



QUALITY CONTROL REPORT

For

Canadian Sub-Surface Energy Services

By

TARA Oilfield Services Ltd.

P.O. Box 1389
Didsbury, Alberta T0M 0W0
Phone: 1-403-335-9158
Fax: 1-403-335-3403
Toll Free: 1-866-FAB-TARA
1-866-322-8272

JOB NUMBER

05-129C

3" Line Heater Bundles

Prepared By:

Nicole Normand, Q.C.I.

Date: March 14, 2006

EXHIBIT INDEX

<u>Exhibit #</u>	<u>Description:</u>
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Certificate of Authorization

Quality Control Program

Expiry Date: **August 3, 2008**

Reg. No.: **AQP-1434**

This is to certify that:

TARA OILFIELD SERVICES LTD.

**1805 - 19 STREET
DIDSBURY, ALBERTA**

having complied with the provisions of the SAFETY CODES ACT, is hereby authorized to:

Construct ASME Section VIII-1 Pressure Vessels

**Manufacture, Repair/Alter Category 'A', 'E' & 'H' Fittings in accordance
with CSA B51**

at the above SHOP address.

**Construct, Repair/Alter ASME B31.1 Power Piping and ASME B31.3
Process Piping**

Repair/Alter ASME Section VIII-1 Pressure Vessels

at the SHOP and FIELD sites controlled from the above address.



Dated at Edmonton, this 8th day of August, 2005

A handwritten signature in black ink, appearing to read "L. Chan".

Chief Inspector and Administrator
Certificate No.: 4697

TARA OILFIELD SERVICES LTD.

CONTRACT REVIEW

Job Number: 05-129C Date: September 15, 2005
Owner Company: Canadian Sub-Surface Energy Services
600#, 505 – 8th Ave. S.W. Calgary, AB T2P 1G2
Description of Job: 3" Line Heater Coils

RESPONSIBLE FOR QUALITY SYSTEM FUNCTIONS	OWNER	TARA OILFIELD SERVICES LTD.
Materials Receiving Inspection, Identification and Traceability	No	Yes
Welding Control	No	Yes
Heat Treatment Control	No	Yes
NDE Control	No	Yes
Pressure Test Control	No	Yes
Preparing and Retention of Quality Control Records	No	Yes

The Alberta Design, Construction and Installation of Boilers and Pressure Vessels Act. and Regulations require the owner to have an authorized Quality System Program if they assume any of the Quality System functions listed above. A piping system over 0.5 cubic metres in capacity must be registered with ABSA.

RESPONSIBLE FOR SUPPLY	OWNER	TARA Oilfield Services Ltd.
Material Control	X	Yes
Design Registration with ABSA	X	Yes
Drawing & Specifications	X	Yes
NDE	X	Yes
Heat Treatment	X	Yes

Owner's Representative: Dave Godlien
Date Contracted: September 15, 2005


QC Manager / QC Inspector

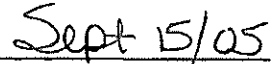

Date

EXHIBIT 9.1
TARA OILFIELD SERVICES LTD.
PRESSURE PIPING SPECIFICATION SHEET

(For Construction/Repair/Alteration of Pressure Piping Systems Less Than or Equal to 0.5 Cubic Meters, Aggregate Volume)

Owner: NABORS Production Services Ltd.

AQP:1434

Plant Location: Portable

Job #: 05-129C

Material List				Piping Sketch (Reference attached drawings if appropriate)				
Item No.	Description	Mat'l Spec. & Grade	Sch./ Rating	(Use for recording RT No's. & Welder Symbols)				
				SEE ATTACHED DRAWINGS				
		SEE						
		ATTACHED						
		DRAWINGS						
Line No.	Design Pressure	Design Temp. Min. / Max.	Corr. All.	Code ASME B31.1/B31.3	Service (e.g., Normal, Cat. D, M, K)	Severe Cyclic Yes/No	Test Pressure	Test Medium
ALL	5000 psi	-50° F	Nil	B31.3	M	Yes	7500 psi	H2O

(Note: Pneumatic tests must have prior approval from ABSA.)

Welding Procedure Specification No's: 2081.2 TOS.2

Line No.	MT / PT Extent %	Radiography Extent %	Hardness Testing	Ultrasonic - Other NDE Description / Extent %	Other Requirements
ALL	N/A	50%	N/A	N/A	None

NDE Contractor: CANSPEC GROUP INC. Post Weld Heat Treatment Yes/N.A.: YES

Post Weld Heat Treatment Time/Temp.: 60min @ 1150° F PWHT Contractor: Continental Stress Relieving Ltd.

Approved by Owner: Dave Godlien Date: Sept. 15, 2005

Approved by Contractor: Martin Sheridan Date: Sept. 15, 2005

Comments:

WORK COMPLETED AND ACCEPTED (AB-83 completed)

Tara Oilfield Services Ltd. Signature: leo Date: Sept 15/05

EXHIBIT 11.9
TARA OILFIELD SERVICES LTD.

**EXAMINATION & INSPECTION REPORT
(INDIRECT FIRED HEATER COILS)**

Job No.: 05-129C Line Number: TLH-01
 Drawing No.: 05-129-BDLs Number of Coils: 16 (8 up - 8 down)
 Location of Installation: Portable

OPERATION	QCM/Date	Owner Insp. / Date	ABSA Insp. / Date
1) Drawings Released <u>ABSA SIGN ON</u>	<u>Geo - 09/25</u>		<u>Nov 04 2005</u>
2) Drawings Submitted to ABSA & CRN Number Issued	<u>Geo 12/19/05</u>	<u>T5045.2</u>	* <u>FEB 28 2006</u>
3) ABSA Safety Codes Officer Notified	<u>Geo 11/04</u>		
4) Welding Procedure Approved	<u>Geo ✓</u>		
5) Welding Personnel Qualified	<u>Geo ✓</u>		
6) Materials & Mtr's Checked	<u>Geo 10/15</u>		* <u>FEB 28 2006</u>
7) Visual Weld Inspection	<u>Geo 10/30</u>		* <u>FEB 28 2006</u>
8) Radiography & Other NDE	<u>Geo 10/30</u>		* <u>FEB 28 2006</u>
9) Postweld Heat Treatment	<u>Geo 02/27/06</u>		* <u>FEB 28 2006</u>
10) NDE & Heat Treatment Recorded	<u>Geo 10/19/05</u>		
11) Non Conformances Cleared	<u>✓</u>		
12) Deficiencies Cleared	<u>✓</u>		
13) Hydrostatic Test Gauges Checked	<u>Geo 02/28/06</u>	<u>(W90) W952</u>	
14) Hydrostatic Test Complete <u>7500 psi</u>	<u>Geo 03/01</u>		* <u>MAR 01 2006</u>
15) Manufacturers Data Report AB-28 Complete	<u>Geo 03/01</u>		* <u>MAR 01 2006</u>
16) Name Plate Stamped and Attached to Correct Heater Coil	<u>Geo 03/01</u>		* <u>MAR 01 2006</u>
17) As Built Drawings Accepted by Owner	<u>—</u>		
18)			
19)			
20)			
21)			

* Denotes an A.I. Inspection Point

** Denotes an A.I. Hold Point

- All above examinations are mandatory and must be signed by Quality Control Personnel when applicable.
- Additional requirements may be added for any particular job at the request of the Customer or the QCM/QCI
- When the QCM has satisfied himself that all the above operations have been performed, he shall date and sign this form and retain a copy in the Job File.

Feb 28/06
Date

[Signature]
Signature of Quality Control Manager



the pressure equipment safety authority

#200, 4208 - 97 Street
Edmonton, Alberta, Canada T6E 5Z9
Tel: (780) 437-9100 / Fax: (780) 437-7787

December 19, 2005

Attention: Leo Dussault
TARA OILFIELD SERVICES LTD
PO BOX 1389
DIDSBURY, AB T0M 0W0

Re: Design registration

The design submission, tracking number 2005-07996, originally received on October 12, 2005 was surveyed and accepted for registration as follows:

CRN : T5045.2
Reg Type: New Design
Drawing No. : 05-129-BDLS-1 Rev 1

Accepted on: December 19, 2005

Description	MAWP	Design Temperature	MDMT
Internal Pressure	34475 kPa	200°C	-29°C

An acceptance letter and a copy of the stamped drawing will be sent to you.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (780) 433-0281 ext 331 or fax (780) 437-7787 or e-mail Liebl@absa.ca.

Sincerely,

LIEBL, ERICK, P. Eng.
Design Survey Engineer

DESIGN CALCULATION COVER SHEET

Page 1 of 4

Customer: Tara Projects	Vessel Description: 3" 5000psi Line Heater	Tag No.:
End User: Unknown	Vessel Serial No. TBA	CRN: Pending
P/O #	Year Built: 2005	A# Pending

The following calculations comply with Section VIII, Division 1 of the ASME Code

☒ Code of Construction, 2004 ASME B31.3 Process Piping

☐ This calculation uses allowable stresses in accordance with original allowable stresses.

☒ Loadings per UG22 have been considered.

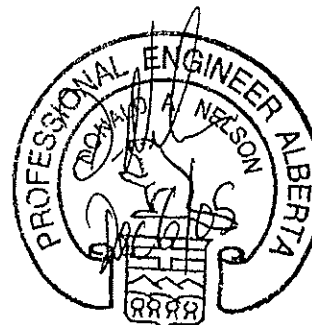
Calc #	Calc Rev #	# of Pages in this Calc	Calc Release Date	Drawing #	Dwg Rev #	Designed By (initial & Date)
2005-302	0	4	Dec 6 2005	05-129-BDLS-1	1	GA Dec 6 2005

Record of Revisions

Calc Rev #	Drawing Rev #	Description of Revisions
0	1	Initial release. All drafting provided by Tara Projects.

Comments:

1. Calc is complete used Codecalc Design Software. The Module used is the Pipes and Pad element The line heater calc is the Header component. The branch component can be disregarded.
2. A-106B and A-333 Gr6 may be used interchangeably in this design. The calc lists A-106B
3. Please disregard the header reinforcement calc.



PVElite 2005 Licensee: NATIONAL ENGINEERING INC.

FileName : line heaters

Pipe&Pad Analysis : 3 x 5000

Item: 2 3:46p Dec 6, 2005

Input Echo, Pipe & Pad Item 2, Description: 3 x 5000

Design Internal Pressure P 5000.00 psig
Design Temperature 200.00 F
392 F

Header Material A-106 B
Header Allowable Stress Operating Sh 20000.00 psi
Header Allowable Stress Ambient Shcold 20000.00 psi
Header Material Type for Coeff. Y Ferritic Steel

Branch Material A-106 B
Branch Allowable Stress Operating Sb 20000.00 psi
Branch Allowable Stress Ambient Sbcold 20000.00 psi
Branch Material Type for Coeff. Y Ferritic Steel

	Header	Branch
Dimension Basis (Nominal or Actual)	Nominal	Nominal
Nominal -or- Actual Outside Diameter	3.0000	1.0000 in.
Basic Quality Factor for Long. Joints	E 1.00	1.00
Mill Tolerance	c 12.5	12.5 %
Corrosion Allowance	c 0.0625	0.0625 in.

Pipe Schedule (Header) SCH XX-STG
Pipe Schedule (Branch) SCH XX-STG

Angle Between Branch and Header beta 90.0000 Degrees
Does the Branch Penetrate a Header Weld No

Warnings or Error Messages for Pipe&Pad Analysis: 2

WARNING - Design Pressure, 5000.000, is greater than 3000 psi.

--- Internal Pressure Calculations for Header and Branch ---

	Header	Branch
Allowable Stress used in Calculations	20000.00	20000.00 psi
Allowable Stress at Ambient Temperature	20000.00	20000.00 psi
Actual Outside Diameter used in Calc.	3.500	1.315 in.
Nominal Thickness used in Calculations	0.600	0.358 in.
Coefficient of Effective Stressed Dia.	0.400	0.400
Required Thickness at Design Pressure	0.398	0.149 in.
Required Thickness + CA and Mill Tol.	0.526	0.242 in.
Max. Allowable Working Pressure (MAWP)	5910.54	9000.36 psig
MAWP, New (uncorroded) & Cold (ambient)	6818.18	11771.89 psig
Hydrotest Pressure	8865.82	13500.54 psig

--- Calculations for Required Branch Reinforcement ---

PVElite 2005 Licensee: NATIONAL ENGINEERING INC.

FileName : line heaters

Pipe&Pad Analysis : 3 x 5000

Item: 2 3:46p Dec 6, 2005

Height of Reinforcement Zone	L4	0.6269	in.
Effective Length removed from Pipe	d1	0.8135	in.
Half Width of Reinforcement Zone	d2	1.1200	in.
Required Reinforcement Area	A1	0.3236	in ²
Area Available in Header Wall	A2	0.0924	in ²
Area Available in Branch Wall	A3	0.1270	in ²
Area Available in Branch Weld	A4	0.1250	in ²
Total Area Available (A2+A3+A4+A4+A4)		0.3445	in ²
Estimated MAWP of Assembly		5096.97	psig

FORMULAS and SUBSTITUTIONS for B31.3 INTERSECTION CALCULATIONS :

$$th = (P * Dh) / 2 (Sh * QF + P * Yh)$$

$$th = (5000 * 3.5000) / 2 (20000 * 1.00 + 5000 * 0.40)$$

$$th = 0.398 \text{ in. Required thickness of header}$$

$$tmh = (th + c) / Hmtr$$

$$tmh = (0.3977 + 0.0625) / 0.8750$$

$$tmh = 0.526 \text{ in. Req'd. thickness + CA + mill tolerance}$$

$$tb = (P * Db) / 2 (Sb * QF + P * Y)$$

$$tb = (5000 * 1.3150) / 2 (20000 * 1.00 + 5000 * 0.40)$$

$$tb = 0.149 \text{ in. Required thickness of branch}$$

$$tmb = (tb + c) / Bmtr$$

$$tmb = (0.1494 + 0.0625) / 0.8750$$

$$tmb = 0.242 \text{ in. Req'd. thickness + CA + mill tolerance}$$

----- Pressure Results -----

$$Hpo = (Th * Hmtr - c) * 2 * Sh * He / (Dh - 2 * (Th * Hmtr - c) * Yh)$$

$$Hpo = (0.6000 * 0.875 - 0.063) * 2 * 20000 * 1.000 / (3.500 - 2 * (0.600 * 0.875 - 0.063) * 0.40)$$

$$Hpo = 5910.543 \text{ psig M.A.W.P., operation, header}$$

$$Hpnc = (Th * Hmtr) * 2 * Shcold * He / (Dh - 2 * (Th * Hmtr) * HY)$$

$$Hpnc = (0.6000 * 0.875) * 2 * 20000 / (3.500 - 2 * (0.600 * 0.875) * 0.40)$$

$$Hpnc = 6818.182 \text{ psig M.A.W.P., New & Cold, header}$$

$$Hpht = (1.5 * Hpo * Shcold / Sh)$$

$$Hpht = (1.5 * 5910.54 * 20000) / 20000$$

$$Hpht = 8865.815 \text{ psig Hydrotest Pressure, header}$$

$$Bpo = (Tb * Bmtr - c) * 2 * Sb * Be / (Db - 2 * (Tb * Bmtr - c) * By)$$

$$Bpo = (0.3580 * 0.875 - 0.063) * 2 * 20000 * 1.000 / (1.315 - 2 * (0.358 * 0.875 - 0.063) * 0.40)$$

$$Bpo = 9000.360 \text{ psig M.A.W.P., operation, branch}$$

$$Bpnc = (Tb * Bmtr) * 2 * Sbcold * Be / (Db - 2 * (Tb * Bmtr) * BY)$$

PVElite 2005 Licensee: NATIONAL ENGINEERING INC.

FileName : line heaters

Pipe&Pad Analysis : 3 x 5000 Item: 2 3:46p Dec 6, 2005

Bpnc = (0.3580 * 0.875) * 2 * 20000 * 1.000 /
 (1.315 - 2 * (0.358 * 0.875) * 0.40)
 Bpnc = 11771.892 psig M.A.W.P., New & Cold, branch

Bpht = (1.5 * Bpo * Sbcold / Sb)
 Bpht = (1.5 * 9000.36 * 20000) / 20000)
 Bpht = 13500.541 psig Hydrotest Pressure, branch

----- Area and Zone Results -----

L4 = The minimum of (L4th, L4tb)
 L4 = Minimum(1.156 , 0.627)
 L4 = 0.627 in. Height of reinforcement zone

d1 = (Db - 2 * (Tb * Bmtr - c)) / Sin(beta)
 d1 = (1.32 - 2 * (0.3580 * 0.88 - 0.0625)) / SIN(90.0)
 d1 = 0.813 in. Effective Length removed from pipe

d2d2 = (Tb * Bmtr - c) + (Th * Bmtr - c) + (d1 / 2)
 d2d2 = (0.358 * 0.875 - 0.0625) + (0.600 * 0.875 - 0.0625) +
 (0.813 / 2)
 d2d2 = 1.120 in. Candidate for d2 based on Tb + Th

d2 = The Min of (The Max of (d1, d2d2), Db)
 d2 = Min(Max(0.813 , 1.120), 3.500)
 d2 = 1.120 in. Half length of reinforcement zone

A1 = (th * d1 * (2 - Sin(á))
 A1 = (0.398 * 0.813 * (2 - Sin(90.0))
 A1 = 0.324 in² Area required to be replaced

A2 = (2 * d2 - d1) * (Th * Hmtr - th - c)
 A2 = (2 * 1.120 - 0.813) * (0.600 * 0.875 - 0.398 - 0.063)
 A2 = 0.092 in² Area available in header

A3 = (2 * L4 * (Tb * Bmtr - tb - c)) / Sin(á)
 A3 = (2 * 0.627 * (0.358 * 0.8750 - 0.149 - 0.063)) / Sin(90.0)
 A3 = 0.127 in² Area available in branch

A4 = (Min(0.7 * Tb, Minthk) / 0.707) ** 2
 A4 = (Min(0.7 * 0.358 , 0.250) / 0.707) ** 2
 A4 = 0.125 in² Area available in branch weld

Welders Name (File Number)	Symbol	T.O.S. Proc. #	Process/ Method	Base Metals	"F" #	Backing	Min. O.D.	Deposit Thickness	Pos.	Uphill/ Downhill	Cored/ Solid	Insert	Backing Gas	GTAW Current	GMAW X-Fer	Expiry Date
Doug Weigum (W-4123)	D	TOS-1&2	SMAW	P1	3	Optional	1.0"	.188"	All	Uphill	N/A	N/A	N/A	N/A	N/A	10/01/2006
			Manual	P1	4			.684"								
Nicholas Vogel (W-21228)	U	TOS-1&2	SMAW	P1	3	Yes	25mm	6.35mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	05/13/2007
			Manual	P1	4	No		15.65mm								
Ryan Zimmer (W-22692)	T	TOS-1&2	SMAW	P1	3	Yes	25mm	6.35mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	07/22/2007
			Manual	P1	4	No		15.65mm								
	M		SMAW	P1	3	Yes	2.5"	6mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	07/22/2007
			Manual	P11	4	No		16mm								
George Gannon (W-14190)	M	TOS-1&2	SMAW	P1	3	Optional	1.0"	.188"	All	Uphill	N/A	N/A	N/A	N/A	N/A	08/07/2007
			Manual	P1	4			.684"								
	M		SAW	P1	6	With	N/A	Max.	Flat	N/A	N/A	N/A	N/A	N/A	N/A	05/27/2007
			Manual													
	M		GMAW	P1	6	Optional	2.875"	.110"	0-45,F	Downhill	N/A	N/A	NO	N/A	SC	05/24/2007
			SMAW		4			Max.	F, V	Uphill						
	M		GMAW	P1	6	Optional	1.0"	.100"	0-45,F	Downhill	N/A	N/A	NO	N/A	SC	05/25/2007
			FCAW			With		.672"	F, V	N/A						
TOS-1&2	S		SMAW	P1	3	Optional	1.0"	.188"	All	Uphill	N/A	N/A	N/A	N/A	N/A	
			Manual	P1	4			.684"								
	S		SAW	P1	6	With	N/A	Max.	Flat	N/A	N/A	N/A	N/A	N/A	N/A	05/27/2007
			Manual													
	S		GMAW	P1	6	Optional	1.0"	.100"	0-45,F	Downhill	N/A	N/A	NO	N/A	SC	05/25/2007
			FCAW			With		.672"	F, V	N/A						
	S		GTAW	P1	6	Optional	1.0"	.188"	Flat	N/A	N/A	N/A	N/A	N/A	N/A	05/03/2007
			SMAW	4130				.672"								
	S		GTAW	P8	5	Optional	1.0"	0.2"	Flat	N/A	N/A	N/A	N/A	N/A	N/A	07/27/2007
			SMAW			With		.488"	1G							

WELD PROCEDURE CERTIFICATE



TARA OILFIELD SERVICES LTD.

P.O. Box 99, Didsbury, Alberta T0M 0W0
Phone 403-335-9158 Cell 403-507-1482

WELDING PROCEDURE SPECIFICATION NO: TOS-2

WELDING PROCEDURE QUALIFICATION RECORD NO(S): PQ2, PQ3

QUALIFIED FOR

Base Metal (Typical): P1 Groups 1 & 2 to P1 Groups 1 & 2 (SA 333 Gr. 6, SA 420 WPL6, SA 350 Gr. LF2, SA 516 Gr. 70 etc.)
Process(es): SMAW Weld Types: GROOVE & FILLET
Position: ALL POSITIONS Diameter: ALL DIAMETERS
Filler Metal: E6010, E7018-1

BASE METAL CONDITIONS & THICKNESS RANGE QUALIFIED:

NOTCH TOUGHNESS APPLICATIONS TO -46°C WITH P.W.H.T.

ASME B31.1	<u>3.2 to 25.4 mm (0.125 to 1.00 in.) inclusive.</u>
ASME B31.3	<u>3.2 to 25.4 mm (0.125 to 1.00 in.) inclusive.</u>
ASME SECT. VIII, DIV.1	<u>3.2 to 25.4 mm (0.125 to 1.00 in.) inclusive.</u>

ALBERTA BOILERS SAFETY ASSOCIATION	
PROVINCE OF ALBERTA	
SAFETY CODES ACT	
WELDING PROCEDURE	
Reg. No. WP	<u>2081.2</u>
Spec No.	<u>TOS-2</u>
Weld Process	<u>SMAW</u>
Matl. Gr. P No.	<u>1 Gr. 12 to P No. 1 Gr. 12</u>
Elec. Gr. F No.	<u>3+4</u> A No. <u>1</u>
Th. Qual. For	<u>3.2 to 25.4 mm PWHT</u> <u>YES</u>
<u>CVN-46°C</u>	
Signed <u>R. ROSEBERG, P.ENG.</u>	
WELDING SPECIALIST	
PROVINCIAL REGISTRATION	

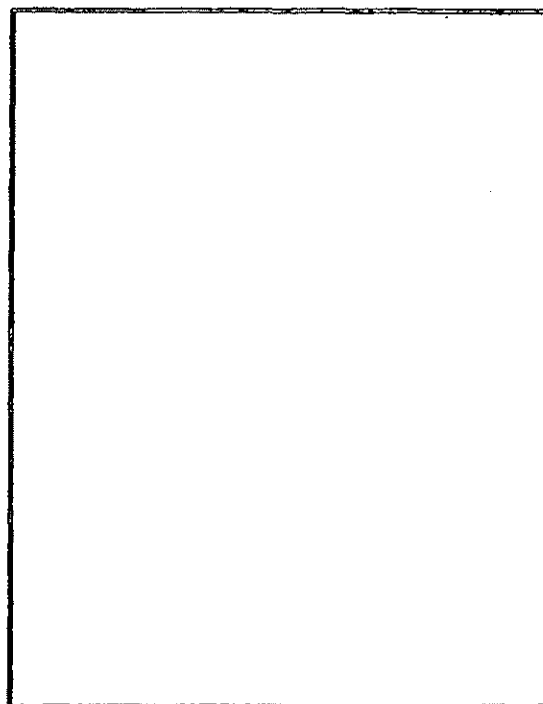


EXHIBIT NO. 14.1

TARA OILFIELD SERVICES LTD.

CERTIFYING STATEMENT

Date: 10-Sept-05

I have reviewed the written practices, procedures, personnel records and certifications of:

Canspec Group Inc.
#6, 1313 – 44th Avenue N.E.
Calgary, Alberta

In my opinion, they comply, in all respects, with requirements of SNT-TC-1A. Canspec Group Inc. are appointed to perform (RT, UT, MT, and PT) Non-Destructive Examinations for Tara Oilfield Services Ltd.

Mr. Phil Smith is by this statement, appointed to act as the Level III person to be responsible for RT, MT, UT and PT Non-Destructive Examinations for TARA Oilfield Services Ltd.

Mr. Ken Growler, certified in RT, is by this statement appointed to act as the Level III examiner, in the absence of Mr. Smith, for TARA Oilfield Services Ltd.

Mr. Tim Griggs, certified in RT, MT, and PT, is by this statement appointed to act as the Level III examiner, in the absence of Mr. Smith, for TARA Oilfield Services Ltd.

In the absence of any of the above, Canspec can assign any of their SNT-TC-1A qualified personnel to be responsible for RT, MT, UT and PT Non-Destructive Examinations for TARA Oilfield services Ltd.

Sept. 10, 2005



Leo Dussault, Quality Control Manager

RADIOGRAPHIC TESTING REPORT

R/PL - 5472

PAGE 14 OF 2



CLIENT: TARA PROJECTS
 ATTENTION: MARTY SHERIDAN
 ADDRESS: D DSBURY
 PROJECT: 05-129C
 WORK LOCATION: CLIENT YARD - DDBSBURY

CONTRACTOR: 316-0013226
 CANSPEC JOB #: 3172
 PO: RT0016
 PROCEDURE #: RT0016
 ACCEPTANCE: STANDARD

DATE: 14/11/05
 MATERIAL TYPE: AS
 FILM BRAND: AGFA D4
 RADIATION SOURCE: Ir 192 Co 60 X-RAY
 FOCAL SPOT: 2.7 XZ 17 (MM) IN

IDENTIFICATION	PIPE DIA	PIPE SCH	FILM TYPE	REIN.	TECH #	SOD (ID)	OFD (I)	# OF EXP	C R K	L F	I P	S U C	E C R P	DEFECT LOCATION & REMARKS	ACC	REJ
1 X-1	3"	XXH D4		125	3	3.4"	600	4								
2 X-2																
3 X-3																
4 X-4																
5 X-5																
6 X-6																
7 X-7																
8 X-8																
9 X-9																
10 X-10																
11 X-11																
12 X-12																
13 X-13																
14 X-14																
15 X-15																
16																
17																
18																
19																
20																

REFER TO OPPOSITE SIDE FOR SCOPE OF SERVICES AND STANDARD OF CARE

SIGNATURES

CLIENT REPRESENTATIVE: *W. J. [Signature]*
 TECHNICIAN (SIGN): *T. G. [Signature]*
 PRINT NAME: T. G. [Signature]
 CGSB LEVEL: 2 # 1270
 SNT LEVEL: 3 #
 CEDO / CGSB LEVEL: #
 SNT LEVEL: #
 SIGNATURE: *S. SKRILEC*
 2ND TECHNICIAN/CEDO

CHARGES: VEHICLE # 374, DAILY KMS, OT HRS, DT HRS, ENVIRO FEE, SHIF + PREM, CAMP - CANSPEC, PER MAN DAY, OTHER DTR A126010, DAILY COST REPORT #, RATE SHEET, QUOTE #, CAMP CONTRACTOR, NAME, LOCATION, PH #

Furnace Work Order

Client: TARA OILFIELD SERVICES LTD.
Address: P.O. BOX 1389
DIDSBURY, AB
T0M 0W0

Date: Friday February 24, 2006
Phone: (403) 335-9158
Date Required: Monday February 27, 2006

Client Reference:
Furnace: 2

P.O. : Leo

Attention: MARTY SHERIDAN
Furnace Load: CF06-6213

Description	Quantity
Coil	1
Spools	5

Total Overtime Hours = 0 @ \$ 00 Per Hour = \$ 00
Furnace Charges: \$600.00
Other Charges(s): \$ 00
COST: \$600.00
GST: \$42.00
TOTAL COST: \$642.00

Heat Cycle (In Degrees Celsius)

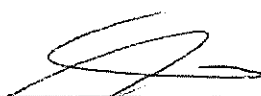
Material: Carbon Steel (P1) <= 1" W/T Code: Customer Spec.
Heat from Ambient to 425° at a Moderate Rate.
Heat from 425° to 621° at 222° per Hour max.
Soak at 621° +/- 14° for 1 Hours.
Cool to 425° at 277° per Hour max.
Cool from to at per Hour max.
From 425° Air cool in furnace.

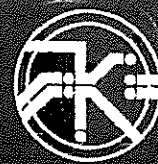
Comments:

- NOTE: 1. An extra charge will apply for any additional supporting or blocking required.
2. Customer will not hold Continental Stress Relieving Services Ltd. responsible for any damage or distortion caused by heat treatment process.

Thank you for the opportunity of quoting.
Continental Stress Relieving Services Ltd.

Name: Aaron Thompson

Signed: 



CONTINENTAL STRESS RELIEVING

RECORDING INSTRUMENTS

CERTIFICATE of CONFORMANCE

CERTIFIED BY: KINGSWAY SCIENTIFIC AND INDUSTRIAL INSTRUMENTS INC.
TEST NUMBER: B 6510
DATE OF CALIBRATION: Jan. 12/06

INSTRUMENT MFG. Chino
MODEL NUMBER: EA100-245
SERIAL NUMBER: EA77C001
RECORDER NUMBER: R 29
CALIBRATION DUE: April 12/06

THIS INSTRUMENT HAS BEEN CALIBRATED AND IT IS WITHIN THE
MANUFACTURES SPECIFICATIONS.

REFERENCE STANDARDS

L&N MODEL 8686 SERIAL # 1768189 CERTIFICATION DATE: May 4/05
Hewlett Packard 3458A Ser. #2823A16911 CERTIFICATION DATE: Feb. 8/05
FLUKE 5520A CALIBRATOR Ser. #7990016 CERTIFICATION DATE: Feb. 24/05
CERTIFICATION DATE: _____
RE-CERTIFICATION DATE: Annually

THE CALIBRATION OF ALL STANDARDS AND MEASURING INSTRUMENTS USED IN THIS
CALIBRATION ARE TRACEABLE TO THE NATIONAL RESEARCH COUNCIL OF CANADA IN
OTTAWA OR TO THE NATIONAL BRUEAU OF STANDARDS IN WASHINGTON, D.C.

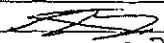
KINGSWAY SCIENTIFIC & IND. INSTR. INC.
CALIBRATED BY:

SIGNATURE:

CONTINENTAL STRESS RELIEVING SERVICES LTD.
Telephone: (403) 273-5105

Date: February 24, 2006
Client: Tara Oilfield Services
Owning Co: N/A
Chart Speed: 30 Lines/Hour
Material: As Per Customer Specifications
Procedure: PWHT
Furnace Load #: CF06-6213
Client Job #:
P.O. #: Leo
Comments: 1-Coil
5-Spools

LD 02/27/06

Operator Name: Aaron Thompson
Operator Signature: 
Temperature in °C: ☒ Recorder #: R 29.

JOB # 05-1290
LINE HEATER BUNDLES
AND SPOOLS

End the Soak

Start the Soak



Red Deer Ltd.
6785 - 52nd Ave.
Red Deer, Alta., T4N 4K8

Ph. 343-2822, Fax: 347-1470
Email: info@kingmeter.com
Web: www.kingmeter.com

PRESSURE GAUGE CALIBRATION TEST CERTIFICATE

We certify that the gauge identified below has been tested and calibrated using precise test equipment and that this instrument is accurate to within 1/2% of its full scale reading.

MODEL & RANGE: 4" Wiha 10,000 / 69,000

GAUGE NO.: W 952

This gauge meets all King's Meter Gauge Calibration Standards.

TEST GAUGE READINGS

GAUGE READINGS

1000 PSI	1000 PSI
2000 "	2000 "
3000 "	3000 "
4000 "	4000 "
5000 "	5000 "
6000 "	6000 "
7000 "	7000 "
8000 "	8000 "
9000 "	9000 "
10,000 "	10,000 "

TECHNICIAN: [Signature]

DATE: Oct 20, 2005

CERTIFICATE OF TRACEABILITY

PERMA-CAL GAUGE MODEL -100NTM18B21, S/N-010328005-01-001 CALIBRATED AGAINST
WIKA 342.11 15,000 S/N Z7003J0 CERTIFICATION #6432.

TRACEABLE TO N.I.S.T. (I.N.M.S)

Calibration Date: January 5, 2005, Expiry Date January 5, 2006



Red Deer Ltd.
6785 - 52nd Ave.
Red Deer, Alta., T4N 4K8

Ph. 343-2822, Fax: 347-1470
Email: info@kingmeter.com
Web: www.kingmeter.com

PRESSURE GAUGE CALIBRATION TEST CERTIFICATE

We certify that the gauge identified below has been tested and calibrated using precise test equipment and that this instrument is accurate to within 1/2% of its full scale reading.

MODEL & RANGE 4" Wika 10,000 / 68,000

GAUGE NO.: WX01

This gauge meets all King's Meter Gauge Calibration Standards

TEST GAUGE READINGS

GAUGE READINGS

<u>1000 PSI</u>	<u>1000 PSI</u>
<u>2000 "</u>	<u>2000 "</u>
<u>3000 "</u>	<u>3000 "</u>
<u>4000 "</u>	<u>4000 "</u>
<u>5000 "</u>	<u>5000 "</u>
<u>6000 "</u>	<u>6000 "</u>
<u>7000 "</u>	<u>7000 "</u>
<u>8000 "</u>	<u>8000 "</u>
<u>9000 "</u>	<u>9000 "</u>
<u>10000 "</u>	<u>10000 "</u>

TECHNICIAN: [Signature]

DATE: Oct 20-2005

CERTIFICATE OF TRACEABILITY

PERMA-CAL GAUGE MODEL -100NTM18B21, S/N-010328005-01-001 CALIBRATED AGAINST
WIKA 342.11 15,000 S/N Z7003J0 CERTIFICATION #6432.
TRACEABLE TO N.I.S.T. (I.N.M.S)

Calibration Date: January 5, 2005, Expiry Date January 5, 2006

Rev. 1.0
11 OCT 02

EXHIBIT # 17.3

TARA OILFIELD SERVICES LTD.

HYDROSTATIC TEST REPORT

Date: March 1, 2006

Job Number: 05-129C

Customer: Canadian Sub-Surface Energy Services

Description of Product: 5000psi Line Heater Bundles

Tests Conducted By: Warren Tersigni, Q.C.I. & Leo Dussault, QCM

Test Pressure: 7500psi

Test Medium: H2O

Holding Time at Test Pressure: 60 minutes

Results: PASS AQP-1434

Owner's Inspector Witnessing Test: _____

Comments: _____

Leo

Leo Dussault, Q.C.M.

Signature of Owner's Inspector

Duane Sears ABSA

Signature of ABSA Safety Codes Officer (if applicable)



the pressure equipment safety authority

MANUFACTURER'S DATA REPORT FOR INDIRECT FIRED HEATER COILS

AB-28 2005-12

TIAL ☐

A# 537501.

Manufactured By: TARA Oilfield Services Ltd. P.O. Box 1389 Didsbury, AB T0M0W0
 Manufactured For: Canadian Sub-Surface Energy Services #600, 505 - 8th Avenue S.W. Calgary, AB T2P 1G2
 Ultimate Owner: Canadian Sub-Surface Energy Services #600, 505 - 8th Ave. S.W. Calgary AB
 Location of Installation: Portable

Manufacturer's Serial No.	Construction Drawing No.	CODE: ASME B31.3		Year Built
05-129C	05-129-BDLS-1 Rev.1	Edition	2004	Addenda N/A
				2006

CONSTRUCTION

Coil ID/Purpose	Design Pressure	Design Temp	Design Minimum Temp	Corrosion Allowance	Registered Drawing No.	CRN
a UPSTREAM COIL	34,475 kPa	200° C	-29° C	0.0625"	05-129-BDLS-1Rev.1	T5045.2
b DOWNSTREAM COIL	34,475 kPa	200° C	-29° C	0.0625"	05-129-BDLS-1Rev.1	T5045.2
c						
d						
e						

COIL

Tubes			End Closures				Openings		
Mat'l Spec.	Diameter	Thickness	Return Bend	Flanges	Mat'l Spec.	Rating	Mat'l Spec.	Size/Type	Rating
a SA333-6 / SA106-B	3" NPS	.600"	SA234 GR. WPB	.600"	N/A	N/A			
b SA333-6 / SA106-B	3" NPS	.600"	SA234 GR. WPB	.600"	N/A	N/A			
c									
d									
e									

HEADERS/MANIFOLDS

Purpose	Size	Shell	Thickness	Ends		Openings			
		Mat'l Spec.			Mat'l Spec.	Thickness	No	Mat'l Spec	Size/Type
f									
g									

TEST PRESSURE, NDE, POSTWELD HEAT TREATMENT AND SIZE

Hydrostatic Test Pressure	Radiography (100% or % Random)	Other NDE (MT) (PT) (UT)	Postweld Heat Treatment		Overall Length	Heating Surface	Volume
			Temp.	Time			
a 51,710 kPa	100%	-	621° C	1 Hour	18 ft 7 in	-	0.4 m3
b 51,710 kPa	100%	-	621° C	1 Hour	18 ft 7 in	-	0.4 m3
c							
d							
e							
f							
g							

IMPACT TESTING: N/A

REMARKS: INDIRECT HEATER COIL SPECIFICATIONS ONLY UP TO HEAD PLATE. FLANGES NOT INCLUDED IN THIS DESIGN.

TOTAL VOLUME: 0.8 m3 FABRICATION DRAWING 05-129C-BDLS-1. REV 2.

CERTIFICATE OF COMPLIANCE

We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this coil bundle are in accordance with the above Provincial Registered Design.

Date March 1, 2006 Signed

(Representative)

For TARA OILFIELD SERVICES LTD.

(Manufacturer)

CERTIFICATE OF SHOP INSPECTION

The undersigned, a duly authorized Safety Codes Officer employed by ABSA has inspected the above Heater Coils and state that, to the best of my knowledge and if, the construction is in accordance with the Alberta Safety Codes Act and Regulations

Date March 1, 2006

Signed

ALTA #58

W
HT
RT1



Manufactured & Certified by
TARA Oilfield Services Ltd.
DIDSBURY, ALBERTA

MANUF. SER. NO: 05-129C

YR BUILT: 2006 CRN: T5045.2

	COIL #1	COIL #2
MAWP (kPa)	<u>34,475</u>	<u>34,475</u>
@ TEMP. °C	<u>200°C</u>	<u>200°C</u>
NPS (In)	<u>3"</u>	<u>3"</u>
THKNS (mm)	<u>.600"</u>	<u>.600"</u>
MATERIAL	<u>SA333 Gr.6</u>	<u>SA333 Gr.6</u>
	<u>SA106 Gr.B</u>	<u>SA106 Gr.B</u>
XRAY	<u>100%</u>	<u>100%</u>
COR. ALL. (mm)	<u>0.0625"</u>	<u>0.0625"</u>
CODE	<u>B31.3</u>	<u>B31.3</u>
TEST PRESS. (kPa)	<u>51,710</u>	<u>51,710</u>

DRWG NO.: 05-129C-BDLS-1

MDMT -29°C PWHT 621°C - 60 MIN.

A537501

COMPLETION OF CONSTRUCTION

DECLARATION

NOTE: This declaration shall be completed and signed by the person responsible, in whole or in part, for the construction, installation, testing and inspection of the pressure piping system and forwarded to the Administrator/Chief Inspector.

- (1) Owner of Plant: Canadian Sub-Surface Energy Services
600#, 505 - 8th Avenue S.W. Calgary, Alberta
(Name and Address)
- (2) Engineer or Contractor: TARA Oilfield Services Ltd.
1805 - 19th Street Didsbury, Alberta
(Name and Address)
- (3) Type of Plant: Line Heater Bundles
- (4) Location of Plant: Portable
(Sec, TWP, Rge)
- (5) Description of Pressure Piping System(s): 3" Sch XXH A333-GR6 & A106-GRB Pipe
with A234-GR WPB Fittings.

STATEMENT OF COMPLIANCE

I, the undersigned, declare that the described pressure piping system, approved under design registration number CRN# T5045.2, complies in all respects with the regulations for construction, installation, testing and inspection and that all applicable pressure piping test data reports have been delivered to the owner.

Nicole
(Signature)

Nicole Normand
(Print Name)

Q.C.I.
(Title)

March 13, 2006
(Date)

TARA Oilfield Services LTD.
(Company)

1805 - 19th Street
(Address)

Didsbury, AB T0M 0W0
(City, Postal Code)

In accordance with the provisions of the Safety Codes Act

Shop Construction ☒; Field Construction ☐; Final Data Report ☐.
Partial Data Report ☐ (from one ABSA-authorized Contractor to another
ABSA- authorized Contractor).

Complete both sides of this Form

1. Constructed By: TARA Oilfield Services Ltd. Owner's Job No: 05-129C
 (Name of ABSA authorized primary contractor or subcontractor)
P.O. Box 1389 Didsbury, AB T0M 0W0
 (Address)

Alberta Quality Program No. AQP-1434

2. Constructed For: Canadian Sub-Surface Energy Services.
(Name of primary contractor if different from above)
600#, 205 - 8th Avenue S.W. Calgary. Alberta
(Address)

Alberta Quality Program No. AQP- N/A Expiry Date: N/A
(Required when the primary contractor undertakes some/all of the quality functions, e.g., Mat'l supply, NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

3. Owner: Canadian Sub-Surface Energy Services
(Name and address)

Portable

(Location of installation)

Alberta Quality Program No. AQP- N/A Expiry Date: N/A
(Required when the owner undertakes some/all of the quality functions, e.g., Mat'l supply, NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

4. Piping Design Alberta Registration No.: PP- N/A

5. WP No.: WP-2081.2 ; Company: TARA Oilfield Services Ltd. ; Owner's WP No. (If used): WP-N/A
(Alberta Registration No.) (Alberta Registration No.)
WPS No(s). used: TOS-2 ; Owner's WPS No(s). (If used): N/A

6. Code: ASME B31.1 Non Boiler External Piping ☐; ASME B31.1 Boiler External Piping ☐.

ASME B31.3 ☒ - Service category: Normal ☐, D ☐, M ☐, High Pressure ☒: B31.5 ☐; B31.9 ☐.

[illegible]

Partial Data Reports, properly identified and certified by ABSA-authorized contractors, as listed below are attached to and form part of this Data Report ☐

No.	Line No.	Spool No.	Drg. No. (with Rev. No.)	Contractor (Name)	AQP No.	Expiry date

Remarks: Provide additional comments including noting any code work that was not performed by the ABSA-authorized contractor(s) supplying this document as a Partial Data Report but which must be completed by another ABSA-authorized contractor who assumes overall responsibility for conformance with the Safety Codes Act & Regulations and applicable ASME Codes, and who assures that all required code work is completed prior to putting the piping system into service.

Endorse certificate 'A' or 'B'

A. CERTIFICATE OF COMPLIANCE

Signed by the subcontractor when supplying this certificate as a
Partial Data Report

We certify that the statements in this Data Report are correct and that materials, construction and workmanship of the piping fabrication conform to the registered quality system and the applicable Piping code(s).

Date: _____
Subcontractor

Print Authorized Representative's Name Signature

This certificate is not valid unless it forms part of a
Final Data Report signed by Primary Contractor

B. CERTIFICATE OF COMPLIANCE

Signed by the primary contractor when supplying this certificate as a
Final Data Report

We certify that the statements in this Data Report are correct and that piping job no. 05-129C

described in this Data Report was constructed in accordance with the Province of Alberta Safety Codes Act and Regulations, and applicable ASME Piping Code(s).

Date: Mar. 13, 2006 TARA Oilfield Services
Ltd.

Primary Contractor
Nicole Normand, Q.C.I. _____
Print Authorized Representative's Name Signature

CERTIFICATE OF INSPECTION

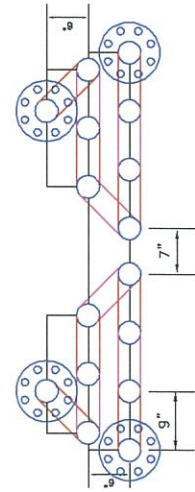
I, the undersigned, employed by _____ have inspected the piping
job no. _____ described in this Construction Data Report and state that, to the best of my

knowledge and belief, the Contractor has constructed this piping in accordance with the applicable Sections of the ASME Piping Codes and Province of Alberta Safety Codes Act and Regulations.

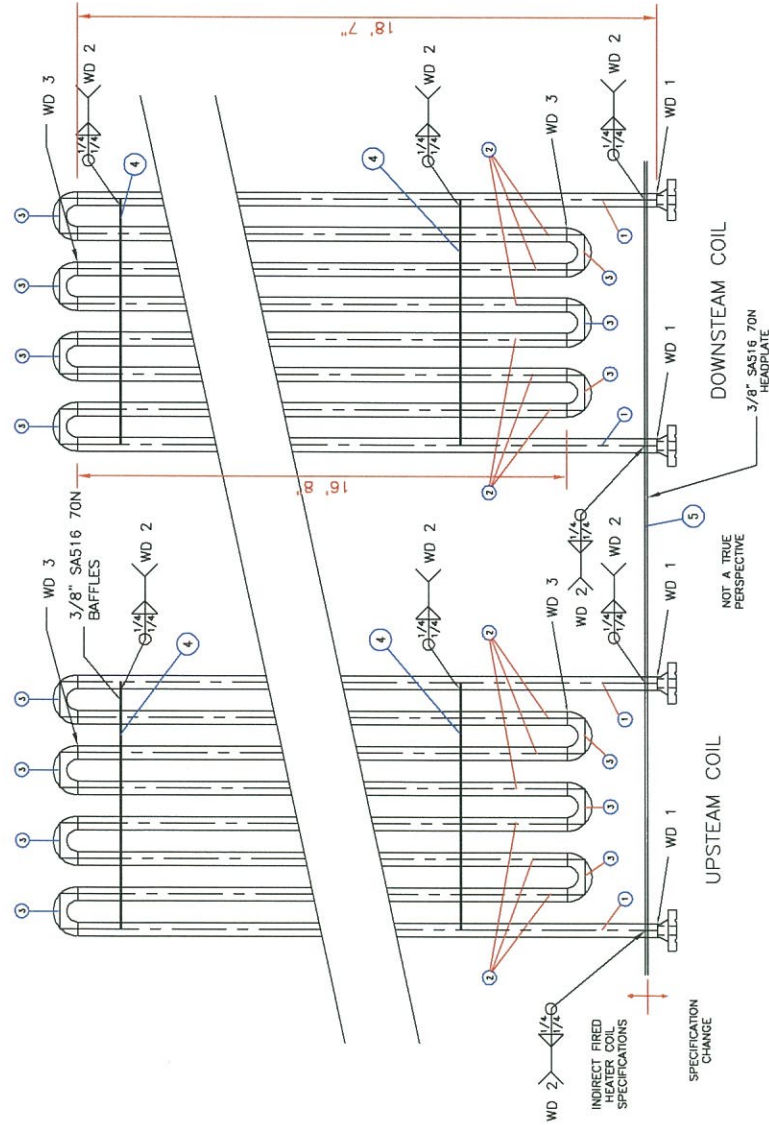
Date: _____ Date: _____

Print Owner's Inspector's Name Owner's Inspector's Signature Name: _____ Sign.: _____

ABSA Safety Codes Officer
(BOILER EXTERNAL PIPING ONLY)



ORIENTATION VIEW



BILL OF MATERIAL

PIPE				
MK	QTY	SIZE	SCHEDULE DESCRIPTION	MATERIAL
1	566mm	3"	XRH PIPE SMLS	A333 GR. 6
2	5080mm	3"	XRH PIPE SMLS	A106 GR. B
WELD FITTINGS				
MK	QTY	SIZE	SCHEDULE DESCRIPTION	MATERIAL
3	6	3"	XRH L.R. 180° RETURN BW	A234 WPB
PLATE MATERIAL				
MK	QTY	THICKNESS	DESCRIPTION	MATERIAL
4	4	3/8"	PIPE SUPPORT/BAFFLES	SA316 70N
5	2	7/8"	HEAD PLATE	SA316 70N

GENERAL NOTES:

1. QUALITY CONTROL NUMBER: AQP, 1438
2. Baffle and Head Material: SA 316 70N
3. All dimensions are in inches unless otherwise specified
4. All tack welds shall be weld procedure T05-02
5. PSI in OTHER PLANS

DESIGN SPECIFICATION

Q/C/P: AQP-1438	ASME B31.3 2004 EDITION
M.A.W.P.: 3000 PSI (24.75 MPa)	
M.D.M.T.: -20°C	DESIGN TEMPERATURE: 200°C
CORROSION ALLOWANCE: .0625"	VOLUME: 0.8 m3
R3.1 SERVICE CATEGORY: NORMAL SERVICE	
N.D.E.: FULL RADIOGRAPHY IN ACCORDANCE TO SEVERE CYCLIC	
HYDROTEST PRESSURE: 7500 PSI (51.70 MPa)	HELD TIME: .10 min.
HYDROTEST MEDIUM: H ₂ O @ SHF	
P.W.H.T. TEMP.: 621°C	HELD TIME: .60 min.
WPS#: T05-02	

FLG TO NOZZLE	ATTACHMENT WELD	FTG TO PIPE
WD 1	WD 2	WD 3
WELDING: B3.1 (1/4\"/>	WELDING: B3.1 (1/4\"/>	WELDING: B3.1 (1/4\"/>

---	---	---
---	---	---
2	ADDED LEAK NUMBERS: XRAY	02/24/06
1	ADDED BAFFLES & HEAD PLATE	12/09/03
0	FOR CALCULATIONS	12/01/05

TARA PROJECTS
TARA OILFIELD SERVICES LTD.
1805 - 19th STREET
DIDSBURY, ALBERTA
PHONE: 403-335-9158 FAX: 403-335-3404

LINE HEATER 125C	LINE HEATER 125C
UNIT: U-02	UNIT: U-02
DATE: 12/01/05	DATE: 12/01/05
REV: 2	REV: 2

BILL OF MATERIAL

PIPE				
MK	CUT LENGTH	SIZE	SCHEDULE	DESCRIPTION
1	5664mm	3"	XXH	PIPE SMLS
2	5080mm	3"	XXH	PIPE SMLS
WELD FITTINGS				
MK	QTY	SIZE	SCHEDULE	DESCRIPTION
3	6	3"	XXH	L.R. 180° RETURN BW
PLATE MATERIAL				
MK	QTY	SIZE	THICKNESS	DESCRIPTION
4	4	13" x 57"	3/8"	PIPE SUPPORT/BAFFLES
5	2	72" RADIUS	3/8"	HEAD PLATE
MATERIAL				
				A133 GR. 6
				A106 GR. B
				A234 WPB
				SAS16 70N
				SAS16 70N

GENERAL NOTES:

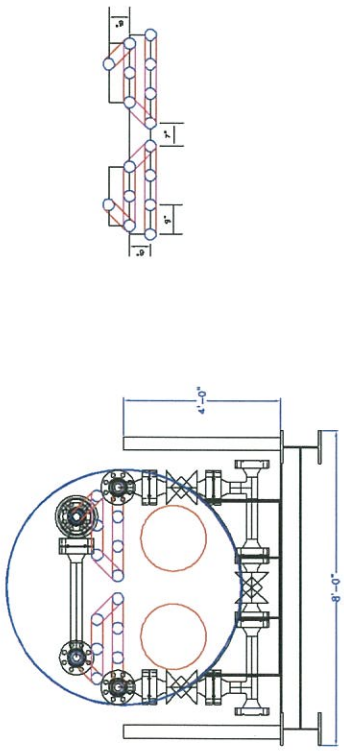
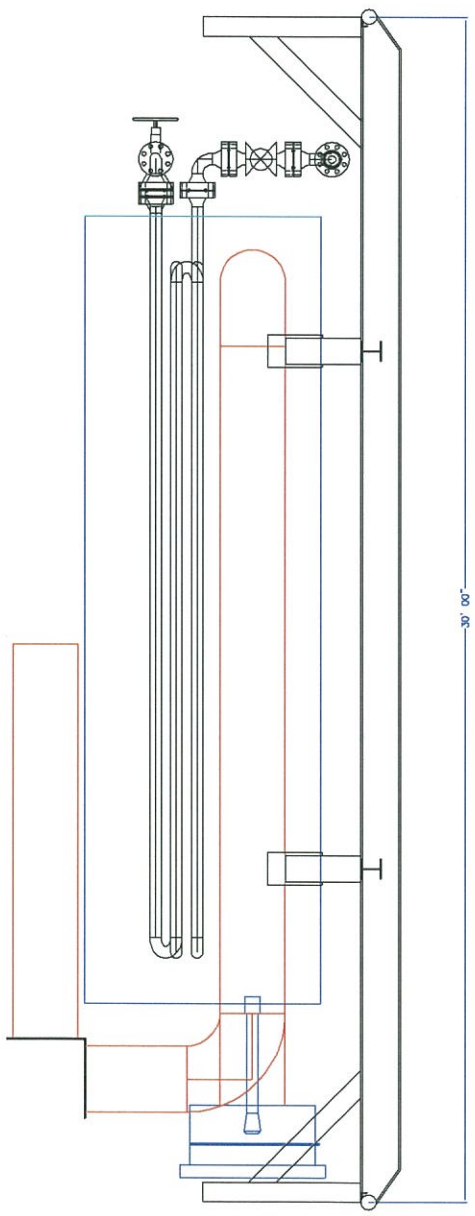
1. QUALITY CONTROL NUMBER: AQP 1434
2. DESIGN AND CONSTRUCTION NUMBER: WP 2081.2
3. BATTLE AND LEAD MANUFACTURING NUMBER
4. ALL FITTINGS USED ARE REGISTERED WITH ASMA
5. ALL WELDS SHALL BE WELDED IN ACCORDANCE WITH THE WELDING PROCEDURE SPECIFICATION (WPS) AND QUALITY CONTROL NUMBER (AQP) LISTED HEREIN
6. ALL TACK WELDS WILL BE WELD PROCEDURE T05-02
7. PSV IN OTHER PIPING.

DESIGN SPECIFICATION

ASME B31.3 2004 EDITION	
U.L.P. AQP-H14	
M.A.W.P. 5000 PSI (34.4758 MPa)	
M.D.M.T. -29°C	DESIGN TEMPERATURE 207°C
CORROSION ALLOWANCE .0625"	VOLUME 0.5 m ³
R3.1 SEVERITY CATEGORY: NORMAL SPRAY	
N.D.E. FULL RADIOGRAPHY IN ACCORDANCE TO SERVICE CYCLIC	
HYDROTEST PRESSURE: 7500 PSI (51.710 MPa)	HOLD TIME .30 min
HYDROTEST MEDIUM: H ₂ O @ 50°F	
P.W.H.T. 1.0 MPa @ 62°C	HOLD TIME 60 min
WPS# T05-2	

FLGS TO NOZZLE	ATTACHMENT WELD	FTGS TO PIPE
WD 1	WD 2	WD 3
WELDING INCHES R = 1/8" (3/16" - 1/8") H = 1/8" (3/16" - 1/8") L = 1/8" (3/16" - 1/8")		

FOR APPROVAL	10/07/05	LD
TARA PROJECTS		
TARA OILFIELD SERVICES LTD.		
1805 - 19th STREET DODSBURY, ALBERTA		
PHONE: 403-335-9198 FAX: 403-335-3404		
SKID LAYOUT		
LINE HEATER 128C		
TARA JOB#	UNIT	DWG. #
05-125C	U-403	05-159C-H05-2
		L. DWS/PAUL
		DATE: 10/07/05
		REV: 0



BILL OF MATERIAL

PIPE			
MK	CUT LENGTH	SCHEDULE DESCRIPTION	MATERIAL
1	566mm	XXH PIPE SMLS	A133 GR. B
2	500mm	XXH PIPE SMLS	A106 GR. B
WELD FITTINGS			
MK	QTY	SCHEDULE DESCRIPTION	MATERIAL
3	6	XXH L.B. 180° RETURN BW	A234 WPB
PLATE MATERIAL			
MK	QTY	THICKNESS DESCRIPTION	MATERIAL
4	4	13" x 57" 3/8" PIPE SUPPORT/BAFFLES	SAS16 70N
5	2	72" RADIUS 3/8" HEAD PLATE	SAS16 70N

GENERAL NOTES:

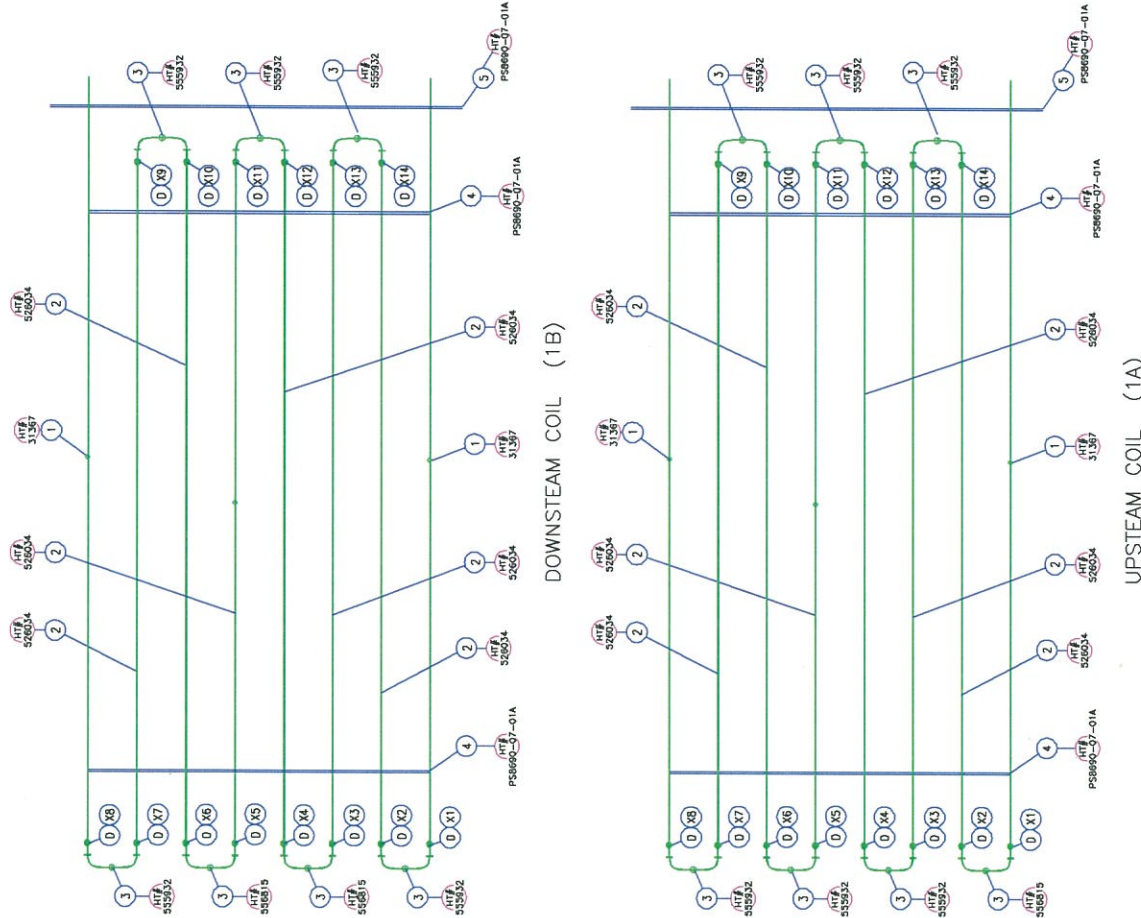
1. QUALITY CONTROL NUMBER: AQP 1434
2. WELDING PROCEDURE REGISTRATION NUMBER: WP 2081.2
3. ALL WELDS SHALL BE WELDED IN ACCORDANCE WITH THE WELDING PROCEDURE SPECIFICATION (WPS) AND QUALITY CONTROL NUMBER (QCN) LISTED HEREIN.
4. ALL FITTINGS USED ARE REGISTERED WITH ASMA.
5. ALL TACK WELDS SHALL BE WELDED IN ACCORDANCE WITH THE WELDING PROCEDURE SPECIFICATION (WPS) AND QUALITY CONTROL NUMBER (QCN) LISTED HEREIN.
6. ALL TACK WELDS SHALL BE WELDED IN ACCORDANCE WITH THE WELDING PROCEDURE SPECIFICATION (WPS) AND QUALITY CONTROL NUMBER (QCN) LISTED HEREIN.
7. PSV IN OTHER PIPING.

DESIGN SPECIFICATION

ASME: B31.3, 2004 EDITION
O.C.P. AQP-1434
M.A.W.P.: 3000 PSI (34.75MPa)
M.D.M.T.: -20°C
CORROSION ALLOWANCE: .0625"
VOLUME: 1A m ³
D.O.I. SERVICE CATEGORY: NORMAL SERVICE
N.D.L. FULL RADIOGRAPHY IN ACCORDANCE TO SILVER CYCLIC
HYDROTEST PRESSURE: 7500 PSI (51.7106Pa) HOLD TIME: 30 min.
HYDROTEST MEDIUM: H ₂ O @ 50°F
P.W.H.T. TEMP.: 621°C
HOLD TIME: 60 min.
WPS: TWS-2

FLGS TO NOZZLE	ATTACHMENT WELD	FTGS TO PIPE
WD 1	WD 2	WD 3

ADDED HT NUMBERS & RADIOGRAPHY	DATE
FOR APPROVAL	02/15/06 LD
	10/07/05 LD
TARA PROJECTS TARA OILFIELD SERVICES LTD. 1805 - 19th STREET DIDSBURY, ALBERTA PHONE: 403-335-9198 FAX: 403-335-3404	
HEAT NUMBERS & RADIOGRAPHY	
LINE HEATER 129C	
TASK: JOSEF	DATE: 10/07/05
UNIT: U-43	REV: 1
OWC #: 105-129C-B05-3	



Benteler Stahl/Rohr GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49 5254 81-0 Fax: +49 5254 13666

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
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EN 10204:2005-01

Benteler Stahl/Rohr GmbH - Postfach 1340 - 33043 Paderborn - Deutschland
Westlund - Edmonton
5105 - 75th Street
EDMONTON, AB T6E 5S5
KANADA

Dokument-Nr.: 65-262679/001/P

Document No.:
No. du document:

Kunden-Bestell-Nr.: 05-5385

Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.: 1124178

Benteler Order No.:
No. de commande Benteler:

Versandanzzeigen-Nr.: 6553634

Dispatch Note No.:
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE

Product: SEAMLESS STEEL TUBES

Produit: TUBES D'ACIER SANS SOUDURE

Prüf-Nr.:
No. du certificat:

Hersteller:
Manufacturer:

Producteur:
Manufacturer's brand:

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

Lieferbedingungen: CSA Standard Z245.1-02 Category I, API Specification 5L Forty-Third Edition, March 2004, PS1 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:

Dimensions-tolerances:

Dimensions-tolerances:

Stahlsorte:

Steel grade:

Nuance d'acier:

Lieferzustand: Hot rolled

Delivery condition:

État de livraison:

Produktkennzeichnung:

Product marking:

Marquage du produit:

CONFORMS

ASME

2004 EDITION

SECTION II PART A

see attachment product marking

QC1: VUW

DATE

03/01/06

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 multiples
		feet	feet	lbs		PSI	s	
0001	49	3" NPS * XXS 18 FT - 22 FT	1074,38	19703	526034	3000	5	
		2520621						
0002	16	3" NPS * XXS 38 FT - 42 FT	667,65	12330	735251	3000	5	
		2520074						

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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 multiples
			feet	lbs		PSI		
0003	12	4" NPS * XXS 32 FT - 36 FT	429,36	11810	735325	3000	5	
0004	111	2" NPS * Sched. 160 18 FT - 22 FT	2383,99	17840	735452	3000	5	
0005	50	3" NPS * Sched. 160 18 FT - 22 FT	2062,20	15106	735264	3000	5	
0006	47	4" NPS * Sched. 160 18 FT - 22 FT	2004,36	22615	735361	3000	5	
0007	617	2" NPS * Sched. 40 18 FT - 22 FT	13133,20	47417	735198	3000	5	
0008	281	2" NPS * Sched. 80 18 FT - 22 FT	5554,79	27972	735457	3000	5	
0008	489	2" NPS * Sched. 80 18 FT - 22 FT	9708,56	48885	735546	3000	5	
0009	450	3" NPS * Sched. 40 18 FT - 22 FT	9370,70	70993	526035	3000	5	

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

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0001	526034	0,130	0,220	0,82	0,007	0,003	0,12	0,04	0,14	0,21	0,002	0,010	0,003	0,0001
0002	735251	0,130	0,215	0,84	0,007	0,006	0,12	0,04	0,08	0,11	0,001	0,010	0,003	0,0001
0003	735325	0,130	0,200	0,82	0,010	0,004	0,14	0,05	0,10	0,13	0,001	0,010	0,003	0,0001
0004	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
0005	735264	0,130	0,215	0,82	0,006	0,003	0,11	0,04	0,13	0,21	0,002	0,010	0,003	0,0001
0006	735361	0,135	0,210	0,83	0,010	0,004	0,15	0,04	0,14	0,18	0,001	0,010	0,003	0,0001
0007	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
0008	735457	0,130	0,195	0,83	0,009	0,005	0,09	0,03	0,07	0,12	0,001	0,010	0,003	0,0001

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

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
Item	Heat No.													
Poste	No. de coulée													
0008	735546	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
0009	526035	0,130	0,210	0,82	0,009	0,002	0,10	0,03	0,11	0,20	0,001	0,010	0,003	0,0001

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr+Mo+V)/5) + ((Cu+Ni)/15) \leq 0,40 \%$
2. Formel: $CEV = C + F + ((Mn/6) + (Si/24) + (Cu/15) + (Ni/20) + ((Cr+Mo+V+Nb)/5) + (5 \cdot B)) \leq 0,40$
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
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0001	526034	0,322	0,291	6,308	0,512
0002	735251	0,315	0,286	6,462	0,351
0003	735325	0,320	0,289	6,308	0,421
0004	735452	0,308	0,280	6,308	0,321
0005	735264	0,320	0,285	6,308	0,492
0006	735361	0,333	0,311	6,148	0,511
0007	735198	0,315	0,286	6,385	0,391
0008	735457	0,305	0,278	6,385	0,311
0008	735546	0,305	0,278	6,385	0,311
0009	526035	0,314	0,284	6,308	0,441

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	526034	0,140	0,250	0,88	0,009	0,005	0,10	0,04	0,14	0,19	0,002	0,010	0,002	0,0004
0001	526034	0,150	0,250	0,88	0,009	0,005	0,10	0,04	0,14	0,17	0,002	0,010	0,002	0,0002

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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													
0002	735251	0,150	0,260	0,89	0,009	0,006	0,10	0,04	0,14	0,17	0,002	0,010	0,002	0,0003
0002	735251	0,150	0,250	0,88	0,009	0,005	0,10	0,04	0,14	0,17	0,002	0,010	0,002	0,0002
0003	735325	0,130	0,170	0,81	0,009	0,004	0,14	0,06	0,08	0,10	0,002	0,010	0,002	0,0001
0003	735325	0,130	0,170	0,81	0,009	0,004	0,14	0,06	0,08	0,10	0,002	0,010	0,002	0,0002
0004	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
0004	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
0005	735264	0,150	0,260	0,89	0,009	0,006	0,10	0,04	0,14	0,17	0,002	0,010	0,002	0,0003
0005	735264	0,150	0,250	0,88	0,009	0,005	0,10	0,04	0,14	0,17	0,002	0,010	0,002	0,0002
0006	735361	0,140	0,180	0,80	0,009	0,004	0,15	0,04	0,15	0,19	0,002	0,010	0,002	0,0002
0006	735361	0,140	0,180	0,81	0,009	0,004	0,15	0,04	0,15	0,20	0,002	0,010	0,002	0,0001
0007	735198	0,140	0,190	0,81	0,010	0,006	0,11	0,04	0,09	0,13	0,002	0,010	0,003	0,0003
0007	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
0008	735457	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
0008	735457	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
0008	735546	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
0008	735546	0,140	0,190	0,82	0,011	0,005	0,09	0,03	0,08	0,13	0,001	0,010	0,002	0,0002
0009	526035	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
0009	526035	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

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

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Formelerggebnisse / 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
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule	Formule
0001	526034	0,337	0,318	6,286	0,472	
0001	526034	0,346	0,332	5,867	0,452	
0002	735251	0,347	0,334	5,933	0,452	
0002	735251	0,346	0,332	5,867	0,452	
0003	735325	0,317	0,287	6,231	0,382	
0003	735325	0,317	0,287	6,231	0,382	
0004	735452	0,310	0,281	6,308	0,331	
0004	735452	0,309	0,280	6,231	0,331	
0005	735264	0,347	0,334	5,933	0,452	
0005	735264	0,346	0,332	5,867	0,452	
0006	735361	0,334	0,312	5,714	0,532	
0006	735361	0,337	0,314	5,786	0,542	
0007	735198	0,320	0,301	5,786	0,372	
0007	735198	0,311	0,282	6,231	0,382	
0008	735457	0,314	0,296	5,786	0,341	
0008	735457	0,316	0,298	5,857	0,342	
0008	735546	0,314	0,295	5,786	0,341	
0008	735546	0,315	0,297	5,857	0,331	
0009	526035	0,314	0,285	6,308	0,431	
0009	526035	0,314	0,285	6,308	0,431	

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
The tubes have been submitted to a leak tightness test by: pressure/Time-record
Les tubes ont passé un contrôle d'étanchéité par:

PASSED

Benteler Stahlh. GmbH
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33043 Paderborn
Deutschland
Tel.: +49 5254 81-0 Fax: +49 5254 13666

BENTELER

Stahl/Rohr

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
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Page: Page:

Augensichtkontrolle:	PASSED	Biegeversuch:	PASSED	Maßkontrolle:	PASSED
Visual inspection:		Bending test:		Dimensions examination:	
Examen visuel:		Essai de cintrage:		Vérification des dimensions:	
		Pos. / Item / Poste:	0004, 0007, 0008		

Ringfaltversuch: PASSED

Flattening test:

Essai d'aplatissement:

Pos. / Item / Poste: 0001, 0002, 0003, 0005, 0006, 0009

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.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung	Einschnürung	Re/Rm
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation	Area reduction	Re/Rm
Poste	No. de l'éprouvette	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement	Coefficient de striction	Re/Rm
Anforderungen			mm	ReH	Rm	A2"	1. Formel	
Requirements				PSI	PSI	%	1. Formula	
Exigences				42061-71794	60191-110229	MIN 30	1. Formule	
0001	000001	526034	25,40 X 15,20	46557	69183	44,00		
0001	000002	526034	25,40 X 15,20	46702	69038	45,00		
0002	000001	735251	25,00 X 15,10	46122	67733	46,00		
0002	000002	735251	25,00 X 15,10	46647	68603	44,00		
0002	000003	735251	25,40 X 15,20	46702	69473	44,00		
0003	000001	735325	25,40 X 17,10	46267	67588	48,00		
0003	000002	735325	25,40 X 17,10	46267	66862	47,00		
0004	000001	735452	19,00 X 8,70	48008	67153	41,00		
0004	000002	735452	19,00 X 8,70	47717	68748	40,00		
0005	000001	735264	25,40 X 11,10	46122	67878	44,00		
0005	000002	735264	25,40 X 11,10	46412	69328	45,00		

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Zugversuch / Tensile test / Essai de traction

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung	Einschnürung	Re/Rm
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation	Area reduction	Re/Rm
Poste	No. de l'éprouvette	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement	Coefficient de striction	Re/Rm
Anforderungen			mm	ReH	Rm	A2"	1. Formel	
Requirements				PSI	PSI	%	1. Formula	
Exigences				42061-71794	60191-110229	MIN 30	1. Formule	
0006	000001	735361	25,40 X	13,50	49023	46,00		
0006	000002	735361	25,40 X	13,50	49313	47,00		
0007	000001	735198	19,00 X	3,80	57580	35,00		
0007	000002	735198	19,00 X	3,80	57435	36,00		
0008	000001	735457	19,00 X	5,50	50908	44,00		
0008	000002	735457	19,00 X	5,50	49748	34,00		
0008	000001	735546	19,00 X	5,50	50763	43,00		
0008	000002	735546	19,00 X	5,50	50908	39,00		
0009	000001	526035	25,40 X	5,50	51053	41,00		
0009	000002	526035	25,40 X	5,50	50908	39,00		

Härteprüfung / Hardness test / Essai de dureté

Pos.	Proben-Nr.	Schmelzen-Nr.	Härte	
Item	Specimen No.	Heat No.	Hardness	
Poste	No. de l'éprouv.	No. de coulée	Dureté	
Anforderungen			HRC	HB
Requirements				HV
Exigences				HRB
0001	000001	526034		MAX 200
0002	000001	735251	136	
0002	000002	735251	136	
0002	000003	735251	139	
0003	000001	735325	138	
0004	000001	735452	139	
0005	000001	735264	135	
			138	

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Härteprüfung / Hardness test / Essai de dureté

Pos.	Proben-Nr.	Schmelzen-Nr.	Härte					
Item	Specimen No.	Heat No.	Hardness					
Poste	No. de l'éprouv.	No. de coulée	Dureté					
Anforderungen			HRC	HB	HV	HRB		
Requisiemants								
Exigences				MAX 200				
0006	000001	735361		147				
0007	000001	735198		146				
0008	000001	735457		135				
0008	000001	735546		135				
0009	000001	526035		156				

Restmagnetismus / Demagnetize / Démagnétiser

residual magnetic field intensity max 3,5 millitesla

Pos.	Ihr Zeichen	Kundenmaterial	Kundenbestell-Nr.
Item	Your reference	Customer's Material No.	Purchase Order No.
Poste	Votre référence	No. de matière du client	No. de commande du client
0001		P.O. 9199589-00	05-5385
0002		P.O. 9199589-00	05-5385
0003		P.O. 9199589-00	05-5385
0004		P.O. 9199589-00	05-5385
0005		P.O. 9199589-00	05-5385
0006		P.O. 9199589-00	05-5385
0007		P.O. 9199589-00	05-5385
0008		P.O. 9199589-00	05-5385
0009		P.O. 9199589-00	05-5385

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BENTELER
Stahl/Rohr

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CE CERTIFICAT DE RECEPTION EN 10204-3.1

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0001, 0005, 0009, 0006, 0003, 0002, 0006, 0002, 0009, 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.

Pos. / Item / Poste: 0004, 0007, 0008, 0008, 0007, 0008, 0007, 0008
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

Beiblatt Produktkennzeichnung / Attachment product marking / Supplément marquage du produit

Pos.	Produktkennzeichnung
Item	Produktkennzeichnung
Poste	Marquage du produit

0001, 0002, 0003

FS: BENTELER Z.245.1, Spec.5L-PSL1, A/SA-106 S5 B/X42/290 HEAT-NO. TEST PRESSUR E DIMENSIONS WEIGHT CLASS WA GERMANY
P.O. 9199589-00

0004, 0005, 0006, 0007, 0008, 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. 9199589-00

FK = Farbmarkenzeichnung, colour marking, marquage par couleur FS = Farbschablonierung, paint stencilling, marquage par pochoir FSD = Farbstrahlendrucker, Colour jet printer, imprimante à jet d'encre de couleur LS = Längsschablonierung, longitudinal stencilling, marquage longitudinal par peinture PCE = Tintenstrahlzeichnung, jet marking, marquage sur étiquette PS = Pagetextur, de stamp, marquage par poinçonnage TS = Tintenstrahlzeichnung, ink jet spray marking, marquage à jet d'encre

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

Mr Seelbach, Tel.: 05254/81-4281, Fax: 4289

Dinslaken, 07.04.2005, TEL.: 02064.623-574 FAX: 02064.623-575

Abnahmebeauftragter
Inspection representative

Contrôleur

JAN FREERKS / SCHEF

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.



VALLOUREC & MANNESMANN TUBES V&M FRANCE (A01) T06011 04 01050196 rue du Galibou 21 n°4 - BP 2 59180 Sallaumines FRANCE tel: 03.27.23.13.01 fax: 03.27.23.13.03		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03) REF: 26-05-138026 103 (A05) N° V&M: LA0993005																																																																		
(A16) Purchaser: CCTF CORPORATION (A07) Order n°: VM1401 / 4872628-00 (B03) SEAMLESS STEEL PIPE, HOT FINISHED (GALLED STEEL) (B06) NORMALIZED 1897 °F 0 H 10 MN (B09) ENDS BEVELLED 37.5° ANTI-RUST COATING DRY VARNISH (B09) Specification: ASTM A 333 (1897109) + ASME SA 333 (010701) + GRADE 1 AND 6-USA 2745-1 (0103798) + GRADE 290 CATH-NACE MR0175 ISO 1516 + CEC N-4 Rev. D + ASME SECT. II PART A PART D (0701) ADD (2603) + ASTM A 530 (010704) + ASME SA 530 (010701) (B04-501) PART D (0701) ADD (2603) + ASTM A 530 (010704) + ASME SA 530 (010701) Steel marking: VALLOUREC & MANNESMANN FRANCE / SA333 2745-1 + 6 + 290 CAT II HP 51 P 3 0.600 SOUR HT HEAT NUMBER VM1401 / 4872628-00 QUANTITY PER ITEM																																																																						
Y/R	O/R	(B11-B12) Size	(B13) single length	(B10) Quantity	(B14) (B09) Weight (item ref.)	(B08) Heat																																																																
05	05	NPS 3 x 1/2 88.90 X 15.24 MM	06096MM 240.01in	32	12004 SKU No 2532003	313617																																																																
(C71-C92) LADLE ANALYSIS CE = C + P (MN)6 + SJ24 + CU15 + NI20 + (CR + MO + V + Nb) / (S + SiB) < 0.40% ; HEAT 313617 = 0.33% 022: NGVC <table border="1"> <thead> <tr> <th>(C70) Process</th> <th>(B08) Heat</th> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Cr</th> <th>Mo</th> <th>Ni</th> <th>Cu</th> <th>Ti</th> <th>Nb</th> <th>V</th> <th>B</th> <th>022</th> </tr> </thead> <tbody> <tr> <td>MIN.</td> <td></td> <td>0.24</td> <td>0.50</td> <td>1.35</td> <td>0.025</td> <td>0.025</td> <td></td> <td></td> <td></td> <td></td> <td>0.11</td> <td>0.11</td> <td>0.11</td> <td>0.001</td> <td>3</td> </tr> <tr> <td>MAX.</td> <td></td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> </tr> <tr> <td>L</td> <td>313617</td> <td>0.15</td> <td>0.18</td> <td>1.04</td> <td>0.016</td> <td>0.002</td> <td>0.11</td> <td>0.01</td> <td>0.03</td> <td>0.04</td> <td>0.02</td> <td>0.00</td> <td>0.00</td> <td>0.000</td> <td>6.933</td> </tr> </tbody> </table> FOR EACH REDUCTION OF 0.01% CARBON BELOW 0.30%, AN INCREASE OF 0.05% MANGANESE ABOVE 1.05% WOULD BE PERMITTED TO A MAXIMUM OF 1.35% MANGANESE							(C70) Process	(B08) Heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022	MIN.		0.24	0.50	1.35	0.025	0.025					0.11	0.11	0.11	0.001	3	MAX.		%	%	%	%	%	%	%	%	%	%	%	%	%	%	L	313617	0.15	0.18	1.04	0.016	0.002	0.11	0.01	0.03	0.04	0.02	0.00	0.00	0.000	6.933
(C70) Process	(B08) Heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	Nb	V	B	022																																																							
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MAX.		%	%	%	%	%	%	%	%	%	%	%	%	%	%																																																							
L	313617	0.15	0.18	1.04	0.016	0.002	0.11	0.01	0.03	0.04	0.02	0.00	0.00	0.000	6.933																																																							
(C10-C01-C03) RECTANGULAR SPECIMEN LONGITUDINAL TENSILE TEST AT ROOM TEMPERATURE <table border="1"> <thead> <tr> <th>(C00) Test</th> <th>(B08) Heat</th> <th>width</th> <th>thick</th> <th>secl</th> <th>(C11) Y.S.</th> <th>(C12) T.S.</th> <th>(C13) Elong. 2"</th> </tr> </thead> <tbody> <tr> <td>MIN.</td> <td></td> <td>mm</td> <td>mm</td> <td>mm</td> <td>42000</td> <td>60000</td> <td></td> </tr> <tr> <td>MAX.</td> <td></td> <td>mm</td> <td>mm</td> <td>mm</td> <td>psi</td> <td>psi</td> <td>%</td> </tr> <tr> <td>010N317</td> <td>313617</td> <td>22.2</td> <td>15.0</td> <td>338.47</td> <td>44249</td> <td>67172</td> <td>44</td> </tr> </tbody> </table>							(C00) Test	(B08) Heat	width	thick	secl	(C11) Y.S.	(C12) T.S.	(C13) Elong. 2"	MIN.		mm	mm	mm	42000	60000		MAX.		mm	mm	mm	psi	psi	%	010N317	313617	22.2	15.0	338.47	44249	67172	44																																
(C00) Test	(B08) Heat	width	thick	secl	(C11) Y.S.	(C12) T.S.	(C13) Elong. 2"																																																															
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UNIFORMS
ASME
2004 EDITION
SECTION II PART A
DATE 03/01/06

ISO 9001



VALLOUREC & MANNESMANN TUBES
V&M FRANCE
Tuberie du St Saulve

2 rue du Galilée Z.I n°4 - BP 2
59410 Saint-Saulve FRANCE
tel: 03.27.23.13.01
fax: 03.27.23.15.53

MATERIAL TEST REPORT

ISO 9001

INSPECTION CERTIFICATE EN 10204 3.1.B

(A03) Ref: 24-05-138026 2/3
(A08) N°V&M: LA0993705

(C00) Test	(B08) Heat	width	thick.	sect.	(C11) Y.S.	(C12) T.S.	(C13) Elong. 2"
MIN.		mm	mm	mm ²	42000	60000	
MAX.		mm	mm	mm ²	psi	psi	%
02DM537	313617	220	15.2	339.83	43524	67172	43

ROCKWELL C HARDNESS < OR = 22 GUARANTEED

(C40-C02-C41)

CHARPY V LONGITUDINAL IMPACT TEST

(C00) Test	(B08) Heat	(C03) temp.	width	height	sect.	(C42) E1	(C42) E2	(C43) E3	(C42) mean	(C42) shear1	(C42) shear2	(C43) shear3	(C43) shear mean
MIN.			mm	mm	cm2	ft.lbf	ft.lbf	ft.lbf	%	%	%	%	
MAX.		'F	mm	mm	cm2	ft.lbf	ft.lbf	ft.lbf	%	%	%	%	
01DM537	313617	-51	10.00	10.00	0.80	129	124	108	120	85	80	65	77

(D01-D99)

NON DESTRUCTIVE TESTS

test	test rate	specification	pressure psi	hold time sec	result
APPEARANCE & DIMENSIONS	100% LOT				OK
EDDY CURRENT TEST	100% LOT	CSA 2245-1			OK
HYDROSTATIC TEST	100% LOT		3000	5	OK

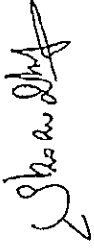
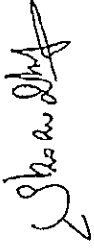
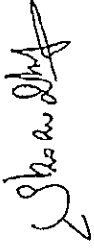
(C30-C69)

TECHNOLOGICAL TESTS

test	result
FLATTENING TEST	OK

(A04)

(A05)

 VALLOUREC & MANNESMANN TUBES (001) V&M FRANCE Tubes de St-Sauve rue du Galibet ZI n°4 - BP 2 59850 Saint-Sauve FRANCE tel.: 03.27.23.13.00 fax: 03.27.23.13.63	MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B	ISO 9001 (A03) Réf: 26-05-138026 3 / 3 (A08) N°V&M: LA0593/05		
(A05) 18/05/2005 <table border="1"> <tr> <td data-bbox="488 936 565 1829"> (Z00) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length. </td> <td data-bbox="488 453 695 936"> (A05) The authorized expert in Quality Control Section Mr SKORUPKA  </td> </tr> </table>			(Z00) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.	(A05) The authorized expert in Quality Control Section Mr SKORUPKA 
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3" XXH LR 180 BW RETURN
BENDS A234-WPB

Purchaser:
蕭雲家名
TRANS-AM PIPING
PRODUCTS LTD.

INSPECTION CERTIFICATE
BENKAN Benex Corporation
検査証明書 株式会社ベネックス

DIN 50049/3.1B
TO EN 10204/3.1B

BENEX No.

Order No
注文番号

651 2-CHOME AIOI CHO
KIRYU CITY GUNMA PREF, JAP

TEL. (0277) 54-8146

90-5559-32

CI-04-542

MAY 27, 2005 1290555932

Job No. 25

Specification for Material

Specification for Inspection
檢 查 規 格

Ud. Examination

Dimensions: Imperial

寸法換算

MFG No. (Heat Identification No.)

Product & Size 品名及尺寸	Quantity 数量	Unit 单位	Unit Price 单价	Total Price 总价
1. 100% Cotton T-shirt	100	pcs	1.50	150.00
2. 100% Cotton T-shirt	50	pcs	2.00	100.00
3. 100% Cotton T-shirt	20	pcs	2.50	50.00
4. 100% Cotton T-shirt	10	pcs	3.00	30.00
5. 100% Cotton T-shirt	5	pcs	3.50	17.50
6. 100% Cotton T-shirt	3	pcs	4.00	12.00
7. 100% Cotton T-shirt	2	pcs	4.50	9.00
8. 100% Cotton T-shirt	1	pcs	5.00	5.00
9. 100% Cotton T-shirt	1	pcs	5.50	5.50
10. 100% Cotton T-shirt	1	pcs	6.00	6.00
11. 100% Cotton T-shirt	1	pcs	6.50	6.50
12. 100% Cotton T-shirt	1	pcs	7.00	7.00
13. 100% Cotton T-shirt	1	pcs	7.50	7.50
14. 100% Cotton T-shirt	1	pcs	8.00	8.00
15. 100% Cotton T-shirt	1	pcs	8.50	8.50
16. 100% Cotton T-shirt	1	pcs	9.00	9.00
17. 100% Cotton T-shirt	1	pcs	9.50	9.50
18. 100% Cotton T-shirt	1	pcs	10.00	10.00
19. 100% Cotton T-shirt	1	pcs	10.50	10.50
20. 100% Cotton T-shirt	1	pcs	11.00	11.00
21. 100% Cotton T-shirt	1	pcs	11.50	11.50
22. 100% Cotton T-shirt	1	pcs	12.00	12.00
23. 100% Cotton T-shirt	1	pcs	12.50	12.50
24. 100% Cotton T-shirt	1	pcs	13.00	13.00
25. 100% Cotton T-shirt	1	pcs	13.50	13.50
26. 100% Cotton T-shirt	1	pcs	14.00	14.00
27. 100% Cotton T-shirt	1	pcs	14.50	14.50
28. 100% Cotton T-shirt	1	pcs	15.00	15.00
29. 100% Cotton T-shirt	1	pcs	15.50	15.50
30. 100% Cotton T-shirt	1	pcs	16.00	16.00
31. 100% Cotton T-shirt	1	pcs	16.50	16.50
32. 100% Cotton T-shirt	1	pcs	17.00	17.00
33. 100% Cotton T-shirt	1	pcs	17.50	17.50
34. 100% Cotton T-shirt	1	pcs	18.00	18.00
35. 100% Cotton T-shirt	1	pcs	18.50	18.50
36. 100% Cotton T-shirt	1	pcs	19.00	19.00
37. 100% Cotton T-shirt	1	pcs	19.50	19.50
38. 100% Cotton T-shirt	1	pcs	20.00	20.00
39. 100% Cotton T-shirt	1	pcs	20.50	20.50
40. 100% Cotton T-shirt	1	pcs	21.00	21.00
41. 100% Cotton T-shirt	1	pcs	21.50	21.50
42. 100% Cotton T-shirt	1	pcs	22.00	22.00
43. 100% Cotton T-shirt	1	pcs	22.50	22.50
44. 100% Cotton T-shirt	1	pcs	23.00	23.00
45. 100% Cotton T-shirt	1	pcs	23.50	23.50
46. 100% Cotton T-shirt	1	pcs	24.00	24.00
47. 100% Cotton T-shirt	1	pcs	24.50	24.50
48. 100% Cotton T-shirt	1	pcs	25.00	25.00
49. 100% Cotton T-shirt	1	pcs	25.50	25.50
50. 100% Cotton T-shirt	1	pcs	26.00	26.00
51. 100% Cotton T-shirt	1	pcs	26.50	26.50
52. 100% Cotton T-shirt	1	pcs	27.00	27.00
53. 100% Cotton T-shirt	1	pcs	27.50	27.50
54. 100% Cotton T-shirt	1	pcs	28.00	28.00
55. 100% Cotton T-shirt	1	pcs	28.50	28.50
56. 100% Cotton T-shirt	1	pcs	29.00	29.00
57. 100% Cotton T-shirt	1	pcs	29.50	29.50
58. 100% Cotton T-shirt	1	pcs	30.00	30.00
59. 100% Cotton T-shirt	1	pcs	30.50	30.50
60. 100% Cotton T-shirt	1	pcs	31.00	31.00
61. 100% Cotton T-shirt	1	pcs	31.50	31.50
62. 100% Cotton T-shirt	1	pcs	32.00	32.00
63. 100% Cotton T-shirt	1	pcs	32.50	32.50
64. 100% Cotton T-shirt	1	pcs	33.00	33.00
65. 100% Cotton T-shirt	1	pcs	33.50	33.50
66. 100% Cotton T-shirt	1	pcs	34.00	34.00
67. 100% Cotton T-shirt	1	pcs	34.50	34.50
68. 100% Cotton T-shirt	1			

Quantity
数量

1

555932

SEAMLESS 180E(L) WPB 3 XXS

[illegible]

Material Manufacturer
素材供給メーカー

Material Heat No.
製鋼番号

NIKK TUBES

02861

(LATEST)

00

Specification	Chemical Composition											* 2 Tension Test 引張試験			
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	CB	CEQ*	Y S	T S	F ₁
規定値	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
100	100	100	100	1000	1000	100	100	100	100	1000	100	100	100	100	100
Min. 最小		10	29												
Max. 最大	30		106	50	58	40	40	15	40	8	20	42		585	
	20	19	73	13	3	2	3	1	1	0	0	33	297	476	41

CARBON CONTENT : 0.23% MAX.
HOT FORMED WITH FINAL TEMPERATURE
BETWEEN 780°C AND 980°C. AIR COOLING.

$$\text{MADE FORM SEAMLESS PIPE} \\ *CEG = C + MN/6 + (CR+MD+V)/5 + (NI+CU)/15$$

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

上記注文品は御指定の規格または仕様に従って製造され、その検査結果を満足してここに証明します。

* 1: The symbol "T" after wall thickness means mm as unit. 厚さ数値の後に示す "T" は mm 単位を意味します。

* 2: YS= Yield strength 鋼力 VP= Yield point 降伏点 TS= Tensile strength 引張り強さ EL= Elongation 伸び

Specifications
 Section
 CONFIDENTIAL
 ASME
 2004 EDITION
 SECTION III PART A
 QCI: *Wuest* DATE: *03/01/06*
 Manager of Quality Assurance Section
 品質保証課長



Trametal S.p.A.

STABILIMENTO, 33058 S. GIORGIO DI NOGARO (UD)
VIA E. FERMI, 44 - TEL. 0431/629985 (RIC. AUT.)
TELEFAX 0431/629985 (RIC. AUT.)
SEDE LEGALE - 16121 GENOVA - VIA XII OTTOBRE, 214° piano
CAP. SOC. EUR. 10.320.000,00 I.V. - C.C.I.A.A. N.R.E.A. GE312155
P.IVA IT 11827130151 - C.F./R.I. 03026960106

Certificato di Collaudo/Inspection Certificate/Abnahmeprufzeugnis EN 10204 3.1.B/Din 50049 3.1.B

Cliente/Customer/Kunde/Client		Certificato/Certificate/Abnahmeprufzeugnis/Certificat d'essai		Bolla Del	
EDMONTON STEEL PLATE		104494	1-1 del 28/04/2005	20504939	08/04/2005
Lamiere/Plates/Bleche/foles SAS 1.6GR 70N	1	(1)			
	N	G.L. allo stato naturale / in as rolled condition / in Wärzstand / dans l'etat de l'acier LC con lamiere a temperatura controllata / with controlled rolling / normalisiertes Walzverfahren / avec laminage normalisé N normalizzato / normalized / normalisiert / normalisé			
	Ord.N. 20500984 Vs E10533-J 1010	(2)			
		(3)			
		(4)			
		(5)			

Analisi Chimica di Colata / Chemical Analysis (heat) / Chemische Analyse / Analyse chimique															Analisi Chimica di Prodotto / Product Analysis / Stuckanalyse / Analyse sur produit															
Colata	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Al	V	Nb	Ti	C.Eq.	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Al	V	Nb	Ti	B	Sn	C.Eq.
3S8381	0,2	1,08	0,28	0,007	0,002	0,01	0,04	0,03	0	0,031	0	0	0	0,389	0,19	1,06	0,25	0,009	0,002	0,01	0,002	0,03	0	0,028	0	0	0	0,0002	0,002	0,373
3S8554	0,2	1,08	0,3	0,008	0,002	0,01	0,04	0,03	0	0,037	0	0	0	0,389	0,2	1,05	0,28	0,006	0,001	0,01	0,04	0,02	0	0,034	0	0	0	0,0003	0,002	0,384
PS8690	0,2	1,04	0,3	0,017	0,004	0,06	0,02	0,05	0	0,03	0	0	0	0,389	0,19	1,04	0,28	0,015	0,003	0,04	0,01	0,04	0	0,033	0	0	0	0,0003	0,003	0,375



10900

N° Lamiera/ Plate/Blech/Tôle	Lotto	N° Prova N° Test Versuchs-N° N° d'essai	Dimensioni/Size/ Grosesse/Dimension	Trazione/Traction/Zugversuch/Traction							Rp 02 psi	Piega Z%	Resilienza/Impact test/Kerbschlagzähigkeit/Resilience				Media Average Mittelwerte Moyenne				
				(2)	(4)	(5)	Temp	ReH psi	Rm psi	A 2' %			Temp	Type Form	(3)	Temp °F		(4)	KV ft / lbf		
PS8690/07/01A	80289	MV98-2005	0,38x96x480	2	D	CC	+20	53,7	78,1	39				KV	L	-50	D	70	58	61	63,000
PS8690/07/02A	80289		0,38x96x480	2	D	CC	+20	53,7	78,1	39				KV	L	-50	D	70	58	61	63,000
PS8690/07/04A	80289		0,38x96x480	2	D	CC	+20	53,7	78,1	39				KV	L	-50	D	70	58	61	63,000
PS8690/01/08A	80289		0,38x96x480	2	D	CC	+20	53,7	78,1	39				KV	L	-50	D	70	58	61	63,000
PS8690/03/05A	80289		0,38x96x480	2	D	CC	+20	53,7	78,1	39				KV	L	-50	D	70	58	61	63,000
3S8381/07/04A	72938	MV99-2005	0,50x96x480	2	D	CC	+20	52,5	75,7	42				KV	L	-50	D	68	75	77	73,333
3S8381/07/05A	72938		0,50x96x480	2	D	CC	+20	52,5	75,7	42				KV	L	-50	D	68	75	77	73,333
3S8381/06/02A	72938	MW01-2005	0,63x96x480	2	D	CC	+20	51,5	74,7	41				KV	L	-50	D	57	57	65	59,667
3S8554/07/03A	76238	MW02-2005	1,13x96x480	2	D	CC	+20	49,6	74,5	42				KV	L	-50	D	51	68	73	64,000

CERTIFICAZIONE che le lamiere elencate sono conformi alla prescrizione dell'ordine, che i controlli della marcatura, dell'aspetto superficiale e dimensionale hanno dato esito positivo.
WE CERTIFY that the above mentioned are consistent with the order prescriptions, marking, inspection and measurement without objection.
WIR BESTÄTIGEN hiermit, dass oben genannte Erzeugnisse den Bestimmungszustand entsprechen, Markierung, Oberfläche und Abmessung ohne Abweichungen.
NOUS CERTIFIONS que les produits énumérés ci dessus sont conformes aux prescriptions de la commande, contrôle de marquage, d'aspect et de dimensions satisfaisant.

IL CAPO SERVIZIO COLLAUDI

Chief Inspection Dpt.

Überwachungsleiter

Le responsabile dei collaudi

CONTRILLO QUALITÀ

CONFORMS

ASME

2004 EDITION

SECTION II PART A

QCI: *U. Verde* DATE: 03/01/06



ACCORDING TO ASME II PART A ED. 2001 + ADD. 2003. FULLY KILLED, FINE GRAIN STEEL. NORMALIZING AT 910°C. 50 MIN/INCH. STILL AIR.



QUALITY CONTROL REPORT

For

Canadian Sub-Surface Energy Services

By

TARA Oilfield Services Ltd.

P.O. Box 1389
Didsbury, Alberta T0M 0W0
Phone: 1-403-335-9158
Fax: 1-403-335-3403
Toll Free: 1-866-FAB-TARA
1-866-322-8272

JOB NUMBER

05-129C

3" Line Heater Spools

Prepared By:

Nicole Normand, Q.C.I.

Date: March 14, 2006

EXHIBIT INDEX

<u>Exhibit #</u>	<u>Description:</u>
1.1	Copy of Certificate of Authorization
8.1	Contract Review
9.1	Pressure Piping Specification Sheet
11.3	Pressure Piping Examination Checklist
11.4	Pressure Piping Examination Guide
11.5	Pressure Test Examination Guide
12.1	Record of Qualification of Welding Personnel Weld Procedure Certificate
14.1	NDE Certifying Statement NDE Reports
15.1	Heat Treatment Records Heat Treatment Calibration Certificate Heat Treatment Charts
16.1	Hydrostatic Test Calibration Certificates
17.3	Hydrostatic Test Reports
22.2	Completion of Construction Declaration (AB-81)
22.3	Construction Data Report for Piping Systems (AB-83) Drawings Material Test Reports



Certificate of Authorization

Quality Control Program

Expiry Date: **August 3, 2008**

Reg. No.: **AQP-1434**

This is to certify that:

TARA OILFIELD SERVICES LTD.

**1805 - 19 STREET
DIDSBURY, ALBERTA**

having complied with the provisions of the SAFETY CODES ACT, is hereby authorized to

Construct ASME Section VIII-1 Pressure Vessels

**Manufacture, Repair/Alter Category 'A', 'E' & 'H' Fittings in accordance
with CSA B51**

at the above SHOP address.

**Construct, Repair/Alter ASME B31.1 Power Piping and ASME B31.3
Process Piping**

Repair/Alter ASME Section VIII-1 Pressure Vessels

at the SHOP and FIELD sites controlled from the above address.



Dated at Edmonton, this 8th day of August, 2005

A handwritten signature in black ink, appearing to read "Shan".

Chief Inspector and Administrator
Certificate No.: **4697**

TARA OILFIELD SERVICES LTD.

CONTRACT REVIEW

Job Number: 05-129C

Date: September 15, 2005

Owner Company: Canadian Sub-Surface Energy Services

600#, 505 – 8th Ave. S.W. Calgary, AB T2P 1G2

Description of Job: 3" Line Heater Spools

RESPONSIBLE FOR QUALITY SYSTEM FUNCTIONS	OWNER	TARA OILFIELD SERVICES LTD.
Materials Receiving Inspection, Identification and Traceability	No	Yes
Welding Control	No	Yes
Heat Treatment Control	No	Yes
NDE Control	No	Yes
Pressure Test Control	No	Yes
Preparing and Retention of Quality Control Records	No	Yes

The Alberta Design, Construction and Installation of Boilers and Pressure Vessels Act. and Regulations require the owner to have an authorized Quality System Program if they assume any of the Quality System functions listed above. A piping system over 0.5 cubic metres in capacity must be registered with ABSA.

RESPONSIBLE FOR SUPPLY	OWNER	TARA Oilfield Services Ltd.
Material Control	X	Yes
Design Registration with ABSA	X	Yes
Drawing & Specifications	X	Yes
NDE	X	Yes
Heat Treatment	X	Yes

Owner's Representative: Dave Godlien

Date Contracted: September 15, 2005

lee
QC Manager / QC Inspector

Sept 15/05
Date

EXHIBIT 9.1
TARA OILFIELD SERVICES LTD.
PRESSURE PIPING SPECIFICATION SHEET

(For Construction/Repair/Alteration of Pressure Piping Systems Less Than or Equal to 0.5 Cubic Meters, Aggregate Volume)

Owner: **NABORS Production Services Ltd.**

AQP:1434

Plant Location: **Portable**

Job #: **05-129C**

Material List				Piping Sketch (Reference attached drawings if appropriate)				
Item No.	Description	Mat'l Spec. & Grade	Sch./ Rating	(Use for recording RT No's. & Welder Symbols)				
				SEE ATTACHED DRAWINGS				
		SEE						
		ATTACHED						
		DRAWINGS						
Line No.	Design Pressure	Design Temp. Min. / Max.	Corr. All.	Code ASME B31.1/B31.3	Service (e.g., Normal, Cat. D, M, K)	Severe Cyclic Yes/No	Test Pressure	Test Medium
ALL	5000 psi	-50° F	Nil	B31.3	M	Yes	7500 psi	H2O

(Note: Pneumatic tests must have prior approval from ABSA.)

Welding Procedure Specification No's: 2081.2 TOS.2

Line No.	MT / PT Extent %	Radiography Extent %	Hardness Testing	Ultrasonic - Other NDE Description / Extent %	Other Requirements
ALL	N/A	50%	N/A	N/A	None

NDE Contractor: GAMMA-TECH INSPECTIONS LTD. Post Weld Heat Treatment Yes/N.A.: YES

Post Weld Heat Treatment Time/Temp.: 60min @ 1150° F PWHT Contractor: Continental Stress Relieving Ltd.

Approved by Owner: Dave Godlien Date: Sept. 15, 2005

Approved by Contractor: Martin Sheridan Date: Sept. 15, 2005

Comments: _____

WORK COMPLETED AND ACCEPTED (AB-83 completed)

Tara Oilfield Services Ltd. Signature:  Date: Sept 15/05

EXHIBIT 11.3

TARA OILFIELD SERVICES LTD.
PRESSURE PIPING EXAMINATION CHECKLIST

PRESSURE PIPING EXAMINATION CHECKLIST			
JOB NUMBER: 05-129C			
NO.	FUNCTION	SIGNATURE OR INITIAL AND DATE	
		Q.C. INSPECTOR	OWNER'S INSPECTOR
1	DRAWINGS: ABSA registration over 0.5 Cu. M. Approved by Owner. Approved for Construction (signed & dated).	leo 09/15/05	
2	Owner's Inspector notified.	leo	
3	Registered Welding Procedures, Q.C. Manual and Forms available at site, Job File started.	leo	
4	Welders qualified for Procedures and have valid Performance Qualification cards. Welders Log completed. WPS reviewed with welders.	leo	
5	Material checked against P.O., drawings, and specifications. Identification confirmed. Colour coding applied.	leo	
6	Sample of each welder's work examined, including root spacing, alignment, cleaning, joint preparation, preheat and electrode control.	leo	
7	Nondestructive Examination completed. Reports and radiographs reviewed, signed by Level II or III, Radiograph I.D. detailed on drawings.	leo 10/24/05	
8	Visual Examination of all completed welds. Welders I.D. stamped and recorded on drawings.	leo	
9	Heat Treatment verified and recorded on drawings.	leo 02/24/06	
10	Each system checked against specifications and drawings before test.	leo	
11	All deficiencies recorded and signed off by Q.C.I. and Owner's Inspector before test.	leo	
12	Pressure Test checked. Gauge calibration verified, gauge #'s recorded.	leo 03/01/06	
13	System checked after test. Deficiencies recorded and corrected.	leo	
14	Construction data reports (AB-83) prepared and signed by Q.C.I. and Owner's Inspector.	leo	
15	Declaration form (AB-81) submitted to ABSA	leo	
16	As built drawings accepted by Owner.	leo	

TARA OILFIELD SERVICES LTD.
PRESSURE PIPING EXAMINATION GUIDE

PRESSURE PIPING EXAMINATION GUIDE	Q.C. INSP. ✓
EXAMINATION PRIOR TO PRESSURE TEST (PUNCHING)	
1. Pipe Material; schedule and specification correct.	✓
2. Flanges; ratings, schedule and material specification correct.	✓
3. Fittings; tees, return bends, reducers, couplings and weld-o-lets etc. Correct schedule and material specification.	✓
4. Valves; identification – Manufacturer's name tag, etc., correct.	✓
5. Valves; installed correctly, flow direction, accesses, rising stems free from obstructions, clearance for removal adequate.	✓
6. Lubrication fittings, drains, etc., installed as required.	✓
7. Bolts, Studs, Nuts; length and material correct. Studs at least flush with heads (max. Thread exposure beyond nut should be about 2 threads)	✓
8. Gaskets are correct type, material, size, etc.	✓
9. All welding satisfactory and traceable to welder's symbol.	✓
10. Seal welding complete - threads covered.	✓
11. All attachment welds satisfactory.	✓
12. All N.D.E., heat treatment complete, records filed.	✓
13. Guide anchors and shoes required installed correctly. (High temp. lines)	✓
14. Line supports adequate - supports to be checked against drawings.	✓
15. Spring hangers - correct type, correct installation.	✓
16. Lines have adequate allowance for expansion.	✓
17. Bellows type expansion joints - correct type, pressure rating and correct installation.	✓
18. Required cold spring applied.	✓
19. Orifice runs have specified straight length of pipe - located correctly etc.	✓
20. All deficiencies recorded on Punch List.	✓
Q. C. Inspector Signature: <u>leo</u>	Date: <u>02/27/06</u>

TARA OILFIELD SERVICES LTD.
PRESSURE TEST EXAMINATION GUIDE

PRESSURE TEST EXAMINATION GUIDE		Q.C. INSP. ✓
PRESSURE TEST PREPARATION		
1. All punch list items corrected.		✓
2. Test blinds correct thickness.		✓
3. All items which could be damaged by test isolated or removed (control valves, pressure relief valves, instruments, expansion joints, etc.)		✓
4. Equipment with internals (e.g., filters) that could be damaged, isolated as required.		✓
5. Vents and drains correctly installed.		✓
6. Open and Closed position of all valves verified.		✓
7. Shipping bars in place - bellows.		✓
8. Hanger stops in place.		✓
PRESSURE TEST COMPLETION		
1. All temporary blinds (blanks) removed.		✓
2. Temporary gaskets changed for correct gaskets.		✓
3. Temporary supports removed.		✓
4. Shipping bars removed from bellows.		✓
5. Spring hanger stops removed - cold setting checked.		✓
6. Pressure Relief Valves – "UV" or "V" symbol and correct set pressure and capacity installed.		✓
7. Safety valve vents are correct size - adequately supported - drain holes and or weather hoods installed.		✓
8. Screens for pumps and compressors installed (initial start-up and permanent screens).		✓
		✓
Q. C. Inspector Signature: <i>lee</i>		Date: <i>02/27/06</i>

Welders Name (File Number)	Symbol	T.O.S. Proc. #	Process/ Method	Base Metals	"F" #	Backing	Min. O.D.	Deposit Thickness	Pos.	Uphill/ Downhill	Cored/ Solid	Insert	Backing Gas	GTAW Current	GMAW X-Fer	Expiry Date
Doug Weigum (W-4123)	D	TOS-1&2	SMAW	P1	3	Optional	1.0"	.188"	All	Uphill	N/A	N/A	N/A	N/A	N/A	1/10/2006
			Manual	P1	4			.684"								
Nicholas Vogel (W-21228)	U	TOS-1&2	SMAW	P1	3	Yes	25mm	6.35mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	05/13/2007
			Manual	P1	4	No		15.65mm								
Ryan Zimmer (W-22692)	T	TOS-1&2	SMAW	P1	3	Yes	25mm	6.35mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	07/22/2007
			Manual	P1	4	No		15.65mm								
	T		SMAW	P1	3	Yes	2.5"	6mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	07/22/2007
			Manual	P11	4	No		16mm								
	M	TOS-1&2	SMAW	P1	3	Optional	1.0"	.188"	All	Uphill	N/A	N/A	N/A	N/A	N/A	7/8/2007
			Manual	P1	4			.684"								
	M		SAW	P1	6	With	N/A	Max.	Flat	N/A	N/A	N/A	N/A	N/A	N/A	05/27/2007
			Manual													
	M		GMAW	P1	6	Optional	2.875"	.110"	0-45,F	Downhill	N/A	N/A	NO	N/A	SC	05/24/2007
			SMAW		4			Max.	F, V	Uphill						
	M		GMAW	P1	6	Optional	1.0"	.100"	0-45,F	Downhill	N/A	N/A	NO	N/A	SC	05/25/2007
			FCAW			With		.672"	F, V	N/A						
	S	TOS-1&2	SMAW	P1	3	Optional	1.0"	.188"	All	Uphill	N/A	N/A	N/A	N/A	N/A	
			Manual	P1	4			.684"								
	S		SAW	P1	6	With	N/A	Max.	Flat	N/A	N/A	N/A	N/A	N/A	N/A	05/27/2007
			Manual													
	S		GMAW	P1	6	Optional	1.0"	.100"	0-45,F	Downhill	N/A	N/A	NO	N/A	SC	05/25/2007
			FCAW			With		.672"	F, V	N/A						
	S		GTAW	P1	6	Optional	1.0"	.188"	Flat	N/A	N/A	N/A	N/A	N/A	N/A	3/5/2007
			SMAW	4130				.672"								
	S		GTAW	P8	5	Optional	1.0"	0.2"	Flat	N/A	N/A	N/A	N/A	N/A	N/A	07/27/2007
			SMAW			With		.488"	1G							

WELD PROCEDURE CERTIFICATE



TARA OILFIELD SERVICES LTD.

P.O. Box 99, Didsbury, Alberta T0M 0W0
Phone 403-335-9158 Cell 403-507-1482

WELDING PROCEDURE SPECIFICATION NO: TOS-2

WELDING PROCEDURE QUALIFICATION RECORD NO(S): PQ2, PQ3

QUALIFIED FOR

Base Metal (Typical): P1 Groups 1 & 2 to P1 Groups 1 & 2 (SA 333 Gr. 6, SA 420 WPL6, SA 350 Gr. LF2, SA 516 Gr. 70 etc.)
Process(es): SMAW Weld Types: GROOVE & FILLET
Position: ALL POSITIONS Diameter: ALL DIAMETERS
Filler Metal: E6010, E7018-1

BASE METAL CONDITIONS & THICKNESS RANGE QUALIFIED:

NOTCH TOUGHNESS APPLICATIONS TO -46°C WITH P.W.H.T.

ASME B31.1	<u>3.2 to 25.4 mm (0.125 to 1.00 in.) inclusive.</u>
ASME B31.3	<u>3.2 to 25.4 mm (0.125 to 1.00 in.) inclusive.</u>
ASME SECT. VIII, DIV.1	<u>3.2 to 25.4 mm (0.125 to 1.00 in.) inclusive.</u>

ALBERTA BOILERS SAFETY ASSOCIATION
PROVINCE OF ALBERTA
SAFETY CODES ACT
WELDING PROCEDURE

Reg. No. WP 2081-2
Spec No. TOS-2
Weld Process SMAW
Matl. Gr. P No. 1 Gr. 1+2 to P No. 1 Gr. 1+2
Elec. Gr. F No. 3+4 A No. 1
Th. Qual. For 3.2 to 25.4 mm PWHT YES
CVN-46°C

01 Mo 2 Day 25 Signed [Signature]
R. ROSEBERG, P. ENG.
WELDING SPECIALIST

PROVINCIAL REGISTRATION

TARA OILFIELD SERVICES LTD.

CERTIFYING STATEMENT

May 31, 2005

I have reviewed the written practices, procedures, personnel records and certifications, in the SNT Manual (Copy #101 Dated May 30,2005) of:

Gamma-Tech Inspection Ltd.
Box: 1346
Crossfield, Alberta
T0M 0S0

Based upon my review of the above referenced procedures, it is my opinion that they are in accordance with ASME Section V requirements as referenced by the applicable construction Code, and that the written practice complies in all respects with the requirements of SNT-TC-1A.

In addition I hereby certify that the demonstration of procedure(s) to the satisfaction of the AI , as required by the ASME Code, Section V, paragraph T-150, has been completed as specified within the TARA Oilfield Services Ltd. Written quality system.

Gamma-Tech Inspections Ltd. are appointed to perform (RT, MT, and PT) Non-Destructive Examinations for Tara Oilfield Services Ltd.

Debra Ross is by this statement, appointed to act as the Level III person to be responsible for RT, MT, and Dennis Nagy Level III for PT, Non-Destructive Examinations for TARA Oilfield Services Ltd.



Leo Dussault, Quality Control Manager

Gamma-Tech Inspection
Box 1346
Crossfield Alberta T0M 0S0
Phone: (403) 946-0464
Fax: (403) 946-0457
Calgary: (403) 235-2454

Gamma-Tech
Inspection Ltd.

RADIOGRAPHIC REPORT

R - 13223

CLIENT: TARA PROJECTS	MATERIAL TYPE: C3	THICKNESS RANGE: 1.600"	LEGEND: WELDERS SYMBOL: ACCEPTABLE: BORDERLINE: REJECT: See back for other legends.	DATE: 0CT-24-05
LOCATION: DIDSBURY	SOURCE OF RADIATION: 1R-192	FOCAL SPOT (F): 3.5mm	* 1 2 3	PAGE: 1 OF 2
GTIL JOB No. 05-03-0029	CONTRACTOR: DWE	SWW ☒ DWV ☐		PROCEDURE: C
CLIENT'S P.O. 3	TECHNIQUE: SWE ☐ DWE ☒			CODE: ASME
CLIENT JOB No. 05-129-	FILM TYPE: AGFA D5	* ONLY 1 FILM / CASSETTE		B 31.3 S/C

IDENTIFICATION	PIPE SIZE	PIPE SCHEDULE	t	# OF EXP	CRK	LF	IP	P	S	UC	CR	EP	%	*	DEFECT LOCATION AND REMARKS	ACCEPT	REJECT
1. 3-1 X-1	3"	XXH	.600	4													
2. 2																	
3. 3																	
4. 3-2																	
5. 5																	
6. 6																	
7. 3-3																	
8. 3-4																	
9. 3-5																	
10. 1																	
11. 2-1																	
12. 1																	
13. 1																	
14. 2-2																	
15. 1																	
16. 1																	
17. 2-3																	
18. 2-4																	
19. 2-5																	
20. 1																	

FINAL FILM INTERPRETATION IS THE RESPONSIBILITY OF THE CLIENT.
I AM IN FULL AGREEMENT WITH THE ABOVE DETAILS AND ACKNOWLEDGE
RECEIPT OF FILM.

CLIENT REPRESENTATIVE: **[Signature]**
TECHNICIAN (SIGN): **[Signature]**
TECHNICIAN (PRINT): **K. WELLS** CGSB LEVEL **II** ASNT LEVEL **II**
ASSISTANT (PRINT): **B. WELLS**

FILM USED: **80** PCS.
FILM SIZE: **5x35** PCS.
SSOFD: **3.95"** Source Side of Object to Film Distance
SOD: **2.9"** Source to Object Distance

DTR #: **007**
VEHICLE #: **007**
5 HRS.



318 Monument Place SE
Calgary, AB T2A 1X3
Telephone: (403) 273-5105
Fax: (403) 248-6497
Email: calgary@continentalstress.com

Furnace Work Order

Client: TARA OILFIELD SERVICES LTD.
Address: P.O. BOX 1389
DIDSBURY, AB
T0M 0W0

Date: Friday February 24, 2006
Phone: (403) 335-9158
Date Required: Monday February 27, 2006

Client Reference:
Furnace: 2

P.O. : Leo

Attention: MARTY SHERIDAN
Furnace Load: CF06-6213

Description	Quantity
Coil	1
Spools	5

Total Overtime Hours = 0 @ \$ 0.00 Per Hour = \$ 0.00
Furnace Charges \$600.00
Other Charges(s) \$ 0.00
COST: \$600.00
GST: \$42.00
TOTAL COST: \$642.00

Heat Cycle (In Degrees Celsius)

Material: Carbon Steel (P1) <= 1 " W/T Code: Customer Spec.
Heat from Ambient to 425° at a Moderate Rate.
Heat from 425° to 621° at 222° per Hour max.
Soak at 621° +/- 14° for 1 Hours.
Cool to 425° at 277° per Hour max.
Cool from to at per Hour max.
From 425° Air cool in furnace.

Comments:

NOTE: 1. An extra charge will apply for any additional supporting or blocking required.
2. Customer will not hold Continental Stress Relieving Services Ltd. responsible for any damage of distortion caused by heat treatment process.

Thank you for the opportunity of quoting.
Continental Stress Relieving Services Ltd.

Name: Aaron Thompson

Signed: 



CONTINENTAL STRESS RELIEVING

RECORDING INSTRUMENTS

CERTIFICATE of CONFORMANCE

CERTIFIED BY: KINGSWAY SCIENTIFIC AND INDUSTRIAL INSTRUMENTS INC.
TEST NUMBER: B 6510
DATE OF CALIBRATION: Jan. 12/06

INSTRUMENT MFG. Chino
MODEL NUMBER: EA100-24S
SERIAL NUMBER: EA77C001
RECORDER NUMBER: R 29
CALIBRATION DUE: April 12/06

THIS INSTRUMENT HAS BEEN CALIBRATED AND IT IS WITHIN THE
MANUFACTURES SPECIFICATIONS.

REFERENCE STANDARDS

L&N MODEL 8686 SERIAL # 1768189 CERTIFICATION DATE: May 4/05
Hewlett Packard 3458A Ser. #2823A16911 CERTIFICATION DATE: Feb. 8/05
FLUKE 5520A CALIBRATOR Ser. #7990016 CERTIFICATION DATE: Feb. 24/05
CERTIFICATION DATE: _____
RE-CERTIFICATION DATE: Annually

THE CALIBRATION OF ALL STANDARDS AND MEASURING INSTRUMENTS USED IN THIS
CALIBRATION ARE TRACEABLE TO THE NATIONAL RESEARCH COUNCIL OF CANADA IN
OTTAWA OR TO THE NATIONAL BRUEAU OF STANDARDS IN WASHINGTON, D.C.

KINGSWAY SCIENTIFIC & IND. INSTR. INC.
CALIBRATED BY:

SIGNATURE:

CONTINENTAL STRESS RELIEVING SERVICES LTD.
Telephone: (403) 273-5105

Date: February 24, 2006

Client: Tara Oilfield Services

Owning Co.: N/A

Chart Speed: 30 Lines/Hour

Material: As Per Customer Specifications

Procedure: PWHT

Furnace Load #: CF06-6213

Client Job #:

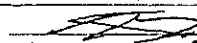
P.O. #: Leo

Comments: 1-Coil

5-Spools

610 02/27/06

Operator Name: Aaron Thompson

Operator Signature: Temperature in °C: $\sqrt{\quad}$ Recorder #: R 29.JOB # 05-1290
LINE HEATER BUNDLES
AND SPOOLS

Start Line Soak



Red Deer Ltd.
6785 - 52nd Ave.
Red Deer, Alta., T4N 4K8

Ph. 343-2822, Fax: 347-1470
Email: info@kingmeter.com
Web: www.kingmeter.com

PRESSURE GAUGE CALIBRATION TEST CERTIFICATE

We certify that the gauge identified below has been tested and calibrated using precise test equipment and that this instrument is accurate to within 1/2% of its full scale reading.

MODEL & RANGE: 4" Wiha 10,000 / 69,000

GAUGE NO.: W 952

This gauge meets all King's Meter Gauge Calibration Standards.

TEST GAUGE READINGS

GAUGE READINGS

1000 PSI	1000 PSI
2000 "	2000 "
3000 "	3000 "
4000 "	4000 "
5000 "	5000 "
6000 "	6000 "
7000 "	7000 "
8000 "	8000 "
9000 "	9000 "
10,000 "	10,000 "

TECHNICIAN: [Signature]

DATE: Oct 20, 2005

CERTIFICATE OF TRACEABILITY

PERMA-CAL GAUGE MODEL -100NTM18B21, S/N-010328005-01-001 CALIBRATED AGAINST
WIKA 342.11 15,000 S/N Z7003J0 CERTIFICATION #6432.

TRACEABLE TO N.I.S.T. (I.N.M.S)

Calibration Date: January 5, 2005, Expiry Date January 5, 2006



Red Deer Ltd.
6785 - 52nd Ave.
Red Deer, Alta., T4N 4K8

Ph. 343-2822, Fax: 347-1470
Email: info@kingmeter.com
Web: www.kingmeter.com

PRESSURE GAUGE CALIBRATION TEST CERTIFICATE

We certify that the gauge identified below has been tested and calibrated using precise test equipment and that this instrument is accurate to within 1/2% of its full scale reading

MODEL & RANGE: 4" Wika 10,000 / 68,000

GAUGE NO.: WX01

This gauge meets all King's Meter Gauge Calibration Standards

TEST GAUGE READINGS

GAUGE READINGS

1000 PSI	1000 PSI
2000 "	2000 "
3000 "	3000 "
4000 "	4000 "
5000 "	5000 "
6000 "	6000 "
7000 "	7000 "
8000 "	8000 "
9000 "	9000 "
10000 "	10000 "

TECHNICIAN: [Signature]

DATE: Oct 20 - 2005

CERTIFICATE OF TRACEABILITY

PERMA-CAL GAUGE MODEL -100NTM18B21, S/N-010328005-01-001 CALIBRATED AGAINST

WIKA 342.11 15,000 S/N Z7003J0 CERTIFICATION #6432.

TRACEABLE TO N.I.S.T. (I.N.M.S)

Calibration Date: January 5, 2005, Expiry Date January 5, 2006

Rev. 1.0
11 OCT 02

EXHIBIT # 17.3

TARA OILFIELD SERVICES LTD.

HYDROSTATIC TEST REPORT

Date: March 1, 2006

Job Number: 05-129C

Customer: Canadian Sub-Surface Energy Services

Description of Product: 5000psi Line Heater Spools

Tests Conducted By: Warren Tersigni, Q.C.I. & Leo Dussault, QCM

Test Pressure: 7500psi

Test Medium: H2O

Holding Time at Test Pressure: 60 minutes

Results: PASS AQP-1434

Owner's Inspector Witnessing Test: _____

Comments: _____

Leo
Leo Dussault, Q.C.M.

Signature of Owner's Inspector

Diane Sears ABSA
Signature of ABSA Safety Codes Officer (if applicable)

COMPLETION OF CONSTRUCTION

DECLARATION

NOTE: This declaration shall be completed and signed by the person responsible, in whole or in part, for the construction, installation, testing and inspection of the pressure piping system and forwarded to the Administrator/Chief Inspector.

- (1) Owner of Plant: Canadian Sub-Surface Energy Services
600#, 505 - 8th Avenue S.W. Calgary, Alberta
(Name and Address)
- (2) Engineer or Contractor: TARA Oilfield Services Ltd.
1805 - 19th Street Didsbury, Alberta
(Name and Address)
- (3) Type of Plant: Line Heater Spools
- (4) Location of Plant: Portable
(Sec, TWP, Rge)
- (5) Description of Pressure Piping System(s): 3" Sch XXH A333-GR6, A350 LF2 CL1
& A420 WPL6 Fittings

STATEMENT OF COMPLIANCE

I, the undersigned, declare that the described pressure piping system, approved under design registration number _____, complies in all respects with the regulations for construction, installation, testing and inspection and that all applicable pressure piping test data reports have been delivered to the owner.

Nicole
(Signature)

Nicole Normand
(Print Name)

Q.C.I.
(Title)

March 13, 2006
(Date)

TARA Oilfield Services LTD.
(Company)

1805 - 19th Street
(Address)

Didsbury, AB T0M 0W0
(City, Postal Code)

In accordance with the provisions of the Safety Codes Act

Shop Construction ☒; Field Construction ☐; Final Data Report ☐;
Partial Data Report ☐ (from one ABSA-authorized Contractor to another
ABSA- authorized Contractor).

1. Constructed By: TARA Oilfield Services Ltd. Owner's Job No: 05-129C
(Name of ABSA authorized primary contractor or subcontractor)
P.O. Box 1389 Didsbury, AB T0M 0W0

Alberta Quality Program No. AQP-1434

2. Constructed For: Canadian Sub-Surface Energy Services.
(Name of primary contractor if different from above)
600#, 205 - 8th Avenue S.W. Calgary. Alberta
(Address)

Alberta Quality Program No. AQP- N/A Expiry Date: N/A
(Required when the primary contractor undertakes some/all of the quality functions, e.g., Mat'l supply, NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

3. Owner: Canadian Sub-Surface Energy Services
(Name and address)
Portable
(Location of installation)

Alberta Quality Program No. AQP- N/A Expiry Date: N/A
(Required when the owner undertakes some/all of the quality functions, e.g., Mat'l supply, NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

4. Piping Design Alberta Registration No.: PP- N/A
(Required if aggregate piping volume is over 0.5m³)

5. WP No.: WP-2081.2 ; Company: TARA Oilfield Services Ltd. ; Owner's WP No. (If used): WP-N/A
 (Alberta Registration No.) (Alberta Registration No.)
 WPS No(s). used: TOS-2 ; Owner's WPS No(s). (If used): N/A

6. Code: ASME B31.1 Non Boiler External Piping ☐; ASME B31.1 Boiler External Piping ☐;
ASME B31.3 ☒ - Service category: Normal ☐, D ☐, M ☐, High Pressure ☒; B31.5 ☐; B31.9 ☐.

[illegible]

Partial Data Reports, properly identified and certified by ABSA-authorized contractors, as listed below are attached to and form part of this Data Report ☐

No.	Line No.	Spool No.	Drg. No. (with Rev. No.)	Contractor (Name)	AQP No.	Expiry date

Remarks: Provide additional comments including noting any code work that was not performed by the ABSA-authorized contractor(s) supplying this document as a Partial Data Report but which must be completed by another ABSA-authorized contractor who assumes overall responsibility for conformance with the Safety Codes Act & Regulations and applicable ASME Codes, and who assures that all required code work is completed prior to putting the piping system into service.

Endorse certificate 'A' or 'B'

A. CERTIFICATE OF COMPLIANCE

Signed by the subcontractor when supplying this certificate as a
Partial Data Report

We certify that the statements in this Data Report are correct and that materials, construction and workmanship of the piping fabrication conform to the registered quality system and the applicable Piping code(s).

Date: _____
Subcontractor

Print Authorized Representative's Name Signature

This certificate is not valid unless it forms part of a Final Data Report signed by Primary Contractor

B. CERTIFICATE OF COMPLIANCE

Signed by the primary contractor when supplying this certificate as a
Final Data Report

We certify that the statements in this Data Report are correct and that piping job no. 05-129C

described in this Data Report was constructed in accordance with the Province of Alberta Safety Codes Act and Regulations, and applicable ASME Piping Code(s).

Date: Mar. 13, 2006 TARA Oilfield Services
Ltd.

Primary Contractor

Nicole Normand, Q.C.I.

Print Authorized Representative's Name

Signature

CERTIFICATE OF INSPECTION

I, the undersigned, employed by _____ have inspected the piping
job no. _____ described in this Construction Data Report and state that, to the best of my

knowledge and belief, the Contractor has constructed this piping in accordance with the applicable Sections of the ASME Piping Codes and Province of Alberta Safety Codes Act and Regulations.

Date: _____

Date: _____

Print Owner's Inspector's Name Owner's Inspector's Signature

Name: _____ Sign.: _____

ABSA Safety Codes Officer
(BOILER EXTERNAL PIPING ONLY)

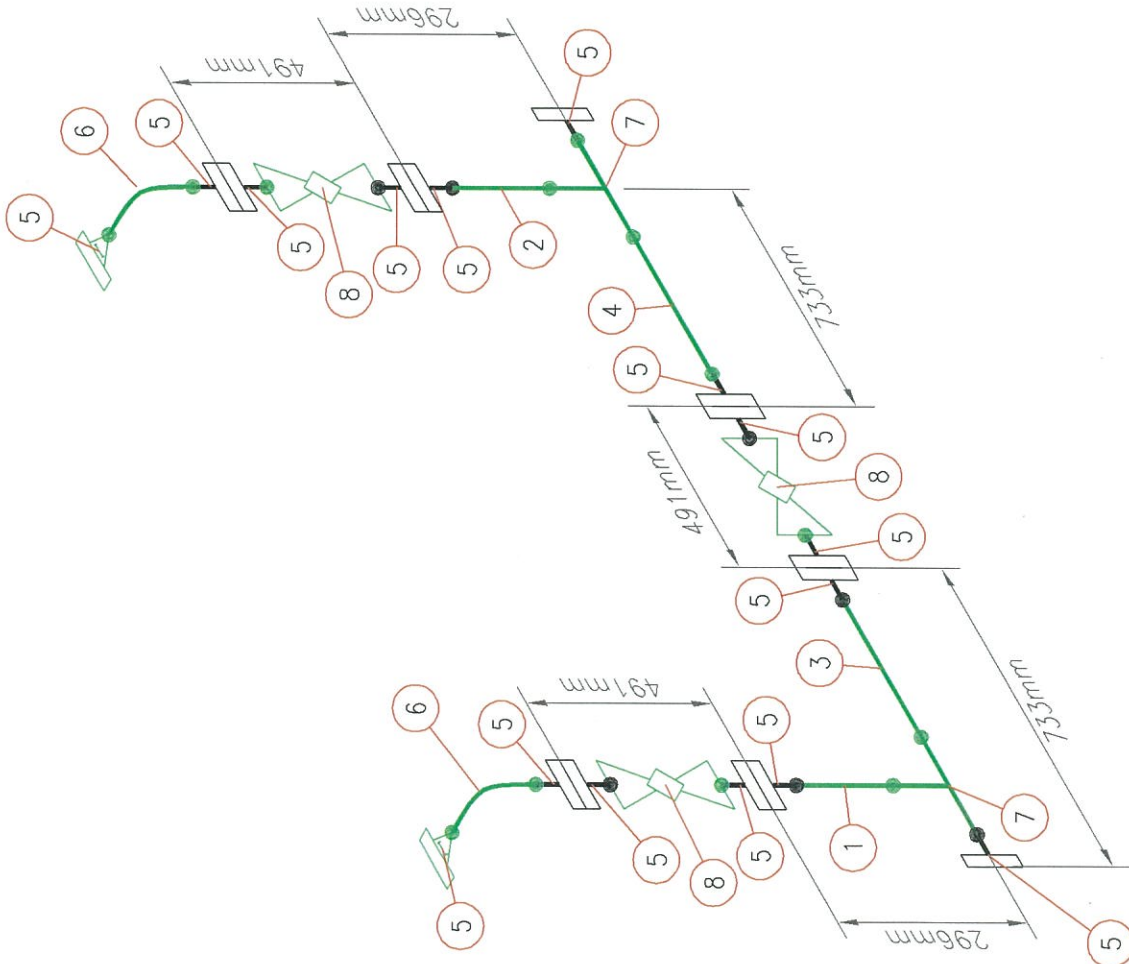
BILL OF MATERIAL

PIPE				MATERIAL	QTY
NO	SIZE	SCHEDULE	DESCRIPTION		
1	80mm	XXH	PIPE SMLS	A333 GR. 6	5
2	80mm	XXH	PIPE SMLS	A333 GR. 6	5
3	31mm	XXH	PIPE SMLS	A333 GR. 6	5
4	31mm	XXH	PIPE SMLS	A333 GR. 6	5
FLANGES				MATERIAL	QTY
NO	SIZE	SCHEDULE	DESCRIPTION		
5	16	3 1/8"	ISO 4194 FLANGE	A500-UF2	5
WELD FITTINGS				MATERIAL	QTY
NO	SIZE	SCHEDULE	DESCRIPTION		
6	2	3"	90° ELBOW LR 90°	A302 WPLG	5
7	2	3" x 3"	STRAIGHT TEE 90°	A302 WPLG	5
VALVES				MATERIAL	QTY
NO	SIZE	SCHEDULE	DESCRIPTION		
8	3	5000	ISO 4194 VALVE 100	A500-UF2	5

DESIGN SPECIFICATION

Q.C.P. - AQR-1434
MAX. W.P. - 5000 PSI
ALLOY - 304
CORROSION ALLOWANCE - NIL
DESIGN CATEGORY - HIGH PRESSURE - SEVERE CYCLIC
N.D.E. - 50% RADIOGRAPHY
HYDROTEST PRESSURE - 7500 PSI
HYDROTEST MEDIUM - H ₂ O
HYDROTEST HOLD TIME - 30 min.
FWHT TEMP. - 621°C
WPS - T05-2

1	FOR CONSTRUCTION	LD	10/12/05
0	FOR APPROVAL	LD	10/11/05
TARA PROJECTS TARA Oilfield Services Ltd. 1805-19th STREET DIDSBURY, AB PH: 403-335-9158 FAX: 403-335-3403			
2.5 MILLION BTU/LINE HEATER DRESS DOWN PIPING LAYOUT DRAWING			
CANADIAN Sub-Surface Energy Services Inc.			
TARA 0584	UNIT: U-01	DATE: 10/11/05	REV: 1



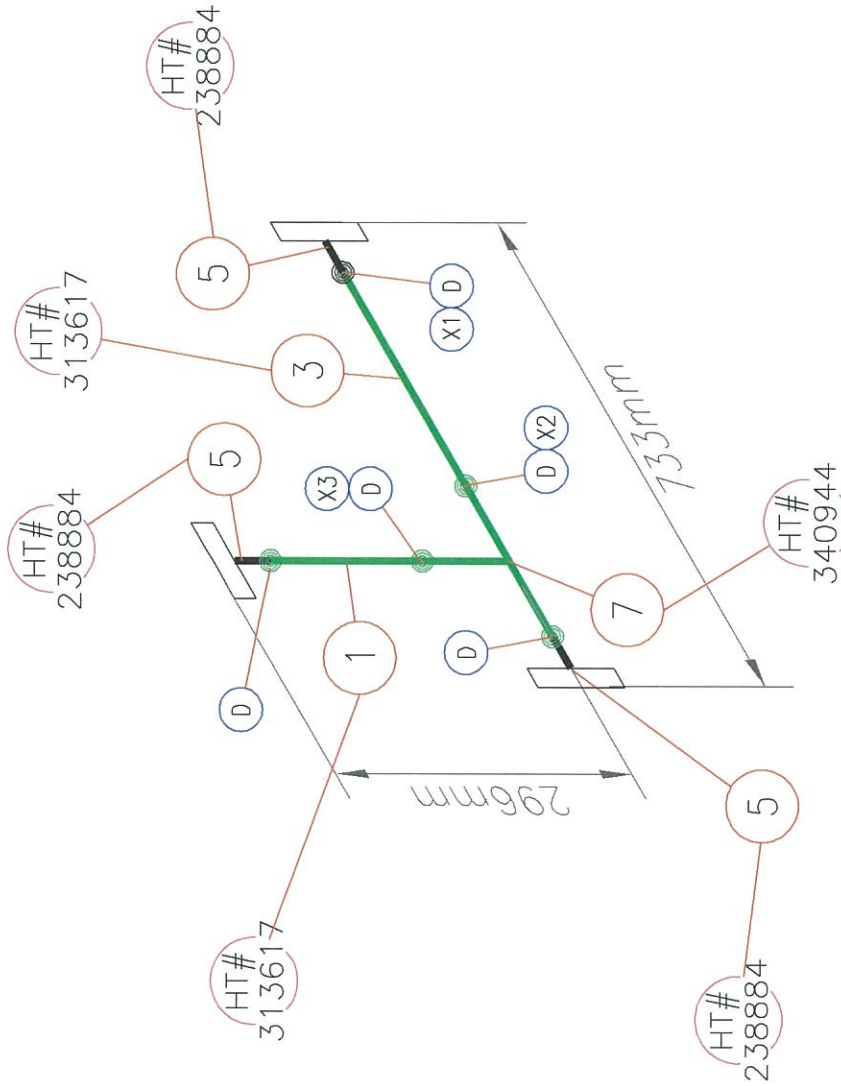
BILL OF MATERIAL

PIPE				MATERIAL	S/F
NO	QTY	SIZE	SCHEDULE DESCRIPTION		
1	1	3"	XXH PIPE SMLS	A333 GR 6	5
2	2	3"	XXH PIPE SMLS	A333 GR 6	5
3	3	3"	XXH PIPE SMLS	A333 GR 6	5
4	4	3"	XXH PIPE SMLS	A333 GR 6	5
COUPLERS				MATERIAL	S/F
NO	QTY	SIZE	SCHEDULE DESCRIPTION		
5	16	3 1/8"	5000 XXH R53 API FLANGE	A501-LF2	5
WELD FITTINGS				MATERIAL	S/F
NO	QTY	SIZE	SCHEDULE DESCRIPTION		
6	2	3"	XXH 50T ELBOW LR 90	A302 WELG	5
7	2	3" x 3"	XXH STANCH TEE 90	A302 WELG	5
VALVES				MATERIAL	S/F
NO	QTY	SIZE	SCHEDULE DESCRIPTION		
8	3	3"	5000 5000 MAX PLUS WAIVE RP	A501-LF2	5

DESIGN SPECIFICATION

Q.C.P. - AOR-1434
M.A.W.P. - 5000 PSI
DESIGN - 40°C
CORROSION ALLOWANCE - NIL
RTJ.3 SERVICE CATEGORY - HIGH PRESSURE - SEVERE CYCLIC
N.D.E. - 50% RADIOGRAPHY
HYDROTEST PRESSURE - 7500 PSI
HYDROTEST MEDIUM - H ₂ O
HYDROTEST HOLD TIME - 30 min
FWHTT TEMP. - 621°C
FWHTT HOLD TIME - 60 min
WPS - T05-2

2	ADDED NOT & HEAT NUMBERS	10/25/05	LD
1	FOR CONSTRUCTION	10/12/05	LD
0	FOR APPROVAL	10/11/05	LD
TARA PROJECTS TARA Oilfield Services Ltd. 1805-19th STREET DIDSBURY, AB PH: 403-335-9158 FAX: 403-335-3403			
2.5 MILLION BTU LINE HEATER DRESS DOWN PIPING SPOOL DRAWINGS			
TARA JOB#	UNIT	DATE	REV
05-129	U1-31	05-129C-1	2



ISO-05-129C-1

BILL OF MATERIAL

PIPE				S/F
NO	QTY	SIZE	DESCRIPTION	
1	1	3"	PIPE SMLS	AS33 GR 6
2	2	3"	PIPE SMLS	AS33 GR 6
3	2	3"	PIPE SMLS	AS33 GR 6
4	4	3"	PIPE SMLS	AS33 GR 6
FLANGES				
5	16	3 1/2"	SCH 40S APT FLANGE	AS33-LF2
WELD FITTINGS				
6	2	3"	90° ELBOW LF BW	AS33-LF2
7	2	3" x 3"	STRAIGHT TEE BW	AS33-LF2
VALVES				
8	3	3"	SWD MAX FLUE VALVE BP	AS33-LF2
9	3	3"	SWD MAX FLUE VALVE BP	AS33-LF2

DESIGN SPECIFICATION

Q.C.P. : AQB-1434
M.A.W.P. : 5000 PSIG
M.D.M.T. : -40°C
COMMISSION ALLOWANCE : NIL
RTJ SERVICE CATEGORY : HIGH PRESSURE - SEVERE CYCLIC
N.D.E. : 50% RADIOGRAPHY
HYDROTEST PRESSURE : 7500 PSIG
HYDROTEST MEDIUM : H ₂ O
PAINT TEMP. : 621°C
WPS : T0352
WELD TIME : 60 min

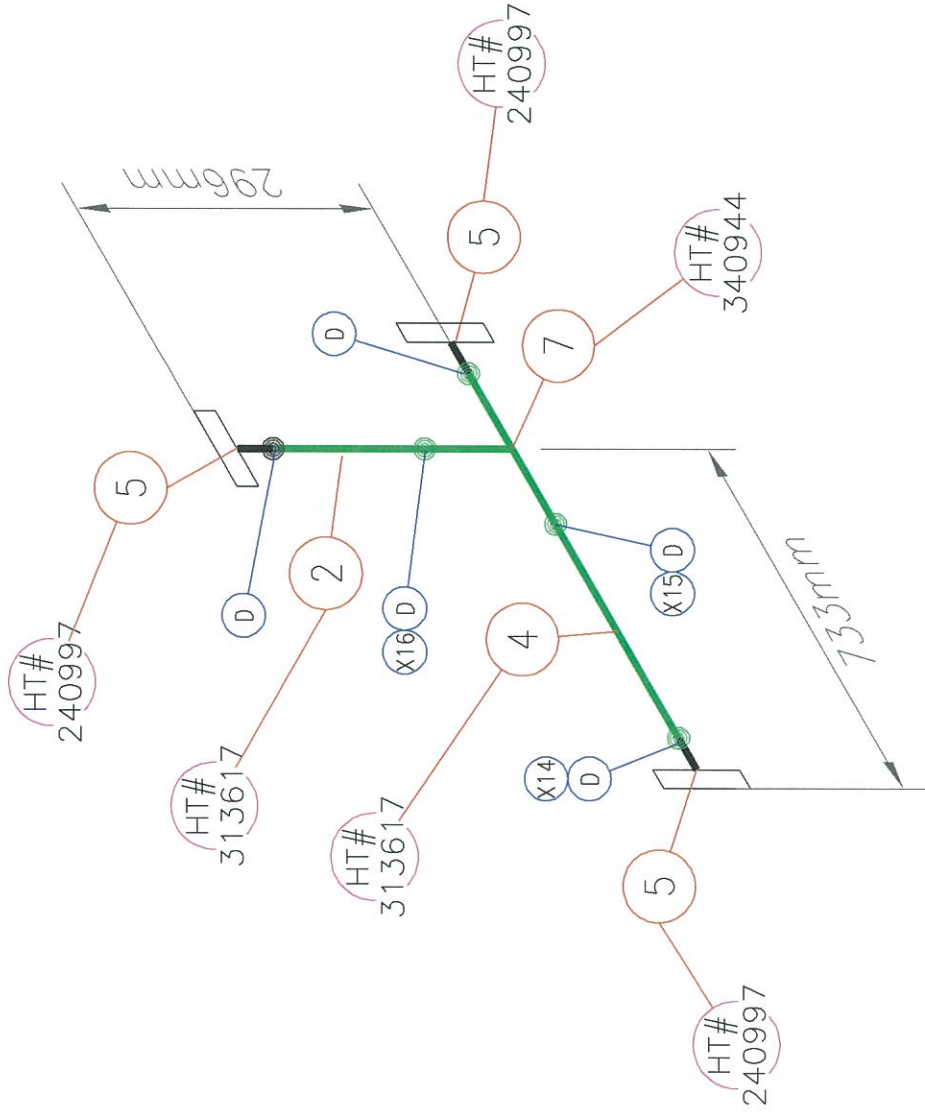
2	ADDED NOT & HEAT NUMBERS	10/25/05	LD
1	FOR CONSTRUCTION	10/12/05	LD
0	FOR APPROVAL	10/11/05	LD

TARA PROJECTS
TARA Oilfield Services Ltd.
1805-19th STREET DIDSBURY, AB
PH: 403-335-9158 FAX: 403-335-3403

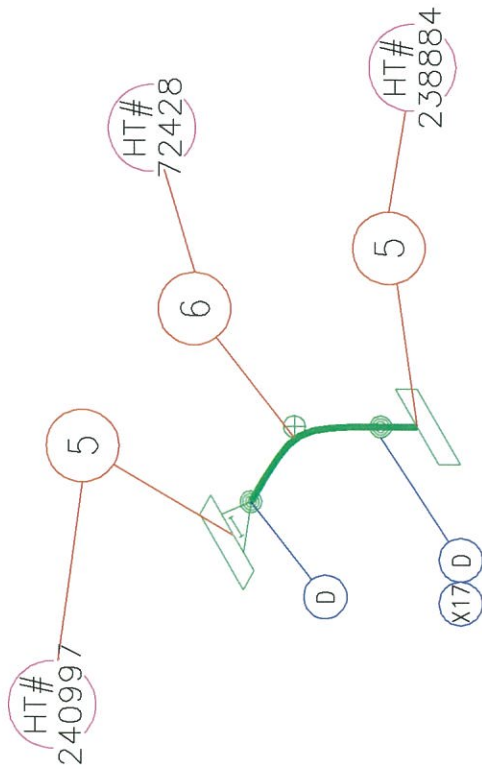
2.5 MILLION BTU LINE HEATER
DRESS DOWN PIPING
SPOOL DRAWINGS

CANADIAN Sub-Surface
Energy Services Inc.

TARA JOB#	DATE	DATE	REV#
05-129	05-02	05-129C-2	2



ISO-05-129B-2



ISO-05-129B-3

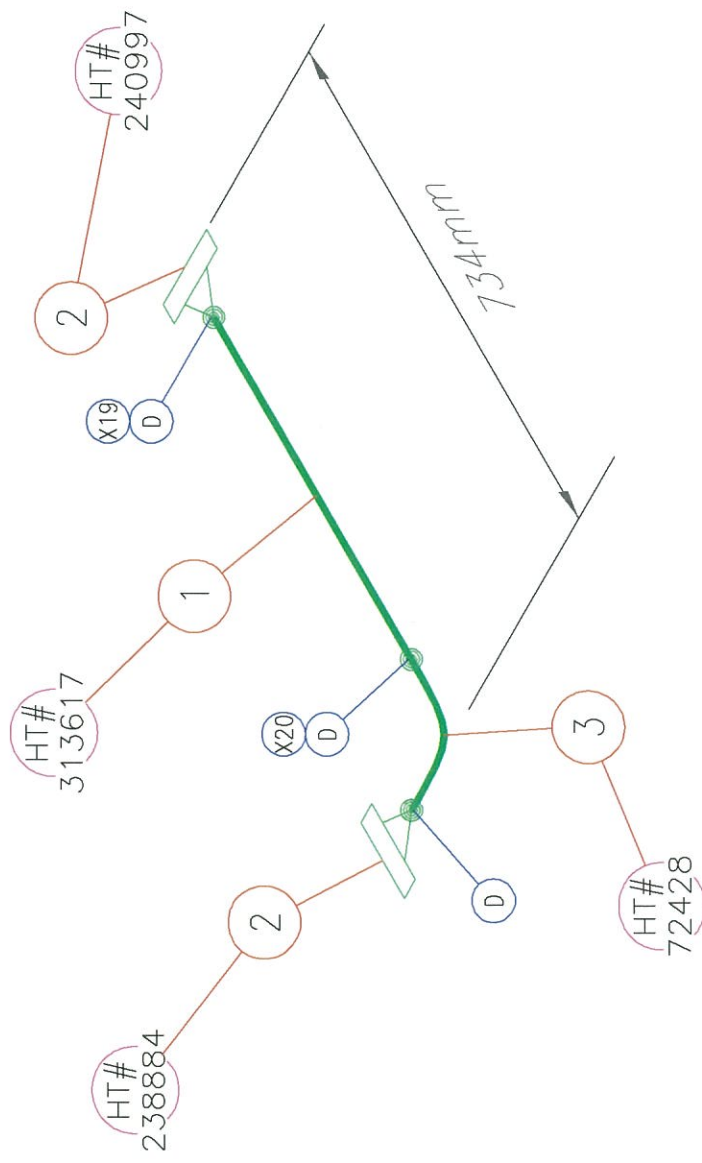
BILL OF MATERIAL				
PIPE				
LNK QTY	SIZE	SCHEDULE	DESCRIPTION	MATERIAL
1	3"	XXL	PIPE 5M5	ASTM A106
2	3"	XXL	PIPE 5M5	ASTM A106
3	3"	XXL	PIPE 5M5	ASTM A106
4	3"	XXL	PIPE 5M5	ASTM A106
FLANGES				
5	16"	SCH 40	FLANGE	ASTM A106
6	16"	SCH 40	FLANGE	ASTM A106
WELD FITTINGS				
7	3"	XXL	90° ELBOW 1/2 BW	ASTM A106
8	3"	XXL	STRAIGHT TEE BW	ASTM A106
VALVES				
9	3"	SCH 40	2" VALVE	ASTM A106
10	3"	SCH 40	2" VALVE	ASTM A106

DESIGN SPECIFICATION	
Q.C.P.	ASTM A106
M.A.W.P.	5000 PSI
M.D.M.T.	-40°C
CORROSION ALLOWANCE: NIL	
R.T.T. SERVICE CATEGORY: HIGH PRESSURE - SEVERE CYCLIC	
N.D.E.: 50% RADIOGRAPHY	
HYDROTEST PRESSURE: 7500 PSI	
HYDROTEST MEDIUM: H ₂ O	
P.W.H.T. TEMP.: 621°C	
W.P.S.: TMS-2	

2	ADDED NOT & HEAT NUMBERS	10/25/05	LD
1	FOR CONSTRUCTION	10/12/05	LD
0	FOR APPROVAL	10/11/05	LD
TARA PROJECTS TARA Oilfield Services Ltd. 1805-19th STREET DIDSBURY, AB PH: 403-335-9158 FAX: 403-335-3403			
2.5 MILLION BTU LINE HEATER DRESS DOWN PIPING SPOOL DRAWINGS			
CANADIAN Sub-Surface Energy Services Inc.			
TARA JOB#	UNITS	DATE	REV.
05-129	U-02	05-129C-3	10/11/05



BILL OF MATERIAL				
PIPE				
NO	QTY	SIZE	SCHEDULE DESCRIPTION	MATERIAL
1	1	3"	SCH. 40	ASTM A106
2	2	3 1/2"	SCH. 40	ASTM A106
3	1	3"	SCH. 40	ASTM A106
WELD FITTINGS				
NO	QTY	SIZE	SCHEDULE DESCRIPTION	MATERIAL
1	1	3"	SCH. 40	ASTM A106
2	1	3"	SCH. 40	ASTM A106



ISO-05-129B-5

DESIGN SPECIFICATION	
Q.C.P. - AQC-1434	
M.A.W.P. - 5000 PSI	
M.D.M.T. - -40°C	
CORROSION ALLOWANCE - NIL	
DESIGN CATEGORY - HIGH PRESSURE - SEVERE CYCLIC	
N.D.E. - 50% RADIOGRAPHY	
HYDROTEST PRESSURE - 7500 PSI	
HYDROTEST MEDIUM - H ₂ O	
PAINT TEMP. - 62°C	
WPS - TMS-2	

TARA PROJECTS	
TARA Oilfield Services Ltd.	
1805-19th STREET DIDSBURY, AB	
PH: 403-335-9158 FAX: 403-335-3403	
CANADIAN Sub-Surface Energy Services Inc.	
2.5 MILLION BTU LINE HEATER DRESS DOWN PIPING SPOOL DRAWINGS	
DATE: 05-128	UNITS: U-02
DATE: 05-128	UNITS: U-02
DATE: 05-128	UNITS: U-02
DATE: 05-128	UNITS: U-02

(44)

(44)

 VALLOUREC & MANNESMANN TUBES (401) Y&M FRANCE rue du Galilée 21 n°1 - BP 2 59480 Salins-les-Bains FRANCE tel: 03.27.23.12.01 fax: 03.27.23.15.63		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03) REF: 26-05-138026 103 (A08) N° V&M: LA093303			
(A05) Purchaser: CCTF CORPORATION (A07) Order n°: VM1401 / 4872628-00 (B01) SEAMLESS STEEL PIPE, HOT FINISHED (KILLED STEEL) (B04) NORMALIZED 1697 °F (918 °C) 10 MON (B05) ENDS REVELLED 3/4" ANTI-RUST COATING DRY VARNISH (B06) SPECIFICATION ASTM A 333 (180/199)+ASME SA 333 (180/199)+ASME SA 510 (180/199)+ASME SA 510 (180/199) (B08) STANDARD MARKING: VALLOUREC & MANNESMANN FRANCE AISA 333 2345-1 + 6 + 280 CAT II HPS LT 51 P 3 0.600 SOUR HT HEAT NUMBER VM1401 / 4872628-00 QUANTITY PER ITEM							
Y/R	Q/R	(B11-B12) Size	(B13) Single length	(B10) Quantity	Length ft	(B14) (B09) Weight item net lb	(B08) Heat
05	05	NPS 3 x 8 88.90 X 15.24 MM	060964M 240.0 (in)	32	644.13	12004 SKU No 2532003	313617
(C71-C93) LADLE ANALYSIS C5 = C + F (MN/6 + Si/24 + Cu/15 + Ni/20 + (Cr + Mo + V + Nb) / 5 + 5 B) < 0.40% ; HEAT 313617 = 0.33% (C72) MN/C (C70) Process Heat MIN. 0.10 0.40 MAX. 0.24 0.50 1.35 0.025 0.025 L 313617 0.15 0.18 1.04 0.016 0.002 0.11 0.01 0.03 0.04 0.02 0.00 0.00 0.000 5.933							
FOR EACH REDUCTION OF 0.01% CARBON BELOW 0.30%, AN INCREASE OF 0.05% MANGANESE ABOVE 1.05% WOULD BE PERMITTED TO A MAXIMUM OF 1.35% MANGANESE							
(C10-C93) RECTANGULAR SPECIMEN LONGITUDINAL TENSILE TEST AT ROOM TEMPERATURE							
(C00) Ten	(B08) Heat	width	thick	secl.	(C11) Y.S.	(C12) T.S.	(C13) Elong. 2"
MIN.		mm	mm	mm ²	42000	60000	
MAX.		mm	mm	mm ²	psi	psi	%
01DMS17	313617	22.2	15.0	338.47	44249	67172	44

CONFORMS

ASME

2004 EDITION

SECTION II PART A

DATE: 03/01/06

QC1: 11/06

VALLOUREC & MANNESMANN TUBES V.M. (A01) TUBES DE SAINTE FRANCE rue du Général Zola 4 - BP 7 59580 Saint-Saulve FRANCE tel: 03.27.23.13.01 fax: 03.27.23.15.53		MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B		ISO 9001 (A03) Ref: 26-05-131026 2/3 (A08) N° V&M: LA0993103								
(C00) Test MIN. MAX.	(B08) Heat	width	thick.	rect.	(C11) Y.S. 42000	(C12) T.S. 60000	(C13) Elong. 2"					
Q2DM537 313617		mm 22.0	mm 15.2	mm 339.83	psi 43524	psi 67172	% 43					
ROCKWELL C HARDNESS < OR = 21 GUARANTEED (C40-C02-C41) CHARPY V LONGITUDINAL IMPACT TEST												
(C00) Test MIN. MAX.	(B08) Heat	temp.	width	height	sect.	(C42) E1	(C42) E2	(C42) E3	(C42) mean	(C42) shear	(C42) shear	(C43) shear
Q2DM537 313617		°F -51	mm 10.00	mm 10.00	mm 0.80	mm 129	mm 124	mm 108	mm 120	mm 85	mm 80	mm 65
NON DESTRUCTIVE TESTS (D01-D09)												
test	test rate	specification	pressure	hold time	result							
APPEARANCE & DIMENSIONS	100% LOT				OK							
EDDY CURRENT TEST	100% LOT	CSA 2245-1			OK							
HYDROSTATIC TEST	100% LOT		3000	5	OK							
TECHNOLOGICAL TESTS (C50-C60)												
test	result											
FLATTENING TEST	OK											

(AM) V&M VALLOUREC & MANNESMANN TUBES VALLOUREC Tubos de St Saive rue du Calibel 21 A - BP 2 59880 Saint-Saive FRANCE tel: 03.27.23.11.01 fax: 03.27.23.11.63	(AMS) MATERIAL TEST REPORT INSPECTION CERTIFICATE EN 10204 3.1.B	ISO 9001 (A03)R&E: 26-03-138026 3/3 (A08)N°V&M: LA0993105			
(201)18/05/2005 <table border="1"><tr><td data-bbox="430 174 690 504"> (Z02) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length. </td><td data-bbox="430 504 690 1081"> (A05) The authorized expert in Quality Control Section M. SKORUPKA <i>Skorupka</i> </td><td data-bbox="430 1081 690 1841"></td></tr></table>			(Z02) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.	(A05) The authorized expert in Quality Control Section M. SKORUPKA <i>Skorupka</i>	
(Z02) Original computer copy - authenticity is guaranteed by the V&M logo. All the pipes/tubes conform to the requirements of the order and standard regarding the grade, quality and heat treatment throughout their whole length.	(A05) The authorized expert in Quality Control Section M. SKORUPKA <i>Skorupka</i>				



Five Star Metals, Inc.

POSTED

P.O. Box 800460 • Houston, Texas 77280-0460 • 713 466-1491 • FAX 713 466-6027

CUSTOMER: CRC WELLHEAD

3771 -74TH AVENUE
EDMONTON ALB CANADA T6B 2T7

CERT. NO.: 238884
REC. DATE: 02/15/2005
SHIP DATE: 02/15/2005
W.O. NO.: 20186-1
P.O. NO.: WS18504

QTY.	FSM NO.	DESCRIPTION	WT. EA.
321 PCS.	CRC17025-6	ASTM A350 LF2 LOW CARBON STEEL 3-1/8" - 5M WN SOLID FLANGE FORGING PER CPP-136, REV. 1, DTD 2/95 CHARPIES 15/12 @ -50 DEG. F, & DWG#FSS-865, REV. A, DTD 10/09/98 (NAFTA 7307.91)	78 LBS.

TEST BAR SIZE: SACRIFICIAL

BAR DIA: 0.502

MELT PRACTICE: ELECTRIC FURNACE

REDUCTION RATIO 5:1 MIN. NO WELD REPAIR.

NOTE: ALL FORGINGS HAVE BEEN HEAT TREATED IN THE SAME HEAT TREAT LOT
UNLESS OTHERWISE STATED, YIELD STRESS IS 0.2% OFFSET. GAUGE
LENGTH IS 2" FOR 1/2" BAR.

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

HEAT NO.: 238884

CODE: RRV

MILL: SMI

C: 00.21

MN: 00.90

PH: 00.010

SU: 00.015

SI: 00.23

NI: 00.10

SN: 00.014

B: 00.0004

CR: 00.10

MO: 00.040

CU: 00.27

AL:

VA: 00.043

CB: 00.001

TI: 00.001

CE: 00.42

YIELD STRENGTH: 54,200

TENSILE STRENGTH: 77,700

ELONGATION: 31.10%

RED. OF AREA: 60.90%

TEST BAR BRINELL: 153/153

FORGING BRINELL: 146/163

10MMX 10MM CHARPY: 19/24/22

TEST TEMP.: -50F LCVN

JOULES:

M L E: 13/17/15

SHEAR FRAC.: 15/20/20

DELTA FERRITE:

RETAINED AUSTENITE:

HEAT TREATED @ REPUBLIC HEAT TREAT.

HEAT TREATMENT: FORGINGS

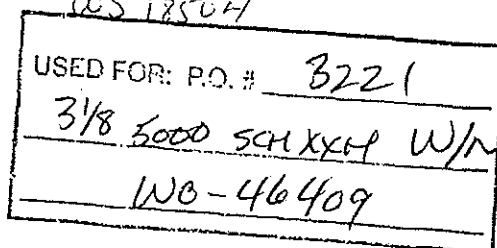
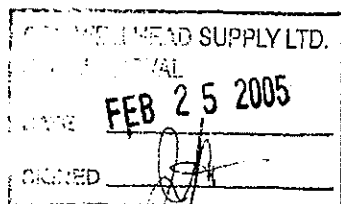
NORMALIZED: 1675F 04.00 HRS AIR

HEAT TREATMENT: TEST BAR

NORMALIZED: 1675F 04.00 HRS AIR

We hereby certify that all test results and procedure information
contained herein are correct and true as contained in the records of the
company.

BY: *Renee Myer*





Five Star Metals, Inc.

POSTED

P.O. Box 800460 • Houston, Texas 77280-0460 • 713 466-1491 • FAX 713 466-6027

CUSTOMER: CRC WELLHEAD

3771 -74TH AVENUE
EDMONTON ALB CANADA T6B 2T7

CERT. NO.: 240997
REC. DATE: 08/02/2005
SHIP DATE: 08/02/2005
W.O. NO.: 20804
P.O. NO.: WS19083

QTY.	FSM NO.	DESCRIPTION	WT. EA.
420 PCS.	CRC17025-6	ASTM A350 LF2 LOW CARBON STEEL 3-1/8"-5M WN SOLID FLANGE FORGING PER CPP-136, REV. 1, DTD 2/95, CHARPIES 15/12 @ -50 DEG. F, & DWG# FSS-865, REV. A, DTD 10/09/98 (NAFTA 7307.91)	78 LBS.

TEST BAR SIZE: SACRIFICIAL BAR DIA: 0.503

MELT PRACTICE: ELECTRIC FURNACE

REDUCTION RATIO 5:1 MIN. NO WELD REPAIR.

NOTE: ALL FORGINGS HAVE BEEN HEAT TREATED IN THE SAME HEAT TREAT LOT
UNLESS OTHERWISE STATED, YIELD STRESS IS 0.2% OFFSET. GAUGE
LENGTH IS 2" FOR 1/2" BAR.

CHEMICAL ANALYSIS

HEAT NO.: 240997

CODE: SGK

MILL: SMI

C: 00.19

MN: 00.90

PH: 00.009

SU: 00.014

SI: 00.22

NI: 00.11

SN: 00.013

B: 00.0003

:

:

:

:

:

:

CR: 00.08

MO: 00.035

CU: 00.32

AL:

VA: 00.044

CB: 00.001

TI: 00.001

CE: 00.40

:

:

:

:

:

:

PHYSICAL PROPERTIES

YIELD STRENGTH: 54,500

TENSILE STRENGTH: 77,600

ELONGATION: 30.80%

RED. OF AREA: 59.50%

TEST BAR BRINELL: 163/163

FORGING BRINELL: 163/163

10MM X 10MM CHARPY: 40/27/26

TEST TEMP.: -50F LCVN

JOULES:

M L E: 32/19/17

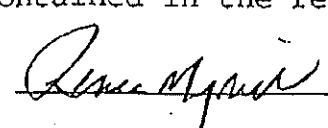
SHEAR FRAC.: 35/30/25

DELTA FERRITE:

RETAINED AUSTENITE:

HEAT TREATMENT: FORGINGS & TEST BAR
NORMALIZED: 1700F 04.00 HRS AIR

We hereby certify that all test results and procedure information contained herein are correct and true as contained in the records of the company.

BY: 

USED FOR: P.O. #

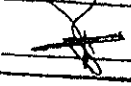
3221

3 1/8 5000 SCH XXH W/N

WO-46409

CRC WELLHEAD SUPPLY LTD.
Q.A. APPROVAL

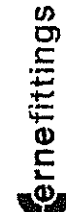
DATE AUG 04 2005

SIGNED 

PROFESSIONAL

HEAT NUMBER : 340944
TRANS AM PIPING PRODUCTS - REV'D BY:
Shipment/Seq #: 5 - 1098 30

3" XXH LR 90° ELL WPL6 HT# 72428

 erne fittings gmbh A-8824 Schläin Hauptstrasse 48 Austria/Europe Telefon +43/5524 501-0 Telefax +43/5524 501-930 Fax No. 12 700 3954		Abnahmeprüfzeugnis Inspection Certificate EN 10204 - 3.1B		Zeugnisnummer [certificate no.] 03145405-BS Rev. 19/07	
Ihre Bestellnummer [your order no.] EO4405DD		Unsere Auftrags-Nr. [our order no.] 76127-MS-0141		Da [at]	
Ihre Artikelnummer [your item no.] 72428		Schmelze Nr. [heat no.] 72428		Ident. Nr. [order]	
Menge [quantity] 50		Artikelbezeichnung [designation] LR-90-S-WPL6-3-XXS elbows		Anforderungen [requirements] ASME B16.9-2001 LR-WPL6, ASTM A 420/A 420M-01, ASME Sec. II Part A, NACE MR-01-75, EN 10204/3.1B, Manufacture standard	
Hersteller [manufacturer] V&M		Dichtheitsprüfung [leakage test] ASTM E308		Härteprüfung [hardness test] 142-144 HB	
J-Faktor [J-Factor] (P + Sn) * 10000 CEQ [CEQ] C + (Min / 6) + (Cr + Mo + V) / 5 + (Cu + Ni) / 15		Kerbschlagbiegeversuch [notched bar impact test] Form: Charpy-V notch Temp. -50° C 80 PR-Lage [pos. of sample] 35.1 Dehnung [elongation] 2% (Rm) 479 Zugfestigkeit [tensile str.] Rp 0.2 317 Br 0.2 317		Wärmebehandlung [heat treatm.] normalized temperature 920 °C Holding Time 30 min. Cooling in still air	
Mech.-technologische Prüfung [mech. technological test]					
1 = Schmelzeanalyse [heat analysis] CEQ [CEQ] C + (Min / 6) + (Cr + Mo + V) / 5 + (Cu + Ni) / 15					
Proben [test no.]					
283506 Pr.-Lage [pos. of sample] 35.1 Dehnung [elongation] 2% (Rm) 479 Zugfestigkeit [tensile str.] Rp 0.2 317 Br 0.2 317					
Kennzeichnung [marking]  Mat. 72428/DN"wall					
Besichtigung und Ausmessung [visual inspection and dimensional check] o.B./o.K.					
Bemerkungen [remarks] Not formed over mandrel Hardness test and stamping acc. to NACE MR-01-75. Stamped with round nosed tools. Hardness test, visual and dimensional test are checked on 10%.					

Zertifiziert nach DGR 9723/EG Anhang I - Absatz 4.3 durch TÜV Süddeutschland CE 0036, Zertifikat-Nr. DGR-0036-QM-WH-104-01 [Certified acc. to PED 97/23/EC by TÜV Cert CE 0036, certificate no. DGR-0036-QM-WH-104-01, Certified acc. to EN ISO 9001]

50208