



## 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**

<b><u>Exhibit #</u></b>	<b><u>Description:</u></b>
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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 cursive script, appearing to read "Selhan", which is the name of the Chief Inspector and Administrator.

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 – 8<sup>th</sup> 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

*(Signature)*  
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

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

2081.2 TOS.2

### Welding Procedure Specification No's:

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: \_\_\_\_\_

Comments: \_\_\_\_\_

## WORK COMPLETED AND ACCEPTED (AB-83 completed)

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

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	OWNER'S INSPECTOR
1	DRAWINGS: ABSA registration over 0.5 Cu. M. Approved by Owner. Approved for Construction (signed & dated).	<i>leo</i> 09/15/05	
2	Owner's Inspector notified.	<i>leo</i>	.
3	Registered Welding Procedures, Q.C. Manual and Forms available at site, Job File started.	<i>leo</i>	
4	Welders qualified for Procedures and have valid Performance Qualification cards. Welders Log completed. WPS reviewed with welders.	<i>leo</i>	
5	Material checked against P.O., drawings, and specifications. Identification confirmed. Colour coding applied.	<i>leo</i>	
6	Sample of each welder's work examined, including root spacing, alignment, cleaning, joint preparation, preheat and electrode control.	<i>leo</i>	
7	Nondestructive Examination completed. Reports and radiographs reviewed, signed by Level II or III, Radiograph I.D. detailed on drawings.	<i>leo</i> 10/24/05	
8	Visual Examination of all completed welds. Welders I.D. stamped and recorded on drawings.	<i>leo</i>	
9	Heat Treatment verified and recorded on drawings.	<i>leo</i> 02/24/06	
10	Each system checked against specifications and drawings before test.	<i>leo</i>	
11	All deficiencies recorded and signed off by Q.C.I. and Owner's Inspector before test.	<i>leo</i>	
12	Pressure Test checked. Gauge calibration verified, gauge #'s recorded.	<i>leo</i> 03/01/06	
13	System checked after test. Deficiencies recorded and corrected.	<i>leo</i>	
14	Construction data reports (AB-83) prepared and signed by Q.C.I. and Owner's Inspector.	<i>leo</i>	
15	Declaration form (AB-81) submitted to ABSA	<i>leo</i>	
16	As built drawings accepted by Owner.	<i>leo</i>	

EXHIBIT 11.4  
**TARA OILFIELD SERVICES LTD.**  
**PRESSURE PIPING EXAMINATION GUIDE**

<b>PRESSURE PIPING EXAMINATION GUIDE</b>		Q.C. INSP. ✓
<b>EXAMINATION PRIOR TO PRESSURE TEST (PUNCHING)</b>		
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:	leo	Date: 02/27/06

## EXHIBIT 11.5

**TARA OILFIELD SERVICES LTD.**  
**PRESSURE TEST EXAMINATION GUIDE**

<b>PRESSURE TEST EXAMINATION GUIDE</b>		Q.C. INSP. ✓
<b>PRESSURE TEST PREPARATION</b>		
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.		✓
<b>PRESSURE TEST COMPLETION</b>		
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:		Date: 02/27/06

Welders Name (File Number)	Symbol	T.O.S. Proc. #	Process/ Method	Base Metals	"F" #	Backing O.D.	Min. Thickness	Pos. Downhill	Uphill/ Uphill	Cored/ Solid	Insert N/A	Backing Gas	GTAW Current	GMAW X-Fer	Expiry Date
Doug Weigum (W-4123)	<b>D</b>	TOS-1&2	SMAW Manual	P1 P1	3 4	Optional With	1.0" .684"	All	Uphill	N/A	N/A	N/A	N/A	N/A	1/10/2006
Nicholas Vogel (W-21228)	<b>U</b>	TOS-1&2	SMAW Manual	P1 P1	3 4	Yes No	25mm 15.65mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	05/13/2007
Ryan Zimmer (W-22692)	<b>T</b>	TOS-1&2	SMAW Manual	P1 P1	3 4	Yes No	25mm 15.65mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	07/22/2007
George Gannon (W-14190)	<b>M</b>	TOS-1&2	SMAW Manual	P1 P1	3 4	Optional With	1.0" .684"	All	Uphill	N/A	N/A	N/A	N/A	N/A	07/22/2007
Martin Sheridan (W-17163)	<b>S</b>	TOS-1&2	SAW Manual	P1 P1	6 4	Optional With	2.875" Max.	.110" Max.	0-45,F F,V	Downhill	N/A	NO	N/A	SC	05/24/2007
			SAW Manual	P1 P1	6 4	Optional With	1.0" .672"	.100" .672"	0-45,F F,V	Downhill	N/A	NO	N/A	SC	05/25/2007
			SAW Manual	P1 P1	3 6	Optional With	1.0" N/A	.188" Max.	All	Uphill	N/A	N/A	N/A	N/A	05/27/2007
			GMAW FCAW	P1 P1	6 4	Optional With	1.0" N/A	.100" .672"	0-45,F F,V	Downhill	N/A	NO	N/A	SC	05/27/2007
			GMAW FCAW	P1 P1	6 4	Optional With	1.0" N/A	.188" .684"	Flat	N/A	N/A	N/A	N/A	N/A	05/25/2007
			GTAW SMAW	P1 4130	6	Optional With	1.0"	.100" .672"	0-45,F F,V	Downhill	N/A	NO	N/A	SC	05/25/2007
			GTAW SMAW	P8 SMAW	5	Optional With	1.0" N/A	.188" .672"	Flat	N/A	N/A	N/A	N/A	N/A	07/27/2007

Welders Name (File Number)	Symbol	T O S	Process/ Proc. #	Base	"F"	Backing Metals	Min. O.D.	Deposit Thickness	Pos.	Uphill/ Downhill	Cored/ Solid	Insert Gas	Backing Gas	GTAW Current	GMAW X-Fer	Expiry Date
Daniel Hill (W-5190)	<b>H</b>	TOS-1&2	SMAW	P1	3	Optional	1.0"	.188" .684"	All	Uphill	N/A	N/A	N/A	N/A	N/A	10/1/2007
Tim Smith (W-18841)	<b>A</b>	TOS-1&2	SMAW	P1	3	Optional	1.0"	.188" .684"	All	Uphill	N/A	N/A	N/A	N/A	N/A	08/29/2005
			Manual	P1	4				All	Downhill	N/A	N/A	N/A	N/A	N/A	09/20/2006
Martin Sheridan (W-17163)	<b>S</b>		SMAW	P1	3	Optional	1.0"	.104" 8.0"	All	Uphill	N/A	N/A	N/A	N/A	N/A	05/13/2007
continued			Manual	P1	4	With			All	Uphill	N/A	N/A	N/A	N/A	N/A	
Ron Rempel (W20370)	<b>R</b>	TOS1&2	SMAW	P1	3	None	25mm	6.35mm 15.65mm	All	Uphill	N/A	N/A	N/A	N/A	N/A	1/4/2007

# WELD PROCEDURE CERTIFICATE



# TARS 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. 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	<u>YES</u>
CVN -46°C	
99	1st Day 28 Signed <u>R. ROSEBERG, P.ENG.</u>
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

## RADIOGRAPHIC REPORT

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

R - 13223

CLIENT: TEA Projects  
LOCATION: DISBURY  
GTIL JOB NO: 05-03-0029  
CLIENTS P.O. 3  
CLIENT JOB NO: 05-129-

IDENTIFICATION	PIPE SIZE	PIPE SCHEDULE	# OF EXP	CRK	LF	IP	P	S	UC	CR	EP	%	*	DEFECT LOCATION AND REMARKS		ACCEPT	REJECT
														THICKNESS RANGE:	WELDERS SYMBOL		
1. <u>3-1</u>	<u>X-1</u>	<u>3"</u>	<u>XXH</u>	<u>.600</u>	<u>4</u>										<u>50.0</u>		
2.		<u>2</u>															
3.		<u>3</u>															
4. <u>3-2</u>	<u>4</u>																
5.		<u>5</u>															
6.		<u>6</u>															
7. <u>3-3</u>	<u>7</u>																
8. <u>3-4</u>	<u>8</u>																
9. <u>3-5</u>	<u>9</u>																
10. <u>1</u>	<u>10</u>																
11. <u>2-1</u>	<u>11</u>																
12.		<u>12</u>															
13.		<u>13</u>															
14. <u>2-2</u>	<u>14</u>																
15.		<u>15</u>															
16.		<u>16</u>															
17. <u>2-3</u>	<u>17</u>																
18. <u>2-4</u>	<u>18</u>																
19. <u>2-5</u>	<u>19</u>																
20.		<u>20</u>															

2621

8621

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: DK  
TECHNICIAN (PRINT): K. WELLS CGSB LEVEL II ASNT LEVEL II  
ASSISTANT (PRINT): B. WELLS

SSOFD:	<u>3.95"</u>	VEHICLE #:	<u>007</u>
Source Side of Object to Film Distance			
SOD:	<u>2.9"</u>		
Source to Object Distance			
FILM USED	<u>5235</u>	FILM SIZE	<u>5235</u>
PCS.		PCS.	
PCS.		PCS.	
PCS.		PCS.	



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

## Furnace Work Order

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

Client Reference: P.O. : Leo  
Furnace: 2

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

Attention: MARTY SHERIDAN  
Furnace Load: CF06-6213

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

## Heat Cycle (In Degrees Celsius)

**Material:** Carbon Steel (P1)  $\leq 1$  " W/T      **Code:** Customer Spec.  
**Heat from Ambient to**       $425^\circ$       **at a Moderate Rate.**  
**Heat from**       $425^\circ$       **to**       $621^\circ$       **at**       $222^\circ$       **per Hour max.**  
**Soak at**       $621^\circ$       **+/**       $14^\circ$       **for**      1      **Hours.**  
**Cool to**       $425^\circ$       **at**       $277^\circ$       **per Hour max.**  
**Cool from**      **to**      **at**      **per Hour max.**  
**From**       $425^\circ$       **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: EA100-24S  
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

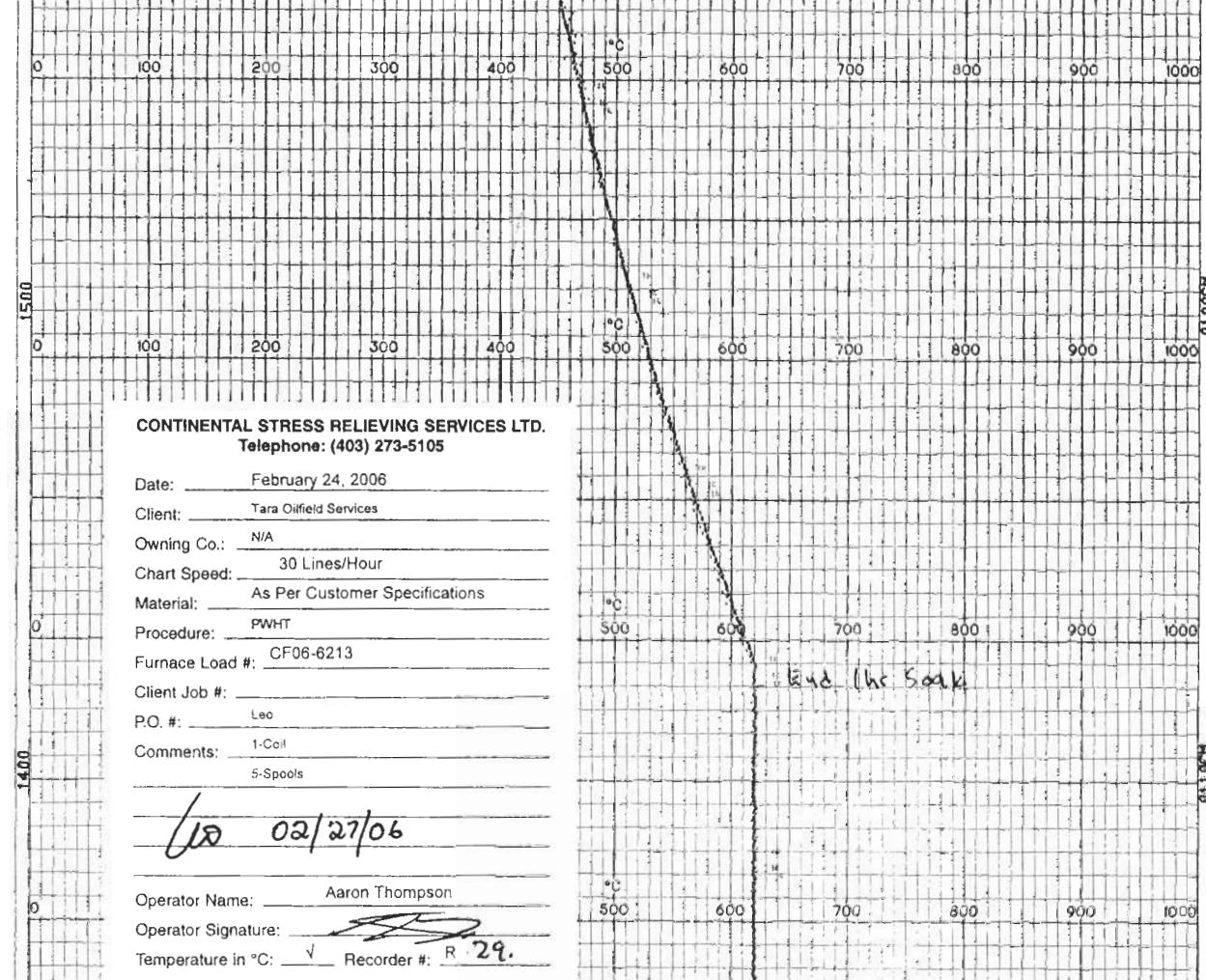
<u>L&amp;N MODEL 8686 SERIAL # 1768189</u>	<u>CERTIFICATION DATE: May 4/05</u>
<u>Hewlett Packard 3458A Ser. #2823A16911</u>	<u>CERTIFICATION DATE: Feb. 8/05</u>
<u>FLUKE 5520A CALIBRATOR Ser. #7990016</u>	<u>CERTIFICATION DATE: Feb 24/05</u>
<u>CERTIFICATION DATE: _____</u>	
<u>RE-CERTIFICATION DATE: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

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 BUREAU 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

Chart Speed: 30 Lines/Hour

Chart Speed. As Per

Material: PWHT

Procedure: \_\_\_\_\_

Furnace Load #:

Client Job #: 100

P.O. #: \_\_\_\_\_

Comments: \_\_\_\_\_

680

18 9

John

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Operator Name: Aaron Thompson

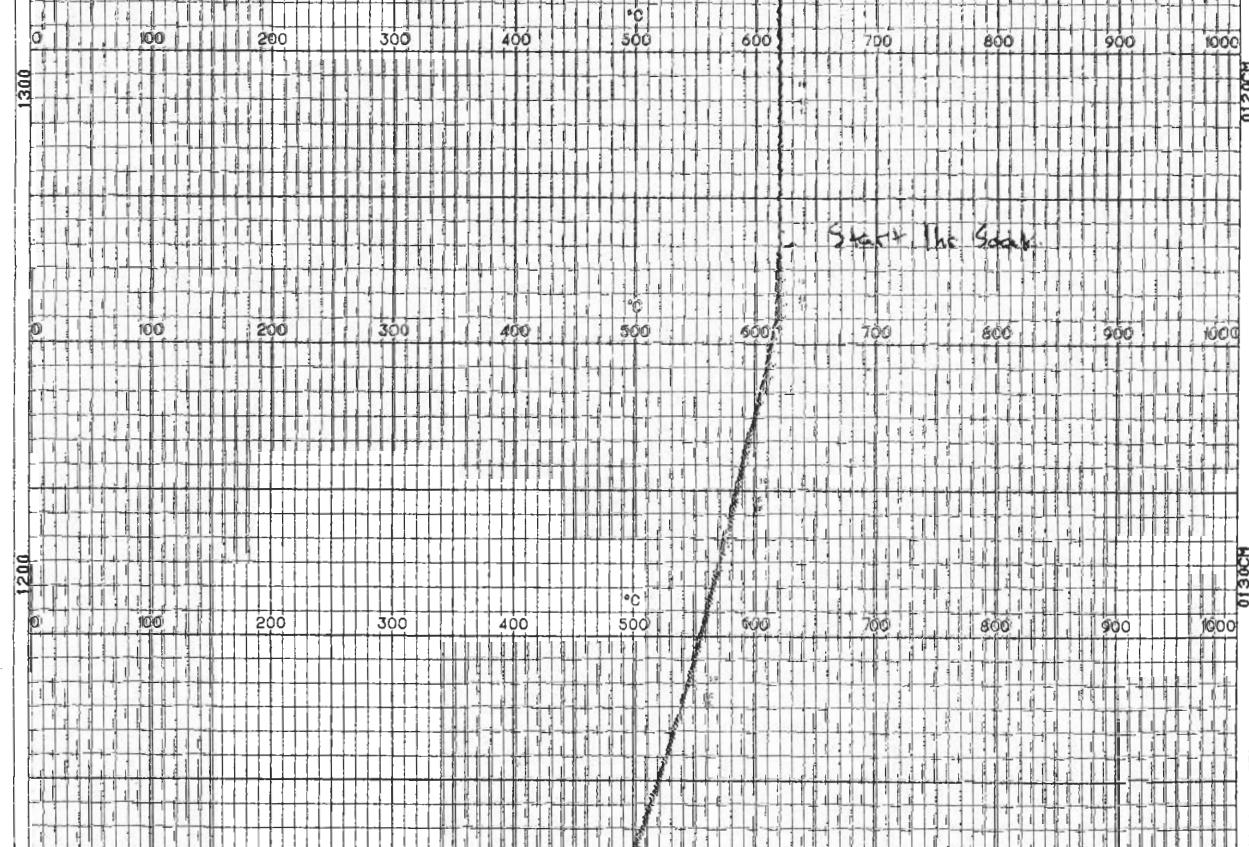
Operator Signature:

Temperature in °C: ✓ Recorder #: R 29.

Digitized by srujanika@gmail.com

## LINE HEATER BUNDLES AND SPOOLS

## ANSWER





Red Deer Ltd.  
6785 - 52<sup>nd</sup> Ave.  
Red Deer, Alta., T4N 4K8

Ph. 343-2822, Fax: 347-1470  
Email: info@kingsmeter.com  
Web: www.kingsmeter.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.: W952

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

#### TEST GAUGE READINGS

#### GAUGE READINGS

<u>1000 PSL</u>	<u>1000 PSL</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>10,000 "</u>	<u>10,000 "</u>

TECHNICIAN:  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 - 52<sup>nd</sup> Ave.  
Red Deer, Alta., T4N 4K8

Ph. 343-2822, Fax: 347-1470  
Email: info@kingsmeter.com  
Web: www.kingsmeter.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.: W X01

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

#### TEST GAUGE READINGS

#### GAUGE READINGS

<u>1000 PSE</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: J.S.

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

**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

Duane 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.

  
(Signature)Nicole Normand  
(Print Name)Q.C.I.  
(Title)March 13, 2006  
(Date)

TARA Oilfield Services LTD. 1805 - 19th Street Didsbury, AB T0M 0W0  
(Company) (Address) (City, Postal Code)



# CONSTRUCTION DATA REPORT FOR PIPING SYSTEMS

**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 Expiry Date: August 03, 2008

2. Constructed For: Canadian Sub-Surface Energy Services.  
 (Name of primary contractor if different from above)  
600#, 205 - 8<sup>th</sup> 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 0.5m<sup>3</sup>)

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

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

**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 \_\_\_\_\_

**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.

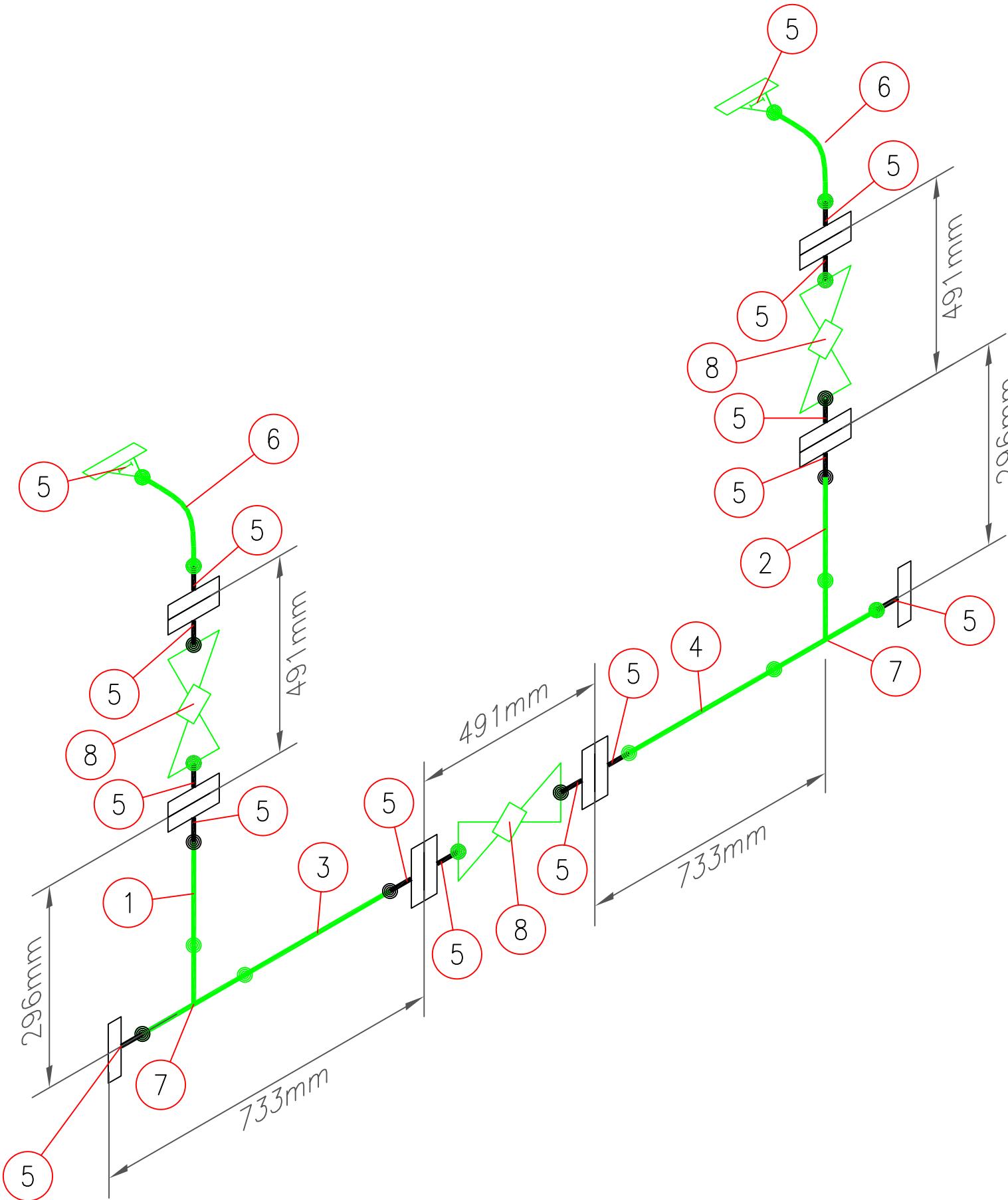
Date:

Date:

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

Name: \_\_\_\_\_ Sign.: \_\_\_\_\_

**ABSA Safety Codes Officer  
(BOILER EXTERNAL PIPING ONLY)**

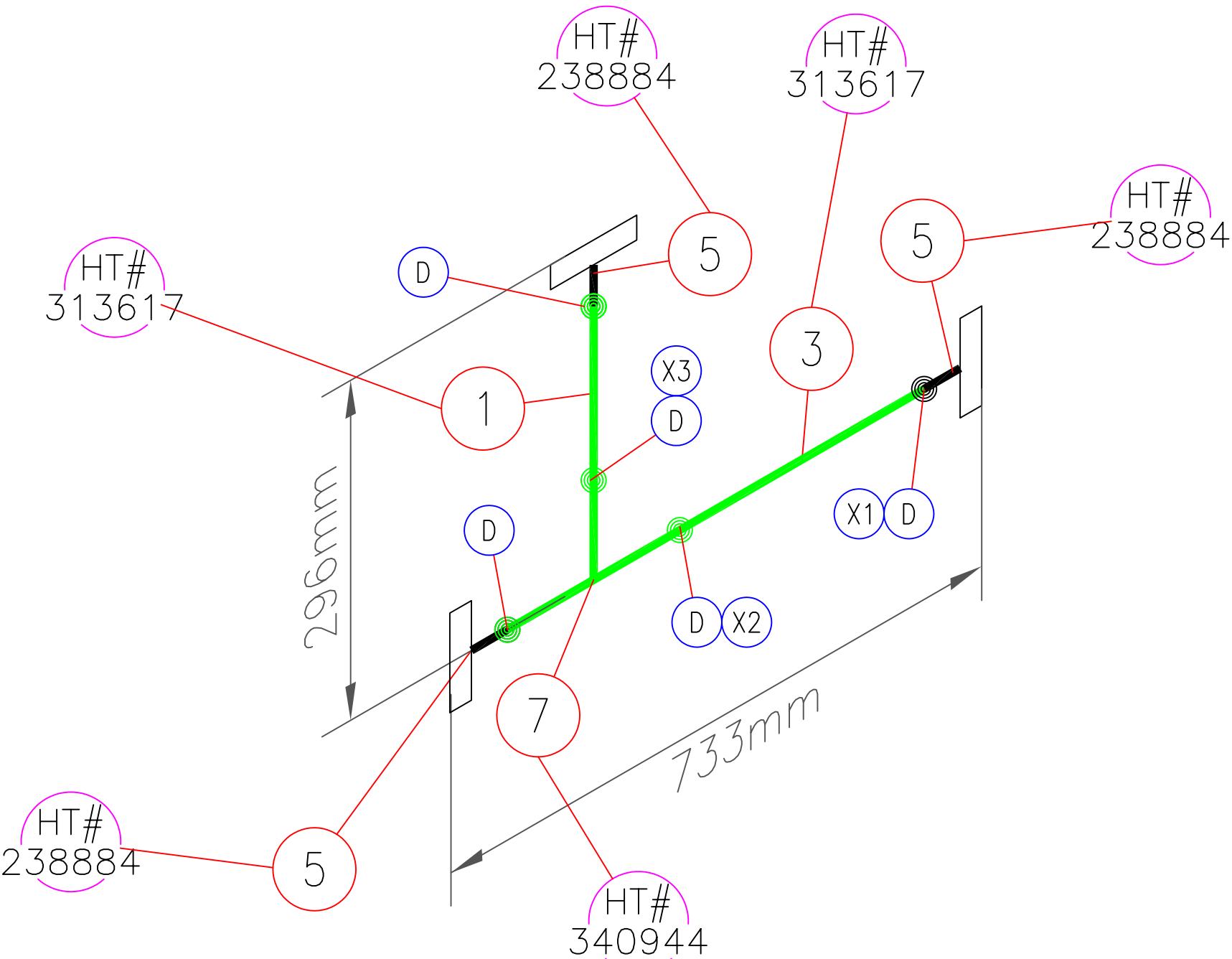


BILL OF MATERIAL					
PIPE					
MK	CUT LENGTH	SIZE	SCHEDULE	DESCRIPTION	MATERIAL
1	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6
2	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6
3	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6
4	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6
FLANGES					
MK	QTY	SIZE	RATING	SCHEDULE	DESCRIPTION
5	16	3 1/8"	5000	XXH.	R35 API FLANGE
					A350-LF2
WELD FITTINGS					
MK	QTY	SIZE	SCHEDULE	DESCRIPTION	MATERIAL
6	2	3"	XXH.	90° ELBOW LR BW	A420 WPL6
7	2	3" X 3"	XXH.	STRAIGHT TEE BW	A420 WPL6
VALVES					
MK	QTY	SIZE	RATING	DESCRIPTION	MATERIAL
8	3	3"	5000#	SAND MAX PLUG VALVE RP	A350-LF2
				FLOWMAX	S

DESIGN SPECIFICATION					
Q.C.P.:	AQP-1434				
M.A.W.P.:	5000 PSI.				
M.D.M.T.:	-46°C				
CORROSION ALLOWANCE:	NIL.				
B31.3 SERVICE CATEGORY:	HIGH PRESSURE - SEVERE CYCLIC				
N.D.E.:	50% RADIOGRAPHY				
HYDROTEST PRESSURE:	7500 PSI.	HOLD TIME:	30 min.		
HYDROTEST MEDIUM:	H <sub>2</sub> O				
P.W.H.T. TEMP.:	621°C	HOLD TIME:	60 min.		
WPS#:	TOS-2				

-	-	-	-
1	FOR CONSTRUCTION	10/12/05	LD
0	FOR APPROVAL	10/11/05	LD

<b>TARA PROJECTS</b> 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 JOB#: 05-129	UNIT: LH-01
DWG #: DRESDOWN1-0	DWG. BY: L. DUSSAULT
DATE: 10/11/05	REV: 1



ISO-05-129C-1

BILL OF MATERIAL					
PIPE					
MK	CUT LENGTH	SIZE	SCHEDULE	DESCRIPTION	MATERIAL S/F
1	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6 S
2	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6 S
3	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6 S
4	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6 S
FLANGES					
MK	QTY	SIZE	RATING	SCHEDULE	DESCRIPTION MATERIAL S/F
5	16	3 1/8"	5000	XXH.	R35 API FLANGE A350-LF2
WELD FITTINGS					
MK	QTY	SIZE	SCHEDULE	DESCRIPTION	MATERIAL S/F
6	2	3"	XXH.	90° ELBOW LR BW	A420 WPL6 S
7	2	3" X 3"	XXH.	STRAIGHT TEE BW	A420 WPL6 S
VALVES					
MK	QTY	SIZE	RATING	DESCRIPTION	MATERIAL VALVE TAG S/F
8	3	3"	5000#	SAND MAX PLUG VALVE RP	A350-LF2 FLOWMAX S

DESIGN SPECIFICATION					
Q.C.P.: AQP-1434					
M.A.W.P.: 5000 PSI.					
M.D.M.T.: -46°C					
CORROSION ALLOWANCE: NIL					
B31.3 SERVICE CATEGORY: HIGH PRESSURE - SEVERE CYCLIC					
N.D.E.: 50% RADIOGRAPHY					
HYDROTEST PRESSURE: 7500 PSI. HOLD TIME: 30 min.					
HYDROTEST MEDIUM: H2O					
P.W.H.T. TEMP.: 621°C HOLD TIME: 60 min.					
WPS#: TOS-2					

2	ADDED NDT & HEAT NUMBERS	10/25/05	LD
1	FOR CONSTRUCTION	10/12/05	LD
0	FOR APPROVAL	10/11/05	LD

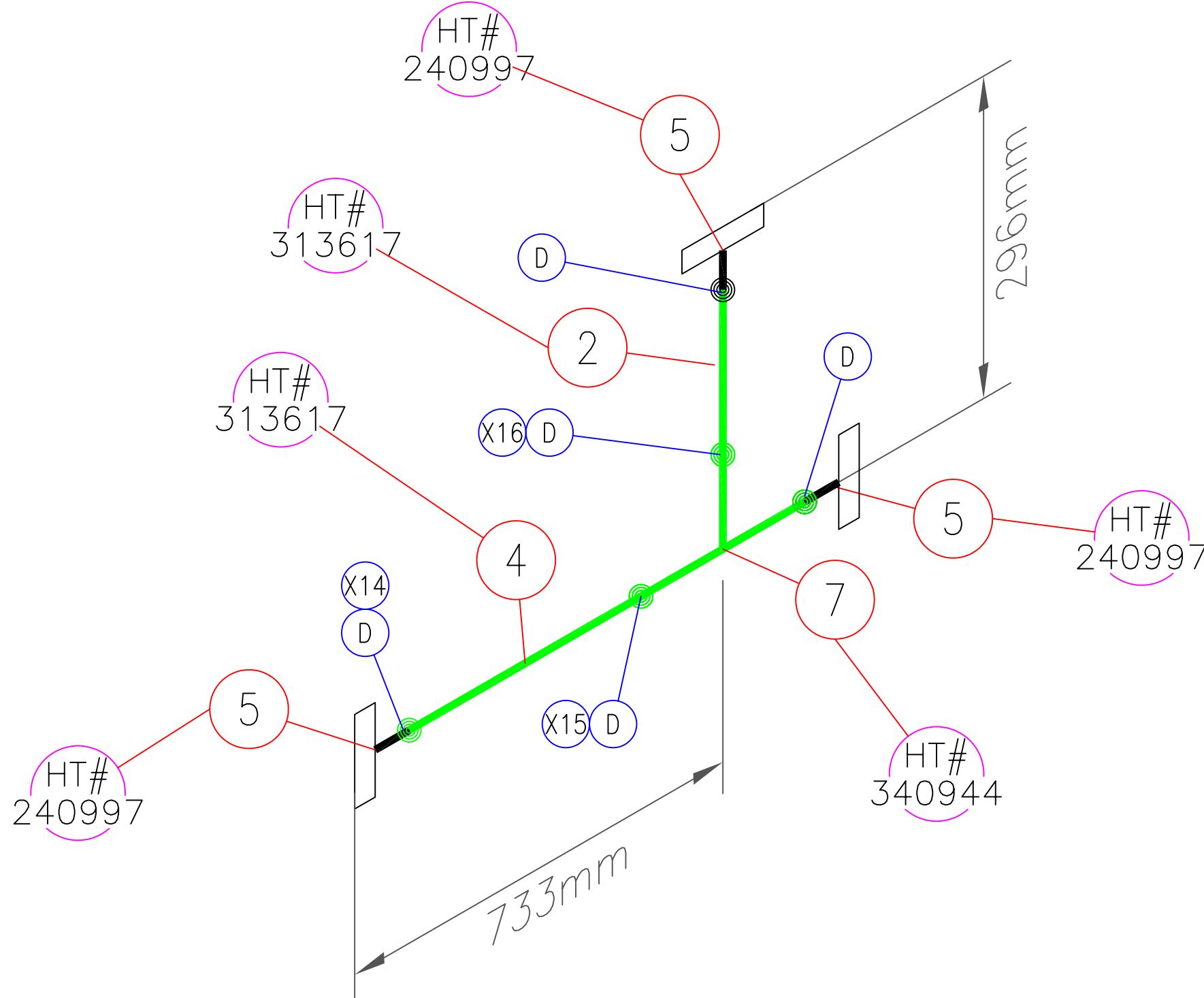
TARA PROJECTS	
TARA Oilfield Services Ltd.	
1805-19th STREET DIDSBURY, AB	
PH: 403-335-9158 FAX: 403-335-3403	

2.5 MILLION BTU LINE HEATER DRESS DOWN PIPING SPOOL DRAWINGS	----- -----
--	----------------

TARA JOB#:	UNIT:	DWG #:	DWG. BY:	DATE:	REV:
05-129	LH-01	05-129C-1	L. DUSSAULT	10/11/05	2



ISO-05-129B-2

BILL OF MATERIAL					
PIPE					
MK	CUT LENGTH	SIZE	SCHEDULE	DESCRIPTION	MATERIAL S/F
1	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6 S
2	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6 S
3	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6 S
4	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6 S
FLANGES					
MK	QTY	SIZE	RATING	SCHEDULE	DESCRIPTION MATERIAL S/F
5	16	3 1/8"	5000	XXH.	R35 API FLANGE A350-LF2
WELD FITTINGS					
MK	QTY	SIZE	SCHEDULE	DESCRIPTION	MATERIAL S/F
6	2	3"	XXH.	90° ELBOW LR BW	A420 WPL6 S
7	2	3" X 3"	XXH.	STRAIGHT TEE BW	A420 WPL6 S
VALVES					
MK	QTY	SIZE	RATING	DESCRIPTION	MATERIAL VALVE TAG S/F
8	3	3"	5000#	SAND MAX PLUG VALVE RP	A350-LF2 FLOWMAX S

DESIGN SPECIFICATION					
Q.C.P.: AQP-1434					
M.A.W.P.: 5000 PSI.					
M.D.M.T.: -46°C					
CORROSION ALLOWANCE: NIL					
B31.3 SERVICE CATEGORY: HIGH PRESSURE - SEVERE CYCLIC					
N.D.E.: 50% RADIOGRAPHY					
HYDROTEST PRESSURE: 7500 PSI. HOLD TIME: 30 min.					
HYDROTEST MEDIUM: H2O					
P.W.H.T. TEMP.: 621°C HOLD TIME: 60 min.					
WPS#: TOS-2					

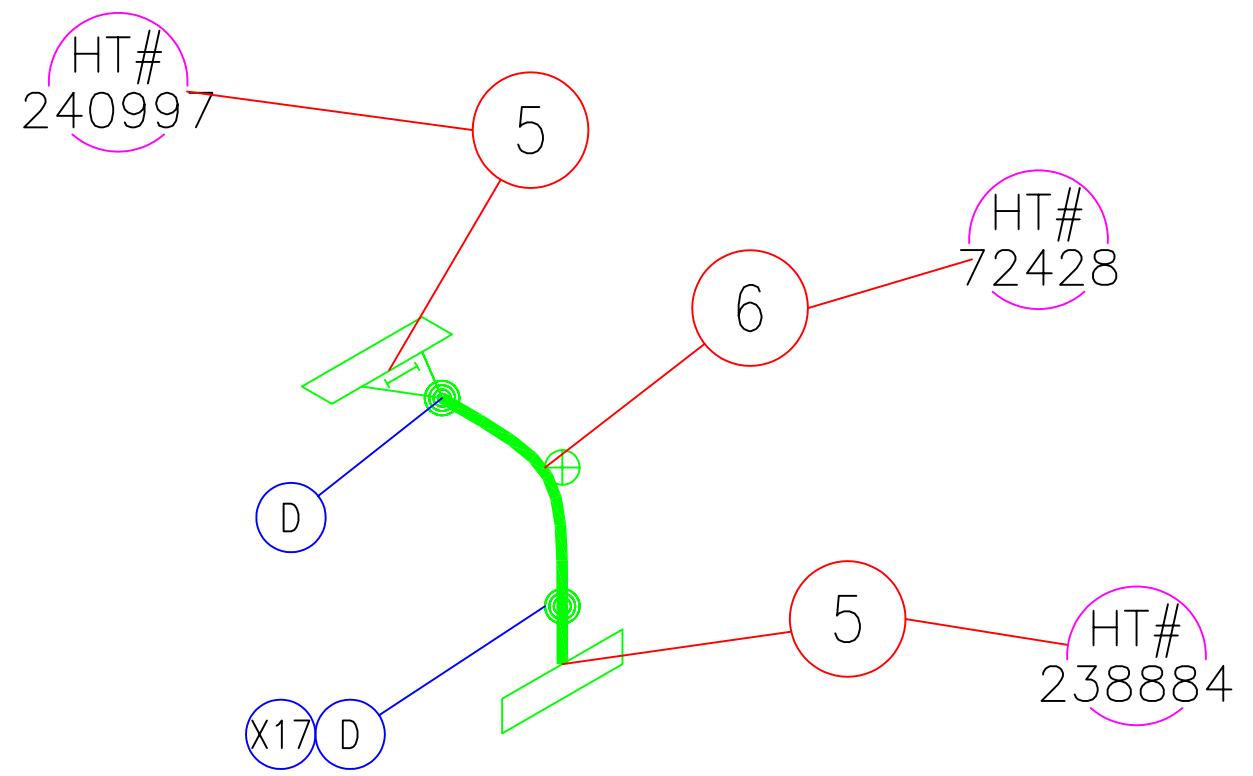
2	ADDED NDT & HEAT NUMBERS	10/25/05	LD
1	FOR CONSTRUCTION	10/12/05	LD
0	FOR APPROVAL	10/11/05	LD

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

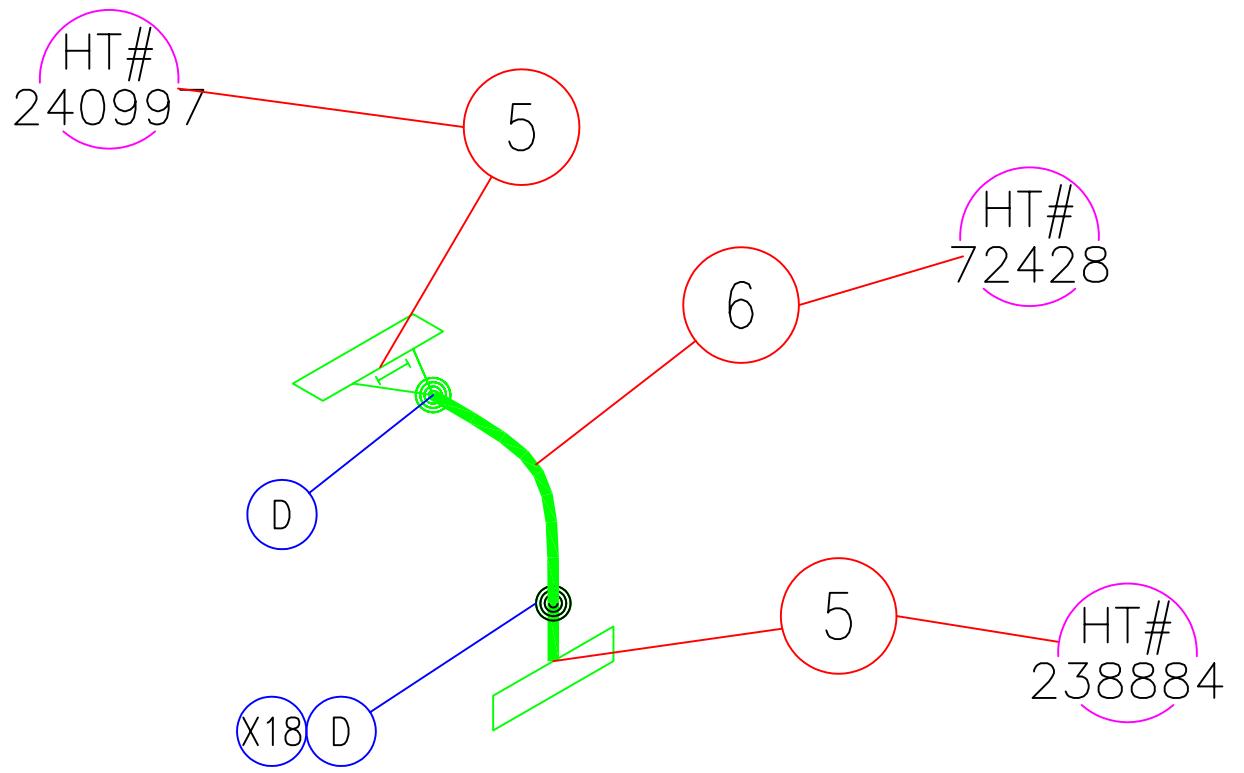
  

2.5 MILLION BTU LINE HEATER DRESS DOWN PIPING SPOOL DRAWINGS	CANADIAN Sub-Surface Energy Services Inc.				
TARA JOB#: 05-129	UNIT: LH-02	DWG #: 05-129C-2	DWG. BY: L. DUSSAULT	DATE: 10/11/05	REV: 2



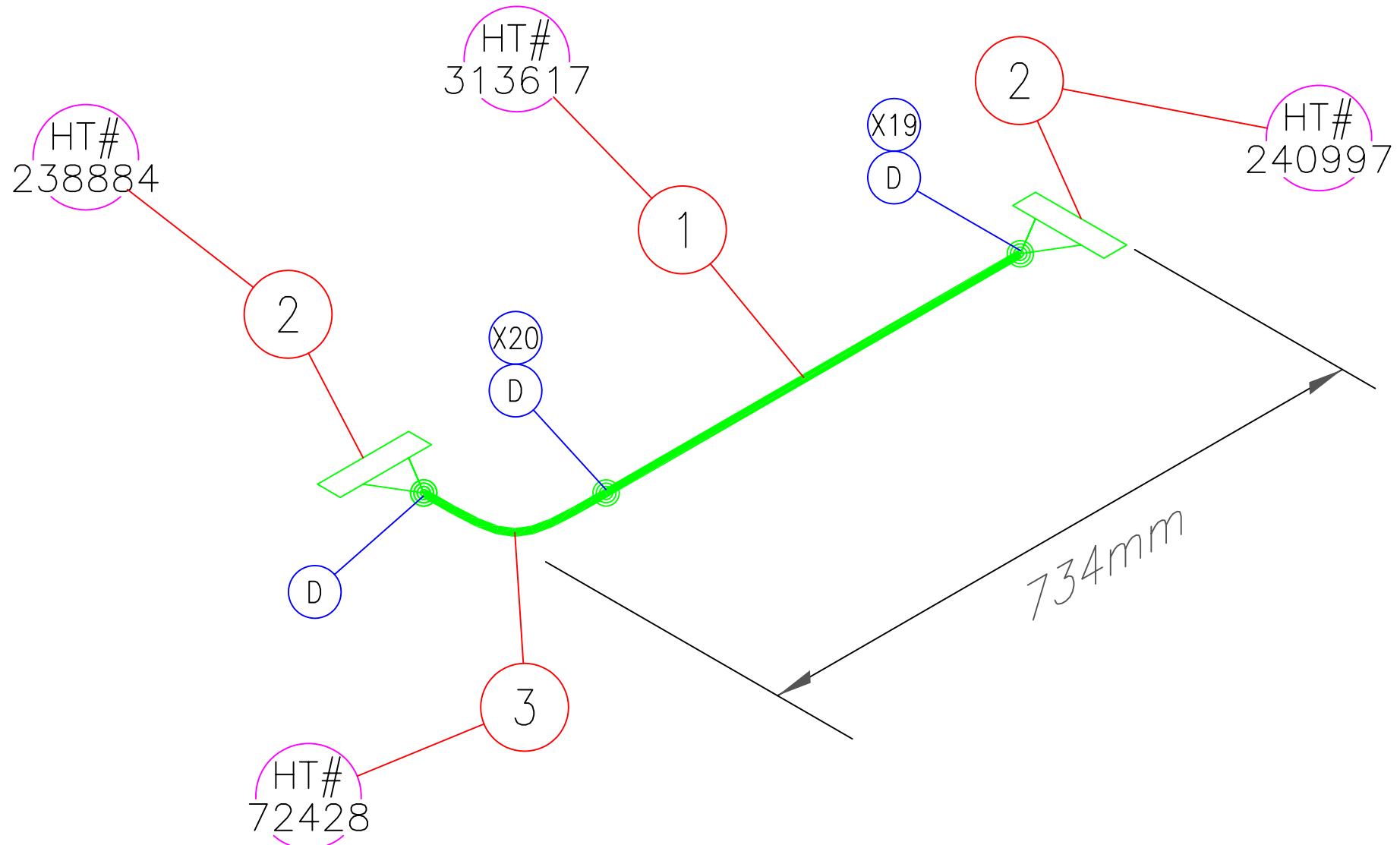
ISO-05-129B-3

BILL OF MATERIAL										
PIPE										
MK	CUT LENGTH	SIZE	SCHEDULE	DESCRIPTION	MATERIAL	S/F				
1	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S				
2	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S				
3	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S				
4	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S				
FLANGES										
MK	QTY	SIZE	RATING	SCHEDULE	DESCRIPTION	MATERIAL				
5	16	3 1/8"	5000	XXH.	R35 API FLANGE	A350-LF2				
WELD FITTINGS										
MK	QTY	SIZE	SCHEDULE	DESCRIPTION	MATERIAL	S/F				
6	2	3"	XXH.	90° ELBOW LR BW	A420 WPL6	S				
7	2	3" X 3"	XXH.	STRAIGHT TEE BW	A420 WPL6	S				
VALVES										
MK	QTY	SIZE	RATING	DESCRIPTION	MATERIAL	VALVE TAG S/F				
8	3	3"	5000#	SAND MAX PLUG VALVE RP	A350-LF2	FLOWMAX S				
DESIGN SPECIFICATION										
Q.C.P.:	AQP-1434									
M.A.W.P.:	5000 PSI.									
M.D.M.T.:	-46°C									
CORROSION ALLOWANCE:	NIL.									
B31.3 SERVICE CATEGORY:	HIGH PRESSURE - SEVERE CYCLIC									
N.D.E.:	50% RADIOGRAPHY									
HYDROTEST PRESSURE:	7500 PSI. HOLD TIME: 30 min.									
HYDROTEST MEDIUM:	H <sub>2</sub> O									
P.W.H.T. TEMP.:	621°C HOLD TIME: 60 min.									
WPS#:	TOS-2									
2	ADDED NDT & 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#:	05-129	UNIT:	LH-02	DWG #:	05-129C-3	DWG. BY: L. DUSSAULT DATE: 10/11/05 REV: 2				



ISO-05-129B-4

BILL OF MATERIAL										
PIPE										
MK	CUT LENGTH	SIZE	SCHEDULE	DESCRIPTION	MATERIAL	S/F				
1	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S				
2	85mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S				
3	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S				
4	311mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S				
FLANGES										
MK	QTY	SIZE	RATING	SCHEDULE	DESCRIPTION	MATERIAL				
5	16	3 1/8"	5000	XXH.	R35 API FLANGE	A350-LF2				
WELD FITTINGS										
MK	QTY	SIZE	SCHEDULE	DESCRIPTION	MATERIAL	S/F				
6	2	3"	XXH.	90° ELBOW LR BW	A420 WPL6	S				
7	2	3" X 3"	XXH.	STRAIGHT TEE BW	A420 WPL6	S				
VALVES										
MK	QTY	SIZE	RATING	DESCRIPTION	MATERIAL	VALVE TAG S/F				
8	3	3"	5000#	SAND MAX PLUG VALVE RP	A350-LF2	FLOWMAX S				
DESIGN SPECIFICATION										
Q.C.P.:	AQP-1434									
M.A.W.P.:	5000 PSI.									
M.D.M.T.:	-46°C									
CORROSION ALLOWANCE:	NIL.									
B31.3 SERVICE CATEGORY:	HIGH PRESSURE - SEVERE CYCLIC									
N.D.E.:	50% RADIOGRAPHY									
HYDROTEST PRESSURE:	7500 PSI. HOLD TIME: 30 min.									
HYDROTEST MEDIUM:	H <sub>2</sub> O									
P.W.H.T. TEMP.:	621°C HOLD TIME: 60 min.									
WPS#:	TOS-2									
2	ADDED NDT & 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#:	05-129	UNIT:	LH-02	DWG #:	05-129C-4	DWG. BY: L. DUSSAULT DATE: 10/11/05 REV: 2				



ISO-05-129B-5

BILL OF MATERIAL						
PIPE						
MK	CUT LENGTH	SIZE	SCHEDULE	DESCRIPTION	MATERIAL	S/F
1	658mm	3"	XXH.	PIPE SMLS	A333 GR. 6	S
FLANGES						
MK	QTY	SIZE	RATING	SCHEDULE	DESCRIPTION	S/F
2	2	3 1/8"	5000	XXH.	R35 API FLANGE	A350-LF2
WELD FITTINGS						
MK	QTY	SIZE	SCHEDULE	DESCRIPTION	MATERIAL	S/F
3	1	3"	XXH.	90° ELBOW SR BW	A420 WPL6	S

DESIGN SPECIFICATION	
Q.C.P.:	AQP-1434
M.A.W.P.:	5000 PSI.
M.D.M.T.:	-46°C
CORROSION ALLOWANCE:	NIL.
B31.3 SERVICE CATEGORY:	HIGH PRESSURE - SEVERE CYCLIC
N.D.E.:	50% RADIOGRAPHY
HYDROTEST PRESSURE:	7500 PSI. HOLD TIME: 30 min.
HYDROTEST MEDIUM:	H <sub>2</sub> O
P.W.H.T. TEMP.:	621°C HOLD TIME: 60 min.
WPS#:	TOS-2

2	ADDED NDT & HEAT NUMBERS	10/27/05	LD
1	FOR CONSTRUCTION	10/12/05	LD
0	FOR APPROVAL	10/11/05	LD

<b>TARA PROJECTS</b> TARA Oilfield Services Ltd. 1805-19th STREET DIDSBURY, AB PH: 403-335-9158 FAX: 403-335-3403	
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2.5 MILLION BTU LINE HEATER DRESS DOWN PIPING SPOOL DRAWINGS	CANADIAN Sub-Surface Energy Services Inc.				
TARA JOB#: 05-129	UNIT: LH-02	DWG #: 05-129C-5	DWG. BY: L. DUSSAULT	DATE: 10/11/05	REV: 2





V&M  
VALOURRE & MANNESMANN TUBES  
S.A.S.  
V&M FRANCE  
Tuberie de St Sauveur  
Rue du Galibat Zin n°4 - BP 2  
33430 Saint-Sauveur FRANCE  
tel.: 03.17.73.13.01  
fax: 03.17.73.15.63

FON

## MATERIAL TEST REPORT

ISO 9001

## INSPECTION CERTIFICATE EN 10204 3.1.B

(A03)R&F 26-05-13 026 2/3  
(A08)N'V&M: LA0993705

## (C01) ROCKWELL CHARDNESS &lt; OR = 22 GUARANTEED

## (C04-C02-C04) CHARPY V LONGITUDINAL IMPACT TEST

(C00) Test	(B08) Heat	width	thick.	rect.	(C11)	(C12)	(C13)
MIN.	Heat	mm	mm	mm	Y.S.	T.S.	Blng. 2"
MAX.		mm	mm	mm	42000	60000	
0220M337	313617	22.0	15.2	239.83	43324	67172	43

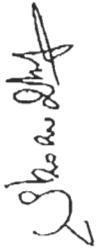
(C00) Test	(C03) Temp.	width	height	rect.	(C42) EI	(C42) E2	(C42) E3	(C42) mean shear	(C42) shear2	(C42) shear3	(C43)
MIN.		mm	mm	mm	16	16	16	20	60	60	60
MAX.		mm	mm	mm	fl.lbf	fl.lbf	fl.lbf	%	%	%	%
0220M337	313617	10.00	10.00	0.80	129	124	108	120	85	80	65

## (D01-D99) NONDESTRUCTIVE TESTS

test	test rate	specification	pressure psi	hold time sec	result
APPEARANCE & DIMENSIONS	100% LOT				OK
EDDY CURRENT TEST	100% LOT	CSA Z245.1			OK
HYDROSTATIC TEST	100% LOT		3000	5	OK

## (C50-C69) TECNNOLOGICAL TESTS

test	result
FLATTENING TEST	OK

 <b>VALLOURC &amp; MANESMANN TUBES</b> (A01) V&M FRANCE 18 rue du Général ZI n°4 - BP 2 59860 Somain - France		<b>MATERIAL TEST REPORT</b> <b>INSPECTION CERTIFICATE EN 10204 3.1.B</b>  (A02)	<b>ISO 9001</b>  (A03) REF: Z6-05-138026 3 / 3 (A08) N°V&M: LA0993/05
(A04) 18/05/2005			
<p>(200) Original computer copy - authenticity is guaranteed by the V&amp;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.</p>		<p>(A05) The authorized expert in Quality Control Section          Ms SKORUPKA  </p>	



# 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

HEAT NO.: 238884

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

CODE: RRV

CR: 00.10

MO: 00.040

CU: 00.27

AL:

VA: 00.043

CB: 00.001

TI: 00.001

CE: 00.42

## PHYSICAL PROPERTIES

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:

*Ronnie Myron*

CRM WELLHEAD SUPPLY LTD.
100% APPROVAL
DATE: <u>FEB 25 2005</u>
SIGNED: <u>[Signature]</u>

WS 18504

USED FOR: P.O. #	<u>3221</u>
<u>3 1/8 5000 SCH XXL W/n</u>	
<u>WO-46409</u>	

**POSTED**

# Five Star Metals, Inc.

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 2T7CERT. 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

## PHYSICAL PROPERTIES

HEAT NO.: 240997

CODE: SGK

YIELD STRENGTH: 54,500

MILL: SMI

C: 00.19

CR: 00.08

TENSILE STRENGTH: 77,600

MN: 00.90

MO: 00.035

ELONGATION: 30.80%

PH: 00.009

CU: 00.32

RED. OF AREA: 59.50%

SU: 00.014

AL:

TEST BAR BRINELL: 163/163

SI: 00.22

VA: 00.044

FORGING BRINELL: 163/163

NI: 00.11

CB: 00.001

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

SN: 00.013

TI: 00.001

TEST TEMP.: -50F LCVN

B: 00.0003

CE: 00.40

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 5600 SCH X X H W/W	
WO - 46409	

CRC WELLHEAD SUPPLY LTD.
Q.A. APPROVAL
DATE AUG 04 2005
SIGNED

# NATIONAL OILWELL VARCO

3" XXH STRAIGHT TEE WPL6 HT# 340944

Fernmeldeamt Schleswig-Holstein		Abnahmeprüfzeugnis Inspection Certificate		Zertifikatnummer (certificate no.)		Rev.	Datum (date)
A-0024 Schleswig-Holstein Handelsstraße 48 Kiel/Holstein Telefon: +49(0)431 50 17 Telefax: +49(0)431 50 1838		EN 10204 - 3,1B Ihre Bestellnummer (your order no.) CI-04-6554		00568505-HG Unsere Auftrag-Nr. (our order no.) 72973-M5-0020			01/07/2005
Kunststoffzement		Ihre Artikelnummer (your part no.)		Schlüssel-Nr. (key no.) 349444		Ident-Nr. (ident no.)	
TRANS AM Piping Products Ltd.		Menge (quantity)		Artikelbeschreibung (description)		Anforderungen (requirements)	
7025-44 Street S.E. Calgary CDN-T2C 4E8 Alberta		Vormaterial (Rohzusammensetzung, pure wuchs und reine)		E.S.W.EI. 6.22% XG5005		ASME B16.2-2001 WPL6, ASTM A-420/SA-420 Spec. II Part A, NACE MR-01-75, EN 10204/3.1B, Maßnahmen Standard	
Von: 33133		Hersteller (Manufacturer)		Lieferant (Supplier)		Nachschubprüfzeugnis (checklist test)	
Analysen Parameter		Schmelzpunkt (melting point)		Schmelzpunkt (melting point)		Bar 172	
Index		Schmelzpunkt (melting point)		Schmelzpunkt (melting point)		Bar 172	
1		C 81 0.1687 0.1711		P 66 0.5005 0.4948		C 81 + MgO * (P + MgO) + (Ca + Na + K) / 6 + (Ca + Na + K) / 15 C + (Mn / 6) + (Cr + V) / 6 + (Ca + Na + K) / 15	
2		C 81 0.1684 0.1711		P 66 0.5005 0.4949		C 81 + MgO * (P + MgO) + (Ca + Na + K) / 6 + (Ca + Na + K) / 15 C + (Mn / 6) + (Cr + V) / 6 + (Ca + Na + K) / 15	
Proben Nr.		Zugversuch (tensile test)		Kurbelwellenprüfzeugnis (crankshaft test)		Handprüfung (hand inspection)	
/test no.] 1040944		Prüflinge (spec.) Temperatur in Temperatur 100°C		Drehmoment (torque) 100 Nm 100 Nm 100 Nm		Prüflinge (spec.) Temperatur in Temperatur 100°C 100°C 100°C	
		Zugversuch (tensile test)		Kurbelwellenprüfzeugnis (crankshaft test)		Handprüfung (hand inspection)	
Kontrollierung (kontrolle)		Zugversuch (tensile test)		Kurbelwellenprüfzeugnis (crankshaft test)		Handprüfung (hand inspection)	
Prüfung und Ausmessung (prüfung und messung)		Zugversuch (tensile test)		Kurbelwellenprüfzeugnis (crankshaft test)		Handprüfung (hand inspection)	
Bestückungen (bestückung)		Zugversuch (tensile test)		Kurbelwellenprüfzeugnis (crankshaft test)		Handprüfung (hand inspection)	
cold formed		Zugversuch (tensile test)		Kurbelwellenprüfzeugnis (crankshaft test)		Handprüfung (hand inspection)	
magnetic particle examination acc. ASTM E709: a1		Zugversuch (tensile test)		Kurbelwellenprüfzeugnis (crankshaft test)		Handprüfung (hand inspection)	
Heat Number : 340944		Heat Number : 340944		Heat Number : 340944		Heat Number : 340944	
Specification/Seg # : 5 - 1098 30		Specification/Seg # : 5 - 1098 30		Specification/Seg # : 5 - 1098 30		Specification/Seg # : 5 - 1098 30	
Die gestellten Anforderungen werden erfüllt (die Anforderungen werden erfüllt)		Die gestellten Anforderungen werden erfüllt (die Anforderungen werden erfüllt)		Die gestellten Anforderungen werden erfüllt (die Anforderungen werden erfüllt)		Die gestellten Anforderungen werden erfüllt (die Anforderungen werden erfüllt)	
Bestückungen (bestückung)		Bestückungen (bestückung)		Bestückungen (bestückung)		Bestückungen (bestückung)	
cold formed		cold formed		cold formed		cold formed	
magnetic particle examination acc. ASTM E709: a1		magnetic particle examination acc. ASTM E709: a1		magnetic particle examination acc. ASTM E709: a1		magnetic particle examination acc. ASTM E709: a1	

Der Werkstoffhersteller ist für die Prüfung  
des Produktes verantwortlich (the manufacturer  
is responsible for the inspection of the product)

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des Produktes verantwortlich (the manufacturer  
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Der Werkstoffhersteller ist für die Prüfung  
des Produktes verantwortlich (the manufacturer  
is responsible for the inspection of the product)

<b>erne fittings gmbh</b> A-6824 Schilins Hauptstraße 48 Austria/Europe Telefon +43/5524/ 501-0 Telefax +43/5524/ 501-8230 		<b>Abnahmeprüfzeugnis</b> <b>Inspection Certificate</b> <b>EN 10204 - 3.1B</b>																
<b>Ihre Bestellnummer /your order no./</b> EO4405DD		<b>Zeugnisnummer /certificate no./</b> <b>031454/05-B5</b> <b>Unsere Auftrags-Nr. /our order no./</b> 76127-MS-0141																
<b>Kunde /customer/</b> WFF Fittings & Flanges (Canada) LTD		<b>Ihre Artikelnummer /your item no./</b> <b>Menge /quantity/</b> 50																
<b>K-7000 5 St. Se</b> <b>CDN-T2H 2G3 Calgary AB, Alberta</b>		<b>Artikelbezeichnung</b> /designation/ elbow LR-90-S-WPL8-3'-XXS																
<b>Formmaterial</b> <b>Base material</b> Rohrzeugnisnr. /use works cert.no./ 26-06-118037		<b>Hersteller</b> /Manufacturer/ V&M																
<b>Analysse</b> <b>analysis</b> <b>Schmelze Nr.</b> <b>heat no.</b> <b>Erschmelzungsart</b> <b>melting process</b>		<b>1 = Schmelzanalyse /heat analysis/</b> <b>J-Faktor /J-Factor/</b> $(Si + Mn) * (P + Sn) * 10000$ <b>CEQ /CEQ:</b> $C + (Mn / 6) + (Cr + Mo + V) / 5 + (Cu + Ni) / 15$																
<b>Index</b> 1	C 0.16 	Si 0.23 	Mn 1.00 	P 0.017 	S 0.002 	Cr 0.06 	Mo 0.01 	Ni 0.01 	Cu 0.00 	V 0.00 	Nb 0.00 	Al 0.001 	B 0.025 	T <sub>1</sub> 0.0003 	N 0.002 	Ceq 0.012 	CEQ 0.33 	J-Fakt. 140-122-148
<b>Mech.-technologische Prüfung</b> /mech. technological test/ <b>Zugversuch</b> /tensile test/ <b>Kerbschlagbiegeversuch</b> /notched bar impact test/ <b>Form:</b> Charpy-V notch																		
<b>Proben</b> <b>Nr.</b> <b>test no.</b> 283505	<b>Pr.-Lage</b> /pos. of sample/ Inz	<b>Temp.</b> +20 °C	<b>Dehngtg. /yield str./</b> Rp 0,2 317	<b>Zugfestigkeit /tensile str./ Rm (N/mm²)</b> 479	<b>Dehnung /elongation/ 2%</b> 35,1	<b>PR-Lage</b> /pos. of sample/ Inz	<b>Temp.</b> -50° C	<b>Querschnitt</b> /cross sec./ 80	<b>Kerbsschlagarbeit</b> /Impact values/ (J) 142-144 HB 140-122-148		<b>Härteprüfung</b> /Hardness test/ normalized temperature 920 °C Holding Time 30 min. Cooling in still air							
<b>Kennzeichnung</b> /marking/  <b>Besichtigung und Ausmessung</b> /visual inspection and dimensional check/ 0.B/o K. <b>Bemerkungen</b> /remarks/ hot 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%.																		
<b>Mal/72428/DN/wall</b> <b>Zusatzauskleidung</b> /add. mark/ Die gestellten Anforderungen wurden erfüllt /Manufacturing requirements are satisfied/ Der Werksachverständige /the Works Inspector/ Bischof Siegfried 19/07/05 Dieses Dokument wurde elektronisch erstellt und ist ohne Untergliedrig. /The certificate is issued by the computerized system and valid without signature./																		