

ANDERSON

P.O. Box 3125, Sherwood Park AB, T8A 2T1
Phone: 780-417-7725 Fax: 780-417-9327 Cell: 780-951-1630

N D E SERVICES INC.

MAGNETIC PARTICLE EXAMINATION REPORT

Customer: VAPORTECH ENERGY SYSTEM
Location: 20711-107 AVE EDMONTON
Examination of: O-LET WELDS
Part/Serial Number: JOB# 5252C-MPI-2
Acceptance Standard: ASME B31.3
Examination Standards: ASME V ART 7, 07 EDIT

M No # 6771B
Date: AUG 25, 07
Po. No.: 5252C
Page: 1 of 1
Job No.: 07-542

SURFACE: ☐ As Ground ☒ As Welded ☐ Base Metal ☐ Machined ☐ Painted ☐ Shot Blast

TEST EQUIPMENT AND MATERIALS

Method: ☒ Yoke ☒ AC ☐ DC ☒ Continuous ☐ Residual
Manuf: Parker Model: B300 Serial No: 7710 Amps: 4
BLACK LIGHT: Manuf: MAGNAFLUX Type: 7 HF Serial No:
INDICATOR: Manuf: MAGNAFLUX Batch:
Cal Date: JULY 1, 07 Due Date: 1-Jan-08

EXAMINATION RESULTS:

A MAGNETIC PARTICLE EXAMINATION WAS CARRIED OUT ON 100% OF SOCKET WELDS
ON THE FOLLOWING:
SPOOL# 505-I-A - 1.5" SCH 80 - TOTAL=4

THE ABOVE WAS FOUND FREE OF RELEVANT INDICATIONS AND ACCEPTABLE TO CODE
AT TIME OF EXAMINATION.

ANDERSON PROCEDURES: ☐ MT 1 DRY VISIBLE ☐ RED ☐ BLK ☐ GRY ☐ YLW ☐ CONTRAST
☐ MT2 WFMP ☒ MT3 BLK/WHT

VISUAL INSPECTION PERFORMED PRIOR TO MAGNETIC PARTICLE EXAMINATION.
INTERPRETATION IS IN ACCORDANCE WITH THE ABOVE MENTIONED STANDARDS TO THE BEST OF MY
PROFESSIONAL ABILITY.

Technician(s):

Print: Yvonne Anderson

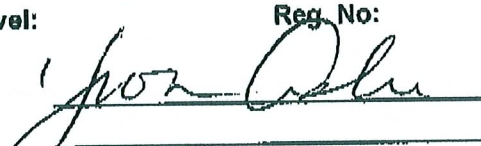
Ass't:

CGSB/SNT Level: II/III

CGSB/SNT Level:

Reg. No: 4642

Reg. No:

Sign: 

Sign:

Consumables :

THE ABOVE REPRESENTATION IS A PROFESSIONAL OPINION, FINAL INTERPRETATION IS THE RESPONSIBILITY OF
THE CUSTOMER. I HAVE REVIEWED AND AM IN FULL AGREEMENT WITH THIS REPORT.

Customer Representative:

TOTAL HOURS:

1

S.T.

O.T.

1

Date: _____

26/09/07
AKH**NDE EXAMINATION REPORT**
☒ MT
☐ PT mt-db 147

CLIENT: VAPORTECH

INVOICE ADDRESS: 20711 - 107 AVE

WORK LOCATION: VAPORTECH SHOP

STANDARD/AITEC PROCEDURE: BPV ASME V ART VII

ACCEPTANCE STANDARD: ANSI B31.3 NORMAL

EXAMINATION OF: AS POINTED OUT BY CUSTOMER REQUEST

JOB NO.: 44004

DEPT. CODE: 20-3000

DATE: 25-Aug-07

P.O. NO.:

afe# 5252C MPI-1

PAGE: 2 OF 2

 SURFACE: ☐ As Ground ☐ Machined ☐ Shot Blasted ☒ Base Metal ☐ Painted ☐ As Welded
 Examination Temperature 15 °C
TEST EQUIPMENT & MATERIALS:

EQUIPMENT		SERIAL No.	TECHNIQUE		TEST MEDIUM
☒ Hand Yoke	Ferrous Probe	#480	☒ MPI	☐ LPI	☒ Wet bat#32D620
☐ Perm Magnet			☒ AC	☐ Water Washable	☐ Dry
☐ Coil		DUE 11/29/07	☐ DC	☐ Post Emulsified	☐ Colour Contrast bat#65C824
☐ Blacklight			☒ Continuous	☐ Solvent Removable	☐ Fluorescent
☐ Alloy Analyzer			☐ Residual		☐ Penetrant Dye
☐ Hardness Tester				Dwell Time min	☒ Other Chem. Oakite
☐ Other				Developer Time min	MFG./TYPE/ BATCH #:

Blavk on white magnetic Particle inspection was performed on two final Tie-in welds to check for possible flaws which may affect the service life of the parts.

(All weld areas and heat affected zones were included in the inspection.)

A TOTAL OF 4 SOCKET WELDS WERE INSPECTED.

MPI #'S 1-4.

No indications noted at time of inspection. Parts meet above acceptance criteria.

A.M.		P.M.		TOTAL HOURS		KILOMETERS	SUBSISTENCE		CONSUMABLES
TIME IN	TIME OUT	TIME IN	TIME OUT	S.T.	Ns.		MANDAY	OT/MEALS	
				OT	1				

TECHNICIAN(S)

Interpretation is in accordance with the above mentioned standards, to the best of my professional ability

Print: Dennis Bowlby

CGSB/SNT Level:

II/II

Reg No.:

#9308

Sign:

Print:

CGSB/SNT Level:

Reg No.:

The above representation is a professional opinion, final interpretation is the responsibility of the client. I have reviewed and am in full agreement with the contents of this report.

Client Representative: (Print)

Sign:

Date:

A024NDE R0

26/09/07
P.M.H.

RADIOGRAPHIC EXAMINATION REPORT

CLIENT: VAPORTECH

LOCATION: 20711 107AVE

DATE: 08/25/07 PAG 1 OF 2

JOB#: 74004 P.O.#: 5252C-X2

CODE: 20-3000

RT DB - 146

DEFECT LEGEND			CODE LEGEND	TECHNIQUES
IF - INCOMPLETE FUSION IP - INCOMPLETE PENETRATION UC - UNDERCUTTING S - SLAG BT - BURN THROUGH	P - POROSITY ML - HIGH / LOW IC - INTERNAL CONCAVITY LC - LOW COVER W - WINDOW	HB - HOLLOW BEAD C - CRACK AC - ARC BURNS SH - SHRINKAGE 1 - BLIGHT, 2 - MEDIUM, 3 - SEVERE	1. ASME B31.3 NORMAL 2. ASME B31.3 SEVERE 3. ASME VIII DIV 1 UW 51 4. ASME VIII DIV 1 UW 52	5. ASME B31.1 6. CSA Z 662 7. API 650 8. OTHER
				1. SINGLE WALL EXPOSURE 3. SINGLE WALL VIEWING 2. DOUBLE WALL EXPOSURE 4. DOUBLE WALL VIEWING

	FILM #	LOCATION	THK	DIA.	WLDG SYM	IF	IP	UC	S	BT	P	IC	LC			TECH #	CODE #	ACC.		REMARKS	REJECT
1					FABRICATION WELDS													☐	1	JOB#5252C	
2																		☐	2		
3	X-7		STD	4"	D											2/3	1	☒	3		
4	X-8		STD	2"	D													☒	4		
5	X-9		STD	2"	D													☒	5		
6	X-10		STD	3"	E													☒	6		
7	X-11		STD	3"	D													☒	7		
8	X-12		STD	3"	D													☒	8		
9	X-13		STD	3"	E													☒	9		
10																		☐	10		
11																		☐	11		
12																		☐	12		
13																		☐	13		
14																		☐	14		
15																		☐	15		
16																		☐	16		
17																		☐	17		
18																		☐	18		
19																		☐	19		
20																		☐	20		
21																		☐	21		
22																		☐	22		
23																		☐	23		
24																		☐	24		
25																		☐	25		

No. of Exp.	Film Brand &	Screen Type &	No. of Film per	Type of Energy	Physical Size	Activity or K.V.	Maximum Source Side Object To Film Distance	Maximum Source to Object Distance	Material	Thickness	Base	Weld	R.F.	Type	Size	Exp. Time C/min
21	D4	PB. 1	1	IR192	.156	70CI	3,4		C/S	STD	>1M	M		ASTM	B	6,9

This Certificate or Report is valid only for that work which was specifically requested. The Company is not responsible for any views or opinions expressed by employees performing this work which fall outside the contract terms or reference. All certificates and / or reports are the result of work performed in conformance with applicable specifications and standards to the best of our ability and intent. However, the company will not be responsible for deviation within the normal limits of accuracy in accordance with standard practices. Final Code Acceptance shall require Client and Manufacturer Representative's signatures.

A.M.	P.M.	TOTAL HOURS	KILOMETERS	SUBSISTENCE	FILM
TIME IN	TIME	TIME	TIME	MAN DAY	OT / MEALS

Film Interpretation is done in accordance with the specified code, to the best of my professional ability.

Radiographer: DENNIS BOWLEY SNT/CGSB Level IIII Reg. No.: 9308

Assistant: _____

The above interpretation is a professional opinion, final film interpretation is the responsibility of the client.
I am in full agreement with the contents of this report and accept receipt of the associated film. Client Representative: _____

A021RE R2

RAC 27/08/07

MAGNETIC PARTICLE EXAMINATION REPORT

Customer: VAPORTECH ENERGY SYSTEM
Location: 20711-107 AVE EDMONTON
Examination of: O-LET WELDS
Part/Serial Number: JOB# 5252C-MPI-2
Acceptance Standard: ASME B31.3
Examination Standards: ASME V ART 7, 07 EDIT

M No # 6771B
Date: AUG 25, 07
Po. No.: 5252C
Page: 1 of 1
Job No.: 07-542

SURFACE: ☐ As Ground ☒ As Welded ☐ Base Metal ☐ Machined ☐ Painted ☐ Shot Blast

TEST EQUIPMENT AND MATERIALS

Method: ☒ Yoke ☒ AC ☐ DC ☒ Continuous ☐ Residual
Manuf: Parker Model: B300 Serial No: 7710 Amps: 4
BLACK LIGHT: Manuf: MAGNAFLUX Type: 7 HF Serial No:
INDICATOR: Manuf: MAGNAFLUX Batch:
Cal Date: JULY 1, 07 Due Date: 1-Jan-08

EXAMINATION RESULTS:

A MAGNETIC PARTICLE EXAMINATION WAS CARRIED OUT ON 100% OF SOCKET WELDS
ON THE FOLLOWING:
SPOOL# 505-I-A - 1.5" SCH 80 - TOTAL=4

THE ABOVE WAS FOUND FREE OF RELEVANT INDICATIONS AND ACCEPTABLE TO CODE
AT TIME OF EXAMINATION.

ANDERSON PROCEDURES: ☐ MT 1 DRY VISIBLE ☐ RED ☐ BLK ☐ GRY ☐ YLW ☐ CONTRAST
☐ MT2 WFMP ☒ MT3 BLK/WHT

VISUAL INSPECTION PERFORMED PRIOR TO MAGNETIC PARTICLE EXAMINATION.
INTERPRETATION IS IN ACCORDANCE WITH THE ABOVE MENTIONED STANDARDS TO THE BEST OF MY
PROFESSIONAL ABILITY.

Technician(s):

Print: Yvonne Anderson
Ass't:

CGSB/SNT Level: II/III Reg. No: 4642
CGSB/SNT Level: Reg. No:

Sign: *Yvonne Anderson*
Sign:

Consumables :

THE ABOVE REPRESENTATION IS A PROFESSIONAL OPINION, FINAL INTERPRETATION IS THE RESPONSIBILITY OF
THE CUSTOMER. I HAVE REVIEWED AND AM IN FULL AGREEMENT WITH THIS REPORT.

Customer Representative: *Brady*
TOTAL HOURS: 1 S.T. O.T. 1

Date: _____

SPOOL LINE LIST:

REVISION # 0
JOB# 5252
CONTRACTOR: IMV Projects Inc.
CLIENT: Husky Energy
LOCATION: Saskatchewan
LSD:



SPOOL SPECIFICATIONS:			
CORROSION ALLOWANCE	-		
CODE	ASME B31.3		
SERVICE	CAT. NORMAL	H2S	0.00%

SPOOL LINE LIST SPECIFICATIONS:														WELD TYPES										
DWG #	DESCRIPTION	FLUID	DESIGN PRESS. (kpa)	DESIGN TEMP. (°C)	TEST PRESS. (kPa) ¹	TEST MEDIUM	PIPE MATERIAL	C.A. (mm)	PIPE NPS-SCH.	FLANGE MATERIAL	PWHT	RT %	NDE OTHER	SPOOL #	SIZE / SCH.	APPROX. LENGTH OF PIPING (IN.)	LINEAR WT. (LBS / IN.)	# FLG	FLG WT. (LBS)	SPOOL WT. (LBS)	TRANS. AREA (IN^2)	APPROX. SPOOL VOL. (IN^3)	# OF BW	# OF SW / WOL
500 - O	Gas Inlet to E139	Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	6-STD 4-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	500 - O	NPS 6" S40	18	1.585	2	26.0	80.5	28.89	520.02	2	2
501 - I	Process Gas to V-135	Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	6-STD 2-STD 1-XS	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	501 - I	NPS 6" S40 NPS 4" S40 NPS 2" S40 NPS 1" S80	87 10 10 10	1.585 0.902 0.305 0.181	3 1 1 0	26.0 16.5 6.0 2.5	215.9 25.5 9.1 1.8	28.89 12.73 3.36 0.72	2513.45 127.30 33.56 7.19	6 2 2 0	2 0 1 3
501 - O SHT 1	E-139 to 5252 - 501 - I	Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	6-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	501 - O SHT 1	NPS 6" S40	39	1.585	2	26.0	113.8	28.89	1126.72	6	0
502 - I	Process Gas to Compressor K-130	Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	4-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	502 - I	NPS 4" S40	47	0.902	2	16.5	75.4	12.73	598.32	5	4
503 - I SHT 1	Process Gas Outlet to V-135	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	3-STD 2-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	503 - I SHT 1	NPS 3" S40 NPS 2" S40	30 35	0.633 0.305	1 4	11.5 6.0	11.5 34.7	7.39 3.36	221.78 117.45	2 5	0 0
503 - I SHT 2	Process Gas Outlet to V-135	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	3-STD 2-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	503 - I SHT 2	NPS 3" S40 NPS 2" S40	62 29	0.633 0.305	1 4	11.5 6.0	11.5 32.8	7.39 3.36	458.34 97.31	6 5	0 0
503 - O	Process Gas Outlet to V-135	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	3-STD 2-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	503 - O	NPS 3" S40 NPS 2" S40	96 17	0.633 0.305	3 1	11.5 6.0	34.5 11.2	7.39 3.36	709.70 57.05	6 3	0 0
504 - I SHT 1	Process Gas From K-130 to E-140	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	3-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	504 - I SHT 1	NPS 3" S40 4" RFWN Flange	111 0	0.633 0.000	1 1	11.5 16.5	11.5 16.5	7.39 -	820.58 -	6 1	6 0
504 - I SHT 2	Process Gas From K-130 to E-140	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	3-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	504 - I SHT 2	NPS 3" S40	123	0.633	2	11.5	23.0	7.39	909.30	2	5
504 - O SHT 1	Process Gas From K-130 to E-140	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	3-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	504 - O SHT 1	NPS 3" S40	109	0.633	2	11.5	23.0	7.39	805.80	3	0
504 - O SHT 2	Process Gas From K-130 to E-140	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	3-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	504 - O SHT 2	NPS 3" S40	118	0.633	2	11.5	23.0	7.39	872.33	7	0
505 - I	Process Gas to PSV-130	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	1.5-XS 1-160	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	505 - I	NPS 1.5" S80 NPS 1" S160	40 46	0.303 0.238	5 2	4.0 2.0	20.0 4.0	0.95 0.52	38.01 24.00	0 0	9 1
506 - I	PSV-130 To Discharge	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	2-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	506 - I	NPS 2" S40	30	0.305	2	6.0	21.2	3.36	100.67	2	2
507 - I	Process Gas Outlet Bypass to V-135	Compressed Gas	1586 230 Psig	176 149°F	3103 450 Psig	WATER	SA-106B	1.6	2-STD	SA-105N CL 150	N/A	10%	MPI 10% WOL/SOL	507 - I	NPS 2" S40	113	0.305	4	6.0	58.5	3.36	379.18	7	0

UTILITY PIPING												
Shop	Compressor Lubrication	OIL	1034	-29 149	1034 (150 PSI)	OIL (Service)	0	0.25-.035	A-182 Swag. 400	N/A	N/A	VISUAL
Shop	Instrument Air	AIR	690	-29 38	690 (100 PSI)	AIR	0	0.375-.035 0.50-049 1-80	A-182 Swag. 600 Swag. 810 A-105N 3000#	N/A	N/A	VISUAL
Shop	Jacket Water Coolant	Glycol	15	-29 38	15	Glycol (Service)	0	1-80	A-105N	N/A	N/A	VISUAL



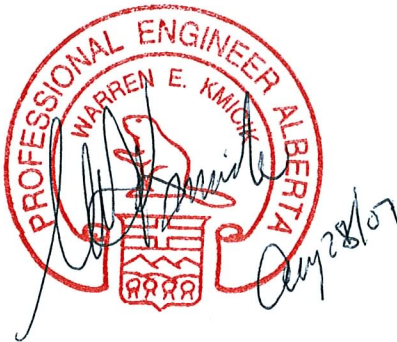
APPROX. GROSS WEIGHT	859 LBS	(PIPE & FLANGE WEIGHT ONLY - VALVES ARE NOT INCLUDED)
APPROX. AGGREGATE VOLUME	10538 CU. IN. 0.17 CU. M.	(PIPE & FLANGE VOLUME ONLY - VALVES ARE NOT INCLUDED)

ORIGINAL	
TOTAL # OF BUTT WELDS	78
TOTAL # OF SOCKET / WOL WELDS	35
TOTAL # OF WELDS ELIGIBLE FOR HARDESS TESTING	113

% NDE	10%
% NDE	10%
% HARDNESS TESTING	10%

# OF BUTT WELDS REQUIRING NDE	8
# OF SOCKET WELDS / WOL REQUIRING NDE	4
# OF WELDS REQUIRING HARDNESS TESTING	11

- Notes:
- Hydrotest will be performed at 70°F for a minimum of 30 minutes.
 - Hydrotest area will be clearly marked, and the test will be performed outside.





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: VaporTech Energy Services Inc. Owner's Job No: 5252C
 (Name of ABSA authorized primary contractor or subcontractor)
20711-107Th Ave., Edmonton, AB T5S 1W5
 (Address)

Alberta Quality Program No. AQP-1120 Expiry Date: March 30, 2008

2. Constructed For: IMV Projects
 (Name of primary contractor if different from above)
Suite 1400, 500 - 5 Avenue SW Calgary, Alberta T2P 3L5 Canada
 (Address)

Alberta Quality Program No. AQP- Expiry Date:
 (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: Huskey Energy Inc.
 (Name and address)
707-8th Avenue SW Box 6525, Station "D" Calgary, Alberta Canada T2P 3G7
 (Location of installation)

Alberta Quality Program No. AQP- Expiry Date:
 (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-
 (Required if aggregate piping volume is over 0.5m³)
 5. WP No.: WP-796.2 ; Company: VaporTech Energy Services Inc. ; Owner's WP No. (If used): WP-
 (Alberta Registration No.) (Alberta Registration No.)
 WPS No(s). used: TIG/STK-2A-AW-STD, MIG/STK-1A-AW-STD, STK-1A-AW-LT ;
 Owner's WPS No(s). (If used):

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 ☐.

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. °C	Test Press. kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	R.T. %	Other NDE
500 - O Gas Inlet to E139	Gas	1586	-28 176	3103	Water	SA-106B	1.6	6-STD 4-STD	SA-105N CL 150	N/A	10% BW	10% MPI
501 - I Process Gas to V-135	Gas	1586	-28 176	3103	Water	SA-106B	1.6	6-STD 2-STD 1-XS	SA-105N CL 150	N/A	10% BW	10% MPI
501 - O E-139 to 5252 - 501 - I	Gas	1586	-28 176	3103	Water	SA-106B	1.6	6-STD	SA-105N CL 150	N/A	10% BW	10% MPI
502 - I Process Gas to Compressor K-130	Gas	1586	-28 176	3103	Water	SA-106B	1.6	4-STD	SA-105N CL 150	N/A	10% BW	10% MPI
503 - I SHT 1 Process Gas Outlet to V- 135	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	3-STD 2-STD	SA-105N CL 150	N/A	10% BW	10% MPI
503 - I SHT 2 Process Gas Outlet to V- 135	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	3-STD 2-STD	SA-105N CL 150	N/A	10% BW	10% MPI

503 - O Process Gas Outlet to V- 135	Compressed Gas	1586	-28 176	3103	Water	S SA-106B	1.6	3-STD 2-STD	SA-105N CL 150	N/A	10% BW	10% MPI
504 - I SHT 1 Process Gas From K-130 to E-140	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	3-STD	SA-105N CL 150	N/A	10% BW	10% MPI
504 - I SHT 2 Process Gas From K-130 to E-140	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	3-STD	SA-105N CL 150	N/A	10% BW	10% MPI
504 - O SHT 1 Process Gas From K-130 to E-140	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	3-STD	SA-105N CL 150	N/A	10% BW	10% MPI
504 - O SHT 2 Process Gas From K-130 to E-140	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	3-STD	SA-105N CL 150	N/A	10% BW	10% MPI
505 - I Process Gas to PSV-130	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	1.5-XS 1-160	SA-105N CL 150	N/A	10% BW	10% MPI
506 - I PSV-130 To Discharge	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	2-STD	SA-105N CL 150	N/A	10% BW	10% MPI
507 - I Process Gas Outlet Bypass to V-135	Compressed Gas	1586	-28 176	3103	Water	SA-106B	1.6	2-STD	SA-105N CL 150	N/A	10% BW	10% MPI
UTILITY PIPING (Cat. D)												
Compressor	OIL	1034	-29 149	1034	OIL (Service)		0	0.25-.035	A-182 Swag. 400	N/A	N/A	Visual
Instrument Air	AIR	690	-29 38	690	AIR (Service)	A-312 TP316 (316 SS) A-106B Galvanized	0	0.375 - WT 0.035 0.50 - WT 0.049 1-80	A-182 Swag. 600 Swag. 810 A-105N 3000#	N/A	N/A	Visual
Jacket Water Coolant	Glycol	15	-29 38	15	GLYCOL (Service)	SA-106B	0	1-80	A-105N	N/A		Visual

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: 09/06/07 VaporTech Energy Services Inc.

Shafiqulah
Subcontractor
Print Authorized Representative's Name

OCT 11 / 07
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. _____ 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: _____
Primary Contractor

Print Authorized Representative's Name Signature

CERTIFICATE OF INSPECTION

I, the undersigned, employed by Blusky 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: OCT 11 2007

Albert Bouwsema
Print Owner's Inspector's Name

AB
Owner's Inspector's Signature

Date: _____

Name: _____ Sign.: _____

ABSA Safety Codes Officer
(BOILER EXTERNAL PIPING ONLY)

HYDROSTATIC TEST REPORT



CLIENT: Husky
JOB # 5252C
FACILITY: VAPORTECH - MANUF.

DATE: August 23, 2007
PROJECT: _____
LOCATION: EDMONTON, AB.

DESCRIPTION OF TESTED ITEMS:

Test of piping spools.

DRAWING #'S:**TEST PR.:**

<u>500-O</u>	<u>NPS 6" S40</u>	<u>450 PSIG</u>
<u>501-I-B</u>	<u>NPS 6" S40</u>	<u>450 PSIG</u>

TEST MEDIUM: Water at 70°F

TEST PRESSURE: _____ 450 PSIG / _____ 3103 kPa

HOLD TIME AT TEST PRESSURE: MINIMUM OF 30 MINUTES

TEST GAUGE#'S: PI-2319, GA-3B

VAPORTECH QUALITY CONTROL INSPECTOR:

Tyler Romanyk

CLIENT REPRESENTATIVE:

AB

COMMENTS:

Re-assembly required for completion of piping system.

Leak test required upon completion of re-assembly.

[Signature]
Signature of Quality Control Manager



HYDROSTATIC TEST REPORT

CLIENT: Husky
 JOB # 5252C
 FACILITY: VAPORTECH - MANUF.

DATE: August 25, 2007
 PROJECT: _____
 LOCATION: EDMONTON, AB.

DESCRIPTION OF TESTED ITEMS:

Test of piping spools.

DRAWING #'S:

TEST PR.:

503-I-A SHT 1	NPS 3" S40	450 PSIG
503-I-B SHT 1	NPS 2" S40	450 PSIG
503-I-C SHT 2	NPS 2" S40	450 PSIG
503-I-D SHT 2	NPS 3" S40	450 PSIG
503-O	NPS 3" / 2" S40	450 PSIG
504-I SHT 2	NPS 3" S40	450 PSIG
504-O SHT 1	NPS 3" S40	450 PSIG
504-O SHT 2	NPS 3" S40	450 PSIG
506-I	NPS 2" S40	450 PSIG
507-I-A	NPS 2" S40	450 PSIG

TEST MEDIUM: Water at 70°F

TEST PRESSURE: 450 PSIG 3103 kPa

HOLD TIME AT TEST PRESSURE: MINIMUM OF 30 MINUTES

TEST GAUGE#'S: GA-2A, GA-2B

VAPORTECH QUALITY CONTROL INSPECTOR:

Tyler Romanyk

CLIENT REPRESENTATIVE:

AB

COMMENTS:

Re-assembly required for completion of piping system.

Leak test required upon completion of re-assembly.

M. M. Howard
 Signature of Quality Control Manager



HYDROSTATIC TEST REPORT

CLIENT: Husky
 JOB # 5252C
 FACILITY: VAPORTECH - MANUF.

DATE: August 26, 2007
 PROJECT: _____
 LOCATION: EDMONTON, AB.

DESCRIPTION OF TESTED ITEMS:

Test of piping spools.

DRAWING #'S:

TEST PR.:

502-I	NPS 4" S40	450 PSIG
504-I SHT 1	NPS 3" S40	450 PSIG
505-I-A	NPS 1.5" S80	450 PSIG
507-I-B	NPS 2" S40	450 PSIG

TEST MEDIUM: Water at 70°F

TEST PRESSURE: 450 PSIG 3103 kPa

HOLD TIME AT TEST PRESSURE: MINIMUM OF 30 MINUTES

TEST GAUGE#'S: GA-2A, GA-2B, GA-3B, PI-2319

VAPORTECH QUALITY CONTROL INSPECTOR:

Tyler Romanyk

CLIENT REPRESENTATIVE:

AB

COMMENTS:

Re-assembly required for completion of piping system.

Leak test required upon completion of re-assembly.

Signature of Quality Control Manager



HYDROSTATIC TEST REPORT

CLIENT: Husky
 JOB # 5252C
 FACILITY: VAPORTECH - MANUF.

DATE: August 27, 2007
 PROJECT: _____
 LOCATION: EDMONTON, AB.

DESCRIPTION OF TESTED ITEMS:

Test of piping spools.

DRAWING #'S:

TEST PR.:

<u>505-I-B</u>	<u>NPS 1" S160</u>	<u>450 PSIG</u>

TEST MEDIUM: Water at 70°F

TEST PRESSURE: 450 PSIG 3103 kPa

HOLD TIME AT TEST PRESSURE: MINIMUM OF 30 MINUTES

TEST GAUGE#'S: GA-2A, GA-2B.

VAPORTECH QUALITY CONTROL INSPECTOR:

Tyler Romanyk

A handwritten signature in black ink, appearing to read 'Tyler Romanyk'.

CLIENT REPRESENTATIVE:

AB

COMMENTS:

Re-assembly required for completion of piping system.

Leak test required upon completion of re-assembly.

Signature of Quality Control Manager

RADIOGRAPHIC INSPECTION REPORT

2450-80 Ave, Edmonton, Alberta T6P1N2
Phone: (780) 469-8333 Fax: (780) 469-8884

RT#6272

Date: July 21, 2007 JOB #: 6272 Page 1 of 1
Client: Vapor-Tech Energy Systems P.O. #: 5252C
Location: Rivest Technologies Inc. Description: 5252C Husky Energy VRU SN:H16-S133

DEFECT LEGEND	✓ = Accept	X = Reject	SEVERITY	PROCEDURES	CODE LEGEND
IF - INCOMPLETE FUSION	P - POROSITY	HB - HOLLOW BEAD	1 - SLIGHT	1 - SINGLE WALL EXPOSURE	1 - ASME B31.3 NORMAL
IP - INCOMPLETE PENETRATION	BT - BURN THROUGH	C - CRACK	2 - MEDIUM	2 - DOUBLE WALL EXPOSURE	2 - ASME B31.3 SEVERE
UC - UNDERCUTTING	IC - INTERNAL CONCAVITY	AB - ARC BURNS	3 - SEVERE	3 - SINGLE WALL VIEWING	3 - ASME VIII DIV 1 UW51
S - SLAG	LC - LOW COVER	SH - SHRINKAGE		4 - DOUBLE WALL VIEWING	4 - ASME VIII DIV 1 UW52
					5 - ASME B16.34
					6 - CSA Z 662
					7 - MSS SP54
					8 -

FILM NO.	LOCATION	DIA.	THK.	SOD	SYM	IF	IP	IC	UC	S	P	PROC #	CODE #	✓	REMARKS	X
1	X#															
2																
3	CS1	0-35	16"	.375"	16"	N						2/3	3	✓		
4		35-70	16"	.375"	16"	N						2/3	3	✓		
5		70-105	16"	.375"	16"	N					3	2/3	3		Wormhole por @ 88-89cm	X
6		105-0cm	16"	.375"	16"	N						2/3	3	✓		
7																
8	CS2	0-35	16"	.375"	16"	N						2/3	3	✓		
9		35-70	16"	.375"	16"	N					2	2/3	3	✓		
10		70-105	16"	.375"	16"	N						2/3	3	✓		
11		105-0	16"	.375"	16"	N						2/3	3	✓		
12																
13																
14																
15																
16																
17																
18																
19																
20																
21																
22																
23																
24																
25																
26																
27																

No. Of Exp.	Film Brand & Design	Screen Type & Thickness	No. of Film per Cassette	Type of Energy	Physical Size	Material	OFD	IQI	
								Type	Size
8	AGFA	0.010" Pb	1	IR192	<0.12"	P1	.375"	DIN	10-16

This Certificate or Report is valid only for that work which was specifically requested. The company is not responsible for any views or opinions expressed by employees performing this work which fall outside the contract terms or reference. All Certificates and/or Reports are the result of work performed in conformance with applicable specifications and standards to the best of our ability and intent. However, the Company will not be responsible for deviation within the normal limits of accuracy in accordance with the standard practices. Final Code Acceptance shall require Client and Manufacturer Representative's signatures.

A.M.		P.M.		TOTAL HOURS	KMS	SUBSISTENCE		FILM
TIME IN	TIME OUT	TIME IN	TIME OUT	S.T. hrs		MAN DAY	OT/MEALS	8-70x440mm
				O.T. 1 hrs				

Film Interpretation is done in accordance with the specified code, to the best of my professional ability

Radiographer Kelly Mock SNT/CGSB Level II Cert #6248 Assistant Chuck Cizek
The above interpretation is a professional opinion, final film interpretation is the responsibility of the client.
I am in full agreement with the contents of this report and accept receipt of the associated film. Client Representative: _____



NDE EXAMINATION REPORT

☒ MT	mt-db	147
☐ PT		

CLIENT: VAPORTECH
 INVOICE ADDRESS: 20711 - 107 AVE
 WORK LOCATION: VAPORTECH SHOP
 STANDARD/AITEC PROCEDURE: BPV ASME V ART VII
 ACCEPTANCE STANDARD: ANSI B31.3 NORMAL
 EXAMINATION OF: AS POINTED OUT BY CUSTOMER REQUEST

JOB NO.:	<u>44004</u>
DEPT. CODE:	<u>20-3000</u>
DATE:	<u>25-Aug-07</u>
P.O. NO.:	
afe#	<u>5252C MPI-1</u>
PAGE:	<u>2</u> OF <u>2</u>

SURFACE: ☐ As Ground ☐ Machined ☐ Shot Blasted ☒ Base Metal ☐ Painted ☐ As Welded
 Examination Temperature 15 °C

TEST EQUIPMENT & MATERIALS:

EQUIPMENT	SERIAL No.	TECHNIQUE		TEST MEDIUM
☒ Hand Yoke <u>Ferrous Probe</u>	<u>#480</u>	<u>MPI</u>	<u>LPI</u>	☒ Wet <u>bat#32D620</u>
☐ Perm Magnet		☒ AC	☐ Water Washable	☐ Dry
☐ Coil	<u>DUE 11/29/07</u>	☐ DC	☐ Post Emulsified	☐ Colour Contrast <u>bat#65C624</u>
☐ Blacklight		☒ Continuous	☐ Solvent Removable	☐ Fluorescent
☐ Alloy Analyzer		☐ Residual		☐ Penetrant Dye
☐ Hardness Tester			Dwell Time _____ min	☒ Other <u>Chem Oakite</u>
☐ Other			Developer Time _____ min	MFG./TYPE/ BATCH #:

Blavk on white magnetic Particle inspection was performed on two final Tie-in welds to check for possible flaws which may affect the service life of the parts.

(All weld areas and heat affected zones were included in the inspection.)

A TOTAL OF 4 SOCKET WELDS WERE INSPECTED.

MPI #'S 1-4.

No indications noted at time of inspection. Parts meet above acceptance criteria.

A.M.		P.M.		TOTAL HOURS	KILOMETERS	SUBSISTENCE		CONSUMABLES
TIME IN	TIME OUT	TIME IN	TIME OUT	S.T.	hrs.	MANDAY	OT/MEALS	
				OT	1			

TECHNICIAN(S)			
Interpretation is in accordance with the above mentioned standards, to the best of my professional ability			
Print: <u>Dennis Bowlby</u>	CGSB/SNT Level: <u>II/II</u>	Reg No.: <u>#0202</u>	Sign: _____
Print: _____	CGSB/SNT Level: _____	Reg No.: _____	Sign: _____
The above representation is a professional opinion, final interpretation is the responsibility of the client. I have reviewed and am in full agreement with the contents of this report.			
Client Representative: (Print) _____	Sign: _____	Date: _____	



RADIOGRAPHIC EXAMINATION REPORT

CLIENT: VAPORTECH

LOCATION: 20711 107AVE

DATE: 08/25/10 PAG 1 OF 2
JOB#: 44004 P.O.#: 5252C V2
CODE: 20-3000

RT - DB - 146

DEFECT LEGEND			CODE LEGEND			TECHNIQUES		
IF - INCOMPLETE FUSION	P - POROSITY	HB - HOLLOW BEAD	1. ASME B31.3 NORMAL	5. ASME B31.1	1. SINGLE WALL EXPOSURE	3. SINGLE WALL VIEWING		
IP - INCOMPLETE PENETRATION	HL - HIGH / LOW	C - CRACK	2. ASME B31.3 SEVERE	6. CSA Z 662	2. DOUBLE WALL EXPOSURE	4. DOUBLE WALL VIEWING		
UC - UNDERCUTTING	IC - INTERNAL	AC - ARC BURNS	3. ASME VIII DIV 1 UW 51	7. API 650				
S - SLAG	CONCAVITY	SH - SHRINKAGE	4. ASME VIII DIV UW 52	8. OTHER				
BT - BURN THROUGH	LC - LOW COVER	1 - SLIGHT, 2 - MEDIUM, 3 - SEVERE						
	W - WINDOW							

FILM #	LOCATION	THK	DIA.	WLDR SYM	IF	IP	UC	S	BT	P	IC	LC	TECH #	CODE #	ACC.	REMARKS	REJECT
1															☐	1 JOB#5252C	
2															☐	2	
3	X-7		STD	4"	D								2/3	1	☒	3	
4	X-8		STD	2"	D										☒	4	
5	X-9		STD	2"	D										☒	5	
6	X-10		STD	3"	E										☒	6	
7	X-11		STD	3"	D										☒	7	
8	X-12		STD	3"	D										☒	8	
9	X-13		STD	3"	E										☒	9	
10															☐	10	
11															☐	11	
12															☐	12	
															☐	13	
14															☐	14	
15															☐	15	
16															☐	16	
17															☐	17	
18															☐	18	
19															☐	19	
20															☐	20	
21															☐	21	
22															☐	22	
23															☐	23	
24															☐	24	
25															☐	25	

No. of Exp.	Film Brand & Design	Screen Type & Thickness	No. of Film per Exposure	Type of Energy	Physical Size	Activity or K.V.	Maximum Source Side Object To Film Distance	Maximum Source to Object Distance	Material	Thickness			IQI		Exp. Time Min/Sec
										Base	Weld	R.F.	Type	Size	
21	D4	PB 1	1	IR19 2	.15	70C	3,4,		C/S	ST	>1M M		AST M	B	6,9,

This Certificate or Report is valid only for that work which was specifically requested. The Company is not responsible for any views or opinions expressed by employees performing this work which fall outside the contract terms or reference. All certificates and / or reports are the result of work performed in conformance with applicable specifications and standards to the best of our ability and intent. However, the company will not be responsible for deviation within the normal limits of accuracy in accordance with standard practices. Final Code Acceptance shall require Client and Manufacturer Representative's signatures.

A.M.		P.M.		TOTAL HOURS		KILOMETERS		SUBSISTENCE		FILM	
IN	OUT	IN	OUT	S.T.	hrs.			MAN DAY	OT / MEALS		
				O.T.	1.5 hrs.						

Film Interpretation is done in accordance with the specified code, to the best of my professional ability.

Radiographer: DENNIS BOWLBY

SNT/CSGB Level III/II

Reg. No.: 9308

Assistant:

The above interpretation is a professional opinion, final film interpretation is the responsibility of the client.

I am in full agreement with the contents of this report and accept receipt of the associated film. Client Representative:

A021RE R2

RIVEST

TECHNOLOGIES INC.

RADIOGRAPHIC INSPECTION REPORT

2450-80 Ave, Edmonton, Alberta T6P1N2
Phone:(780)469-8333 Fax:(780)469-8884

RT#6474

Date: August 21, 2007 JOB #: 6474 Page 2 of 4
Client: Vapor-Tech Energy Systems P.O. #: 5252C
Location: Rivest Technologies Inc. Description: 5252C-X1 Husky VRU

DEFECT LEGEND	✓ = Accept	X = Reject	SEVERITY	PROCEDURES	CODE LEGEND
IF - INCOMPLETE FUSION	P - POROSITY	HB - HOLLOW BEAD	1 - SLIGHT	1 - SINGLE WALL EXPOSURE	1 - ASME B31.3 NORMAL
IP - INCOMPLETE PENETRATION	BT - BURN THROUGH	C - CRACK	2 - MEDIUM	2 - DOUBLE WALL EXPOSURE	2 - ASME B31.3 SEVERE
UC - UNDERCUTTING	IC - INTERNAL CONCAVITY	AB - ARC BURNS	3 - SEVERE	3 - SINGLE WALL VIEWING	3 - ASME VIII DIV 1 UW51
S - SLAG	LC - LOW COVER	SH - SHRINKAGE		4 - DOUBLE WALL VIEWING	4 - ASME VIII DIV 1 UW52
					5 - ASME B16.34
					6 - CSA Z 662
					7 - MSS SP54
					8 -

	FILM NO.	LOCATION	DIA.	THK.	SOD	SYM	IF	IP	IC	UC	S	P	PROC #	CODE #	✓	REMARKS	X
1	X#																
2																	
3	1		4"	.237"	4.3"	N							2/3	1	✓		
4	2		4"	.237"	4.3"	N							2/3	1	✓		
5	3		6"	.280"	6.3"	N							2/3	1	✓		
6	4		6"	.280"	6.3"	N							2/3	1	✓		
7	5		6"	.280"	6.3"	N							2/3	1	✓		
8	6		6"	.280"	3"	N							1/3	1	✓		
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	

No. Of Exp.	Film Brand & Design	Screen Type & Thickness	No. of Film per Cassette	Type of Energy	Physical Size	Material	OFD	IQI	
								Type	Size
17	AGFA	0.010" Pb	1	IRI92	<0.12"	P1	.237/ .280"	DIN	10-16

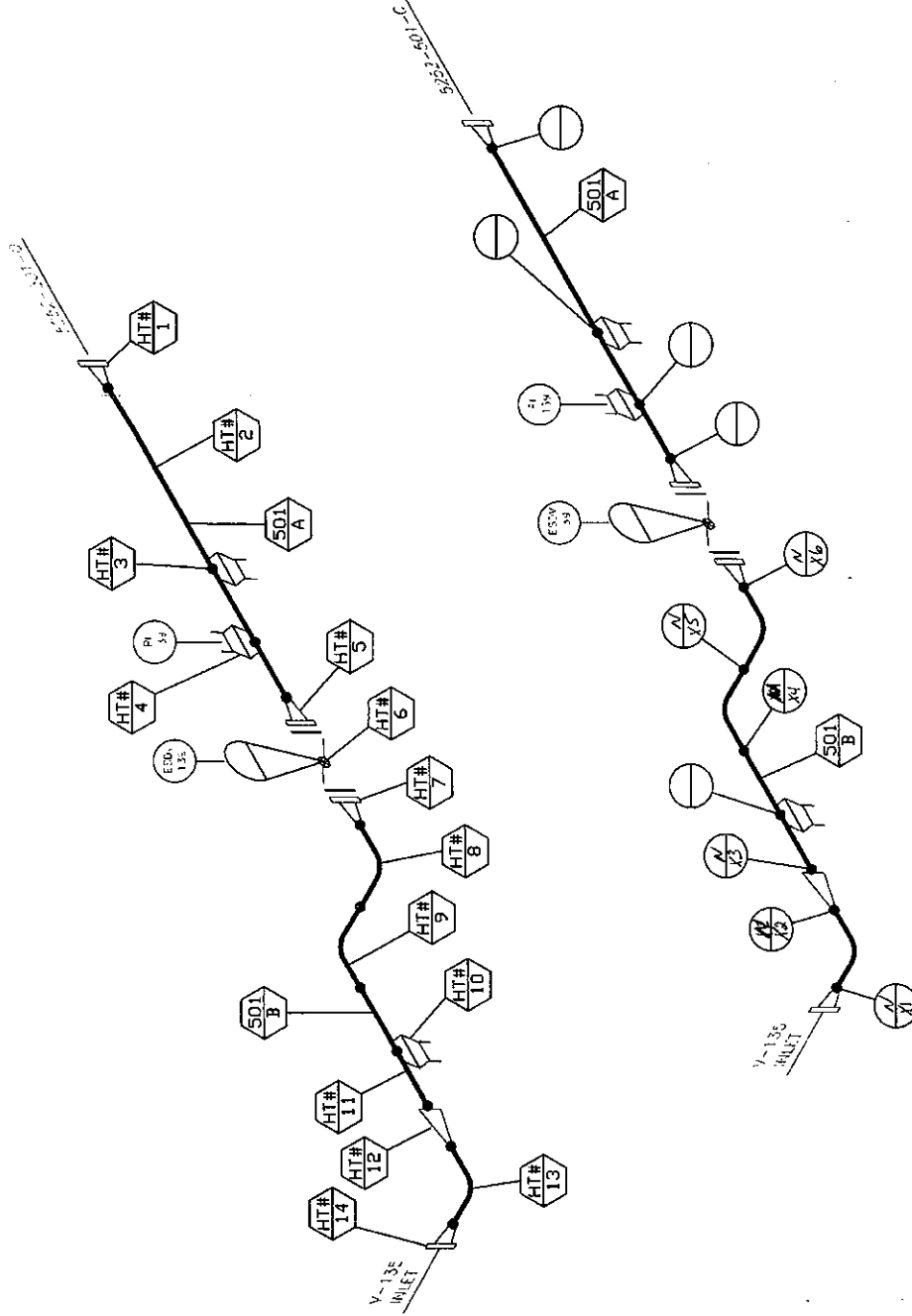
This Certificate or Report is valid only for that work which was specifically requested. The company is not responsible for any views or opinions expressed by employees performing this work which fall outside the contract terms or reference. All Certificates and/or Reports are the result of work performed in conformance with applicable specifications and standards to the best of our ability and intent. However, the Company will not be responsible for deviation within the normal limits of accuracy in accordance with the standard practices. Final Code Acceptance shall require Client and Manufacturer Representative's signatures.

A.M.		P.M.		TOTAL HOURS	KMS	SUBSISTENCE		FILM
ME IN	TIME OUT	TIME IN	TIME OUT	S.T. hrs		MAN DAY	OT/MEALS	5-70x440mm
				O.T. hrs				12-70x220mm

Film interpretation is done in accordance with the specified code, to the best of my professional ability.

Radiographer Kelly Mock SNT/CGSB Level II Cert #6248 Assistant Jeff Kinsella
The above interpretation is a professional opinion, final film interpretation is the responsibility of the client.
I am in full agreement with the contents of this report and accept receipt of the associated film. Client Representative: _____

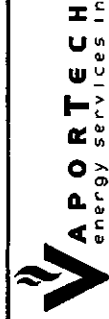
CONSTRUCTION MAP



HEAT NUMBER

#

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22



CLIENT:

HUSKY ENERGY
Calgary, Alberta

PROJECT:

WELL HEAD VRU
LOCATION: Lloydminster, Saskatchewan

DRAWING NO:

5252-501-I-CM

SPOOL DESCRIPTION:

PROCESS GAS TO V-135 (B/C/D/E)

DATE:

2007/05/07

APPROVE:

MIRSLAY

SCALE:

N.T.S.

REV:

1D

GENERAL NOTES:
1. ALL DIMENSIONS APPROXIMATE. FIELD VERIFY PRIOR TO CONSTRUCTION.
2. ALL DIMENSIONS IN INCHES.
3. ALL WELDING SHALL COMPLY WITH HUSKY SPEC PG-AW-01: WELDING.
4. P.F.W. = FIELD FIT WELD. PROVIDE ADDITIONAL 6" TO PIPE LENGTH

ASME CODE / CLIENT SPEC	B31.3 / Husky Spec AH
SERVICE	Sweet (30% Propane/70% CO2)
DESIGN PRESSURE	230 psig
DESIGN TEMP	300°F / -20°F
OPERATING PRESSURE/TEMP	0 psig / 122°F
NON-DESTRUCTIVE EXAMINATION	Field - 10% RT/UT
BRINELL HARDNESS	N/A
	450 psig for 1 hour

WELDER STAMP
X-RAY NUMBER

HEAT NUMBER



RADIOGRAPHIC INSPECTION REPORT

2450-80 Ave, Edmonton, Alberta T6P1N2
Phone:(780)469-8333 Fax:(780)469-8884

RT#6474

Date: August 21, 2007
Client: Vapor-Tech Energy Systems
Location: Rivest Technologies Inc.

JOB #: 6474
P.O. #: 5252C
Description: 5252C-X1 Husky VRU

Page 2 of 4

DEFECT LEGEND	✓ = Accept	X = Reject	SEVERITY	PROCEDURES	CODE LEGEND
IF - INCOMPLETE FUSION	P - POROSITY	HB - HOLLOW BEAD	1 - SLIGHT	1 - SINGLE WALL EXPOSURE	1 - ASME B31.3 NORMAL
IP - INCOMPLETE PENETRATION	BT - BURN THROUGH	C - CRACK	2 - MEDIUM	2 - DOUBLE WALL EXPOSURE	2 - ASME B31.3 SEVERE
UC - UNDERCUTTING	IC - INTERNAL CONCAVITY	AB - ARC BURNS	3 - SEVERE	3 - SINGLE WALL VIEWING	3 - ASME VIII DIV 1 UW51
S - SLAG	LC - LOW COVER	SH - SHRINKAGE		4 - DOUBLE WALL VIEWING	4 - ASME VIII DIV 1 UW52
					5 - ASME B16.34
					6 - CSA Z 662
					7 - MSS SP54
					8 -

	FILM NO.	LOCATION	DIA.	THK.	SOD	SYM	IF	IP	IC	UC	S	P			PROC #	CODE #	✓	REMARKS	X
1	X#																		
2																			
3	1		4"	.237"	4.3"	N									2/3	1	✓		
4	2		4"	.237"	4.3"	N									2/3	1	✓		
5	3		6"	.280"	6.3"	N									2/3	1	✓		
6	4		6"	.280"	6.3"	N									2/3	1	✓		
7	5		6"	.280"	6.3"	N									2/3	1	✓		
8	6		6"	.280"	3"	N									1/3	1	✓		
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			
24																			
25																			
26																			
27																			

No. Of Exp.	Film Brand & Design	Screen Type & Thickness	No. of Film per Cassette	Type of Energy	Physical Size	Material	OFD	IQI	
								Type	Size
17	AGFA	0.010" Pb	1	IRI92	<0.12"	P1	.237/.280"	DIN	10-16

This Certificate or Report is valid only for that work which was specifically requested. The company is not responsible for any views or opinions expressed by employees performing this work which fall outside the contract terms or reference. All Certificates and/or Reports are the result of work performed in conformance with applicable specifications and standards to the best of our ability and intent. However, the Company will not be responsible for deviation within the normal limits of accuracy in accordance with the standard practices. Final Code Acceptance shall require Client and Manufacturer Representative's signatures.

A.M.		P.M.		TOTAL HOURS	KMS	SUBSISTENCE		FILM
ME IN	TIME OUT	TIME IN	TIME OUT	S.T. hrs		MAN DAY	OT/MEALS	5-70x440mm
				O.T. hrs				12-70x220mm

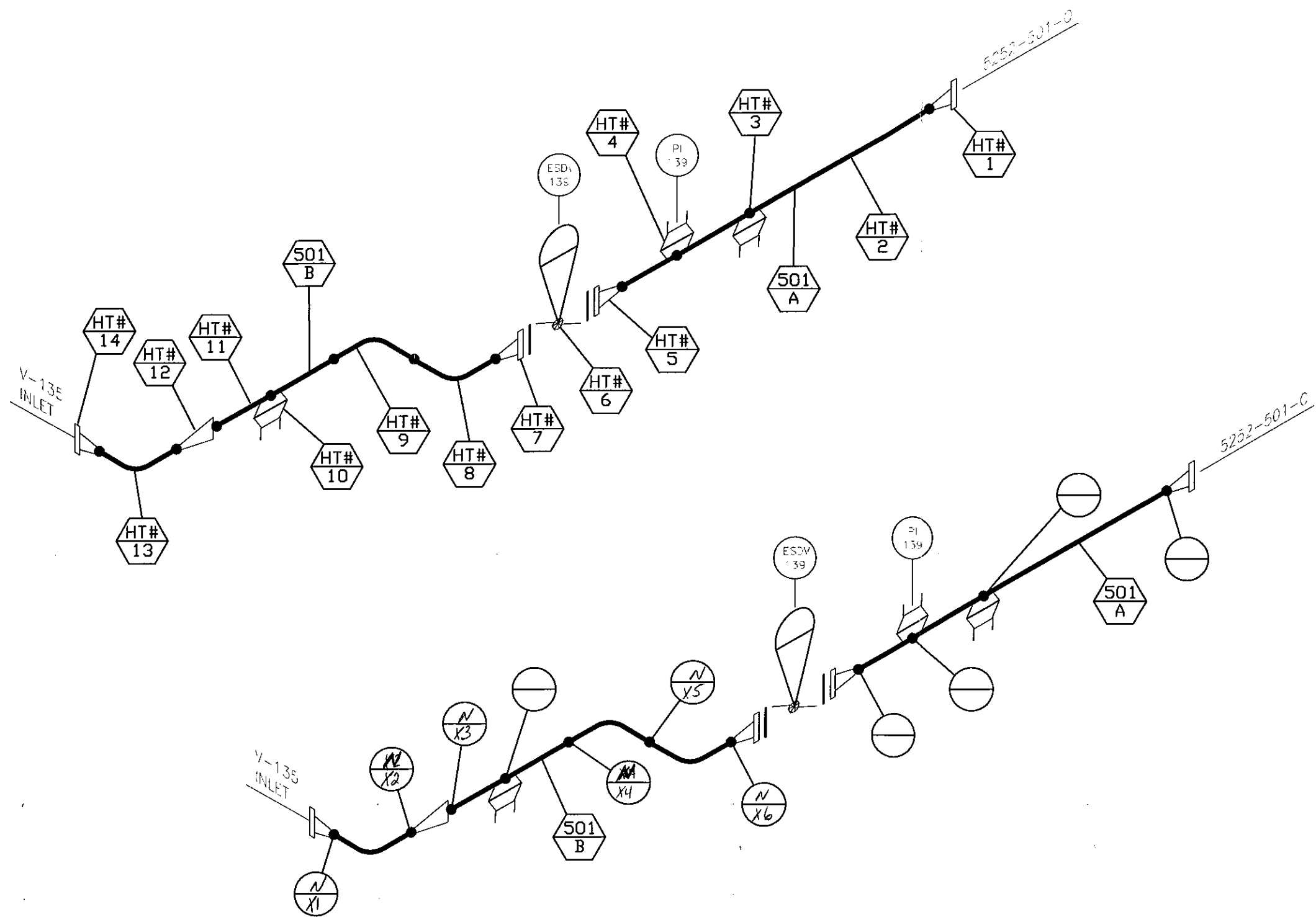
Film Interpretation is done in accordance with the specified code, to the best of my professional ability.

Radiographer Kelly Mock SNT/CGSB Level II Cert #6248 Assistant Jeff Kinsella

The above interpretation is a professional opinion, final film interpretation is the responsibility of the client.

I am in full agreement with the contents of this report and accept receipt of the associated film. Client Representative: _____

CONSTRUCTION MAP



#	HEAT NUMBER
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	



CLIENT: **HUSKY ENERGY**
Calgary, Alberta

PROJECT: **WELL HEAD VRU**
LOCATION: Lloydminster, Saskatchewan

DRAWING NO: **5252-501-I-CM**

SPOOL DESCRIPTION: **PROCESS GAS TO V-135 (B/C/D/E)**

DATE: 2007/05/07	DWG. BY: MIROSLAV	APPROV'D:	SCALE: NTS	REV: 1D
------------------	-------------------	-----------	------------	---------

WELDER STAMP
X-RAY NUMBER

HEAT NUMBER

ASME CODE / CLIENT SPEC	B31.3 / Husky Spec AH
SERVICE	Sweet (30% Propane/70% CO2)
DESIGN PRESSURE	230 psig
DESIGN TEMP	300°F/-20°F
OPERATING PRESSURE/TEMP	0 psig / 122°F
NON-DESTRUCTIVE EXAMINATION	Fillet - 10% MT/PT
	BW-10% RT/UT
BRINELL HARDNESS	N/A
	450 psig for 1 hour

GENERAL NOTES:			
1. ALL DIMENSIONS APPROXIMATE. FIELD VERIFY PRIOR TO CONSTRUCTION.			
2. ALL DIMENSIONS IN INCHES.			
3. ALL WELDING SHALL COMPLY WITH HUSKY SPEC PS-MW-01: WELDING.			
4. F.F.W. = FIELD FIT WELD, PROVIDE ADDITIONAL 6" TO PIPE LENGTH			
1D	LQ	LENGTHEN SPOOL BY 3"	07-08-07 SA
1	KY	ISSUED FOR CONSTRUCTION	07-05-07
REV	BY	DESCRIPTION	DD-MM-YY CHK'D

Date: August 21, 2007 JOB #: 6474 Page 2 of 4
Client: Vapor-Tech Energy Systems P.O. #: 5252C
Location: Rivest Technologies Inc. Description: 5252C-X1 Husky VRU

DEFECT LEGEND	✓ = Accept	X = Reject	SEVERITY	PROCEDURES	CODE LEGEND
IF - INCOMPLETE FUSION	P - POROSITY	HB - HOLLOW BEAD	1 - SLIGHT	1 - SINGLE WALL EXPOSURE	1 - ASME B31.3 NORMAL
IP - INCOMPLETE PENETRATION	BT - BURN THROUGH	C - CRACK	2 - MEDIUM	2 - DOUBLE WALL EXPOSURE	2 - ASME B31.3 SEVERE
UC - UNDERCUTTING	IC - INTERNAL CONCAVITY	AB - ARC BURNS	3 - SEVERE	3 - SINGLE WALL VIEWING	3 - ASME VIII DIV 1 UW51
S - SLAG	LC - LOW COVER	SH - SHRINKAGE		4 - DOUBLE WALL VIEWING	4 - ASME VIII DIV 1 UW52
					5 - ASME B16.34
					6 - CSA Z 662
					7 - MSS SP54
					8 -

	FILM NO.	LOCATION	DIA.	THK.	SOD	SYM	IF	IP	IC	UC	S	P		PROC #	CODE #	✓	REMARKS	X
1	X#																	
2																		
3	1		4"	.237"	4.3"	N								2/3	1	✓		
4	2		4"	.237"	4.3"	N								2/3	1	✓		
5	3		6"	.280"	6.3"	N								2/3	1	✓		
6	4		6"	.280"	6.3"	N								2/3	1	✓		
7	5		6"	.280"	6.3"	N								2/3	1	✓		
8	6		6"	.280"	3"	N								1/3	1	✓		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		
26																		
27																		

No. Of Exp.	Film Brand & Design	Screen Type & Thickness	No. of Film per Cassette	Type of Energy	Physical Size	Material	OFD	IQI	
								Type	Size
17	AGFA	0.010" Pb	1	IRI92	<0.12"	P1	.237/.280"	DIN	10-16

This Certificate or Report is valid only for that work which was specifically requested. The company is not responsible for any views or opinions expressed by employees performing this work which fall outside the contract terms or reference. All Certificates and/or Reports are the result of work performed in conformance with applicable specifications and standards to the best of our ability and intent. However, the Company will not be responsible for deviation within the normal limits of accuracy in accordance with the standard practices. Final Code Acceptance shall require Client and Manufacturer Representative's signatures.

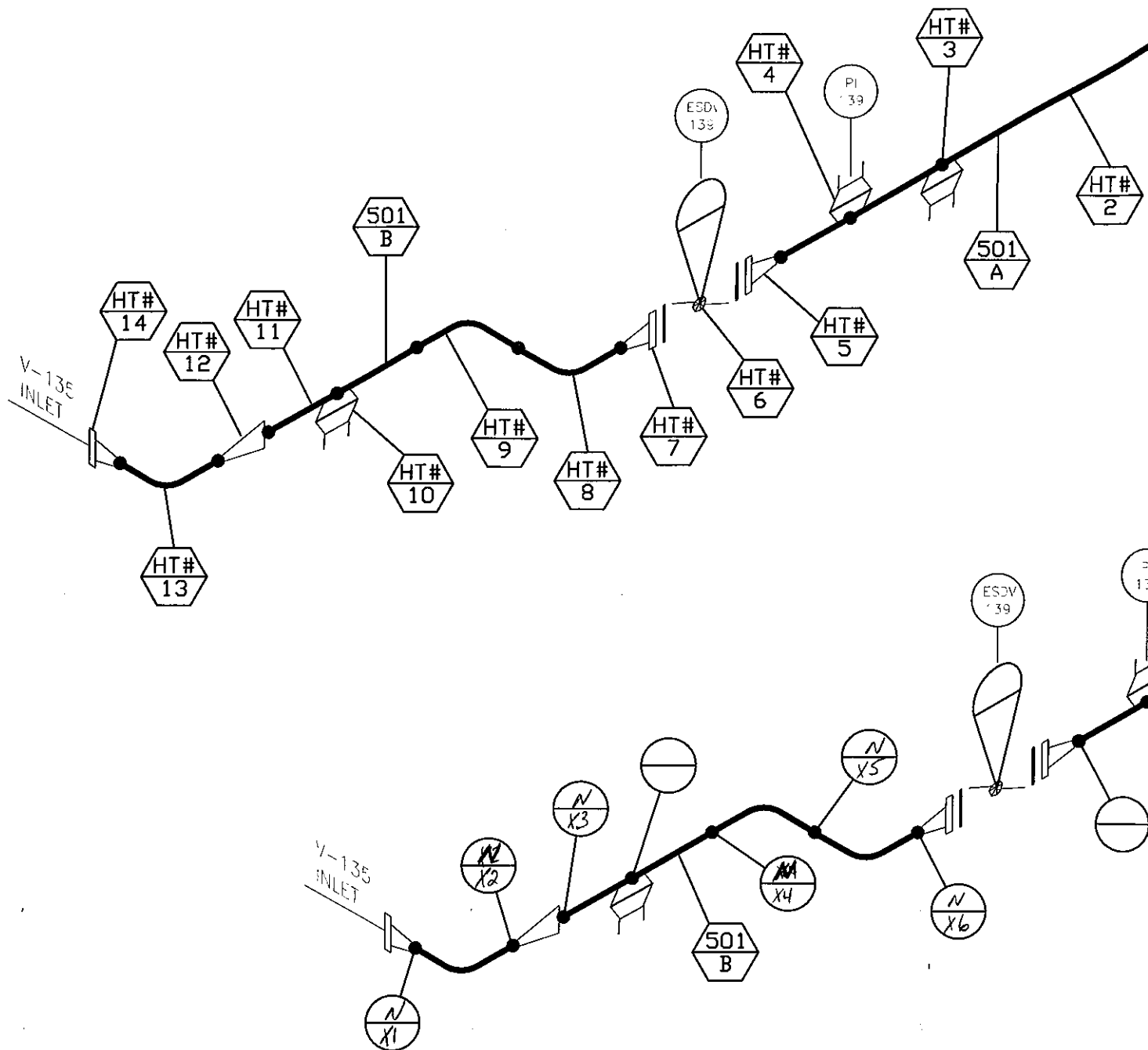
A.M.		P.M.		TOTAL HOURS	KMS	SUBSISTENCE		FILM
TIME IN	TIME OUT	TIME IN	TIME OUT	S.T. hrs		MAN DAY	OT/MEALS	5-70x440mm
				O.T. hrs				12-70x220mm

Film Interpretation is done in accordance with the specified code, to the best of my professional ability.

Radiographer Kelly Mock SNT/CGSB Level II Cert #6248 Assistant Jeff Kinsella

The above interpretation is a professional opinion, final film interpretation is the responsibility of the client.

I am in full agreement with the contents of this report and accept receipt of the associated film. Client Representative: _____



WELDER STAMP
X-RAY NUMBER

HT#
HEAT NUMBER

ASME CODE / CLIENT SPEC	B31.3 / Husky Spec AH
SERVICE	Sweet (30% Propane/70% CO2)
DESIGN PRESSURE	230 psig
DESIGN TEMP	300°F / -20°F
OPERATING PRESSURE/TEMP	0 psig / 122°F
NON-DESTRUCTIVE EXAMINATION	Fillet - 10% MT/PT
	BW-10% RT/UT
BRINELL HARDNESS	N/A
	450 psig for 1 hour

GENERAL
1. ALL
2. ALL
3. ALL
4. F.F.W

10 LQ
1 KY
REV BY

TRAVEL SHEET



DO NOT START CONSTRUCTION WITHOUT A.I. REVIEW

The Authorized Inspector shall be presented with the Travel Sheet prior to construction so that he can designate additional inspection points and/or Hold Points. (Any revisions shall be marked with a delta symbol with revision number and described at the bottom of this page.)

R Denotes an A.I. Review Point

H Denotes an A.I. Hold Point

① 578077

JOB FILE INITIATED:																
SEQ	ITEM	COMMENTS	QCI	M	D	Y	HOLD PT	A.I.	M	D	Y	HOLD PT	CLIENT	M	D	Y
1	CRN Drawing & Revision <i>AB, SK</i>	CRN#	TR	05	24	07		R	05	31	07					
2	Calculations in File		TR	05	24	07										
3	Release of Approved Dwg.		TR	05	24	07										
4	WPS(s) Checked		TR	08	06	07										
5	Welder(s) Qualified		TR	08	06	07										
6	Thicknesses Verified & Recorded		N.C	07	16	07										
7	Nozzle & Flange Rating Checked		N.C	07	16	07										
8	Heat Numbers Recorded <i>Shell 0683071</i> <i>Heads 142 S-25993</i>	Shell / Heads / Plate	N.C	07	16	07		I	07	26	07					
		Nozzle	N.C	07	16	07										
9	MTRs Checked	Shell / Heads / Plate	N.C	07	16	07		R	07	09	06					
		Nozzle	N.C	07	16	07										
10	Nozzle Orientation/Weld Prep. Openings		N.C	07	16	07										
11	Nozzles & Fittings Fit-up Inspection		N.C	07	16	07										
12	Radius Nozzles		N.C	07	16	07										
13	Shell(s) & Head(s) Fit-up Inspection	#1 Circ. - Head	N.C	07	19	07										
		#2 Circ. - Flange														
14	Impact Tests	N/A														
15	Internals Checked		N.C	07	19	07										
16	Internal Sandblast	SSPC-SP-6	N.C	07	16	07										
17	Final Internal Inspection							H	07	11	07					
18	Mist Pad Grid Fit-Up / Weldout		N.C	07	19	07										
19	Weld Sizes Checked		N.C	07	19	07										
20	Welder I.D. Checked		N.C	07	16	07										
21	Radiography	Nozzle	N.C	07	19	07										
		#1 Circ. - Head						R	07	09	06					
		#2 Circ. - Flange						R	07	09	06					
22	NDE: UT Cat. D Welds		N.C	07	19	07										
23	NDE: WFMPI Internals		N.C	07	19	07										
24	Final Extern. Exam. Prior to PWHT		N.C	07	19	07		I	07	26	07					
25	PWHT Chart Checked															
26	Hydrostatic Test	PSI / kPa						H	07	26	07					
		Gauge #														
27	NDE: MPI Externals after Hydro Test		N.C	07	19	07										
28	NDE: Brinell Hardness Testing															
29	Internal Coating															
30	External Sandblast	SSPC-SP-6	N.C	07	19	07										
31	N.C.R. #															
32	Nameplate Stamping							H	07	13	07					
33	Manuf. Data Report Completed & Verified							H	07	13	07					
34	Nameplate Installation															

SERIAL NO.:

DRAWING NO.:

JOB NO.:

H16-S133

H16-S133

5252C

(A) 578077

AB-25 (Side 1) 2006/04

ALBERTA MUNICIPAL AFFAIRS

ABSA, the pressure equipment safety authority

9410 - 20th Avenue

Edmonton, AB T6N 0A4

Partial/ Partiel ☐MANUFACTURER'S DATA REPORT
FOR PRESSURE VESSELDÉCLARATION DE CONFORMITÉ DU CONSTRUCTEUR
D'APPAREILS SOUS PRESSION

Upon shipment of a pressure vessel, this form fully and correctly filled in must be mailed to the office of the Chief Inspector in the province of installation in accordance with the regulations under the Act, governing the construction and installation of pressure vessels.

Au moment de l'expédition d'un appareil sous pression, ce formulaire complété correctement, doit être envoyé au bureau de l'inspecteur en chef de la province d'installation tel que prévu dans les règlements de la loi sur les appareils sous pression.

Manufactured by Construit par	Name and address of Manufacturer/ Nom et adresse du constructeur Vapor-Tech Systems, 20711-107Ave, Edmonton, Alberta, T5S 1W5
Manufactured for Construit pour	Name and address of Purchaser or Consignee/ Nom et adresse du client ou de son représentant IMV Projects Inc. Suite 1400, 500 - 5 Avenue SW, Calgary, Alberta, T2P 3L5
Ultimate owner Utilisateur	Name and address/ Nom et adresse Husky Energy Inc., 707-8th Avenue SW, Box 6525, Station "D", Calgary, Alberta, T2P 3G7
Location of installation Lieu d'installation	Address/ Adresse Saskatchewan 11-36-49-20-W3M

Pressure vessel/ Appareil

Type/ Genre 16" Horizontal Suction Scrubber	Overall Length/Longueur totale 75 13/16" (64" Seam to Seam)	Serial No./ N° de série H16 - S133	Year built/Année de fabrication 2007
Provincial Registration No. - C.R.N./N° d'enregistrement provincial - N.E.C. U1084.23	National Board No./ N° National Board	Drawing No./ N° de dessin H16 - G6 Rev. 0B	

The chemical and physical properties of all parts meet the requirements of material specifications of the A.S.M.E. Code.
Les propriétés chimiques et physiques de toutes les composantes respectent les exigences des spécifications de matériaux de code ASME.

The design, construction and workmanship conform to CSA B51. La conception, la construction et la façon sont conformes à ACNOR B51.	ASME Section VIII	Division 1	Addenda/Supplément 2005	Code case No. N° de cas
Manufacturer's partial data reports properly identified and signed by authorized inspectors have been furnished for the following items of the report, and attached to this report: Les rapports partiels du constructeur adéquatement identifiés et signés par les inspecteurs autorisés ont été produits pour les items suivants du rapport, et attachés à ce rapport:				
Names of parts/ Nom de la composante	Item No./ N° d'item	Manufacturer's Name/ Nom du constructeur	Identifying Stamp/ Estampe d'identification	

Shell/ Virole

Description	Material Matériau	Thickness Épaisseur	Corr. Allow. Surépais. de corr.	Diameter Diamètre	Longitudinal Joints Joints longitudinaux			P.W.H.T. Traitement therm		Girth Joints Joints de circonférence		Number of courses Nombre de sections
					Type	R.T. Radiog.	Efficiency Efficacité	Temp.	Time Durée	Type	R.T. Radiog.	
SHELL	SA - 106B	0.375"	0.125"	16" OD	SMLS	N/A	100%			1	FULL	1

Heads/ Têtes

Description	Material Matériau	Min. Thickn. Épais. minim.	Corr. Allow Surép. Corr.	Crown Radius Rayon couron.	Knuckle Radius Petit rayon	Ellipse Ratio Rapp. ellipse	Conical Apex Angle Angle conique	Hemisph. Radius Ray. Hémisph	Flat Diameter Diam. plat	Side to pressure Côte sous pression
END HEAD, END HEAD	SA - 516 - 70N	0.313"	0.125"	-	-	2:1	-	-	-	Concave
Removable bolts used (describe other fastenings) Boulons amovible utilisés (décrire tout autre attache)					Mat'l Spec./ Spéc. du mat.			Grade		Size/ Dimension

Pressure - Temperature/ Pression - température

Pressure Vessel Part Partie de l'appareil	Constructed for max. allowable working pressure Construit pour une pression maximale de marche permise	At max. temp. A une temp. max.	Min. Temp. (when less than -29°C) Temp. min. (inférieure à -29°C)	Test pressure (hydro-pneumatic or combination) Pression d'épreuve (hydro-pneumatique ou combinaison)
SHELL, HEADS & NOZZLES	200 PSIG INTERNAL 15 PSIG EXTERNAL	300 °F 300 °F	-20 °F -20 °F	260 PSIG

Tube Section/ Faisceau tubulaire

Tube sheet/ Plaque tubulaire	Material/ Matériau	Diameter/ Diamètre	Nominal Thickness Épaisseur nominale	Corr. Allow. Surépais. corrosion	Attachment Mode d'attachement
Tube material/ Matériau des tubes	Diameter/ Diamètre	Nominal Thickness (gauge) Épaisseur nominale (calibre)	Number/ Nbre	Type (Straight or U) Type (Droit ou U)	Heating Surface Surface de chauffe

Jacket/ Chemise

Type of jacket/ Genre de chemise	Jacket closure Fermeture de chemise	Proof Test Pression d'épreuve	Heating Surface Surface de chauffe	Sketch/ Schéma
----------------------------------	--	----------------------------------	---------------------------------------	----------------

Safety Valve Outlets/ Soupapes de sûreté

Number/ Nombre	Dimension	Location/ Endroit
----------------	-----------	-------------------

Nozzles and Openings/ Tubulures et ouvertures

Purpose/ But	Number Nombre	Dimension	Type	Material Matériau	Nominal Thickness Épaisseur nominale	Reinforcement material Matériau de renfort	How attached Genre d'attaches	Location/ Endroit
Inlet, Outlet	N1, N2	4"	CL 150 RFWN	SA - 106B	0.531"		UW - 16.1C	SHELL
Inspection, Level Control, Level Shutdown	N3, N4, N5	3"	CL 150 RFWN	SA - 106B	0.438"		UW - 16.1C	SHELL
Drain, Sightglass Down	N6, N8	2"	CL 150 RFWN	SA - 106B	0.436"		UW - 16.1C	SHELL
Sightglass Up	N7	1.5"	CL 150 RFWN	SA - 106B	0.400"		UW - 16.1C	SHELL
Inspection	N10	3"	CL 150 RFWN	SA - 106B	0.438"		UW - 16.1C	SHELL
Inspection	N11	3"	CL 150 RFWN	SA - 106B	0.438"		UW - 16.1C	HEAD - ELLIPTICAL

Supports/ Supports

Skirt/ Jupe Yes/ Oui No/ Non ☐ ☒	Lugs/ Oreilles No./ Nbre	Legs/ Pieds No./ Nbre	Other/ Autres (Description)	Attached/ Attaches (Where and How/ Méthode et endroit) SHELL / WELDED
		4		

Remarks/ Observations (Cubical capacity/ Volume)

Construction Drawing H16-S133, 7.8 Cu. Ft. (0.22 Cu. m) RT-1 Per UW-11(A)5(B)& UW-51
Impact Exemptions: UCS 66(c), UG-20(f)

Safety Valve on Process Piping by VaporTech Energy Services Inc.

Certificate of Compliance/ Certificat de conformité

We certify that the statements made in this data report are correct and that the said vessel has been constructed in accordance with the Provincial Registered design below and the requirements of standard CSA B51.

Nous certifions que les données de la déclaration de conformité sont correctes et que l'appareil a été construit en accord avec l'enregistrement provincial ci-dessous et les exigences de la norme ACNOR B51.

Provincial Registered Design
Enregistrement provincial U1084.23

Manufacturer
Constructeur VaporTech Energy Services Inc.

Signature M. M. M. M. Date 9/11/07

Certificate of Compliance - Field Work/ Certificat de conformité - Installation au chantier

We certify that the field installation of all parts of the vessel conforms with the requirements of Provincial Regulations.

Nous certifions que l'installation au chantier de toutes les composantes de l'appareil est conforme aux règlements provinciaux.

Installer's Name
Nom de l'installateur _____

Signature _____

Date _____

Certificate of Shop Inspection/ Certificat d'inspection en usine

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector
Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression
employed by ABSA

off de Alberta

have inspected the above vessel and state that to the best of my knowledge and belief, the manufacturer has constructed the vessel in accordance with the Provincial registration CRN U1084.23 and the requirements of standard CSA B51.

ai inspecté l'appareil précité et autant que je sache, crois que le constructeur a construit l'appareil en accord avec l'enregistrement provincial NEC _____ et les exigences de la norme ACNOR B51.

Inspector's Name

Nom de l'inspecteur AI Grumbach AB9YA

Signature AI Grumbach Date Sept 13, 2007

Certificate of Field Inspection/ Certificat d'inspection - Installation au chantier

I, the undersigned, a duly authorized Boiler and Pressure Vessel Inspector
Je, soussigné, inspecteur autorisé de chaudières et appareil sous pression
employed by _____

have inspected the items not covered by the Shop Inspection Certificate and the installation of the items and state that to the best of my knowledge and belief the construction and assembly of the items are in accordance with the Provincial Regulations.

ai inspecté les composantes non couvertes par le certificat d'inspection en usine l'installation de l'appareil et, autant que je sache, la construction et l'assemblage de l'appareil sont en accord avec les règlements provinciaux.

Inspector's Name

Nom de l'inspecteur _____

Signature _____ Date _____

W

RI-1

Certified by



A P (O) R H C O H
only service

MAWP	PSI	DESIGN TEMP.	SERIAL
200	AT	300	116-5133
MAWP (EXC)	PSI	DESIGN TEMP.	YEAR BUILT
15	AT	300	2007
MIDMIT	PSI	MAWP	CRN
20	AT	200	1108423

PROVINCIAL STAMP

A578011



9410 - 20 Ave N.W.
Edmonton, Alberta, Canada T6N 0A4
Tel: (780) 437-9100 / Fax: (780) 437-7787

May 24, 2007

Attention: Golam Kibria
VAPORTECH ENERGY SERVICES INC
20711 107 AVENUE
EDMONTON, AB T5S 1W5

Re: Design registration

The design submission, tracking number 2007-03354, originally received on May 09, 2007 was surveyed and accepted for registration as follows:

CRN : U1084.2

Accepted on: May 24, 2007

Reg Type: Revision To accepted Design

Drawing No. : H16-G6 SHT. 1 TO 10 Rev 0B

Description	MAWP	Design Temperature	MDMT
Internal Pressure	1379 kPa	149°C	-29°C
External Pressure	103 kPa	149°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 3369 or fax (780) 437-7787 or e-mail Radisavljevic@absa.ca.

Sincerely,

Zana Radisavljevic

RADISAVLJEVIC, ZANA, R.E.T.
Design Surveyor

Saskatchewan**Corrections and
Public Safety****Licensing and Inspections****Boiler & Pressure Vessel Safety**
330 - 1855 Victoria Avenue
Regina, Saskatchewan
S4P 3T2

TEL : (306)787-4567

FAX : (306)787-9273

REGISTRATION APPROVAL

19-Jul-07

VaporTech Energy Services Inc.
20711 - 107 Avenue
Edmonton, Alberta T5S 1W5**Our File** 39305 [0V]**ATTENTION :** Todd Carey, Design Engineer

With reference to your submission respecting the registration of the item below, for legal use in the province, please note we have surveyed, approved and registered this design as noted.

MANUFACTURER :	VaporTech Energy Services Inc.	
ITEM :	DRAWING NUMBER :	CRN :
16" Horizontal Vessel	H16-G6 Sht 1-10 Rev 0B	U1084.23

We wish to point out that every vessel must be constructed strictly in accordance with the registered design.

In addition to stamping every vessel with the registration number given above and as required in CSA Code B51, a Manufacturer's Data Report must be forwarded to this office immediately at the time a vessel is shipped. Such forms may be obtained upon request.

Sincerely,

Ilyas Chaudhry**Codes and Standards Compliance****REMARKS:** CRN registered under reciprocal agreement.

ANDERSONP.O. Box 3125, Sherwood Park AB, T8A 2T1
Phone: 780-417-7725 Fax: 780-417-9327 Cell: 780-951-1630**N D E SERVICES INC.****MAGNETIC PARTICLE EXAMINATION REPORT**

Customer: VAPORTECH ENERGY SYSTEM
Location: 20711-107 AVE EDMONTON
Examination of: EXTERNAL WELDS
Part/Serial Number: H16-S133
Acceptance Standard: SEE NOTE BELOW
Examination Standards: ASME V ART 7

M No # 6746D
Date: JULY 27, 07
Po. No.: 5252C
Page: 1 of 1
Job No.: 07-505

EXAMINED TO ASME VIII DIV 1 APPX6, 04 EDIT, 06 ADD

SURFACE: ☐ As Ground ☒ As Welded ☐ Base Metal ☐ Machined ☐ Painted ☐ Shot Blast

TEST EQUIPMENT AND MATERIALS

Method: ☒ Yoke ☒ AC ☐ DC ☒ Continuous ☐ Residual
Manuf: Parker **Model:** B300 **Serial No:** 7710 **Amps:** 4
BLACK LIGHT: **Manuf:** **Model:** **Serial No:**
INDICATOR: **Manuf:** MAGNAFLUX **Type:** 7HF **Batch:**
Cal Date: JULY 1, 07 **Due Date:** 1-Jan-08

EXAMINATION RESULTS:

A MAGNETIC PARTICLE EXAMINATION WAS CARRIED OUT ON THE FOLLOWING AFTER HYROTEST:

- ALL EXTERNAL ATTACHMENT FILLET WELDS
- N1, N2, N3, N4, N5, N6&N8, N7, N10 AND N11 CAT D FILLET WELDS

JULY # 5252C-MPI-1

THE ABOVE WAS FOUND FREE OF RELEVANT INDICATIONS AND ACCEPTABLE TO CODE
AT TIME OF EXAMINATION.

ANDERSON PROCEDURES: ☐ MT 1 DRY VISIBLE ☐ RED ☐ BLK ☐ GRY ☐ YLW ☐ CONTRAST
☐ MT2 WFMP ☒ MT3 BLK/WHT

VISUAL INSPECTION PERFORMED PRIOR TO MAGNETIC PARTICLE EXAMINATION.
INTERPRETATION IS IN ACCORDANCE WITH THE ABOVE MENTIONED STANDARDS TO THE BEST OF MY PROFESSIONAL ABILITY.

Technician(s):

Print: Yvonne Anderson
Ass't:

CGSB/SNT Level: II/III **Reg. No:** 4642
CGSB/SNT Level: **Reg. No:**

Sign: 
Sign:

Consumables : 1

THE ABOVE REPRESENTATION IS A PROFESSIONAL OPINION, FINAL INTERPRETATION IS THE RESPONSIBILITY OF THE CUSTOMER. I HAVE REVIEWED AND AM IN FULL AGREEMENT WITH THIS REPORT.

Customer Representative: 

TOTAL HOURS: 1.5 **S.T.** **O.T.**

Date: JULY 27, 2007

ANDERSONP.O. Box 3125, Sherwood Park AB, T8A 2T1
Phone: 780-417-7725 Fax: 780-417-9327 Cell: 780-951-1630**N D E SERVICES INC.****MAGNETIC PARTICLE EXAMINATION REPORT**

Customer: VAPORTECH ENERGY SYSTEM
Location: 20711-107 AVE EDMONTON
Examination of: INTERNAL WELDS
Part/Serial Number: H16-S133
Acceptance Standard: SEE NOTE BELOW
Examination Standards: ASME V ART 7

M No # 6730D
Date: JULY 12, 07
Po. No.: 5252C
Page: 1 of 1
Job No.: 07-418

EXAMINED TO ASME VIII DIV 1 APPX6, 04 EDIT, 06 ADD

SURFACE: ☒ As Ground ☒ As Welded ☐ Base Metal ☐ Machined ☐ Painted ☐ Shot Blast

TEST EQUIPMENT AND MATERIALS

Method: ☒ Yoke ☒ AC ☐ DC ☒ Continuous ☐ Residual
Manuf: Parker **Model:** B300 **Serial No:** 7710 **Amps:** 4
BLACK LIGHT: **Manuf:** SPECTROLINE **Model:** B1B150P **Serial No:** 1490589
INDICATOR: **Manuf:** MAGNAFLUX **Type:** 14 A **Batch:** _____
Cal Date: JAN 1, 07 **Due Date:** JULY 1, 07

EXAMINATION RESULTS:

A MAGNETIC PARTICLE EXAMINATION WAS CARRIED OUT ON THE FOLLOWING PRIOR TO HYRO:

- INTERNAL WELDS
- N1, N2, N3, N4, N5, N6&N8, N7, N10 AND N11

5252C-MPI-1

THE ABOVE WAS FOUND FREE OF RELEVANT INDICATIONS AND ACCEPTABLE TO CODE
AT TIME OF EXAMINATION.

ANDERSON PROCEDURES: ☐ MT 1 DRY VISIBLE ☐ RED ☐ BLK ☐ GRY ☐ YLW ☐ CONTRAST
☒ MT2 WFMP ☐ MT3 BLK/WHT

VISUAL INSPECTION PERFORMED PRIOR TO MAGNETIC PARTICLE EXAMINATION.
INTERPRETATION IS IN ACCORDANCE WITH THE ABOVE MENTIONED STANDARDS TO THE BEST OF MY PROFESSIONAL ABILITY.

Technician(s):

Print: Yvonne Anderson
Ass't: _____

CGSB/SNT Level: III/III **Reg. No:** 4642
CGSB/SNT Level: _____ **Reg. No:** _____

Sign: Yvonne Anderson**Sign:** _____**Consumables :** _____

THE ABOVE REPRESENTATION IS A PROFESSIONAL OPINION, FINAL INTERPRETATION IS THE RESPONSIBILITY OF THE CUSTOMER. I HAVE REVIEWED AND AM IN FULL AGREEMENT WITH THIS REPORT.

Customer Representative: [Signature]

TOTAL HOURS: 1 **S.T.** _____ **O.T.** _____

Date: July 12, 2007

ANDERSONP.O. Box 3125, Sherwood Park AB, T8A 2T1
Phone: 780-417-7725 Fax: 780-417-9327 Cell: 780-951-1630**N D E SERVICES INC.****ULTRASONIC EXAMINATION REPORT**

Customer: VAPOR-TECH SYSTEMS
Location: 20715-107 AVE EDMONTON, AB
Examination of: CAT D WELDS
Part/Serial Number: H16-S133
Acceptance Standard: ASME VIII DIV I APPX 12
Examination Standards: ASME V ART 5/06 ADDENDUM

U No# 3143B
Date: JULY 12, 07
Po. No: 5252C
Page: 1 of 1
Job No.: 07-464

EXAMINED TO ASME VIII DIV 1 APPX 12, 04 EDIT, 06 ADD

Ultrasonic Equipment:

Make: OLYPMUS **Model:** Epoch XT **Serial No:** 97245510 **Cal Date:** JUNE 1, 07
Cal Due Date: JUNE 1, 08 **Cal Blocks:** V2/FBH/SDH **Couplant:** UTX **T.V.:**

Scanning Limitation: GEOMETRIC CONFIGURATION

Transducer Angle	Frequency (MHZ)	Crystal Size (mm)	Primary Response (dB) (%)	Scanning Sensitivity (dB)	Calibration Range (mm)
------------------	--------------------	----------------------	------------------------------	------------------------------	---------------------------

60	2.25	12.7	1ST HOLE @80%	6 DB +	50
70	2.25	12.7	1ST HOLE @80%	6 DB +	50

EXAMINATION RESULTS:

ULTRASONIC EXAMINATION WAS CARRIED OUT ON THE FOLLOWING CAT D NOZZLE WELDS
ON VESSEL SER# H16-S133 PRIOR TO PWHT, JOB# 5252C-UT-1
- N1, N2, N3, N4, N5, N6&N8, N7, N10 AND N11

THE ABOVE WAS FOUND FREE OF RELEVANT INDICATIONS AND ACCEPTABLE TO
CODE AT TIME OF EXAMINATION.

VISUAL INSPECTION PERFORMED PRIOR TO ULTRASONIC EXAMINATION.

INTERPRETATION IS IN ACCORDANCE WITH THE ABOVE MENTIONED STANDARDS TO THE BEST OF MY ABILITY.

Technician(s)

Print: Yvonne Anderson
Ass't:

CGSB/SNT Level: II/III
CGSB/SNT Level:

Reg No.: 4642
Reg No.:

Sign:
Sign:

THE ABOVE REPRESENTATION IS A PROFESSIONAL OPINION, FINAL INTERPRETATION IS THE RESPONSIBILITY OF THE
CUSTOMER. I HAVE RECEIVED AND AM IN FULL AGREEMENT WITH THE CONTENTS OF THIS REPORT.

Customer Representative:
TOTAL HOURS: 1

S.T.

O.T.

Date: July 12, 2007



AB

These items shipped on our sales order:
\$21512

Attention: Quality Control Manager

Subject: Customer P.O.: 001600

[illegible]

Chris Adams

Page 1

FABRICATION & ENGINEERING

T5S 1W5

TAG:

16" OD x 3/8"nom .313"min 2:1 S.E. 2" S.F.

CUSTOMER P.O. NO.	001600
CESSCO W.O. NO.	S21512
DATE CERT. ORIGINATED	27-Apr-07

[illegible]

The chemical and physical properties as indicated on the attached report are the results of the Mill Tests of the raw material used in the manufacture of these products and are certified to meet only the minimum requirements of the ASME and ASTM specifications for this material

- | | | | |
|-------------------------------------|--|-------------------------------------|---|
| ☒ | The items listed above were formed in strict accordance with all applicable requirements of the ASME Boiler and Pressure Vessel Code Section VIII, Div. 1. | ☐ | We hereby certify that these heads were heated to 1950°F and water quenched in strict accordance with all applicable specifications |
| ☒ | We hereby certify that these heads were hot formed at the required normalizing temperature and air cooled, in accordance with all applicable specifications. | ☐ | We hereby certify that these heads were heated to 1950°F and rapid air cooled in strict accordance with all applicable specifications |
| ☐ | We hereby certify that these heads were cold formed in compliance with ASME Boiler and Pressure Vessel Code, Section VIII, Div. 1 paragraph UCS - 70 (d). | ☒ | We hereby certify that these heads comply with tolerances of UG - 81 of ASME Section VIII, Div. 1. |

HOT FORMING (NORMALIZING) TEMP. OF 1650° F IS HELD FOR 1 HOUR/INCH OF THICKNESS PRIOR TO FORMING

WE HEREBY CERTIFY THAT THIS REPORT COVERING THE ABOVE AND ATTACHED INFORMATION IS TRUE AND CORRECT AS SHOWN AND CONTAINED IN OUR RECORDS.

Chris Adams

Chris Adams
QUALITY CONTROL

INSPECTION & TEST PLAN

CUSTOMER: VaporTech Energy Services	JOB NO: S21512
DESCRIPTION : HEADS	TAG NO: 5252A-E
10 PCS 16" OD x 3/8"nom .313"min 2:1 S.E. 2" S.F.	P.O.NO: 001600
	PAGE NO: 1 of 1

INSP. POINT	INSPECTION, EXAMINATION OR TESTING INSTRUCTIONS AND ACCEPTANCE CRITERIA	CESSCO				
		B.H.N	SIGN	DATE	LOG NO.	MIN THK
1	MATERIAL RECEIVED, INSPECTION COMPLETED		✓	4/24/07	25993	367
2	MILL TEST REPORTS CHECKED AND TRACEABLE				✓	366
3	CHECK HEAD FOR DEFECTS		✓	4/25/07	✓	366
4	VERIFY ALL STAMPING ON HEAD		✓	✓	✓	372
5	CIRCLE STAMPING ON HEAD		✓	✓	✓	369
6	BEVEL: IN: OUT: 30° N.L.		✓	09/26/07	✓	369
7	STRAIGHT FLANGE LENGTH REQUIREMENT: 2"		✓	✓	✓	367
8	CUSTOMER REQUIREMENTS:				✓	365
	HIC: SELECT CHEM:				✓	368
	U.T. GRID: B.H.N.: MISC:				✓	371
	TO MATCH: SCH:					
9	CHECK HEAD FOR DEFECTS AFTER MACHINING		✓			
10	CHECK FINISHED BEVEL		✓			
11	FINISHED DIAMETER CHECK		✓			
12	MACHINING TOLERANCE	O.D.	I.D.	HEIGHT		
		+1/8"	+1/8"	+1"		
		-1/8"	-1/8"	-1/4"		
	CLEAR TO SHIP		✓		✓	

* NOTE: MIN THK DETERMINED AFTER HOT FORMING.

REMARKS:

K-04158

Scanned


**ILSENBURGER
GROBBLECH**

Ein Unternehmen der Salzgitter Gruppe

**Inspection certificate 3.1/3.1.B
DIN EN 10204**

 No. (A03) 379329
 Page 1/15
 Date 05.08.2005

(A02)

 No. (A01) 605/1231
 Purchase Salzgitter Mannesmann
 (A02) International GmbH
 40409 Düsseldorf

27.05.2005

 No. (A07)
 Customer
 (A06)

 P.O. No. 1-PPV-1894
 Cessco Steel
 CDN- New Westminster

 Product Heavy plate
 (B01)

 Works order No. 0000009017
 (A08)

 Dispatch note No. 0080554876
 27.07.2005
 WS

 Steel grade and terms of delivery SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
 (B02-B03) SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
 SA 516(M), SA 20(M)
 ASME sect. II part A ed. 2004
 ASTM A 516(M) -03, A 20(M) -03
 CESSCO Rev.11 Feb.2005

 Inspection
 (A09)

CESSCO
PLATE LOG
NO:

 Marking of the product (B06)
 Trademark/Steelgrade/Heat-No/Product-No/
 inspector's stamp

Material data (B01-B08)

Item	Quantity (B05)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B08-B11)	in x in x in
01	1	231134 1	62364	N	0,313 x 120,000 x 384,000	- 25980 - 25983
01	1	231134 2	62364	N	0,313 x 120,000 x 384,000	- 25982 - 25983
01	1	231135 1	61927	N	0,313 x 120,000 x 384,000	- 25982 - 25983
01	1	231135 2	61927	N	0,313 x 120,000 x 384,000	- 25982 - 25983
02	1	227667 1	24058	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227667 2	24058	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227668 1	24058	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227668 2	24058	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227669 1	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227669 2	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227670 1	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227670 2	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227671 1	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227671 2	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227672 1	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227672 2	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227673 1	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227673 2	62367	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227674 1	62365	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227674 2	62365	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227675 1	62364	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	227675 2	62364	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	228174 1	61927	N	0,375 x 96,000 x 384,000	- 25988 - 25988
02	1	228174 2	61927	N	0,375 x 96,000 x 384,000	- 25988 - 25988
03	1	231129 1	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231129 2	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231130 1	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231130 2	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231131 1	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231131 2	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231132 1	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231132 2	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231133 1	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
03	1	231133 2	00600	N	0,375 x 120,000 x 480,000	- 26000 - 26000
04	1	229887 1	74666	N	0,500 x 96,000 x 384,000	- 26020 - 26028
04	1	229887 2	74666	N	0,500 x 96,000 x 384,000	- 26020 - 26028

N: normalized

**CHEMICAL & PHYSICALS
CHECKED**

ASME Ed. 1.1 Add.

Cessco By (u)

 We hereby certify that the delivered material complies with the terms of the order.
 (Z01)

DM-Systeme Certification as per ISO 9001 since 28 February 1998

 Trademark
 (A04)

 Ilsenburger Grobblech GmbH
 Veckenstedter Weg 10
 D-38871 Ilseburg
 (A01)

 Inspection Stamp
 (Z03)

 AUG 12 2005
 Inspection Report
 (Z02)

Cylon

Inspection certificate 3.1/3.1.B DIN EN 10204 (A02)		No. (A03) 379329 Page 2/15 Date 05.08.2005	
No. (A07) 605/1231 Purchaser Salzgitter Mannesmann (A05) International GmbH 40409 Düsseldorf	27.05.2005	No. (A07) P.O. No. 1-PPV-1894 Customer Cessco Steel (A05) CDN- New Westminster	
Product Heavy plate (B01)		Works order No. 0000009017 (A08) Dispatch note No. 0080554876 (A05) 27.07.2005 Inspection WS (A05)	
Steel grade and terms of delivery SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV (B02-B03) SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV SA 516(M), SA 20(M) ASME sect. II part A ed. 2004 ASTM A 516(M) -03, A 20(M) -03 CESSCO Rev.11 Feb.2005			

Material data (B01-B09)					
Item	Quantity (B08)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B05-B11)
					in x in x in
04	1	229887 3	74666	N	0,500 x 96,000 x 384,000 - 26029
04	1	229888 1	24060	N	0,500 x 96,000 x 384,000 - 26018
04	1	229888 2	24060	N	0,500 x 96,000 x 384,000 - 26018
04	1	229889 1	24060	N	0,500 x 96,000 x 384,000 - 26022
04	1	229889 2	24060	N	0,500 x 96,000 x 384,000 - 26025
04	1	229890 1	24060	N	0,500 x 96,000 x 384,000 - 26015
04	1	229890 2	24060	N	0,500 x 96,000 x 384,000 - 26023
04	1	229891 1	24060	N	0,500 x 96,000 x 384,000 - 26017
04	1	229891 2	24060	N	0,500 x 96,000 x 384,000 - 26017
04	1	229892 1	61925	N	0,500 x 96,000 x 384,000 - 26016
04	1	229892 2	61925	N	0,500 x 96,000 x 384,000 - 26016
04	1	229892 3	61925	N	0,500 x 96,000 x 384,000 - 26016
04	1	229893 1	74666	N	0,500 x 96,000 x 384,000 - 26030
04	1	229893 2	74666	N	0,500 x 96,000 x 384,000 - 26030
04	1	229893 3	74666	N	0,500 x 96,000 x 384,000 - 26034
04	1	236409 1	62367	N	0,500 x 120,000 x 384,000 - 26034
05	1	227089 1	74503	N	0,500 x 120,000 x 384,000 - 26037
05	1	227089 2	74503	N	0,500 x 120,000 x 384,000 - 26037
05	1	227090 1	47024	N	0,500 x 120,000 x 384,000 - 26038
05	1	227090 2	47024	N	0,500 x 120,000 x 384,000 - 26038
05	1	227091 1	74503	N	0,500 x 120,000 x 384,000 - 26043
05	1	227091 2	74503	N	0,500 x 120,000 x 384,000 - 26043
05	1	227092 1	47024	N	0,500 x 120,000 x 384,000 - 26040
05	1	227092 2	47024	N	0,500 x 120,000 x 384,000 - 26040
05	1	227093 1	47023	N	0,500 x 120,000 x 384,000 - 26045
05	1	227093 2	47023	N	0,500 x 120,000 x 384,000 - 26045
06	1	231119 1	00600	N	0,625 x 120,000 x 384,000 - 26044
06	1	231119 2	00600	N	0,625 x 120,000 x 384,000 - 26044
06	1	231119 3	00600	N	0,625 x 120,000 x 384,000 - 26044
06	1	231120 1	00600	N	0,625 x 120,000 x 384,000 - 26044
06	1	231120 2	00600	N	0,625 x 120,000 x 384,000 - 26051
06	1	231120 3	00600	N	0,625 x 120,000 x 384,000 - 26051
07	1	229816 1	00600	N	0,625 x 96,000 x 384,000 - 26052
07	1	229816 2	00600	N	0,625 x 96,000 x 384,000 - 26052
07	1	229816 3	00600	N	0,625 x 96,000 x 384,000 - 26052
07	1	229817 1	00600	N	0,625 x 96,000 x 384,000 - 26053
07	1	229817 2	00600	N	0,625 x 96,000 x 384,000 - 26053
07	1	229817 3	00600	N	0,625 x 96,000 x 384,000 - 26053

N: normalized

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

CEM-System: Certification as per ISO 9001 since 28 February 1990

 Trademark
(A04)

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-38831 Ilseburg
(A01)

 Inspection Stamp
(Z03)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B
DIN EN 10204

No. (A03) 379329
Page 3/15
Date 05.08.2005

No. (A07) 605/1231
Purchaser (A06) Salzgitter Mannesmann
International GmbH
40409 Düsseldorf

27.05.2005 No. (A07) P.O. No. 1-PPV-1894
Customer (A06) Cessco Steel
CDN- New Westminster

Product (B01) Heavy plate

Work order No. 0000009017
(A06)
Dispatch note No. 0080554876
27.07.2005
Inspection (A05) WS

Steel grade and terms of delivery (B02-B03)
SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Material data (B01-B03)

Item	Quantity (B06)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B08-B11)	in x in x in
07	1	232211 1	00600	N	0,625 x 96,000 x 384,000	- 26061
07	1	232211 2	00600	N	0,625 x 96,000 x 384,000	- 26056
07	1	232211 3	00600	N	0,625 x 96,000 x 384,000	- 26057
07	1	232212 1	00600	N	0,625 x 96,000 x 384,000	- 26062
07	1	232212 2	00600	N	0,625 x 96,000 x 384,000	- 26068
07	1	232212 3	00600	N	1,000 x 96,000 x 480,000	- 26065
08	1	227362 1	74667	N	1,000 x 96,000 x 480,000	- 26067
08	1	227363 1	74667	N	1,000 x 96,000 x 480,000	- 26086
08	1	227364 1	47246	N	1,000 x 96,000 x 480,000	- 26087
08	1	227365 1	24060	N	1,000 x 96,000 x 480,000	- 26077
08	1	227366 1	61927	N	1,000 x 96,000 x 480,000	- 26078
08	1	227367 1	61927	N	1,000 x 96,000 x 480,000	- 26074
08	1	227368 1	61927	N	1,000 x 120,000 x 480,000	- 26069
09	1	230838 1	00599	N	1,000 x 120,000 x 480,000	- 26084
09	1	230839 1	00599	N	1,000 x 120,000 x 480,000	- 26089
09	1	230840 1	00599	N	1,000 x 120,000 x 480,000	- 26092
09	1	230841 1	00599	N	1,000 x 120,000 x 480,000	- 26094
09	1	230842 1	00599	N	1,000 x 120,000 x 480,000	- 26089
09	1	230843 1	00599	N	1,000 x 120,000 x 480,000	- 26092
09	1	230844 1	00599	N	1,000 x 120,000 x 480,000	- 26094
09	1	230845 1	00599	N	1,000 x 120,000 x 480,000	- 26089
09	1	231108 1	00600	N	1,000 x 120,000 x 480,000	- 26092
09	1	231109 1	00600	N	1,000 x 120,000 x 480,000	- 26094
09	1	231110 1	00600	N	1,000 x 120,000 x 480,000	- 26089
09	1	231111 1	00600	N	1,000 x 120,000 x 480,000	- 26092
09	1	231112 1	00600	N	1,000 x 120,000 x 480,000	- 26094
09	1	231113 1	00600	N	1,000 x 120,000 x 480,000	- 26089
09	1	231114 1	00599	N	1,000 x 120,000 x 480,000	- 26092
09	1	231115 1	00599	N	1,000 x 120,000 x 480,000	- 26094
09	1	231116 1	00599	N	1,000 x 120,000 x 480,000	- 26089
09	1	231117 1	00599	N	1,000 x 120,000 x 480,000	- 26092
09	1	231118 1	00599	N	1,000 x 120,000 x 480,000	- 26094
09	1	231248 1	00602	N	1,375 x 96,000 x 384,000	- 26089
10	1	231249 1	00602	N	1,375 x 96,000 x 384,000	- 26092
10	1	231250 1	00602	N	1,375 x 96,000 x 384,000	- 26094
10	1	231251 1	00602	N	1,375 x 120,000 x 384,000	- 26089
11	1	231103 1	00602	N	1,375 x 120,000 x 384,000	- 26092
11	1	231104 1	00602	N	1,375 x 120,000 x 384,000	- 26094
11	1	231105 1	00602	N	1,375 x 120,000 x 384,000	- 26089

N: normalized

We hereby certify that the delivered material complies with the terms of the order.
(201)

DIN System: Certification as per ISO 3801 since 28 February 1990

Tredemärk
(A04)

Ilsenburg Grobblech GmbH
Vöckernstadter Weg 10
D-36871 Ilseburg
(A01)

Inspection Stamp
(203)

Inspection Representative
(202)

Cyron

Inspection certificate 3.1/3.1.B
DIN EN 10204
(A2)

No. (A07) 605/1231
Purchaser (A08) Salzgitter Mannesmann International GmbH
40409 Düsseldorf

27.05.2005 No. (A07) P.O. No. 1-PPV-1894
Customer (A08) Cessco Steel
CDN- New Westminster

Product (B01) Heavy plate

Werk order No. (A09) 0000009017
Dispatch note No. (A10) 0080554876
27.07.2005

Steel grade and terms of delivery (B02-B03) SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Inspection (A05) WS

Material data (B04-B08)					
Item	Quantity (B06)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B09-B11) in x in x in
11	1	231106 1	00602	N	1,375 x 120,000 x 384,000 - 2 6 0 9 6
01	4	Weight	7.420	kg	N: normalized
02	20	(B12)	35.580		
03	10		27.800		
04	20		47.420		
05	10		29.640		
06	6		22.236		
07	12		35.580		
08	7		41.496		
09	20		148.200		
10	4		26.080		
11	4		32.600		
Σ	117		454.052		

Dimensional check and visual examination of the surface condition:
without objection

Ladle analysis (C70-C95)										
Heat No. (B07)	C % ≤0.20	Si % 0.15-0.45	Mn % 0.15-1.20	P % ≤0.010	S % ≤0.003	N %	Al % ≥0.020	Cu % ≤0.20	Cr % ≤0.20	Ni % ≤0.30
00599	0,16	0,37	1,18	0,010	0,003	0,003	0,040	0,04	0,05	0,19
00600	0,16	0,37	1,16	0,010	0,002	0,004	0,042	0,03	0,05	0,19
00602	0,20	0,25	1,17	0,009	0,002	0,004	0,037	0,01	0,03	0,04
24058	0,17	0,36	1,16	0,010	0,002	0,003	0,035	0,02	0,03	0,16
Heat No. (B07)	Mo % ≤0.15	V % ≤0.015	Ti % ≤0.01	Nb % ≤0.02	B % ≤0.0005	Ca % ≤0.005	O ppm ≤50	Nb+V % ≤0.03	EV1 1) % ≤0.50	EV2 2) % ≤0.40
00599	0,01	0,003	0,01	0,02	0,0002	0,002	3,6	0,02	0,13	0,38
00600	0,00	0,004	0,00	0,02	0,0002	0,002	4,1	0,02	0,10	0,38
00602	0,00	0,003	0,00	0,02	0,0001	0,001	4,1	0,02	0,06	0,40
24058	0,00	0,002	0,00	0,02	0,0001	0,001	4,2	0,02	0,07	0,38

1) EV1: Nb+V+Ti+Cu+Mo+Cr
2) EV2: C+Mn+Si+Mo+S+N+V+Cr/5+V/5+Cu/15

We hereby certify that the delivered material complies with the terms of the order.

(201)

DIN-SYSTEM Certification as per ISO 9001 since 28 February 1993

Trademark (A04)

Ilseburger Grobblech GmbH
Vackertstraße Weg 10
D-38871 Ilseburg
(A01)

Inspection Stamp (A03)

Inspection Representative (202)

Cyron

Inspection certificate 3.1/3.1.B DIN EN 10204 (A02)		No. (A03) 379329
		Page 5/15
		Date 05.08.2005
No. (A07) 605/1231	27.05.2005	No. (A07) P.O. No. 1-PPV-1894
Purchaser (A06) Salzgitter Mannesmann International GmbH 40409 Düsseldorf	Customer (A06) Cessco Steel CDN- New Westminster	
Product (B01) Heavy plate	Works order No. (A08) 0000009017	
Steel grade and terms of delivery (B02-B03) SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV SA 516(M), SA 20(M) ASME sect. II part A ed. 2004 ASTM A 516(M) -03, A 20(M) -03 CESSCO Rev.11 Feb.2005	Diagatch note No. 0080554876 27.07.2005	Inspection (A05) WS

Ladle analysis (C74-C91)
 Manufacturer standard

Heat No. (B07)	C %	Si %	Mn %	P %	S %	N %	Al %	Cu %	Cr %	Ni %
	≤0,20	0,15-0,45	0,85-1,20	≤0,010	≤0,005		≥0,020	≤0,30	≤0,20	≤0,30
24060	0,16	0,34	1,17	0,010	0,002	0,004	0,034	0,02	0,03	0,18
47023	0,17	0,33	1,14	0,010	0,003	0,004	0,040	0,03	0,05	0,18
47024	0,16	0,35	1,16	0,010	0,003	0,004	0,047	0,03	0,05	0,18
47246	0,16	0,34	1,13	0,009	0,002	0,003	0,030	0,02	0,03	0,18
61925	0,16	0,34	1,14	0,009	0,001	0,004	0,044	0,02	0,03	0,17
61927	0,16	0,33	1,16	0,010	0,001	0,004	0,041	0,02	0,03	0,17
62364	0,17	0,33	1,13	0,010	0,001	0,003	0,030	0,02	0,03	0,18
62365	0,17	0,34	1,13	0,010	0,001	0,004	0,030	0,02	0,03	0,17
62367	0,16	0,34	1,14	0,009	0,001	0,004	0,028	0,02	0,03	0,19
74503	0,16	0,32	1,13	0,009	0,003	0,004	0,028	0,03	0,04	0,18
74666	0,15	0,32	1,14	0,009	0,003	0,005	0,049	0,02	0,03	0,18
74667	0,19	0,24	1,17	0,010	0,002	0,005	0,031	0,02	0,03	0,04
Heat No. (B09)	Mo %	V %	Ti %	Nb %	B %	Ca %	O ppm	Nb+V %	EV1 1) %	EV2 2) %
	≤0,13	≤0,015	≤0,01	≤0,02	≤0,0005	≤0,006	≤50	≤0,03	≤0,50	≤0,40
24060	0,00	0,002	0,00	0,02	0,0001	0,001	4,7	0,02	0,07	0,37
47023	0,00	0,004	0,00	0,02	0,0001	0,001	3,8	0,02	0,10	0,38
47024	0,00	0,003	0,00	0,02	0,0001	0,001	4	0,02	0,10	0,38
47246	0,00	0,004	0,00	0,02	0,0001	0,001	3,9	0,02	0,07	0,37
61925	0,00	0,002	0,00	0,02	0,0000	0,000	4,3	0,02	0,07	0,37
61927	0,00	0,002	0,00	0,02	0,0000	0,000	3,9	0,02	0,07	0,37
62364	0,00	0,001	0,00	0,02	0,0000	0,000	4,1	0,02	0,07	0,38
62365	0,00	0,001	0,00	0,02	0,0000	0,000	3,9	0,02	0,07	0,37
62367	0,00	0,001	0,00	0,02	0,0000	0,000	3,9	0,02	0,07	0,37
74503	0,00	0,002	0,00	0,01	0,0001	0,001	4,2	0,01	0,08	0,37
74666	0,00	0,003	0,00	0,02	0,0001	0,001	4,2	0,02	0,07	0,36
74667	0,00	0,002	0,00	0,02	0,0001	0,001	4,1	0,02	0,07	0,40

1) EV1: Nb+V+Ti+Cu+Mo+Cr

2) EV2: CEV=C+Mn/6+Mo/5+N/16+Cr/5+V/5+Cu/15

Steelmaking process: Basic oxygen process
 (C70)

Date:	<u>6/15/09</u>	Init:	<u>MAS</u>
PO#:	<u>1600</u>		
Job#:	<u>5252</u>		
CE Calculated:	<u>137</u>		
MTR Accepted:	☒ Yes	☐ No	

 We hereby certify that the delivered material complies with the terms of the order.
 (Z01)
 QMS-System Certification as per ISO 9001 since 28 February 1998


 Teilnehmend
 (A04)

 Ilseburger Grobblech GmbH
 Veckenstedter Weg 10
 D-38071 Hainburg
 (A01)


 Inspection Stamp
 (Z02)

 Inspection Representative
 (Z02)

Cyron

Inspection certificate 3.1/3.1.B
DIN EN 10204
(A02)

No. (A07) 605/1231
Purchaser: Salzgitter Mannesmann
(A08) International GmbH
40409 Düsseldorf

27.05.2005 No. (A07) Customer (A08) P.O. No. 1-PPV-1894
Cessco Steel
CDN- New Westminster

Product Heavy plate (B01)

Steel grade and terms of delivery (B02-B03) SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

No. (A03) 379329
Page 6/15
Date 05.08.2005

Works order No. (A06) 0000009017
Dispatch note No. (A08) 0080554876
27.07.2005
Inspection (A05) WS

Check analysis (C70-C98)

Specimen No. (C80)	Heat No. (B07)	C %	Si %	Mn %	P %	S %	N %	Al %	Cu %
		≤0,20	0,15-0,45	0,75-1,50	≤0,020	≤0,005			≤0,30
230845	00599	0,14	0,37	1,18	0,007	0,003	0,004	0,043	0,04
229817	00600	0,17	0,35	1,21	0,010	0,003	0,005	0,036	0,02
231105	00602	0,20	0,24	1,14	0,009	0,003	0,004	0,032	0,01
196766 *)	24058	0,17	0,37	1,15	0,014	0,003	0,002	0,034	0,02
196751 *)	24060	0,16	0,32	1,17	0,008	0,001	0,003	0,035	0,02
217756 *)	47023	0,15	0,32	1,17	0,011	0,003	0,003	0,042	0,02
218665 *)	47024	0,17	0,35	1,11	0,008	0,001	0,004	0,049	0,03
221557 *)	47246	0,14	0,31	1,16	0,005	0,003	0,004	0,025	0,02
213213 *)	61925	0,16	0,34	1,18	0,005	0,000	0,005	0,043	0,02
Specimen No. (C80)	Heat No. (B07)	Cr %	Ni %	Mo %	V %	Ti %	Nb %	B %	Ca %
		≤0,20	≤0,30	≤0,15	≤0,015	≤0,010	≤0,02	≤0,0005	≤0,006
230845	00599	0,06	0,18	0,00	0,002	0,003	0,01	0,0004	0,001
229817	00600	0,05	0,17	0,00	0,005	0,005	0,02	0,0001	0,004
231105	00602	0,04	0,05	0,00	0,004	0,005	0,02	0,0002	0,004
196766 *)	24058	0,03	0,18	0,00	0,002	0,000	0,02	0,0003	0,001
196751 *)	24060	0,03	0,19	0,00	0,003	0,001	0,02	0,0003	0,003
217756 *)	47023	0,04	0,17	0,01	0,003	0,005	0,02	0,0000	0,002
218665 *)	47024	0,04	0,17	0,00	0,004	0,001	0,02	0,0004	0,000
221557 *)	47246	0,02	0,19	0,00	0,003	0,001	0,02	0,0002	0,002
213213 *)	61925	0,03	0,16	0,00	0,002	0,002	0,02	0,0000	0,000
Specimen No. (C80)	Heat No. (B07)	O ppm	Nb+V %	EV1 1) %	EV2 2) %				
		≤50		≤0,50					
230845	00599	3,8	0,012	0,12	0,36				
229817	00600	4,1	0,025	0,10	0,40				
231105	00602	4,1	0,024	0,08	0,40				
196766 *)	24058	3,9	0,022	0,07	0,38				
196751 *)	24060	4,5	0,023	0,07	0,38				
217756 *)	47023	3,7	0,023	0,10	0,37				
218665 *)	47024	3,9	0,024	0,10	0,38				
221557 *)	47246	3,8	0,023	0,06	0,35				
213213 *)	61925	4,2	0,022	0,07	0,38				

1) EV1: Nb+V+Ti+Cu+Mo+Cr
*) The sample product is not part of the delivery

2) EV2: C+Mn+Nb+Mo+S+N+V+Cu+Ti

We hereby certify that the delivered material complies with the terms of the order.
(Z01)
DIN-Syntax Certification no per ISO 9001 since 28 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Vackenhofstr. Weg 10
D-38871 Ilseburg
(A01)

Inspection Stamp
(Z03)
Inspection Representative
(Z02)
Cyron

Inspection certificate 3.1/3.1.B		No. (A01)	379329
DIN EN 10204		Page	7/15
(A02)		Date	05.08.2005
No. (A07)	605/1231	27.05.2005	No. (A07)
Purchaser (A04)	Salzgitter Mannesmann International GmbH 40409 Düsseldorf	Customer (A06)	Cessco Steel CDN- New Westminster
Product (B01)	Heavy plate	Works order No. (A08)	0000009017
Steel grade and terms of delivery (B02-B03)	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV SA 516(M), SA 20(M) ASME sect. II part A ed. 2004 ASTM A 516(M) -03, A 20(M) -03 CESSCO Rev.11 Feb.2005	Dispatch note No. (A05)	0080554876 27.07.2005 WS

Check analysis (C70-C30)

Specimen No. (C00)	Heat No. (B07)	C % ≤0,20	Si % 0,13-0,45	Mn % 0,79-1,30	P % ≤0,020	S % ≤0,005	N %	Al %	Cu % ≤0,34
215259 *)	61927	0,16	0,30	1,16	0,006	0,002	0,004	0,043	0,02
220824 *)	62364	0,15	0,32	1,10	0,006	0,001	0,003	0,029	0,02
227674	62365	0,19	0,31	1,15	0,012	0,000	0,003	0,037	0,02
227669	62367	0,15	0,35	1,17	0,012	0,002	0,006	0,023	0,02
216884 *)	74503	0,15	0,31	1,12	0,009	0,003	0,004	0,026	0,03
220069 *)	74666	0,17	0,31	1,09	0,011	0,000	0,007	0,047	0,02
224336 *)	74667	0,18	0,25	1,22	0,010	0,003	0,004	0,031	0,02
Specimen No. (C00)	Heat No. (B07)	Cr % ≤0,20	Ni % ≤0,30	Mo % ≤0,13	V % ≤0,015	Ti % ≤0,010	Nb % ≤0,02	B % ≤0,0005	Ca % ≤0,005
215259 *)	61927	0,02	0,18	0,00	0,001	0,000	0,02	0,0001	0,001
220824 *)	62364	0,04	0,16	0,00	0,002	0,002	0,02	0,0000	0,001
227674	62365	0,03	0,19	0,00	0,000	0,003	0,02	0,0000	0,001
227669	62367	0,03	0,16	0,00	0,002	0,001	0,02	0,0000	0,000
216884 *)	74503	0,03	0,17	0,00	0,003	0,001	0,02	0,0000	0,001
220069 *)	74666	0,03	0,18	0,00	0,004	0,002	0,02	0,0003	0,002
224336 *)	74667	0,03	0,03	0,00	0,002	0,004	0,01	0,0004	0,001
Specimen No. (C00)	Heat No. (B07)	O ppm ≤54	Nb+V % ≤0,30	EV1 1) % ≤0,30	EV2 2) %				
215259 *)	61927	4,2	0,021	0,06	0,37				
220824 *)	62364	3,6	0,022	0,08	0,35				
227674	62365	3,8	0,020	0,07	0,40				
227669	62367	3,8	0,022	0,07	0,36				
216884 *)	74503	4,1	0,023	0,08	0,36				
220069 *)	74666	4,1	0,024	0,08	0,37				
224336 *)	74667	3,9	0,012	0,07	0,39				

1) EV1: Nb+V+Ti+Cu+Mo+Cr

*) The sample product is not part of the delivery

2) EV2: C+Mn+Si+Mo+S+P+Ni+Cr+V+Cu+Ti

Fully killed

Grain size according to ASTM: 7 and finer

Produced with sulfid shape control.

We hereby certify that the delivered material complies with the terms of the order.

(Z01)

DIN-System Certification as per ISO 9001 since 28 February 1990

 Trademark (A04)

ILsenburger Grobblech GmbH
Vöckertsdorfer Weg 10
D-38871 Ilsenburg
(A01)

 Inspection Stamp (Z03)

Inspection Representative (Z02)

Cyrion

Inspection certificate 3.1/3.1.B		No. (A03)	379329
DIN EN 10204		Page	8/15
(A02)		Date	05.08.2005
No. (A01)	605/1231	27.05.2005	No. (A01)
Purchaser	Salzgitter Mannesmann	Customer	P.O. No. 1-PPV-1894
(A04)	International GmbH	(A05)	Cessco Steel
	40409 Düsseldorf		CDN- New Westminster
Product	Heavy plate	Works order No.	0000009017
(B01)		(A06)	Dispatch note No.
			0080554876
Steel grade and terms of delivery	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV	Inspection	WS
(B02-B03)	SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV	(A06)	27.07.2005
	SA 516(M), SA 20(M)		
	ASME sect. II part A ed. 2004		
	ASTM A 516(M) -03, A 20(M) -03		
	CESSCO Rev.11 Feb.2005		

Material is vacuum degassed

Tensile test (C10-C24)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type (C10)	Yield strength (C11) Rp0,2 N/mm2 ≥ 260	Tensile strength (C12) Rm N/mm2 485 - 620	Elongation (C13) 8 in % ≥ 17		
227089	74503	K6G	Q	N	P	364	499	22		
227090	47024	K6G	Q	N	P	362	508	24		
227091	74503	K6G	Q	N	P	369	501	23		
227092	47024	K6G	Q	N	P	356	515	26		
227093	47023	K6G	Q	N	P	366	509	22		
227362	74667	K6G	Q	N	P	352	509	25		
227363	74667	K6G	Q	N	P	360	515	28		
227364	47246	K6G	Q	N	P	349	508	27		
227365	24060	K6G	Q	N	P	356	512	25		
227366	61927	K6G	Q	N	P	357	511	29		
227367	61927	K6G	Q	N	P	369	514	27		
227368	61927	K6G	Q	N	P	368	511	27		
227667	24058	K6G	Q	N	P	386	529	22		
227668	24058	K6G	Q	N	P	384	529	24		
227669	62367	K6G	Q	N	P	395	528	23		
227670	62367	K6G	Q	N	P	387	533	23		
227671	62367	K6G	Q	N	P	392	530	23		
227672	62367	K6G	Q	N	P	405	528	22		
227673	62367	K6G	Q	N	P	387	532	23		
227674	62365	K6G	Q	N	P	390	534	25		
227675	62364	K6G	Q	N	P	391	531	23		
228174	61927	K6G	Q	N	P	386	520	24		
229816	00600	K6G	Q	N	P	359	510	25		
229817	00600	K6G	Q	N	P	358	509	23		
229887	74666	K6G	Q	N	P	375	515	21		
229888	24060	K6G	Q	N	P	386	519	27		
229889	24060	K6G	Q	N	P	372	523	22		
229890	24060	K6G	Q	N	P	383	523	20		
229891	24060	K6G	Q	N	P	371	513	20		
229892	61925	K6G	Q	N	P	380	520	22		
229893	74666	K6G	Q	N	P	375	507	22		
230838	00599	K6G	Q	N	P	349	506	28		

- 1) K: Top
2) 0: 1/8 Width
3) 0: Thickness of product

- 4) 0: transversal
5) N: normalized
6) P: prime

We hereby certify that the delivered material complies with the terms of the order.

(Z01)

QM-System Certification as per ISO 9001 since 28 February 1998

 Trademark
(A04)

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-38971 Ilseburg
(A01)

 Inspection Stamp
(Z03)

Inspection Representative
(Z02)

Cyron



ILSENBURGER
GROBBLECH

Ein Unternehmen der Salzgitter Gruppe

Inspection certificate 3.1/3.1.B
DIN EN 10204
(A02)

No. (A03) 379329
Page 9/15
Date 05.08.2005

No. (A07) 605/1231
Purchaser Salzgitter Mannesmann
(A06) International GmbH
40409 Düsseldorf

27.05.2005

No. (A07) P.O. No. 1-PFV-1894
Customer Cessco Steel
(A06) CDN- New Westminster

Product Heavy plate
(B01)

Works order No. 0000009017
(A04)

Dispatch note No. 0080554876
27.07.2005
(A05) WS

Steel grade and terms of delivery SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
(B02-B03) SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Tensile test (C10-C29)

Specimen No. (C01)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type (C10)	Yield strength (C11) Rp0,2 N/mm2 ≥280	Tensile strength (C12) Rm N/mm2 485-610	Elongation (C13) 8 in % ≥17		
230839	00599	K6G	Q	N	P	355	504	29		
230840	00599	K6G	Q	N	P	350	504	28		
230841	00599	K6G	Q	N	P	354	505	28		
230842	00599	K6G	Q	N	P	353	503	26		
230843	00599	K6G	Q	N	P	348	504	28		
230844	00599	K6G	Q	N	P	346	503	29		
230845	00599	K6G	Q	N	P	348	502	29		
231103	00602	K6G	Q	N	P	340	510	29		
231104	00602	K6G	Q	N	P	342	513	29		
231105	00602	K6G	Q	N	P	337	512	27		
231106	00602	K6G	Q	N	P	349	515	28		
231108	00600	K6G	Q	N	P	342	495	28		
231109	00600	K6G	Q	N	P	339	496	28		
231110	00600	K6G	Q	N	P	339	496	26		
231111	00600	K6G	Q	N	P	348	502	29		
231112	00600	K6G	Q	N	P	341	500	31		
231113	00600	K6G	Q	N	P	352	504	30		
231114	00599	K6G	Q	N	P	349	507	27		
231115	00599	K6G	Q	N	P	353	504	26		
231116	00599	K6G	Q	N	P	345	506	28		
231117	00599	K6G	Q	N	P	352	504	27		
231118	00599	K6G	Q	N	P	355	507	29		
231119	00600	K6G	Q	N	P	353	501	28		
231120	00600	K6G	Q	N	P	356	508	25		
231129	00600	K6G	Q	N	P	384	520	26		
231130	00600	K6G	Q	N	P	379	517	27		
231131	00600	K6G	Q	N	P	370	517	24		
231132	00600	K6G	Q	N	P	368	513	25		
231133	00600	K6G	Q	N	P	372	520	25		
231134	62364	K6G	Q	N	P	389	535	20		
231135	61927	K6G	Q	N	P	398	525	21		
231248	00602	K6G	Q	N	P	353	520	29		
231249	00602	K6G	Q	N	P	351	519	27		
231250	00602	K6G	Q	N	P	352	518	26		
231251	00602	K6G	Q	N	P	345	515	28		

- 1) K: Top
2) H: 1/8 Width
3) G: Thickness of product

- 4) D: transversal
5) N: normalized
6) P: primed

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

DNV-System: Certificate as per ISO 9001 since 28 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Vackensieder Weg 10
D-36871 Ilseburg
(A01)

Inspection Stamp
(Z02)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B		No. (A04)	379329
DIN EN 10204		Page	10/15
(A02)		Date	05.08.2005
No. (A07)	605/1231	27.05.2005	No. (A07)
Purchaser (A06)	Salzgitter Mannesmann International GmbH 40409 Düsseldorf	Customer (A06)	P.O. No. 1-PPV-1894 Cessco Steel CDN- New Westminster
Product (B01)	Heavy plate	Works order No. (A08)	0000009017
Steel grade and terms of delivery (B02-B03)	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV SA 516 (M), SA 20 (M) ASME sect. II part A ed. 2004 ASTM A 516 (M) -03, A 20 (M) -03 CESSCO Rev.11 Feb.2005	Dispatch note No. (A05)	0080554876 27.07.2005 WS

Tensile test (C10-C20)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type (C10)	Yield strength (C11) Rp0,2 N/mm2	Tensile strength (C12) Rm N/mm2	Elongation (C13) 8 in %		
		1) 2) 3)	4)	5)	6)	≥ 250	485 - 820	≥ 17		
232211	00600	K6G	Q	N	P	363	508	26		
232212	00600	K6G	Q	N	P	364	511	24		
234065	00599	K6G	Q	N	P	356	504	28		
236409	62367	K6G	Q	N	P	397	527	24		

1) K: Top
 2) S: 1/4 Width
 3) S: Thickness of product
 4) Q: transversal
 5) N: normalized
 6) P: prismatic

Impact test (C40-C45)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type of specimen (C40-C41)	Temperature (C03) °F	Impact energy (C42-C45)			
		1) 2) 3)	4)	5)			1 ftlb ≥ 15	2	3	MW: 6) ftlb ≥ 20
227089	74503	K60	L	N	Charpy V-notch	-051	186	184	188	186
227090	47024	K60	L	N	Charpy V-notch	-051	142	132	112	128
227091	74503	K60	L	N	Charpy V-notch	-051	173	125	212	170
227092	47024	K60	L	N	Charpy V-notch	-051	113	189	83	128
227093	47023	K60	L	N	Charpy V-notch	-051	120	129	120	123
227362	74667	K6V	L	N	Charpy V-notch	-051	135	83	93	103
227363	74667	K6V	L	N	Charpy V-notch	-051	90	50	72	71
227364	47246	K6V	L	N	Charpy V-notch	-051	79	61	68	69
227365	24060	K6V	L	N	Charpy V-notch	-051	129	115	126	123
227366	61927	K6V	L	N	Charpy V-notch	-051	191	193	133	172
227367	61927	K6V	L	N	Charpy V-notch	-051	205	197	215	206
227368	61927	K6V	L	N	Charpy V-notch	-051	203	133	161	166
227667	24058	K60	L	N	Charpy V-notch	-051	104	98	135	112
227668	24058	K60	L	N	Charpy V-notch	-051	128	92	127	116
227669	62367	K60	L	N	Charpy V-notch	-051	28	42	27	32

1) K: Top
 2) S: 1/4 Width
 3) O: near surface
 V: 1/4 Thickness
 4) L: longitudinal
 5) N: normalized
 6) MW: Average

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

QM-System: Certification as per ISO 9001 since 20 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Vöckelstraße Weg 10
D-38871 Ilseburg
(A01)

Inspection stamp
(Z03)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B
DIN EN 10204
(A2)

No. (A2) 605/1231
Purchaser Salzgitter Mannesmann
(A2) International GmbH
40409 Düsseldorf

27.05.2005 No. (A2) P.O. No. 1-PPV-1894
Customer Cessco Steel
(A2) CDN- New Westminster

Product Heavy plate
(B2)

Works order No. 0000009017
(A2)

Dispatch note No. 0080554876
27.07.2005

Steel grade and terms of delivery SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
(B2-B3) SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516 (M), SA 20 (M)
ASME sect. II part A ed. 2004
ASTM A 516 (M) -03, A 20 (M) -03
CESSCO Rev.11 Feb.2005

No. (A2) 379329
Page 11/15
Date 05.08.2005

Inspection (A2) WS

Impact test (C40-C45)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type of specimen (C40-C41)	Temperature (C03) °F	Impact energy (C42-C43)			
							1 ftlb ≥ 15	2	3	MW 6) ftlb ≥ 20
227670	62367	K60	L	N	Charpy V-notch	-051	99	138	109	115
227671	62367	K60	L	N	Charpy V-notch	-051	94	83	135	104
227672	62367	K60	L	N	Charpy V-notch	-051	38	37	39	38
227673	62367	K60	L	N	Charpy V-notch	-051	126	97	89	104
227674	62365	K60	L	N	Charpy V-notch	-051	89	129	136	118
227675	62364	K60	L	N	Charpy V-notch	-051	131	134	135	133
228174	61927	K60	L	N	Charpy V-notch	-051	163	166	148	159
229816	00600	K60	L	N	Charpy V-notch	-051	137	105	21	88
229817	00600	K60	L	N	Charpy V-notch	-051	95	118	27	80
229887	74666	K60	L	N	Charpy V-notch	-051	139	68	120	109
229888	24060	K60	L	N	Charpy V-notch	-051	171	191	121	161
229889	24060	K60	L	N	Charpy V-notch	-051	131	119	128	126
229890	24060	K60	L	N	Charpy V-notch	-051	77	52	79	69
229891	24060	K60	L	N	Charpy V-notch	-051	128	106	123	119
229892	61925	K60	L	N	Charpy V-notch	-051	66	80	89	79
229893	74666	K60	L	N	Charpy V-notch	-051	125	198	201	175
230838	00599	K6V	L	N	Charpy V-notch	-051	97	159	115	124
230839	00599	K6V	L	N	Charpy V-notch	-051	125	128	155	136
230840	00599	K6V	L	N	Charpy V-notch	-051	168	97	132	132
230841	00599	K6V	L	N	Charpy V-notch	-051	92	134	119	115
230842	00599	K6V	L	N	Charpy V-notch	-051	121	83	108	104
230843	00599	K6V	L	N	Charpy V-notch	-051	137	142	196	159
230844	00599	K6V	L	N	Charpy V-notch	-051	152	131	195	159
230845	00599	K6V	L	N	Charpy V-notch	-051	122	151	128	133
231103	00602	K6V	L	N	Charpy V-notch	-051	52	57	41	49
231104	00602	K6V	L	N	Charpy V-notch	-051	43	49	49	47
231105	00602	K6V	L	N	Charpy V-notch	-051	81	81	80	81
231106	00602	K6V	L	N	Charpy V-notch	-051	77	62	83	74
231108	00600	K6V	L	N	Charpy V-notch	-051	123	164	133	140
231109	00600	K6V	L	N	Charpy V-notch	-051	196	119	103	139
231110	00600	K6V	L	N	Charpy V-notch	-051	140	122	90	117
231111	00600	K6V	L	N	Charpy V-notch	-051	113	91	114	106
231112	00600	K6V	L	N	Charpy V-notch	-051	226	146	162	178
231113	00600	K6V	L	N	Charpy V-notch	-051	148	178	103	143

1) K: Top
2) 6: 1/8 Width
3) D: near surface
V: 1/4 Thickness

4) L: longitudinal
5) N: normalized
6) MW: Average

We hereby certify that the delivered material complies with the terms of the order.

(Z01)

DS-System Certification as per ISO 9001 since 28 February 1998

Trademark
(A04)

Ilsenburger Grobblech GmbH
Vickelsbüchel Weg 10
D-33671 Ilsenburg
(A01)

Inspection
(Z03)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B		No. (A03)	379329
DIN EN 10204		Page	12/15
(A02)		Date	05.08.2005
No. (A07)	605/1231	27.05.2005	No. (A07)
Purchaser (A06)	Salzgitter Mannesmann International GmbH 40409 Düsseldorf	Customer (A06)	Cessco Steel CDN- New Westminster
Product (B01)	Heavy plate	Works order No. (A06)	0000009017
Steel grade and terms of delivery (B02-B05)	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV SA 516(M), SA 20(M) ASME sect. II part A ed. 2004 ASTM A 516(M) -03, A 20(M) -03 CESSCO Rev.11 Feb.2005	Dispatch note No. (A06)	0080554876 27.07.2005 WS

Impact test (C40-C49)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct (C02)	Cond. (B05)	Type of specimen (C40-C41)	Temperature (C03) °F	Impact energy (C42-C45)			
							1 ftlbf ≥ 15	2	3	MW 6) ftlbf ≥ 20
231114	00599	K6V	L	N	Charpy V-notch	-051	122	118	37	92
231115	00599	K6V	L	N	Charpy V-notch	-051	104	122	129	119
231116	00599	K6V	L	N	Charpy V-notch	-051	113	112	124	117
231117	00599	K6V	L	N	Charpy V-notch	-051	104	149	170	141
231118	00599	K6V	L	N	Charpy V-notch	-051	128	122	139	130
231119	00600	K60	L	N	Charpy V-notch	-051	113	147	194	151
231120	00600	K60	L	N	Charpy V-notch	-051	127	122	143	131
231129	00600	K60	L	N	Charpy V-notch	-051	177	137	145	153
231130	00600	K60	L	N	Charpy V-notch	-051	146	148	160	151
231131	00600	K60	L	N	Charpy V-notch	-051	136	102	145	128
231132	00600	K60	L	N	Charpy V-notch	-051	139	142	145	142
231133	00600	K60	L	N	Charpy V-notch	-051	91	136	141	122
231134	62364	K60	L	N	Charpy V-notch	-051	45	38	33	39
231135	61927	K60	L	N	Charpy V-notch	-051	44	58	57	53
231248	00602	K6V	L	N	Charpy V-notch	-051	66	31	42	46
231249	00602	K6V	L	N	Charpy V-notch	-051	66	52	47	55
231250	00602	K6V	L	N	Charpy V-notch	-051	44	64	71	60
231251	00602	K6V	L	N	Charpy V-notch	-051	83	95	79	86
232211	00600	K60	L	N	Charpy V-notch	-051	86	80	49	72
232212	00600	K60	L	N	Charpy V-notch	-051	117	70	104	97
234065	00599	K6V	L	N	Charpy V-notch	-051	126	129	133	129
236409	62367	K60	L	N	Charpy V-notch	-051	126	126	131	128

1) K: Top
2) S: 1/8 Width
3) Q: near surface
V: 1/4 Thickness

4) L: longitudinal
5) N: normalized
6) MW: Average

Specimen size:
5,0 x 10 x 55 mm (from 5,00 mm up to 8,99 mm plate thickness)
7,5 x 10 x 55 mm (from 9,00 mm to 11,99 mm plate thickness)
10 x 10 x 55 mm (from 12,00 mm plate thickness)

We hereby certify that the delivered material complies with the terms of the order.

(Z01)
DIN-Systec Certification as per ISO 9001: since 28 February 1993

 Trademark
(A04)

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-38571 Ilseburg
(A01)

 Inspection Representative
(Z02)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B		No. (A03)	379329
DIN EN 10204		Page	13/15
(A02)		Date	05.08.2005
No. (A07)	605/1231	27.05.2005	No. (A07) P.O. No. 1-PPV-1894
Purchaser (A06)	Salzgitter Mannesmann International GmbH 40409 Düsseldorf	Customer (A06)	Cessco Steel CDN- New Westminster
Product (B01)	Heavy plate	Works order No. (A08)	0000009017
Steel grade and terms of delivery (B02-B05)	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV SA 516(M), SA 20(M) ASME sect. II part A ed. 2004 ASTM A 516(M) -03, A 20(M) -03 CESSCO Rev.11 Feb.2005	Dispatch note No. (A08)	0080554876 27.07.2005 WS

Hardness test (C30-C35)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Cond. (B05)	Type of specimen (C03)	Hardness (C31-C32)			
					1	2	3	MW 4)
199415 *)	24060	K6	N	HV10	160	160	163	161
214400 *)	61925	K6	N	HV10	158	160	160	159
215259 *)	61927	K6	N	HV10	161	162	158	160
216884 *)	74503	K6	N	HV10	157	157	157	157
217756 *)	47023	K6	N	HV10	157	158	161	159
218665 *)	47024	K6	N	HV10	157	160	159	159
220025 *)	24058	K6	N	HV10	162	160	161	161
220069 *)	74666	K6	N	HV10	159	156	154	156
220824 *)	62364	K6	N	HV10	163	162	161	162
221557 *)	47246	K6	N	HV10	158	161	156	158
224336 *)	74667	K6	N	HV10	160	160	157	159
227089	74503	K6	N	HB30	146	150	147	148
227090	47024	K6	N	HB30	152	149	150	150
227091	74503	K6	N	HB30	146	149	148	148
227092	47024	K6	N	HB30	151	154	154	153
227093	47023	K6	N	HB30	149	151	151	150
227362	74667	K6	N	HB30	152	153	153	153
227363	74667	K6	N	HB30	152	150	154	152
227364	47246	K6	N	HB30	150	151	149	150
227365	24060	K6	N	HB30	152	152	151	152
227366	61927	K6	N	HB30	149	151	152	151
227367	61927	K6	N	HB30	151	155	154	153
227368	61927	K6	N	HB30	151	150	153	151
227667	24058	K6	N	HB30	159	156	158	158
227668	24058	K6	N	HB30	158	156	158	157
227669	62367	K6	N	HV10	162	162	167	164
227669	62367	K6	N	HB30	160	159	154	158
227670	62367	K6	N	HB30	160	157	160	159
227671	62367	K6	N	HB30	156	155	156	156
227672	62367	K6	N	HB30	159	156	158	158
227673	62367	K6	N	HB30	160	159	156	158
227674	62365	K6	N	HV10	165	166	169	167
227674	62365	K6	N	HB30	156	159	159	158
227675	62364	K6	N	HB30	156	155	158	156
227675	61927	K6	N	HB30	157	153	152	154
228174	00600	K6	N	HB30	153	150	149	151
229816	00600	K6	N	HB30	158	159	159	159
229817	00600	K6	N	HV10				

- 1) X: Top
2) 6: 1/8 Width
*) The sample product is not part of the delivery

- 3) N: normalized
4) MW: Average

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

CEC-System: Certificates as per ISO 9001 since 22 February 1990

 Trademark
(A04)

Ilsenburger Grobblech GmbH
Verkehrsweg 10
D-38971 Ilsenburg
(A01)

 Inspection
(Z03)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B		No. (A03)	379329
DIN EN 10204		Page	14/15
(A02)		Date	05.08.2005
No. (A01)	605/1231	27.05.2005	No. (A07)
Purchaser	Salzgitter Mannesmann International GmbH	Customer	Cessco Steel
(A06)	40409 Düsseldorf	(A05)	CDN- New Westminster
Product	Heavy plate	Works order No.	0000009017
(B01)		(A08)	
Steel grade and terms of delivery	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV	Dispatch note No.	0080554876
(B02-B03)	SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV	Inspection	27.07.2005
	SA 516(M), SA 20(M)	(A09)	WS
	ASME sect. II part A ed. 2004		
	ASTM A 516(M) -03, A 20(M) -03		
	CESSCO Rev.11 Feb.2005		

Hardness test (C30-C35)

Specimen No. (C00)	Heat No. (B01)	Location (C01)	Cont. (B05)	Type of specimen (C06)	Hardness (C31-C32)			
					1	2	3	MW 4)
229817	00600	K6	N	HB30	151	149	151	150
229887	74666	K6	N	HB30	153	154	155	154
229888	24060	K6	N	HB30	151	153	157	154
229889	24060	K6	N	HB30	157	155	157	156
229890	24060	K6	N	HB30	154	158	156	156
229891	24060	K6	N	HB30	153	151	152	152
229892	61925	K6	N	HB30	153	157	156	155
229893	74666	K6	N	HB30	152	151	151	151
230838	00599	K6	N	HB30	149	150	153	151
230839	00599	K6	N	HB30	152	147	149	149
230840	00599	K6	N	HB30	147	147	150	148
230841	00599	K6	N	HB30	150	149	150	150
230842	00599	K6	N	HB30	147	151	149	149
230843	00599	K6	N	HB30	151	148	147	149
230844	00599	K6	N	HB30	151	152	151	151
230845	00599	K6	N	HV10	155	156	155	155
230845	00599	K6	N	HB30	151	148	149	149
231103	00602	K6	N	HB30	151	151	154	152
231104	00602	K6	N	HB30	152	151	152	152
231105	00602	K6	N	HV10	160	158	163	160
231105	00602	K6	N	HB30	150	154	154	153
231106	00602	K6	N	HB30	152	153	152	152
231108	00600	K6	N	HB30	148	146	149	148
231109	00600	K6	N	HB30	147	148	144	146
231110	00600	K6	N	HB30	147	145	146	146
231111	00600	K6	N	HB30	147	147	148	147
231112	00600	K6	N	HB30	151	150	148	150
231113	00600	K6	N	HB30	150	150	152	151
231114	00599	K6	N	HB30	151	149	153	151
231115	00599	K6	N	HB30	148	147	149	148
231116	00599	K6	N	HB30	149	150	153	151
231117	00599	K6	N	HB30	148	151	149	149
231118	00599	K6	N	HB30	153	149	152	151
231119	00600	K6	N	HB30	148	150	148	149
231120	00600	K6	N	HB30	149	149	151	150
231129	00600	K6	N	HB30	155	153	157	155
231130	00600	K6	N	HB30	152	153	153	153

- 1) K: Top
2) 6: 1/8 Width
3) N: normalized
4) MW: Average
*) The sample product is not part of the delivery

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

DM-System: Certification as per ISO 9001 since 28 February 1990

 Trademark
(A04)

Ilsenburger Grobblech GmbH
Veckenstedter Weg 10
D-38871 Ilsenburg
(A01)

 Inspection Stamp
(Z02)

Inspection Representative
(Z03)

Cyron

Inspection certificate 3.1/3.1.B		No. (A03)	379329
DIN EN 10204		Page	15/15
(A02)		Date	05.08.2005
No. (A07)	605/1231	27.05.2005	No. (A07)
Purchaser (A06)	Salzgitter Mannesmann International GmbH	Customer (A06)	Cessco Steel
	40409 Düsseldorf		CDN- New Westminster
Product (B01)	Heavy plate	Works order No. (A08)	0000009017
Steel grade and terms of delivery (B02-B03)	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV	Dispatch note No. (A09)	0080554876
	SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV	Inspection (A05)	WS
	SA 516(M), SA 20(M)		
	ASME sect. II part A ed. 2004		
	ASTM A 516(M) -03, A 20(M) -03		
	CESSCO Rev.11 Feb.2005		

Hardness test (C31-C32)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Cond. (B05)	Type of specimen (C30)	Hardness (C31-C32)			
					1	2	3	MW 4)
231131	00600	K6	N	HB30	155	153	153	154
231132	00600	K6	N	HB30	151	153	150	151
231133	00600	K6	N	HB30	157	153	152	154
231134	62364	K6	N	HB30	157	158	158	158
231135	61927	K6	N	HB30	154	156	157	156
231248	00602	K6	N	HB30	156	157	154	156
231249	00602	K6	N	HB30	157	155	153	155
231250	00602	K6	N	HB30	151	151	154	152
231251	00602	K6	N	HB30	156	151	151	153
232211	00600	K6	N	HB30	152	149	150	150
232212	00600	K6	N	HB30	153	153	150	152
234065	00599	K6	N	HB30	149	152	151	151
236409	62367	K6	N	HB30	155	155	154	155

1) K: Top

2) E: 1/8 Width

*) The sample product is not part of the delivery

3) N: normalized

4) MW: Average

For results of microanalysis see appendix to this certificate.

Heat treatment: Temperature : 910 +/-10°C
 Soaking time: 30 min/inch
 Cooling in still air

We hereby certify that the delivered material complies with the terms of the order.

(Z01)

ISO-System: Certification as per ISO 9001 since 28 February 1998

 Trademark
 (A04)

Ilsenburger Grobblech GmbH
 Veckenstedter Weg 10
 D-36477 Ilseburg
 (A01)

 Inspection

Inspection
 (Z02)

Inspection Representative
 (Z02)

Cyron



T5S 1W5

S21512

Attention: Quality Control Manager

Subject: Customer P.O.: 001600

[illegible]

Chris Adams

Q.C. Documentation

An Affiliate of Canadian Erectors Limited

FABRICATION & ENGINEERING

SOLD TO
VaporTech Energy Services
20711 - 107th Avenue
Edmonton
T5S 1W5

TAG:

195 TW5

16" OD x 3/8"nom .313"min 2:1 S.E. 2" S.F.

CUSTOMER P.O. NO.	001600
CESSCO W.O. NO.	S21512
DATE CERT. ORIGINATED	27-Apr-07

[illegible]

The chemical and physical properties as indicated on the attached report are the results of the Mill Tests of the raw material used in the manufacture of these products and are certified to meet only the minimum requirements of the ASME and ASTM specifications for this material

- | | | | |
|-------------------------------------|--|-------------------------------------|---|
| ☒ | The items listed above were formed in strict accordance with all applicable requirements of the ASME Boiler and Pressure Vessel Code Section VIII, Div 1. | ☐ | We hereby certify that these heads were heated to 1950°F and water quenched in strict accordance with all applicable specifications |
| ☒ | We hereby certify that these heads were hot formed at the required normalizing temperature and air cooled, in accordance with all applicable specifications. | ☐ | We hereby certify that these heads were heated to 1950°F and rapid air cooled in strict accordance with all applicable specifications |
| ☐ | We hereby certify that these heads were cold formed in compliance with ASME Boiler and Pressure Vessel Code, Section VIII, Div. 1 paragraph UCS - 79 (d). | ☒ | We hereby certify that these heads comply with tolerances of UG - 81 of ASME Section VIII, Div. 1. |

HOT FORMING (NORMALIZING) TEMP. OF 1650° F IS HELD FOR 1 HOUR/INCH OF THICKNESS PRIOR TO FORMING

WE HEREBY CERTIFY THAT THIS REPORT COVERING THE ABOVE AND ATTACHED INFORMATION IS TRUE AND CORRECT AS SHOWN AND CONTAINED IN OUR RECORDS.

Chris Adams

Chris Adams
QUALITY CONTROL

INSPECTION & TEST PLAN

CUSTOMER: VaporTech Energy Services	JOB NO: S21512
DESCRIPTION: HEADS	TAG NO: 5252A-E
10 PCS 16" OD x 3/8"nom .313"min 2:1 S.E. 2" S.F.	P.O.NO: 001600
	PAGE NO: 1 of 1

INSP. POINT	INSPECTION, EXAMINATION OR TESTING INSTRUCTIONS AND ACCEPTANCE CRITERIA	CESSCO				
		B.H.N	SIGN	DATE	LOG NO.	MIN THK
1	MATERIAL RECEIVED, INSPECTION COMPLETED		✓	4/24/01	25993	367
2	MILL TEST REPORTS CHECKED AND TRACEABLE				✓	366
3	CHECK HEAD FOR DEFECTS		✓	4/25/01	✓	366
4	VERIFY ALL STAMPING ON HEAD		✓	✓	✓	372
5	CIRCLE STAMPING ON HEAD		✓	✓	✓	369
6	BEVEL: IN: OUT: 30° N.L.		✓	4/26/01	✓	369
7	STRAIGHT FLANGE LENGTH REQUIREMENT: 2"		✓	✓	✓	367
8	CUSTOMER REQUIREMENTS:				✓	365
	HIC: SELECT CHEM:				✓	368
	U.T. GRID: B.H.N.: MISC:				✓	371
	TO MATCH: SCH:					
9	CHECK HEAD FOR DEFECTS AFTER MACHINING		✓	✓		
10	CHECK FINISHED BEVEL		✓	✓		
11	FINISHED DIAMETER CHECK		✓	✓		
12	MACHINING TOLERANCE	O.D.	I.D.	HEIGHT		
		+1/8"	+1/8"	+1"		
		-1/8"	-1/8"	-1/4"		
	CLEAR TO SHIP		✓	✓	APR 26/01	

NOTE: MIN THK DETERMINED AFTER HOT FORMING.

REMARKS: _____

Scanned

K-04158



Inspection certificate 3.1/3.1.B
DIN EN 10204
 (A02)

No. (A07) 605/1231
 Purchase (A08) Salzgitter Mannesmann International GmbH
 (A09) 40409 Düsseldorf

27.05.2005 No. (A07) P.O. No. 1-PPV-1894
 Customer (A08) Cessco Steel
 (A09) CDN- New Westminster

Product (B01) Heavy plate

Steel grade and terms of delivery (B02-B03) SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
 SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
 SA 516(M), SA 20(M)
 ASME sect. II part A ed. 2004
 ASTM A 516(M) -03, A 20(M) -03
 CESSCO Rev.11 Feb.2005

No. (A03) 379329
 Page 1/15
 Date 05.08.2005

Works order No. (A08) 0000009017
 Dispatch note No. 0080554876
 27.07.2005
 Inspection (A09) WS

CESSCO
PLATE LOG
NO:

Marking of the product (B05)
 Trademark/Steelgrade/Heat-No/Product-No/
 inspector's stamp

Material data (B01-B06)						in x in x in		
Item	Quantity (B04)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B08-B11)			
01	1	231134 1	62364	N	0,313 x 120,000 x 384,000	- 25980		
01	1	231134 2	62364	N	0,313 x 120,000 x 384,000	- 25983		
01	1	231135 1	61927	N	0,313 x 120,000 x 384,000	- 25983		
01	1	231135 2	61927	N	0,313 x 120,000 x 384,000	- 25983		
02	1	227667 1	24058	N	0,375 x 96,000 x 384,000	- 25988		
02	1	227667 2	24058	N	0,375 x 96,000 x 384,000	- 25988		
02	1	227668 1	24058	N	0,375 x 96,000 x 384,000	- 25988		
02	1	227668 2	24058	N	0,375 x 96,000 x 384,000	- 25988		
02	1	227669 1	62367	N	0,375 x 96,000 x 384,000	- 26000		
02	1	227669 2	62367	N	0,375 x 96,000 x 384,000	- 26000		
02	1	227670 1	62367	N	0,375 x 96,000 x 384,000	- 25989		
02	1	227670 2	62367	N	0,375 x 96,000 x 384,000	- 25989		
02	1	227671 1	62367	N	0,375 x 96,000 x 384,000	- 25989		
02	1	227671 2	62367	N	0,375 x 96,000 x 384,000	- 25989		
02	1	227672 1	62367	N	0,375 x 96,000 x 384,000	- 25989		
02	1	227672 2	62367	N	0,375 x 96,000 x 384,000	- 25989		
02	1	227673 1	62367	N	0,375 x 96,000 x 384,000	- 25989		
02	1	227673 2	62367	N	0,375 x 96,000 x 384,000	- 25989		
02	1	227674 1	62365	N	0,375 x 96,000 x 384,000	- 26000		
02	1	227674 2	62365	N	0,375 x 96,000 x 384,000	- 25991		
02	1	227675 1	62364	N	0,375 x 96,000 x 384,000	- 25999		
02	1	227675 2	62364	N	0,375 x 96,000 x 384,000	- 25999		
02	1	228174 1	61927	N	0,375 x 96,000 x 384,000	- 26000		
02	1	228174 2	61927	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231129 1	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231129 2	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231130 1	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231130 2	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231131 1	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231131 2	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231132 1	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231132 2	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231133 1	00600	N	0,375 x 120,000 x 480,000	- 26000		
03	1	231133 2	00600	N	0,375 x 120,000 x 480,000	- 26000		
04	1	229887 1	74666	N	0,500 x 96,000 x 384,000	- 26020		
04	1	229887 2	74666	N	0,500 x 96,000 x 384,000	- 26028		

CHEMICAL & PHYSICALS
CHECKED
 A.S.M.E. Ed. 24 Add.
 Cessco By (A11)

We hereby certify that the delivered material complies with the terms of the order.
 (Z01)
 QM-Systeme Certification as per ISO 9001 since 28 February 1996

Trademark (A04)
 Ilseburger Grobblech GmbH
 Vackerstrasse Weg 10
 D-38871 Ilseburg
 (A01)

Inspection Stamp (Z03)
 AUG 12 2005
 Inspection Representative (Z02)
 Cyron

Inspection certificate 3.1/3.1.B
DIN EN 10204
(A2)

No. (A07) **605/1231** 27.05.2005 No. (A07) **P.O. No. 1-PPV-1894**
Purchaser (A06) **Salzgitter Mannesmann International GmbH** Customer (A06) **Cessco Steel**
40409 Düsseldorf CDY- New Westminster

Product (B01) **Heavy plate** Works order No. (A08) **0000009017**
Dispatch note No. **0080554876**
27.07.2005
Inspection (A05) **WS**

Steel grade and terms of delivery (B02-B03) **SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV**
SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Material data (B01-B09)						in x in x in		
Item	Quantity (B08)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B02-B11)			
04	1	229887 3	74666	N	0,500 x 96,000 x 384,000	- 26029	26019	
04	1	229888 1	24060	N	0,500 x 96,000 x 384,000	- 26018	26026	
04	1	229888 2	24060	N	0,500 x 96,000 x 384,000	- 26022	26025	
04	1	229889 1	24060	N	0,500 x 96,000 x 384,000	- 26015	26032	
04	1	229889 2	24060	N	0,500 x 96,000 x 384,000	- 26023	26024	
04	1	229890 1	24060	N	0,500 x 96,000 x 384,000	- 26017	26021	
04	1	229890 2	24060	N	0,500 x 96,000 x 384,000	- 26016	26031	
04	1	229890 3	24060	N	0,500 x 96,000 x 384,000	- 26014	26033	
04	1	229891 1	24060	N	0,500 x 96,000 x 384,000	- 26030	26027	
04	1	229891 2	24060	N	0,500 x 96,000 x 384,000	- 26034	26035	
04	1	229891 3	24060	N	0,500 x 96,000 x 384,000	- 26037	26036	
04	1	229892 1	61925	N	0,500 x 96,000 x 384,000	- 26038	26042	
04	1	229892 2	61925	N	0,500 x 96,000 x 384,000	- 26043	26047	
04	1	229892 3	61925	N	0,500 x 96,000 x 384,000	- 26044	26049	
04	1	229893 1	74666	N	0,500 x 96,000 x 384,000	- 26048	26046	
04	1	229893 2	74666	N	0,500 x 96,000 x 384,000	- 26051	26051	
04	1	229893 3	74666	N	0,500 x 96,000 x 384,000	- 26052	26055	
04	1	236409 1	62367	N	0,500 x 120,000 x 384,000	- 26057	26053	
04	1	227089 1	74503	N	0,500 x 120,000 x 384,000	- 26058		
05	1	227089 2	74503	N	0,500 x 120,000 x 384,000	- 26059		
05	1	227090 1	47024	N	0,500 x 120,000 x 384,000	- 26060		
05	1	227090 2	47024	N	0,500 x 120,000 x 384,000	- 26061		
05	1	227091 1	74503	N	0,500 x 120,000 x 384,000	- 26062		
05	1	227091 2	74503	N	0,500 x 120,000 x 384,000	- 26063		
05	1	227092 1	47024	N	0,500 x 120,000 x 384,000	- 26064		
05	1	227092 2	47024	N	0,500 x 120,000 x 384,000	- 26065		
05	1	227093 1	47023	N	0,500 x 120,000 x 384,000	- 26066		
05	1	227093 2	47023	N	0,500 x 120,000 x 384,000	- 26067		
06	1	231119 1	00600	N	0,625 x 120,000 x 384,000	- 26068		
06	1	231119 2	00600	N	0,625 x 120,000 x 384,000	- 26069		
06	1	231119 3	00600	N	0,625 x 120,000 x 384,000	- 26070		
06	1	231120 1	00600	N	0,625 x 120,000 x 384,000	- 26071		
06	1	231120 2	00600	N	0,625 x 120,000 x 384,000	- 26072		
06	1	231120 3	00600	N	0,625 x 120,000 x 384,000	- 26073		
07	1	229816 1	00600	N	0,625 x 96,000 x 384,000	- 26074		
07	1	229816 2	00600	N	0,625 x 96,000 x 384,000	- 26075		
07	1	229816 3	00600	N	0,625 x 96,000 x 384,000	- 26076		
07	1	229817 1	00600	N	0,625 x 96,000 x 384,000	- 26077		
07	1	229817 2	00600	N	0,625 x 96,000 x 384,000	- 26078		
07	1	229817 3	00600	N	0,625 x 96,000 x 384,000	- 26079		

N: normalized

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

ILN-System Certification as per ISO 9001 since 28 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-38121 Ilseburg
(A01)

Inspection Stamp
(Z05)

Inspection Representative
(Z02)

Cyron



ILSENBURGER
GROBBLECH

Ein Unternehmen der Salzgitter Gruppe

Inspection certificate 3.1/3.1.B
DIN EN 10204

No. (A00) 379329
Page 3/15
Date 05.08.2005

No. (A01) 605/1231
Purchaser: Salzgitter Mannesmann
(A06) International GmbH
40409 Düsseldorf

27.05.2005

No. (A01)
Customer
(A06)

P.O. No. 1-PPV-1894
Cessco Steel
CDN- New Westminster

Product: Heavy plate
(B01)

Work order No. 0000009017
(A06)

Dispatch note No. 0080554876
27.07.2005
WS

Steel grade and terms of delivery (B02-B03)
SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Material data (B01-B09)

				in x in x in		
Item	Quantity (B08)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B09-B11)	
07	1	232211 1	00600	N	0,625 x 96,000 x 384,000	- 26061
07	1	232211 2	00600	N	0,625 x 96,000 x 384,000	- 26056
07	1	232211 3	00600	N	0,625 x 96,000 x 384,000	- 26057
07	1	232212 1	00600	N	0,625 x 96,000 x 384,000	- 26059
07	1	232212 2	00600	N	0,625 x 96,000 x 384,000	- 26062
07	1	232212 3	00600	N	1,000 x 96,000 x 480,000	- 26068
08	1	227362 1	74667	N	1,000 x 96,000 x 480,000	- 26068
08	1	227363 1	74667	N	1,000 x 96,000 x 480,000	- 26065
08	1	227364 1	47246	N	1,000 x 96,000 x 480,000	- 26064
08	1	227365 1	24060	N	1,000 x 96,000 x 480,000	- 26067
08	1	227366 1	61927	N	1,000 x 96,000 x 480,000	- 26072
08	1	227367 1	61927	N	1,000 x 96,000 x 480,000	- 26086
08	1	227368 1	61927	N	1,000 x 120,000 x 480,000	- 26087
09	1	230838 1	00599	N	1,000 x 120,000 x 480,000	- 26087
09	1	230839 1	00599	N	1,000 x 120,000 x 480,000	- 26075
09	1	230840 1	00599	N	1,000 x 120,000 x 480,000	- 26082
09	1	230841 1	00599	N	1,000 x 120,000 x 480,000	- 26077
09	1	230842 1	00599	N	1,000 x 120,000 x 480,000	- 26078
09	1	230843 1	00599	N	1,000 x 120,000 x 480,000	- 26074
09	1	230844 1	00599	N	1,000 x 120,000 x 480,000	- 26069
09	1	231108 1	00600	N	1,000 x 120,000 x 480,000	- 26084
09	1	231109 1	00600	N	1,000 x 120,000 x 480,000	- 26083
09	1	231110 1	00600	N	1,000 x 120,000 x 480,000	- 26089
09	1	231111 1	00600	N	1,000 x 120,000 x 480,000	- 26089
09	1	231112 1	00600	N	1,000 x 120,000 x 480,000	- 26092
09	1	231113 1	00599	N	1,000 x 120,000 x 480,000	- 26093
09	1	231114 1	00599	N	1,000 x 120,000 x 480,000	- 26093
09	1	231115 1	00599	N	1,000 x 120,000 x 480,000	- 26093
09	1	231116 1	00599	N	1,000 x 120,000 x 480,000	- 26093
09	1	231117 1	00599	N	1,000 x 120,000 x 480,000	- 26093
09	1	231118 1	00599	N	1,000 x 120,000 x 480,000	- 26093
09	1	234065 1	00602	N	1,375 x 96,000 x 384,000	- 26093
10	1	231248 1	00602	N	1,375 x 96,000 x 384,000	- 26093
10	1	231249 1	00602	N	1,375 x 96,000 x 384,000	- 26093
10	1	231250 1	00602	N	1,375 x 96,000 x 384,000	- 26093
10	1	231251 1	00602	N	1,375 x 120,000 x 384,000	- 26093
11	1	231103 1	00602	N	1,375 x 120,000 x 384,000	- 26093
11	1	231104 1	00602	N	1,375 x 120,000 x 384,000	- 26093
11	1	231105 1	00602	N	1,375 x 120,000 x 384,000	- 26093

N: normalized

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

ISO-System: Certification as per ISO 9001 since 28 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Vöckelstadter Weg 10
D-38071 Ilseburg
(A01)

Inspection Stamp
(Z03)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.8
DIN EN 10204
(A2)

No. (A07) **605/1231** 27.05.2005 No. (A07) **P.O. No. 1-PPV-1894**
Purchaser **Salzgitter Mannesmann** Customer **Cessco Steel**
(A08) **International GmbH** (A06) **CDN- New Westminster**
40409 Düsseldorf

Product **Heavy plate** Works order No. **0000009017**
(B01) Dispatch note No. **0080554876**
Steel grade and terms of delivery **SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV** Inspection **27.07.2005**
(B02-B03) **SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV** (A05) **WS**
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Material data (B01-B06)

Item	Quantity (B06)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B08-B11)	in x in x in
11	1	231106 1	00602	N	1,375 x 120,000 x 384,000	- 2 6 0 9 6
01	4	Weight	7.420	kg	N: normalized	
02	20	(B12)	35.580			
03	10		27.800			
04	20		47.420			
05	10		29.640			
06	6		22.236			
07	12		35.580			
08	7		41.496			
09	20		148.200			
10	4		26.080			
11	4		32.600			
Σ	117		454.052			

Dimensional check and visual examination of the surface condition:
without objection

Ladle analysis (C70-C90)

Manufacturer standard

Heat No. (B07)	C % ≤0,20	Si % 0,15-0,45	Mn % 0,85-1,20	P % ≤0,010	S % ≤0,003	N % ≤0,003	Al % ≥0,020	Cu % ≤0,30	Cr % ≤0,20	Ni % ≤0,30
00599	0,16	0,37	1,18	0,010	0,003	0,003	0,040	0,04	0,05	0,19
00600	0,16	0,37	1,16	0,010	0,002	0,004	0,042	0,03	0,05	0,19
00602	0,20	0,25	1,17	0,009	0,002	0,004	0,037	0,01	0,03	0,04
24058	0,17	0,36	1,16	0,010	0,002	0,003	0,035	0,02	0,03	0,16
Heat No. (B07)	Mo % ≤0,13	V % ≤0,015	Ti % ≤0,01	Nb % ≤0,02	B % ≤0,0005	Ca % ≤0,005	O ppm ≤50	Nb+V % ≤0,03	EV1 1) % ≤0,50	EV2 2) % ≤0,40
00599	0,01	0,003	0,01	0,02	0,0002	0,002	3,6	0,02	0,13	0,38
00600	0,00	0,004	0,00	0,02	0,0002	0,002	4,1	0,02	0,10	0,38
00602	0,00	0,003	0,00	0,02	0,0001	0,001	4,1	0,02	0,06	0,40
24058	0,00	0,002	0,00	0,02	0,0001	0,001	4,2	0,02	0,07	0,38

1) EV1: Nb+V+Ti+Cu+Mo+Cr

2) EV2: C+Mn+Nb+Mo+S+N+V+Cr/5+V/5+Cu/15

We hereby certify that the delivered material complies with the terms of the order.
(Z01)
DN-System Certification as per ISO 9001 since 28 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Vöckelsdorfer Weg 10
D-39171 Ilseburg
(A01)

Inspection Stamp
(Z02)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B
DIN EN 10204

No. (A07) **605/1231** 27.05.2005 No. (A07) **P.O. No. 1-PPV-1894**
Purchaser (A06) **Salzgitter Mannesmann** Customer (A06) **Cessco Steel**
(A06) **International GmbH** (A06) **CDN- New Westminster**
40409 Düsseldorf

Product **Heavy plate** Works order No. **0000009017**
(B01) (A06) Dispatch note No. **0080554875**
Steel grade and terms of delivery **SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV** Inspection (A06) **WS**
(B02-B03) **SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV**
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Ladle analysis (EN-CSI)
Manufacturer standard

Heat No. (B01)	C %	Si %	Mn %	P %	S %	N %	Al %	Cu %	Cr %	Ni %
	≤0,20	0,15 - 0,45	0,55 - 1,20	≤0,010	≤0,005		≥0,020	≤0,30	≤0,20	≤0,30
24060	0,16	0,34	1,17	0,010	0,002	0,004	0,034	0,02	0,03	0,18
47023	0,17	0,33	1,14	0,010	0,003	0,004	0,040	0,03	0,05	0,18
47024	0,16	0,35	1,16	0,010	0,003	0,004	0,047	0,03	0,05	0,18
47246	0,16	0,34	1,13	0,009	0,002	0,003	0,030	0,02	0,03	0,18
61925	0,16	0,34	1,14	0,009	0,001	0,004	0,044	0,02	0,03	0,17
61927	0,16	0,33	1,16	0,010	0,001	0,004	0,041	0,02	0,03	0,17
62364	0,17	0,33	1,13	0,010	0,001	0,003	0,030	0,02	0,03	0,17
62365	0,17	0,34	1,13	0,010	0,001	0,004	0,030	0,02	0,03	0,18
62367	0,16	0,34	1,14	0,009	0,001	0,004	0,028	0,02	0,03	0,17
74503	0,16	0,32	1,13	0,009	0,003	0,004	0,028	0,03	0,04	0,19
74666	0,15	0,32	1,14	0,009	0,003	0,005	0,049	0,02	0,03	0,18
74667	0,19	0,24	1,17	0,010	0,002	0,005	0,031	0,02	0,03	0,04
Heat No. (B02)	Mo %	V %	Ti %	Nb %	B %	Ca %	O ppm	Nb+V %	EV1 1) %	EV2 2) %
	≤0,13	≤0,015	≤0,01	≤0,02	≤0,0005	≤0,005	≤55	≤0,03	≤0,50	≤0,40
24060	0,00	0,002	0,00	0,02	0,0001	0,001	4,7	0,02	0,07	0,37
47023	0,00	0,004	0,00	0,02	0,0001	0,001	3,8	0,02	0,10	0,38
47024	0,00	0,003	0,00	0,02	0,0001	0,001	4	0,02	0,10	0,38
47246	0,00	0,004	0,00	0,02	0,0001	0,001	3,9	0,02	0,07	0,37
61925	0,00	0,002	0,00	0,02	0,0000	0,000	4,3	0,02	0,07	0,37
61927	0,00	0,002	0,00	0,02	0,0000	0,000	3,9	0,02	0,07	0,37
62364	0,00	0,001	0,00	0,02	0,0000	0,000	4,1	0,02	0,07	0,38
62365	0,00	0,001	0,00	0,02	0,0000	0,000	3,9	0,02	0,07	0,38
62367	0,00	0,001	0,00	0,02	0,0000	0,000	3,9	0,02	0,07	0,37
74503	0,00	0,002	0,00	0,01	0,0001	0,001	4,2	0,01	0,08	0,37
74666	0,00	0,003	0,00	0,02	0,0001	0,001	4,2	0,02	0,07	0,36
74667	0,00	0,002	0,00	0,02	0,0001	0,001	4,1	0,02	0,07	0,40

1) EV1: Nb+V+Ti+Cr+Mo+Cr
2) EV2: CE+Cr+Mn+V+Mo+S+N+Ti+Cr+S+V+S+Cr+Ti

Steelmaking process: Basic oxygen process
(C7Q)

Date: **6/15/07** Init: **MAS**
PO#: **1600**
Job#: **5252**
CE Calculated: **37**
MTR Accepted: ☒ Yes ☐ No

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

QMS-System Certification as per ISO 9001 since 28 February 1998

Trademark
(A01)

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-38071 Ilseburg
(A01)

Inspection Stamp
(Z02)

Inspection Representative
(Z02)

Cyron



ILSENBURGER
GROBBLECH

Ein Unternehmen der Salzgitter Gruppe

Inspection certificate 3.1/3.1.B		No. (AMZ)	379329
DIN EN 10204		Page	6/15
(A02)		Date	05.08.2005
No. (A07)	605/1231	27.05.2005	No. (A07)
Purchaser	Salzgitter Mannesmann	Customer	Cessco Steel
(A04)	International GmbH	(A06)	CDN- New Westminster
	40409 Düsseldorf		
Product	Heavy plate	Work order No.	0000009017
(B01)		(A08)	
Steel grade and terms of delivery	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV	Dispatch note No.	0080554876
(B02-B03)	SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV		27.07.2005
	SA 516(M), SA 20(M)	Inspection	WS
	ASME sect. II part A ed. 2004	(A05)	
	ASTM A 516(M) -03, A 20(M) -03		
	CESSCO Rev.11 Feb.2005		

Check analysis (C70-C99)

Specimen No. (C80)	Heat No. (B07)	C %	Si %	Mn %	P %	S %	N %	Al %	Cu %
		≤0,28	0,13-0,45	0,78-1,50	≤0,028	≤0,005			≤0,30
230845	00599	0,14	0,37	1,18	0,007	0,003	0,004	0,043	0,04
229817	00600	0,17	0,35	1,21	0,010	0,003	0,005	0,036	0,02
231105	00602	0,20	0,24	1,14	0,009	0,003	0,004	0,032	0,01
196766 *)	24058	0,17	0,37	1,15	0,014	0,003	0,002	0,034	0,02
196751 *)	24060	0,16	0,32	1,17	0,008	0,001	0,003	0,035	0,02
217756 *)	47023	0,15	0,32	1,17	0,011	0,003	0,003	0,042	0,02
218665 *)	47024	0,17	0,35	1,11	0,008	0,001	0,004	0,049	0,03
221557 *)	47246	0,14	0,31	1,16	0,005	0,003	0,004	0,025	0,02
213213 *)	61925	0,16	0,34	1,18	0,005	0,000	0,005	0,043	0,02
Specimen No. (C80)	Heat No. (B07)	Cr %	Ni %	Mo %	V %	Ti %	Nb %	B %	Ca %
		≤0,20	≤0,30	≤0,13	≤0,015	≤0,010	≤0,02	≤0,0005	≤0,008
230845	00599	0,06	0,18	0,00	0,002	0,003	0,01	0,0004	0,001
229817	00600	0,05	0,17	0,00	0,005	0,005	0,02	0,0001	0,004
231105	00602	0,04	0,05	0,00	0,004	0,005	0,02	0,0002	0,004
196766 *)	24058	0,03	0,18	0,00	0,002	0,000	0,02	0,0003	0,001
196751 *)	24060	0,03	0,19	0,00	0,003	0,001	0,02	0,0003	0,003
217756 *)	47023	0,04	0,17	0,01	0,003	0,005	0,02	0,0000	0,002
218665 *)	47024	0,04	0,17	0,00	0,004	0,001	0,02	0,0004	0,000
221557 *)	47246	0,02	0,19	0,00	0,003	0,001	0,02	0,0002	0,002
213213 *)	61925	0,03	0,16	0,00	0,002	0,002	0,02	0,0000	0,000
Specimen No. (C80)	Heat No. (B07)	O ppm	Nb+V %	EV1 1) %	EV2 2) %				
		≤50		≤0,30					
230845	00599	3,8	0,012	0,12	0,36				
229817	00600	4,1	0,025	0,10	0,40				
231105	00602	4,1	0,024	0,08	0,40				
196766 *)	24058	3,9	0,022	0,07	0,38				
196751 *)	24060	4,5	0,023	0,07	0,38				
217756 *)	47023	3,7	0,023	0,10	0,37				
218665 *)	47024	3,9	0,024	0,10	0,38				
221557 *)	47246	3,8	0,023	0,06	0,35				
213213 *)	61925	4,2	0,022	0,07	0,38				

1) EV1: Nb+V+Ti+Cu+Mo+Cr

2) EV2: CE+V+Ti+Cu+Mo+Cr+Ni+P+S+V+Si+Cu+Ni

We hereby certify that the delivered material complies with the terms of the order.

(Z01)
DIN-Systec Certification no per ISO 9001 since 28 February 1990

Trademark
(A04)

ILSENBURGER GROBBLECH GmbH
Vöckelstädter Weg 10
D-38871 Ilsenburg
(A01)

Inspection Stamp
(Z02)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B
DIN EN 10204
(A2)

No. (A07) 605/1231
Purchaser Salzgitter Mannesmann
(A06) International GmbH
40409 Düsseldorf

27.05.2005 No. (A07) P.O. No. 1-PPV-1894
Customer Cessco Steel
(A06) CDN- New Westminster

Product Heavy plate
(B01)

Work order No. 0000009017
(A08)
Dispatch note No. 0080554876
27.07.2005
(A09) WS

Steel grade and terms of delivery SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
(B02-B03) SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Check analysis (C10-C35)

Specimen No. (C00)	Heat No. (B07)	C %	Si %	Mn %	P %	S %	N %	Al %	Cu %
		≤0,20	0,15-0,45	0,70-1,30	≤0,020	≤0,005			≤0,30
215259 *)	61927	0,16	0,30	1,16	0,006	0,002	0,004	0,043	0,02
220824 *)	62364	0,15	0,32	1,10	0,006	0,001	0,003	0,029	0,02
227674	62365	0,19	0,31	1,15	0,012	0,000	0,003	0,037	0,02
227669	62367	0,15	0,35	1,17	0,012	0,002	0,006	0,023	0,02
216884 *)	74503	0,15	0,31	1,12	0,009	0,003	0,004	0,026	0,03
220069 *)	74666	0,17	0,31	1,09	0,011	0,000	0,007	0,047	0,02
224336 *)	74667	0,18	0,25	1,22	0,010	0,003	0,004	0,031	0,02
Specimen No. (C00)	Heat No. (B07)	Cr %	Ni %	Mo %	V %	Ti %	Nb %	B %	Ca %
		≤0,20	≤0,30	≤0,13	≤0,015	≤0,010	≤0,02	≤0,0005	≤0,005
215259 *)	61927	0,02	0,18	0,00	0,001	0,000	0,02	0,0001	0,001
220824 *)	62364	0,04	0,16	0,00	0,002	0,002	0,02	0,0000	0,001
227674	62365	0,03	0,19	0,00	0,000	0,003	0,02	0,0000	0,001
227669	62367	0,03	0,16	0,00	0,002	0,001	0,02	0,0000	0,000
216884 *)	74503	0,03	0,17	0,00	0,003	0,001	0,02	0,0000	0,001
220069 *)	74666	0,03	0,18	0,00	0,004	0,002	0,02	0,0003	0,002
224336 *)	74667	0,03	0,03	0,00	0,002	0,004	0,01	0,0004	0,001
Specimen No. (C00)	Heat No. (B07)	O ppm	Nb+V %	EV1 1) %	EV2 2) %				
		≤50		≤0,30					
215259 *)	61927	4,2	0,021	0,06	0,37				
220824 *)	62364	3,6	0,022	0,08	0,35				
227674	62365	3,8	0,020	0,07	0,40				
227669	62367	3,8	0,022	0,07	0,36				
216884 *)	74503	4,1	0,023	0,08	0,36				
220069 *)	74666	4,1	0,024	0,08	0,37				
224336 *)	74667	3,9	0,012	0,07	0,39				

2) EV2: CE+Cr+Mn+Mo+Ni+P+Si+S+V+Cu+Ti

1) EV1: Nb+V+Ti+Cu+Mo+Cr
*) The sample product is not part of the delivery

Fully killed

Grain size according to ASTM: 7 and finer

"Produced with sulfid shape control."

We hereby certify that the delivered material complies with the terms of the order.
(Z01)
GMB-System: Certification as per ISO 9001 since 28 February 1990

Trademark
(A04)

Ilsenburger Grobblech GmbH
Vöckelstraße Weg 10
D-33871 Ilsenburg
(A01)

Inspection Stamp
(Z03)

Inspection Representative
(Z02)

Cyron



ILSENBURGER
GROBBLECH

Ein Unternehmen der Salzgitter Gruppe

Inspection certificate 3.1/3.1.B
DIN EN 10204
(AK2)

No. (A02) 605/1231
Purchaser (A03) Salzgitter Mannesmann International GmbH
40409 Düsseldorf

27.05.2005

No. (A02) P.O. No. 1-PPV-1894
Customer (A03) Cessco Steel
CDN- New Westminster

Product (B01) Heavy plate

Steel grade and terms of delivery (B02-B03) SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

No. (A03) 379329
Page 8/15
Date 05.08.2005

Works order No. (A04) 0000009017
Dispatch note No. (A05) 0080554876
27.07.2005
WS

Material is vacuum degassed

Tensile test (C10-C25)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type (C10)	Yield strength (C11) Rp0.2 N/mm ² ≥ 240	Tensile strength (C12) Rm N/mm ² 485 - 620	Elongation (C13) 8 in %
227089	74503	K6G	Q	N	P	364	499	22
227090	47024	K6G	Q	N	P	362	508	24
227091	74503	K6G	Q	N	P	369	501	23
227092	47024	K6G	Q	N	P	356	515	26
227093	47023	K6G	Q	N	P	366	509	22
227362	74667	K6G	Q	N	P	352	509	25
227363	74667	K6G	Q	N	P	360	515	28
227364	47246	K6G	Q	N	P	349	508	27
227365	24060	K6G	Q	N	P	356	512	25
227366	61927	K6G	Q	N	P	357	511	29
227367	61927	K6G	Q	N	P	369	514	27
227368	61927	K6G	Q	N	P	368	511	27
227667	24058	K6G	Q	N	P	386	529	22
227668	24058	K6G	Q	N	P	384	529	24
227669	62367	K6G	Q	N	P	395	528	23
227670	62367	K6G	Q	N	P	387	533	23
227671	62367	K6G	Q	N	P	392	530	23
227672	62367	K6G	Q	N	P	405	528	22
227673	62367	K6G	Q	N	P	387	532	23
227674	62365	K6G	Q	N	P	390	534	25
227675	62364	K6G	Q	N	P	391	531	23
228174	61927	K6G	Q	N	P	386	520	24
229816	00600	K6G	Q	N	P	359	510	25
229817	00600	K6G	Q	N	P	358	509	23
229887	74666	K6G	Q	N	P	375	515	21
229888	24060	K6G	Q	N	P	386	519	27
229889	24060	K6G	Q	N	P	372	523	22
229890	24060	K6G	Q	N	P	383	523	20
229891	24060	K6G	Q	N	P	371	513	20
229892	61925	K6G	Q	N	P	380	520	22
229893	74666	K6G	Q	N	P	375	507	22
230838	00599	K6G	Q	N	P	349	506	28

- 1) K: Top
2) 6: 1/8 Width
3) G: Thickness of product

- 4) Q: transversal
5) N: normalized
6) P: phreatic

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

QMS-System: Certification as per ISO 9001 since 28 February 1998

Trademark
(A04)

Ilsenburger Grobblech GmbH
Veckenstedter Weg 10
D-38171 Bannburg
(A01)

Inspection Stamp
(Z03)

Inspected on Representative
(Z02)

Cyron



ILSENBURGER
GROBBLECH

Ein Unternehmen der Salzgitter Gruppe

Inspection certificate 3.1/3.1.B
DIN EN 10204
(A02)

No. (A02) 605/1231
Purchaser Salzgitter Mannesmann
(A05) International GmbH
40409 Düsseldorf

27.05.2005 No. (A07) P.O. No. 1-PFV-1894
Customer Cessco Steel
(A04) CDN- New Westminster

Product Heavy plate
(B01)

Works order No. 0000009017
(A06)

Dispatch note No. 0080554876
(A05) 27.07.2005
WS

Steel grade and terms of delivery (B02-B03) SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Tensile test (C10-C19)

Spectrum No. (C00)	Heat No. (B02)	Location (C01) 1) 2) 3)	Direct. (C02) 4)	Cond. (B05) 5)	Type (C10) 6)	Yield strength (C11) Rp0,2 N/mm2 ≥ 280	Tensile strength (C12) Rm N/mm2 485-620	Elongation (C13) 81n % ≥ 17		
230839	00599	K6G	Q	N	P	355	504	29		
230840	00599	K6G	Q	N	P	350	504	28		
230841	00599	K6G	Q	N	P	354	505	28		
230842	00599	K6G	Q	N	P	353	503	26		
230843	00599	K6G	Q	N	P	348	504	28		
230844	00599	K6G	Q	N	P	346	503	29		
230845	00599	K6G	Q	N	P	348	502	29		
231103	00602	K6G	Q	N	P	340	510	29		
231104	00602	K6G	Q	N	P	342	513	29		
231105	00602	K6G	Q	N	P	337	512	27		
231106	00602	K6G	Q	N	P	349	515	28		
231108	00600	K6G	Q	N	P	342	495	28		
231109	00600	K6G	Q	N	P	339	496	28		
231110	00600	K6G	Q	N	P	339	496	26		
231111	00600	K6G	Q	N	P	348	502	29		
231112	00600	K6G	Q	N	P	341	500	31		
231113	00600	K6G	Q	N	P	352	504	30		
231114	00599	K6G	Q	N	P	349	507	27		
231115	00599	K6G	Q	N	P	353	504	26		
231116	00599	K6G	Q	N	P	345	506	28		
231117	00599	K6G	Q	N	P	352	504	27		
231118	00599	K6G	Q	N	P	355	507	29		
231119	00600	K6G	Q	N	P	353	501	28		
231120	00600	K6G	Q	N	P	356	508	25		
231129	00600	K6G	Q	N	P	384	520	26		
231130	00600	K6G	Q	N	P	379	517	27		
231131	00600	K6G	Q	N	P	370	517	24		
231132	00600	K6G	Q	N	P	368	513	25		
231133	00600	K6G	Q	N	P	372	520	25		
231134	62364	K6G	Q	N	P	389	535	20		
231135	61927	K6G	Q	N	P	398	525	21		
231248	00602	K6G	Q	N	P	353	520	29		
231249	00602	K6G	Q	N	P	351	519	27		
231250	00602	K6G	Q	N	P	352	518	26		
231251	00602	K6G	Q	N	P	345	515	28		

1) K: Top
2) B: 1/8 Width
3) G: Thickness of product
4) Q: transversal
5) N: normalized
6) P: prime metal

We hereby certify that the delivered material complies with the terms of the order.

(Z01)

DM-System Certification as per ISO 9001 since 23 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Veckenstedter Weg 18
D-35871 Ilseburg
(A01)

Inspection
(Z03)

Inspection Representative
(Z02)

Cyron



ILSEBURGER
GROBBLECH

Ein Unternehmen der Salzgitter Gruppe

Inspection certificate 3.1/3.1.B		No. (A08)	379329	
DIN EN 10204		Page	10/15	
(A01)		Date	05.08.2005	
No. (A07)	605/1231	27.05.2005	No. (A07)	P.O. No. 1-PPV-1894
Purchaser	Salzgitter Mannesmann	Customer	(A08)	Cessco Steel
(A08)	International GmbH	(A08)	CDN- New Westminster	
40409 Düsseldorf				
Product	Heavy plate	Works order No.	(A08)	0000009017
(B01)		Dispatch note No.	(A08)	0080554876
				27.07.2005
Steel grade and terms of delivery	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV	Inspection	(A05)	WS
(B02-B03)	SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV			
	SA 516(M), SA 20(M)			
	ASME sect. II part A ed. 2004			
	ASTM A 516(M) -03, A 20(M) -03			
	CESSCO Rev.11 Feb.2005			

Tensile test (C10-C26)

Specimen No. (C01)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type (C10)	Yield strength (C11) Rp0,2 N/mm2 ≥ 260	Tensile strength (C12) Rm N/mm2 485-620	Elongation (C13) 8 in %		
		1) 2) 3)	4)	5)	6)			≥ 17		
232211	00600	K6G	Q	N	P	363	508	26		
232212	00600	K6G	Q	N	P	364	511	24		
234065	00599	K6G	Q	N	P	356	504	28		
236409	62367	K6G	Q	N	P	397	527	24		

1) K: Top
2) S: 1/8 Width
3) S: Thickness of product
4) Q: transverse
5) N: normalized
6) P: prismatic

Impact test (C40-C49)

Specimen No. (C01)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type of specimen (C40-C41)	Temperature (C42) °F	Impact energy (C43-C45) 1 2 3 MW: 6) ft.lbf ≥ 15				
		1) 2) 3)	4)	5)							
227089	74503	K60	L	N	Charpy V-notch	-051	186	184	188		186
227090	47024	K60	L	N	Charpy V-notch	-051	142	132	112		128
227091	74503	K60	L	N	Charpy V-notch	-051	173	125	212		170
227092	47024	K60	L	N	Charpy V-notch	-051	113	189	83		128
227093	47023	K60	L	N	Charpy V-notch	-051	120	129	120		123
227362	74667	K6V	L	N	Charpy V-notch	-051	135	83	93		103
227363	74667	K6V	L	N	Charpy V-notch	-051	90	50	72		71
227364	47246	K6V	L	N	Charpy V-notch	-051	79	61	68		69
227365	24060	K6V	L	N	Charpy V-notch	-051	129	115	126		123
227366	61927	K6V	L	N	Charpy V-notch	-051	191	193	133		172
227367	61927	K6V	L	N	Charpy V-notch	-051	205	197	215		206
227368	61927	K6V	L	N	Charpy V-notch	-051	203	133	161		166
227667	24058	K60	L	N	Charpy V-notch	-051	104	98	135		112
227668	24058	K60	L	N	Charpy V-notch	-051	128	92	127		116
227669	62367	K60	L	N	Charpy V-notch	-051	28	42	27		32

1) K: Top
2) S: 1/8 Width
3) Q: near surface
4) L: longitudinal
5) N: normalized
6) MW: Average
V: 1/4 Thickness

We hereby certify that the delivered material complies with the terms of the order.

(Z01)

ILM-System: Certification as per ISO 9001 since 28 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Völknerstraße Weg 10
D-38871 Ilseburg
(A01)

Inspection
(Z03)

Inspection Representative
(Z02)

Cyron



ILSENBURGER
GROBBLECH

Ein Unternehmen der Salzgitter Gruppe

Inspection certificate 3.1/3.1.B
DIN EN 10204
(A2)

No. (A03) 379329
Page 11/15
Date 05.08.2005

No. (A01) 605/1231
Purchaser Salzgitter Mannesmann
(A06) International GmbH
40409 Düsseldorf

27.05.2005 No. (A07) P.O. No. 1-PPV-1894
Customer Cessco Steel
(A08) CDN- New Westminster

Product Heavy plate
(B01)

Works order No. 0000009017
(A05)

Dispatch note No. 0080554876
27.07.2005

Steel grade and terms of delivery SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
(B02-B03) SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Inspection
(A05)

Impact test (C40-C49)

Specimen No. (C00)	Heat No. (B07)	Location (C01)		Direct. (C02)	Cond. (B05)	Type of specimen (C40-C41)	Temperature (C03) °F	Impact energy (C42-C45)			
		1) 2) 3)	4)					1 ftlb ≥15	2	3	MW 6) ftlb ≥20
227670	62367	K60	L	N	N	Charpy V-notch	-051	99	138	109	115
227671	62367	K60	L	N	N	Charpy V-notch	-051	94	83	135	104
227672	62367	K60	L	N	N	Charpy V-notch	-051	38	37	39	38
227673	62367	K60	L	N	N	Charpy V-notch	-051	126	97	89	104
227674	62365	K60	L	N	N	Charpy V-notch	-051	89	129	136	118
227675	62364	K60	L	N	N	Charpy V-notch	-051	131	134	135	133
228174	61927	K60	L	N	N	Charpy V-notch	-051	163	166	148	159
229816	00600	K60	L	N	N	Charpy V-notch	-051	137	105	21	88
229817	00600	K60	L	N	N	Charpy V-notch	-051	95	118	27	80
229887	74666	K60	L	N	N	Charpy V-notch	-051	139	68	120	109
229888	24060	K60	L	N	N	Charpy V-notch	-051	171	191	121	161
229889	24060	K60	L	N	N	Charpy V-notch	-051	131	119	128	126
229890	24060	K60	L	N	N	Charpy V-notch	-051	77	52	79	69
229891	24060	K60	L	N	N	Charpy V-notch	-051	128	106	123	119
229892	61925	K60	L	N	N	Charpy V-notch	-051	66	80	89	79
229893	74666	K60	L	N	N	Charpy V-notch	-051	125	198	201	175
230838	00599	K6V	L	N	N	Charpy V-notch	-051	97	159	115	124
230839	00599	K6V	L	N	N	Charpy V-notch	-051	125	128	155	136
230840	00599	K6V	L	N	N	Charpy V-notch	-051	168	97	132	132
230841	00599	K6V	L	N	N	Charpy V-notch	-051	92	134	119	115
230842	00599	K6V	L	N	N	Charpy V-notch	-051	121	83	108	104
230843	00599	K6V	L	N	N	Charpy V-notch	-051	137	142	196	159
230844	00599	K6V	L	N	N	Charpy V-notch	-051	152	131	195	159
230845	00599	K6V	L	N	N	Charpy V-notch	-051	122	151	128	133
231103	00602	K6V	L	N	N	Charpy V-notch	-051	52	57	41	49
231104	00602	K6V	L	N	N	Charpy V-notch	-051	43	49	49	47
231105	00602	K6V	L	N	N	Charpy V-notch	-051	81	81	80	81
231106	00602	K6V	L	N	N	Charpy V-notch	-051	77	62	83	74
231108	00600	K6V	L	N	N	Charpy V-notch	-051	123	164	133	140
231109	00600	K6V	L	N	N	Charpy V-notch	-051	196	119	103	139
231110	00600	K6V	L	N	N	Charpy V-notch	-051	140	122	90	117
231111	00600	K6V	L	N	N	Charpy V-notch	-051	113	91	114	106
231112	00600	K6V	L	N	N	Charpy V-notch	-051	226	146	162	178
231113	00600	K6V	L	N	N	Charpy V-notch	-051	148	178	103	143

1) K: Top
2) S: 1/8 Width
3) O: near surface
V: 1/4 Thickness

4) L: longitudinal
5) N: normalized
6) MW: Average

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

ISA-System: Certification as per ISO 9001 since 28 February 1999

Trademark
(A04)

ILsenburger Grobblech GmbH
Verkehrsweg 10
D-38071 Hainburg
(A01)

Inspection
(Z02)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B		No. (A03)	379329
DIN EN 10204		Page	12/15
		Date	05.08.2005
No. (A07)	605/1231	27.05.2005	No. (A07)
Purchaser	Salzgitter Mannesmann		P.O. No. 1-PPV-1894
(A06)	International GmbH		Cessco Steel
	40409 Düsseldorf		CDN- New Westminster
Product	Heavy plate	Works order No.	0000009017
(B01)		(A08)	
Steel grade and terms of delivery	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV	Dispatch note No.	0080554876
(B02-B03)	SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV		27.07.2005
	SA 516(M), SA 20(M)	Inspection	WS
	ASME sect. II part A ed. 2004	(A05)	
	ASTM A 516(M) -03, A 20(M) -03		
	CESSCO Rev.11 Feb.2005		

Impact test (C40-C41)

Specimen No. (C01)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type of specimen (C40-C41)	Temperature (C03) °F	Impact energy (C42-C43)			
							1 ft.lbf ≥ 15	2	3	MW 6) ft.lbf ≥ 20
231114	00599	K6V	L	N	Charpy V-notch	-051	122	118	37	92
231115	00599	K6V	L	N	Charpy V-notch	-051	104	122	129	119
231116	00599	K6V	L	N	Charpy V-notch	-051	113	112	124	117
231117	00599	K6V	L	N	Charpy V-notch	-051	104	149	170	141
231118	00599	K6V	L	N	Charpy V-notch	-051	128	122	139	130
231119	00600	K6V	L	N	Charpy V-notch	-051	113	147	194	151
231120	00600	K6V	L	N	Charpy V-notch	-051	127	122	143	131
231121	00600	K6V	L	N	Charpy V-notch	-051	177	137	145	153
231122	00600	K6V	L	N	Charpy V-notch	-051	146	148	160	151
231123	00600	K6V	L	N	Charpy V-notch	-051	136	102	145	128
231124	00600	K6V	L	N	Charpy V-notch	-051	139	142	145	142
231125	00600	K6V	L	N	Charpy V-notch	-051	91	136	141	122
231126	00600	K6V	L	N	Charpy V-notch	-051	45	38	33	39
231127	00600	K6V	L	N	Charpy V-notch	-051	44	58	57	53
231128	00600	K6V	L	N	Charpy V-notch	-051	66	31	42	46
231129	00600	K6V	L	N	Charpy V-notch	-051	66	52	47	55
231130	00600	K6V	L	N	Charpy V-notch	-051	44	64	71	60
231131	00600	K6V	L	N	Charpy V-notch	-051	83	95	79	86
231132	00600	K6V	L	N	Charpy V-notch	-051	86	80	49	72
231133	00600	K6V	L	N	Charpy V-notch	-051	117	70	104	97
231134	00600	K6V	L	N	Charpy V-notch	-051	126	129	133	129
231135	00600	K6V	L	N	Charpy V-notch	-051	126	126	131	128

1) K: Top
2) B: 1/8 Width
3) O: near surface
4) V: 1/4 Thickness

4) L: longitudinal
5) N: normalized
6) MW: Average

Specimen size:
5,0 x 10 x 55 mm (from 5,00 mm up to 8,99 mm plate thickness)
7,5 x 10 x 55 mm (from 9,00 mm to 11,99 mm plate thickness)
10 x 10 x 55 mm (from 12,00 mm plate thickness)

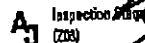
We hereby certify that the delivered material complies with the terms of the order.

(Z01)

QM-Systeme Certification as per ISO 9001 since 28 February 1990

 Trademark
(A04)

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-35697 Ilseburg
(A01)

 Inspection Representative
(Z03)

Inspection Representative
(Z02)

Cyron



ILSENBURGER
GROBBLECH

Ein Unternehmen der Salzgitter Gruppe

Inspection certificate 3.1/3.1.B
DIN EN 10204

(A01)

No. (A03) 379329
Page 13/15
Date 05.08.2005

No. (A07) 605/1231
Purchaser Salzgitter Mannesmann
(A08) International GmbH
40409 Düsseldorf

27.05.2005

No. (A07) P.O. No. 1-PPV-1894
Customer Cessco Steel
(A08) CDN- New Westminster

Product Heavy plate
(B01)

Works order No. 0000009017
(A06)

Dispatch note No. 0080554876
(A06)

Steel grade and terms of delivery SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
(B02-B03) SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516(M), SA 20(M)
ASME sect. II part A ed. 2004
ASTM A 516(M) -03, A 20(M) -03
CESSCO Rev.11 Feb.2005

Inspection WS
(A06)

Hardness test (CEN)

Specimen No. (C01)	Heat No. (B07)	Location (C01)	Cond. (B05)	Type of specimen (C03)	Hardness (C31-C33)			
					1	2	3	MW 4)
199415 *)	24060	K6	N	HV10	160	160	163	161
214400 *)	61925	K6	N	HV10	158	160	160	159
215259 *)	61927	K6	N	HV10	161	162	158	160
216884 *)	74503	K6	N	HV10	157	157	157	157
217756 *)	47023	K6	N	HV10	157	158	161	159
218665 *)	47024	K6	N	HV10	157	160	159	159
220025 *)	24058	K6	N	HV10	162	160	161	161
220069 *)	74666	K6	N	HV10	159	156	154	156
220824 *)	62364	K6	N	HV10	163	162	161	162
221557 *)	47246	K6	N	HV10	158	161	156	158
224336 *)	74667	K6	N	HV10	160	160	157	159
227089	74503	K6	N	HB30	146	150	147	148
227090	47024	K6	N	HB30	152	149	150	150
227091	74503	K6	N	HB30	146	149	148	148
227092	47024	K6	N	HB30	151	154	154	153
227093	47023	K6	N	HB30	149	151	151	150
227362	74667	K6	N	HB30	152	153	153	153
227363	74667	K6	N	HB30	152	150	154	152
227364	47246	K6	N	HB30	150	151	149	150
227365	24060	K6	N	HB30	152	152	151	152
227366	61927	K6	N	HB30	149	151	152	151
227367	61927	K6	N	HB30	151	155	154	153
227368	61927	K6	N	HB30	151	150	153	151
227667	24058	K6	N	HB30	159	156	158	158
227668	24058	K6	N	HB30	158	156	158	157
227669	62367	K6	N	HV10	162	162	167	164
227669	62367	K6	N	HB30	160	159	154	158
227670	62367	K6	N	HB30	160	157	160	159
227671	62367	K6	N	HB30	156	155	156	156
227672	62367	K6	N	HB30	159	156	158	158
227673	62367	K6	N	HB30	160	159	156	158
227674	62365	K6	N	HV10	165	166	169	167
227674	62365	K6	N	HB30	156	159	159	158
227675	62364	K6	N	HB30	156	155	158	156
228174	61927	K6	N	HB30	157	153	152	154
229816	00600	K6	N	HB30	153	150	149	151
229817	00600	K6	N	HV10	158	159	159	159

- 1) X: Top
2) 6: 1/8 Width
*) The sample product is not part of the delivery

- 3) N: normal load
4) MW: Average

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

QMS-System: Certification as per ISO 9001 since 28 February 1990

ILSENBURGER GROBBLECH GmbH
(A04)

ILSENBURGER GROBBLECH GmbH
Verkehrsweg 10
D-38971 Ilmenburg
(A01)

Inspection Representative
(Z02)

Inspection Representative
(Z02)

Cyrion

Inspection certificate 3.1/3.1.B DIN EN 10204 (A2)		No. (A03) 379329 Page 14/15 Date 05.08.2005
No. (A07) 605/1231 Purchaser (A08) Salzgitter Mannesmann International GmbH 40409 Düsseldorf	27.05.2005	No. (A07) P.O. No. 1-PPV-1894 Customer (A08) Cessco Steel CDN- New Westminster
Product (B01) Heavy plate		Works order No. (A06) 0000009017 Dispatch note No. (A06) 0080554876 27.07.2005 WS
Steel grade and terms of delivery (B02-B03)	SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV SA 516(M), SA 20(M) ASME sect. II part A ed. 2004 ASTM A 516(M) -03, A 20(M) -03 CESSCO Rev.11 Feb.2005	

Hardness test (C30-C35)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Cond. (B05)	Type of specimen (C30)	Hardness (C31-C32)			
					1	2	3	MW 4)
229817	00600	K6	N	HB30	151	149	151	150
229887	74666	K6	N	HB30	153	154	155	154
229888	24060	K6	N	HB30	151	153	157	154
229889	24060	K6	N	HB30	157	155	157	156
229890	24060	K6	N	HB30	154	158	156	156
229891	24060	K6	N	HB30	153	151	152	152
229892	61925	K6	N	HB30	153	157	156	155
229893	74666	K6	N	HB30	152	151	151	151
230838	00599	K6	N	HB30	149	150	153	151
230839	00599	K6	N	HB30	152	147	149	149
230840	00599	K6	N	HB30	147	147	150	148
230841	00599	K6	N	HB30	150	149	150	150
230842	00599	K6	N	HB30	147	151	149	149
230843	00599	K6	N	HB30	151	148	147	149
230844	00599	K6	N	HB30	151	152	151	151
230845	00599	K6	N	HV10	155	156	155	155
230845	00599	K6	N	HB30	151	148	149	149
231103	00602	K6	N	HB30	151	151	154	152
231104	00602	K6	N	HB30	152	151	152	152
231105	00602	K6	N	HV10	160	158	163	160
231105	00602	K6	N	HB30	150	154	154	153
231106	00602	K6	N	HB30	152	153	152	152
231108	00600	K6	N	HB30	148	146	149	148
231109	00600	K6	N	HB30	147	148	144	146
231110	00600	K6	N	HB30	147	145	146	146
231111	00600	K6	N	HB30	147	147	148	147
231112	00600	K6	N	HB30	151	150	148	150
231113	00600	K6	N	HB30	150	150	152	151
231114	00599	K6	N	HB30	151	149	153	151
231115	00599	K6	N	HB30	148	147	149	148
231116	00599	K6	N	HB30	149	150	153	151
231117	00599	K6	N	HB30	148	151	149	149
231118	00599	K6	N	HB30	153	149	152	151
231119	00600	K6	N	HB30	148	150	148	149
231120	00600	K6	N	HB30	149	149	151	150
231129	00600	K6	N	HB30	155	153	157	155
231130	00600	K6	N	HB30	152	153	153	153

1) K: Top
2) B: Vb Width
*) The sample product is not part of the delivery

3) N: normalized
4) MW: Average

We hereby certify that the delivered material complies with the terms of the order.
(Z01)
QM-System: Certification as per ISO 9001 since 28 February 1990

 Trademark
(A04)

Ilsenburger Grobblech GmbH
Veckerstraße Weg 10
D-38671 Ilsenburg
(A01)

 Inspection Stamp
(Z03)

Inspection Representative
(Z02)

Cyron

Inspection certificate 3.1/3.1.B
DIW EN 10204
(A02)

No. (A07) 605/1231
Purchaser (A06) Salzgitter Mannesmann International GmbH
40409 Düsseldorf

27.05.2005 No. (A07) P.O. No. 1-PFV-1894
Customer (A06) Cessco Steel
CDN- New Westminster

Product (B01) Heavy plate

Work order No. (A08) 0000009017
Dispatch note No. (A08) 0080554876
27.07.2005

Steel grade and terms of delivery (B02-B03) SA 516 Gr. 70 MTLTV / A 516 Gr. 70 MTLTV
SA 516M Gr. 485 MTLTV / A 516M Gr. 485 MTLTV
SA 516 (M), SA 20 (M)
ASME sect. II part A ed. 2004
ASTM A 516 (M) -03, A 20 (M) -03
CESSCO Rev.11 Feb.2005

Inspection (A05) WS

Hardness test (C31-C33)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Cond. (B05)	Type of specimen (C03)	Hardness (C31-C33)			
					1	2	3	MW 4)
231131	00600	K6	N	HB30	155	153	153	154
231132	00600	K6	N	HB30	151	153	150	151
231133	00600	K6	N	HB30	157	153	152	154
231134	62364	K6	N	HB30	157	158	158	158
231135	61927	K6	N	HB30	154	156	157	156
231248	00602	K6	N	HB30	156	157	154	156
231249	00602	K6	N	HB30	157	155	153	155
231250	00602	K6	N	HB30	151	151	154	152
231251	00602	K6	N	HB30	156	151	151	153
232211	00600	K6	N	HB30	152	149	150	150
232212	00600	K6	N	HB30	153	153	150	152
234065	00599	K6	N	HB30	149	152	151	151
236409	62367	K6	N	HB30	155	155	154	155

- 1) K: Top
2) B: 1/8 Width
*) The sample product is not part of the delivery

- 3) N: normalized
4) MW: Average

For results of microanalysis see appendix to this certificate.

Heat treatment: Temperature : 910 +/-10°C
Soaking time: 30 min/inch
Cooling in still air

We hereby certify that the delivered material complies with the terms of the order.
(Z01)

DN-System: Certification as per ISO 9001 since 28 February 1990

Trademark
(A04)

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-36471 Ilseburg
(A01)

Inspection Place
(Z03)

Inspection Representative
(Z02)

Cyron

HEAT NUMBER : AC007
 TRANS AM PIPING PRODUCTS - REV'D BY: 
 Shipment/Seq #: S 6 - 1724 14

1" CL 150 W/N FLANGE RF XXH
 BORE A105N

Certificate No 6906050R-1214002

Customer (주) 세폴 SEYBOLD

Material SA/A105-02

P.O. No. CI-06-618

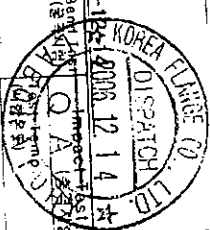
W/O No. 6906050R

Issued date 2006-12-14

INSPECTION CERTIFICATE

(시 협 성 적 서)

KOREA FLANGE CO., LTD.
 한국로렌지공업주식회사
 194, Dongbu-Dong, Dong-Ku,
 Ulsan-Metropolitan, KOREA
 울산광역시 동구 동부동 194번지



Item No. (품번)	Article (품명)	Quantity (수량)	Lot No. (품번하) (Control No.)	Mechanical Properties (기계적성질)				Tension Test (인장시험)				Bend Test (굽힘시험)		Hardness Test (경도시험)	CODE NO (제품번호)
				Y.S. (항복강도) psi	T.S. (인장강도) psi	E.L. (인신율) %	H.A. (단면수축율) %	Min	Max	Min	Max	Angle (각도) (°E)	Unit (단위) (mm)		
002	AN 150 WN RF S160 1		AC007	48300	77500	32.0	57.0							148 145	
003	AN 150 WN RF XXS 3/4		AC007	48300	77500	32.0	57.0							148 145	
004	AN 150 WN RF XXS 1		AC007	48300	77500	32.0	57.0							148 145	
005	AN 300 WN RF S160 1		AC007	48300	77500	32.0	57.0							155-152	
006	AN 600 WN RF XS-20		AC008	48000	77700	35.0	65.0								

Lot No. (품번하) (Control No.)	Chemical Composition (화합성분) (%)				Mechanical Properties (기계적성질)				Tension Test (인장시험)				Bend Test (굽힘시험)		Hardness Test (경도시험)	CODE NO (제품번호)
	C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	U	N	Angle (각도) (°E)	Unit (단위) (mm)		
AC007	MAX 35	10	60	MAX 35	MAX 10	MAX 100	MAX 300	MAX 120	MAX 80	MAX 400	MAX 20					
AC007	21	23	82	10	9	1	60	10	10	10	10					
AC007	21	23	82	10	9	1	60	10	10	10	10					
AC007	21	23	82	10	9	1	60	10	10	10	10					
AC008	18	25	99	12	6	1	40	10	10	10	10					

CE Calculated: 36
 MTR Accepted: ☒ Yes ☐ No

KOFS-CAO-035EN(3) 2001.10

Works Test Certificate to EN 10204/3.1B
 Flanges supplied to ASME B16.5, NACE MR-01-75
 CSA Z245.12 GR 248 CAT 1

5/12/07 Init: MNS

QA Department Manager

Visual & Dimension Inspection
 (시각 및 치수 검사)
 GOOD

Solution
 (고용화물처리)

Tempering
 (조질)

Annealing
 (조질)

Quenching
 (조질)

Heat treatment
 (열처리)

Normalizing
 (조질)

900 °C 2.0 h A.C

HEAT NUMBER : 161A5
TRANS AM PIPING PRODUCTS - REV'D BY:
Shipment/Seq #: 5 6 1173 22

1-1/2" CL 150 W/N FLANGE RF XXH
BORE A105N

CLIENTE / Customer / Client
TRANS AM PIPING PRODUCTS LTD.
7025 - 44TH STREET S.E.
CALGARY - ALBERTA T2C 4E8
CANADA

CERTIFICADO DE INSPECCION
Works Certificate - Certificat d'Usine
FECHA: 09/03/2006
N°: 105480
Page: 1

DIN EN 10204 / 3.1
ISO 10474 / 3.1



ULMA FORJA S.COOP.

ULMA

PRODUCTO: FLANGES
SU PEDIDO N°:
Your Order No. P08 CI-06-175
Votro Cde. N°:

NORMAS APLICABLES: ASME B16.5-96
Requisitos - Normes Applicables

MATERIAL CORRESPONDIENTE: ASTM A105N-03
Materia Correspondiente - Matière
MODELO DE FUSION: ASME SA105N-03
NACE MR-01-7503
Steel Making - Elaboration de l'acier
E = Elec. Y = Oxígeno básico

DE
of. de 0102/2006

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

MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant

DEPARTAMENTO: QUALITY ASSURANCE



B° Zubiaga, 3 - Apdo. 14
20560 Oñati (Gipuzkoa) SPAIN
Tel.: 34 - 943 780552
Fax: 34 - 943 781808
E-mail: forja@forjng.ulma.es

50886

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations	COLADA N° Heat No N° Coulee	RESISTENCIA T. Strength Tensile Rupt Mm2	LONGITUD Y. Strength Elongation La. & d Mm2	ALARGUE Elongation La. & d %	ESTRUCION Rud. Area Section %	RESISTENCIA Impact test Resilience Joules	ACERA Average Adoptive	DUREZA Hardness Chavil HB
1	1	WN 10 150LB S40 RF A105N	NIE	260A5	517	313	32.00	64.30			150
1	1	WN 10 150LB S40 RF A105N	NIE	265A5	515	317	32.00	64.80			150
5	1	WN 10 150LB S40 RF A105N	NIE	274A5	522	315	32.00	65.80			152
9	1	WN 1.1/2 150LB SXXXS RF A105N	NIE	161A5	504	303	33.20	67.00			150
10	1	WN 1.1/2 300LB SXXXS RF A105N	NIE	18A5	515	317	33.00	66.40			151
13	1	WN 3 600LB S80 RF A105N	NIE	42A5	516	319	32.00	65.80			149
15	1	WN 3 900LB S40 RF A105N	NIE	338A5	518	314	31.70	63.00			150
16	1	BLIND 1/2 1500LB RF A105N	NIE	378A5	504	311	33.70	67.00			147
		BLIND 1/2 1500LB RF A105N	NY	243A4	528	313	31.70	64.00			153

COMPOSICION QUIMICA - STEEL MARKERS LADLE ANALYSIS - ANALYSE CHIMIQUE

Heat No N° Coulee	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
161A5	0.200	0.210	0.850	0.015	0.010	0.020	0.010	0.001	0.001	0.002	0.200	0.360
18A5	0.200	0.230	0.810	0.009	0.010	0.020	0.010	0.002	0.002	0.804	0.280	0.358
243A4	0.220	0.250	0.860	0.005	0.002	0.040	0.005	0.010	0.001	0.007	0.020	0.376
260A5	0.190	0.220	0.830	0.016	0.005	0.120	0.080	0.020	0.007	0.001	0.210	0.377
265A5	0.190	0.210	0.850	0.012	0.005	0.110	0.070	0.020	0.007	0.003	0.220	0.403
274A5	0.190	0.240	0.900	0.011	0.003	0.140	0.170	0.040	0.007	0.003	0.220	0.393
338A5	0.180	0.240	0.850	0.011	0.004	0.180	0.130	0.060	0.002	0.004	0.200	0.354
378A5	0.190	0.190	0.880	0.015	0.008	0.070	0.070	0.003	0.002	0.004	0.270	0.362
42A6	0.180	0.230	0.830	0.017	0.002	0.080	0.080	0.020	0.007	0.001		

Las dimensiones y la condición superficial se hallaron satisfactorias
Dimension and surface condition were found acceptable
- Les dimensions et états de surface sont satisfaisants
Los materiales citados cumplen las normas aplicables
Manufacturing requirements are satisfied
- Les normes applicables sont respectées

EL INSPECTOR
Works Inspector - L'inspecteur

ULMA FORJA S.COOP.
Dpto. de Garantía de calidad
Quality Assurance Dept.

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

Date: 5/17/07
CE Calculated: 0.36
MTR Accepted: ☒ Yes ☐ No

HEAT NUMBER : 26495
 TRANS AM PIPING PRODUCTS - REV'D BY: 
 Shipment/Seq #: S 6 - 1471 6

2" CL 150 W/N FLANGE RF XXH
 BORE A105N

三英鋼鐵股份有限公司
 SAN ENG STEEL FORGING CO., LTD.
 NO. 22 LANE 50, WAN SING STREET
 SAN MIN DISTRICT, KAOHSIUNG,
 TAIWAN, R. O. C.
 Tel: 07-372 4249 07-371 2934
 Fax: 07-371 2923 07-371 2846
 URL: http://www.saneng.com.tw
 e-mail: saneng@ksts.seed.net.tw

MILL TEST CERTIFICATE
 EN10204-3.1.(B) DIN50049/3.1.B)
 CUSTOMER : SEYBOLD INTERNATIONAL CORP.
 20 HOLLY STREET, SUITE 205
 TORONTO, M4S 3B1, CANADA
 TEL: 416-4810191 FAX: 416-4811790

CERT NO.: SE-5662CN
 DATE: 07/24/2006

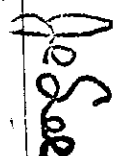
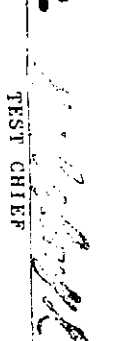
ORDER NO.: 5662(3) TRANS AM
 L/C NO.:

P R O D U C T		S P E C I F I C A T I O N F O R M A T E R I A L		S P E C I F I C A T I O N F O R F I T T I N G S											
FORGED CARBON STEEL FLANGES		ASTM A-105-03/ASME SA-105 (Z245.12 CAT 1 GR.248 SOVR SERVICE-01)		ASME B16.5-98a											
ITEM NO.	D E S C R I P T I O N	Q U A N T I T Y	C H E M I C A L C O M P O S I T I O N (%)												
			C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	C.E.
1.	150 WRF STD 1 1/2" A105N	1	0.200	0.200	1.050	0.008	0.012	0.070	0.050	0.040	0.005	0.003	0.005	0.009	0.394
2.	150 WRF STD 2" A105N	2	0.200	0.130	1.150	0.016	0.019	0.100	0.070	0.060	0.012	0.003	0.005	0.009	0.420
3.	150 WRF STD 3" A105N	3	0.200	0.190	1.040	0.011	0.004	0.050	0.060	0.040	0.005	0.003	0.005	0.011	0.393
4.	150 WRF STD 4" A105N	4	0.210	0.200	1.120	0.013	0.017	0.090	0.060	0.060	0.005	0.003	0.005	0.010	0.421
5.	150 WRF STD 20" A105N	20	0.200	0.210	1.080	0.014	0.009	0.080	0.110	0.040	0.008	0.003	0.005	0.008	0.411
6.	150 WRF STD 24" A105N	24	0.200	0.200	1.010	0.020	0.009	0.080	0.040	0.020	0.010	0.003	0.002	0.000	0.380
7.	150 WRF STD 16" A105N	16	0.220	0.210	0.810	0.021	0.019	0.140	0.080	0.030	0.030	0.003	0.005	0.010	0.402
8.	300 WRF STD 6" A105N	6	0.200	0.170	1.110	0.010	0.015	0.070	0.040	0.030	0.005	0.003	0.005	0.008	0.405
9.	600 WRF STD 6" A105N	6	0.200	0.220	1.110	0.012	0.007	0.070	0.050	0.050	0.005	0.003	0.005	0.008	0.405
10.	600 WRF STD 6" A105N	6	0.180	0.270	0.890	0.019	0.018	0.220	0.070	0.160	0.020	0.000	0.000	0.011	0.372
ITEM	H E A T	T E N S I L E S T R E N G T H (M P A)	Y I E L D S T R E N G T H (M P A)	E L O N G A T I O N (%)	H A R D N E S S (H R)	R E D U C T I O N O F A R E A (%)	H E A T T R E A T M E N T	M A T E R I A L S U P P L I E R	R E M A R K S						
									NORMALIZATION: 880°C X 3HRS CONFORMS TO MEET NACE MR-01-75 LATEST EDITION						
									Date: 5/12/07 Init: MRS						
									PO#: 5252B						
									Job#: 5252B						
									CE Calculated: 4						
									MTR Accepted: ☒ Yes ☐ No						

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR BY THE ABOVE ORDER AND IS THAT WHICH HAS BEEN TESTED TO THE SATISFACTION OF THE CERTIFICATE.

MANAGER

TEST CHIEF

3" CL 150 W/N FLANGE RF
SCH 160 BORE A105N

HEAT NUMBER : AC018
TRANS AM PIPING PRODUCTS - REV'D BY: *[Signature]*
Shipment/Seq #: 8 7 - 1090 3

INSPECTION CERTIFICATE

(사) 협성적사

KOF KOREA FLANGE CO., LTD.
한국프랜지공업주식회사
194, Dongbu-Dong, Dong-Ku,
Ulsan-Metropolitan, KOREA
울산광역시 동구 동북동 194번지

Certificate No. 7901050A-0131001

Customer SEYBOLD

Material SA/A105-02

P.O. No. 6083

W/O No. 7901050A

Issued date 2007-0

(발주번호)

(작성지번호)

(발행일)

(작성지)

(발행일)

(작성지)

Item No. (품번)	Article (품명)	Quantity (수량)	Lot No. (주조번호) (Control No.)	Mechanical Properties (기계적 특성)										Hardness Test (경도 시험)	CODE NO (제품번호)
				Y.S. (항복강도) psi	T.S. (인장강도) psi	E.L. (연신율) %	R.A. (단면수축율) %	Radius (반경) (인치)	Angle (각도) (도)	Ave. Temp. (평균 온도) (도 F)	Min. Temp. (최저 온도) (도 F)	Max. Temp. (최고 온도) (도 F)	Min. Temp. (최저 온도) (도 F)		
001	AN 150 WN RF S160 11/2		AC020	49300	77700	40.0	59.0							151 148	
002	AN 150 WN RF S160 2		AC020	49300	77700	40.0	59.0							151 148	
003	AN 150 WN RF S160 3	↑	AC018	48900	78100	35.0	61.0							150 147	
004	AN 150 WN RF XXS 11/2		AC020	49300	77700	40.0	59.0							151 148	
005	AN 150 WN SQ RF S160 10		AC033	48800	79000	34.0	61.0							156 153	

Chemical Composition (화합물 조성) (%) Requirement (A33) (요구치)	C		Si		Mn		P		S		Ni		Cr		Mo		V		Co		Heat Treatment (열처리)	Visual & Dimension Inspection (시각 및 치수 검사)
	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100	1/100			
Lot No. (주조번호) (Control No.)	MAX 35	10	35	60	105	MAX 35	MAX 40	MAX 100	MAX 100	MAX 300	MAX 120	MAX 80	MAX 400	MAX 20								
AC020	21	23	82	10	9	1	60	10	10	10	10	10	10	10								
AC020	21	23	82	10	9	1	60	10	10	10	10	10	10	10								
AC018	21	25	93	20	11	1	20	10	10	10	10	10	10	10								
AC020	21	23	82	10	9	1	60	10	10	10	10	10	10	10								
AC033	18	23	101	15	5	1	20	10	10	10	10	10	10	10								
Works Test Certificate to EN 10204/3.1B																						
Flanges supplied to ASME B16.5, NACE MR-01-75																						
CSA Z245.12 GR 248 CAT 1																						
Others (기타 사항)																						
QA Department Manager (품질보증팀장)																						
B. A. [Signature]																						

Works Test Certificate to EN 10204/3.1B
Flanges supplied to ASME B16.5, NACE MR-01-75
CSA Z245.12 GR 248 CAT 1

Surveyor To: We hereby certify that material described herein has been tested and satisfied as above in accordance with the specification.

KOFS-CA0-035EN(3) 2001.10

Date: 5/17/07 Init: rwg
Job: 52525
CE Calculated: 1.37
MTR Accepted: ☒ Yes ☐ No

Visual & Dimension Inspection
(시각 및 치수 검사)
GOOD
B. A. Coey

QA Department Manager
(품질보증부장)

HEAT NUMBER : 44039
 TRANS AM PIPING PRODUCTS - REV'D BY:
 Shipment/Seq #: 5 6 - 1110 15



4" CL 150 W/N FLANGE RF
 SCH 160 BORE A105N

三英鋼鐵股份有限公司
 SAN ENG STEEL FORGING CO., LTD.

MILL TEST CERTIFICATE
 EN10204-3.1.B(DIN50049/3.1.B)
 CUSTOMER: SEYBOLD INTERNATIONAL CORP.

CERT NO.: SE-5000FN

DATE: 02/10/2006

NO. 22 LANE 50, WAN SING STREET
 SAN MIN DISTRICT, KAOHSIUNG,
 TAIWAN, R. O. C.
 Tel: 07-372 4249 07-371 2934
 Fax: 07-371 2923 07-371 2846
 URL: http://www.saneng.com.tw
 e-mail: saneng@ksts.seed.net.tw

ORDER NO.: 5000(6)TRANS AM

L/C NO.:

PAGE:

P R O D U C T		S P E C I F I C A T I O N F O R M A T E R I A L				S P E C I F I C A T I O N F O R F I T T I N G S									
FORGED CARBON STEEL FLANGES		ASTM A-105-03/ASME SA-105 (2245.12 CAT 1 GR.248 SOUR SERVICE-01)				ASME B16.5-98a									
ITEM NO.	D E S C R I P T I O N	Q U A N T I T Y	C H E M I C A L C O M P O S I T I O N (%)												
			C	SI	Mn	P	S	Cu	Cr	Ni	Mo	V	Nb	N	C.E.
1.	150 WRF S160		0.210	0.200	1.120	0.013	0.017	0.090	0.060	0.060	0.005	0.003	0.005	0.010	0.421
2.	150 WRF XS		0.200	0.200	1.050	0.008	0.012	0.070	0.050	0.040	0.005	0.003	0.005	0.009	0.394
3.	300 WRF STD		0.210	0.280	0.900	0.022	0.008	0.170	0.250	0.180	0.020	0.000	0.001	0.008	0.438
4.	900/1500 WRF XS		0.200	0.210	1.050	0.011	0.010	0.050	0.040	0.030	0.015	0.003	0.005	0.007	0.392
5.	600 WRF XS(SC)		0.210	0.180	1.120	0.011	0.016	0.060	0.060	0.050	0.040	0.004	0.005	0.008	0.425
6.	900 WRF STD		0.220	0.250	0.950	0.016	0.005	0.036	0.026	0.032	0.003	0.007	0.002	0.000	0.389
7.	900/1500 WRF XS		0.200	0.210	1.050	0.011	0.006	0.050	0.040	0.030	0.015	0.003	0.005	0.007	0.392
8.	150 WRF XS		0.200	0.200	1.110	0.012	0.008	0.050	0.040	0.040	0.015	0.003	0.005	0.008	0.403
ITEM	H E A T	TENSILE STRENGTH (MPA)	YIELD STRENGTH (MPA)	ELONGATION (%)	HARDNESS (H B)		REDUCTION OF AREA (%)	H E A T T R E A T M E N T	M A T E R I A L S U P P L I E R	R E M A R K S					
					MAX	MIN									
1.	44039	535.10	359.70	31.8	157	63.0		NORMALIZED	DEMK	NORMALIZATION: 880°C X 2HRS CONFORMS TO MEET NACE MR-01-75 LATEST EDITION.					
2.	10938	491.30	287.30	35.8	154	67.7		NORMALIZED	DEMK						
3.	57374	503.10	331.50	32.6	150	64.9		NORMALIZED	RED OCTOBER						
4.	38794	504.70	329.30	33.0	157	64.0		NORMALIZED	DEMK						
5.	27937	513.90	339.30	34.0	153	67.7		NORMALIZED	PANZHINUA IRON						
6.	06869	500.80	331.30	36.0	171	67.7		NORMALIZED	DEMK						
7.	38794	504.70	329.30	33.0	157	64.0		NORMALIZED	DEMK						
8.	47402	517.80	325.60	33.0	153	67.7		NORMALIZED	DEMK						
Date: 5/13/07										MTR Accepted: ☒ Yes ☐ No					

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR BY THE ABOVE ORDER AND IS THAT WHICH HAS BEEN TESTED TO THE SATISFACTION OF THE CERTIFICATE.

MANAGER

TEST CHIEF

San Jose

San Jose

Date: 5/17/07
 MTR Accepted: ☒ Yes ☐ No

2" XXH BW TEES A234-WPB

HEAT NUMBER : 624550
 TRANS AM PIPING PRODUCTS - REV'D BY: *SB*
 Shipment/Seq #: S 6 - 1721 11

Purchaser:
 品名
 TRANS-AM PIPING
 PRODUCTS LTD.

INSPECTION CERTIFICATE

検査証明書

EN 10204/3.1

株式会社 ベネックス

Certificate No.

KIRYU FACTORY

Date: 11/11

証明番号

651 2 CHOME AIOI-CHO
KIRYU CITY GUNMA PREF. JAPAN群馬県桐生市相生町2-651
TEL (0277) 54-8146

JAN. 31, 2007

4890624550

BENEX No.
 ベネックス番号
 90-6245-50

Order No.
 注文番号
 CI-06-680

Job No.
 工事番号

Specification for Material
 材料規格

Specification for Inspection
 検査規格

Visual Examination
 外観検査

Dimensional Inspection
 寸法検査

MPG No. (Heat Identification No.)
 製造番号

ASTM A234/A234M-04 GR. WPB
 SATISFIES ASME SA234-LATEST

ASME B16.9-2003
 (T * 1)

Quantity
 数量

GOOD

GOOD

624550

SEAMLESS T(S) WPB 2 XXS

HARDNESS TEST
 H.B. 197MAX.

Material Manufacturer
 素材供給メーカー

Material Heat No.
 製鋼番号

NACE MR-01-75
 (2003)

GOOD

JFE STEEL CO. CHITA WORKS

2-46054

Chemical Composition 化学成分 %

* 2 Tension Test
 引張試験

Y S T S

E

Specification

C

Si

Mn

P

S

Ni

Cr

Mo

Cu

V

CEQ*

Y S

T S

E

%

規定値

100

100

100

1000

1000

100

100

1000

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

Min.

10

29

106

50

58

40

40

15

40

8

42

240

415

30

Max.

30

106

50

58

40

40

15

40

8

42

240

415

30

Min.

10

29

106

50

58

40

40

15

40

8

42

240

415

30

Max.

30

106

50

58

40

40

15

40

8

42

240

415

30

Min.

10

29

106

50

58

40

40

15

40

8

42

240

415

30

Max.

30

106

50

58

40

40

15

40

8

42

240

415

30

Min.

10

29

106

50

58

40

40

15

40

8

42

240

415

30

Min.

10

29

106

50

58

40

40

15

40

8

42

240

415

30

Max.

30

106

50

58

40

40

15

40

8

42

240

415

30

Min.

10

29

106

50

58

40

40

15

40

8

42

240

415

30

Max.

30

106

50

58

40

40

15

40

8

42

240

415

30

Min.

10

29

106

50

58

40

40

15

40

8

42

240

415

30

Max.

30

106

50

58

40

40

15

40

8

42

240

415

30

Min.

10

29

106

50

58

40

40

15

40

8

42

240

415

30

Max.

30

106

50

58

40

40

15

40

8

42

240

415

30

Min.

10

29

106

50

58

HEAT NUMBER : 504395
TRANS AM PIPING PRODUCTS - REV'D BY: JB
P.O. # /Seq #: L-07 - 7328 1

1-1/2" XXH LR 45 BW ELLS A234-WPB

ERNE FITTINGS GmbH

A-6824 Schöns, Hauptstr. 48 Austria
Telefon 05524/501-0 Telefax 05524/501-930

Abnahmeprüfzeugnis Nr.: 001502/03-HG
Inspection certificate no.:

EN 10204 - 3.1.B

Best.Nr. /Order no.: 122302AZA
Unsere Nr. /Our no.: 56410-HS

Besteller /Customer:
Allied Fitting Corp.

8207 43 Road Street
CDN- Edmonton, Alberta T6B 2H3

Pos. Menge Kundenartikelnnummer
Item Quantity article-no.
0021 50,000

Anforderungen /Requirements:
ERNE-elbows ASME B16.9-2001 LR
material : WPB
TR-addit. basemat.: chemical requirements
: CAN/CSA Z245.11
TR-fitting : ASTM A 234/A 234M-01
TR-addit. fitting : ASME SA 234 Sec. II Part A,
M0803, NACE MR-01-75
: NACE MR-01-75
certificate : EN 10204/3.1B
rust protection : ERNE Standard
Designation:
LR-45-S-WPB-1.1/2"-XXS

Werkstoffgüternachweis des Einsatzrohres / Certificate of base Material:

Schmelze-Nr. Heat-no.	Rohrzeugnis-Nr. Tube work's-cert.-no.	Hersteller Manufacturer	Prüfdruck Testpressure
504395	65-072805/001/8	PA	1925 SED

Analyse / Analysis:

Erschmelzungsart /Smelting process:

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Nb	V	CAE	Ti	Pb	Sn	B
0.1500	0.2600	0.7000	0.0130	0.0090	0.0700	0.0200	0.0800	0.2300		0.0100					
0.148	0.200	0.805	0.0072	0.0005	0.141	0.055	0.067	0.096	0.001	0.048	0.342	0.002	0.001	0.009	

1 = Schmelzanalyse /heat analysis 2 = Produktanalyse /product analysis

Mech.-technologische Prüfung / Mech.-technological test:

Zugversuch /Tensile test

Kerbschlagbiegeversuch /Notched bar impact test
Form: Charpy-V

Probe- Nr. Test-no	Proben- Lage Pos. of sample	Prüftemp. Test temp. (°C)	Streckgrenze Rp Yield strength (N/mm²)	Zugfestigk. Rm Tensile strg. (N/mm²)	Dehnung A5 A Elongation (%)	Proben- lage Pos. of sample	Prüftemp. Test temp. (°C)	Querschn. Cross Sec. (mm²)	Kerbschlagarbeit Impact values (J)
M0417/01	L	+20	372,00	508,00	31,0	L	+20	60,00	146-152-148

Besichtigung und Ausmessung:
Visual inspection and dimensional check: o.B./o.K

Kennzeichnung:
Marking: E/MAT/HEAT/NW/MALL/QS

Härteprüfung /Hardness test
143 - 148 HB

Wärmebehandlung /Heat treatment:
Normalized

Bemerkungen /Comment:
cold formed

Die gestellten Anforderungen wurden erfüllt.
Manufacturing requirements are satisfied.

Der Werksachverständige
Works Inspector

Schöns, 16.07.2003
Grafisch Harald

Date: 5/17/02 Init: VAS
PO#: 5252B
Job#: 5252B
CE Calculated: 131
MTR Accepted: ☒ Yes ☐ No

11/2 X 2 XXH SMLS STEEL NIPPLES
A106 TBE

Tenaris

INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

1 1/2 XXH A106
2520605

Siderca S.A.I.C.
De Jorge A. Sumini 250
CERROABATEA Campana
Buenos Aires, Argentina
(54) 3489 4331 DO Tel
(54) 3489 433405 Fax

Cliente / Customer		Expediential Manufacturing Order		Numero / Number	Fedat / Date	Pag / Page
CCTF		56334.10		202714	06/05/2004	2
Producto / Product		Orden de Compra / Purchase Order		Item	Referencia del Cliente / Customer Reference	
Seamless steel line pipe		486085700		00009	486085700	
Norma / Standard		Grado / Grade		Extremos / Ends		
API 5L X 60 S 100 CASME SA 106 + CSA Z245.10A		B044+206SS		PLAIN END DEBURRED		
Dimensions / Dimensions		Schedule	Peso Nominal / Nominal Weight	Cantidades / Quantities		
48.30 x 10.16 mm			9.56 KG/MT	56 Pcs 371.04 m 3554 KG		
1.900 x 0.400 inches		6.41 LB/FT	S.R. (SP)	1217.32 Ft 7635 LB		
		Superficie Exterior / External Surface				
		VARNISHED				

ENSAYOS DE TRACCION / TENSILE TEST

[illegible]**NOTA / NOTE:**

ENV 476

11/2 X 2 XXH SMLS STEEL NIPPLES
A106 TBE

Tenaris

INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474 3.1B)

1 1/2 XXH A106

Sidgerea S.A.I.C.
Dr Jorge A. Simini 250
(076044444) Campana
Buenos Aires, Argentina
(54) 3489 4311 00 tel
(54) 3489 432405 fax

Cliente / Customer		Expediente / Manufacturing Order		Numero / Number	Fecha / Date	Pág / Page
CCTE		56734.10		202714	06/05/2004	4
Producto / Product		Orden de Compra / Purchase Order		Item	Referencia del Cliente / Customer Reference	
Seamless steel line pipe		40605700		00009	40605700	
Norma / Standard		Grado / Grade		Excessos / Excs		
API 5LX80T4X106ASME SA106 + CSA Z245.19R		B0Y42+280SS		PLAIN END DESIRED		
Dimensiones / Dimensions		Peso Nominal / Nominal Weight		Cantidades / Quantities		
48.38 x 10.16 mm		9.56 KG/MT		56 Pz 371.04 m		
1.906 x 0.400 Inches		6.41 LB/FT		56 Pcs 1217.32 Ft		
Schedule		Espesor Nominal / Nominal Thickness		S/R (S)		
		6.41 LB/FT		VARNISHED		
		Longitud / Length		Superficie Externa / External Surface		
				VARNISHED		

ENSAYOS DE TRACCION / TENSILE TEST

No de Ensayo	Condición de la probeta	Temp de Ensa	Sección	Fuente / Yield strength						Retortat. T.S		Rasada F/R	Alargamiento Elongation		Red. de ens	Dureza / Hardness Tipo / Type: BHN		
				Omet Method		EUL Method		Req. V. Min		Req. V. Max			VARIATS Ratio				V. OBL.	
				Req. Min	V. ok	EUL Min	Req. V. Min	Req. V. Max	Req. Min	Req. Max	Req. Min		Req. Max	Req. Min			Req. Max	
Heat Treat N°	Specimen condition	Test Temp	Size	Area	Inch#2													
Zone	Endel	Ext	N° P/T	Tip	OM	°C	Inches											
3232	431772	CR	PRO		ST	L	1/4IN	0.735 X 0.410	0.335							137		
3234	431792	CR	PRO		ST	L	1/4IN	0.746 X 0.400	0.317							172		
																200		

PRO = Process / Process
M = Normalizado / Normalized
DEXT = Desbalanceado / Slings Head
Q de T = Templado / Reheated Quenched & Tempered
1/4IN = Temp. Ambient / Room Temperature

RE = Rectangular
CI = Chemical / Chemical
ST = Sprocket / Sprocket
Tubular support
TU = Transversal

C/B = Cuerpo / Body
R/U = Resaca / Uprset
P / A = Promedio / Average
M/N = Medio / medium
Max = Máximo / Maximum

L = Longitudinal
T = Transversal
P/T = Tubo Pipe
EXT = Extremo End
M = Medio Medio

V. OK = Valor Obtenido / Obtained value
E = Contorno de material / Shaping
Q = Extremo opuesto al E / Opposite extreme to E

NOTA / NOTE:

CAD 1790

HEAT NUMBER : 32374
 TRANS AM PIPING PRODUCTS - REV'D BY: 
 P.O. # /Seq #: L-05 - 12018 1

1 1/2 X 2 XXH SMLS STEEL NIPPLES
 A106 TBE



INSPECTION CERTIFICATE

(EN 10204 3.1B - ISO 10474.3.1B)

2506605

1 1/2 XXH A106

Siderca S.A.C.
 B.P. 15000 - Lima 15
 Peru
 Tel: (51) 1 443 4310
 Fax: (51) 1 443 4310

Cliente / Customer CCTE		Expediente / Manufacturing Order 58334.10		Numero / Number 202714		Fecha / Date 06/05/2004		Págs / Pages 1	
Producto / Product Seamless steel line pipe		Orden de Compra / Purchase Order 48095700		Item 00009		Referencia del Cliente / Customer Reference 48095700		PLAN END DEBURRED	
Norma / Standard API 5L A106/ASME SA106 + CSA Z245.11B		Grado / Grade B36101/280SS		Economos / Ends 56 Pcs		Cantidades / Quantities 371.04 m		3554 Kg 7835 LB	
Dimensiones / Dimensions 48.30 x 10.16 mm 1.900 x 0.400 inches		Schedule 9.56 KG/MT 6.41 LB/FT		Longitud / Length S.R. (SP)		Superficie Exterior / External Surface VARNISHED		56 Pcs 1217.32 Ft	

ENSAYOS DE TRACCION / TENSILE TEST

Nº de Ensayo	Condiciones de la probeta	Temp de Ensayo	Dimensións	Sección	Fuerza / Yield Strength				Rotura / T.S.				Alargamiento				Dureza / Hardness			
					Direct Method				ELX Method				Redu. F.R.				Tipo / Vids: BHN			
Has	Test Nº	Zone	Estad. Ent	Nº P/T	Tip. Ori	Temp	Stm	Area	Indic2	Indic2	Req. Min	Req. Min	Req. Min	Req. Min	Req. Min	Req. Min	Req. Min	Req. Min	Req. Min	Req. Min
32374	43172	CG	PRO	ST	L	TAHT	0.132 X 0.410	0.335	0.317	0.5	42	45.1	60	65.5	50	58.7	50.8	24.7	30.2	137
32374	43172	CG	PRO	ST	L	TAHT	0.132 X 0.410	0.335	0.317	0.5	42	45.1	60	65.5	50	58.7	50.8	24.7	30.2	137

NOTA / NOTE:

TEST TECNOLÓGICO / TECHNOLOGICAL TEST				Ene. De auto expandido				Ene. De tracción de auto			
Adaptamiento	Condiciones	Adaptación	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas
Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas
Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas	Pruebas



44 # 337163

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 10398Sv06 Page/Page: 1 / 5 Date/Date: 02.11.2006
---	--	--

3" S160 Smpls Pipe SA 106-B

(A01) V&M FRANCE	(A08.1) V&M-Order-No. / N° de Cde V&M/ TH2937 (A08.2) Suborder / Suborder
(A06.1) Customer / Client COMCO PIPE + SUPPLY COMPANY COMCO PIPE + SUPPLY COMPANY EDMONTON (ALBERTA) T6P 1S	(A07.1) Order-No. / N° de Cde VM1728 REV 1
(A06.2) Orderer / Emetteur VALLOUREC TUBES CANADA / BURLINGTON, ONTARIO L7R 3X5	(A07.2) Order-No. / N° de Cde VM1728 REV 1 Date / Date 13.07.2006
	(A07.3) Order-No. / N° de Cde E1007188
(B01, B02, B04) Description of the product Description du produit	Hot finished seamless line pipe Sour service Ends bevelled, angle 30° (+5 / -0), root face 1.6 mm (± 0.8) Inside without rust protection - Outside dry varnish Tubes sans soudure, finis à chaud, pour conduite Service H2S Extrémités chanfreinées, angle 30° (+5 / -0), méplat 1,6 mm (± 0.8) Inter sans protection - Exter vernis sec API spec. 5 L, PSL1, 03.2004 ASTM A 106 M - 04 A / ASTM A 530 M - 04 / ASTM A 53 M - 04 ASME SA 106, Edition 2004 / ASME SA 530 M, Edition 2004 ASME SA 53 M, Edition 2004 ASME Boiler and Pressure Vessel Code, Sect. II, Part. A, Edition 2004, Addenda 2005 CSA Z 245.1:2002 Nace Standard MR 0175-2003, Paragraph 3.2 Nace Standard MR 0103-2005, Paragraph 2.1 Spec. CPcn-3, Rev. E, dated 08.2006 X 42 Grade B acc. to - API 5 L - ASTM A 106 M / ASME SA 106 - ASTM A 53 M / ASME SA 53 M Grade 290 Category I selon CSA Z 245.1

Date: 3/26/07	Init: MMB
PO#: 001388	
Job#: 38	
CE Calculated: 38	
MTR Accepted: ☒ Yes ☐ No	

(A13) V&M Item Poste	(A09) Cust. Item Poste	(B14) Item text Texte du poste	(B09) Dimensions Dimensions	(B10) Single length Long. Indiv.
8			NPS 3 SCH 160 OD-Tolerance + 0.75 % - 0.75 % WT-Tolerance + 15 % - 12.5 % NPS 3 SCH 160 Tol. sur DE + 0.75 % - 0.75 %	Fixed length 20 Ft + 4 in - 0 in Longueur fixe 20 Ft + 4 in - 0 in

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 10398Sv06 Page/Page: 2 / 5 Date/Date: 02.11.2006
---	--	--

(A13) V&M Item Poste	(A09) Cust. Item Poste	(B14) Item text Texte du poste	(B09) Dimensions Dimensions	(B10) Single length Long. indiv.
			Tol. sur EP + 15 % - 12.5 %	

(A13) V&M Item Poste	(A09) Cust. Item Poste	(B07.1) Heat Coulée	(B08) Quantity Nombre	(B11) Total length Long. totale ft	(B13) Weight Poids lb
8		337163	54	1.092,68	15.787

(C71)

HEAT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE COULEE

For each reduction of 0,01 % carbon below 0,30 %, an increase of 0,06 % manganese above 1,06 % will be permitted up to a maximum of 1,20 % manganese

(B07.1) Heat Coulée	(B15) Process Procédé	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	Cu %	Ti %
min	-	-	0,10	0,29	-	-	-	-	-	-	-
max	-	0,26	0,50	1,06	0,030	0,030	0,40	0,15	0,40	0,40	0,04
337163	Oxygen (BOF)	0,15	0,23	1,05	0,010	0,002	0,12	0,01	0,02	0,01	0,02

(B07.1) Heat Coulée	Nb/Cb %	V %	B %	0002 %	2528 %	0014 %	1099 %	0001 %				
min	-	-	-	-	3,00	-	-	-				
max	0,11	0,08	0,001	0,15	-	1,00	0,40	0,03				
337163	0,00	0,00	0,000	0,02	7,00	0,16	0,33	0,01				

0002	V+NB+Ti
2528	MN/C
0014	CR+CU+MO+NI+V
1099	C+F(MN/6+SI/24+CU/15+NI/20+((CR+MO+V+NB)/5)+5*B)
0001	NB+V

Heats fully killed
Acier Calmé

(C72)

PRODUCT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE PRODUIT

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT - INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 10398Sv06 Page/Page: 3 / 5 Date/Date: 02.11.2006
---	--	--

(C72)

PRODUCT CHEMICAL ANALYSIS / ANALYSE CHIMIQUE PRODUIT

For each reduction of 0,01 % carbon below 0,30 %, an increase of 0,06 % manganese above 1,06 % will be permitted up to a maximum of 1,20 % manganese

(B07.1) Heat Coulée	(C00.1) Test Piece Eprouvette	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	Cu %	Ti %
min		-	0,10	0,29	-	-	-	-	-	-	-
max		0,26	0,50	1,06	0,030	0,030	0,40	0,15	0,40	0,40	0,04
337163	01KL508	0,15	0,22	1,02	0,012	0,003	0,11	0,00	0,02	0,01	0,02
337163	02KL508	0,15	0,22	1,03	0,012	0,003	0,11	0,01	0,02	0,01	0,02

(B07.1) Heat Coulée	(C00.1) Test Piece Eprouvette	Nb/Cb %	V %	B %	0002 %	2528 %	0014 %	1099 %	0001 %		
min		-	-	-	-	3,00	-	-	-		
max		0,11	0,08	0,001	0,15	-	1,00	0,40	0,03		
337163	01KL508	0,00	0,00	0,000	0,02	6,65	0,15	0,33	0,00		
337163	02KL508	0,00	0,00	0,000	0,02	6,82	0,15	0,33	0,00		

0002	V+NB+Ti
2528	MN/C
0014	CR+CU+MO+NI+V
1099	C+F(MN/6+SI/24+CU/15+NI/20+((CR+MO+V+NB)/5)+5*B)
0001	NB+V

(B04)

HEAT TREATMENT / TRAITEMENT THERMIQUE

NORMALIZED CONDITION MIN 920°C (1688 F) COOLING AIR
ETAT NORMALISE MIN 920°C (1688 F) REFROIDISSEMENT AIR

TENSILE TEST RESULTS / RESULTATS D'ESSAI DE TRACTION

(C10.1) Type / Type	Tube strip specimen / Eprouvette prismatique
(C03) Test temperature / Température d'essai	Room temperature / Température ambiante
(C02) Direction / Orientation	longitudinal / longitudinal

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 10398Sv06 Page/Page: 4 / 5 Date/Date: 02.11.2006
---	--	--

TENSILE TEST RESULTS / RESULTATS D'ESSAI DE TRACTION

(B07.1) Heat Coulée	(C00.1) Test Piece Eprouvette	(C10.2) Dimension Dimension	(C11) YS LimElast	(C12) TS Résist.	(C13.2) Elong. Allong.						
		in / sq in	R _{p0.2} psi	R _m psi	2" %						
min		-	42000	60000	29						
max		-	-	-	-						
337163	01KL508	0,97x0,46 0,46	42944	69058	42						

(C10.2)	Dimension / Dimension	Test piece dimensions / Dimension de l'éprouvette
		Test piece area / Section de l'éprouvette

HARDNESS TEST RESULTS / RESULTATS DE DURETE

(C30)	Method of test / Méthode d'essai	Brinell
-------	----------------------------------	---------

(B07.1) Heat Coulée	(C00.1) Test Piece Eprouvette	(C31.1) HB									
min		-									
max		200,0									
337163	01KL508	138,0									

(C50)

TECHNOLOGICAL AND OTHER TESTS ON SPECIMENS / ESSAIS TECHNOLOGIQUES ET AUTRES ESSAIS SUR ECHANTILLON

Test	Conditions	Test rate	Result
Nature d'essai	Conditions	Ampleur du contrôle	Résultat
Flattening test			Satisfactory
Essai d'aplatissement			Satisfaisant

(D54)

OTHER TESTS ON PIPE / AUTRES ESSAIS SUR TUBE

Test	Conditions	Test rate	Result
Nature d'essai	Conditions	Ampleur du contrôle	Résultat
Hydrostatic test	3000 PSI 5 SEC	100% each lot	Satisfactory
Epreuve hydrostatique		100% Lot	Satisfaisant
Appearance & Dimensions		100% each lot	Satisfactory
Aspect & Dimensions		100% Lot	Satisfaisant
Residual magnetism	30 GAUSS MAX	100% each lot	Satisfactory
Magnétisme résiduel spectro		100% Lot	Satisfaisant

V&M FRANCE TUBERIE SAINT SAULVE SAINT SAULVE ZONE INDUSTRIELLE 59880 SAINT SAULVE 	 VALLOUREC & MANNESMANN TUBES	MATERIAL TEST REPORT INSPECTION CERTIFICATE 3.1 EN 10204 : 2004 No. / N° : 10398Sv06 Page/Page: 5 / 5 Date/Date: 02.11.2006
---	---	---

(A04, B06)

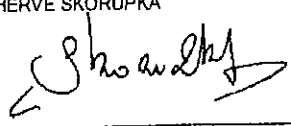
MARKING, IDENTIFICATION / MARQUAGE, IDENTIFICATION

Paint stenciling Marquage peinture	 V & M FRANCE 5L 0061 API DATE OF MARKING A/SA106 A/SA53 Z245-1 3 1/2 X 0.438 88.90 X 11.13 B + X42 + 290 CAT 1 PSL1 S 3000 PSI HT HEAT NUMBER SCH 160 LENGTH LENGTH
--	--

(Z01)

The supplied products are in compliance with the requirements of the order
Les produits livrés sont conformes aux stipulations de la commande

(A05, Z02, Z03)

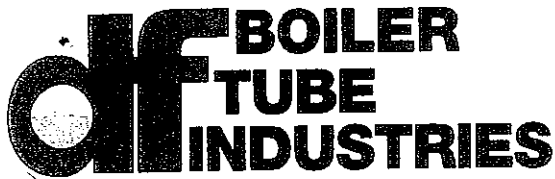
Date / Date	02.11.2006
Validated by Validé par	Inspection Representative Agent Réceptionnaire
	HERVE SKORUPKA 
☎	+ (33) 3 27 23 14 56
☎	+ (33) 3 27 23 15 25
@	herve.skorupka@vmtubes.fr
Stamp / Cachet	

This testimonial and certification respectively may neither be modified nor used for other products. Offences are regarded as falsification of documents and will be subject to criminal prosecution.
Ce certificat, ou cette attestation ne doit être ni modifié ni appliqué pour d'autres produits. Tous changements ou application pour d'autres produits seront considérés comme falsification de documents et fraude et seront sujet à la juridiction pénale.

HH# 78781801

MILL TEST REPORT

0.250" THICK x 1.250" WIDE x
120.00" LONG OF ASME SA516
GRADE 70N PLATE.



Service & Quality Second to None!"

11653-163 Street
Edmonton, Alberta
Canada T5M 3W6

Office: (780) 472-0235

Fax: (780) 478-5361

Toll Free: 1-877-472-0235

email: info@dfboilertube.com

FEBRUARY 22 , 2007

VAPORTECH ENERGY SERVICES LTD.
20711 - 107 AVENUE
EDMONTON , ALBERTA
T5S 1W5

ATTENTION: MS. MARY ANN BAREFOOT

PACKING LIST

PURCHASE ORDER: #001167

OUR ORDER: #07 - 064

100' (10 PIECES @ 120.00" EACH) OF 0.250" THICK x 1.250" WIDE ASME SA516 GRADE
70N PLATE:

PLATE HEAT NUMBER: #57A002 78781801 / COSIPA.

THIS ORDER HAS BEEN CHECKED AND CONFORMS TO ALL OF D.F. BOILER TUBE
INDUSTRIES QUALITY CONTROL REQUIREMENTS AND MEETS OR EXCEEDS VAPORTECH
ENERGY SERVICES LTD.'S KNOWN QUALITY CONTROL REQUIREMENTS.

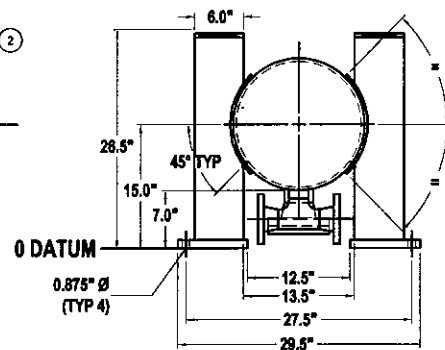
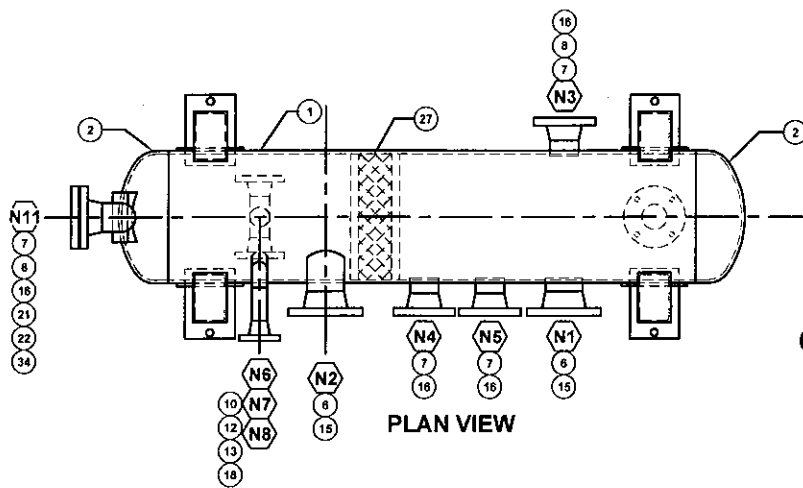
SINCERELY,

A handwritten signature in black ink, appearing to read 'D. P. Fiala', is written over a horizontal line.

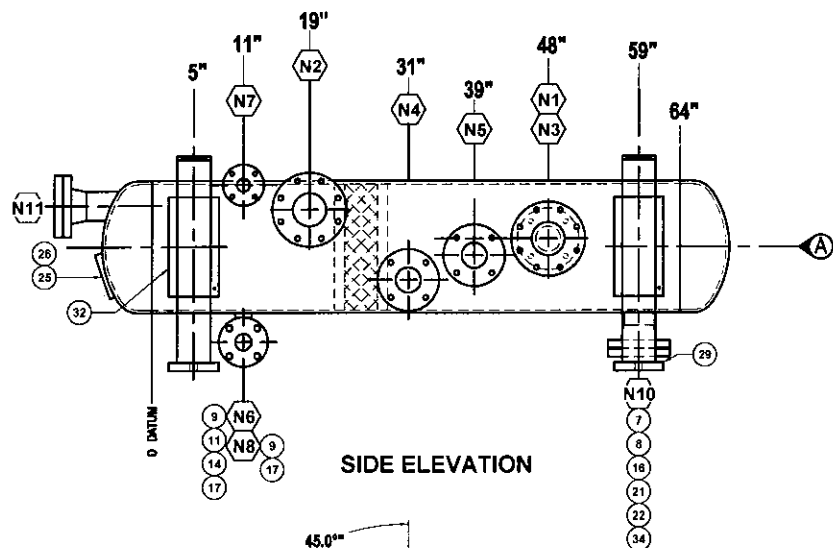
DANNY P. FIALA

TUBE REPRESENTATIVE

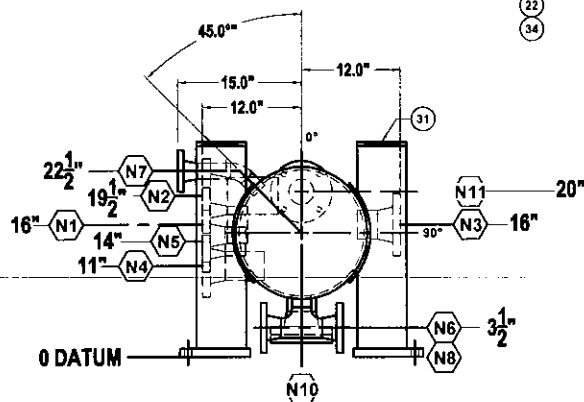
CLOSED END CONFIGURATION
INSPECTION NOZZLE LOCATED ON SHELL



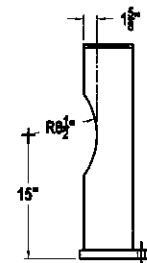
SADDLE SUPPORT
END VIEW



SIDE ELEVATION



REAR ELEVATION



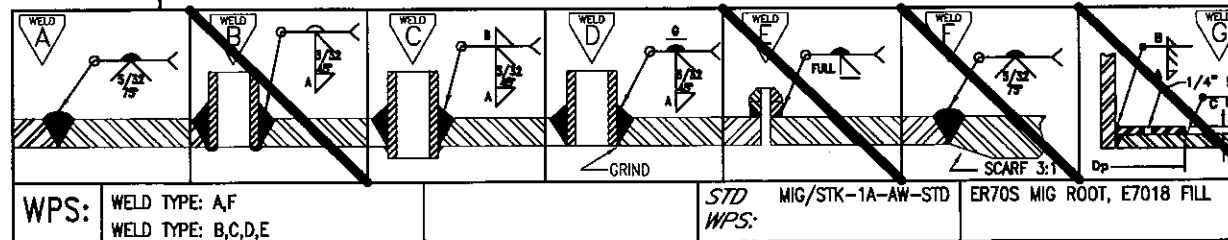
LEG DETAIL

NOZZLE SCHEDULE:

REF.	CONNECTION	NOM. SIZE	RATING CLASS		TYPE	WALL THICK.	PROJECTION		WELD DETAILS	NOZZLE - WELD	
							INTERNAL	EXTERNAL		A	B
N1	GAS INLET	4	150#	RF	WN FLANGE	Sch 160	0.313	1	A, C	0.375	0.25
N2	GAS OUTLET (INSPECTION)	4	150#	RF	WN FLANGE	Sch 160	0.313	2.375 From Center	A, C	0.375	0.25
N3	RECYCLE	3	150#	RF	WN FLANGE	Sch 160	0.313	1.25	A, C	0.375	0.25
N4	LSHH	3	150#	RF	WN FLANGE	Sch 160	0.313	1.25	A, C	0.375	0.25
N5	LSH	3	150#	RF	WN FLANGE	Sch 160	0.313	1.25	A, C	0.375	0.25
N6	DRAIN	2	150#	RF	WN FLANGE	XXS	FLUSH	0	A, D	0.375	-
N7	LEVEL GAUGE TOP	1.5	150#	RF	WN FLANGE	XXS	0.313	4	A, C	0.375	0.25
N8	LEVEL GAUGE BOTTOM	2	150#	RF	WN FLANGE	XXS	FLUSH	0	A, D	0.375	-
N9											
N10	INSPECTION PORT	3	150#	RF	WN FLANGE	Sch 160	FLUSH	1.5	A, C	0.375	-
N11	INSPECTION PORT	3	150#	RF	WN FLANGE	Sch 160	FLUSH	3" From Center	A, C	0.375	-

BILL OF MATERIALS:

REF.	QTY	ITEM	NOM. SIZE	NOM. THK	LENGTH	DESCRIPTION			MATERIAL	
1	1	SHELL	16	0.375	64	SMLS PIPE, Sch 30 (STD)			SA-108B	
2	2	HEAD	16	0.375	6	2:1 SE, 0.313" MTAF, 30° BEVEL, 2" STR FLG			SA-516-70N	
3										
REF.	QTY	ITEM	NOM. SIZE	RATING CLASS	TYPE	BORE		NOZZLE REFERENCE	MATERIAL	
						FITTING	NOZZLE			
4										
5										
6	2	FLANGE	4	150#	RF	WN FLANGE	-	160	N1, N2	SA-105N
7	5	FLANGE	3	150#	RF	WN FLANGE	-	160	N3, N4, N5, N10, N11	SA-105N
8	2	BLIND FLANGE	3	150#	RF	BLIND FLANGE	-	-	N10, N11	SA-105N
9	2	FLANGE	2	150#	RF	WN FLANGE	-	XXS	N6, N8	SA-105N
10	1	FLANGE	1.5	150#	RF	WN FLANGE	-	XXS	N7	SA-105N
11	1	WELD TEE	2	-	-	BW TEE	XXS	-	N6, N8	SA-234 WPB
12	1	ELBOW, LR 45°	1.5	-	-	BW LR 45°	XXS	-	N7	SA-234 WPB
13	1	NIPPLE PBE	1.5	-	-	NIPPLE	XXS	-	N7	SA-108B
14	1	NIPPLE PBE	2	-	-	NIPPLE	XXS	-	N6, N8	SA-108B
15	CTS	PIPE, SMLS (0.531 WT)	4	-	-	SMLS	160	-	N1, N2	SA-108B
16	CTS	PIPE, SMLS (0.438 WT)	3	-	-	SMLS	160	-	N3, N4, N5, N10, N11	SA-108B
17	CTS	PIPE, SMLS (0.436 WT)	2	-	-	SMLS	XXS	-	N6, N8	SA-108B
18	CTS	PIPE, SMLS (0.400 WT)	1.5	-	-	SMLS	XXS	-	N7	SA-108B
19										
20										
REF.	QTY	ITEM	DESCRIPTION						MATERIAL	
21	8	STUDS	STUD BOLTS, 0.625" X 3.5"						SA-193 B7M	
22	16	NUTS	HEX NUTS, 0.625"						SA-194 2HM	
23										
24										
25	1	NAMEPLATE	6.5" X 4.5" X 0.0625" PLATE						316 SS	
26	1	NAMEPLATE BRACKET	7 X 4.75 X 0.125 (HORIZONTAL MOUNT)						SA-36/44W	
27	1	MISTPAD	OD 15.25", THICKNESS 4", DENSITY # 9						316 SS	
28	4	LEG	6" X 4" X 0.25" HSS - CUT AS PER DETAIL						44W	
29	8	BASE PLATE	8.5" X 6" X 1" PLATE						SA-36/44W	
30										
31	4	TOP CAP	6" X 4" X 0.5" PLATE						SA-36/44W	
32	4	PLATE	ROLLED PLATE 16" ID 8" X 14" (0.375" THK) - CUT AND FORM TO VESSEL						SA-516-70N	
33										
34	3	GASKET	GASKET, 3" - 150# RF, 1/8" SPIRAL WOUND						316SS	
35										



- NOTES:
- UNLESS OTHERWISE SPECIFIED:
 1. DIMENSIONS SHOWN IN INCHES.
 2. ALL DIMENSIONAL TOLERANCES ARE $\pm 1/16"$.
 3. ALL INTERNAL EDGES TO BE CHAMFERED OR ROUNDED TO $1/8"$.
 4. ALL DIMENSIONAL WELD TOLERANCES ARE $\pm 1/16"$.
 5. ALL ANGULAR WELD TOLERANCES ARE $\pm 10^\circ$.
 6. ALL GROOVE WELDS ARE TO BE FULL PENETRATION.
 7. ALL STRUCTURAL WELDS ARE TO BE $1/4"$ FILLET, CONTINUOUS AND SEAL WELDED.
 8. INTERNAL SURFACE PREPARATION: SSPC-SP-6 (PRIOR TO REMOVABLE MIST PAD GRID INSTALLATION)
 9. EXTERNAL SURFACE PREPARATION: SSPC-SP-6 (AFTER PWHT, IF APPLICABLE)
 10. PRIME: (1) ONE COAT
PRIME CODE #: ENDURA INTERMIX EPOXY
PRIME BATCH #: ENDURA EP-2C PRIMER SEALER
 11. PAINT: (2) TWO COAT
RAL 7030
PRIME CODE #: GENERAL PAINT
PRIME BATCH #: INDURETHANE
 12. 44W REPRESENTS CSA G41 21-44W / CSA G41.21-300W
 13. NDE REQUIREMENTS: PRIOR TO ANY INTERNAL COATING APPLICATION
RT 2 - SPOT
MPI - INTERNAL (WHERE APPLICABLE) WET FLOURSCENT
- NOZZLE: ROOT PASS
- ATTACHMENT / FILLET WELDS
 14. MPI REQUIRED ON ANY BACKGROUGED ROOT PASS.
 15. UT ALL CAT D WELDS - 100%
 16. HYDROTEST PERFORMED AT 1.3X MAWP.

MAWP	200 PSI @ 300 °F
MDMT	-20 °F @ 200 PSI
MAWP (EXT.)	15 PSI @ 300 °F
DESIGN TEMP.	300 °F @ 200 PSI
SERVICE	SWEET
SHELL THK. NOM.	0.375 INCH
HEAD THK. NOM.	0.375 INCH
HEAD THK. MIN.	0.313 INCH
CORR ALLOWANCE	0.125 INCH
HEAT TREAT	N/A
VOLUME	7.8 CU. FT.
WEIGHT	850 LBS
HYDROSTATIC TEST	280 PSI
IMPACTS EXEMPT	EXEMPT PER UG-20(f), UCS 66(b)
PROCEDURES	AQP-1120, WPS-798.2
RADIOGRAPHY	RT-2 SPOT
ASME CODE	SECTION VIII, DIV. 1, 2004 EDITION
REVISED TO	SECTION VIII, DIV. 1, 2005 ADDENDUM
CRN NO.	U1084.2
CRN DRAWING NO.	H16-G6 Rev.0A
A-NUMBER	

1	D5-24-07	ISSUED FOR CONSTRUCTION	TR	-	-	-	-	-	-
REV	MM-DD-YY	DESCRIPTION	DWN	CHK	DSGN	APP	ECN		

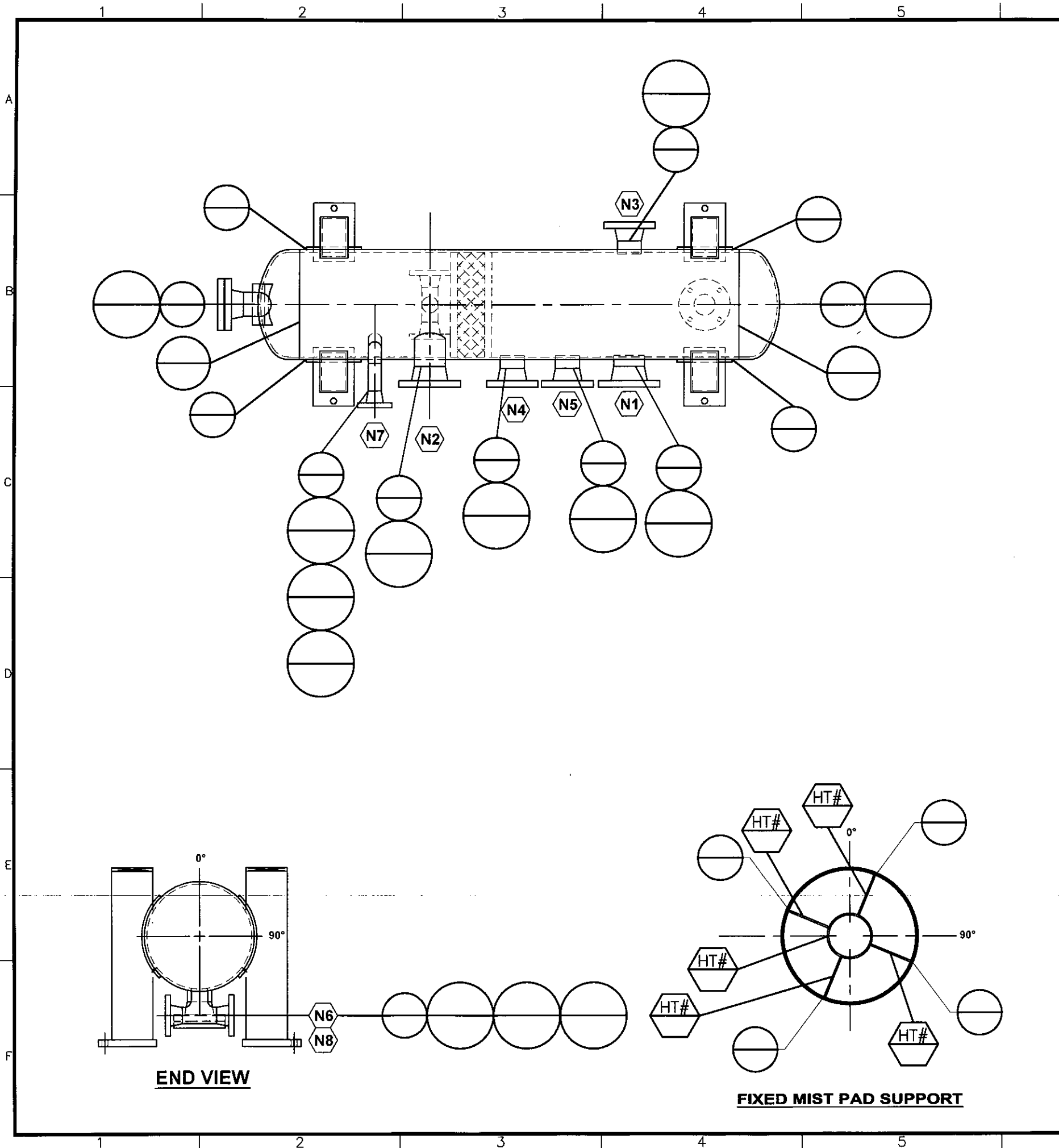
A P O R T E C H
energy services inc.

HUSKEY ENERGY
C/O IMV PROJECTS

TANK VRU
JOB #: 5252C
LSD: 11-36-49-20 W3M

HORIZONTAL 16" SUCTION SCRUBBER

N.T.S. **H16-S133** 1 OF 3 **1**



NOZZLE SCHEDULE:										
REF.	CONNECTION	NOM. SIZE	RATING CLASS		TYPE	FITTING BORE	MATERIAL	HEAT NO.	NOZZLE	
N1	GAS INLET	4	150#	RF	WN FLANGE	Sch 160	SA-105N	44039	4	Sch 160
N2	GAS OUTLET (INSPECTION)	4	150#	RF	WN FLANGE	Sch 160	SA-105N	44039	4	Sch 160
N3	RECYCLE	3	150#	RF	WN FLANGE	Sch 160	SA-105N	AC018	3	Sch 160
N4	LSHH	3	150#	RF	WN FLANGE	Sch 160	SA-105N	78578B	3	Sch 160
N5	LSH	3	150#	RF	WN FLANGE	Sch 160	SA-105N	AC018	3	Sch 160
N6	DRAIN	2	150#	RF	WN FLANGE	XXS	SA-105N	26495	2	XXS
11	WELD TEE	2	-	-	BWTEE	XXS	SA-234 WPB	624550MT		
14	NIPPLE	2	-	-	NIPPLE	XXS	SA-106B	526998		
N7	LEVEL GAUGE TOP	1.5	150#	RF	WN FLANGE	XXS	SA-105N	161A5	1.5	XXS
12	ELBOW, LR 45°	1.5	-	-	BWLR 45°	XXS	SA-234 WPB	504395		
13	NIPPLE	1.5	-	-	NIPPLE	XXS	SA-106B	32374		
N8	LEVEL GAUGE BOTTOM	2	150#	RF	WN FLANGE	XXS	SA-234 WPB	26495	2	XXS
N10	INSPECTION PORT	3	150#	RF	WN FLANGE	Sch 160	SA-105N	AC018	3	Sch 160
8	FLANGE	3	150#	RF	BLIND FLANGE	-	SA-105N			
N11	INSPECTION PORT	3	150#	RF	WN FLANGE	Sch 30	SA-105N	40647	3	Sch 30
8	FLANGE	3	150#	RF	BLIND FLANGE	-	SA-105N			

STRUCTURAL COMPONENTS:										
REF.	DESCRIPTION	MATERIAL	HEAT NO.			REF.	DESCRIPTION	MATERIAL		
25	NAMEPLATE BRACKET	SA-36/44W	670310							

NOTES:

1.

CONSTRUCTION MAP

(A/000) WELDERS STAMP
WELD X-RAY NUMBER

(A/0) WELDERS STAMP
MATERIAL STAMP

1	TR	ISSUED FOR CONSTRUCTION	05-24-07	-
REV	BY	DESCRIPTION	MM-DD-YY	CHK

A PORTECH
energy services inc.

HUSKEY ENERGY
C/O IMV PROJECTS

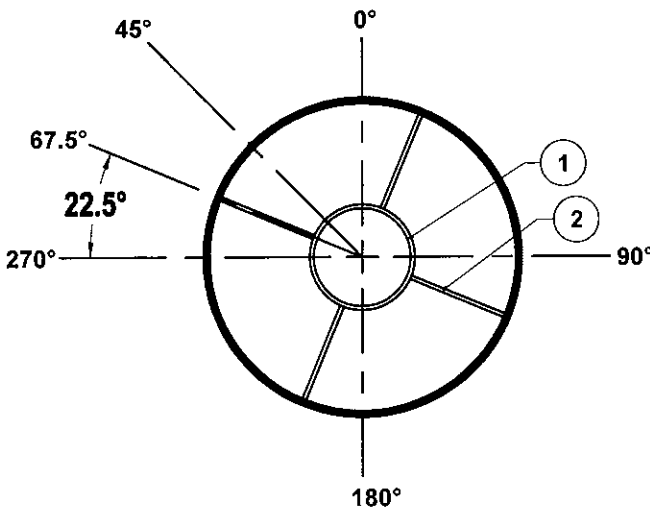
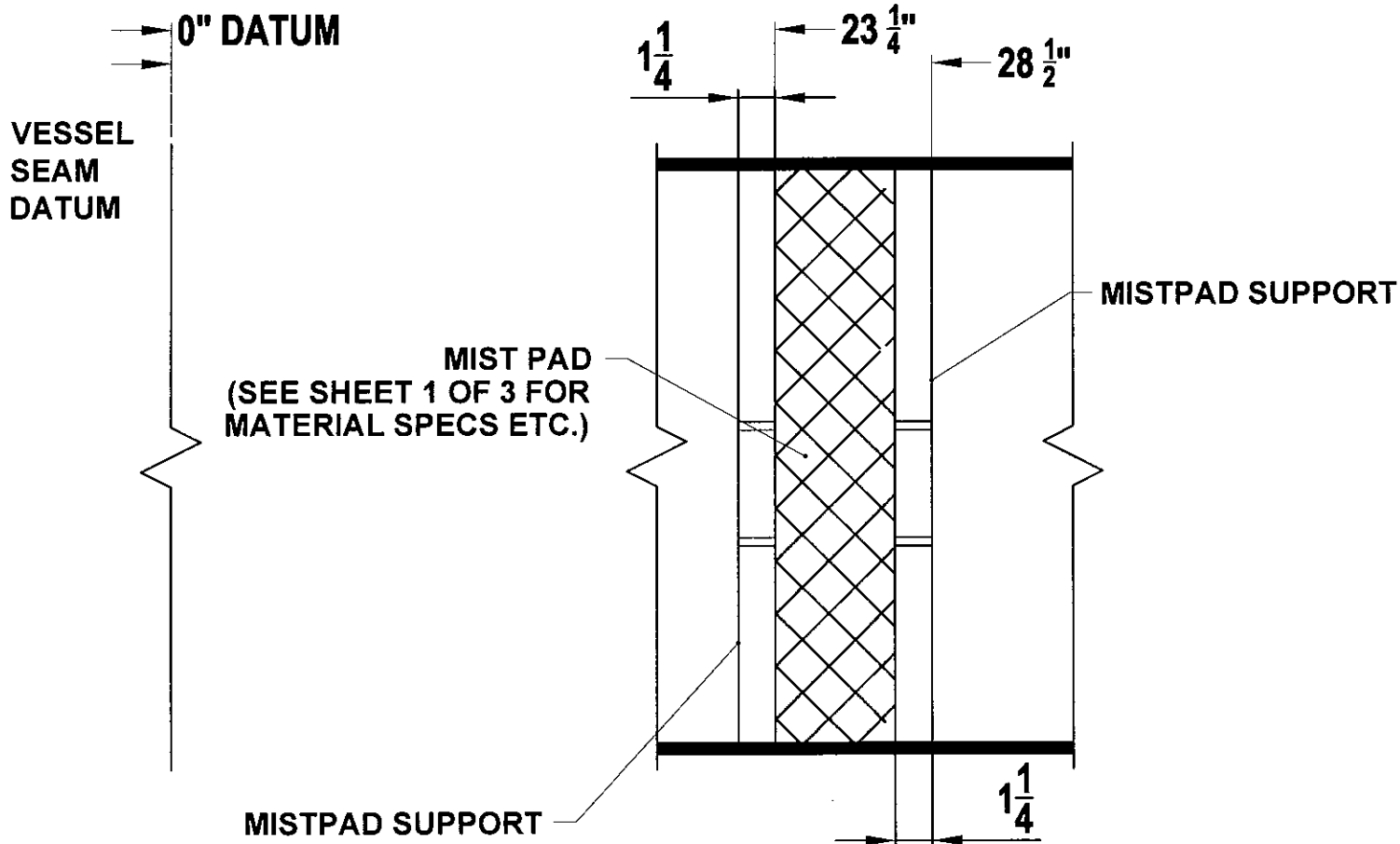
TANK VRU
JOB #: 5252C
LSD: 11-36-49-20 W3M

VESSEL NDE

N.T.S.	H16-S133	2 OF 3	1
--------	----------	--------	---

BILL OF MATERIALS:

REF.	QTY	ITEM	DESCRIPTION	MATERIAL
1	2	CENTER SUPPORT	NPS 3", S-80, SMLS PIPE 1 1/4" LONG	SA-106B
2	8	FIXED BRACE	3/8" X 1 1/4" X 5 7/8" FLAT BAR	SA-516-70N



- NOTES:
- 1. ALL STRUCTURAL WELDS ARE TO BE 3/16" FILLET, CONTINUOUS SEAL WELDED UNLESS NOTED.
 - 2. ITEMS #1 AND 2 SHALL BE COATED WITH THE SAME COATING AS THE VESSEL.

1	TR	ISSUED FOR CONSTRUCTION	05-24-07	—
REV	BY	DESCRIPTION	MM-DD-YY	CHK



HUSKEY ENERGY
C/O IMV PROJECTS

TANK VRU
JOB #: 5252C
LSD: 11-36-49-20 W3M

FIXED MISTPAD DETAILS

N.T.S.	H16-S133	3 OF 3	1
--------	----------	--------	---

7216 - 52 Street, Edmonton, Alberta T6B 2G3

Telephone (780) 468-2425
Fax (780) 469-6809

DATE Aug 10 2007

CLIENT Vaportech

PHONE NO. 485-1905

ADDRESS 20711 - 107

DATE REQUIRED ASAP

Edmonton, AB.

ATTENTION OF Tyler Romanyk

CLIENT REF. NO. _____ P.O. NO. _____ JOB NO. 5252

MATERIAL	P#	DESCRIPTION	QTY.	FURNACE SIZE / NO.	PRICE PER FURNACE LOAD
		Pipe Spool	1		
		Spool# 503-1 SHT02			
		4' x 1.5' approx -			

CUSTOMER SPECIFICATION ☒

TOTAL

P-NO. 1 MATERIAL Carbon Steel
AMBIENT to 425 at M/R
425 to 621 at 222 per hour
SOAK at 621 °± 14 ° for 1 hours 0 mins.
COOL FROM 621 to 425 at 277 per hour
COOL FROM 425 to AMB at A.C.
COOL FROM — to — at —

TOTAL OVERTIME HOURS = _____ @ \$ _____ /hr.

OTHER CHARGES OR CONDITIONS: _____

Above temperatures in °C

Comments Same day Load - out

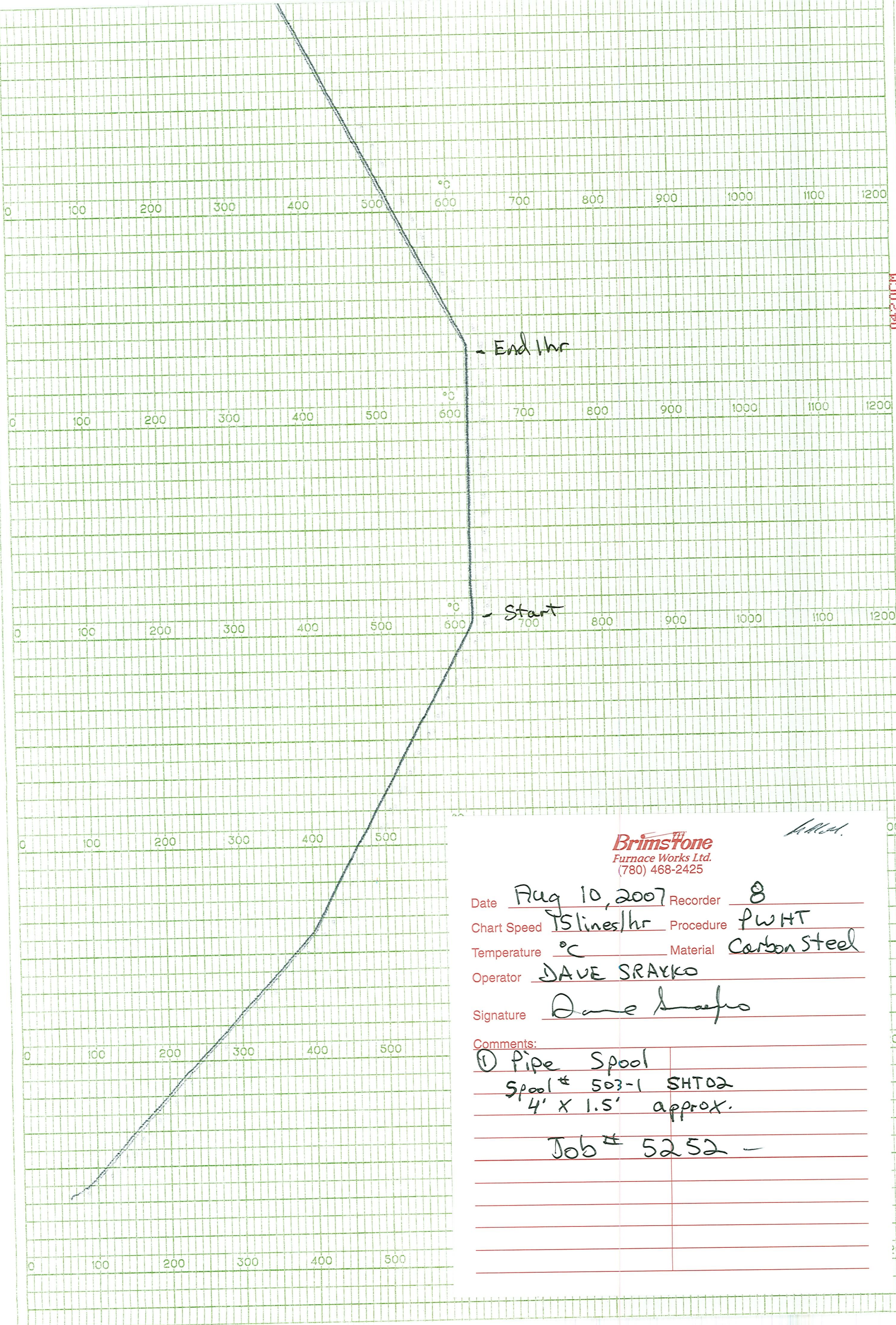
NOTE: Customers sending in work for heat treatment only:

- (1) Will be charged an extra for any supports or blocking required.
- (2) Will not hold Brimstone Furnace Works Ltd. responsible for any damage or distortion caused by Heat treatment process.

Thank you for your patronage
BRIMSTONE FURNACE WORKS LTD.
Dave Smyth

HEAT TREATMENT INSTRUCTIONS

JOB #/SERIAL # 5252		CUSTOMER: Husky Energy		DATE: 9-Aug-07	
COMPONENT DESCRIPTION:					
DWG. NO. AND LINE NO.	DIAMETER	THICKNESS	MATERIAL	LENGTH	WEIGHT
503-I Sheet 2	NPS 3"/2"Std	VARIOUS (MAX. THICKNESS: 0.250")	SA-106B, SA-105N, SA-234 WPB, SA-36	VARIOUS (SEE SPOOL LIST)	150
TYPE OF HEAT TREATMENT: PIPING STRESS RELIEF P-No. 1					
HEATING: Temperature to be raised from 800°F (425°C) to 1100°F (595°C) at a maximum rate of <u>400</u> °F (<u>222</u> °C) per hour. NOTE: THIS VALUE MUST NEVER EXCEED 400°F (222°C) PER HOUR. [Calculated rate = 400°F/hr. (222°C/hr.) Divided by the maximum metal thickness of the shell or head plate in inches.]					
HOLDING: Temperature to be held at a minimum of 1100°F (595°C) for <u>60</u> minutes (<u>1</u> hour). TEMPERATURE: <u>1150°F ± 25°F (621°C ± 14°C)</u> [Holding time to be determined by Table UCS-56 for Nominal Thickness as specified in UW-40(f). Minimum of 15 minutes.]					
COOLING: Temperature to be lowered from 1100°F (595°C) to 800°F (425°C) at a maximum rate of <u>500</u> °F (<u>278</u> °C) per hour. NOTE: THIS VALUE MUST NEVER EXCEED 500°F (278°C) PER HOUR. [Calculated rate = 500°F/hr. (278°C/hr.) Divided by the maximum metal thickness of the shell or head plate in inches] From 800°F (427°C) items may be cooled in still air.					
ADDITIONAL REQUIREMENTS: • Job number and description required on heat treatment charts along with the operator's signature & date. • Reporting of thermocouple attachment method and location, and verification of furnace thermocouple calibration is required. • A sufficient number of thermocouples shall be located to control and maintain uniform distribution of temperature on all vessels and parts. Thermocouples shall be directly attached to the item or provision shall be made for thermocouple placement at bottom, centre and top of the furnace charge in accordance with the ASME Code. • During the heating period, there shall not be a greater variation in temperature throughout the portion of the vessel being heated than 250°F (139°C) within any 15 ft. (4.6 m) interval of length. • During the holding period, there shall not be a greater difference than 150°F (83°C) between the highest and lowest temperature throughout the portion of the vessel being heat treated, except where the range is further limited by these instructions. • If Capacitor Discharge welding is used to attach thermocouples an ASME Code Section IX Welding Procedure Specification is required (WPS qualification is not required), and the energy output must be limited to 125 Watt-Seconds. No other welding is permitted on vessels or parts. [0.5 X Capacitance in farads X Voltage² = W-Sec.]					
Q. C. Inspector Signature:		Bob Garvie		Date: 9-Aug-07	
Thermocouple Attachment Method:			Location(s):		
Furnace Heat Number:		4			
Furnace Operator Signature:				Date: Aug 10, 2007	



0420CM

0430CM

0440CM

00

Brimstone
Furnace Works Ltd.
(780) 468-2425

Handwritten initials

Date Aug 10, 2007 Recorder 8
Chart Speed 15 lines/hr Procedure PWHT
Temperature °C Material Carbon Steel
Operator DAVE SRAYKO
Signature *Dave Srayko*

Comments:
① Pipe Spool
Spool # 503-1 SHT02
4' X 1.5' approx.
Job # 5252 -