTON NORTHERN		
CAR/TRUCK NO.		
CRLE8592		

	SOLD TO	EDMONTON STEEL PLATE 5545 89TH STREET EDMONTON, AB T6E 5W9 CANADA	EDMONTON STEEL PLATE 5545 89TH STREET EDMONTON, AB T6E 5W9 CANADA
--	----------------	--	--

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
 OSM CARBON PRESSURE VESSEL PLATE ASTM A516-03 GRADE 70 ASME SA516 2001/2003
 ADDENDA NORMALIZED TEST COUPONS. .26 MAX C, .020 MAX P, .15 MIN SI, .40 MAX
 SI, .85 MIN MN, 1.20 MAX MN, .008 MAX S, .10 MAX CU, .08 MAX MO, .25 (continued)

PHYSICAL PROPERTIES

OSM ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	MAX NI, .25 MAX CR, .03 MAX V, .02 MAX CB, .03 MAX TI, CU + NI + CR + MO = .70 MAX. PLATES FURNISHED IN AS ROLL COND. LCVN 15 FT/LBS AVG @ -50 F (P) 12 FT/LBS MIN. PLUS ADDITIONAL SET NORMALIZED TEST AT 1550 F +/- 25 F HOLD 25 MINS/INCH HOLD 25 MINS MINIMUM. C.E. (CEA FORMULA) .45 MAX AIM FOR C.E. (CEA) .40 MAX. HEATS INDICATED WITH (*) ARE NORMALIZED TEST RESULTS DIN 50049 3.1.B/EN 10204 3.1.B. 0.3750 X 120.000ME X 480.000 SCHEDULE B: 7208.52.00.00									
	4 PCS 24504 LBS	^ M00675	C27	550	815	24				
	(*)	^ M00675	C27	505	775	23				
										LCVN @ -50 DEG F 7.5 mm 35 35 59 /43 ft/lbs
	4 PCS 24504 LBS	^ M00958	B23	530	795	22				
	(*)	^ M00958	B23	498	745	23				
										LCVN @ -50 DEG F 7.5 mm 43 41 43 /42 ft/lbs

Material Control	10/17/05	Sign	Date
Material Received	Rm	DEC 12	2005
Heat # / MTR'S	Rm	DEC 12	2005
Chemical Analysis	Rm	DEC 12	2005
Quantity	1	Job#	1183-2, 1184-2

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cb	Al	Cr	Mo	Ti	B	Nb	Ca	CE	U.S. Steel
^M00675	.25	1.09	.007	.004	.26	<.02	<.02	.002	.002	.044	<.02	<.02	.003				.43	
CK C27	.25	1.10	.005	.003	.24	.01	.01	<.003	<.003	.044	<.02	<.02	.002					
^M00958	.23	1.09	.010	.004	.27	<.02	<.02	.002	<.003	.037	<.02	<.02	.003				.41	
CK B23	.24	1.11	.009	.002	.25	.01	.01	<.003	<.003	.038	<.02	<.02	.002					
^M00967	.24	1.10	.013	.004	.22	<.02	<.02	.002	<.003	.042	<.02	<.02	.003				.43	
CK A21	.24	1.13	.012	.002	.18	.01	.01	.003	<.003	.041	<.02	<.02	.002					

HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.

certify the above to be correct as contained in the records of OREGON STEEL MILLS By

Chris White

OREGON STEEL MILLS

P.O. BOX 2760, Portland, Oregon 97208 • (503) 286-9651 Fax (503) 240-5268

REPORT OF CHEMICAL/PHYSICAL TESTS

REVISED 10/19/04

CERTIFICATE NO.	DATE	PAGE
825401	Sep 29, 2004	2
MILL ORDER NO.	DATE	
174591		
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E10510-J1010LG		
JOB/REQ. NO.		
SHIPPING NO.	DATE	
825401	09/29/2004	
CARRIER		
BURLINGTON NORTHERN		
CAR/TRUCK NO.		
CRLE8592		



SOLD TO

EDMONTON STEEL PLATE
5545 89TH STREET
EDMONTON, AB T6E 5W9
CANADA

EDMONTON STEEL PLATE
5545 89TH STREET
EDMONTON, AB T6E 5W9
CANADA

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
OSM CARBON PRESSURE VESSEL PLATE ASTM A516-03 GRADE 70 ASME SA516 2001/2003
ADDENDA NORMALIZED TEST COUPONS. .26 MAX C, .020 MAX P, .15 MIN SI, .40 MAX
SI, .85 MIN MN, 1.20 MAX MN, .008 MAX S, .10 MAX CU, .08 MAX MO, .25 (continued)

PHYSICAL PROPERTIES

OSM ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
	MAX NI, .25 MAX CR, .03 MAX V, .02 MAX CB, .08 MAX TI, CU + NI + CR + MO = .70 MAX. PLATES FURNISHED IN AS ROLL COND. LCVN 15 FT/LBS AVG @ -50 F (P) 12 FT/LBS MIN. PLUS ADDITIONAL SET NORMALIZED TEST AT 1650 F +/- 25 F HOLD 25 MINS/INCH HOLD 25 MINS MINIMUM. C.E. (CEA FORMULA) .45 MAX AIM FOR C.E. (CEA) .40 MAX. HEATS INDICATED WITH (*) ARE NORMALIZED TEST RESULTS DIN 50049 3.1.B/EN 10204 3.1.B.									
1	0.3750 X 120.000ME X 480.000									
	4 PCS 24504 LBS	^ M00967 A21		560	820	22				
	(*)	^ M00967 A21		525	760	20				
										LCVN @ -50 DEG F 7.5 mm 46 35 52 /44 ft/lbs
	1 PC 6126 LBS	^ M00967 A26		535	815	21				
	(*)	^ M00967 A26		499	755	20				
										LCVN @ -50 DEG F 7.5 mm 54 48 66 /56 ft/lbs
	4 PCS 24504 LBS	^ M00967 B21		535	805	21				
	(*)	^ M00967 B21		500	760	23				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	V	Cb	Al	Cr	Mo	Ti	B	Nb	Ca			CE	Mcquay Em Grain Size
M00967	.24	1.10	.013	.004	.22	<.02	<.02	.002	<.003	.042	<.02	<.02	.003						.43	
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.																				

I certify the above to be correct as contained in the records of OREGON STEEL MILLS B

Clint White

OREGON STEEL MILLS

P.O. BOX 2760, Portland, Oregon 97208 • (503) 286-9651 Fax (503) 240-5268

REPORT OF CHEMICAL/PHYSICAL TESTS

REVISED 10/19/04

CERTIFICATE NO.	DATE	PAGE
825401	Sep 29, 2004	3

	SOLD TO	EDMONTON STEEL PLATE 5545 89TH STREET EDMONTON, AB T6E 5W9 CANADA	EDMONTON STEEL PLATE 5545 89TH STREET EDMONTON, AB T6E 5W9 CANADA	MILL ORDER NO. 174591	DATE
				CUSTOMER ORDER NO. E10510-J1010LG	
				JOB/REQ. NO.	
				SHIPPING NO. 825401	DATE 09/29/2004
				CARRIER BURLINGTON NORTHERN	

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
OSM CARBON PRESSURE VESSEL PLATE ASTM A516-03 GRADE 70 ASME SA516 2001/2003
ADDENDA NORMALIZED TEST COUPONS. .26 MAX C, .020 MAX P, .15 MIN SI, .40 MAX
SI, .85 MIN MN, 1.20 MAX MN, .008 MAX S, .10 MAX CU, .08 MAX MO, .25 (continued)

CARRIER BURLINGTON NORTHERN
CAR/TRUCK NO. CRLE8592

PHYSICAL PROPERTIES

OSM ITEM NO	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
	MAX NI, .25 MAX CR, .03 MAX V , .02 MAX CB, .08 MAX TI, CU + NI + CR + MO = .70 MAX. PLATES FURNISHED IN AS ROLL COND. LCVN 15 FT/LBS AVG @ -50 F (P) 12 FT/LBS MIN. PLUS ADDITIONAL SET NORMALIZED TEST AT 1550 F +/- 25 F HOLD 25 MINS/INCH HOLD 25 MINS MINIMUM. C.E. (CEA FORMULA) .45 MAX AIM FOR C.E. (CEA) .40 MAX.HEATS INDICATED WITH (*) ARE NORMALIZED TEST RESULTS DIN 50049 3.1.B/EN 10204 3.1.B.									
1	0.3750 X 120.000ME X 480.000									
		^	M00967 B21							
	4 PCS 24504 LBS	^	M00967 B26	540	805	23				LCVN @ -50 DEG F 7.5 mm 63 57 34 /51 ft/lbs
		(*) ^	M00967 B26	505	770	23				
										LCVN @ -50 DEG F 7.5 mm 53 27 47 /42 ft/lbs
	4 PCS 24504 LBS	^	M00967 B28	535	805	23				
		(*) ^	M00967 B28	510	765	23				
										LCVN @ -50 DEG F 7.5 mm 62 54 54 /56 ft/lbs
	4 PCS 24504 LBS	^	M00968 B23	565	835	22				

CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	SI	Cu	Ni	V	Cb	Al	Cr	Mo	Ti	B	Nb	Ca			CE	McQuay-Norris Grain Size
M00967	.24	1.10	.013	.004	.22	<.02	<.02	.002	<.003	.042	<.02	<.02	.003						.43	
^ M00968	.26	1.07	.011	.003	.28	<.02	<.02	.002	<.003	.035	<.02	<.02	.004						.44	
CK B23	.02	1.09	.011	.002	.25	.01	.01	.003	<.003	.035	<.02	<.02	<.002							
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.																				

certify the above to be correct as contained in the records of OREGON STEEL MILLS By

Cliff White

OREGON STEEL MILLS

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REPORT OF CHEMICAL/PHYSICAL TESTS

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CERTIFICATE NO.	DATE	PAGE
825401	Sep 29, 2004	4
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JOB/REQ. NO.		
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825401	09/29/2004	
CARRIER		
BURLINGTON NORTHERN		
CAR/TRUCK NO.		
CRLE8592		



SOLD TO

EDMONTON STEEL PLATE
5545 89TH STREET
EDMONTON, AB T6E 5W9
CANADA

EDMONTON STEEL PLATE
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EDMONTON, AB T6E 5W9
CANADA

THIS MATERIAL HAS BEEN MANUFACTURED, TESTED AND FOUND TO MEET THE SPECIFICATIONS AND PURCHASE ORDER REQUIREMENTS
OSM CARBON PRESSURE VESSEL PLATE ASTM A516-03 GRADE 70 ASME SA516 2001/2003
ADDENDA NORMALIZED TEST COUPONS. .26 MAX C, .020 MAX P, .15 MIN SI, .40 MAX
SI, .85 MIN MN, 1.20 MAX MN, .008 MAX S, .10 MAX CU, .08 MAX MO, .25 (continued)

PHYSICAL PROPERTIES

OSM ITEM NO.	DESCRIPTION	HEAT NO.	SLAB	YIELD PSI X 100	TENSILE PSI X 100	% ELONG 8" 2"	% RA	HARDNESS BHN	BEND TEST	IMPACTS
1	MAX NI, .25 MAX CR, .03 MAX V, .02 MAX CB, .08 MAX TI, CU + NI + CR + MO = .70 MAX. PLATES FURNISHED IN AS ROLL COND. LCVN 15 FT/LBS AVG @ -50 F (P) 12 FT/LBS MIN. PLUS ADDITIONAL SET NORMALIZED TEST AT 1550 F +/- 25 F HOLD 25 MINS/INCH HOLD 25 MINS MINIMUM. C.E. (CEA FORMULA) .45 MAX AIM FOR C.E. (CEA) .40 MAX. HEATS INDICATED WITH (*) ARE NORMALIZED TEST RESULTS DIN 50049 3.1.B/EN 10204 3.1.B. 0.3750 X 120.000ME X 480.000 (*) ^ M00968 B23 510 790 21 LCVN @ -50 DEG F 7.5 mm 18 27 56 /33 ft/lbs 29 PCS 177654 LBS TOTALS									



CHEMICAL ANALYSIS

HEAT NO.	C	Mn	P	S	SI	CU	NI	V	CB	Al	Cr	Mo	TI	B	Nb	Ca	CE	Mo. Size
M00968 WRONG # DISCARD	.26	1.07	.011	.003	.28	<.02	<.02	.002	<.003	.035	<.02	<.02	.004					.44
HEATS INDICATED WITH (+) WERE MELTED & MANUFACTURED IN THE USA. HEATS INDICATED WITH (^) WERE ROLLED IN THE USA.																		
END OF REPORT																		

certify the above to be correct as contained in the records of OREGON STEEL MILLS By

Chris White

Certificate of Compliance

Customer WATERFLOOD SERVICE &

Purchase Order 31248

Work Order C60972

Date 2005/11/23

Page 1 of 1

Item#	Description	Qty	Heat#	Tag Code
P60972-2	DISC(S) - 2.0000" NOM X 18.25" OD (Material Spec: SA 516-70 Normalized)	3	69489-28282	A
		1	5205240N-CH521817	-
P60972-3	RING(S) - 2.0000" NOM X 18.25" OD X 10.75" ID (Material Spec: SA 516-70 Normalized)	4	05204776N-CH511917	-

Supplementary Requirements

The items listed above comply with the requirements of ASME Code Section I (PG-80) and Section VIII, Div. 1, UCS-79(d), UG-79 & UG-80. All welders and procedures are qualified to ASME Code Section IX. For tacking carbon steel items, roundbar used is 1018 Cold Rolled. Material being supplied conforms to the latest ASME Code Section II, Part A, 2004-07-01 Edition.

Steve Zubrycky (QAM)

Supplementary Examination - Items

1183-2
1184-2
1190-2
1191-2

NUCOR

BAR MILL GROUP

PLYMOUTH DIVISION

SOLD TO: RUSSEL METALS, INC.
445 1ST. AVE. EAST
REGINA, SASKATCHEWAN
CANADA S4N 4Z3

MILL TEST REPORT

NUCOR - PLYMOUTH IS AN I.S.O. 9001 AND AN A.D.S. CERTIFIED MILL

SHIP TO: RUSSEL METALS INC.
445 1ST. AVE. EAST
REGINA, SASKATCHEWAN
CANADA S4N 4Z3

FAXED: 81-306-721-7144

INVOICE NUMBER: 57850
CUSTOMER PO#: M 54010441
BILL OF LADING: 66390
SHIP DATE: 3/21/03

Item Description	Heat#	Yield P.S.I.	Tensile P.S.I.	Elong % B"	C	Mn	P	S	Si	Cu	Ni	Cr	V	Mo	B
Grade															
3/4 X 3/4 X 1/8	113137	53,178	71,700	26.0	.15	.71	.010	.031	.23	.31	.10	.15	.002	.024	.002
44W/A36-01 /ASME-98	38502	54,072	71,496	27.0	.563										
2 1/2 X 2 1/2 X 3/16	230810	54,098	73,020	30.0	.15	.70	.008	.036	.24	.40	.12	.09	.007	.025	.001
44W/A36-01 /ASME-98	47122	53,942	73,886	28.0	3.012										
4 X 5.40 CHANNEL	231200	49,490	68,385	34.0	.13	.72	.007	.034	.24	.39	.11	.10	.005	.018	.005
44W/A36-01 /ASME-98	12694	49,957	68,886	31.0	5.400										
1/2 X 4 FLAT BAR	230614	49,941	73,778	29.0	.18	.69	.006	.024	.21	.33	.09	.15	.005	.023	.005
44W/A36-01 /ASME-98	38316	49,650	73,638	29.0	6.800										
3 X 3 X 1/4	230824	49,383	70,027	31.0	.14	.72	.007	.031	.21	.27	.09	.06	.007	.020	.001
44W/A36-01 /ASME-98	12406	49,813	70,774	30.0	4.807										
3 X 3 X 3/8	228016	47,522	70,199	32.0	.14	.74	.012	.027	.25	.30	.12	.18	.005	.020	.005
44W/A36-01 /ASME-98	12414	47,192	69,427	31.0	7.087										
4 X 4 X 3/8	131029	45,122	65,499	35.0	.12	.74	.012	.027	.25	.30	.12	.18	.005	.020	.005
44W/A36-01 /ASME-98	12498	44,911	65,563	34.0	9.691										

Material Control	Sign	Date
Material Received	R	FEB - 8 2006
Heat # / MTR'S	R	FEB - 8 2006
Chemical Analysis	R	FEB - 8 2006
Quantity 1	Job#	1190-2

RUSSEL METALS	
THIS TEST CERTIFICATE APPLIES TO:	
CUSTOMER	W. ASER FLOW D
P.O. No.	23124-W 53
INV. No.	54362088
HEAT NO.	130824
INT.	12

Michael J. Vernon

PLANT METALLURGIST QUALITY ASSURANCE MANAGER

WE CERTIFY THAT ALL MANUFACTURING PROCESSES, INCLUDING MELTING OCCURRED IN THE UNITED STATES. ALL OF THE MATERIAL PRODUCED IS MADE FROM SCRAP STEEL AND IRON. ALL PRODUCTS PRODUCED ARE WELD FREE.

ASTM A36-01a/ASME SA36/CAN/CSA 540-21-98 44W

POSTED

Purchaser : WESTLUND INDUSTRIAL SUPPLY

INSPECTION CERTIFICATE

EN 10204 3.1B



D M Y Certificate No.

-No. Purchase Order No. Job No.

A-266

4810102

13/07/2005 T- 2005200557

No.		MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe		Specification for Inspection		Visual Examination	Dimensional Inspection	
			ASTM A234-03/ASME SA234 WPB CSA Z245.11 GR241 CAT I NACE MR0175-2000		ASME / ANSI B16.9		Good	Good	
			Product & Size (T:*1)	Quantity	Heat Treatment (Note 1)	Symbol No.			
1		05E00021	90 EL WPB 2 S160		465		A	7515146	
2		05E20029	RC WPB 16 X 14 STD	Material Control	Sign	2Date	N	7511353	
3				Material Received	R	FEB - 8 2006			
4				Heat # / MTR'S	R	FEB - 8 2006			
				Chemical Analysis	R	FEB - 8 2006			
5				Quantity 1	Job#	190-2			

Specification		Chemical Composition %											Tension Test #2			HARDNESS MAX
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	
Min .		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.		%
Max .			10	29										240	415	30
Material Heat No.		23		106	50	58	40	40	40	15	80	20			585	
1	J4LC382	11	25	126	8	4	2	3	7	1	0	0	34	323	471	58
2	J4LB336	9	21	131	11	4	3	2	11	2	0	0	34	321	445	50
3																
4																
5																

Note 1) A : Hot formed with final temperature between 620°C-980°C, Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling S : Stress Relieving 675°Cx0.5 HR. Air Cooling

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

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY :

I 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.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength E = Elongation

Form TZ-6A

Quality Assurance Manager

Thai Benkan Co., Ltd.

58 Soi Watkrunai, Bangkok, Prapadaeng.

Samutprakarn, 10130 Thailand.

Customer's Order

CCTF A DIVISION OF EMCO LTD.
5407 - 53 AVENUE NW
EDMONTON, AB T6B 3G2
CANADA

CERTIFICADO DE INSPECCION Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.5
EN 10204 / 3.1.5.



FECHA
Date-Dated: 20/01/2004

Nº
No. N.º: 92145

HOJA
Page: 1

Nº: 922164

ULMA FORJA S. COOP
B-240149-3-4-5-6-7-8-9-10-11
20560-01A-1-2-3-4-5-6-7-8-9-10-11
7-1-2-3-4-5-6-7-8-9-10-11
1-2-3-4-5-6-7-8-9-10-11
1-2-3-4-5-6-7-8-9-10-11

PRODUCTO
Article - Produit:

FLANGES

SU PEDIDO Nº
Your Order No.
Votro Cdo. N.º:

4867584-00

DE
Date: 15/09/2003

Certified Acc. PED 97/23/EC
by TÜV Rheinland
N.º 01 202 BQ 02 7443

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant:



37867

DEPARTAMENTO
Section
Department:

QUALITY ASSURANCE

NORMAS APLICABLES

ASME B16.5-98

MATERIAL CORRESPONDIENTE

Material Correspondent: Qualite

ASTMA106N-01

ASME SA106N

MODO DE FUSION (*)

Steel making - Elaboration de l'acier
E = Elec Y = Oxigeno basic

NACE MR-01-75/03

ARTICULO Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	GRABADO Mark No. N.º Gravier	RESERVA Reserve Réserve	INTEGRA Integral Intégral	ALMACEN Storage Stockage	ENTREGA Delivery Livraison	RECEPCION Receipt Réception	OTRO Other Autre	OTRO Other Autre	OTRO Other Autre
24 7535422	500	THR 1 150LB RF A106N	NE	181A3	514	303	30.20	61.00				150
35 7535821	20	RI IND 18 150LB RF A106N	NE	537A3	518	325	29.40	62.00				154
51 7535007	360	WN 2 300LB S160 RF A106N	NE	298A3	514	307	32.00	64.80				150
68 7536118	7	RI IND 20 300LB RF A106N	NY	534A3	520	328	28.00	61.00				152
71 7530016	75	SW 1 1/2 300LB S80 RF A106N	NE	136A3	516	303	30.60	61.00				150
79 7530560	600	WN 2 600LB S160 RF A106N	NE	310A3	507	303	31.20	63.00				150

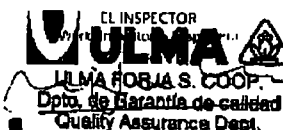
COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE

COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE

Element Element Élément	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cl %	CEQ %
135A3	0.190	0.230	0.930	0.021	0.023	0.120	0.240	0.060	0.002	0.004	0.360	0.421
181A3	0.180	0.180	0.920	0.025	0.013	0.180	0.230	0.060	0.002	0.006	0.340	0.419
298A3	0.200	0.230	0.900	0.014	0.020	0.030	0.060	0.020	0.000	0.001	0.090	0.370
310A3	0.210	0.200	0.880	0.010	0.029	0.080	0.130	0.020	0.002	0.001	0.270	0.404
534A3	0.220	0.180	0.860	0.024	0.020	0.001	0.020	0.003	0.001	0.001	0.002	0.366
537A3	0.220	0.180	0.860	0.028	0.017	0.010	0.002	0.040	0.006	0.001	0.020	0.375

Dimension and surface condition were found satisfactory
Dimension and surface condition were found satisfactory
Les dimensions et états de surface sont satisfaisants

Manufacturing requirements are satisfied
Manufacturing requirements are satisfied
Les normes applicables sont respectées



(*) OBSERVACIONES:
Remarks
Observations: N NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR

Material Control	Sign	Date
Material Received	<i>[Signature]</i>	FEB 08 2006
Heat # / MTR'S	<i>[Signature]</i>	FEB 08 2006
Chemical Analysis	<i>[Signature]</i>	FEB 08 2006
Quantity /	Job#	1190-2

HEAT. 780 SKU: 7535015 DESC: 3 300 RF WN FLG S160 A N



METALFAR

PRODOTTI INDUSTRIALI S.P.A.
23861 CESANA BRIANZA (LC) ITALY
Tel. 031.655441 - Fax 031.655149
MATERIAL TEST DEPARTMENT
SALA PROVE ED ANALISI MATERIALI

COMPANY
WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2000 =

IRACO LIMITED
CASTLE HOUSE - STATION ROAD
NEW BARNET HERTFORD GB

INSPECTION CERTIFICATE EN 10204/3.1

CERTIFICATO DI COLLAUDO

N. 2720/ 23/07/2005
INVOICE / FATTOIRA: 2500/ 22/07/2005
S. 42391
DEL. NOTE / BULLA: 4346/ 22/07/2005

PAG. 2

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	YOUR P.O. VS. ORDINE	OUR REFERENCE AS ORDINE	QUANTITY QUANTITA'	DESCRIPTION DESCRIZIONE	DIM. ACCORDANCE TO DIM. IN ACCORDO A		VISUAL & DIMENSIONAL VISIVO E DIMENSIONALE	
	35762.	0022	16827*CT	04004375 0062	75	W/N 300 RF 4" XS LP2 7585470	ASME/ANSI B16.5	SATISFACTORY		
	35762.	0022	16827*CT	04004375 0062	75	W/N 300 RF 4" XS LP2	ASME/ANSI B16.5	SATISFACTORY		
	35779	0016	16887*CT	05002129 0047	108	W/N 600 RF 3" STD A105 7530080	ASME/ANSI B16.5	SATISFACTORY		
	35779	0016	16887*CT	05002129 0047	108	W/N 600 RF 3" STD A105	ASME/ANSI B16.5	SATISFACTORY		
	35780	0005	16844*CT	05000512 0025	144	W/N 300 RF 3" 160 A105 7535015	ASME/ANSI B16.5	SATISFACTORY		
	35780	0005	16844*CT	05000512 0025	144	W/N 300 RF 3" 160 A105	ASME/ANSI B16.5	SATISFACTORY		

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL MATERIALE	C %	SI %	Mn %	S %	P %	Cr %	Ni %	Mo %	TI %	Cu %	V %	Fe %	N %	Al %	C.E. %	ORIGIN ORIGINE
	35762.	0022	ASTM A350 LP2 CL1/2	0.180	0.200	1.140	0.015	0.015	0.110	0.070	0.019	0.019	0.170	0.021	0.000	0.000	0.025	0.414	EUROPE
	35762.	0022	ASTM A350 LP2 CL1/2	0.180	0.200	1.140	0.015	0.015	0.110	0.070	0.019	0.019	0.170	0.021	0.000	0.000	0.025	0.414	EUROPE
	35779	0016	ASTM A 105	0.195	0.210	1.090	0.013	0.011	0.090	0.060	0.010	0.017	0.120	0.024	0.001	0.000	0.026	0.413	EUROPE
	35779	0016	ASTM A 105	0.195	0.210	1.090	0.013	0.011	0.090	0.060	0.010	0.017	0.120	0.024	0.001	0.000	0.026	0.413	EUROPE
	35780	0005	ASTM A 105	0.190	0.220	1.100	0.015	0.011	0.100	0.060	0.010	0.020	0.130	0.021	0.000	0.000	0.025	0.412	EUROPE
	35780	0005	ASTM A 105	0.190	0.220	1.100	0.015	0.011	0.100	0.060	0.010	0.020	0.130	0.021	0.000	0.000	0.025	0.412	EUROPE

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	TEST SPECIMEN PROVEA Specimen Design	YIELD POINT Caratteristica R _{eH} (N/mm ²)	TENSILE STRENGTH R _m (N/mm ²)	ELONGATION Allungamento A ₅ %	REDUCTION OF AREA Riduzione Area Z ₅ %	HARDNESS Durezza H _{RC}	BEND TEST Piega	FLATTENING TEST Subordinata	IMPACT TEST Resistenza Joules / cm ²	CHARPY MAGNA 10-2-1				YIELD POINT SOSTENIMENTO R _{eH} > 0.05			OUR REP.	
											0	1	2	3	S	W	X			
	35762.	0022	126.60	50.80	368.0	511	31.0	58.0	156-159	0.0	0.0	KV	-50	67	70	65	1			0.0
	35762.	0022	126.60	50.80	368.0	511	31.0	58.0	156-159	0.0	0.0	KV	-50	67	70	65	1			0.0
	35779	0016	126.60	50.80	368.0	524	28.0	57.0	159-163	0.0	0.0	KV	20	83	80	84	1			0.0
	35779	0016	126.60	50.80	368.0	524	28.0	57.0	159-163	0.0	0.0	KV	20	83	80	84	1			0.0
	35780	0005	126.60	50.80	372.0	533	29.0	59.0	163-165	0.0	0.0	KV	20	84	86	81	1			0.0
	35780	0005	126.60	50.80	372.0	533	29.0	59.0	163-165	0.0	0.0	KV	20	84	86	81	1			0.0

HEAT CODE COD. COLATA	HEAT COLATA	ITEM POS.	MATERIAL IN ACCORDANCE TO MATERIALE IN ACCORDO A	HEAT TREATMENT TRATTAMENTO TERMICO
	35762.	0022	ASTM/ASME A 350/SA 350 H - 02b	NORMALIZED AT 930 C - COOLED IN STILL AIR
	35762.	0022	ASTM/ASME A 350/SA 350 H - 02b	NORMALIZED AT 930 C - COOLED IN STILL AIR
	35779	0016	ASTM/ASME A 105/SA 105 H - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR
	35779	0016	ASTM/ASME A 105/SA 105 H - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR
	35780	0005	ASTM/ASME A 105/SA 105 H - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR
	35780	0005	ASTM/ASME A 105/SA 105 H - 02	NORMALIZED AT 920 C - COOLED IN STILL AIR

NOTE	QUALITY CONTROL DEPARTMENT CONTROLLATO QUALITA'	INSPECTION AUTHORITY ENTE UFFICIALE (UNI / ASUR)	MANUFACTURER'S SYMBOL MARCHIO FABBRICANTE
MATERIAL IN ACCORDANCE WITH NACE MR-0175/2003	Control Sign Date Received R FEB 08 2006 Heat 780 MTR'S R FEB 08 2006 Chemical Analysis R FEB 08 2006 Quant L Job# 1190	BRACCHI FLAVIO	MFT

CERTIFIED MILL TEST REPORT



**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 223047 PAGE 1

BONNEY FORGE
P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-0330
(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 10/11/05

CUSTOMER'S Order No.: 4874340-00

Bonney Order No. 018885

SHIPPED TO: CCTF CORPORATION

324685

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS
SA/A105N			
009	229	56499	7551584 36 -14 X 3/4 3000 A105N THRD T C .190 MN 1.200 P .008 S .022 SI .180 NI .030 CU .150 CD .003 CR .050 MD .010 V .000 AL .026 NB .013 CE(LONG FORMULA) = 0.41 T/S 76500 Y/S 52000 EL 39.00 RA 76.00 BRINELL HARDNESS1: 150 HARDNESS2: 150
014	10	56417	7553242 3 X3 3000 A105N THRD T C .210 MN 1.010 P .012 S .024 SI .220 NI .030 CU .130 CD .004 CR .070 MD .013 V .024 AL .001 NB .000 CE(LONG FORMULA) = 0.41 T/S 78125 Y/S 52250 EL 32.50 RA 64.45 BRINELL HARDNESS1: 137 HARDNESS2: 137
015	35	56046	7559608 3 X 2 6000 A105N THRD T C .200 MN 1.050 P .009 S .021 SI .260 NI .070 CU .180 CR .060 MD .014 V .024 AL .001 NB .001 CE(LONG FORMULA) = 0.41 T/S 81000 Y/S 55425 EL 29.85 RA 63.50 BRINELL HARDNESS1: 147 HARDNESS2: 147
		56123	7559608 3 X 2 6000 A105N THRD T C .190 MN .980 P .009 S .026 SI .230 NI .100 CU .290 CR .110 MD .025 V .001 AL .005 NB .010 SN .009 CE(LONG FORMULA) = 0.41 T/S 83125 Y/S 57425 EL 29.35 RA 57.00 BRINELL HARDNESS1: 150 HARDNESS2: 147

***** 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.

By 

Cris Childers

CMTR: REV 1

Material Control	Sign	Date	QUALITY PROCESS MANAGER
Material Received		FEB 08 2006	
Heat # / MTR'S		FEB 08 2006	
Chemical Analysis		FEB 08 2006	
Quantity <u>1</u>	Job# <u>1190-2</u>		

HEAT 499 SKU: 7551584 DESC: 3/4X14TO36 3000 TOL A1

CERTIFIED MILL TEST REPORT



**The Best Value
Price, Quality, Service
All The Time.**

LOG NO. 225626 PAGE 2
 BONNEY FORGE
 P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17058-0330
 (814) 842-2848 • (800) 345-7546 • FAX (814) 842-4908
 www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 01/13/06

CUSTOMER'S Order No.: 4641476-00

Bonney Order No. 026248

SHIPPED TO: CCTF CORPORATION

340318

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM	QUANTITY	LOT NO	GRADE OR SPECIFICATION	CHEMICAL ANALYSIS (BY GRADE OR SPECIFICATION)
SA/A105N				
009	25	56392	7551746 5-4X11/4 3M A105N THRD T	
			C .220 MN .980 P .010 S .023 SI .220	
			NI .014 CU .230 CR .100 MO .018 V .034	
			CB .006 AL .006 SN .008	
			CE(LONG FORMULA) = 0.43	
			T/S 83500 Y/S 60750 EL 29.60 RA 62.75	
			BRINELL HARDNESS1: 159 HARDNESS2: 156	
010	25	56297	7550007 4-31/2X2 3M A105N THRD T	
			C .190 MN 1.010 P .013 S .023 SI .250	
			NI .020 CU .090 CO .002 CR .050 MO .008	
			V .022 AL .001 NB .000	
			CE(LONG FORMULA) = 0.38	
			T/S 80500 Y/S 52750 EL 30.05 RA 66.75	
			BRINELL HARDNESS1: 153 HARDNESS2: 150	
011	100	56501	7551894 6 X 2 3M A105N THRD T	
			C .190 MN 1.040 P .013 S .018 SI .190	
			NI .040 CU .140 CO .003 CR .060 MO .020	
			V .001 AL .027 NB .011	
			CE(LONG FORMULA) = 0.39	
			T/S 75127 Y/S 52284 EL 33.15 RA 71.62	
			BRINELL HARDNESS1: 137 HARDNESS2: 139	
012	25	56161	7551916 18-12X2 3M A105N THRD T	
			C .190 MN .970 P .033 S .020 SI .250	
			NI .060 CU .180 CR .080 MO .012 V .024	
			AL .001 NB .001	
			CE(LONG FORMULA) = 0.39	
			T/S 79500 Y/S 54000 EL 31.65 RA 66.55	
			BRINELL HARDNESS1: 144 HARDNESS2: 159	

***** 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.

[Signature]

Cris Childers

CMTR: REV 1

Material Control	Sign	Date
Material Received	<i>[Signature]</i>	FEB 08 2006
Heat # / MTR'S	<i>[Signature]</i>	FEB 08 2006
Chemical Analysis	<i>[Signature]</i>	FEB 08 2006
Quantity <u> / </u>	Job# <u>1190-2</u>	

2006 QUALITY PROCESS MANAGER

HEAT. 161 SKU: 7551916 DESC: 2X12TO18 3000 TOL A105

CERTIFIED MILL TEST REPORT



**The Best Value
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All The Time.**

LOG NO. 222732 PAGE 6
 BONNEY FORGE
 P.O. BOX 330 • U.S. RTE 622 SOUTH • MOUNT UNION, PA 17066-0330
 (814) 542-2645 • (800) 345-7546 • FAX (814) 542-4906
 www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 09/28/05

CUSTOMER'S Order No.: 4874544-00

Bonney Order No. 020023

SHIPPED TO: CCTF CORPORATION

323970

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS	PHYSICAL PROPERTIES	REMARKS
------	----------	---------	----------------------------	-------------------	---------------------	---------

5A/A105N

017	200	56468	7552114	36-12X3/4 6M A105N THRD T		
				C .200 MN 1.030 P .006 S .022 SI .230		
				NI .030 CU .140 CO .003 CR .040 MO .015		
				V .021 AL .001 NB .000		
				CE(LONG FORMULA) = 0.40		
				T/S 77750 Y/S 52875 EL 32.65 RA 67.90		
				BRINELL HARDNESS1: 139 HARDNESS2: 139		
020	200	56274	7552483	5-4X1 3M A105N SOCK S		
				C .200 MN 1.040 P .010 S .025 SI .270		
				NI .020 CU .080 CO .002 CR .050 MO .005		
				V .024 AL .001 NB .000		
				CE(LONG FORMULA) = 0.40		
				T/S 76875 Y/S 54875 EL 31.60 RA 67.70		
				BRINELL HARDNESS1: 144 HARDNESS2: 147		
		56359	7552483	5-4X1 3M A105N SOCK S		
				C .190 MN 1.000 P .010 S .020 SI .240		
				NI .020 CU .110 CO .002 CR .050 MO .009		
				V .024 AL .001 NB .001		
				CE(LONG FORMULA) = 0.38		
				T/S 78000 Y/S 51250 EL 30.55 RA 65.60		
				BRINELL HARDNESS1: 147 HARDNESS2: 147		
021	250	56424	7552203	36-3/4 X 1/2 3M A105N LREQ T		
				C .210 MN 1.000 P .009 S .026 SI .240		
				NI .040 CU .120 CO .003 CR .070 MO .011		
				V .024 AL .001 NB .001		
				CE(LONG FORMULA) = 0.41		
				T/S 79000 Y/S 53125 EL 33.15 RA 65.60		
				BRINELL HARDNESS1: 141 HARDNESS2: 144		

***** 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.

by

Chris Childers

CMTR: REV 1

Material Control	Sign	Date
Material Received		FEB 08 2006
Heat # / MTR'S		FEB 08 2006
Chemical Analysis		FEB 08 2006
Quantity <u>1</u>	Job# <u>1190-2</u>	

QUALITY PROCESS MANAGER

HEAT 424 SKU: 7552203 DESC: 1/2X1-1/4TO36 THRD EOL 05N

HEAT. E00021 SKU: 7515146 DESC: 2 S160 LR 90 WELD E NPB

Material Control	Sign	Date
Material Received	<i>R</i>	
Heat # / MTR'S	<i>R</i>	FEB 08 2006
Chemical Analysis	<i>R</i>	FEB 08 2006
Quantity	1190 - 2	

Purchaser: CCTF CORPORATION

INSPECTION CERTIFICATE

EN 10204 3.1

E-No. MA-384 Purchase Order No. 4874510 Job No.



16/11/2005 T. 2005200930

No.	MFG. No. (Heat Identification No.)	Specification for Material Made from Seamless Pipe ASTM A234-04/ASME SA234 WPB CSA Z245.11 GR241 CAT 1 NACE MR0175-2003		Specification for Inspection ASME / ANSI B16.9-2003		Visual Examination	Dimensional Inspection
		Product & Size (T:*)	Quantity	Heat Treatment (Note 1)	Symbol No.		
1	05K20058	RC WPB 16 X 10 STD	3/5	N	7513887		
2	05K20087	RC WPB 16 X 10 STD	2/5	N	7513887		
3	05E20038	RE WPB 18 X 10 STD	5	N	7510197		
4	05B00086	90 EL WPB 1 S80	100	A	7510588		
5	05E00021	90 EL WPB 2 S180	1/500	A	7515146		

Specification		Chemical Composition %											Tension Test #2			HARDNESS MAX
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	
Min.		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa		%
Max.			10	29										240	415	30
Material Heat No.		23		108	50	58	40	40	40	15	80	20			585	
1	J5K6015	18	20	72	13	7	1	1	4	0	0	0	31	314	473	48
2	J5L8034	19	22	66	17	8	2	3	8	1	0	1	32	320	482	44
3	J4LB336	9	21	131	11	4	3	2	11	2	0	0	34	321	445	50
4	J4KB717	19	21	71	19	5	1	2	8	1	0	0	32	335	508	42
5	J4LC382	11	25	128	8	4	2	3	7	1	0	0	34	323	471	58

(NOTE 1) A - HOT FORMED WITH FINAL TEMPERATURE BETWEEN 820 C - 880 C, AIR COOLING

N - NORMALIZING 810 C X 0.5 HR AIR COOLING S - STRESS RELIEVING 675 C X 0.5 HR AIR COOLING
C.E. = $(C+Mn)/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$ MAGNETIC 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.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS - Yield strength TS - Tensile strength E - Elongation

Quality Assurance Manager
Thai Benkan Co., Ltd.
58 Soi Watkrumi, Rangkrui, Prapadeng.



Siderca

Tenaris Group

Material Control	Sign	Date
Material Received	R	FEB - 8 2006
Heat # / MTR'S	R	FEB - 8 2006
Chemical Analysis	R	FEB - 8 2006

Quantity 1 Job# 1188

2520540

INSPECTION CERTIFICATE

(DIN 50049.3.1B - EN 10204 3.1B - ISO 10474 3.1B)

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

Cliente / Customer CCTF				Expediente/ Manufacturing Order 5/4502.06		Número / Number 156149		Fecha / Date 30/09/2002		Pág./Page 1 / 5	
Producto / Product SEAMLESS STEEL LINE PIPE				Orden de Compra/ Purchase Order PO 4862762-00		Item		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L+ CSA Z245.1				Grado / Grade B/X42+290/1				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 60.30 x 8.74 mm 2 3/8 x 0.344 inches		Schedule 160	Peso Nominal / Nominal Weight 7.46 LB/FT 11.11 KG/MT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 150 Pz 998.15 m 11092 Kg 150 Pcs 3274.77 Ft 24454 Lb		

ENSAYOS DE TRACCION / TENSILE TEST

Cotada	Nº de Ensayo	Condición de la probeta							Temp de Ens	Dimensiones		Sección	Fluencia / Yield Strength					Rotura/U.T.S			Relación F/R	Alargamiento Elongation			Red. de área	Dureza / Hardness Tipo / type: BHN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
													Offset Method		EUL Method			Req. Min	V. obt.	Req. Max		YS/UTS Ratio	Lo 2"	Req. Min		V. obt.	Área Red.		Req. Min	V. Obt.			Req. Max																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Heat	Test Nº	Zona	Estado	Ext.	Nº P/T	Tipo	Ord	°C	Inches	Inches2	0.2%	%	Ksi	%	Ksi	Req. Min	V. obt.	Req. Max	Req. Max	Obt	mm	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%	Req. Min	%</

TEST TECNOLÓGICO / TECHNOLOGICAL TEST

NOTA / NOTE:

Apilamiento Flattening Test	Curvado Bend Test	Abocardado Flaring Test	Pestado Flange Test	Ens. De anillo expandido Ring expanding Test	Ens. De Tracción de anillo Ring tensile Test
Satisfact.	Satisfact.	N.A	N.A	N.A	N.A
Pro = Procesal / Process		RE = Rectangular		C/B = Cuerpo / Body	
N = Normalizada / Normalized		CI = Cilíndrica / Cylindrical		R/U = Recalque / Upset	
DIST = Distensionada / Stress Relief		ST = Segmento Tubular / Tubular segmen		P/A = Promedia / Average	
Q & T = Templado y Revenido / Quenched & Tempered		TU = Transversal		Min = Mínimo / minimum	
TA/RT = Temp. Ambiente / Room Temperature				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	

CAJ 17504



(DIN 50049.3.1B - EN 10204 3.1B - ISO 10474 3.1B)

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

Cliente / Customer CCTF				Expediente / Manufacturing Order 5/4502.06		Número / Number 156149		Fecha / Date 30/09/2002		Pág./Page 2 / 5	
Producto / Product SEAMLESS STEEL LINE PIPE				Orden de Compra / Purchase Order PO 4862762-00		Item		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L+ CSA Z245.1				Grado / Grade B/X42+290/1				Extremos / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 60.30 x 8.74 mm 2 3/8 x 0.344 inches		Schedule 160	Peso Nominal / Nominal Weight 7.46 LB/FT 11.11 KG/MT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED			Cantidades / Quantities 150 Pz 998.15 m 11092 Kg 150 Pcs 3274.77 Ft 24464 Lb	

[illegible][illegible]

NOTAS / NOTES: H = Análisis de coque / Heat Analysis. P = Análisis de producto / Product Analysis C.e = Carbono Equivalente/Equivalent Carbon R = Ratio * = PPM / Part per million

CEQ 1 = C*(MN5)+(CR*MO*V)5+(NI*CU)15

$$CEQZ = C \cdot F((MN/8) + (SI/24) + (CU/15) + (NI/20) + (CR + MO + V + NB)/5 + (5 \cdot B))$$

PCM =

* = PPM / Part per million

Sum 1 = CR+CU+MO+NI+V

SUM 2 =

SUM 3 =

R1 - MN/C

R2 =

R 3 ■

CALL 17504



Tenaris Group

INSPECTION CERTIFICATE

(DIN 50049.3.1B - EN 10204 3.1B - ISO 10474 3.1B)

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

Cliente / Customer CCTF				Expediente / Manufacturing Order 5/4502.06		Número / Number 156149		Fecha / Date 30/09/2002		Pág. / Page 3 / 5	
Producto / Product SEAMLESS STEEL LINE PIPE				Orden de Compra / Purchase Order PO 4862762-00		Item		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L+ CSA Z245.1				Grado / Grade B/X42+2901		Extremo / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 60.30 x 8.74 mm 2 3/8 x 0.344 inches		Schedule 160	Peso Nominal / Nominal Weight 7.46 LB/FT 11.11 KG/MT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 150 Pz 898.15 m 11092 Kg 150 Pcs 3274.77 Ft 24454 Lb		

& = Monograma / Monogram SIDERCA
 MM.YY = Mes / Año Month / Year
 NNNNN = Número de tubo / Nbr of pipe
 Y/T = Año / Trimestre Year / Quarter
 LLL = Longitud / length
 HNXXXX = Colada / Heat
 @ = Monograma / Monogram API

Estarado (Tubo) / Stencilling (Pipe)
 MADE IN ARGENTINA NNNNN LLLL PPPPP & SL0098 @ MM.YY A/SA106 API5L CSA Z245.1 B/X42PSL1/2901 S 2 3/ 8 X 0.344 2 SCH 160 7.46 SIDERCA CCTF 4862762-00 5/4502.06 HNXXXX

Tarjeta / Card :
 SIDERCA MADE IN ARGENTINA
 P.O.: PO 4862762-00 OF: 5/4502-06
 PIECES: LENGTH:
 WEIGHT(KG): LIFT:
 SIZE: 60.30 X 8.74 GDO:B/X42+2901
 SPEC: API+ASTM HEAT:
 CCTF EDMONTON

"FABRICADO POR SIDERCA" "PROCESO DE ACERACIÓN" -FABRICACIÓN DE ACERO: FUNDICIÓN POR ARCO ELECTRICO Y COLADO CONTINUO - ACERO CALMADO AL ALUMINIO. -LA PRÁCTICA DE AFINO EN EL HORNO - CUCHARA INCLUYE UNA INYECCIÓN FINAL DE UNA VARILLA DE SILICIURO DE CALCIO PARA OBTENER UNA FORMA GLOBULAR DE EVENTUALES MICROINCLUSIONES. -MATERIAL LIBRE DE CONTAMINACIÓN DE MERCURIO.	"MANUFACTURED BY SIDERCA" "ACIERAGE PROCESS" -STEEL MAKING PROCESS: E.A.F./L.F. AND CONTINUOUS CASTING - FULL ALUMINIUM KILLED AND FINE GRAIN PRACTICE. -THE LF PRACTICE INCLUDES A FINAL INJECTION OF CALCIUM SILICIDE WIRE FOR MICROINCLUSION SHAPE CONTROL. -MATERIAL FREE FROM MERCURY CONTAMINATION.
"PROCESO DE LAMINACIÓN" -FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA.	"ROLLING PROCESS" -MANUFACTURING PROCESS : SEAMLESS HOT ROLLED.
"CONTROLES" -CONTROL VISUAL Y DIMENSIONAL: SATISFACTORIO. -CONTROL NO DESTRUCTIVO TUBO (C.N.D.):SATISFACTORIO.	"CONTROLS" -VISUAL AND DIMENSIONAL INSPECTION : SATISFACTORY. -PIPE NON DESTRUCTIVE TEST (N.D.T.): SATISFACTORY.
"TRATAMIENTO TÉRMICO DE TUBOS"	"HEAT TREATMENT OF PIPES"

CALI 17504



Tenaris Group

INSPECTION CERTIFICATE

(DIN 50049.3.1B - EN 10204 3.1B - ISO 10474 3.1B)

Dr Jorge A. Simini 250
(02804MHA) Campana
Buenos Aires, Argentina
(54) 3489 433100 tel
(54) 3489 433405 fax

Cliente / Customer CCTF				Expediente/ Manufacturing Order 5/4502.06		Número / Number 156149		Fecha / Date 30/09/2002		Pág./Page 4 / 5	
Producto / Product SEAMLESS STEEL LINE PIPE				Orden de Compra/ Purchase Order PO 4862762-00		Item		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L+ CSA Z245.1				Grado / Grade B/X42+290/1		Extremo / Ends BEVELLED AT 30 DEG. ASTM					
Dimensiones / Dimensions 60.30 x 8.74 mm 2 3/8 x 0.344 inches		Schedule 160	Peso Nominal / Nominal Weight 7.46 LB/FT 11.11 KG/MT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 150 Pz 998.15 m 11092 Kg 150 Pcs 3274.77 Ft 24454 Lb		
-DIRECTO DE LAMINACIÓN.						-AS ROLLED.					
CONDICIONES DEL MATERIAL						*MATERIAL CONDITIONS*					
-NO REPARADO POR SOLDADURA.						-NO REPAIR BY WELDING.					
PROPIEDADES DEL MATERIAL						*MATERIAL PROPERTIES*					
- DUREZA DE ACUERDO A NACE MR-01-75 ULTIMA EDICION (HRC22).						- HARDNESS TEST ACCORDING TO NACE MR-01-75 LATEST EDITION (HRC22).					
-EL MATERIAL CUMPLE CON LOS REQUISITOS DE ASTM A530/A530M EDICION 98.						-MATERIAL ACCORDING TO REQUIREMENTS OF ASTM A530/A530M EDITION 98.					
-EL MATERIAL CUMPLE CON LOS REQUERIMIENTOS CSA Z245.1.98 GR 241/290 Cat I.						-MATERIAL COMPLIES WITH CSA Z245.1.98 GR 241/290 Cat I REQUIREMENTS.					
PROTECCIÓN DE ROSCAS Y BISELES						*THREADS AND EDGES PROTECTION*					
-PROTECCION DE EXTREMOS: PROTECTORES PLASTICOS CERRADOS.						-END PROTECTION: PLASTIC CLOSED END PROTECTORS					
NORMAS						*STANDARDS*					
-CERTIFICADO DE ACUERDO CON: DIN 50049 3.1.B/92 - EN 10204 3.1.B/95 - ISO 10474 3.1.B/92.						-CERTIFICATE ACCORDING TO : DIN 50049 3.1.B/92 - EN 10204 3.1.B/95 - ISO 10474 3.1.B/92.					
-EDICION DE LA NORMA : ASTM A53/99.						-EDITION OF REGULATION: ASTM A53/99.					
-EDICION DE LA NORMA : ASME SA 106/01.						-EDITION OF REGULATION: ASME SA 106/01.					
-EDICION DE LA NORMA : ASTM A106/99.						-EDITION OF REGULATION: ASTM A106/99.					
-EDICION DE LA NORMA : API 5L, 42" Edition 2000.						-EDITION OF REGULATION: API 5L, 42" Edition 2000.					
-EDICION DE LA NORMA : CSA Z245.1/98.						-EDITION OF REGULATION: CSA Z245.1/98.					
Observaciones / Remarks											
HYDROSTATIC TEST PRESSURE : 207 KPA*100 = 3000 PSI (5 sec.).											
INSPECTION METHODS: E.M.I. LONG.(EXT.) 5 % E.M.I. LONG.(INT) 10% - E.M.I. TRANSV. (EXT. - INT.) NOTCH 10%.											
ONE SKY-BLUE LONGITUDINAL STRIPE FULL LENGTH.											

CAJ 17904



Tenaris Group

INSPECTION CERTIFICATE

(DIN 50049.3.1B - EN 10204 3.1B - ISO 10474 3.1B)

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

Cliente / Customer CCTF				Expediente / Manufacturing Order 5/4502.06		Número / Number 156149		Fecha / Date 30/09/2002		Pág./Page 5 / 5	
Producto / Product SEAMLESS STEEL LINE PIPE				Orden de Compra / Purchase Order PO 4882762-00		Item		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L+ CSA Z245.1				Grado / Grade B/X42+290/I				Extremo / Ends BEVELLED AT 30 DEG. ASTM			
Dimensiones / Dimensions 60.30 x 8.74 mm 2 3/8 x 0.344 inches		Schedule 160		Peso Nominal / Nominal Weight 7.46 LB/FT 11.11 KG/MT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 150 Pz 998.19 m 11092 Kg 150 Pcs 3274.77 Ft 24454 Lb	
MARKS END: ONE PURPLE BAND.											

Por la presente certificamos que el material aqui descrito ha sido fabricado de acuerdo con las normas y especificaciones solicitadas en vuestra orden y satisfacen los correspondientes requerimientos. Este certificado se emite mediante un sistema computarizado y es valido con firma electrónica. El certificado original presenta el logo Tenaris (verde claro), impreso en la parte inferior de la hoja. En caso que el poseedor del certificado entregue una copia del mismo, deberá garantizar la conformidad con el original, haciéndose responsable por cualquier uso ilegal o indebido. Cualquier alteración y / o falsificación estará sujeta a la ley. Si necesita asegurar la autenticidad de este certificado, contactarse con Siderca S.A.C., e-mail: aye@siderca.com	We hereby certify that material herein described has been manufactured in accordance with the standards and specifications required in your order and satisfies the corresponding requirements. This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark Tenaris light-green coloured at the bottom of the page is stamped. In case the owner of the certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and / or falsification will be subject to the law. If you need to assure the authenticity of this certificate, please do not hesitate to contact Siderca SAIC through this e-address: aye@siderca.com	 QUALITY CERTIFICATION DEPT OTO CERTIFICACION DE CALIDAD EDUARDO A. AYERBE
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CALI 17504



Material Control	Sign	Dat
Material Received	R	FEB - 8 2006
Heat # / MTR'S	R	FEB - 8 2006
Chemical Analysis	R	FEB - 8 2006
Quantity 1	Job# 1190	

INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

H 915

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 CANADA				Expedientel Manufacturing Order 5/7382.10		Número / Number 205475		Fecha / Date 01/06/2004		Pág./Page 1 / 5	
Producto / Product Seamless steel line pipe				Orden de Compra Purchase Order PO 45028997		Item 00010		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L + CSA Z245.1				Grado / Grade B/X42+290SS				Extremos / Ends ANSI B16.25F2/ASME B1625			
Dimensiones / Dimensions 88.90 x 11.13 mm 3 1/2 x 0.438 inches		Schedule 160	Peso Nominal / Nominal Weight 21.35 KG/MT 14.32 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 75 Pz 496.34 m 10622 Kg 75 Pcs 1628.41 Ft 23417 Lb		

ENSAYOS DE TRACCION / TENSILE TEST

Colada	Nº de Ensayo	Condición de la probeta							Temp de Ensa	Dimensiones		Sección	Fuencia / Yield Strength					Rotura/U.T.S			Relación F/R	Alargamiento Elongation			Red. de area	Dureza / Hardness Tipo / type: BHN							
Heat	Test N°	Specimen condition							Test Temp	Size		Area	Offset Method		EUL Method			Req. Min	V. obt.	Req. Max	YB/UTS Ratio	Lo 2"	Req. Min	V. obt.	Area Red.	Req. Min	V. Obt.			Req. Min			
													Req. Min	V. obt.	EUL	Req. Min	V. obt.														Req. Max		
		Zona	Estado	Ext.	Nº P/T	Tipo	Ori	°C		Inches	Inches2		0.2%	%	Ksi	Ksi	Ksi										Req. Max	Obt.	mm		%	Req. Min	%
		Kal	%	Ksi	Ksi	Ksi	Req. Max	Obt.		mm	%		Req. Min	%																			
32404	432010	C/B	PRO			ST	L	TART	0,748	X	0,437	0,329			0.5	42	44.9		60	66.7			60.8	25.0	40.8			129			20		
32404	432030	C/B	PRO			ST	L	TART	0,748	X	0,444	0,335			0.5	42	43.6		60	68.0			60.8	25.0	36.6			137			20		

TEST TECNOLÓGICO / TECHNOLOGICAL TEST

Apilamiento Flattening Test	Curvado Bend test	Abocardado Flaring Test	Pastefiado Flange Test	Ens. De anillo expandido Ring expanding Test	Ens. De Tracción de anillo Ring tensile Test
Satisfact.	N.A	N.A	N.A	N.A	N.A

NOTA / NOTE:

Pro = Proceso / Process
N = Normalizada / Normalized
DIST = Distensionada / Stress Relief
Q & T = Templado y Revenido / Quenched & Tempered
TA/RT = Temp. Ambiente / Room Temperature

RE = Rectangular
CI = Cilíndrica / Cylindrical
ST = Segmento Tubular / Tubular segmen
TU = Transversal

O/B = Cuerpo / Body
RAU = Rocalque / Upset
P/A = Promedio / Average
Min = Mínimo / 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 17504

83847

(EN 10204 3.1B - ISO 10474 3.1B)

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 CANADA				Expediental / Manufacturing Order 57382.10		Número / Number 205475		Fecha / Date 01/08/2004		Pág./Page 2 / 5	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45028997		Item 00010		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L + CSA Z245.1				Grado / Grade B/X42+290SS				Extremos / Ends ANSI B16.25F2A/ASME B1625			
Dimensiones / Dimensions 88.90 x 11.13 mm 3 1/2 x 0.438 inches		Schedule 160	Peso Nominal / Nominal Weight 21.35 KG/MT 14.32 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 75 Pz 496.34 m 10622 Kg 75 Pcs 1628.41 Ft 23417 Lb		

ENSAYOS QUIMICOS / CHEMICAL ANALYSES

			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
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NOTAS / NOTES: H = Análisis de ceniza / Heat Analysis. P = Análisis de producto / Product Analysis C.e = Carbono Equivalente/Equivalent Carbon		R = Ratio	* = PPM / Part per million
CEQ 1 = $C + (MN/6) \times (CR + MO + V)/5 + (NI + CU)/15$	CEQ 2 = $C + F((MN/6) + (SI/24) + (CU/15) + (NI/20) \times (CR + MO + V + NB)/5 + (5 \times B))$	PCM =	
Sum 1 = CR + CU + MO + NI + V	SUM 2 =	SUM 3 =	
R 1 = MVC	R 2 =	R 3 =	

CALL 17504



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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 CANADA				Expediente / Manufacturing Order 57382.10		Número / Number 205475		Fecha / Date 01/06/2004		Pág./Page 3 / 5	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45028997		Item 00010		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L + CSA Z245.1				Grado / Grade B/X42+290SS				Extremo / Ends ANSI B16.25F2A/ASME B1625			
Dimensiones / Dimensions 88.90 x 11.13 mm 3 1/2 x 0.438 inches		Schedule 160	Peso Nominal / Nominal Weight 21.35 KG/MT 14.32 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 75 Pz 496.34 m 10622 Kg 75 Pcs 1628.41 Ft 23417 Lb		

& = Monograma / Monogram SIDERCA NNNN = Número de tubo / Nbr of pipe MM.YY = Mes / Año Month / Year YYT = Año / Trimestre Year / Quarter				Marcas / Marking LLL = Longitud / length HNNXXXX = Colada / Heat				PPP = Peso / Weight @ = Monograma / Monogram API			
Estandar (Tubo) / Stencilling (Pipe) NNNNN LLLL PPPPP TENARIS SD 5L0098 @ MM.YY A/SA106 A53 API5L CSA Z245.1-98 B/X42PSL1/290 C1 SS S 3 1/2 X 0.438 3 SCH 160 14,32 3000PSI PO 45028997 V.L. CODE 915 57382.10 MADE IN ARGENTINA HNNXXXX											
Tarjeta / Card : SIDERCA MADE IN ARGENTINA P.O.: PO 45028997 OF: 57382-10 PIECES: LENGTH: WEIGHT(KG): LIFT: SIZE: 88.90 X 11.13 GDO:B/X42+290SS SPEC: API+ASTM HEAT: CL:V.L. CANADA											
FABRICADO POR SIDERCA						*MANUFACTURED BY SIDERCA*					
PROCESO DE ACERACIÓN -FABRICACIÓN DE ACERO: FUNDICIÓN POR ARCO ELECTRICO Y COLADO CONTINUO - ACERO CALMADO AL ALUMINIO. -LA PRÁCTICA DE AFINO EN EL HORNO - CUCHARA INCLUYE UNA INYECCIÓN FINAL DE UNA VARILLA DE SILICIOURO DE CALCIO PARA OBTENER UNA FORMA GLOBULAR DE EVENTUALES MICROINCLUSIONES. -MATERIAL LIBRE DE CONTAMINACIÓN DE MERCURIO.						*ACIERAGE PROCESS* -STEEL MAKING PROCESS: E.A.F./L.F. AND CONTINUOUS CASTING - FULL ALUMINIUM KILLED AND FINE GRAIN PRACTICE. -THE LF PRACTICE INCLUDES A FINAL INJECTION OF CALCIUM SILICIDE WIRE FOR MICROINCLUSION SHAPE CONTROL. -MATERIAL FREE FROM MERCURY CONTAMINATION.					
PROCESO DE LAMINACIÓN -FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA.						*ROLLING PROCESS* -MANUFACTURING PROCESS : SEAMLESS HOT ROLLED.					
CONTROLES -CONTROL VISUAL Y DIMENSIONAL: SATISFACTORIO. -CONTROL NO DESTRUCTIVO TUBO (C.N.D.):SATISFACTORIO.						*CONTROLS* -VISUAL AND DIMENSIONAL INSPECTION : SATISFACTORY. -PIPE NON DESTRUCTIVE TEST (N.D.T.): SATISFACTORY.					

CALI 17894



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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

Cliente / Customer VAN LEEUWEN CANADA				Expediente / Manufacturing Order 5/7382.10		Número / Number 205475		Fecha / Date 01/06/2004		Pág./Page 4 / 5	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45028997		Item 00010		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L + CSA Z245.1				Grado / Grade B7K42+280SS		Extremo / Ends ANSI B16.25F2A/ASME B1625					
Dimensiones / Dimensions 88.90 x 11.13 mm 3 1/2 x 0.438 inches		Schedule 160	Peso Nominal / Nominal Weight 21.35 KG/MT 14.32 LB/FT		Longitud / Length S.R. (SP)	Superficie Externa / External Surface VARNISHED			Cantidades / Quantities 75 Pz 498.34 m 10622 Kg 75 Pcs 1628.41 Ft 23417 Lb		
CONDICIONES DEL MATERIAL -NO REPARADO POR SOLDADURA.						*MATERIAL CONDITIONS* -NO REPAIR BY WELDING.					
PROPIEDADES DEL MATERIAL -LA DUREZA CUMPLE CON LA NORMA NACE MR 01-75 ULTIMA EDICION. -EL MATERIAL CUMPLE CON LOS REQUISITOS DE ASTM A530/A530M EDICION 98. -EL MATERIAL CUMPLE CON LOS REQUERIMIENTOS CSA Z245.1.98 GR 241/290 Cat I.						*MATERIAL PROPERTIES* -HARDNESS ACCORDING TO NACE MR-01-75 LATEST EDITION. -MATERIAL ACCORDING TO REQUIREMENTS OF ASTM A530/A530M EDITION 98. -MATERIAL COMPLIES WITH CSA Z245.1.98 GR 241/290 Cat. I REQUIREMENTS.					
NORMAS -CERTIFICADO DE ACUERDO CON: EN 10204 3.1.B/95 - ISO 10474 3.1.B/92. -EDICION DE LA NORMA : ASME SA 106/01. -EDICION DE LA NORMA : ASME SA 53/01. -EDICION DE LA NORMA : NACE MR-01-75 ULTIMA EDICION -EDICION DE LA NORMA : API 5L, 42" Edition 2000. -EDICION DE LA NORMA : CSA Z245.1/98. -EDICION DE LA NORMA : ASTM A53/02. -EDICION DE LA NORMA : ASTM A106/02a.						*STANDARDS* -CERTIFICATE ACCORDING TO : EN 10204 3.1.B/95 -ISO 10474 3.1.B/92. -EDITION OF REGULATION: ASME SA 106/01. -EDITION OF REGULATION: ASME SA 53/01. -EDITION OF REGULATION: NACE MR-01-75 LATEST EDITION -EDITION OF REGULATION: API 5L, 42" Edition 2000. -EDITION OF REGULATION: CSA Z245.1/98. -EDITION OF REGULATION: ASTM A53/02. -EDITION OF REGULATION: ASTM A106/02a.					
Observaciones / Remarks HYDROSTATIC TEST PRESSURE :211 KPA*100 = 3000 PSI (5 sec.). NON DESTRUCTIVE TEST: SATISFACTORY. INSPECTION METHODS: E.M.I. LONG. (EXT.) NOTCH 5% - LONG. (INT.) NOTCH 10% - TRANSV. (EXT./ INT.) NOTCH 10 %. END PROTECTION: CLOSED PLASTIC NON LIFTABLE PORTECTORS. CONTINUOUS FULL LENGTH STRIPE: BLUE ONE ORANGE BAND ON MARKS END.											

CAL 17804



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

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 CANADA				Expediente / Manufacturing Order 5/7382.10		Número / Number 205475		Fecha / Date 01/06/2004		Pág./Page 5 / 5	
Producto / Product Seamless steel line pipe				Orden de Compra / Purchase Order PO 45028997		Item 00010		Referencia del Cliente / Customer Reference			
Norma / Standard ASTM A53/A106/ASME SA106/API 5L + CSA Z245.1				Grado / Grade B/X42+290SS				Extremo / Ends ANSI B16.25F2A/ASME B1625			
Dimensiones / Dimensions 88.90 x 11.13 mm 3.1/2 x 0.438 inches		Schedule 160	Peso Nominal / Nominal Weight 21.35 KG/MT 14.32 LB/FT		Longitud / Length S.R. (SP)		Superficie Externa / External Surface VARNISHED		Cantidades / Quantities 75 Pz 496.34 m 10622 Kg 75 Pcs 1628.41 Ft 23417 Lb		

Por la presente certificamos que el material aquí descrito ha sido fabricado de acuerdo con las normas y especificaciones solicitadas en vuestra orden y satisfacen los correspondientes requerimientos. Este certificado se emite mediante un sistema computarizado y es válido con firma electrónica. El certificado original presenta el logo Tenaris (verde claro), impreso en la parte inferior de la hoja. En caso que el poseedor del certificado entregue una copia del mismo, deberá garantizar la conformidad con el original, haciéndose responsable por cualquier uso ilegal o indebido. Cualquier alteración y / o falsificación estará sujeta a la ley. Si necesita asegurar la autenticidad de este certificado, contactarse con Siderca SAIC, e-mail: aye@siderca.com	We hereby certify that material herein described has been manufactured in accordance with the standards and specifications required in your order and satisfies the corresponding requirements. This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark Tenaris light-green coloured at the bottom of the page is stamped. In case the owner of the certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and / or falsification will be subject to the law. If you need to assure the authenticity of this certificate, please do not hesitate to contact Siderca SAIC through this e-address: aye@siderca.com	 QUALITY CERTIFICATION DEPT. DTO CERTIFICACION DE CALIDAD EDUARDO A. AYERBE
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CALI 17204

No. 40474886

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WUYANG IRON AND限责任公司
STEEL CO. LTD.

质量 证 明 书

QUALITY CERTIFICATE

收 货 单 位: ORDER NO. 7607-V
CUSTOMER 编 号: 05WYC-06
合 同 编 号: 05WYC-06
CONTRACT NO.:
技 术 条 件: ASTM A516 Gr70/ASME A516 Gr70
TECHNICAL CONDITION: (EDITION 2001+2003A)

地 址: 中国河南舞钢 邮 编: 462500 电话(Tel): 0375-8111264
ADDRESS: WUGANG HENAN CHINA ZIPCODE: 462500 传真(Fax): 0375-8111269

Material Control	Sign	Date
Material Received	Rm	DEC 12 2005
Heat# / MTR'S	号 Rm	DEC 12 2005
Chemical Analysis	号 Rm	DEC 12 2005
Quantity	Job# 1183-2, 1184-2	1190-2, 1191-2

钢 号 STEEL GRADE	炉 号 HEAT NO.	批 号 BATCH NO.	尺 寸 DIMENSIONS, INCHES	块 数 PCS	重 量 WEIGHT MTS	化 学 成 份 CHEMICAL COMPOSITIONS 0.001%																	机 械 性 能 MECHANICAL PROPERTIES			弯曲试验 BEND TEST b=2a 180°	冲击试验 IMPACT TEST AkV		超声波试验 ULTRASONIC TEST	判定结果 JUDGE RESULT
						C	Si	Mn	P	S	Cr	Al	Mo	Ti	Cu	Nb	Bi	V	Ceq	Re (ksi)	Rm (ksi)	A 2°, %	° F	ft. lbf						
A516Gr. 70/ SA516Gr. 70	05204671W	CH511807	2.000*121.00*498.00	1	15.603	190	260	1000	17	6	70	33	39	6	130	2	250	6		63	80	36			-31.0	52 32 60	ASTM A435 PASS	合格 PASS		
A516Gr. 70/ SA516Gr. 70	05204776W	CH511917	2.000*121.00*500.00	1	15.565	190	250	1050	9	3	40	34	10	2	130	1	210	4		54	80	33			-31.0	69 46 63	ASTM A435 PASS	合格 PASS		
A516Gr. 70/ SA516Gr. 70	05204668W	CH521312	2.000*121.00*486.00	1	15.129	190	240	1080	11	4	40	42	11	6	130	2	240	3		48	77	33			-31.0	78 58 64	ASTM A435 PASS	合格 PASS		
A516Gr. 70/ SA516Gr. 70	05204668W	CH521315	2.000*121.00*484.00	1	15.067	190	240	1080	11	4	40	42	11	6	130	2	240	3		53	77	37			-31.0	72 72 60	ASTM A435 PASS	合格 PASS		
A516Gr. 70/ SA516Gr. 70	05204721W	CH521383	2.250*97.00*540.00	1	15.161	180	260	1050	11	3	50	31	10	1	130	1	220	2		49	81	32			-31.0	54 51 47	ASTM A435 PASS	合格 PASS		

第三联 商检、船检或顾客

备注:
NOTES:

- PRIME QUALITY, NEWLY PRODUCED, HOT ROLLED KILLED STEEL P. V. O. PLATES TO ASTM A516 Gr. 70/ASME A516 Gr. 70 (EDITION 2001+2003A)
- TOLERANCES TO A20, FLATNESS TOLERANCE AS PER 1/2 OF A20, NORMALISED, WITH CHARPY V-NOTCH TEST TO A20 CAT. IV. INVOICING ON NOMINAL THEORETICAL WEIGHT OF 7.85 KGS/INCH.
- ALL MATERIAL WAS TOTALLY VACUUM DEGAUSSED AND THAT ALL PLATES WERE ULTRASONICALLY INSPECTED ACCORDING TO ASTM A435.
- COLOR CODE: YELLOW/WHITE/YELLOW COLOR STRIPE CODE.
- INFORMATION ON STEEL PLATE NORMALISING CYCLE:
1) SOAKING TEMPERATURE: 900°C +/- 10°C. 2) SOAKING TIME: 1.5 MINUTES/INCH 3) COOLING MEANS: AIR COOLING
- QUALITY CERTIFICATE ISSUED AS PER EN10204/3. 1B.

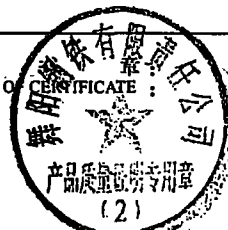


质 量 检 验 负 责 人: Xie Liangfa
PERSON IN CHARGE OF QUALITY EXAMINATION:

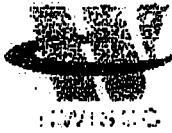
判 定 员: Zhang Haiyu
QUALITY CONTROL INSPECTOR:
审 核 员: Zhang Wei
QUALITY CONTROL CHECKER:

证 明 书
SEAL OF CERTIFICATE:

日期: 6 月 22 日 2005 年
DATE: MONTH DAY YEAR



- NOTE: 1. This certificate will not be valid unless marked with special seal of quality certification and quality control inspector.
2. The duplicated copy of the certificate shall be invalid. Corrected area must be marked with special seal of quality control inspector.



舞阳钢铁有限责任公司

WUYANG IRON AND STEEL CO., LTD

地址: 中国河南省舞钢市 Add: Wugang City, Henan Pro., P. R. China 462500

E-mail: wgieco66@vip.163.com

CERTIFICATION

WE HEREBY CERTIFY THAT THE NORMAL LEVEL FOR THE THREE
ELEMENTS TO YOUR ORDER 7607-V/7608-V AS FOLLOWS:

B: 0.0001-0.0002

SN: 0.008-0.009

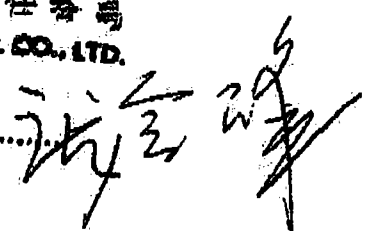
N: 50-70PPM.

WUYANG IRON AND STEEL CO., LTD.

For and on behalf of OCTOBER 28, 2005

舞阳钢铁有限责任公司
WUYANG IRON AND STEEL CO., LTD.

Authorized Signature(s)


28/10-05

CHARPY V-NOTCH IMPACT TEST REPORT

Client:	Edmonton Exchanger & Manufacturing Ltd.	Job. No.:	218-050012
Address:	5545 - 89 Street Edmonton AB, T6E 5W9		
Client Job No.:	J1010LG		
Material Description:	SA-516 Grade 70N 2.00" thick		
Heat Number / Plate Number:	05204668N-CH521312		
Serial No.:	None		
Heat Treatment:	N (Normalized)		
Specification:	ASTM A-370 (ASME SA-370) & ASME Section VIII UG-84		
Specimen Size:	10.0 mm Charpy V-Notch		
Qualification Temp:	-50°F		
Date of Test:	October 20, 2005		

TEST RESULTS

Sample Set	Sample Number	Impact Energy		Shear (%)	Lateral Expansion (in)
		ft-lb	Joule		
NC	1	73	99	30	N/A
	2	49	66	15	N/A
	3	76	103	30	N/A
	Average:	66	268	25	N/A

TEST RESULTS CERTIFIED BY:

Helissa Reekie
Helissa Reekie CET

Qualimet



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)		A09 Advice of dispatch No./ Date of dispatch 185251-30.06.05	A08/ Manufacturer's order/ A03 Certificate No. 295796-002	Sheet 1/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 50305 A07.2 No. E10339-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade SA516-70 B03 Specifica- ASME-2A:01+A02 tions DIL-HUE-3:31.10.03	SA20-85			



A01-A99 Further commercial information - Concession requests

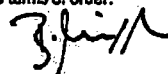
B09 Item No.	B08 Heat No.	B07 Roll plate / Test No.	B16 Concession request no.	Date
04	68714	08190-01	TO/A379/2005	01.06.05

B01-B99 Product description

B09 Item No.	B10 Quantity	B11 Thickness	B12 Width	B13 Length	B14 Mass theoretical KG	B04 Delivery condition	B08 Heat No.	B07 Rolled plate No./ Test No.	B16 Customer reference
			INCH						
01	1	1,5000 x	97,00000 x	480,00000	8984	N	68713	16107-01	ITEM 1
01	1	1,5000 x	97,00000 x	480,00000	8984	N	68713	16107-02	ITEM 1
**	2				17968				
02	1	1,5000 x	121,00000 x	480,00000	11207	N	68716	16101-02	ITEM 2
02	1	1,5000 x	121,00000 x	480,00000	11207	N	69437	30074-01	ITEM 2
**	2				22414				
03	1	2,0000 x	97,00000 x	480,00000	11979	N	68714	08199-01	ITEM 3
03	1	2,0000 x	97,00000 x	480,00000	11979	N	68714	29429-01	ITEM 3
03	1	2,0000 x	97,00000 x	480,00000	11979	N	68716	08185-01	ITEM 3
03	1	2,0000 x	97,00000 x	480,00000	11979	N	69489	28282-01	ITEM 3
**	4				47916				
04	1	2,0000 x	121,00000 x	480,00000	14943	N	68714	08190-01	ITEM 4
04	1	2,0000 x	121,00000 x	480,00000	14943	N	68714	08227-01	ITEM 4
04	1	2,0000 x	121,00000 x	480,00000	14943	N	68714	08229-01	ITEM 4
04	1	2,0000 x	121,00000 x	480,00000	14943	N	69144	25068-01	ITEM 4
**	4				59772				
***	12				148070				

Material Control	Sign	Date
Material Received	Rm	DEC 12 2005
Heat # / MTR'S	Rm	DEC 12 2005
Chemical Analysis	Rm	DEC 12 2005
Quantity /	Job#	1183-2

1184-2
1190-2
1191-2

A04  Trademark	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. QM-System: Certification as per ISO 9001	 B. MUELLER Test House Manager	 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillinger/Saar Inspection department	A01 Date 01.07.05 KW 1
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DILLINGER HÜTTE

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)		A09 Advice of dispatch No./ Date of dispatch 185251-30.06.05	A08/ Manufacturer's order/ A03 Certificate No. 295796-002	Sheet 2/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 50305 A07.2 No. E10339-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade B03 Specifica- tions	SA516-70 ASME-2A:01+A02 DIL-HUE-3:31.10.03 SA20-S5			

B04 Delivery condition / Heat treatment of plates

ITEM NO.: 01-04

N: HT: 1634 GR.F +27 -27 GR.F

SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH)

COOLING IN STILL AIR

B06 Marking

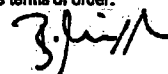
ITEM NO.: 01-04

STEEL GRADE SA516 70 MTLTV SA516 60 MTLTV

HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

C10-C29 Tensile test

B09 Item No.	B08 Heat No.	B07 Rol.plate/ Test No.	B05 Reference condition	C01 C02/ C01	C03 Temp. GR.F	C10 C11 KSI RP02	C12 RM	C13 A % LO-2IN	C14-C15
01	68713	16107		K1	QV	RT	49,7	75,5	33,9
02	68716	16101		K1	QV	RT	48,9	75,3	36,4
02	69437	30074		K1	QV	RT	48,4	75,5	35,4
03	68714	08199		K1	QV	RT	47,1	74,0	36,5
03	68714	29429		K1	QV	RT	49,7	74,4	35,4
03	68716	08185		K1	QV	RT	48,7	74,1	36,2
03	69489	28282		K1	QV	RT	49,3	76,4	35,6
04	68714	08190		K1	QV	RT	47,9	74,2	36,0
04	68714	08227		K1	QV	RT	46,8	74,0	37,5
04	68714	08229		K1	QV	RT	46,8	74,2	35,3
04	69144	25068		K1	QV	RT	47,7	76,4	35,0

A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.		A01
 Trademark	QM-System: Certification as per ISO 9001	 B. MUELLER Test House Manager	 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department
		Inspector's stamp	Date 01.07.05 KW 1



DILLINGER HÜTTE

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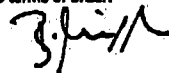
A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)		A09 Advice of dispatch No./ Date of dispatch 185251-30.06.05	A08/ Manufacturer's order/ A03 Certificate No. 295796-002	Sheet 3/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 50305 A07.2 No. E10339-J1010-LG		B01 Product HOT ROLLED PLATES
B02/ Steel grade SA516-70 B03 Specifica- tions ASME-2A:01+A02 DIL-HUE-3:31.10.03		SA20-85		

C40-C49 Impact test

B09 Item No.	B08 Heat No.	B07 Rot.plate/ Test No.	B05 Reference condition	C01	C02/ C01	C03 Temp. GR.F	C41 Specimen width	C40 Type of specimen	C44 Testing method	C46 Energy	C45	C42 Individual values AV=FT.LBF	C43 Average value
01	68713	16107		K1	LV	-51		CHP-V			AV 99	83	143
02	68716	16101		K1	LV	-51		CHP-V			AV 117	89	131
02	69437	30074		K1	LV	-51		CHP-V			AV 118	117	125
03	68714	08199		K1	LV	-51		CHP-V			AV 64	94	45
03	68714	29429		K1	LV	-51		CHP-V			AV 87	90	107
03	68716	08185		K1	LV	-51		CHP-V			AV 67	85	72
03	69489	28282		K1	LV	-51		CHP-V			AV 86	63	69
04	68714	08190		K1	LV	-51		CHP-V			AV 38	73	36
04	68714	08227		K1	LV	-51		CHP-V			AV 81	90	74
04	68714	08229		K1	LV	-51		CHP-V			AV 78	85	65
04	69144	25068		K1	LV	-51		CHP-V			AV 74	84	51

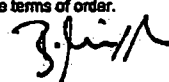
C70-C99 Chemical composition % - Heat analysis

B08 Heat	C70	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
68713	Y	0,183	0,353	1,17	0,009	0,0009	0,0057	0,036	0,015	0,015	0,030	0,058	0,002	0,000	0,001
68714	Y	0,182	0,378	1,18	0,008	0,0008	0,0067	0,037	0,016	0,005	0,024	0,025	0,002	0,000	0,000
68716	Y	0,173	0,397	1,20	0,008	0,0016	0,0061	0,031	0,022	0,011	0,045	0,042	0,005	0,000	0,002
69144	Y	0,202	0,372	1,18	0,011	0,0008	0,0043	0,043	0,020	0,007	0,026	0,050	0,001	0,003	0,000
69437	Y	0,180	0,365	1,16	0,009	0,0007	0,0045	0,034	0,022	0,012	0,039	0,051	0,000	0,000	0,002
69489	Y	0,183	0,391	1,18	0,010	0,0015	0,0064	0,051	0,023	0,009	0,033	0,206	0,002	0,001	0,000

A04  Trademark	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. QM-System: Certification as per ISO 9001	 B. MUELLER Test House Manager	 Inspector's stamp	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01 Date 01.07.05 KW 1
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**DILLINGER HÜTTE**

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)		A09 Advice of dispatch No./ Date of dispatch 185251-30.06.05	A08/ Manufacturer's order/ A03 Certificate No. 295796-002	Sheet 4/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 50305 A07.2 No. E10339-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade B03 Specifica- tions	SA516-70 ASME-2A:01+A02 DIL-HUB-3:31.10.03 SA20-S5			
C70-C99 Chemical composition % - Heat analysis				
B08 Heat	C70	Ti	S	
68713	Y	0,003	0,0000	
68714	Y	0,003	0,0000	
68716	Y	0,003	0,0002	
69144	Y	0,003	0,0000	
69437	Y	0,002	0,0001	
69489	Y	0,001	0,0002	
C94 Heat analysis Carbon equivalent / Alloying restrictions				
B08 Heat	FO-02=	0,40	FO-55=	0,12
68713	FO-02=	0,40	FO-55=	0,12
68714	FO-02=	0,39	FO-55=	0,07
68716	FO-02=	0,39	FO-55=	0,12
69144	FO-02=	0,41	FO-55=	0,10
69437	FO-02=	0,39	FO-55=	0,12
69489	FO-02=	0,43	FO-55=	0,27
C95 Ladle treatment				
ITEM NO.: 01-04 HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL				
A04	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. QM-System: Certification as per ISO 9001			A01
 Trademark	 B. MUELLER Test House Manager			 AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department
Inspector's stamp			Date 01.07.05	KW 1



DILLINGER-HÜTTE

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)		A09 Advice of dispatch No/ Date of dispatch 185251-30.06.05	A08/ Manufacturer's order/ A03 Certificate No. 295796-002	Sheet 5/...
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 50305 A07.2 No. E10339-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade SA516-70	SA20-S5			
B03 Specifications ASME-2A:01+A02 DIL-HUE-3:31.10.03				

C70-C99 Chemical composition % - Product analysis

B08 Heat	B07 Test No.	C01	C	SI	MN	P	S	N	AL	CU	MO	NI	CR	V	NB	SN
68713	16105	K1	0,183	0,354	1,16	0,009	0,0013	0,0049	0,035	0,012	0,015	0,030	0,059	0,000	0,000	0,00
68714	08191	K1	0,178	0,374	1,17	0,008	0,0010	0,0059	0,037	0,014	0,006	0,024	0,024	0,000	0,001	0,00
68716	08185	K1	0,170	0,391	1,18	0,008	0,0018	0,0063	0,031	0,021	0,009	0,043	0,041	0,004	0,000	0,000
68716	16098	K1	0,167	0,401	1,18	0,008	0,0017	0,0064	0,031	0,020	0,010	0,044	0,041	0,004	0,000	0,001
69144	25068	K1	0,193	0,362	1,16	0,010	0,0008	0,0043	0,044	0,024	0,009	0,026	0,050	0,001	0,006	0,001
69437	30074	K1	0,180	0,370	1,18	0,008	0,0006	0,0039	0,039	0,022	0,011	0,038	0,047	0,000	0,000	0,000
69489	28282	K1	0,178	0,392	1,17	0,009	0,0012	0,0062	0,057	0,024	0,009	0,035	0,196	0,002	0,000	0,000

B08 Heat	B07 Test No.	C01	TI	B
68713	16105	K1	0,003	0,0001
68714	08191	K1	0,002	0,0002
68716	08185	K1	0,003	0,0001
68716	16098	K1	0,003	0,0002
69144	25068	K1	0,002	0,0003
69437	30074	K1	0,002	0,0001
69489	28282	K1	0,001	0,0000

C94 Product analysis Carbon equivalent / Alloying restrictions

B08 Heat	B07 Test No.	C01	FO-02=	FO-55=
68713	16105	K1	0,39	0,12
68714	08191	K1	0,38	0,07
68716	08185	K1	0,38	0,11
68716	16098	K1	0,38	0,12
69144	25068	K1	0,40	0,11
69437	30074	K1	0,39	0,12

A04

Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



QM-System: Certification as per ISO 9001

B. MUELLER
Test House ManagerAG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillinger/Saar
Inspection department

A01

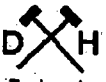
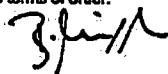
Inspector's stamp Date 01.07.05

KW 1



DILLINGER HÜTTE

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.biz/certificate)

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)		A09 Advice of dispatch No./ Date of dispatch 185251-30.06.05	A08/ Manufacturer's order/ A03 Certificate No. 295796-002	Sheet 6
A05 Established inspecting body DH	A06 Purchaser ARCELOR CANADA, BURLI Final receiver EDMONTON STEEL, EDMON	A07.1 No. 50305 A07.2 No. E10339-J1010-LG	B01 Product HOT ROLLED PLATES	
B02/ Steel grade SA516-70	SA20-S5			
B03 Specifications ASME-2A:01+A02 DIL-HUE-3:31.10.03				
C94 Product analysis Carbon equivalent / Alloying restrictions				
B08 Heat 69489	B07 Test No. 28282	C01 K1 FO-02= 0,42 FO-55= 0,26		
C94 Carbon equivalent formula / Alloying restrictions				
FO-02 = C + (MN/6) + (CR+MO+V) / 5 + (NI+CU) / 15 FO-55 = CU+MO+NI+CR FO-78 = CR+MO FO-91 = MN/C				
D01 Checking of marking, surface, shape and dimensions				
ITEM NO.: 01-04 RESULT OF MARKING, SURFACE, SHAPE AND DIMENSIONS: NO REMARKS SURFACE AS PER ASME-SA20 THICKNESS AS PER ASME-SA20 LENGTH AND WIDTH AS PER ASME-SA20 FLATNESS AS PER 1/2-ASME-SA20				
				
A04  Trademark	Z01/Z02 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. QM-System: Certification as per ISO 9001		 B. MUELLER Test House Manager  Inspector's stamp AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	
		Date 01.07.05	KW 1	A01

Material Control	Sign	Date
Material Received	Rm	DEC 12 2005
Heat # / MTR'S	Rm	DEC 12 2005
Chemical Analysis	Rn	DEC 12 2005
Quantity	Job#	1183-2

No. 40474802

客户单位: ORDER NO. 7607-V
 合同编号: 05WYWC-06
 合同条件: ASTM A516 Gr70/ASME A516 Gr70
 技术条件: (EDITION 2001+2003A)

1184-2

1190-2

1191-2

地址: 中国河南舞钢

ADDRESS: WUGANG HENAN CHINA

量 证 明 书

QUALITY CERTIFICATE

邮编: 462500 电话(Tel): 0375-8111264

ZIPCODE: 462500 传真(Fax): 0375-8111269



限责任公司
 STEEL CO. LTD.



QR /C07E05

证明书号: 05K2033
 CERTIFICATE NO.:
 许可证号:
 EXEQUATUR NO.:
 车号:
 TRAIN NO.:

钢 号 TEEL GRADE	炉 号 HEAT NO.	批 号 BATCH NO.	尺 寸 DIMENSIONS, INCHES	块数 PCS	重量 WEIGHT MTS	化 学 成 分 CHEMICAL COMPOSITIONS																机 械 性 能 MECHANICAL PROPERTIES			弯曲试验 BEND TEST b=2a 180°	冲 击 试 验 IMPACT TEST AkV		超声波试验 ULTRASONIC TEST	判定结果 JUDGE RESULT
						C	Si	Mn	P	S	Cr	Al	Mo	Ti	Cu	Nb	Ni	V	Ceq	Re (ksi)	Rm (ksi)	A 2°, %	° F	ft. lbf					
A516Gr.70/ SA516Gr.70	5205240N	CH521818	2.000*97.00*403.00	1	10.067	140	240	1060	11	5	50	30	10	1	150	1	230	3		63	73	36		-31.0	138 177 183	ASTM A435 PASS	合格 PASS		
A516Gr.70/ SA516Gr.70	5205240N	CH521817	2.000*97.00*409.00	1	10.207	140	240	1060	11	5	50	30	10	1	150	1	230	3		47	71	37		-31.0	201 169 142	ASTM A435 PASS	合格 PASS		
A516Gr.70/ SA516Gr.70	5205240N	CH521818	2.000*97.00*407.50	1	10.170	140	240	1060	11	5	50	30	10	1	150	1	230	3		51	72	35		-31.0	114 144 153	ASTM A435 PASS	合格 PASS		
A516Gr.70/ SA516Gr.70	5205240N	CH521822	2.000*97.00*401.50	1	10.020	140	240	1060	11	5	50	30	10	1	150	1	230	3		49	70	38		-31.0	119 146 139	ASTM A435 PASS	合格 PASS		
A516Gr.70/ SA516Gr.70	5205240N	CH521823	2.000*97.00*400.50	1	9.996	140	240	1060	11	5	50	30	10	1	150	1	230	3		49	70	37		-31.0	106 112 112	ASTM A435 PASS	合格 PASS		

第三联 商检、船检或顾客

合计 5 块 吨
 TOTAL: 5 PCS 50.449 MT

试样状态:
 CONDITION OF TEST PIECE:

供货状态: 正火
 CONDITION OF SUPPLY: NORMALIZED

备注: 1. PRIME QUALITY, NEWLY PRODUCED, HOT ROLLED KILLED STEEL P. V. Q. PLATES TO ASTM A516 Gr. 70/ASME A516 Gr. 70 (EDITION 2001+2003A)
 2. TOLERANCES TO A20, FLATNESS TOLERANCE AS PER 1/2 OF A20, NORMALISED, WITH CHARPY V-NOTCH TEST TO A20 CAT. IV. INVOICING ON NOMINAL THEORETICAL WEIGHT OF 7.85 KGS/LBS.
 3. ALL MATERIAL WAS TOTALLY VACUUM DEGASSED AND THAT ALL PLATES WERE ULTRASONICALLY INSPECTED ACCORDING TO ASTM A435.
 4. COLOR CODE: YELLOW/WHITE/YELLOW COLOR STRIPE CODE.
 5. INFORMATION ON STEEL PLATE NORMALISING CYCLE:
 1) SOAKING TEMPERATURE: 900°C ± 10°C. 2) SOAKING TIME: 1.5 MINUTES/INCH 3) COOLING MEANS: AIR COOLING
 6. QUALITY CERTIFICATE ISSUED AS PER EN10204/3.1B.



质量检验负责人: Xie Liangfa
 PERSON IN CHARGE OF QUALITY EXAMINATION:

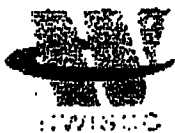
判定员: Yang Haiyu
 QUALITY CONTROL INSPECTOR:
 审核员: Zhang Wei
 QUALITY CONTROL CHECKER:

主: 1. 本质量证明书无产品质量证明专用章及判定员专用章无效。
 2. 证书复印件无效, 涂改处必须加盖判定员专用章。

NOTE: 1. This certificate will not be valid unless marked with special seal of quality certification and quality control inspector.
 2. The duplicated copy of the certificate shall be invalid. Corrected area must be marked with special seal of quality control inspector.



日期: 6 月 22 日 2005 年
 DATE: MONTH DAY YEAR



舞阳钢铁有限责任公司

WUYANG IRON AND STEEL CO., LTD

地址: 中国河南省舞钢市 Add: Wugang City, Henan Pro., P. R. China 462500

E-mail: wgieco66@vip.163.com

CERTIFICATION

WE HEREBY CERTIFY THAT THE NORMAL LEVEL FOR THE THREE
ELEMENTS TO YOUR ORDER 7607-V/7608-V AS FOLLOWS:

B: 0.0001-0.0002

SN: 0.008-0.009

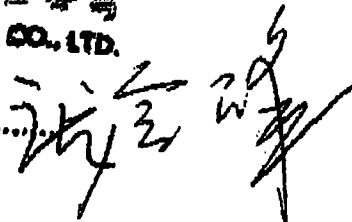
N: 50-70PPM.

WUYANG IRON AND STEEL CO., LTD.

OCTOBER 28, 2005

For and on behalf of
舞阳钢铁有限责任公司
WUYANG IRON AND STEEL CO., LTD.

Authorized Signature(s)


28/10-05/

Material Control	Sign	Date
Material Received	Rm	DEC 12 2005
Heat # / MTR'S	Rm	DEC 12 2005
Chemical Analysis	Rn	DEC 12 2005
Quantity	Job#	1183-2

量 证 明 书

QUALITY CERTIFICATE

地址: 中国河南舞钢 邮编: 462500 电话(Tel): 0375-8111264
 ADDRESS: WUGANG HENAN CHINA ZIPCODE: 462500 传真(Fax): 0375-8111269

证 明 书 号: 05K2033
 CERTIFICATE NO.:
 许 可 证 号:
 EXEQUATUR NO.:
 车 号:
 TRAIN NO.:



QR /C07E05



限 责 任 公 司
 STEEL CO. LTD.

舞 钢 铁 有 限 公 司
 WUGANG IRON AND STEEL CO. LTD.

1184-2
 1190-2
 1191-2

货 单 位: ORDER NO. 7607-V
 同 编 号: 05WYC-06
 INTRACT NO.:
 术 条 件: ASTM A516 Gr70/ASME A516 Gr70
 CHNICAL CONDITION: (EDITION 2001+2003A)

钢 号 STEEL GRADE	炉 号 HEAT NO.	批 号 BATCH NO.	尺 寸 DIMENSIONS, INCHES	块 数 PCS	重 量 WEIGHT HTS	化 学 成 份 CHEMICAL COMPOSITIONS 0.001%																机 械 性 能 MECHANICAL PROPERTIES			弯曲试验 BEND TEST b=2a 180°	冲 击 试 验 IMPACT TEST AKV		超声波试验 ULTRASONIC TEST	判定结果 JUDGE RESULT
						C	Si	Mn	P	S	Cr	Al	Mo	Ti	Cu	Nb	Ni	V	Coq	Re (ksi)	Rm (ksi)	A 2°, %	° F	ft. lbf					
516Gr.70/ A516Gr.70	5205240N	CH521818	2.000*97.00*403.00	1	10.057	140	240	1060	11	5	50	30	10	1	150	1	230	3		53	73	36		-31.0	138 177 183	ASTM A435 PASS	合格 PASS		
516Gr.70/ A516Gr.70	5205240N	CH521817	2.000*97.00*408.00	1	10.207	140	240	1060	11	5	50	30	10	1	150	1	230	3		47	71	37		-31.0	201 169 142	ASTM A435 PASS	合格 PASS		
516Gr.70/ A516Gr.70	5205240N	CH521818	2.000*97.00*407.50	1	10.170	140	240	1060	11	5	50	30	10	1	150	1	230	3		51	72	36		-31.0	114 144 153	ASTM A435 PASS	合格 PASS		
516Gr.70/ A516Gr.70	5205240N	CH521822	2.000*97.00*401.50	1	10.020	140	240	1060	11	5	50	30	10	1	150	1	230	3		49	70	38		-31.0	119 146 139	ASTM A435 PASS	合格 PASS		
516Gr.70/ A516Gr.70	5205240N	CH521823	2.000*97.00*400.50	1	9.995	140	240	1060	11	5	50	30	10	1	150	1	230	3		49	70	37		-31.0	106 112 112	ASTM A435 PASS	合格 PASS		

合 计 TOTAL: 5	块 PCS 50.448	吨 MT	试 样 状 态: CONDITION OF TEST PIECE:	供 应 状 态: CONDITION OF SUPPLY:	正火 NORMALIZED
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注 意: 1. PRIME QUALITY, NEWLY PRODUCED, HOT ROLLED KILLED STEEL P. V. Q. PLATES TO ASTM A516 Gr. 70/ASME A516 Gr. 70 (EDITION 2001+2003A)
 2. TOLERANCES TO A20, FLATNESS TOLERANCE AS PER 1/2 OF A20, NORMALISED WITH CHARPY V-NOTCH TEST TO A20 CAT. IV. INVOICING ON NOMINAL THEORETICAL WEIGHT OF 7.85 KGS/DM3.
 3. ALL MATERIAL WAS TOTALLY VACUUM DEGASSED AND THAT ALL PLATES WERE ULTRASONICALLY INSPECTED ACCORDING TO ASTM A435.
 4. COLOR CODE: YELLOW/WHITE/YELLOW COLOR STRIPE CODE.
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 6. QUALITY CERTIFICATE ISSUED AS PER EN10204/3. 1B.



量 检 验 负 责 人: Xia Liangfa
 PERSON-IN-CHARGE OF QUALITY EXAMINATION:

判 定 员: Wang Haiyu
 QUALITY CONTROL INSPECTOR:
 审 核 员: Zhong Wei
 QUALITY CONTROL CHECKER:

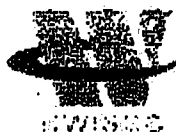
日期: 6 月 22 日 2005 年
 DATE: MONTH DAY YEAR

1. 本质量证明书无产品质量证明专用章及判定员专用章无效。
 2. 证书复印件无效, 涂改处必须加盖判定员专用章。

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第三联 商检、船检或顾客



舞阳钢铁有限责任公司

WUYANG IRON AND STEEL CO., LTD

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CERTIFICATION

WE HEREBY CERTIFY THAT THE NORMAL LEVEL FOR THE THREE
ELEMENTS TO YOUR ORDER 7607-V/7608-V AS FOLLOWS:

B: 0.0001-0.0002

SN: 0.008-0.009

N: 50-70PPM.

WUYANG IRON AND STEEL CO., LTD.

For and on behalf of OCTOBER 28, 2005

舞阳钢铁有限责任公司
WUYANG IRON AND STEEL CO., LTD.

Authorized Signature(s)

[Handwritten signature]
28/10-05

Drawing No.: FUEL GAS-8 Rev. 2 Rev. No.: 2 AI Review & Initial: _____
AI Date : _____ CRN#: 0H5535.231 Serial No.: 05119003
(A)Number: _____ Vessel Title: FUEL GAS-8

OPERATION	QC PERSONNEL	DATE	AUTHORIZED INSPECTOR	Date
*Hold Point - Authorized Inspector to Designate Prior to construction				
1) Material checked against drawing	<i>[Signature]</i>	Feb 20/06		
2) Mill test checked	<i>[Signature]</i>	Feb 21/06		
3) Heat No's recorded	<i>[Signature]</i>	Feb 21/06		
4) Shell & head thickness recorded	<i>[Signature]</i>	Feb 21/06		
5) Vessel layout checked	<i>[Signature]</i>	Feb 21/06		
6) Shell head diameter checked	<i>[Signature]</i>	Feb 21/06		
7) Shell & head fit up checked	<i>[Signature]</i>	Feb 22/06		
8) Nozzle & fitting fit up checked	<i>[Signature]</i>	Feb 22/06		
9) Impact test acceptable	N/R			
10) Internals completed	<i>[Signature]</i>	Feb 22/06		
11) Internal inspection	<i>[Signature]</i>	Feb 22/06		
12) Welders I.D.	<i>[Signature]</i>	Feb 23/06		
13) Weld sizes	<i>[Signature]</i>	Feb 22/06		
14) Radiograph	10% requested	March 9/06		
15) Other N.D.E.	10% M.P. requested	March 9/06		
16) Nozzle orientation	<i>[Signature]</i>	Feb 22/06		
17) Flange & fitting rating	<i>[Signature]</i>	Feb 22/06		
18) External after welding complete	<i>[Signature]</i>	March 1/06		
*MANDATORY HOLD POINT * - FOR HEAT TREATED VESSELS DO NOT PROCEED UNTIL EXTERNAL IS SIGNED OFF BY A.I.				
19) Heat treatment chart checked	N/R			
20) Hydrostatic test completed	<i>[Signature]</i>	March 10/06		
21) Name plate attached	<i>[Signature]</i>	March 10/06		
22) Affidavits / data reports	<i>[Signature]</i>	March 10/06		
23) Sandblasting complete				
24) Painting complete				

MATERIAL USED IN VESSEL

Item	Material Spec.	Heat No.'s Plate & Heads	Thickness	Schedule
Shell # 1	SA106 B	64037	3/8"	STD
Shell # 2				
Head # 1	SA234 WPB	04M3000 9	3/8"	STD
Head # 2	A105N	E1516	1 3/4"	

Piping Inspection Requirements

CUSTOMER: Waterflood
CONTACT: Dave Heier
L.S.D: Stock
AFE / PO#: TBA
WSS JOB#: 1190

PH#: 306-634-7212
FAX#: 306-634-7887
DATE REQUIRED: Mar. 7/06

WSS ENG: Carmon Lindquist

HOLD POINTS TO BE MARKED WITH *

Piping	Vessels	SECTIONS	QI	LEGIBLE INITIAL Personnel	Hold Point
	4.0	SECTION IV - Manual Control			
	4.4	Control Copy of QC manual available for all personnel - Manual is current		cl	
	5.0	SECTION V - Drawing & Design Calculations			
		All piping systems over 0.5 cubic meters (18 cubic feet) must be registered Boilers Branch		cl	
18.3.H					
18.7.C	5.2.2	Design Calculations are done signed and dated		cl	
	5.2.3	The Following are listed on drawings - Title, Drawing# & Rev.#, Date, Job#, Dimensions - Bill of material with material specifications ASME II - Design Pressure & Min/Max metal design temperatures - Code edition, year and addenda - X-ray requirements - heat treatment requirements - Welding procedure specifications for each weld - Weld Detail			
18.3.C					
18.7.d.ii					
18.7.d.ii					
18.3.e					
18.7.d.v					
18.3.d					
18.7.d.iv					
		- Hydro Test Pressure & medium, CRN# - Impact test requirements, Coating requirements - Name plate location, Design Code, Substance retaining - Aggregate volume of piping			
18.10.a	5.4	- stamped issued for construction Signed and dated		cl	
		A Registered Professional Engineer shall stamp all design drawings for pressure piping systems exceeding 0.5 cubic meters in aggregate capacity.		N/A	
18.8					
	5.3	All documents are accompanied by exhibit #2		cl	
18.10.d	5.6	Latest code book are available		cl	
		To ensure the owner's approval is obtained for any revisions and submitting the final "as built" drawing to the owner along with all pertinent records		cl	
18.10.H					
		To ensure a drawing index is maintained listing the drawing title, number and revision, copies issued and the name of the person to whom they were issued		cl	
18.10.e					
	6.0	SECTION VI - Material Control			
18.11.a	6.2	following - PO#/Req#/Material ordering-handling report # - ASME Sec II requirements. I.e. SA105N, SA106B - Request for mill test reports - Statement that all fittings are designs must be registered with Sask. boilers branch. - any other code requirements		R	
18.11.b	6.3	in job file		R	
	6.5	All material received will be check against PO/Req./MOHR for: - All material will be check before received. all material not received will be ejected and returned to supplied. - All material once received that is unacceptable will be tagged with hold tag (Exhibit #18) and shall be considered a nonconformity.		R	
	6.5.3	Recording of all material specification number, grade thickness etc. on a Exhibit#4		R	
	6.6.1			R	
	6.6.3	All plate conforms to ASME Sec II Requirements by signing and dating mill test report		R	
18.	6.6.6	All material marked with stamps are low impact stamps All material is marked on both pieces before cut.		cl	

Piping Inspection Requirements - Exhibit ISO-11.2

7.0 SECTION VII - Examination Program			
18.20.a	7.2.1	A job file is created with all items listed in 15.2 Hold points established. Exhibit 20 for piping All examination list on travel sheet will be signed and dated when each task is complete.	Rm
18.20.b/c	7.2.2	All applicable material is identified with specifications and/or heat numbers and that these heat numbers are transferred and remain traceable throughout construction	Rm
18.20.d	7.2.4	The material contains no visible scars or defects and is as specified on the drawings.	CE
	7.3.1	Alignment tolerances are maintained during construction.	CE
	7.3.4	Spool length and orientation spools prepped for coating	CE
	7.3.5	Weld details are correct.	CE
	7.3.8	Heat-treatment charts comply with instructions.	N/A
	7.3.9	The correct hydrostatic test pressure is applied.	CE
18.20.f		Examine each system after completion and prior to test against design specifications and drawings using the Pressure Piping Examination Guide (Exhibit #21)	Rm
	7.4	Name plates are filled out proper & installed. Exhibit 6C	CE
18.19.c		Forward the Completion of Construction Declaration Form (AB-81, exhibit #15) to Boiler Branch prior to operation of the piping system	Rm
18.19.d		Forward the Construction Data Report for piping systems (Exhibit #16, AB-83) to the owner with any additional records required by the contract.	Rm
9.0 SECTION IX - Welding			
9.2.1.		Prior to construct a review of weld procedures	CE
		Assigning welding tasks based on the qualifications and performance variables on the Welders Qualification /Continuity Log (Exhibit #10) and providing that qualifications in the process remain valid in accordance with the Welders Qualification/Continuity	CE
9.4.1		Verifying that welders have valid performance qualification cards	CE
9.4.3		Maintaining a Welders Log (Exhibit #10)	CE
9.4.4		Ensuring that welding procedure are followed & copies of the procedure are available.	CE
9.4.5		Visually examining all completed welds.	CE
9.4.6		Verifying that all welds are identified with the welder's symbol	CE
9.4.7		Ensuring that all tack welds are completely removed and that tack welds left in place are done by qualified pressure welders.	CE
9.5.1		Verifying that purchase orders for welding consumables specify SFA specification and AWS classification.	Rm
9.5.2		SFA	Rm
9.5.3		Ensuring that low hydrogen electrodes are kept in heated storage at manufacturer recommendations but not less than 150 Deg. F. and not more than 250 Deg. F. after the container seal is broken.	CE
9.5.4		Ensuring that welders are issued with sufficient electrodes for a time period no longer than specified by the manufacturer for code work. Electrodes that are removed from the oven for longer than this period will be discarded.	CE

ing Inspection Requirements - Exhibit ISO-11.2

10.0 SECTION X - Nonconformities

- 10.2 All nonconformities will be tag with hold tags & report will be filled out.
10.7 report will be file in job book and nonconformity report file.

Rm
Rm

11.0 SECTION XI - Non-destructive Examinations

- 11.2.1 Reviewing the subcontractor's qualifications, certifications, written practices and procedures.
11.2.2 Certifying Statement and Appointment Letter (Exhibit #19) to be kept on file, the NDE subcontractors CGSB SNT-TC-1A level III examiner to act as the level III examiner
11.2.5 Ensuring that all examination/interpretation is done under the supervision of a Level II Examiner or higher.
11.2.7 Ensuring that MT and PT examiners are certified by letter and that their eye examination records are up to date.
11.2.9 Notifying the examiners of NDE requirements.
11.2.10 Identifying the welds to be examined.
11.2.11 Maintaining traceability of NDE reports to their locations on the vessel by stamping the weld number on the vessel or by recording on a weld map or as-built drawing.
11.2.12 Reviewing all NDE reports and radiographic film.
11.2.13 Filing all NDE reports when the job is completed.

cc

cc

cc

cc

cc

cc

cc

cc

cc

12.0 SECTION XII - Heat treatment

- 12.2 Review and accept contractor facilities and wittern procedure
After heat treatment vessel and time chart are reviewed and filed in
12.6 job book

N/A

N/A

13.0 SECTION XIII - Measurement and Testing Equipment

- 13.2.1 All gauges and recorders are identified with S/N calibration date and records are kept on file
13.2.2/3 Calibration after 12 months or First usage date is write on calibration record and calibration is 12 months for that date.
13.2.6 Gauge to be 1.5 to 4 time hydro test pressure.

cc

cc

cc

14.0 SECTION XIV - Pressure tests

- 14.2.1 To be done with maximum regard to safety and unauthorized personal will stay clear.
14.2.2 A.I to witness hydro unless waved.
14.2.3 Air to be vented for vessel.
14.2.4 Water temp to 30°F above MDMT.
14.2.6 One Gauge and One Pen recorder to be used.
Leak test & hydro test charts are to be completely filled out signed and dated.

cc

cc

cc

cc

cc

cc

15.0 SECTION XV - Record Retention

- 18.24.a/b 15.2.1 Drawings and design calculations.
18.24.c 15.2.2 Material Reports.
18.24.d 15.2.3 Mill Test Reports.
15.2.4 Travel Sheet.
15.2.5 Manufacturer's Specification Sheet.
18.24.h 15.2.6 Heat Treatment Instruction Sheet and Charts.
18.24.e/g 15.2.7 Non-destructive Examination Reports.
18.24.f 15.2.8 Physical Test Reports.
18.24.i 15.2.9 Nonconformity Reports.
15.2.10 Manufacturer's Data Reports with partial Data Reports attached.
15.2.11 A nameplate stamping facsimile.
18.24.j 15.2.12 Welder Qualification (Exhibit #10)
15.2.13 Calibration Chart (Exhibit #17)
18.24.o As built drawings
18.24.k Weld procedures
18.24.l Pressure test procedure and report
18.24.m Material list spools, PO
18.24.n NDE Examiners certificates

Rm

Revision 0
July 27/04

Leak Test Certificate

Section XVII
Page 17.29

Date: March 10/06

Customer Name: Stock

Customer Location: _____

Job Number: 05119003

Item Description: 8" Fuel gas vessel

Time: Start 7:45 am Stop 8:15 am

Recorder Serial Number: 2370

Gauge Serial Number: WF-09 Expirary Date: 08/06 Pressure: 0-1000

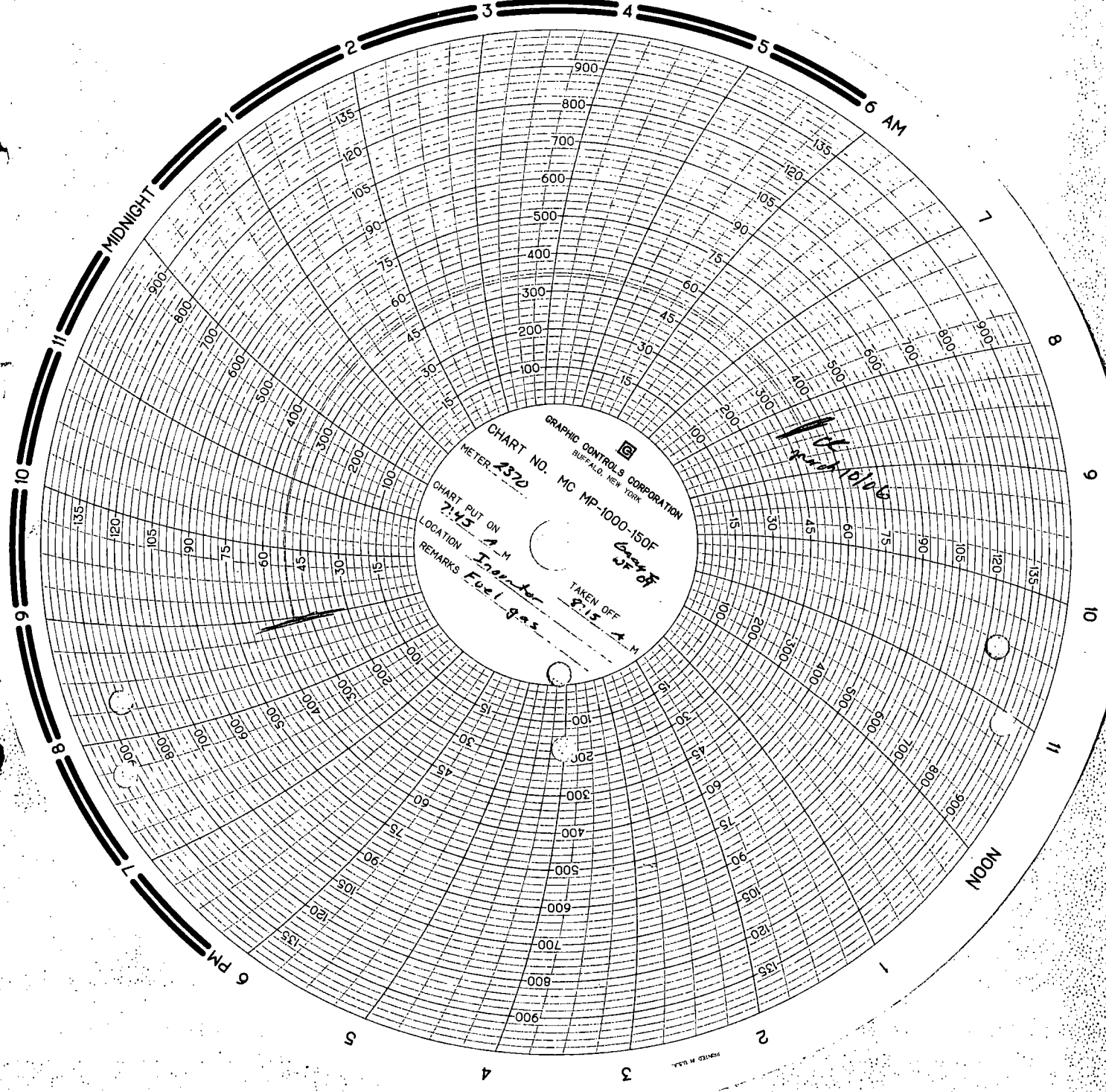
Hydro Test Pressure: 338 psi

WSS Representative: Chad Knott

Authorized Inspector: _____

Results: Pass ✓
Fail _____

Reasons if fail:



GAUGE CALIBRATION SHEET

S&M SUPPLY

Box 28, 314 Kensington Ave.
 Estevan, SK S4A 2A2
 306-634-6494 (phone)
 306-634-2599 (fax)

Description of Gauge CPW gauge 0-1000 Psi.SN # or Gauge # 802-1000 W/F-09

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2006)

Master Gauge Used Perma Cal 0-1000 Test gauge # 1001Date Calibration Performed Oct 31/06Name of Technician [Signature] Comment Gauge Calibrated GoodSignature of Technician [Signature] Comment

Master Gauge Reading	As Found Reading	As Left Reading
0	+0	0
100	120	100
200	220	200
300	320	300
400	420	400
500	520	500
600	620	600
700	720	700
800	820	800
900	920	900

GAUGE CALIBRATION SHEET

S&M SUPPLY

Box 28, 314 Kensington Ave.
Estevan, SK S4A 2A2
306-634-6494 (phone)
306-634-2599 (fax)

Description of Gauge Clif Mock Pressure Recorder 0-1000 PSI

SN # or Gauge # S/N 2370

Master Dead Weight (Ametek Model T50 SN # 91604)

Calibrated to National Standard (HCS-2)

Calibration Exp Date (NOV 30, 2006)

Master Gauge Used ID 1001 0-1000 PSI

Date Calibration Performed October 3/06

Name of Technician Travis Klatt

Comment

Signature of Technician Travis Klatt

Comment

Master Gauge Reading	As Found Reading	As Left Reading
100 PSI	101 PSI	100 PSI
200 PSI	202 PSI	200 PSI
300 PSI	302 PSI	300 PSI
400 PSI	402 PSI	400 PSI
500 PSI	502 PSI	500 PSI
550 PSI	552 PSI	550 PSI
600 PSI	602 PSI	600 PSI
700 PSI	702 PSI	699 PSI
800 PSI	802 PSI	799 PSI
900 PSI	902 PSI	899 PSI



CONTRACT INSPECTION LTD
HEAD OFFICE:
300 Hwy 18 WEST
BOX 66 ESTEVAN, SK S4A 2A2
PH: 306-634-3476 FAX: 634-8418

REGINA OFFICE:
510 Quebec St
Regina, SK S4R 1K9
PH: 306-751-0454 FAX: 751-0454

Job Report # E 0575
of Pages

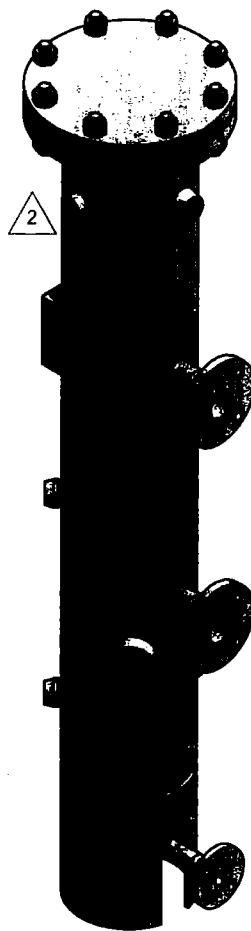
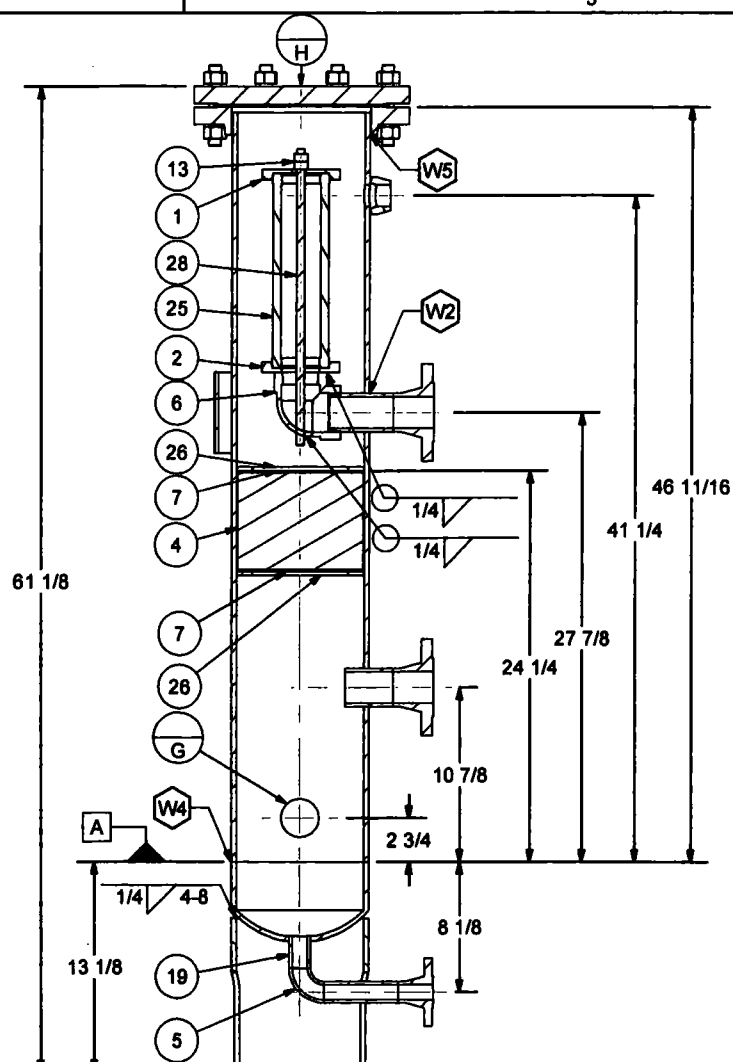
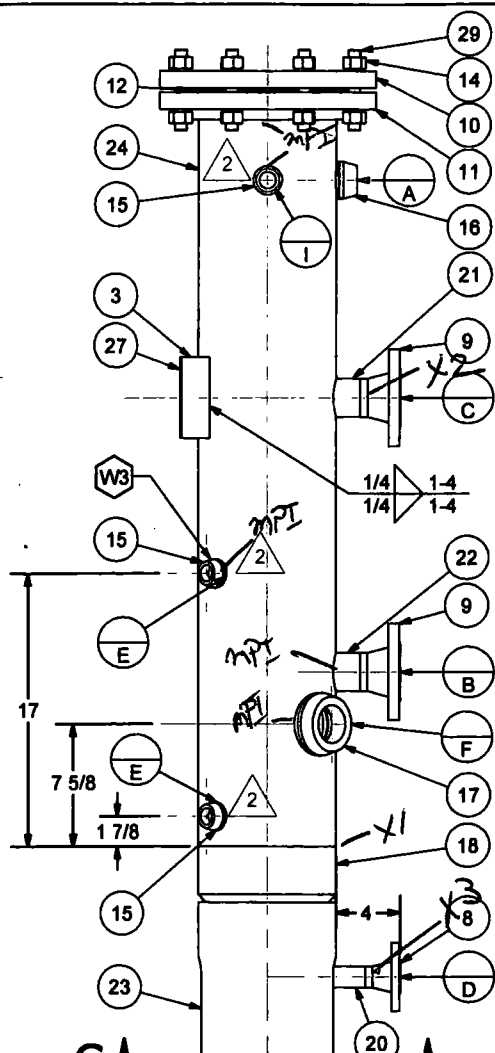
Date: 03/08/06
Client: WaterFlood.
Location: _____
PO/AFE: 32522
JOB#: 1190

Prime Contractor: LitterFlood.
Items Inspected: 8" Vessel 05119003
1 Slip on Flange 2-1" Socket welds
Consumables: 1-2" Tol
Penetrant ☐ Developer ☐ Contrast ☒ Bath ☒ Cleaner ☐

Travel Time: _____
Site Time: _____
Total Hours: _____
Kilometres: _____
Per Diem: _____

Technician: Shawn Davies CGSB Level II Reg.# 9777 Technician: _____

Magnetic Particle Inspection	Liquid Penetrant Inspection	Ultrasonic Inspection
Specifications: ASME Section V, Sub A, Art. 7 Procedures & Techniques, ASME Sec. VIII, Div 1, App. 6 Evaluation-Acceptance Criteria, CSA W59-2003 Structural Steel Welding, CSA Z662-Pipeline, API 650 Tank Steel and Welding, ASTM E1444-Procedures & Techniques. Equipment: Portable AC or DC Yoke, High Intensity White & Black Lighting Technique Used: Continuous AC Ultraviolet ☐ Black & White ☒ Powder ☐ Results: <u>All welds inspected</u> <u>acceptable at time of</u> <u>inspection with above</u> <u>det'd specs.</u> For additional information see attached, if applicable.	Specifications: ASME Sec. V, Sub. A, Art. 6 Procedures & Techniques, ASME VIII Div I; App.8-Evaluation-Acceptable Criteria, CSA W59-2003 Structural Steel Welding, CSA Z662-Pipeline, API 650-Tanks, ASTM E1417 Procedures & Techniques. Equipment: Aerosols- cleaners, penetrant and powder developer (in medium) Technique Used: Solvent removable – visible red dye method, florescent Results: _____ _____ _____ _____ _____ For additional information see attached, if applicable.	Specifications: ASME Sec. V, Sub. A, Art. 4/5-Procedures & Techniques, ASME Sec. VIII, App. 12-Evaluation-Acceptance Criteria, CSA W59-2003 Structural Steel Welding, CSA Z662- Pipeline, ASTM E797 Procedures. & Techniques. Equipment: Portable Digital Thickness gauge, 5MHz – 0 degrees split transducer Technique Used: Straight Beam (longitudinal Wave), Contact, A-Scan Results: _____ _____ _____ _____ _____ For additional information see attached, if applicable.



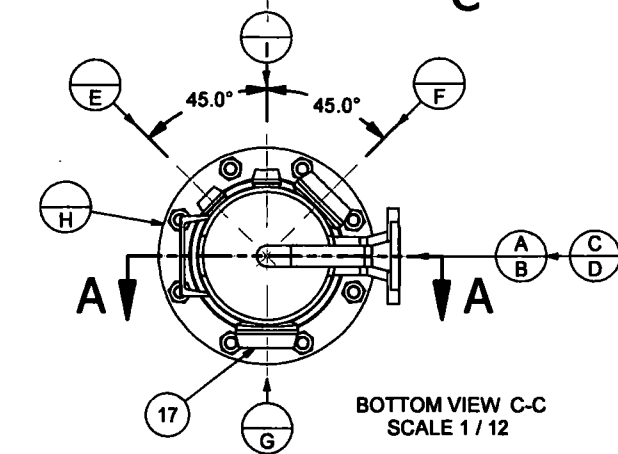
BILL OF MATERIAL						
ITEM	QTY	PART NUMBER	REV#	DESCRIPTION	MATERIAL	ID
1	1	100TIS001	0	FILTER CAP	1018 CD	M
2	1	100TIS002	0	FILTER BASE	1018 CD	M
3	5.000 in	C5.000@6.7	0	5"@6.7# CHANNEL	44W	R
4	1	DIVMESH8	0	8" OD X 6" THICK DIVMESH PAD	OPW4310-316SS	P
5	1	EBBABABACAB		1" 90 DEG LR SCH 80/XH WN ELBOW	SA234WPB	P
6	1	EBCACABAKBC		2" 90 DEG LR 3000# NPT ELBOW	SA105N	P
7	2	EM.750	0	3/4" X 9F EXPANDED MESH	44W	R
8	1	FLBABAACC		1"-150# ANSI RF WN SCH 80/XH FLANGE	SA105N	P
9	2	FLCABAACC		2"-150# ANSI RF WN SCH 80/XH FLANGE	SA105N	P
10	1	FLIABACAC		8"-150# ANSI RF BLIND FLANGE	SA105N	P
11	1	FLIABACAC		8"-150# ANSI RF SO FLANGE	SA105N	P
12	1	GTIABJA		8"-150# 304SS GRAPHITE - SPIRAL WOUND GASKET	Stainless Steel	P
13	2	NT122H		1/2" NC HEX NUT	2H	P
14	16	NT342H		3/4" NC HEX NUT	2H	P
15	3	OTAMKBAAAC		3/4"-3000# THD REG OLET ON 1" TO 36" RUN	SA105N	P
16	1	OTBAKBAAAC		1"-3000# THD REG OLET ON 1 1/4" TO 36" RUN	SA105N	P
17	2	OTCAKBAAAC		2"-3000# THD REG OLET ON 2 1/2" TO 36" RUN	SA105N	P
18	1	PCIABB		8" SCH 40/STD WN PIPE CAP	SA234WPB	P
19	2.000 in	PIBACA		1" SCH 80/XH SMLS PIPE	SA106B	R
20	4.625 in	PIBACA		1" SCH 80/XH SMLS PIPE	SA106B	R
21	4.000 in	PICACA		2" SCH 80/XH SMLS PIPE	SA106B	R
22	3.000 in	PICACA		2" SCH 80/XH SMLS PIPE	SA106B	R
23	9.625 in	PIIABA		8" SCH 40/STD SMLS PIPE	SA106B	R
24	46.375 in	PIIABA		8" SCH 40/STD SMLS PIPE	SA106B	R
25	1	RFG12		PECO 1 MICRON FILTER, 3" DIA X 12" LONG	FILTER	P
26	2	RGHPAGAAEQ	0	7 15/16" X 8" X 1/4" RING	44W	P
27	1	S/N TAG	0	SERIAL NUMBER TAG	Stainless Steel	P
28	1	SD12X18B7		1/2" NC X 18" STUD	B7	P
29	8	SD34X434B7		3/4" NC X 4 3/4" STUD	B7	P

- DESIGN NOTES:**
1. TYPICAL BUTT WELDS PER UW-12 TYPE 1
 2. DESIGN TEMPERATURE 200F, (93C)
 3. FABRICATE TO A.S.M.E. CODE FOR PRESSURE VESSELS, SECTION 8, DIVISION 1, 2004 EDITION AND 2005 ADDENDUM
 4. SHELL AND HEAD MATERIAL AS LISTED IN BOM
 5. HYDROSTATIC TEST PRESSURE 338 PSIG.
 6. MAWP (DESIGN PRESSURE) SHALL BE 260 PSIG.
 7. 0% X-RAY REQUIRED AS PER UW-12(C,D)
 8. POST WELD HEAT TREATMENT AS PER CUSTOMER REQUEST
 9. REGISTERED WELD PROCEDURE REG. NO. : WP542.3
 10. MIN. DESIGN METAL TEMPERATURE -20 DEGREES F. @ 260 PSIG.
 11. CORROSION ALLOWANCE FOR VESSEL IS 1/16"
 12. CRN # OH05535.231
 13. TYPE OF SUBSTANCE IS NATURAL GAS / CONDENSATES
 14. VESSEL IS TO BE INSTALLED VERTICALLY
 15. IMPACT TESTING NOT REQUIRED AS PER UG-20
 16. 1/8" RADIUS ON ALL INTERNAL OPENINGS
 17. ALL FITTINGS SHALL BE LOCATED AT THE SAME ELEVATION AROUND THE SHELL UNLESS OTHERWISE DIMENSIONED
 18. FITTINGS LOCATED AT ANY POINT AROUND PERIMETER OF SHELL (AT ELEVATION HEIGHT) WITH OPPOSING FITTINGS ROTATING EQUALLY
 19. ALL DIMENSIONS IN INCHES UNLESS OTHERWISE STATED

- CUSTOMER REQUESTED:**
1. 10% X-RAY
 2. 10% M.P.
 3. UT TESTING ON ALL ROLLED PLATE HEADS
 4. WELD MAP - DO NOT STAMP WELDS

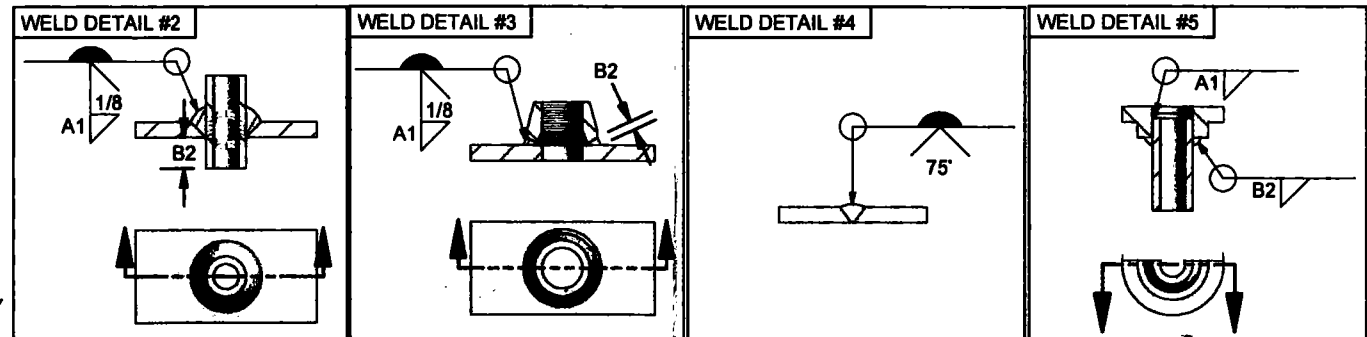
ISSUED FOR CONSTRUCTION

PER *[Signature]* 02/03/06



NOZZLE SCHEDULE				
ITEM	QTY.	A1	B2	C3
A	1	0.375	0.340	-
B	1	0.375	1.000	-
C	1	0.375	2.600	-
	1	0.375	0.000	-
	2	0.250	0.300	-
F	1	0.375	0.340	-
G	1	0.375	0.340	-
H	1	0.322	0.375	-
I	1	0.250	0.300	-

NOTES:			
S/N 05119003 E9-10934			
MATERIAL:		WEIGHT 278.3 lbmass	
NO.	REVISION DESCRIPTION	BY:	DATE:
1	NOZZLE SIZE CHANGED	RF	03/30/05
2	NEW FORMAT & NOZZLE SIZE CHANGED	JC	11/23/05



WATERFLOOD SERVICE & SALES LTD.

BOX 1490
ESTEVAN, SASKATCHEWAN S4A 2L7
Phone (306) 634-7212 - Fax (306) 634-7887
PUMPS, ENGINES, AND COMPRESSOR SERVICES

Inovator

SCHINDLE & BAZIN
OILFIELD CONSTRUCTION

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TITLE:	
INOVATOR FUEL GAS VESSEL	
DGN: B. BLACKBURN	DATE: 11/18/2005
DWN: JADE CABLE	DATE: 11/18/2005
CHKD: CARMON LINDQUIST	DATE: 11/23/2005
APP: JADE CABLE	DATE: 11/23/2005
REV: 2	PAGE: 1 OF 1
PART NO:	Fuel Gas-8-Rev2

CERTIFIED MILL TEST REPORT



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LOG NO. 221318 PAGE 5

BONNEY FORGE
P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17088-0330
(814) 542-2545 • (800) 345-7346 • FAX (814) 542-4906
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 08/02/09

CUSTOMER'S Order No.: 4641185-00

Bonney Order No 016516

SHIPPED TO: CCTF CORPORATION

315682

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION	CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS
SA/A105N				
018	50	56161	7550007 4-31/2X2 3M A105N THRD T	
			C .190 MN .970 P .033 S .020 SI .250	
			NI .060 CU .180 CR .080 MO .012 V .024	
			AL .001 NB .001	
			CE(LONG FORMULA) = 0.39	
			T/S 79500 Y/S 54000 EL 31.65 RA 66.55	
			BRINELL HARDNESS1: 144 HARDNESS2: 159	
019	50	56091	7551894 6 X 2 3M A105N THRD T	
			C .180 MN .790 P .015 S .027 SI .240	
			NI .130 CU .290 CR .170 MO .030 V .002	
			AL .002 NB .000	
			CE(LONG FORMULA) = 0.38	
			T/S 78000 Y/S 54250 EL 30.95 RA 63.20	
			BRINELL HARDNESS1: 144 HARDNESS2: 144	
020	25	55981	7551908 10 -8 X 2 3000 A105N THRD T	
			C .200 MN 1.050 P .010 S .026 SI .250	
			NI .030 CU .120 CR .050 MO .008 V .023	
			AL .001 NB .001	
			CE(LONG FORMULA) = 0.40	
			T/S 77000 Y/S 49300 EL 35.00 RA 64.00	
			BRINELL HARDNESS1: 147 HARDNESS2: 153	
021	25	55646	7551924 36 -20 X 2 3000 A105N THRD T	
			C .200 MN .990 P .006 S .023 SI .260	
			NI .060 CU .170 CR .060 MO .015 V .023	
			CB .002	
			CE(LONG FORMULA) = 0.40	
			T/S 78750 Y/S 51875 EL 33.15 RA 63.50	
			BRINELL HARDNESS1: 153 HARDNESS2: 156	

***** 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.

by

Chris Childers

CMTR: REV 1

Material Control	Sign	Date
Material Received		
Heat # / MTR'S		
Chemical Analysis		
Quantity	1	
Job#	1190-3	

QUALITY PROCESS MANAGER

FEB 08 2006

FEB 08 2006

FEB 08 2006

HEAT: 55981 SKU: 7551908 DESC: 2X8T010 3000 TOL A105N

CERTIFIED MILL TEST REPORT



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LOG NO. 224844 PAGE 2

BONNEY FORGE
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(814) 542-2546 • (800) 345-7546 • FAX (814) 542-4908
www.bonneyforge.com

CUSTOMER: CCTF CORPORATION

Date 12/15/05

CUSTOMER'S Order No.: 4641434-00

Bonney Order No 024293

SHIPPED TO: CCTF CORPORATION

334219

5407 - 53 AVENUE

EDMONTON ALBERTA, T6B 3G2 CANA

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, TOLERANCES
BA/A105N			
010	25	56204 7551645	21/2X1 3M A105N THRD T C .190 MN 1.010 P .012 S .024 SI .230 NI .020 CU .100 CO .002 CR .040 MO .008 V .025 AL .001 NB .000 CE(LONG FORMULA) = 0.38 T/S 78125 Y/S 53500 EL 31.90 RA 65.85 BRINELL HARDNESS1: 144 HARDNESS2: 144
011	50	56578 7551657	31/2-3 X 1 3000 A105N THRD T C .190 MN 1.010 P .009 S .022 SI .210 NI .030 CU .090 CO .003 CR .060 MO .010 V .000 AL .029 NB .010 CE(LONG FORMULA) = 0.38 T/S 75500 Y/S 54125 EL 33.25 RA 68.15 BRINELL HARDNESS1: 135 HARDNESS2: 137
012	50	56578 7551673	10-6X1 3M A105N THRD T C .190 MN 1.010 P .009 S .022 SI .210 NI .030 CU .090 CO .003 CR .060 MO .010 V .000 AL .029 NB .010 CE(LONG FORMULA) = 0.38 T/S 75500 Y/S 54125 EL 33.25 RA 68.15 BRINELL HARDNESS1: 135 HARDNESS2: 137
013	25	56182 7551720	21/2X1 1/4 3M A105N THRD T C .190 MN 1.050 P .007 S .024 SI .240 NI .020 CU .060 CO .002 CR .040 MO .008 V .024 AL .001 NB .000 CE(LONG FORMULA) = 0.38 T/S 75128 Y/S 48597 EL 32.30 RA 67.50 BRINELL HARDNESS1: 139 HARDNESS2: 139

***** 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.

CMTR: REV 1

Material Control	Signature	Date
Material Received	<i>[Signature]</i>	FEB 08 2006
Heat # / MTR'S	<i>[Signature]</i>	FEB 08 2006
Chemical Analysis	<i>[Signature]</i>	FEB 08 2006
Quantity	1	Job# 7790-3

QUALITY PROCESS MANAGER

HEAT: 56578 SKU: 7551673 DESC: 1X6T010 3000 TOL A105N

CERTIFIED MILL TEST REPORT



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LOG NO. 221823 PAGE 7

BONNEY FORGE
 P.O. BOX 330 • U.S. RTE 522 SOUTH • MOUNT UNION, PA 17066-
 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
 www.bonneyforge.com

CUSTOMER: WESTLUND INDUSTRIAL SUPPLY

Date 08/24/05

CUSTOMER'S Order No.: 9103826-00

Bonney Order No. 017934

SHIPPED TO: WESTLUND INDUSTRIAL SUPPLY
 5105 75TH STREET

319299

EDMONTON ALBERTA
 EDMONTON ALBERTA, T6E5S5 CANAD

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
------	----------	---------	----------------------------	--

SA/A105N

130	250	56438	7551568	5 -3 X 3/4 3000 A105N THRD T		
				C .190 MN .990 P .008 S .025 SI .250		
				NI .040 CU .190 CO .003 CR .070 MO .011		
				V .023 AL .001 NB .001		
				CE(LONG FORMULA) = 0.39		
				T/S 76875 Y/S 52250 EL 32.65 RA 65.60		
				BRINELL HARDNESS1: 147 HARDNESS2: 144		

131	75	56384	7551576	12 -6 X 3/4 3000 A105N THRD T		
				C .200 MN .960 P .009 S .022 SI .250		
				NI .082 CU .230 CR .104 MO .020 V .035		
				CB .009 AL .007		
				CE(LONG FORMULA) = 0.41		
				T/S 81000 Y/S 58125 EL 31.85 RA 64.45		
				BRINELL HARDNESS1: 153 HARDNESS2: 153		

132	500	56224	7551622	2X1 3M A105N THRD T		
				C .180 MN .970 P .012 S .019 SI .230		
				NI .097 CU .280 CR .140 MO .019 V .034		
				CB .008 AL .008		
				CE(LONG FORMULA) = 0.41		
				T/S 85500 Y/S 59500 EL 32.00 RA 65.00		
				BRINELL HARDNESS1: 159 HARDNESS2: 162		

Material Control	56384	Sign	7551622	2X1 3M A105N THRD T		
Material Received			FEB 08	2806 .190 MN .990 P .008 S .025 SI .250		
Heat # / MFR'S			FEB 08	2806 .040 CU .190 CO .003 CR .070 MO .011		
Chemical Analysis			FEB 08	2806 .023 AL .001 NB .001		
Quantity	1	Job#	1190-3	CE(LONG FORMULA) = 0.39		
				T/S 76875 Y/S 52250 EL 32.65 RA 65.60		
				BRINELL HARDNESS1: 147 HARDNESS2: 144		

***** 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.



by

Cris Childers

QUALITY PROCESS MANAGER

**MF RINGS AND BEARING RACES LIMITED**

21, Community Centre, Mayapuri, Industrial Area, Phase-I, New Delhi - 110064

Ph:- 51833100, 51833101, 28114458, 28114376, Fax:- 51833107 & 28115759

E-mail :- sales@metalforgings.co.in

QCLF-17 Rev 03



3

TEST CERTIFICATE

Work T.C. No. & Date	10437 DATED 28.02.2004	Invoice No.	125
Customer	M/s. C.C.T.F.	Dimension Std:-	ASME B16.5 (1996)
Address	4-480 AUDLEY BOULEVARD ANNACIS BUINES PARK DELTA, BC V3M 564 CANADA		
PO. No. & Date	4640988-00 DATED 14.02.2005		
Material Specification:-	ASTM A105N-2004		

We hereby certify that the material detailed meets the requirement of Purchase Order / Relevant specification.

Part No.	Description	Qty	Group No.	Heat No.	H.T. /Temp.	Soaking Time	Cooling Media
AS PER ANNEXURE							

CHEMICAL COMPOSITION

	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Cb
	0.35 Max.	0.60-1.05	0.035 Max.	0.040 Max.	0.10-0.35	0.4 Max.	0.3 Max.	0.12 Max.	0.05 Max.	0.4 Max.	0.02 Max.
Heat No.	Mill Test Report										
418364	.23	.85	.023	.024	.22	-	-	-	-	-	-
418343	.21	.89	.030	.026	.25	-	-	-	-	-	-
416818	.24	.80	.030	.025	.22	-	-	-	-	-	-
Group No.	Product Analysis										
E 1511	.215	.85	.021	.022	.22	.03	.02	.04	.006	.02	.005
E 1512	.22	.83	.021	.023	.20	.02	.03	.02	.005	.03	.006
E 1513	.21	.87	.022	.022	.21	.03	.02	.03	.005	.02	.005
E 1514	.20	.88	.027	.024	.23	.03	.04	.02	.006	.03	.007
E 1515	.21	.86	.028	.023	.24	.03	.02	.03	.005	.02	.008
E 1516	.23	.78	.028	.023	.22	.02	.04	.03	.006	.03	.005

PHYSICAL PROPERTIES

Group No.	Y.S.(P.S.I.) Min 36,000	UTS(P.S.I.) Min 70,000	Elong% (4D) Min 22%	R.A.% Min 30%	Hard (BHN) 187 Max	Bend Test	Charpy V-Notch Test Temp. °C (in Joules)			Spectimen Size 10x10x55mm
E 1511	45671	75155	28.40	56.58	156	-	-	-	-	-
E 1512	43521	73299	31.80	60.04	149	-	-	-	-	-
E 1513	44023	73755	29.80	60.11	153	-	-	-	-	-
E 1514	44595	73184	32.40	59.10	149	-	-	-	-	-
E 1515	46827	75734	29.80	56.58	156	-	-	-	-	-
E 1516	46531	76404	27.60	55.81	159	-	-	-	-	-

REMARKS

Heat Treatment Details (H.T.):

N - Normalized, NT - Normalized & Tempered
SA - Solution Annealed

Material Control	Sign	Date
Material Received	<i>R</i>	FEB 08 2006
Heat # / MTR'S	<i>R</i>	FEB 08 2006
Chemical Analysis	<i>R</i>	FEB 08 2006
Quantity	1	Job# 1190-3

HEAT: E-1516 SKU: 7535244 DESC: 8 150 RF SO FLG A105N

HEAT: 254A5 SKU: 7534337 DESC: 2 150 RF WN FLG XH A105N

CLIENTE / Customer / Client

CCTF CORPORATION (EDMONTON)
8407 - 83 AVENUE NW
EDMONTON, AB T6B 8G2
CANADA

CERTIFICADO DE INSPECCION
Works Certificate - Certificat d'Usine

DIN 50048 / 3.1.B
EN 10204 / 3.1.B
ISO 10474 / 3.1.B

FECHA: 16/06/2005 N.º 102463 HOJA: 1
Date: 16/06/2005 No. Page:



ULMA

N.º: 922164

ULMA FORJA, S.COOP.

PRODUCTO
Article - Produit

FLANGES

SU PEDIDO N.º
Your Order No. 4873413-00
Votre Cde. N.º

DE
of - de 24/05/2005

Certified acc PED 97/23/EC
by TÜV Rheinland
N.º 01 202 EAQ 02 7443

Bº Zubillaga, 3 - Apdo. 14
20660 ORRATI (Gipuzkoa) SPAIN
Tel.: 34 - 943 780552
Tel.: 34 - 943 781808
E-mail: forja@forging.ulma.es

NORMAS APLICABLES
Requirements - Normes Applicables

ASME B16.5-98

MATERIAL CORRESPONDIENTE
Material Correspondent - Qualité

ASTMA106N-03
ASME SA106N

MODO DE FUSION (*)
Steel Making - Elaboration de l'acier
E = Elec. Y = Oxígeno básico

NACE MR-01-7503

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant



47614

DEPARTAMENTO QUALITY ASSURANCE
Section
Department

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No. N.º Coulee	RESISTENCIA T. Strength Resist Rupt N/mm2	UNIT CLAS. Yield Point Unité Clas. N/mm2	ALARGAM. Elongation Allongement Lo: A 0 %	ESTRICCION Reduction A Striction %	RESILENCIA Impact test Resilience Joules	MEDIA Average Moyenne	TEMP. °C	DUREZA Hardness Dureté HB
5 7534337	539	WN 2 150LB S80 RF A105N	NE	264A5	510	314	32,00	84,80				149
62 7531890	20	BLIND 1 1500LB RTJ A105N	NE	268A5	497	303	31,80	83,90				147

COLADA N.º
Heat No.
N.º Coulee

COMPOSICION QUIMICA - STEEL MARKER'S - ANALYSE CHIMIQUE

C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
254A5 0.180	0.250	0.840	0.010	0.001	0.080	0.060	0.030	0.007	0.001	0.260	0.366
268A5 0.200	0.230	0.830	0.013	0.023	0.020	0.010	0.002	0.002	0.004	0.180	0.356

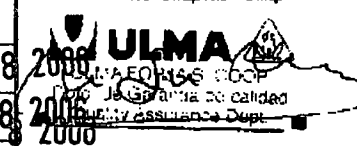
Las dimensiones y la condición superficial se hallaron satisfactorias
Dimension and surface condition were found acceptable
Les dimensions et état de surface sont satisfaisants

Los materiales citados cumplen las normas aplicables
Manufacturing requirements are satisfied
Les normes applicables sont respectées

EL INSPECTOR
Works Inspector - L'Inspecteur

(*) OBSERVACIONES: N NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR
Remarks
Observations

Material Control	Sign	Date
Material Received	<i>[Signature]</i>	FEB 08 2006
Heat # / MTR'S	<i>[Signature]</i>	FEB 08 2006
Chemical Analysis	<i>[Signature]</i>	FEB 08 2006
Quantity	1	Job# 1190-3



HEAT: 198A SKU: 7510586 DESC: 1 XH LR 90 WELD ELL WPB



INSPECTION CERTIFICATE

(MILL TEST)
CHUP HSIN ENTERPRISE CO., LTD.

17, TUNG LI ROAD HSIAO KANG
KAOHSIUNG, TAIWAN R. O. C.

TEL: (07) 831-9157-9

FAX: (07) 831-2942, 821-7500

Customer: CCTF (A DIVISION OF EMCO LTD.)
Product: SEAMLESS STEEL PIPE FITTING
Spec: ASTM A234 WPB-99
(DIN 50049/3.1B) NACE MR 0175-95

Material Control	Sign	Date
Material Received	<i>Pz</i>	FEB 08 2006
Heat # / MTR'S	<i>Pz</i>	FEB 08 2006
Chemical Analysis	<i>Pz</i>	FEB 08 2006
Quantity	1	Job# 1190-3

Certificate No: 09100018-0108
Order No: 4648993-00
Date: 2002/12/31

Specification for Raw Material		Specification for Inspection				Visual Examination			Dimensional Inspection										
ASTM A106 GR.B		ANSI B16.9-1993 ANSI B16.28-1994				GOOD			GOOD										
Item	Description		Quantity		Heat ID.	Heat No.		Raw Material Mfg		Raw Certificate NO									
68	90 E L/R XS 7510586	1	30	198A	J130198	SUMITOMO		WYYM1125											
69	90 E L/R XS 7510888	1 1/2	70	227A	J100227	SUMITOMO		WYYM1513											
70	90 E L/R XS 7510900	2	200	0642	J2K0842	SUMITOMO		WYYM1413											
71	90 E L/R XS 7510826	2 1/2	25	5711	J1K5711	SUMITOMO		WYYM1543											
72	90 E L/R XS 7510885	4	50	2233	J2K2233	SUMITOMO		WYYM2108											
73	90 E L/R XS 7511035	6	75	9921	J2K9921	SUMITOMO		WYYM2540											
74	90 E L/R XS 7511051	8	20	2580	J2K2580	SUMITOMO		WYYN3011											
75	90 E L/R XS 7514859	10	10	2903	J2K2903	SUMITOMO		WYYM2542											
76	90 E S/R XS 7511302	1	50	698	J714898	SUMITOMO		BYJ4415											
77	45 E L/R XS 7511507	3	25	1230	J2L1230	SUMITOMO		WYYN1837											
Specifi cation	Chemical Composition %												Tension Test			HARD NESS TEST:	Heat Treatment	Magnetic Particle Exam.	Remark
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	Y.S	T.S	H				
	× 100	× 100	× 100	× 10000	× 10000	× 100	× 100	× 100	× 100	× 10000	× 10000	× 100	P.S.I	P.S.I	%				
MIN													35000	60000	30				
MAX	30	106	50	58	40	40	40	15	80	20	50		85000	187					
68	20	22	46	9	11	5	3	2	0	0	0	29	43500	71100	41	136	620°C TO 980°C HOT FORMED		
69	18	23	48	10	11	5	8	5	1	0	0	28	42100	71100	45	136			
70	21	31	47	14	11	10	3	5	2	0	0	31	42000	71100	41	135			
71	16	30	74	17	10	11	4	4	0	0	<2	30	43500	70400	42	133			
72	17	28	70	17	7	10	3	3	0	0	0	30	44900	74700	41	138			
73	18	24	64	10	7	7	3	3	1	0	0	30	42900	67500	45	133			
74	21	25	52	10	11	8	2	4	2	0	0	32	42800	72400	42	136			
75	18	23	68	11	3	14	3	1	1	0	0	31	39600	69200	43	133			
76	19	18	54	14	9	1	3	4	0	0	<2	29	44000	67600	61	130			
77	16	30	68	16	9	7	2	5	0	0	0	29	45700	74700	44	136			

C.E.=C+MN/6+(CR+MO+V)/5+(NI+CU)/15

We hereby certify that the product described herein has manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

L.S. Tsai

Chief of Quality Assurance Section



Tenaris

ZIM SHANGHAI

CERTIFICATO DI COLLAUDO INSPECTION CERTIFICATE (UNI EN 10204 3.1 / ISO 10474 3.1 B)

N./L. 05/19575
Pagina/Page 001/004
Data/Date 28/07/2005

Dalmine S.p.A. - Dalmine PI
Piazza Caduti 6 luglio 1944,
24044 Dalmine (Bg) - Italy
+ 39 035 560 111 tel
+ 39 035 560 3827 fax

Client/Customer TENARIS GLOBAL SERVICES S.A.	Rifer. Ordine Cui/Customer's order 2004P0006618	Posiz. Cliente/Customer's Ref.	Confirma / Posiz. Mtl order 1231810/004
Indirizzo/Address LA CUMPARSITA 1373 SEXTO	Località/Town MONTEVIDEO	Ordine di Vendita/Job Number E/412709/4	Avviso di spedizione/Shipping Note 00004259 - 13/07/2005

Prodotto/Product TUBI S.S. LINE PIPE (FIORI STANDARD) NORMA API 5L PSL1 ASTM A583 A 106, CSA Z245.1, NACE MR 0175, SPEC. COMCO A 106-B DATED 09-20-99 FSTD 7832 REV.2 ACCIAIO GR. X42 PSL1, GR.B API 5L PSL1, GR.B A/SA 106, E 290 CAT.1 SS NORMALIZZATI GREZZI INTERNAMENTE, OLEATI ESTERNAMENTE CON QUAKERCOAT 854 CLEAR GRUSSIATI SECONDO ASME B 16.25 FIG. 2A CT4-2554 SEAMLESS LINE PIPE, NORM API 5L PSL1 ASTM A583 A 106, CSA Z245.1, NACE MR 0175, SPEC. COMCO A 106-B DATED 09-20-99 FSTD 7832 REV.2 STEEL GR X42 PSL1, GR.B API 5L PSL1, GR.B A/SA 106, AND 290 CAT.1 SS, NORMALIZED, INTERNALLY BARE, EXTERNALLY OILED, BEVELLED ACC ASME B 16.25 FIG 2A	Dimensioni/Dimensions Lgh. Dn/Lg. From 11590 Lgh. A/Lg. To 11800 D.E. mm/O.D. mm 457,000 SP mm/W.T. mm 9,530	Quantità/Quantity Pezzi/Pieces 142 Metri/Mt 1669,83 Chilli/Kg 178982 Feet/Feet 5478' 5" Libbre/Lb 394587,3
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PROVA DI TRAZIONE/TENSILE TEST																			
Prova/Test	Colata/Heat	°C	T	L/T	Proveita (mm)/Test spec (mm)			R _s KSI			R _m KSI			Allungam. (%) /Elongation (%)				Note/Note	
					Tipol/Type	Dimensioni/Dimensions	Sez./Sec. area	%	Min.	Max.	Min.	Max.	Cal.	mm.	Min.	Oil/Obl.	Min.	Max.	
								0,50	42	72	60	94						0,93	
M9601	953643	+ 20		L	Rec	38,76	9,51	368,6		51,9		73,9	2"	50,8	28,0	43,7		0,70	
M9601/10	953643	+ 20		L	Rec	25,84	9,61	248,3		52,4		74,3	2"	50,0	26,0	42,0		0,71	SPEC. CSA Z 2451.1
M9603	953697	+ 20		L	Rec	38,20	9,40	359,1		48,1		70,3	2"	50,8	28,0	43,7		0,68	
M9603/10	953697	+ 20		L	Rec	25,60	9,50	243,2		49,1		70,7	2"	50,0	26,0	40,0		0,69	SPEC. CSA Z2451.1
M9605	953698	+ 20		L	Rec	38,00	9,40	357,2		49,4		70,5	2"	50,8	28,0	44,7		0,70	
M9605/10	953698	+ 20		L	Rec	25,00	9,40	235,0		53,3		71,5	2"	50,0	26,0	42,0		0,75	SPEC. CSA Z245.1
M9607	953708	+ 20		L	Rec	38,50	9,40	361,9		49,4		73,2	2"	50,8	28,0	45,7		0,67	
M9607/10	953708	+ 20		L	Rec	25,80	9,50	245,1		51,2		73,9	2"	50,0	26,0	38,0		0,69	SPEC. CSA Z245.1
T = 1: DOPO P.N.H.T. / AFTER P.N.H.T. 2: DOPO "STRAIN AGEING" / AFTER "STRAIN AGEING" 3: DOPO P.V.H.T. + DOPO "STRAIN AGEING" / AFTER P.V.H.T. + AFTER "STRAIN AGEING" L/T = L: LONGITUDINALE / LONGITUDINAL T: TRASVERSALE / TRANSVERSAL R _s = SNERVAMENTO / YIELD STRENGTH Tipo = Rec: RETTANGOLARE / RECTANGULAR Seg: STRISCIA TUBOLARE / TUBULAR STRIP R _m = ROTTURA / TENSILE STRENGTH Cil: CILINDRICA / ROUND Tu: TUBOLARE / TUBULAR Z = STRIATURE / REDUCTION OF AREA																			

PROVA DI DUREZZA/HARDNESS TEST				
Prova/Test	Col/Lt/Heat	T	Tipol/Type	Min. Max.
			HBW	0,0 200,0
			1" Dia/From 2" A/To 3"	
M9601	953643		0,0	150,0
M9601/10	953643		0,0	148,0
M9603	953697		0,0	145,0
M9603/10	953697		0,0	148,0
M9605	953698		0,0	147,0
M9605/10	953698		0,0	149,0
M9607	953708		0,0	153,0
M9607/10	953708		0,0	150,0
T = 1: DOPO P.N.H.T. / AFTER P.N.H.T. 2: DOPO "STRAIN AGEING" / AFTER "STRAIN AGEING" 3: DOPO P.V.H.T. + DOPO "STRAIN AGEING" / AFTER P.V.H.T. + AFTER "STRAIN AGEING"				

Material Control	Sign	Date
Material Received	<i>R</i>	FEB - 8 2006
Heat # / MTR'S	<i>R</i>	FEB - 8 2006
Chemical Analysis	<i>R</i>	FEB - 8 2006
Quantity 1	Lot#	1190-2

Questo certificato è emesso da un sistema computerizzato ed è valido senza firma. Il certificato originale riporta il marchio "Tenaris" in colore verde. Il possessore dell'originale, qualora ritenga copia, deve attestare a suo nome la conformità, assumendosi ogni responsabilità per un'illeciti o semplicemente non consentiti dalla Dalmine. Alterazioni e/o falsificazioni saranno perseguite a termini di legge.

This certificate is issued by a computerized system and it is valid without signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.

01E23



TESTING LABORATORY REPORT

BILL OF LADING
NO DE CONN.
400256

COMPTE RENDU DU LABORATOIRE D'ESSAI

- PHYSICAL PROPERTIES - METALLURGICAL PROPERTIES - CHEMICAL ANALYSIS
- PROPRIETES PHYSIQUES - PROPRIETES METALLURGICAL - ANALYSE CHIMIQUE

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, THIS REPORT RELATES ONLY TO THE ITEMS TESTED.
THE CHEMISTRY ANALYSIS WAS DETERMINED IN ACCORDANCE WITH TEST METHODS
ASTM E 415 AND/OR ASTM E 1019.

HOPKINS STREET SOUTH
WHITBY, ON, CAN
L1N 5T1

FAX : (905)668-4536

TEL : (905)668-8811

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RUSSEL METALS INC.
445 1ST AVENUE C/O ON SITE SIDING
REGINA, SK, CAN
S4N 4Z3
Attn:MR. AL BENOIT

Q/A Manager.



CERTIFIES THAT THE RESULTS BELOW ARE A TRUE AND CORRECT COPY OF THE
RECORDS PREPARED AND MAINTAINED BY THE AFOREMENTIONED COMPANY, IN
COMPLIANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS CITED BELOW.

THIS PRODUCT HAS BEEN MELTED AND MANUFACTURED IN CANADA.

MATERIAL TESTED MATERIAU EPROUVE	GRADE NUANCE	CONTROL NO. NO. DE CONTROLE	CUSTOMER P.O. NO. NO DE COMM DU CLIENT
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CHANNEL 4 @ 6.25(20 FT) C.S.A. G40.21-98 44W 71195301 M54008485

TEST RESULTS FOR HEAT B1756 HEAT SEQ 1

SAMPLE	C	MN	P	S	SI	CU	NI	CR	MO	SN	CB	V
1	.16	.02	.003	.025	.19	.25	.14	.08	.03	.010	.000	.000

MECHANICAL TESTS SAMPLE NUMBER 2 YIELD: 54124.0 PSI, TENSILE: 76211.0 PSI %ELONGATION: 22.9 GUAGE LENGTH: 8 IN
SAMPLE NUMBER 1 YIELD: 53514.0 PSI, TENSILE: 75183.0 PSI %ELONGATION: 22.2 GUAGE LENGTH: 8 IN

CHANNEL 5 @ 6.70(40 FT) C.S.A. G40.21-98 44W 71245301 M54009190

TEST RESULTS FOR HEAT B20061 HEAT SEQ 1

SAMPLE	C	MN	P	S	SI	CU	NI	CR	MO	SN	CB	V
1	.17	.79	.008	.018	.18	.38	.09	.11	.02	.011	.000	.000

MECHANICAL TESTS SAMPLE NUMBER 2 YIELD: 57577.0 PSI, TENSILE: 79146.0 PSI %ELONGATION: 21.5 GUAGE LENGTH: 8 IN
SAMPLE NUMBER 1 YIELD: 59387.0 PSI, TENSILE: 79982.0 PSI %ELONGATION: 22.5 GUAGE LENGTH: 8 IN

CHANNEL 6 @ 8.20(40 FT) C.S.A. G40.21-98 44W

TEST RESULTS FOR HEAT B19900 HEAT SEQ 1

SAMPLE	C	MN	P	S	SI	CU	NI	CR	MO	SN	CB	V
1	.15	.78	.008	.020	.20	.34	.08	.11	.02	.010	.000	.000

MECHANICAL TESTS SAMPLE NUMBER 2 YIELD: 53011.0 PSI, TENSILE: 74196.0 PSI %ELONGATION: 21.9 GUAGE LENGTH: 8 IN
SAMPLE NUMBER 1 YIELD: 51179.0 PSI, TENSILE: 74040.0 PSI %ELONGATION: 23.1 GUAGE LENGTH: 8 IN

CHANNEL 5 @ 6.70(20 FT) C.S.A. G40.21-98 44W 71245303 M54009194

TEST RESULTS FOR HEAT B20081 HEAT SEQ 1

SAMPLE	C	MN	P	S	SI	CU	NI	CR	MO	SN	CB	V
1	.21	.81	.006	.022	.18	.31	.10	.12	.03	.011	.000	.000

MECHANICAL TESTS SAMPLE NUMBER 2 YIELD: 55385.0 PSI, TENSILE: 78579.0 PSI %ELONGATION: 22.5 GUAGE LENGTH: 8 IN
SAMPLE NUMBER 1 YIELD: 58832.0 PSI, TENSILE: 77579.0 PSI %ELONGATION: 24.0 GUAGE LENGTH: 8 IN

Material Control	Sign	Date
Material Received	LM	FEB 8 2006
Heat # / MTR'S	AMN	FEB - 8 2006
Chemical Analysis	AM	FEB - 8 2006
Quantity	1	Job# 1181-2

RUSSEL METALS
THIS TEST REPORT IS VALID FOR:
CUST. WATERFLOOD
PO NO. 23317-WSS
INV. NO. 54359092
HEAT NO. B20081
INT. [initials]

ALBERT GREIFENBERG GmbH & Co. KG

Flanschen und Bunde nach DIN und Sonderanfertigung

Besteller/Purchaser/Acheteur **WFF FITTINGS &**

Kunden-Bestell-Nr./Client order no./No. de commande du client

Kennzeichnung: Firmenzeichen, Werkstoff, Schmelze, DN, PN
marking/marque

A 105

Anforderungen: **ASTM-STD. 2003 / ASME B16.5**
Requirements/Valeur demandées

Stempel des Herstellers/Stamp of the manufacturer/
Sigle du fournisseur

CALGARY ALBERTA T2A 6G3



Abnahmeprüfzeugnis nach
Inspection certificate acc. to EN 10204-
Certificat de réception selon

3.1.E

Unsere Auftrags-Nr./Our works no./Notre no. de commande

LS: 2502957 Auftrag: 126101

Seite: 1

Datum/Date: 22.02.2005

Probenlage/Position of sample/Position de l'échantillon

TANG.

Position Item Position	Anzahl Quantity Quantité	Artikel-Bezeichnung/Article/Article		R _m R _{ts} R _{ts} Y _P N/mm ²	R _u R _{ts} N/mm ²	A Elongation %	Z R. o. A. %	Av Av	J	Prüftemp. Test temp. Temp. d'essai °C	Kerbforn Notch Entaille	Erweichungsart und Analysen nach Angaben des Herstellers Process and chemical composition in conformity with certificate of manufacturer. Procès et composition chimique en conformité avec certificat du producteur.	%
		Probe Nr. Sample No. No. d'essai	Schmelze + E-Art Heat Charge Nr./No. Melting furnace Mode de fusion										
001	100	2938	W-1-400-105/C21 WN 150 LB RF 4" STD. H213F E	296	496	35	62	128	132	138	20	ISO-V	C 0,190 CR 0,040 Mo 0,010 SI 0,210 V 0,006 MN 0,800 Cu 0,030 P 0,029 Nb 0,001 S 0,011 Ni 0,020
			HB 150-155										
002	25	1114	W-1-100-105/C21-XS WN 150 LB RF 1" XH 966 E	302	508	58	60	50	54	20	ISO-V	C 0,210 CR 0,040 Ni 0,050 SI 0,220 AL 0,020 MN 0,940 V 0,005 P 0,034 Cu 0,003 S 0,010 Nb 0,002	
			HB 153-155										
Material Control Material Received Heat # / MTR'S Chemical Analysis Quantity Sign Date Job# 1190-3													

Für/for/pour EN 10 204-3.1.B:

Es wird bestätigt, daß die Lieferung geprüft wurde und den
Verabreichungen bei der Bestellannahme entspricht.

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

Nous certifions que la livraison était vérifiée et est conforme aux
spécifications de l'acceptation de la commande.

Bezeichnung und Ausmessung ohne Beanstandung

Visual inspection and dimensions satisfactory. Aucun défaut au point de vue aspect et de dimension.

Zertifiziert für Werkstoffhersteller nach Richtlinie 97/23/EG

Certified as material manufacturer to PED 97/23/EG

Certifications par la matière fabriquer DEP 97/23/EG

Anhang I. 4.3/Annex I. 4.3/Annex I. 4.3

TUV-CERT. Nr./No. 0044

Verwaltung, Fertigtelllager und Versand:

Office, Warehouse and Traffic department:

Office, Magasin et Expédition:

Gothwaldstraße 17

45525 Hattingen

Telefon: 0 23 24/50 08-00

Telefax: 0 23 24/2 47 57

Betrieb/Plant/Usine: D Bochum-Linden,

Deilmatal 24, Industriegebiete

E-Mail: info@albert-greifenberg.de

http://www.albert-greifenberg.de/

ALBERT GREIFENBERG
GmbH & Co. KG

Der Werkstoffverständige

HE Works Inspector

L'expert d'usine

HEAT: 04M30009 SKU: 7515685 DESC: 8 STD WELD CAP WPB

Purchaser: CCTP

INSPECTION CERTIFICATE

EN 10204 3.1B

E-No. M-787 Purchase Order No. 4885540-00 Job No.



D M Y Certificate No.

11/11/2004 T- 2004200934

No.	MFG. No. (Heat Identification No.)	Specification for Material		Specification for Inspection	Visual Examination	Dimensional Inspection
		Product & Size (T*1)	Quantity	Heat Treatment (Note 1)	Symbol No.	
1	04M30009	C WPB 8 S40	460/700	N	7515685	COLD FORMING
2						
3						
4						
5						

Specification	Chemical Composition %											Tension Test		E	HARDNESS MAX
	C x 100	Si x 100	Mn x 100	P x 1000	S x 1000	Cu x 100	Ni x 100	Cr x 100	Mo x 100	V x 1000	Nb x 1000	C.E. x 100	YS MPa		
Min.															
Max.		10	29										240	415	
Material Heat No.	23		106	50	58	40	40	40	15	80	20			585	
1	119480	6	19	35	9	5	34	6	7	<0.4	<2				
2															
3															
4															
5															

	Material Control	Sign	Date
1	Material Received	<i>[Signature]</i>	FEB 08 2006
2	Heat # / MTR'S	<i>[Signature]</i>	FEB 08 2006
3	Chemical Analysis	<i>[Signature]</i>	FEB 08 2006
4	Quantity	1	Job # 1190-3

(NOTE 1) N : NORMALIZING 910 C X 0.6 HR. AIR COOLING

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

MAGNETIC 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.

* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength E = Elongation

*A Hot Finished Condition

Quality Assurance Manager
Thai Benkan Co., Ltd.
58 Soi Witkulmai, Bangkok, Prapadaeng.

REG. NO. 815
 NO MATRICULE 815
 DATE D'ÉMISSION 02/11/22
 DATE OF EXPIRATION 02/11/22
 MAINTENANCE CERTIFYING AGENCY
 ORGANISME DE CERTIFICATION

Robert D. Harty

REG. NO. 815
 NO MATRICULE 815
 DATE D'ÉMISSION 02/11/22
 DATE OF EXPIRATION 02/11/22
 MAINTENANCE CERTIFYING AGENCY
 ORGANISME DE CERTIFICATION

La présente carte que Graham Ball
 has qualified according to the CAN/CSSB Standard 48.9712-2000 as follows:
 est qualifiée selon la norme CAN/CSSB 48.9712-2000 comme suit:

Natural Resources
 Ressources naturelles
 Canada

REG. NO. 815
 NO MATRICULE 815
 DATE D'ÉMISSION 1998/02/17
 DATE OF EXPIRATION 1998/02/17
 MAINTENANCE CERTIFYING AGENCY
 ORGANISME DE CERTIFICATION

Robert D. Harty

Qualified Operator
 Opérateur qualifié

La présente carte que Graham Ball
 has qualified pursuant to Section 10 of the Atomic Energy Control Regulations as a:
 est qualifiée conformément à l'article 10 du Règlement sur le contrôle de l'énergie
 atomique comme étant un:

Atomic Energy
 Commission de contrôle
 de l'énergie atomique
 Canada

REG. NO. 815
 NO MATRICULE 815
 DATE D'ÉMISSION 2002/03/11
 DATE OF EXPIRATION 2005/12/31
 MAINTENANCE CERTIFYING AGENCY
 ORGANISME DE CERTIFICATION



Natural Resources
 Ressources naturelles
 Canada



**Pharmaceutical
Companies**

tion associated with this identity card



Name: Wayne MacDonald

Reg. No.
No. Mailboxes 1959

Issue Date/ **2002/03/12**
Date d'émission

Entry Date: 2006/12/31
Expiration:



**Commission des comités
de l'énergie atomique**

2025-2026

1.

Tout ceci est fait.
Le présent démontre que
les quantités relatives de Section 12 et des autres Energy Control Regulations au r.
sont égales au total de la Section 12 du Règlement sur le contrôle de l'énergie
et des autres Energy Control Regulations.

Qualified Operator
Opérateur qualifié

QUALIFICATION DATE: 10/21/201

1959, 1961
 1962, 1963, 1964, 1965

ISSUE DATE: 09/08/02
ISSUE TO: 98010277
ISSUED TO: 98010277
ISSUED TO: 98010277



Natural Resources
Canada

Resources nationales
Canada

They couldn't find

D. Wayne McDermid

D. Wayne MacDonald

U. S. 441118, 11/14/2000

2000 10/12/2000 10:00 AM

UNITED STATES DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION

2 PT

22

24

77/08/01

7709/01

78712/01
02/07/01

DATE TIME
PAGE

DATE CHG: 10/1/73
BY: J. H. H. H. H.

77/08/01
70/08/01
73/05/01

[illegible]

06/12/31

06/12/21

ON THE

1958 • SHOW DATE: 03/12/58
DATE OF BIRTH: 03/12/58

MANAGER, CREDITORS AGENCY/
CONTINUING CONTACTS DE
CREDITORS



Atomic Energy Commission de contrôle
Control Board de l'énergie atomique

This certifies that
La présente atteste que

Frank P. Eiswerth

has qualified pursuant to Section 18 of the Atomic Energy Control Regulations as a
s'est qualifié en vertu de l'article 18 du Règlement sur le contrôle de l'énergie
atomique comme étant un

**Qualified Opérateur
Operator qualifié**

QUALIFICATION DATE
DATE DE QUALIFICATION

1995/05/31

REG NO.
NO D'AGREMENT

9433

ISSUE DATE
DATE D'ÉMISSION

1999/07/27

ISSUING OFFICER
AGREMENT OFFICER



Natural Resources Canada
Ressources naturelles Canada

This card is proof of the certification of the individual as specified.
Cette carte est la preuve de la certification de l'individu comme indiquée.



Name/
Nom Kevin Rodger Tremblay
Reg. No./
No. matricule 448
Issue Date/
Date d'émission 2005/01/14
Expiry Date/
Expiration 2007/12/31
Signature ↓



Natural Resources Canada
Ressources naturelles Canada

Qualified to i) CAN/CGSB-48.9712 or/ou
ii) ISO 20807 Qualifié selon

Method	Level	Sector	Cert. Date	Recert. Date	Expires
Méthode	Niveau	Secteur	Date cert.	Date recert.	Expiration
RT i	2	EMC	99/01/07		07/12/31

Manager, Certifying Agency
Gestionnaire, Organisme de certification

This certifies that
Le présent certificat que
has qualified according to the CAN/CSSB Standard 48.9712-2000 as follows:
est qualifié selon la norme CAN/CSSB 48.9712-2000 comme suit:

METHOD MÉTHODE	LEVEL NIVEAU	SECTOR SECTEUR	CERT. DATE DATE CERT.	EXPIRY DATE DATE EXPIRATION
RT	2	ERC	01/01/15	06/12/31

Richard V. Murphy

REG. NO. / NO MATRICULE: 7204
ISSUE DATE / DATE D'ÉMISSION: 04/01/30

MANAGER, CERTIFYING AGENCY /
GÉNÉRALISTE, ORGANISME DE
CERTIFICATION

Your certification card is only valid when presented with this identity card
Votre certificat de poche est valide seulement s'il est présenté avec cette carte d'identité



Name /
Nom: Neil Kenneth Graves

Reg. No. /
No. matricule: 7204

Issue Date /
Date d'émission: 2004/02/18

Expiry Date /
Expiration: 2006/12/31



Saskatchewan
Corrections and
Public Safety

Welder's Certificate

No 4061

This is to certify that Chad Knoll
has been tested in accordance with the requirements of ASME Code
Section IX for pressure welding and is qualified to weld subject to the
limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to the Branch
- (b) automatic termination if the holder ceases, for six consecutive months, to be actively employed upon welding of the type authorized hereby.

Chad Knoll
Welder's Signature

Chad Knoll
Welding Inspector



Saskatchewan
Corrections and
Public Safety

Welder's Certificate

No 406

This is to certify that Chad Knoll
has been tested in accordance with the requirements of ASME Code
Section IX for pressure welding and is qualified to weld subject to the
limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to the Branch
- (b) automatic termination if the holder ceases, for six consecutive months, to be actively employed upon welding of the type authorized hereby.

Chad Knoll
Welder's Signature

Chad Knoll
Welding Inspector

Name Chad Knoll Symbol CHK

Process(es) GTAW SMAW Material 1-11, 4X
(P No.)

Filler Metal Group (F No.) F6 F5 Minimum Pipe Dia. 25.00
(IN MILLIMETERS)

Max. Deposited Weld Metal Th. 6 16 Position(s) Qualified All
(IN MILLIMETERS)

Backing Req'd Yes ☒ No ☐ Uphand ☒ Downhand

Test Date Aug 5, 2004 Expires Aug 5, 2006

Restrictions _____

Name Chad Knoll Symbol CHK

Process(es) SMAW SMAW Material 1-11, 4X
(P No.)

Filler Metal Group (F No.) F3 F4 Minimum Pipe Dia. 25.00
(IN MILLIMETERS)

Max. Deposited Weld Metal Th. max max Position(s) Qualified All
(IN MILLIMETERS)

Backing Req'd Yes ☒ No ☐ Uphand ☒ Downhand

Test Date Aug 5, 2004 Expires Aug 5, 2006

Restrictions _____

REVISION 0
Dec. /02

EXHIBIT # 10B
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CONTINUITY LOG 2005

WELDERS NAME FILE NUMBER	SYMBOL	PROCESS	JAN. - MAR.	APR. - JUN.	JUL. - SEPT.	OCT. - DEC.
CHAD Knoll	CHK	SMAW	1138		1171 ^{SMAW} GTAW	
		SMAW	1143		1171 ^{SMAW} GTAW	
		SMAW	1140		1169 SMAW	
		SMAW ^{GTAW} GTAW	1146		1170 SMAW	
		SMAW ^{GTAW} GTAW	1140 E1-31174		1158 SMAW	
		SMAW ^{GTAW} GTAW	1140 1151			1148 SMAW
		SMAW		1136		1147 SMAW
		SMAW		03109303		1176 GTAW SMAW
		SMAW		03109304		1160 SMAW
		SMAW		1125		
		SMAW		1141		
		SMAW ^{GTAW} GTAW		1151		
		SMAW		C9-2469		
		SMAW		E9-9343		
		SMAW		E9-9045		
		SMAW		1161		
		SMAW		1157		
		SMAW		1150		
		SMAW/GTAW		1156		
		SMAW/GTAW		1154		
		SMAW		1152		
		SMAW			1153	
		SMAW ^{GTAW} GTAW			1155	
		SMAW			1149	

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Saskatchewan
Corrections and
Public Safety

Welder's Certificate
No. 5358

This is to certify that Jeff Chinski
has been tested in accordance with the requirements of ASME Code
Section IX for pressure welding and is qualified to weld subject to the
limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to
the Branch
- (b) automatic termination if the holder ceases, for six consecutive
months, to be actively employed upon welding of the type
authorized hereby.

Jeff Chinski
Welder's Signature

[Signature]
Welding Inspector

Name Jeff Chinski Symbol Jmc

Process(es) SMAW SMAW Material 1-11, 4X
(P No.)
Filler Metal F3 F4 Minimum Pipe Dia. 25mm OD
(IN MILLIMETERS)
Max. Deposited Weld Metal Th. 22mm Position(s) A11
(IN MILLIMETERS)
Qualified

Backing Req'd Yes No Yes No Uphand Downhand

Test Date 2005 May 5 Expires 2007 May 5

Restrictions F4 with backing

REVISION 0

Dec. /02

EXHIBIT # 10A

WELDERS QUALIFICATION LOG

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REVISION 0
Dec. /02

EXHIBIT # 10B
CONTINUITY LOG

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CONTINUITY LOG						
WELDERS NAME FILE NUMBER	SYMBOL	PROCESS	JAN. - MAR.	APR. - JUN.	JUL. - SEPT.	OCT. - DEC.
JcA Chinski	JMC	Snaw		Test		
		"		1161		
		"		1147		
		"		E9-9626		
		"		1156		
		"		1154		
		"		1152		
		"			1153	
		"			1158	
		"			1169	
		"			1170	
					1171N	
					11715	
					1148	
						05117202
						1147
						1176

Name Terry Morrow Symbol TGM
Process(es) GTAW SMAW Material 1-11, 4X
Filler Metal Group (F No.) F6 F5 Minimum Pipe Dia. 25mm OD
Max. Deposited Weld Metal Th. 6mm 16mm Position(s) A11
(IN MILLIMETERS) (IN MILLIMETERS)
Backing Req'd Yes ☒ No ☒ Yes ☒ No ☒ Uphand ☒ Downhand
Test Date Aug 5, 2004 Expires Aug 5, 2006
Restrictions _____



Saskatchewan
Corrections and
Public Safety

Welder's Certificate
No 5784

This is to certify that Terry Morrow
has been tested in accordance with the requirements of ASME Code
Section IX for pressure welding and is qualified to weld subject to the
limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to
the Branch
- (b) automatic termination if the holder ceases, for six consecutive
months, to be actively employed upon welding of the type
authorized hereby.

Terry Morrow
Welder's Signature

Chris Blay
Welding Inspector

Name Terry Morrow Symbol TGM
Process(es) SMAW SMAW Material 1-11, 4X
Filler Metal Group (F No.) F3 F4 Minimum Pipe Dia. 25 OD
Max. Deposited Weld Metal Th. max max Position(s) A11
(IN MILLIMETERS) (IN MILLIMETERS)
Backing Req'd ☒ No ☒ Yes ☒ Uphand ☒ Downhand
Test Date 2005 July 7 Expires 2007 July 7
Restrictions Replaces Ticket No 5408



Saskatchewan
Corrections and
Public Safety

Welder's Certificate
No 3544

This is to certify that Terry Morrow
has been tested in accordance with the requirements of ASME Code
Section IX for pressure welding and is qualified to weld subject to the
limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to
the Branch
- (b) automatic termination if the holder ceases, for six consecutive
months, to be actively employed upon welding of the type
authorized hereby.

Terry Morrow
Welder's Signature

Chris Blay
Welding Inspector

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REVISION 0
Dec. /02

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CONTINUITY LOG 2005

WELDERS NAME FILE NUMBER	SYMBOL	PROCESS	JAN. - MAR.	APR. - JUN.	JUL. - SEPT.	OCT. - DEC.
Terry Morrow	T G m	SMAW		1155		
		SMAW			1163	
		SMAW			1149	
		SMAW			1167	
Terry Morrow	T G m	SMAW			1092	
		SMAW			1170	
		GTAW			1170	
		SMAW			1158	
Terry MORROW	T G m	SMAW			1169	
		SMAW			1171N	
		GTAW			1171N	
		SMAW			1171S	
TERRY MORROW	T G m	GTAW			1171S	
		SMAW				1148
		SMAW				1172-02
		SMAW				1172-03
Terry morrow	T G m	SMAW				1167-03
		SMAW				1176
		SMAW				1179
		SMAW				1147
Terry morrow	T G m	SMAW				1160
		SMAW				1185
		SMAW				1177
		SMAW				1183

Name Geoff Mann Symbol GJM
 Process(es) SMAW SMAW Material 1-11, 4X
 Filler Metal Group (F No.) F3 F4 Minimum Pipe Dia. 25.00
 Max. Deposited Weld Metal Th. MAX MAX Position(s) Qualified All
 Backing Req'd Yes ☒ No ☒ Uphand/Downhand
 Test Date Aug 5, 2004 Expires Aug 5, 2006
 Restrictions _____



Saskatchewan
Corrections and
Public Safety

Welder's Certificate

No 4060

This is to certify that Geoff Mann
 has been tested in accordance with the requirements of ASME Code
 Section IX for pressure welding and is qualified to weld subject to the
 limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to the Branch
- (b) automatic termination if the holder ceases, for six consecutive months, to be actively employed upon welding of the type authorized hereby.

Geoff Mann
 Welder's Signature

[Signature]
 Welding Inspector

Name Geoff Mann Symbol GJM
 Process(es) CAW FCAW Material 1-11, 4X
 Filler Metal Group (F No.) 6 6 Minimum Pipe Dia. 73 with c.d.
 Max. Deposited Weld Metal Th. 3mm 19mm Position(s) Qualified 1G
 Backing Req'd Yes ☒ No ☒ Uphand/Downhand
 Test Date OCT 19/05 Expires OCT 19/07
 Restrictions FCAW with backing



Saskatchewan
Corrections and
Public Safety

Welder's Certificate

No 4725

This is to certify that Geoff Mann
 has been tested in accordance with the requirements of ASME Code
 Section IX for pressure welding and is qualified to weld subject to the
 limitations shown and the following:

- (a) cancellation upon an adverse report by an inspector to the Branch
- (b) automatic termination if the holder ceases, for six consecutive months, to be actively employed upon welding of the type authorized hereby.

Geoff Mann
 Welder's Signature

[Signature]
 Welding Inspector

[illegible]

REVISION 0
Dec. /02

EXHIBIT # 10B
CONTINUITY LOG

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CONTINUITY LOG 2005						
WELDERS NAME FILE NUMBER	SYMBOL	PROCESS	JAN. - MAR.	APR. - JUN.	JUL. - SEPT.	OCT. - DEC.
Geoff Mann	GJM		1142	1151	1153	
			1124	1136	1152	
			1140	1094-03	1164	
				1094-04	1163	
				1093-04	1155	
				1094-05	1154	
				1093-05	1163-01	
				1092-09	-02	
				1092-10	-03	
				1157	1164-01	
				1147	-02	
				1162-03	1150	
				" "02	1170N	
				" "01	1170S	
				1150		05117201
				1154		05117205
				1156		05117602
				1152		1176 Gross Flaw
				1144		1179 Gross Flaw
						1160
						1185 Gross Flaw