QUALITY CONTROL PACKAGE

QC #	P-JCP-06093b
Project Description:	Header Tie-in Piping
Location:	13-36-63-11 W5
AFE/CC#	200608025
Contractor:	Kana

SECTION I

- QC Sign Off Sheet
- Certificate of Authorization
- Turnovers [redacted] Sign off 4907
- Design Specification & Engineered Drawings
- Emergency Forms
- ABSA Data Reports, AB-83, AB-40, AB-90
- Non-Conformance Reports
- Licenses
- Work Order Cards

P- JCP 060938

AFE 20060525

Alberta
MUNICIPAL AFFAIRS

ABSA
the pressure equipment safety authority

Certificate of Authorization Permit
Quality Management System

Expiry Date: **April 24, 2009** Reg No.: **AQP-2167**

This is to certify that:

KANA OILFIELD SERVICES LTD.
4107 - 41 STREET
WHITECOURT, ALBERTA

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

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

Construct, Repair/Alter ASME B31.1 Boiler External Piping

Repair/Alter ASME Section I Power Boilers, ASME Section IV Heating Boilers and ASME Section VIII-1 Pressure Vessels

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

Alberta MUNICIPAL AFFAIRS

Dated at Edmonton, this 3rd day of May, 2006

Chief Inspector and Administrator

Certificate No.: 4974

Form No AB-121
Rev (2006/04)

ABSA
the pressure equipment safety authority

COMPLETION OF CONSTRUCTION

DECLARATION

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

(1) Owner of Plant: Pengrowth Corporation

PO Box 390, Swan Hills, AB
(Name and Address)

(2) Engineer or Contractor: Kana Oilfield Services Ltd.

PO Box 808, 4107-41 St. Whitecourt, AB. T7S 1N8
(Name and Address)

(3) Type of Plant: Pipeline Header

(4) Location of Plant: 08-35-63-11 W5M to 13-36-63-11 W5M
(Sec, TWP, Rge)

(5) Description of Pressure Piping System(s): 8" & 12" Sch.40 300 ANSI Stainless Steel Header Piping

STATEMENT OF COMPLIANCE

I, the undersigned, declare that the described pressure piping system, approved under design registration number Less than .5m3, complies in all respects with the regulations for construction, installation, testing and inspection and that all applicable pressure piping test data reports have been delivered to the owner.

[redacted] [redacted] [redacted] April 25/07
(Signature) (Print Name) (Title) (Date)

Kana Oilfield Services Ltd. PO Box 808, 4107-41 St. Whitecourt AB T7S 1N8
(Company) (Address) (City, Postal Code)

The information you provide is necessary only for the administration of the programs as required by the Alberta Safety Codes Act and Regulations in the Boiler Discipline

AB-83 2005-02

ABSA
the pressure equipment safety authority

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: Kana Oilfield Services Ltd. Owner's Job No: Kana Job # 3696
(Name of ABSA authorized primary contractor or subcontractor)
PO Box 808, 4107 - 41 St. Whitecourt, AB T7S 1N8
(Address)
Alberta Quality Program No. AQP-2167 Expiry Date: April 24, 2009

2. Constructed For: ____________
(Name of primary contractor if different from above)
____
(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: Pengrowth Corp. PO Box 390, Swan Hills, AB
(Name and address)
08-35-63-11 W5M. To 13-36-63-11 W5M
(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-Less than .5m3
(Required if aggregate piping volume is over $0.5m^3$)

5. WP No.: WP-1148.2 ; Company: Kana Oilfield Services Ltd. ; Owner's WP No. (If used): WP-____________
(Alberta Registration No) (Alberta Registration No.)
WPS No(s). used: KOS 3 ; 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
083-4379-170-061 01	Oil Well Effluent	3,450	+93C	5,175	Water	A312 TP316/316L	-	8" & 12" Sch40	A182 300ANSI	-	10%	LPI 100%
083-4379-170-062 01	Oil Well Effluent	3,450	+93C	5,175	Water	A312 TP316/316L	-	8" & 12" Sch40	A182 300ANSI	-	10%	LPI 100%

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

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

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

Endorse certificate 'A' or 'B'

A. CERTIFICATE OF COMPLIANCE

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

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

Date: _____ _____
Subcontractor

_____ _____
Print Authorized Representative's Name Signature

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

B. CERTIFICATE OF COMPLIANCE

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

We certify that the statements in this Data Report are correct and that piping job no. 3696 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: April 25/07 Kana Oilfield Services Ltd.
Primary Contractor

[redacted]
Print Authorized Representative s Name Signature

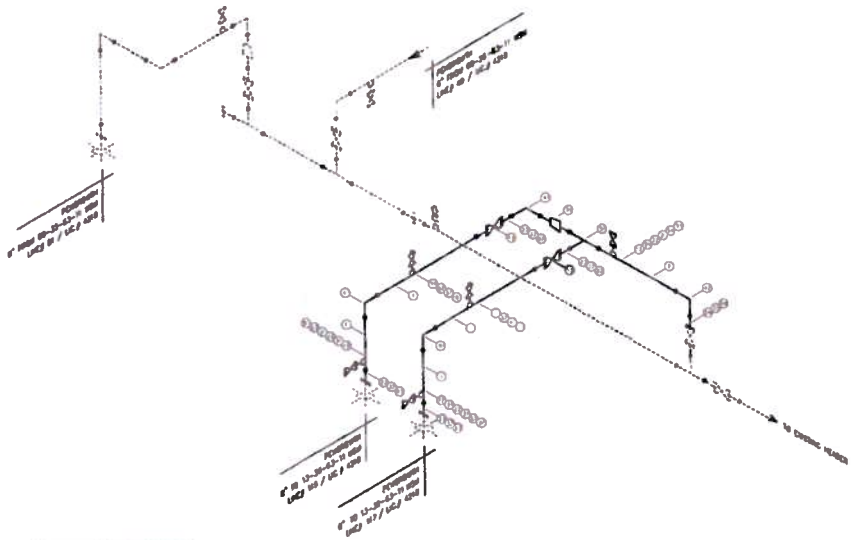
CERTIFICATE OF INSPECTION

I, the undersigned, employed by Pengrowth 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: Aug 9/07 Date: _____

[redacted] Name: Sign.:
Print Owner's Inspector's Name Owner's Inspector's Signature

ABSA Safety Codes Officer
(BOILER EXTERNAL PIPING ONLY)



PERMIT TO PRACTICE
PENGROWTH CORPORATION
Signature
Date
PERMIT NUMBER: P 6761
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

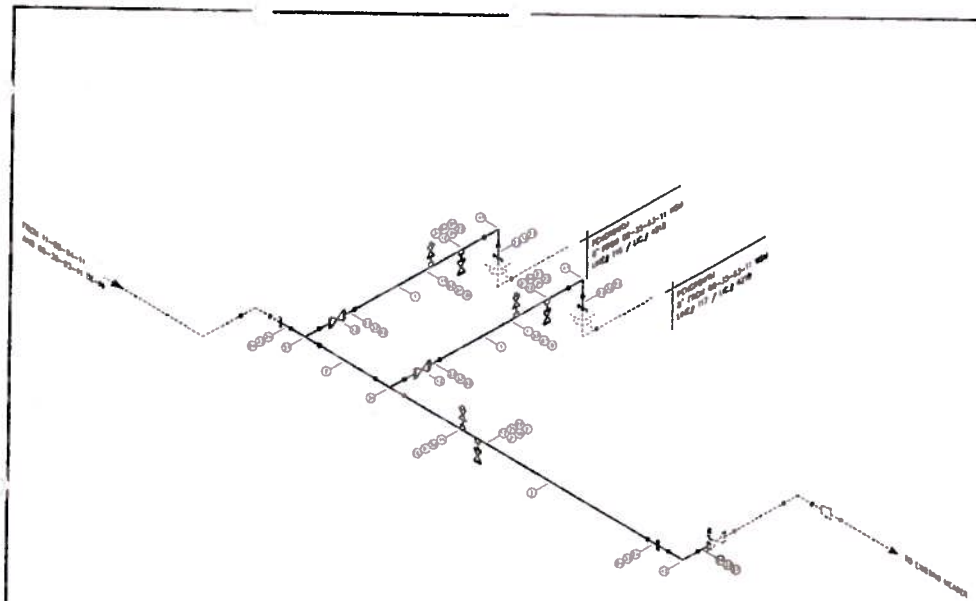
PROFESSIONAL ENGINEER ALBERTA

NOTES

PENGROWTH

FACILITY: JUDY CREEK P PELINE SYSTEM
DESCRIPTION: 08-36-63-11 W5M HEADER
EQUIPMENT: ISOMETRIC Piping PLAN

ARRATECH CORPORATION



PERMIT TO PRACTICE
PENGROWTH CORPORATION
Signature
Date Dec 18/06
PERMIT NUMBER: P 6761
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PROFESSIONAL ENGINEER ALBERTA

Dec 18/06

NOTES

PENGROWTH

FACILITY: JUDY CREEK PIPELINE SYSTEM
DESCRIPTION: 13-36-63-11 W5M HEADER
EQUIPMENT: ISOMETRIC PIPING PLAN

SECTION 2

- NDE Reports & Technician Qualifications
- Weld Procedures & Welder Reports
- Welder ID & NDE Maps

BAKOS (NDT) INSPECTION (1989) LTD.

18209

WHITECOURT - Box 906, Whitecourt, Alberta T7S 1N9 Phone: (780) 778-5575 Fax: (780) 778-3817

NON-DESTRUCTIVE INSPECTION REPORT

PAGE: 1 OF 2

DATE: JAN 29TH / 2007

CLIENT: PENGROWTH CORP.

~~P.O. No.~~ 2006008025 - 9620667

LOCATION: JCK RED PENN 8-35-63-11W5M HEADER

TYPE OF INSPECTION: MT ☐ A.C. ☐ D.C. ☐ PT ☒ UT ☐

DRY POWDER ☐ B&W CONTRAST ☐ WET FLOURESCENT ☐ SOLVENT ☐ WATER WASH ☒ 0 DEGREE COMPRESSION WAVE ☐

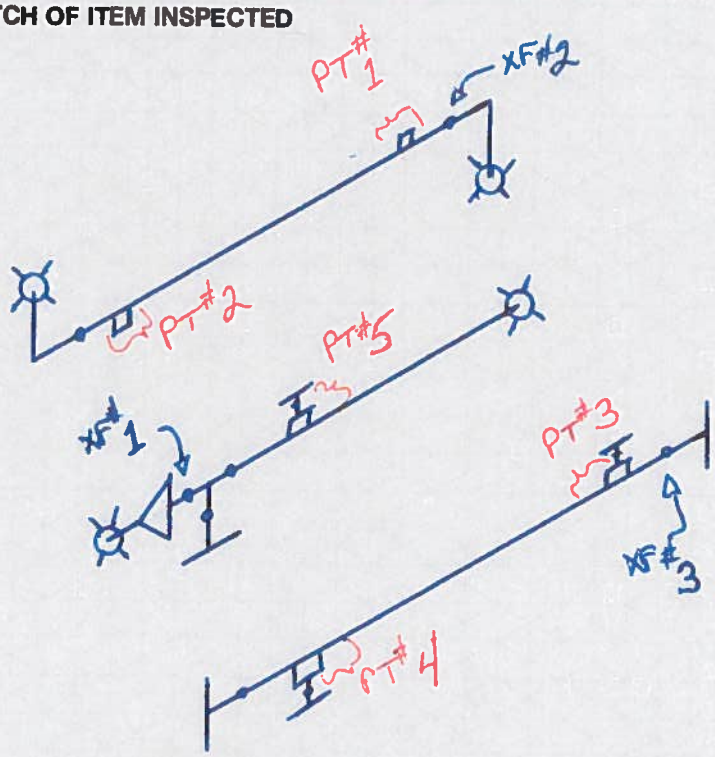
EQUIPMENT: ARDROX AEROSALS

APPLICABLE SPECIFICATION: B31.3 OPERATOR: [redacted]

SURFACE CONDITION: ☒ CLEAN BARE METAL ☐ MACHINED ☒ BUFFED ☐ SAND BLASTED ☐ PAINTED ☒ GROUND

ITEM INSPECTED: 2-1" TOL, 3-2" WOLS

SKETCH OF ITEM INSPECTED



DETAILS			
#		TYPE	OK
PT			
#			
1		8" x 1" TOL	✓
2		8" x 1" TOL	✓
3		8" x 2" WOL	✓
4		8" x 2" WOL	✓
5		12" x 2" WOL	✓

INSPECTION RESULTS: NO RELAVENT DEFECTS AT TIME OF INSPECTIONS.

KILOMETERS: SUBSISTENCE: ☐ YES ☐ NO

TOTAL HOURS	
REG.-	
S.D.-	
O.T.-	
SUPPLIES-	
COST TOTAL	

I am in full agreement with above details and charges.

CLIENT'S REPRESENTATIVE: [redacted]

BAKO'S (NDT): [redacted] ASST - [redacted]

KEJ

BAKOS (NDT) INSPECTION (1989) LTD.

84484

WHITECOURT - Box 906, Whitecourt, Alberta T7S 1N9 Phone: (780) 778-5575 Fax: (780) 778-3817

RADIOGRAPHIC WELDING REPORT

CLIENT PENGROWTH CORP. DATE JAN. 29TH/2007 PAGE 2 OF 2

DESCRIPTION QT - 8-35-63-11 W5M 8" HEADER PIPING

JOB No. P.O. No. 20060825-962067 CODE B31.3 8"

LOCATION JACK RED PENN Kilometers Subsistence Yes No

Radiography Technique Details in accordance with A.S.M.E. Section V-T291

EXPOSURE DEVICE: Type / Make NEWMATARAY Serial No. #100-3-137

SOURCE STRENGTH: Curies 21 ci Ir Source Serial No. F878

FILM: Brand AGFA Class I

TOTAL HRS.:	
REG. HRS.:	
S.D. HRS.:	
O.T. HRS.:	

DEFECT LEGEND

IF - INCOMPLETE FUSION	IUC - INTERNAL UNDERCUT	PH - PIN HOLE	SLIGHT - 1		
IP - INCOMPLETE PENETRATION	EUC - EXTERNAL UNDERCUT	HL - HIGH LOW	MEDIUM - 2		
IC - INTERNAL CONCAVITY	W - WINDOW	RC - RECAP	SEVERE - 3		
HB - HOLLOW BEAD	ICICLE	C - CRACK			
BT - BURN THROUGH	P - POROSITY	AB - ARC BURN			
TI - TUNGSTEN INCLUSION	S - SLAG	LC - LOW COVER			

EXPOSURE LEGEND

DOUBLE WALL CONTACT	DWC
SINGLE WALL INTERNAL	SW
ELLIPTICAL	EL
SUPERIMPOSED	SI
SHADOW EXPOSURE	SE
SINGLE WALL	SW

	WELD NUMBER	PIPE SIZE	WELDER SYMBOL	FILM TYPE	EXPOS LEGEND	CI-M MA-M	No. OF EXPOS	WELD QUALITY ACCEPT	WELD QUALITY REJECT	DEFECT SEVERITY 3	DEFECT SEVERITY 2	DEFECT SEVERITY 1		REASON & LOCATION OF DEFECTS OTHER REMARKS
1													1	
2													2	
3		8-35 % HEADER PIPING											3	
4													4	
5	XF#												5	
6													6	
7	1	12" 40S		DS	DWC	53	3	✓					7	
8													8	
9													9	
10	2	8" 40S		DS	DWC	26	3	✓					10	
11													11	
12								✓					12	
13	3												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	

Final film interpretation is the responsibility of the client. Client is in full agreement with details and acknowledges receipt of film.

CLIENT REPRESENTATIVE [redacted] PRINT [redacted]

TECHNICIAN (sign) [redacted] CGSB LEVEL II

TECHNICIAN (print) CEDDA

ASSISTANT (print) A.M. TIME IN / OUT P.M. TIME IN / OUT

WHITE - CLIENT GREEN - OFFICE YELLOW - OFFICE PINK - OFFICE GOLDENROD - FILM

LARGE FILM SIZES

14" X 17"	
7" X 17"	
4½" X 17"	
4½" X 8½"	
4½" x 5½"	

BAKOS (NDT) INSPECTION (1989) LTD.

18206

WHITECOURT - Box 906, Whitecourt, Alberta T7S 1N9 Phone: (780) 778-5575 Fax: (780) 778-3817

NON-DESTRUCTIVE INSPECTION REPORT

PAGE: 1 OF 2

DATE: JAN. 28TH/2007

CLIENT: PENGROWTH CORP.

~~P.O. No.~~ 200608025-9620667

LOCATION: J.CK.R.P. 13-36-63-11 WSM % HEADER

TYPE OF INSPECTION: MT ☐ A.C. ☐ D.C. ☐ PT ☒ UT ☐

DRY POWDER ☐ B&W CONTRAST ☐ WET FLOURESCENT ☐ SOLVENT ☐ WATER WASH ☒ 0 DEGREE COMPRESSION WAVE ☐

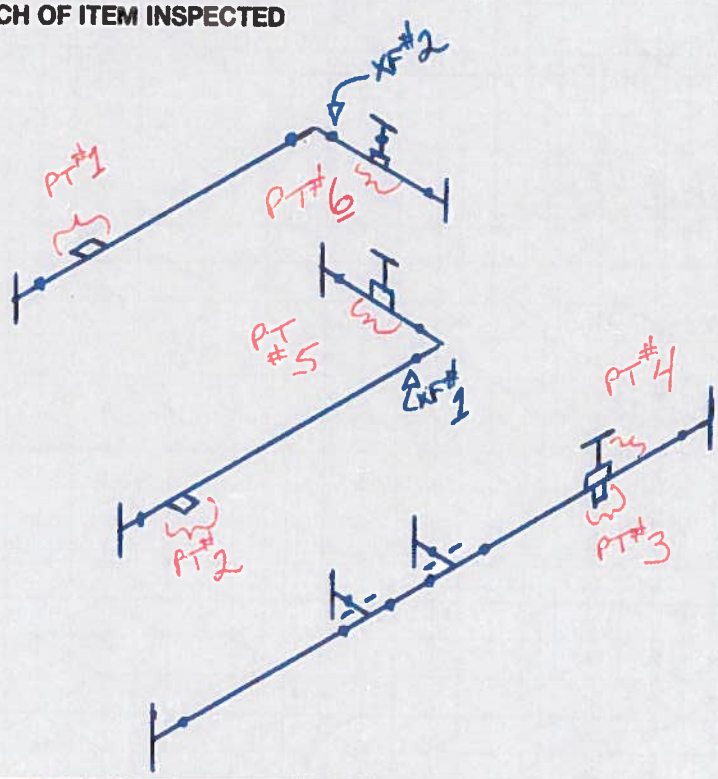
EQUIPMENT: ARDROX AEROSALS

APPLICABLE SPECIFICATION: B31.3 OPERATOR: [redacted]

SURFACE CONDITION: ☒ CLEAN BARE METAL ☐ MACHINED ☒ BUFFED ☐ SAND BLASTED ☐ PAINTED ☒ GROUND

ITEM INSPECTED: 3-1" TOLS, 3-2" WOLS

SKETCH OF ITEM INSPECTED



DETAILS

#		TYPE	OK
PT #			
1		8"x1" TOL	✓
2		8"x1" TOL	✓
3		12"x1" TOL	✓
4		12"x2 WOL	✓
5		8"x2" WOL	✓
6		8"x2" WOL	✓

INSPECTION RESULTS: NO RELAVENT DEFECTS AT TIME OF INSPECTIONS.

TOTAL HOURS
REG.-
S.D.-
O.T.-
SUPPLIES-
COST TOTAL

KILOMETERS: SUBSISTENCE: ☐ YES ☐ NO

I am in full agreement with above details and charges.

CLIENT'S REPRESENTATIVE: [redacted]

BAKO'S (NDT): [redacted] ASST [redacted]

BAKOS (NDT) INSPECTION (1989) LTD.

WHITECOURT - Box 906, Whitecourt, Alberta T7S 1N9 Phone: (780) 778-5575 Fax: (780) 778-3817

84483

RADIOGRAPHIC WELDING REPORT

CLIENT PENGROWTH CORP. DATE JAN 29TH/2007 PAGE 2 OF 2

DESCRIPTION RT- 13-36-63-11 W5M HEADER % PIPING

JOB No. ~~P.O. No.~~ 2006080025-9620667 CODE B31.3%

LOCATION J.C.K. ROD PENN Kilometers Subsistence Yes No

Radiography Technique Details in accordance with A.S.M.E. Section V-T291

EXPOSURE DEVICE Type / Make PANORAMIC AKAY Serial No. #100-3-187

SOURCE STRENGTH Curies 2 Ci Ir Source Serial No F878

FILM Brand AGFA Class I

TOTAL HRS.:	
REG. HRS.:	
S.D. HRS.:	
O.T. HRS.:	

DEFECT LEGEND

IF INCOMPLETE FUSION	IUC INTERNAL UNDERCUT	PH PIN HOLE	SLIGHT - 1		
IP INCOMPLETE PENETRATION	EUC EXTERNAL UNDERCUT	HL HIGH LOW	MEDIUM - 2		
IC INTERNAL CONCAVITY	W WINDOW	RC RECAP	SEVERE - 3		
HB HOLLOW BEAD	I ICICLE	C CRACK			
BT BURN THROUGH	P POROSITY	AB ARC-BURN			
TI TUNGSTEN INCLUSION	S SLAG	LC LOW COVER			

EXPOSURE LEGEND

DOUBLE WALL CONTACT	DWC
SINGLE WALL INTERNAL	SW EL
ELLIPTICAL	
SUPERIMPOSED	SI
SHADOW EXPOSURE	SE
SINGLE WALL	SW

	WELD NUMBER	PIPE SIZE	WELDER SYMBOL	FILM TYPE	EXPOS LEGEND	CI-M MA-M	No OF EXPOS	WELD QUALITY ACCEPT	WELD QUALITY REJECT	DEFECT SEVERITY 3	DEFECT SEVERITY 2	DEFECT SEVERITY 1	REASON & LOCATION OF DEFECTS OTHER REMARKS
1													
2													
3		13-36 % HEADER PIPING											
4													
5	XF#												
6													
7	1	8" 40S		DS	DWC	26	3	✓			INC		@ 50 cm
8													
9													
10	2	▽						✓					
11													
12													
13	3	12" 40S		DS	DWC	53	3	✓			LC		
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													

Final film interpretation is the responsibility of the client. Client is in full agreement with details and acknowledges receipt of film.

LARGE FILM SIZES
14" X 17"
7" X 17"
4½" X 17"
4½" X 8½"
4 ." x 5 "

CLIENT REPRESENTATIVE [redacted] PRINT [redacted]

TECHNICIAN (sign) [redacted] CGSB LEVEL II CGSB

TECHNICIAN (print) [redacted]

ASSISTANT (print)

A.M. TIME IN	A.M. TIME OUT	P.M. TIME IN	P.M. TIME OUT

WHITE CLIENT GREEN OFFICE YELLOW OFFICE PINK OFFICE GOLDENROD FILM

BAKOS NDT

Haas Inspection Services
199 Tolt Road
St.Philip's, NL
A1M 1R6
Tele: 709 895 2170
Email:
claytonhaas@hotmail.com

Certifying Statement

This is to certify that the undersigned has reviewed the written practices, procedures, personnel records, and certification of Bakos NDE and is in compliance with the requirements of SNT-TC-1A, CGSB ISO 9712 and current ASME Code accepted edition. Bakos NDT will

- Ensure all personnel performing NDE shall be qualified and certified in accordance with SNT-TC-1A or CGSB.
- Have a level III examiner on staff and be responsible for NDE procedures and supervise examiner certification and training.
- Ensure that all examinations be done under the supervision of a level II or level III examiner.
- Ensure that all interpretation be done by a level II or level III examiner.

Bakos NDT therefore may supply NDE reports in which NDE procedures have been written and approved and Roland Pitzal meets or exceeds the above mentioned criteria.

Authorization:

BAKOS NDT

Has met the requirements of Bakos (NDT) Inspection (1989) Ltd. "Written Practice" and has attained the required practical training in accordance with SNT-TC-1A and is certified to perform nondestructive examinations in the disciplines and at the NDE levels shown below

RT LIII	1600	HOURS
MT LIII	530	HOURS
PT LIII	500	HOURS
UT LII	1200	HOURS

CGSB/SNT-TC-1A LIII

RT,MT,PT,UT REG#6468

Supporting documentation is on file with Bakos(NDT)Inspection(1989) Ltd

WPS NUMBER KOS-3

PQR NUMBER KOS-3-1

QUALIFIED FOR

MATERIAL (TYPICAL): P8 to P8 (SA 312 Type 304, SA 312 Type 316, SA 403 Type 348, etc.)

PROCESS: GTAW, SMAW JOINT DESIGN: Groove & Fillet

POSITION: All DIAMETER: All

AWS CLASSIFICATION: ER3XX(L), E3XX(L)-15 or 16

BASE METAL THICKNESS RANGE QUALIFIED:

AS WELDED: 1.6 to 19.1mm (1/16 to .750 in.)

ALBERTA
LABOUR
BOILERS & PRESSURE VESSELS ACT
WELDING PROCEDURE

Reg. No. WP 1148.2
Spec No. KOS-3
Weld Process ..... GTAW/SMAW
Matl. Gr. P No ..... 8 ..... to P No ... 8 .....
Elec. Gr. F No ..... 6 ..... A No ... 8 .....
Th. Qual For ..... 19.1mm .. Position .. All ...
.....
.....
Yr. 87 Mo. 8 Day 28 Signed ..... R. Roseberg
R. ROSEBERG, P.ENG.
WELDING SPECIALIST

Kana Oilfield Services Ltd.

Box 808 Whitecourt AB, T7S 1N8

WELDERS LOG

Exhibit: 9
Page: 18.9

Name	PROCESS	FILE NO.	MATERIAL "P" GROUP	ELECTRODE "F" GROUP	POSITION "S" QUALIFIED	THICKNESS RANGE QUALIFIED	MINIMUM PIPE DIA. QUALIFIED	DATE OF EXP. ALTA P.Q CARD	WPS No. Used	Revelwed Welding Procedure	Welders I.D.
[redacted]	SMAW	W-17093	P1	F3/F4	ALL	6mm/16mm	25mm	July 11/07	KOS-5-2 KOS-7-3	Yes	CH
"	GTAW SMAW	"	P1-P10H	F6/F5	ALL	.250"/.438"	1"	March 6/09	KOS-3 KOS-17	Yes	"

Kana Oilfield Services Ltd.
Box 808 Whitecourt AB, T7S 1N8

WELDERS LOG

Exhibit: 9
Page: 18.9

Name	PROCESS	FILE NO.	MATERIAL "P" GROUP	ELECTRODE "F" GROUP	POSITION "S" QUALIFIED	THICKNESS RANGE QUALIFIED	MINIMUM PIPE DIA. QUALIFIED	DATE OF EXP. ALTA P.Q CARD	WPS No. Used	Reveiwed Welding Procedure	Welders I.D.
[redacted]	SMAW	W-07107	P1	F3/F4	ALL	.104"/8.0"	1"	July 29/07	KOS 5 - 2 KOS 7 - 3	Yes	P
[redacted]	GTAW SMAW	W-07107	P1 to P10H	F6/F5	ALL	.250"/.438"	1"	Sept 11/08	KOS 3 KOS 17	Yes	P

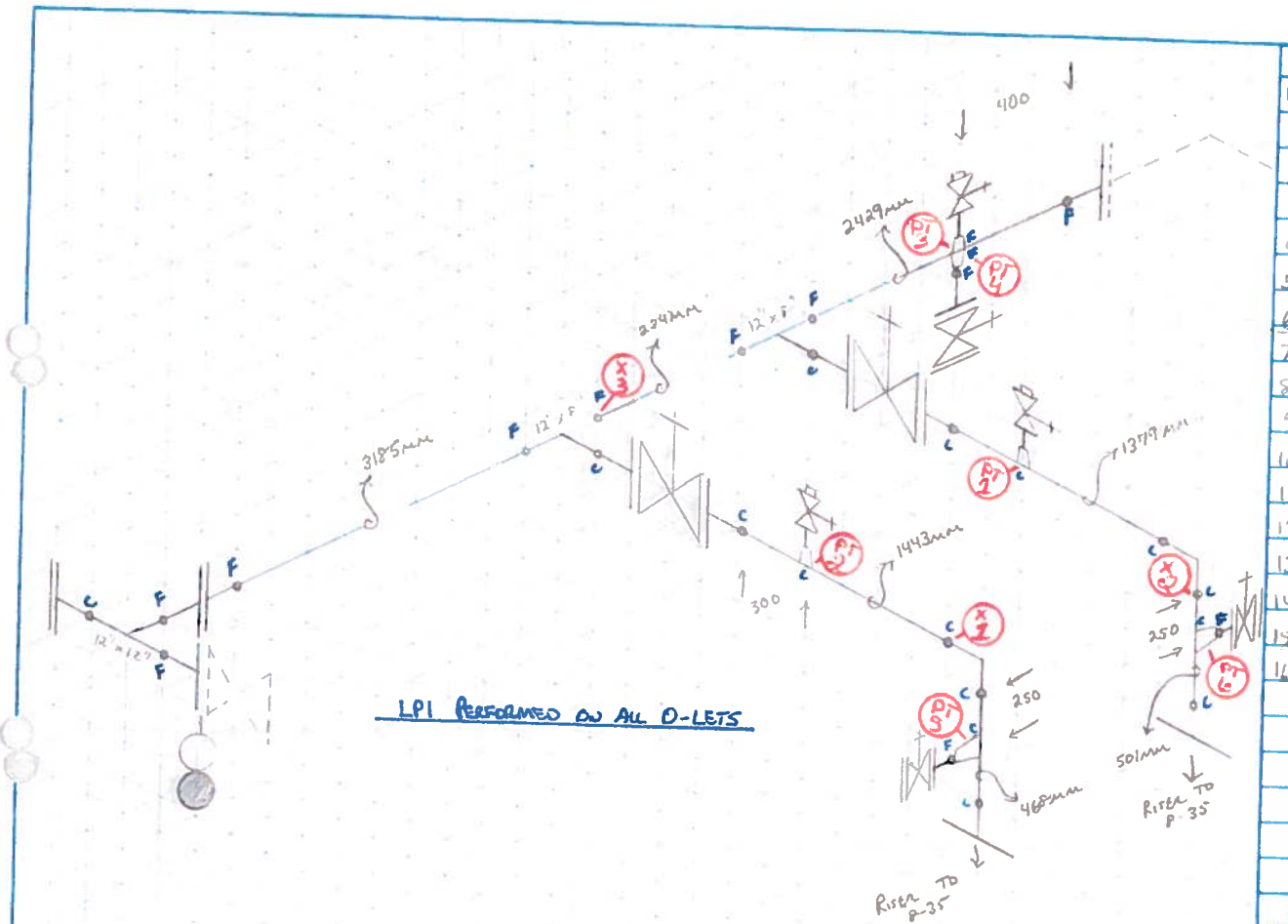
Kana Oilfield Services Ltd.

Box 808 Whitecourt AB, T7S 1N8

WELDERS LOG

Exhibit: 9
Page: 18.9

Name	PROCESS	FILE NO.	MATERIAL "P" GROUP	ELECTRODE "F" GROUP	POSITION "S" QUALIFIED	THICKNESS RANGE QUALIFIED	MINIMUM PIPE DIA. QUALIFIED	DATE OF EXP. ALTA P.Q CARD	WPS No. Used	Revelved Welding Procedure	Welders I.D.
[redacted]	SMAW	W-17093	P1	F3/F4	ALL	.188"/.500"	1"	Aug. 13/09	KOS 5 KOS 7	Yes	T
"	GTAW SMAW	W-17093	P8	F6/F5	ALL	6mm/16mm	25mm	Oct. 11/08	KOS 3	Yes	T
	GTAW SMAW	W-17093	P1-P10H	F6/F5	ALL	.250"/.438"	1"	Mar. 6/09	KOS 3, KOS-17	Yes	T



Welded By Floyd "F" & Cuister "C"

MATERIALS

ITEM	QTY	SIZE	SCH RATING	DESCRIPTION	HEAT #
1	E-E	12"	40	Smls Pipe	J0408
2	F-E	8"	40	Smls Pipe	37281
3	5	12"	40 300#	Rewn Flange	70386
4	6	8"	40 300#	Rewn Flange	11141
5	3	2"	40 300#	Rewn Flange	11036, 70789
6	1	12"x12"	40	Strt Tee	57358
7	2	12"x8"	40	Red Tee	57358
8	2	8"	40	90° Elbow	37654
9	3	2"	40	Weld-O-Let	DF507
10	3	1"	3000#	Thread-O-Let	T553
11	3	1"x4"	80	TBE Nipples	
12	3	1"	6000#	Hex Plugs	
13	3	1"	8000	Thrd Gate Valve	
14	3	2"	300#	Rf Gate Valve	
15	3	2"	300#	Rf Blind Flange	
16	1	12"	300#	Rf Blind Flange	

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PH: (780) 778-2385 FAX: (780) 778-6569

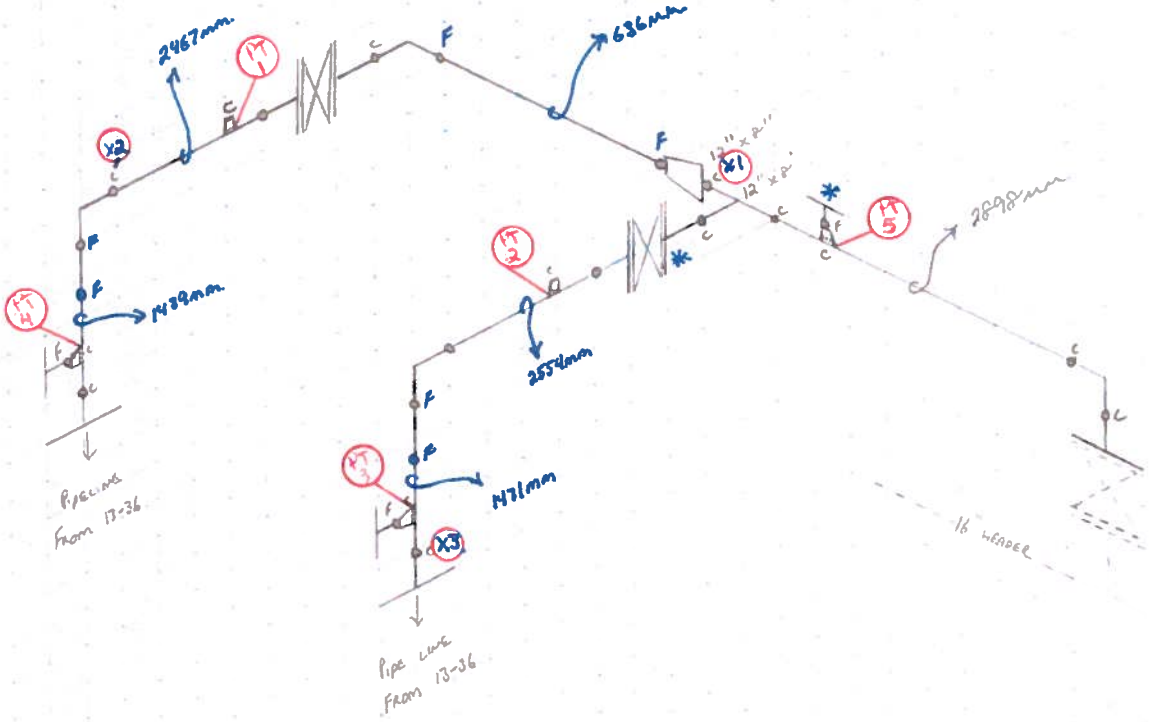
DATE:

CODE	WELD PROC.	% X-RAY	TEST PRESS.	DESIGN PRESS.	OPER. TEMP.	DESIGN TEMP.	STRESS RELIEVE	CORE. ALLOW	PAINT	INS.	LOCATION
331.3	HDS-3	15% 100% LPI	5175 kPa 10 minutes	3450 kPa	/	93°C	/	/	/		13-36-63-11

DRAWN: [redacted]
APPROVED:
CLIENT: Pengrowth

DATE:
SHEET #:
REV.:
SPEC.:
DWG #:
LINE #:
REF DWG #: 083-4373 70-062 05

T & T PRINTING



Welded By Curtis Hryzac "C" + Floyd Parker "F"

MATERIALS

ITEM	QTY	SIZE	SCH RATING	DESCRIPTION	HEAT #
1	E-E	12"	40	316/316L Pipe	J0408
2	E-E	8"	40	316/316L Pipe	37281
3	1	12"	40 300#	316/316L Rfwn Flange	70386
4	6	8"	40 300#	316/316L Rfwn Flange	11141 * 69185
5	3	2"	40 300#	316/316L Rfwn Flange	70789 * 11035
6	1	12"	40	316/316L LR 90° Elbow	MR0175
7	2	8"	40	316/316L LR 90° Elbow	37654
8	1	12"x8"	40	316/316L Red Tee	57358
9	1	12"x8"	40	316/316L Conc Reducer	05745
10	3	2"	40	316/316L WOL	DF507
11	2	1"	3000#	316/316L TOL	T553

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DATE:

CODE	WELD PROC.	% X-RAY	TEST PRESS.	DESIGN PRESS.	OPER. TEMP.	DESIGN TEMP.	STRESS RELIEVE	CORE. ALLOW	PAINT	INS.	LOCATION
B31.3	K06-3	10% BW / 100% LPI	5175 KPa for 10 minutes	3450 KPa		93°	/	/	/		08-35-63-11

DRAWN: [redacted]
APPROVED:
CLIENT: Pengrowth.

DATE:
SHEET #:
REV.:
SPEC.:
DWG #:
LINE #:
REF DWG #: 083-[illegible]

T&T PRINTING

SECTION 3

- Hydro Test Procedures, Results & Calibration Reports & Waiver Reports
- Pneumatic Test Procedures, Results & Calibration Reports

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P.O. Box 808, 4107 - 41 St., Whitecourt, AB, T7S 1N8
Phone: (780) 778-2385 Fax: (780) 778-6569

HYDROSTATIC TEST REPORT

Date Feb 18, 2007

Job Number 3696

Customer Pengrowth

Description of Product 8-35-63-11 WSM

8" nozzles for new Riser tie-in

Test Conducted By [redacted]

Test Pressure 5175 kPa

Test Medium water

Test Medium Temperature Ambient

Holding Time at Test Pressure 10 minutes

Adverse Conditions Affecting Test

Results Good

Authorized Inspector Witnessing Test Brian Jager

Comments

Recorder N/A

Gauge E16644 & E16641 0-2000 PSI

Deadweight N/A

Signature of Quality Control Manager [redacted]

CERTIFICATE OF CALIBRATION

WIKA

WIKA INSTRUMENTS LTD.

Cerificate No.: E 16641

BMW0144

Customer : BMW PRODUCTS & SERVICES

4920 WATSON CRESCENT
T0G 2C0 SWAN HILLS

Order No.	: 370226	PO#	: 21-3152285
Item	: 1	Date of order	: 1/22/2007

Specification of Gauge under test (DUT)

Object	: dial gauge
Manufacturer	: WIKA
Type	: 233.54.100
Serial No.	: -
ID No.	: 370226-1-1
Pressure range	: 0 ... 2000 psi
Accuracy	: 1 % (of span)
Resolution	: 20 psi
Method of measurement	: Gauge pressure
Output signal	: -

Working Standard (WS)

Test equipment	: electr. Gauge
Pressure range	: 0 ... 160 bar
Calibration number	: A3829 DKD 2006-07
Accuracy	: 0.0252 % (of span)
Identity	: SS 202

Calibration conditions

Place of calibration	: Cal-lab (Edmonton)
Test temperature (in °C)	: 24.0
Humidity (in %)	: 18.0
Amb. pressure (in mbar)	: 1000.0
Medium	: water
No. of measurement	: 6
Position	: vertical
Full-scale load (in min.)	: 5
Method of calibration	: Pressure-setting according to DUT

Used auxiliary instruments

Multimeter	: -
Resistor	: -

Extensions :

Product Manager : [redacted]

calibrated by : [redacted]

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Fax: (604)299-4508

WIKA

WIKA INSTRUMENTS LTD.

Cerificate No.: **E 16641**

Calibration results

Reading DUT *psi*	Reading WS *psi*		Mean-value *psi*	Deviation *psi*	Hysteresis *psi*	Deviation %
	M 1	*M 2*				
0 0	0.0	0.0	0.0	0.0	0.0	0.0
400 0	397.0	391.8	394 4	5.6	5.2	0.3
800 0	791.4	784.4	787 9	12 1	7.0	0.6
1200.0	1189.2	1186.0	1187.6	12.4	3.2	0.8
1600 0	1586.3	1581.6	1583 9	16.1	4.7	0.8
2000 0	1996.3	1996.3	1996.3	3.7	0.0	0.2

date of calibration: 1/24/2007

Declaration of conformity:

The object is within the specifications according to the stated standards.

The calibration object is labeled with a calibration mark, which shows the date of calibration and the recommended date for recalibration.(Maximum of 1 year from date of issue.)

WIKA INSTRUMENTS LTD. certifies that the above mentioned instruments have been calibrated and are traceable to the National Institute of Standards and Technology (NIST).

Calibration is carried out according to the following norms:

- ASME B 40.1 (latest revision)

-Calibration of Wika test instruments is carried out on an annual basis. Validity of certification of test instruments is one year from date of issue.

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Fax (604)298-4585

CERTIFICATE OF CALIBRATION

WIKA INSTRUMENTS LTD

Certificate No.: E 16644

BMW0144

Customer : BMW PRODUCTS & SERVICES

4920 WATSON CRESCENT
T0G 2C0 SWAN HILLS

Order No	: 370226	PO#	: 21-3152285
Item	: 1	Date of order	: 1/22/2007

Specification of Gauge under test (DUT)

Object	: dial gauge
Manufacturer	: WIKA
Type	: 233.54.100
Serial No	: -
ID No.	: 370226-1-2
Pressure range	: 0 ... 2000 psi
Accuracy	: 1 % (of span)
Resolution	: 20 psi
Method of measurement	: Gauge pressure
Output signal	: -

Working Standard (WS)

Test equipment	: electr. Gauge
Pressure range	: 0 ... 160 bar
Calibration-number	: A3829 DKD 2006-07
Accuracy	: 0.0252 % (of span)
Identity	: SS 202

Calibration conditions

Place of calibration	: Cal-lab (Edmonton)
Test temperature (in °C)	: 24.0
Humidity (in %)	: 18.0
Amb. pressure (in mbar)	: 1000.0
Medium	: water
No. of measurement	: 6
Position	: vertical
Full-scale load (in min.)	: 5
Method of calibration	: Pressure-setting according to DUT

Used auxiliary instruments

Multimeter	: -
Resistor	: -

Extensions :

Product Manager

calibrated by :

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Fax (604)299-4566

WIKA INSTRUMENTS LTD.

Cerificate No.: **E 16644**

Calibration results

Reading DUT *psi*	Reading WS *psi*		Mean-value *psi*	Deviation *psi*	Hysteresis *psi*	Deviation *%*
	M 1	*M 2*				
0.0	0.0	0.0	0.0	0.0	0.0	0.0
400.0	405.7	407.1	406.4	-6.4	1.4	-0.3
800.0	814.4	809.2	811.8	-11.8	5.2	-0.6
1200.0	1212.2	1210.1	1211.1	-11.1	2.1	-0.6
1600.0	1614.2	1607.2	1610.7	-10.7	7.0	-0.5
2000.0	2011.8	2011.8	2011.8	-11.8	0.0	-0.6

date of calibration: 1/24/2007

Declaration of conformity:

The object is within the specifications according to the stated standards.

The calibration object is labeled with a calibration mark, which shows the date of calibration and the recommended date for recalibration.(Maximum of 1 year from date of issue.)

WIKA INSTRUMENTS LTD. certifies that the above mentioned instruments have been calibrated and are traceable to the National Institute of Standards and Technology (NIST).

Calibration is carried out according to the following norms:

- ASME B 40.1 (latest revision)
-
-Calibration of Wika test instruments is carried out on an annual basis. Validity of certification of test instruments is one year from date of issue.

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HYDROSTATIC TEST REPORT

Date Feb 17, 2007

Job Number 3696

Customer Penngrowth

Description of Product 8-35-63-11 W5M
16" x 8" spool for header tie-in

Test Conducted By [redacted]

Test Pressure 5175 Kpa

Test Medium Water

Test Medium Temperature Ambient

Holding Time at Test Pressure 10 minutes

Adverse Conditions Affecting Test

Results Good

Authorized Inspector Witnessing Test Brian Jager

Comments

Recorder N/A

Gauge E16644 & E16641 0-2000 psi.

Deadweight N/A

Signature of Quality Control Manager [redacted]

CERTIFICATE OF CALIBRATION

WIKA INSTRUMENTS LTD

Certificate No.: E 16641

BMW0144

Customer : BMW PRODUCTS & SERVICES

4920 WATSON CRESCENT
T0G 2C0 SWAN HILLS

Order No.	: 370226	PO#	: 21-3152285
Item	: 1	Date of order	: 1/22/2007

Specification of Gauge under test (DUT)

Object	: dial gauge
Manufacturer	: WIKA
Type	: 233.54.100
Serial No	: -
ID No.	: 370226-1-1
Pressure range	: 0 ... 2000 psi
Accuracy	: 1 % (of span)
Resolution	: 20 psi
Method of measurement	: Gauge pressure
Output signal	: -

Working Standard (WS)

Test equipment	: electr. Gauge
Pressure range	: 0 ... 160 bar
Calibration-number	: A3829 DKD 2006-07
Accuracy	: 0.0252 % (of span)
Identity	: SS 202

Calibration conditions

Place of calibration	: Cal-lab (Edmonton)
Test temperature (in °C)	: 24.0
Humidity (in %)	: 18.0
Amb. pressure (in mbar)	: 1000.0
Medium	: water
No. of measurement	: 6
Position	: vertical
Full-scale load (in min.)	: 5
Method of calibration	: Pressure-setting according to DUT

Used auxiliary instruments

Multimeter	: -
Resistor	: -

Extensions :

Product Manager : T[redacted]ko

calibrated by : T[redacted]

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WIKA

WIKA INSTRUMENTS LTD

Cerificate No.: **E 16641**

Calibration results

Reading DUT psi	Reading WS psi		Mean-value psi	Deviation psi	Hysteresis psi	Deviation %
	M 1	M 2				
0 0	0 0	0.0	0 0	0.0	0 0	0.0
400 0	397.0	391 8	394 4	5 6	5 2	0.3
800 0	791.4	784.4	787.9	12 1	7 0	0.6
1200 0	1189 2	1186.0	1187 6	12.4	3 2	0.6
1600 0	1586 3	1581.6	1583 9	16 1	4 7	0.8
2000 0	1996 3	1996 3	1996.3	3.7	0.0	0 2

date of calibration: 1/24/2007

Declaration of conformity:

The object is within the specifications according to the stated standards.

The calibration object is labeled with a calibration mark, which shows the date of calibration and the recommended date for recalibration.(Maximum of 1 year from date of issue.)

WIKA INSTRUMENTS LTD. certifies that the above mentioned instruments have been calibrated and are traceable to the National Institute of Standards and Technology (NIST).

Calibration is carried out according to the following norms:

- ASME B 40 1 (latest revision)

-Calibration of Wika test instruments is carried out on an annual basis. Validity of certification of test instruments is one year from date of issue.

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CERTIFICATE OF CALIBRATION

WIKA INSTRUMENTS LTD

Certificate No.: E 16644

Customer : BMW PRODUCTS & SERVICES

BMW0144

4920 WATSON CRESCENT
T0G 2C0 SWAN HILLS

Order No	: 370226	PO#	: 21-3152285
Item	: 1	Date of order	: 1/22/2007

Specification of Gauge under test (DUT)

Object	: dial gauge
Manufacturer	: WIKA
Type	: 233.54.100
Serial No	: -
ID No	: 370226-1-2
Pressure range	: 0 ... 2000 psi
Accuracy	: 1 % (of span)
Resolution	: 20 psi
Method of measurement	: Gauge pressure
Output signal	: -

Working Standard (WS)

Test equipment	: electr. Gauge
Pressure range	: 0 ... 160 bar
Calibration-number	: A3829 DKD 2006-07
Accuracy	: 0.0252 % (of span)
Identity	: SS 202

Calibration conditions

Place of calibration	: Cal-lab (Edmonton)
Test temperature (in °C)	: 24.0
Humidity (in %)	: 18.0
Amb. pressure (in mbar)	: 1000.0
Medium	: water
No. of measurement	: 6
Position	: vertical
Full-scale load (in min.)	: 5
Method of calibration	: Pressure-setting according to DUT

Used auxiliary instruments

Multimeter	: -
Resistor	: -

Extensions :

Product Manager : [redacted]

calibrated by [redacted]

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WIKA

WIKA INSTRUMENTS LTD

Certificate No.: **E 16644**

Calibration results

Reading DUT *psi*	Reading WS *psi*		Mean-value *psi*	Deviation *psi*	Hysteresis *psi*	Deviation *%*
	M 1	*M 2*				
0.0	0.0	0.0	0.0	0.0	0.0	0.0
400.0	405.7	407.1	406.4	-6.4	1.4	-0.3
800.0	814.4	809.2	811.8	-11.8	5.2	-0.6
1200.0	1212.2	1210.1	1211.1	-11.1	2.1	-0.6
1600.0	1614.2	1607.2	1610.7	-10.7	7.0	-0.5
2000.0	2011.8	2011.8	2011.8	-11.8	0.0	-0.6

date of calibration 1/24/2007

Declaration of conformity:

The object is within the specifications according to the stated standards.

The calibration object is labeled with a calibration mark, which shows the date of calibration and the recommended date for recalibration.(Maximum of 1 year from date of issue.)

WIKA INSTRUMENTS LTD. certifies that the above mentioned instruments have been calibrated and are traceable to the National Institute of Standards and Technology (NIST).

Calibration is carried out according to the following norms:

- ASME B 40.1 (latest revision)

-Calibration of Wika test instruments is carried out on an annual basis. Validity of certification of test instruments is one year from date of issue

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HYDROSTATIC TEST REPORT

Date Jan 22/07

Job Number 3696

Customer PENGROWTH

Description of Product 13-36-63-11 HEADER

Test Conducted By [redacted]

Test Pressure 5175 KPa

Test Medium WATER

Test Medium Temperature Ambient

Holding Time at Test Pressure 1 Hour

Adverse Conditions Affecting Test

Results Good

Authorized Inspector Witnessing Test Shawn Major

Comments

Recorder D-200PSI, Serial #242EC-14757. cal date: Dec 28/06

Gauge

Deadweight

Signature of Quality Control Manager

METER CALIBRATIONS

SELECT CONTROLS LTD.

BOX 1477 WHITECOURT, AB T7S 1P3
WHITECOURT 778-5373
FOX CREEK 622-3166
EDSON 723-4762

DATE	CUSTOMER
Dec. 28	Pengrowth
WORK REQ #	**LOCATION/LSD**
WS 13100	Red Penn

Dryflow Meter Information

Make	Barton
Serial No.	242EC - 14757-2
Differential Range	n/a
Static Range	0 to 2000psi
Temperature Range	0 to 150°F

Meter Run Information

Meter Run Identifier	
Make	
Serial No.	
Type	
Run Size	
I.D. Upstream	
I.D. Downstream	
A.G.A.	
Orifice Size	

Orifice Plate Condition Good	Yes ☐ No ☐
Orifice Plate Bevel Down Stream	Yes ☐ No ☐
Orifice Changer Condition Good	Yes ☐ No ☐
Travel Stops Set	Yes ☐ Adj. ☐
Diff. Pen Arc Correct	Yes ☐ Adj. ☐
Pen Spacing Correct	Yes ☑ Adj. ☐
Pen Tension Correct	Yes ☑ Adj. ☐
Linkage Condition Good	Yes ☑ No ☐
Manifold / Piping Condition Good	Yes ☐ No ☐
Static Pressure Tap	U/S ☐ D/S ☐

Differential Calibration

KPa ☐ / InW.C. ☐	% As Found Up	% As Found Down	% As Left Up	% As Left Down

Static Calibration

KPa ☐ / PSI ☐	D.W. ☐	T.G. ☐	% As Found	% As Left
0				0
500				25
1000				50
1500				75
2000				100

Zeroed At: 0 psi

Temperature Calibration

°C ☐ / °F ☐	Bath ☐	Thermometer ☑	As Found	As Left
32				32
58				58
90				90

Last Calibration Date n/a

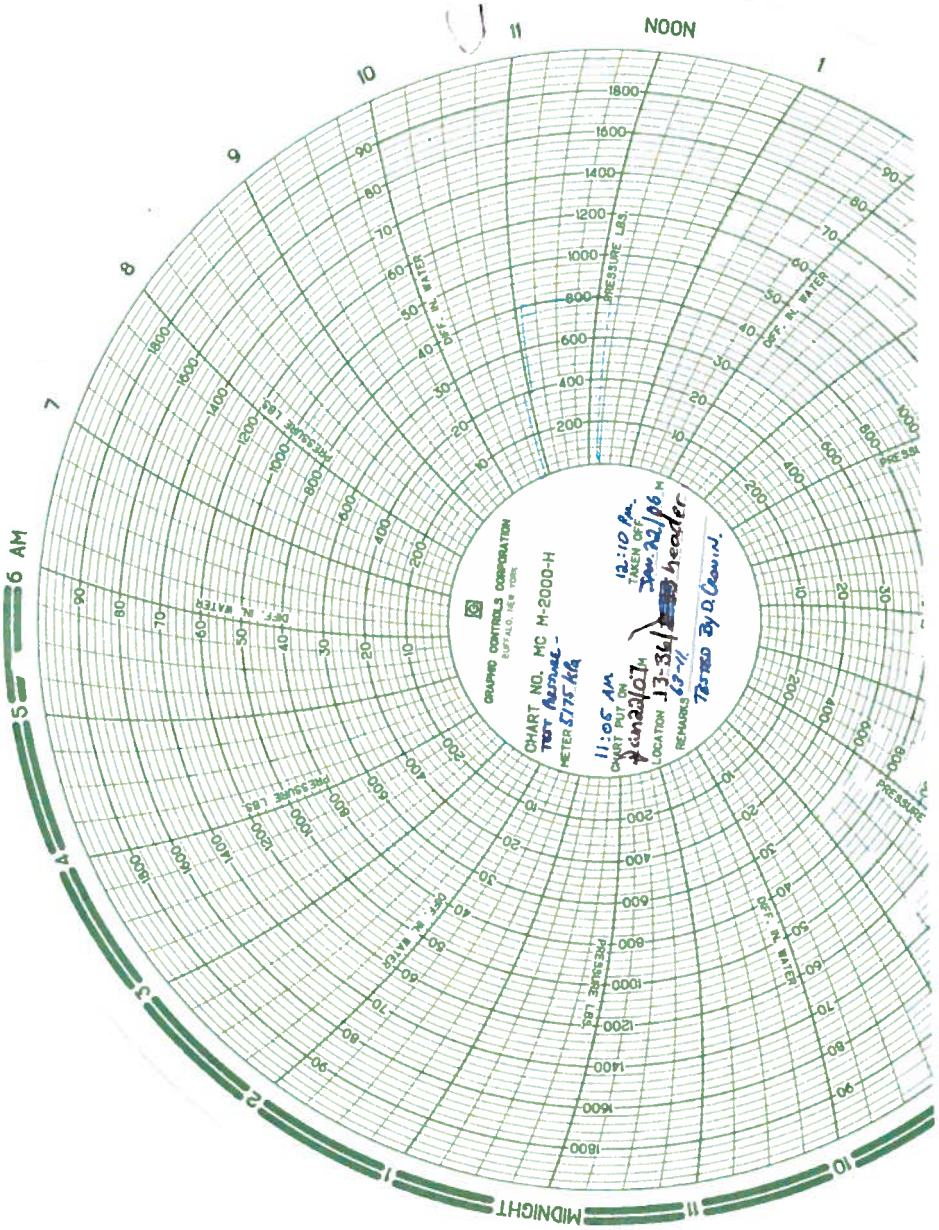
Technician [redacted]

Comments Meter complete with high pressure hose & fittings extra pens, charts, clock key.

Parts Supplied STATIC PEN MAY HAVE TO BE RE-ZEROED AFTER SHIPPING

White: Office Yellow: File Pink: Customer Goldenrod: Book

REPORT 09602


NOON
MIDNIGHT
6 AM
PRESSURE LBS.
DIFF. IN. WATER
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CHART NO. MC M-2000-H
TEST Pressure
METER 5175 kPa
11:05 AM
CHART PUT ON
Jan 22/07
LOCATION 13-36
REMARKS 63-11
12:10 PM
TAKEN OFF
Jan. 22/06
header
TESTED By D. Cronin.

LSD-13 36 63-11
File# - P-XP-06073b
Recorder - 0 2000 Psi
Serial# - 242LC-14757
Caldate - Dec. 28/06
Test pres - 5175 19,20
Duration 1 Hour

Dave C.
Curtis F.

KANA OILFIELD SERVICES LTD.
P.O. Box 808, 4107 - 41 St., Whitecourt, AB, T7S 1N8
Phone: (780) 778-2385 Fax: (780) 778-6569

HYDROSTATIC TEST REPORT

Date Jan 21/07

Job Number 3696

Customer Penn West

Description of Product 13-36-63-10

8" HEADER

Test Conducted By [redacted]

Test Pressure 5175 KPa

Test Medium WATER

Test Medium Temperature Ambient

Holding Time at Test Pressure 1 Hour

Adverse Conditions Affecting Test

Results Good

Authorized Inspector Witnessing Test Shawn Mayer

Comments

Recorder 2000 PSI, Serial #24216 14757, Calibration: Dec 28/06

Gauge

Deadweight

Signature of Quality Control Manager [redacted]

METER CALIBRATIONS

SELECT CONTROLS LTD.

BOX 1477, WHITECOURT, AB T7S 1P3
WHITECOURT 778-5373
FOX CREEK 622-3166
EDSON 723-4762

DATE	CUSTOMER
Dec. 28	Pengrowth
WORK REQ. #	**LOCATION/LSD**
WS 13100	Red Penn

Dryflow Meter Information

Make	Barton
Serial No.	242EC-14757-2
Differential Range	n/a
Static Range	0 to 2000psi
Temperature Range	0 to 150°F

Meter Run Information

Meter Run Identifier	
Make	
Serial No.	
Type	
Run Size	
I.D. Upstream	
I.D. Downstream	
A.G.A.	
Orifice Size	

Orifice Plate Condition Good	Yes ☐ No ☐
Orifice Plate Bevel Down Stream	Yes ☐ No ☐
Orifice Changer Condition Good	Yes ☐ No ☐
Travel Stops Set	Yes ☐ Adj. ☐
Diff. Pen Arc Correct	Yes ☐ Adj. ☐
Pen Spacing Correct	Yes ☑ Adj. ☐
Pen Tension Correct	Yes ☑ Adj. ☐
Linkage Condition Good	Yes ☑ No ☐
Manifold / Piping Condition Good	Yes ☐ No ☐
Static Pressure Tap	U/S ☐ D/S ☐

Differential Calibration

KPa ☐ / InW.C. ☐	% As Found Up	% As Found Down	% As Left Up	% As Left Down

Static Calibration

KPa ☐ / PSI ☑	D.W. ☑ % As Found	T.G. ☐ % As Left
0		0
500		25
1000		50
1500		75
2000		100

Zeroed At: 0 p.

Temperature Calibration

°C ☐ / °F ☑	Bath ☐ As Found	Thermometer ☑ As Left
32		32
58		58
90		90

Last Calibration Date n/a

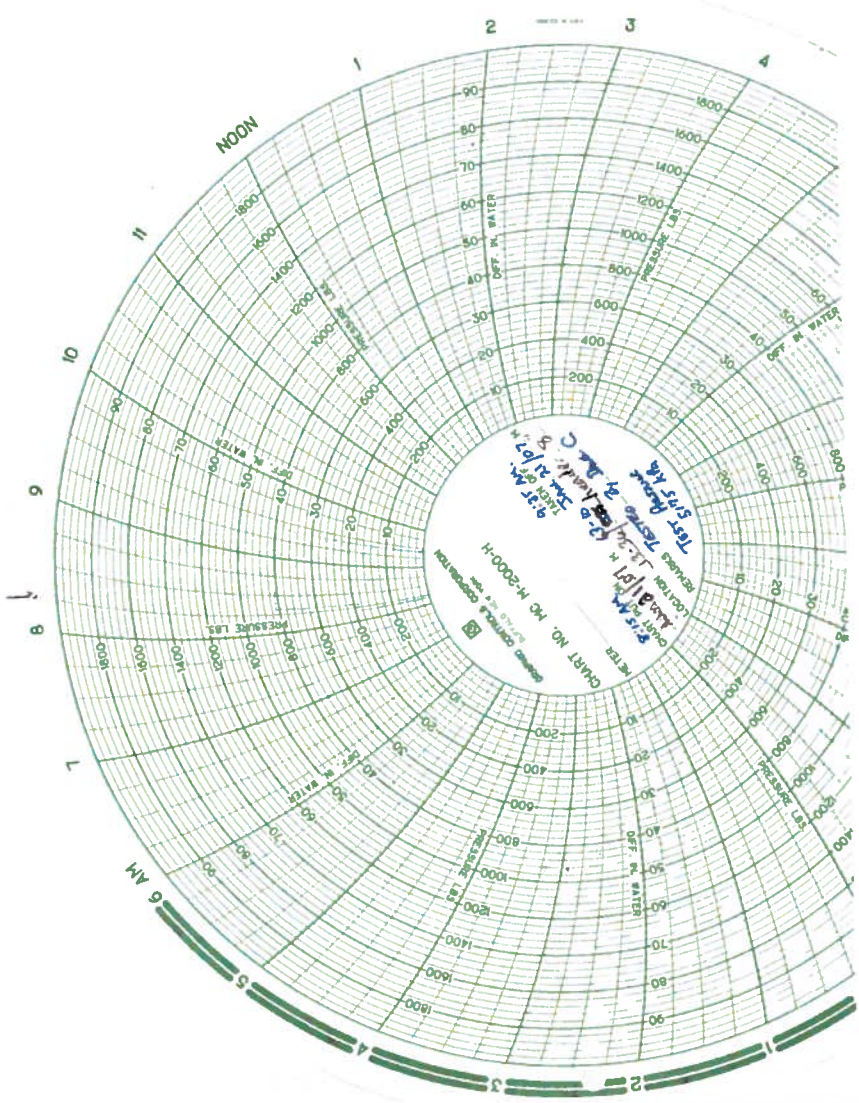
Technician [redacted]

Comments Meter complete with high pressure hose & fittings extra pens, charts, clock key

Parts Supplied STATIC PEN MAY HAVE TO BE RE-ZEROED AFTER SHIPPING

White: Office Yellow: File Pink: Customer Goldenrod: Book

REPORT 09602


NOON
6 AM
PRESSURE LBS.
DIFF. IN. WATER
CHART NO. MC M-2000-H
METER
LOCATION
REMARKS
Test Pressure
Sims Kfs

LSD- 73-36-63-10
File# P-JCP-06093b
Recorder- 0 2000PSI
Serial#- 24BCC 14757
Cal date: Dec 28/06
Test Pres- 5175 KPa
Duration- 1 Hour

SECTION 4

- Heat Treatment Records
- Internal Corrosion/Erosion Protective Coating Reports
- Valve Repair & Internal Coating Data Reports
- Pre & Post Weld Treatment Procedures
- Product Identification Numbers

SECTION 5

- Material Test Reports (MTR)
- Material Receiving Reports
- Packing Slips & Invoices
- Pipe Tally Sheets
- QC Reports

B.M.W ATT. WAYNE

March 19 - 2007.

Loc 07-01-64-11 SATT

AFE# 200616030

A182 - 316/316L.

2 → 3" 600# RF CHECK VALVES

7 → 1" 800 API THREADED GATE VALVES

7 → 1" x3" NIPPLES SCH #160

7 → 1" - HEX PLUGS.

LOC: 7-02-64-11

AFE # 200608017

2 → 1"x4" NIPPLES PLAIN BOTH ENDS SCH#160 A333 Gr 6

2 → 2" #1500 RF BLIND DRILL FOR 1" SOCKET WELD SCH #160 A350 - LF2

THANKS

Telegram / Key 8-35 to 13-36 21-513 - 09.

TÜV CERT ISO 9001:2000 RWTÜV APPROVED AD 2000 WO PED 97/23/EC MANUFACTURER

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER :

M/S PINNACLE STAINLESS STEEL
455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L5T 2J3

ORDER NO.-32417,33278,34587

MANUFACTURER'S SYMBOL

MTR NO. FRG/24139 - C
DATE 22.09.2008
MATERIAL SPECIFICATION ASTM A182/A182M -05
GRADE ASME SA182/SA182M -05
DIMENSIONAL SPECIFICATION F304/304L
MATERIAL CONFORMS TO NACE MR0 175 - 2002 ASME B16.5 2003
STAINLESS STEEL FORGED FLANGES

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%P	%S	%Cr	%Ni	%Mo	%N+%M	REMARKS
34587	1/2"	BLRF	150#	72246	100	0.025	1.24	0.46	0.015	0.038	16.84	10.60	2.02	525	
32417	16"	BLRF	150#	70275	10	0.024	1.88	0.61	0.014	0.043	16.65	10.57	2.01	675	
32417	1/2"	SORF	150#	72531	27	0.028	1.70	0.41	0.009	0.038	16.90	10.68	2.04	670	
34587	4"	SORF	600#	68933	25	0.028	1.70	0.42	0.025	0.041	16.65	10.10	2.08	790	
32417	1"	SWRF S160	150#	72355	25	0.020	1.69	0.33	0.030	0.040	16.62	10.07	2.04	570	
33278	1"	THFF	150#	72355	25	0.020	1.69	0.33	0.030	0.040	16.62	10.07	2.04	570	
33278	1"	THRF	150#	72643	25	0.020	1.69	0.33	0.030	0.040	16.62	10.07	2.04	570	
33278	12"	WNRF S80S	300#	71524	100	0.020	1.80	0.41	0.020	0.036	16.70	10.75	2.03	745	
34587	2"	WNRF S80S	150#	72687	6	0.026	1.80	0.44	0.008	0.037	16.55	10.12	2.03	685	
					200	0.023	1.75	0.49	0.021	0.039	16.50	10.00	2.05	910	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Rm)	YIELD STRENGTH (Rp0.2)	ELONGATION % Lo=4D	REDUCTION OF AREA	IMPACT TEST CHARPY V-NOTCH 10x10mm (DVL) J				HARDNESS (BHN)
								1	2	3	AVG	
72246	1/2"	BLRF	150#	561.96	300.66	58.39	68.24				-	162
70275	16"	BLRF	150#	554.03	396.94	57.28	73.05				-	156
72531	1/2"	SORF	150#	630.33	261.47	60.32	67.81				-	163
68933	4"	SORF	600#	570.41	296.59	62.20	73.29				-	156
72355	1"	SWRF S160	150#	549.47	287.48	59.22	68.90				-	160
72355	1"	THFF	150#	549.47	287.48	59.22	68.90				-	160
72643	1"	THRF	150#	574.12	281.93	60.04	69.54				-	159
71524	12"	WNRF S80S	300#	552.37	283.66	56.80	72.34				-	148
72687	2"	WNRF S80S	150#	627.88	257.33	60.14	67.80				-	156

MELTING PROCESS : INDUCTION+ASD (ESR)/OIDCAST
HEAT TREATMENT : SOLUTION ANNEALED AT 1040°C AND WATER QUENCHED
DIMENSIONAL INSPECTION : CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION : SATISFACTORY
PMI : NO OBJECTION (100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION : NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST : ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND/OR MEAN ORG

CRN REGISTRATION NOS. FOR FLANGES

OB-0686-9 - Prince Edward Island	CSA OB-0686-96 - Quebec
OB-0686-8 Labrador	CSA OB-0686-96 - Saskatchewan
OB-0686-90 Newfoundland	OB-0686-9 - New Brunswick
OB-0686 92 Alberta	OB-0686-69 - Nova Scotia
OB-0686-95 - Ontario	OB 86-9 - Northwest Territories
OB-0686-951 - British Columbia	OB-0686-9Y - Yukon
CSA OB-0686-96 - Manitoba	

WORKS INSPECTOR

ANDHRA BANK ★ FOR ★ BANK ★ 1840 ★ BANDRA (MUMBAI) INDIA ★

OFFICE 10, Imperial Chambers, 1st Floo Wilson Road Ba ard E tat M mb i 40 1 D 142 61 27 228, 264 2265 7678 2261 3056 Fax (+91 22) 2261 2960/2265 9713
FACTORY G-75, MIDC Tarapur Indust a Area D st Tha e M har tra - 4 N 2- 279 24 Fax (+91-2525) 274 444 275 587 E-MAIL vfl@viraj.com
Survey No. 140/1 Boisar - Palghar Road Saravali Tarapur

APPROVED AD 2000 WO PED 97/23/EC MANUFACTURER

Rej 8-35 D13-36 HEADER

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1B

CUSTOMER : M/S PINACLE STAINLESS STEEL . 455 AMBASSADOR DRIVE MISSISSAUGA, ONTARIO L5T 2J3	MANUFACTURER'S SYMBOL	MTR NO. FRG/21984 - C
		DATE 07/07/2004
		MATERIAL SPECIFICATION ASTM A182/A182M - 02
		ASME SA182/SA182 M - A02
		GRADE F316/316L
		DIMENSIONAL SPECIFICATION ASME B16.5 1998
		MATERIAL CONFORMS TO NACE MR0 175 - 2002
ORDER NO.: 21223,21505,NIL		STAINLESS STEEL FORGED FLANGES

CHEMICAL ANALYSIS

SL NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	RS P+M	REMARKS
1	20"	SORF	150#	66555	12	0.025	1.71	0.48	0.022	0.038	16.55	10.06	2.02	760	
2	12"	WNRF 40S	300#	66058	15	0.023	1.79	0.39	0.015	0.034	16.57	10.11	2.02	600	
3	12"	WNRF 80S	300#	66058	5	0.023	1.79	0.39	0.015	0.034	16.57	10.11	2.02	600	
4	18"	WNRF S40S	300#	63983	2	0.022	1.98	0.53	0.017	0.039	16.98	10.98	2.11	860	
5	6"	WNRF S10S	150#	66384	100	0.024	1.84	0.50	0.015	0.043	16.64	10.10	2.10	650	
6	6"	WNRF S160S	1500#	66200	10	0.022	1.80	0.44	0.015	0.036	16.67	10.78	2.06	690	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 10x10mm (JOULES) 1	2	3	AVG	HARDNESS (BHN)
66555	20"	SORF	150#	549.45	289.60	56.40	74.80	-	-	-	-	166
66058	12"	WNRF 40S	300#	557.39	291.59	58.40	73.99	-	-	-	-	153
66058	12"	WNRF 80S	300#	557.39	291.59	58.40	73.99	-	-	-	-	153
63983	18"	WNRF S40S	300#	550.13	277.03	55.20	73.43	-	-	-	-	162
66384	6"	WNRF S10S	150#	558.48	285.18	58.00	74.04	-	-	-	-	152
66200	6"	WNRF S160S	1500#	553.86	289.93	57.20	70.41	-	-	-	-	152

MELTING PROCESS	: INDUCTION/ARGO (RS)/CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

CRN REGISTRATION NOS. FOR FLANGES:

OB-0686-8	OB-0686-87
OB-0686-90	OB-0686-88
OB-0686-92	OB-0686-8T
OB-0686-85	OB-0686-8Y
OB-0686-951	
OB-0686-86	

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN.

WORKS MANAGER

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel. : (+91-22) 2261 4327, 2261 4284, 2265 7678, 22613056 Fax : 91-22-2261 2980 / 22659713
FACTORY : G-34/75 MIDC Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA. Tel : (+91-2525) 270143, 271366 - 68 Fax : (+91-2525) 270431 / 272448 E-MAIL : vfl@virajl.com

Pengrowth/Rej 8-35 to 13-36 Header 21-3143515

INSPECTION CERTIFICATE AND MILL TEST REPORT

According to
DIN 50049 3. 1. B / EN 10204

WENZHOUSHI DONGNAN PIPE MADE FACTORY
/ DBA OF SC MFG. GROUP INC.
No. 315-4, Gongye Beijie, Yongzhong Town, Wenzhou City, P.R. China
Tel.: 86-577-86378822 Fax.: 86-577-86377259

Customer:
PINACLE STAINLESS STEEL INC.
455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
T 2J3

Manufacturer's Symbol
SCDN

Order No. 26960

SC MFG PO No.SC-1507

MTR No.	5111
Date of issue:	20-Jun-2005
Grade:	316 / 316L
Made From:	Pipe A/SA 312 - 01a
Material Specification:	ASTM A403 WPS - 00a ASME A403 WPS - 98
Dimensional Specification:	ASME B16.9 - 01 MSS-SP43-91

Chemical Analysis

Item No.	Item Description	Sch.	Heat No.	QTY	%C	%Mn	%P	%S	%Si	%NI	%Cr	%Mo
21	8" 90LR ELBOW	40S	31625	25	0.016	1.250	0.020	0.019	0.600	13.10	16.80	2.3
22	10" 90LR ELBOW	40S	37435	10	0.023	1.350	0.029	0.021	0.340	13.30	17.40	2.15
47	12" X 12" X 10" TEE	40S	57358	2	0.027	1.740	0.025	0.019	0.740	13.70	17.20	2.14
48	12" X 12" X 8" TEE	40S	57358	4	0.027	1.740	0.025	0.019	0.740	13.70	17.20	2.14
52	12" TEE	40S	57358	5	0.027	1.740	0.025	0.019	0.740	13.70	17.20	2.14

Mechanical Properties

Heat No.	Item Description	Tensile MPa	Yield MPa	Elong. %	Red. Area %	Bend Test	Flattening Test	Hardness HB	Impact Test	Hydrostat. Test	Xray Test	Visual & Dimension
31625	8" 90LR ELBOW	540	265	54	-	ok	ok	140	ok	ok	-	ok
37435	10" 90LR ELBOW	565	250	52	-	ok	ok	145	ok	ok	-	ok
57358	12" X 12" X 10" TEE	585	275	55	-	ok	ok	150	ok	ok	-	ok
57358	12" X 12" X 8" TEE	585	275	55	-	ok	ok	150	ok	ok	-	ok
57358	12" TEE	585	275	55	-	ok	ok	150	ok	ok	-	ok

Heat Treatment: SOLUTION TREATED, 1060 °C (20 Minutes) Water Quenched
Misc: Material in accordance with NACE MR0175-2001
Free from Mercury contamination
Addition of filler metal? ☑No ☐Yes

Steel Making Process: Electric Furnace

WE CERTIFY THIS MATERIAL HAS BEEN MANUFACTURED AND EXAMINED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE SPECIFICATION(S) AND THE RESULTS OF ALL EXAMINATIONS ARE ACCEPTABLE.

CANADIAN REGISTRATION NUMBERS			
ONT	OA8868.5	NB	0A8868.57
QUE	CSA-0A8868.56	NFLD	0A8868.50
ALB	0A8868.52	NS	0A8868.58
BC	0A8868.51	PEI	0A8868.59
SASK	CSA-0A8868.56	NWT	0A8868.5T
MAN	CSA-0A8868.56	YUK	0A8868.5Y
		NUN	0A8868.5N

INSPECTION CERTIFICATE AND MILL TEST REPORT

According to
DIN 50049 3. 1. B / EN 10204

THIRD DIVISION
/ DBA OF SC MFG. GROUP INC.
No. 80 Dali Road, Heping District, Tianjin, China
Tel.: 86-22-27319741 Fax.: 86-22-27319749

Customer:
PINACLE STAINLESS STEEL INC.

455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L5T 2J3

Manufacturer's Symbol

SCDN

Order No. 29874

SC MFG PO No. SC-1519

MTR No.	SC-1519
Date of issue:	19-Dec-2005
Grade.	316 / 316L
Made From:	Pipe A/SA 312 - 01a
Material Specification:	ASTM A403 WPS - 00a ASME A403 WPS - 98
Dimensional Specification:	ASME B16.9 - 01 MSS-SP43-91

Chemical Analysis

Item No.	Item Description	Sch.	Heat No.	QTY	%C	%Mn	%P	%S	%Si	%Ni	%Cr	%Mo
7	12" X 8" CON RED	40S	05745	10	0.025	1.540	0.030	0.026	0.750	12.20	17.30	2.7
8	12" X 6" ECC RED	40S	05745	2	0.025	1.540	0.030	0.026	0.750	12.20	17.30	2.7
9	1 1/2" X 1 1/2" X 1" TEE	40S	47386	100	0.022	1.640	0.030	0.020	0.350	13.20	17.40	2.4
10	4" X 4" X 2" TEE	40S	85664	10	0.023	1.560	0.030	0.027	0.460	13.60	17.50	2.2
11	6" X 6" X 4" TEE	40S	67665	10	0.023	1.600	0.027	0.024	0.800	13.20	17.20	2.5
12	12" X 12" X 6" TEE	40S	05745	2	0.025	1.540	0.030	0.026	0.750	12.20	17.30	2.7

Mechanical Properties

Heat No.	Item Description	Tensile MPa	Yield MPa	Elong. %	Red. Area %	Bend Test	Flattening Test	Hardness HB	Impact Test	Hydrostat. Test	Xray Test	Visual & Dimension
05745	12" X 8" CON RED	565	250	52	-	ok	ok	130	ok	ok	-	ok
05745	12" X 6" ECC RED	565	250	52	-	ok	ok	130	ok	ok	-	ok
47386	1 1/2" X 1 1/2" X 1" TEE	570	245	58	-	ok	ok	130	ok	ok	-	ok
85664	4" X 4" X 2" TEE	580	265	57	-	ok	ok	130	ok	ok	-	ok
67665	6" X 6" X 4" TEE	550	245	50	-	ok	ok	125	ok	ok	-	ok
05745	12" X 12" X 6" TEE	565	250	52	-	ok	ok	130	ok	ok	-	ok

Heat Treatment: SOLUTION TREATED, 1060 °C (20 Minutes) Water Quenched

Misc: Material in accordance with NACE MR0175-2001
Free from Mercury contamination
Addition of filler metal? ☑No ☐Yes

Steel Making Process: Electric Furnace

WE CERTIFY THIS MATERIAL HAS BEEN MANUFACTURED AND EXAMINED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE SPECIFICATION(S) AND THE RESULTS OF ALL EXAMINATIONS ARE ACCEPTABLE.

CANADIAN REGISTRATION NUMBERS			
ONT	0A8868.5	NB	0A8868.57
QUE	CSA-0A8868.56	NFLD	0A8868.50
ALB	0A8868.52	NS	0A8868.58
BC	0A8868.51	PEI	0A8868.59
SASK	CSA-0A8868.56	NWT	0A8868.5T
MAN	CSA-0A8868.56	YUK	0A8868.5Y
		NUN	0A8868.5N

INSPECTION CERTIFICATE AND MILL TEST REPORT

WENZHOUSHI DONGNAN PIPE MADE FACOTRY
DBA OF SC MFG GROUP INC
No 315 4 GONGYE BEIJIE, YONGZHONG TOWN WENZHOU CITY P R CHINA
Tel 86-22-27319741 Fax 86-22-27319749

According
DIN 50049 3 1 B N 10204

Customer:
PINACLE STAINLESS STEEL INC
455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L[illegible] J3

Order No.33628

Manufacturer's Symbol
SCDN

SC MFG PO No.SC-1540

MTR No	SC-1540
Date of issue	30-Jun-2006
Grade	316/316L
Made From	Pipe A/SA 312 01a
Material Specification	ASTM A403 WPS - 00a ASME A403 WPS 98
Dimensional Specification	ASME B16 9 - 01 MSS SP43-91

Chemical Analysis

Item No	Item Description	Sch	Heat No	QTY	C	%Mn	%P	%S	%S	%NI	%Cr	%Mo
13	1" 90 DEG L/R ELBOW	40S	89973	1000	0 027	1 55	0 028	0 027	0 73	13.14	17 2	2 30
14	1-1/2 90 DEG L/R ELBOW	40S	47386	500	0 022	1 64	0 030	0 020	0 35	13.22	17 4	2.11
15	2" 90 DEG L/R ELBOW	40S	65747	500	0 023	1 25	0 025	0 012	0 53	13.23	17 5	2.46
16	8" 90 DEG L/R ELBOW	40S	37654	25	0 021	1 73	0 026	0 022	0 71	13.31	17 6	2.42
17	12" 90 DEG L/R ELBOW	40S	52273	10	0 024	1 38	0 027	0 025	0.47	12.42	17 5	2 12
18	2-1/2 X 1-1/2 CON RED	40S	45321	25	0 030	1 70	0 010	0 010	0 65	12.17	17 4	2 43

Mechanical Properties

Heat No.	Item Description	Tensile MPa	Yield MPa	Elong %	Red. Area %	Bend Test	Flattening Test	Hardness HB	Impact Test	Hydrostat. Test	Xray Test	Visual & Dimension
89973	1" 90 DEG L/R ELBOW	580	223	51	-	ok	ok	155	ok	ok	-	ok
47386	1-1/2 90 DEG L/R ELBOW	555	240	52	-	ok	ok	160	ok	ok	-	ok
65747	2" 90 DEG L/R ELBOW	565	251	54	-	ok	ok	153	ok	ok	-	ok
37654	8" 90 DEG L/R ELBOW	575	268	56	-	ok	ok	164	ok	ok	-	ok
52273	12" 90 DEG L/R ELBOW	550	236	53	-	ok	ok	155	ok	ok	-	ok
45321	2-1/2 X 1-1/2 CON RED	560	246	56	-	ok	ok	154	ok	ok	-	ok

Heat Treatment: SOLUTION TREATED, 1060 °C (20 Minutes) Water Quenched
Misc: Material in accordance with NACE MR0175-2001
Free from Mercury contamination
Addition of filler metal? No Yes

Steel Making Process: Electric Furnace

WE CERT FY THIS MATERIAL HAS BEEN MANUFACTURED AND EXAMINED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE SPECIFICATION(S) AND THE RESULTS OF ALL EXAMINATIONS ARE ACCEPTABLE.

CANADIAN REGISTRATION NUMBERS			
ONT	OA8868 5	NB	0A8868 57
QUE	CSA-0A8868 56	NFLD	0A8868 50
ALB	0A8868.52	NS	0A8868.58
BC	0A8868 51	PEI	0A8868 59
SASK	CSA-0A8868 56	NWT	0A8868 5T
MAN	CSA-0A8868 56	YUK	0A8868 5Y
		NUN	0A8868.5N

APPROVED
AD 2000 WO
PED 97/23/EC
MANUFACTURER

RWTUV

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER : M/S PINACLE STAINLESS STEEL . 456 AMBASSADOR DRIVE MISSISSAUGA, ONTARIO L5T 2J3	MANUFACTURER'S SYMBOL	MTR NO.	FRG/24299 - B
		DATE	10.09.2006
		MATERIAL SPECIFICATION	ASTM A182/A182M - 05 ASME SA182/SA182 M - 04
		GRADE	F51/F51L
		DIMENSIONAL SPECIFICATION	ASME B16.5 2003
		MATERIAL CONFORMS TO NACE MR0 175 - 2002	
		STAINLESS STEEL FORGED FLANGES	

ORDER NO.: 34587

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	NI PPM	REMARKS
34587	6.00	SORF	150#	72535	128	0.023	1.89	0.43	0.012	0.036	16.90	11.10	2.12	690	
34587	6.00	SORF	150#	72613	78	0.022	1.70	0.46	0.013	0.035	16.84	10.11	2.05	740	
34587	6.00	SORF	150#	72613	78	0.022	1.70	0.46	0.013	0.035	16.84	10.11	2.05	740	
34587	6.00	WNRF 40S	300#	11141	25	0.024	1.77	0.47	0.017	0.026	16.56	10.12	2.04	610	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 1mm/1mm (JOULES) 1	2	3	AVG	HARDNESS (BHN)
72535	6.00	SORF	150#	541.30	245.72	59.98	69.15	-	-	-	-	159
72613	6.00	SORF	150#	517.94	228.74	60.20	68.37	-	-	-	-	170
72613	6.00	SORF	150#	517.94	228.74	60.20	68.37	-	-	-	-	170
11141	6.00	WNRF 40S	300#	522.66	245.97	60.00	74.34	-	-	-	-	148

MELTING PROCESS	: INDUCTION/ASD (RE)/CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

CSA REGISTRATION NOS. FOR FLANGES:

OB-0686-0 - Prince Edward Island
OB-0686-00 - Labrador
OB-0686-00 - Newfoundland
OB-0686-02 - Alberta
OB-0686-05 - Ontario
OB-0686-051 - British Columbia
CSA.OB-0686-06 - Manitoba
CSA.OB-0686-06 - Quebec
CSA.OB-0686-06 - Saskatchewan
OB-0686-07 - New Brunswick
OB-0686-08 - Nova Scotia
OB-0686-0T - Northwest Territories
OB-0686-0Y - Yukon

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN

WORKS INSPECTOR

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel : (+91-22) 2261 4327, 2261 4284, 2265 7678, 2261 3056 Fax : (+91-22) 2261 2980/2265 9713
FACTORY : G-75, MIDC Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA. Tel.: (+91-2525) 279 018 - 24 Fax : (+91-2525) 274 444, 275 587 ✧ E-MAIL : vfl@viraj.com
Survey No. 140/1, Boisar - Palghar Road, Saravali, Tarapur, Tal. Palghar, Dist. Thane, Maharashtra, India.

TÜV CERT RWTÜV APPROVED AD 2000 WO PED 97/23/EC MANUFACTURER

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER :

M/S PINACLE STAINLESS STEEL
455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L5T 2J3

ORDER NO.: 29721,30512,32417

MANUFACTURER'S SYMBOL

MTR NO.	FRG/29729 - D
DATE	17.04.2009
MATERIAL SPECIFICATION	ASTM A182/A182M - 06
	ASME SA182/SA182 M - 04
GRADE	F316/316L
DIMENSIONAL SPECIFICATION	ASME B16.5 2003
MATERIAL CONFORMS TO NACE MR0 175 - 2003	

STAINLESS STEEL FORGED FLANGES

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION		HEAT NO	QTY	% C	% Mn	% Si	% S	% P	% Cr	% Ni	% Mo	% N PPM	REMARKS
32417	4" SORF	150#	71196	300	0.022	1.70	0.41	0.023	0.037	16.70	10.10	2.00	705	
32417	4" SORF	300#	68512	100	0.023	1.73	0.44	0.019	0.041	16.68	10.24	2.02	780	
32417	1" SWRF 40S	150#	70343	500	0.024	1.74	0.32	0.026	0.039	16.68	10.12	2.02	780	
32417	1" SWRF 80S	600#	71150	50	0.023	1.63	0.41	0.012	0.040	16.60	10.08	2.00	710	
32417	4" WNRF 40S	150#	71425	200	0.028	1.76	0.42	0.009	0.040	16.64	10.00	2.01	678	
32417	6" WNRF 80S	150#	70631	10	0.026	1.73	0.49	0.024	0.041	16.60	10.02	2.04	725	
32417	6" WNRF 40S	300#	69185	25	0.027	1.72	0.46	0.021	0.042	16.68	10.15	2.02	630	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION		TENSILE STRENGTH (Rm)	YIELD STRENGTH (Rp0.2)	ELONGATION % L=5D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH VALUES (J) 1	2	3	AVG	HARDNESS (BHN)
71196	4" SORF	150#	552.41	291.59	56.80	73.16	-	-	-	-	152
68512	4" SORF	300#	552.32	288.08	56.80	72.30	-	-	-	-	152
70343	1" SWRF 40S	150#	556.19	284.58	56.20	73.91	-	-	-	-	151
71150	1" SWRF 80S	600#	541.41	288.38	57.00	70.97	-	-	-	-	145
71425	4" WNRF 40S	150#	568.39	290.24	56.80	73.57	-	-	-	-	145
70631	6" WNRF 80S	150#	539.59	278.82	57.00	72.87	-	-	-	-	150
69185	6" WNRF 40S	300#	564.78	293.21	57.00	70.01	-	-	-	-	160

MELTING PROCESS : INDUCTION+VOD (ESR/CONSAST)
HEAT TREATMENT : SOLUTION ANNEALED AT 1065°C AND WATER QUENCHED
DIMENSIONAL INSPECTION : CONFORMS WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION : SATISFACTORY
PMI : NO OBJECTIONS(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION : NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST : THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/SPECIFICATION AND IS OF BRIGHT ORIGIN.

CONFIGURATION MODE FOR PROVINCES:

OB-0686-0 - Prince Edward Island	CSA.OB-0686-05 - Quebec
OB-0686-00 - Labrador	CSA.OB-0686-06 - Saskatchewan
OB-0686-00 - Newfoundland	OB-0686-07 - New Brunswick
OB-0686-02 - Alberta	OB-0686-08 - Nova Scotia
OB-0686-04 - Ontario	OB-0686-09 - Northwest Territories
OB-0686-051 - British Columbia	OB-0686-0Y - Yukon
CSA.OB-0686-06 - Manitoba	

FOR VIRAJ FORGINGS LTD.

WORK INSPECTOR

OFFICE : 10, Imperial Chambers, 1st Floor, [illegible], Ballard Estate, Mumbai - 400 038, INDIA. Tel. : (+91-22) 2261 4327, 2261 4284, 2265 7678, 2261 3056 Fax : (+91-22) 2261 2980/2265 9713
FACTORY : G-75, MIDC Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA. Tel.. (+91-2525) 270 143, 271 365 - 68 Fax : (+91-2525) 270 431/272 448 E-MAIL : vfl@viraj.com
Survey No. 140/1, Boisar - Palghar Road, Saravali, Tarapur, Tal. Palghar, Dist. Thane, Maharashtra, India.

Pengrowth/Key 8-35 to 13-36 21-5138504

TÜV CERT RWTÜV

APPROVED AD 2000 WO PED 97/23/EC MANUFACTURER

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER : M/S PINACLE STAINLESS STEEL . 455 AMBASSADOR DRIVE MISSISSAUGA, ONTARIO L5T 2J3	MANUFACTURER'S SYMBOL	MTR NO.	FRG/23316 - B
		DATE	28.11.2005
		MATERIAL SPECIFICATION	ASTM A182/A182M - 02 ASME SA182/SA182M - A02
		GRADE	F316/316L
		DIMENSIONAL SPECIFICATION	ASME B16.5 2003
		MATERIAL CONFORMS TO NACE MR0 175 - 2002	
ORDER NO. 27921,30512		STAINLESS STEEL FORGED FLANGES	

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N3 PPM	REMARKS
30512	12"	WNRF 40S	300#	70386	10	0.020	1.73	0.50	0.012	0.045	16.66	10.10	2.02	588	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 10x10mm (JOULES) 1	2	3	AVG.	HARDNESS (BHN)
70386	12"	WNRF 40S	300#	560.06	289.00	58.20	72.21	-	-	-	-	156

MELTING PROCESS	: INDUCTION/AOD (IAS)/CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

CRN REGISTRATION NOS. FOR FLANGES:

OB-0686-9 - Prince Edward Island	CSA.OB-0686-96 - Quebec
OB-0686-00 - Labrador	CSA.OB-0686-96 - Saskatchewan
OB-0686-00 - Newfoundland	OB-0686-97 - New Brunswick
OB-0686-92 - Alberta	OB-0686-98 - Nova Scotia
OB-0686-95 - Ontario	OB-0686-97 - Northwest Territories
OB-0686-951 - British Columbia	OB-0686-97 - Yukon
CSA.OB-0686-96 - Manitoba	

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN.

WORKS INSPECTOR

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel. : (+91-22) 2261 432 7, 2261 4284, 2265 7678, 2261 3056 Fax : (+91-22) 2261 2980/2265 9713
FACTORY : G-75, MIDC Tarapur Industrial Area, Dist Thane, Maharashtra - 401 506, INDIA. Tel.: (+91-2525) 270 143, 271 365 - 68 Fax : (+91-2525) 270 431/272 448 E-MAIL : vfl@viraj.com
Survey No. 140/1, Boisar - Palghar Road, Saravali, Tarapur, Tal. Palghar, Dist. Thane, Maharashtra, India.

APPROVED
AD 2000 WO
PED 97/23/EC
MANUFACTURER

RWTUV

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER :

M/S PINACLE STAINLESS STEEL .
455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L5T 2J3

ORDER NO.: 34587

MANUFACTURER'S SYMBOL

MTR NO.	FRG/24299 - B
DATE	10.09.2006
MATERIAL SPECIFICATION	ASTM A182/A182M - 05
	ASME SA182/SA182 M - 04
GRADE	F316/316L
DIMENSIONAL SPECIFICATION	ASME B16.5 2003
MATERIAL CONFORMS TO NACE MR0 175 - 2002	
STAINLESS STEEL FORGED FLANGES	

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N2 PPM	REMARKS
34587	6.00	SORF	150#	72635	126	0.023	1.89	0.43	0.012	0.036	16.90	11.10	2.12	690	
34587	8.00	SORF	150#	72613	78	0.022	1.70	0.46	0.013	0.035	16.64	10.11	2.05	740	
34587	8.00	SORF	150#	72613	78	0.022	1.70	0.46	0.013	0.035	16.64	10.11	2.05	740	
34587	8.00	WNRF 40S	300#	11141	25	0.024	1.77	0.47	0.017	0.029	16.56	10.12	2.04	810	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 16x10mm (JOULES) 1	2	3	AVG	HARDNESS (BHN)
72635	6.00	SORF	150#	541.30	245.72	59.88	69.15	-	-	-	-	159
72613	8.00	SORF	150#	517.94	228.74	60.20	68.37	-	-	-	-	170
72613	8.00	SORF	150#	517.94	228.74	60.20	68.37	-	-	-	-	170
11141	8.00	WNRF 40S	300#	522.56	245.97	60.00	74.34	-	-	-	-	148

MELTING PROCESS	: INDUCTION/ADD (IRS)/CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN

CRN REGISTRATION NOS. FOR FLANGES:

OB-0686-0 - Prince Edward Island	CSA.OB-0686-06 - Quebec
OB-0686-00 - Labrador	CSA.OB-0686-06 - Saskatchewan
OB-0686-00 - Newfoundland	OB-0686-07 - New Brunswick
OB-0686-02 - Alberta	OB-0686-08 - Nova Scotia
OB-0686-05 - Ontario	OB-0686-0T - Northwest Territories
OB-0686-051 - British Columbia	OB-0686-0Y - Yukon
CSA.OB-0686-08 - Manitoba	

FORGINGS LTD.
WORK INSPECTOR

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel (+91-22) 2261 4327, 2261 4284, 2265 7678, 2261 3056 Fax : (+91-22) 2261 2980/2265 9713
FACTORY : G-75, MIDC Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA Tel (+91-2525) 279 018 - 24 Fax (+91-2525) 274 444, 275 587 ✧ E-MAIL : vfl@viraj.com
Survey No. 140/1, Boisar - Palghar Road, Saravali, Tarapur, Tal Palghar, Dist. Thane, Maharashtra, India.

INSPECTION CERTIFICATE AND MILL TEST REPORT

WENZHOUSHI DONGNAN PIPE MADE FACOTRY
/ DBA OF SC MFG. GROUP INC
No 315 4 , GONGYE BEIJIE, YONGZHONG TOWN, WENZHOU CITY P R CHINA
Tel 86-22-27319741 Fax: 86-22-27319749

According to
DIN 50049 3 1 B / EN 10204

Customer:
PINACLE STAINLESS STEEL INC.
455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L5T 2J3

Order No.33628

Manufacturer's Symbol
SCDN

SC MFG PO No.SC-1540

MTR No	SC-1540
Date of issue:	30-Jun-2006
Grade	316/316L
Made From	Pipe A/SA 312 - 01a
Material Specification	ASTM A403 WPS - 00a ASME A403 WPS 98
Dimensional Specification	ASME B16.9 - 01 MSS SP43-91

Chemical Analysis

Item No	Item Description	Sch.	Heat No	QTY	%C	%Mn	%P	%S	%Si	%Ni	%Cr	%Mo
13	1" 90 DEG L/R ELBOW	40S	89973	1000	0.027	1.55	0.028	0.027	0.73	13.14	17.2	2.30
14	1-1/2 90 DEG L/R ELBOW	40S	47386	500	0.022	1.64	0.030	0.020	0.35	13.22	17.4	2.11
15	2" 90 DEG L/R ELBOW	40S	65747	500	0.023	1.25	0.025	0.012	0.53	13.23	17.5	2.46
16	8" 90 DEG L/R ELBOW	40S	37654	25	0.021	1.73	0.026	0.022	0.71	13.31	17.6	2.42
17	12" 90 DEG L/R ELBOW	40S	52273	10	0.024	1.38	0.027	0.025	0.47	12.42	17.5	2.12
18	2-1/2 X 1-1/2 CON RED	40S	45321	25	0.030	1.70	0.010	0.010	0.65	12.17	17.4	2.43

Mechanical Properties

Heat No.	Item Description	Tensile MPa	Yield MPa	Elong. %	Red. Area %	Bend Test	Flattening Test	Hardness HB	Impact Test	Hydrostat Test	Xray Test	Visual & Dimension
89973	1" 90 DEG L/R ELBOW	580	223	51	-	ok	ok	155	ok	ok	-	ok
47386	1-1/2 90 DEG L/R ELBOW	555	240	52	-	ok	ok	160	ok	ok	-	ok
65747	2" 90 DEG L/R ELBOW	565	251	54	-	ok	ok	153	ok	ok	-	ok
37654	8" 90 DEG L/R ELBOW	575	268	56	-	ok	ok	164	ok	ok	-	ok
52273	12" 90 DEG L/R ELBOW	550	236	53	-	ok	ok	155	ok	ok	-	ok
45321	2-1/2 X 1-1/2 CON RED	560	246	56	-	ok	ok	154	ok	ok	-	ok

Heat Treatment: SOLUTION TREATED, 1060 °C (20 Minutes) Water Quenched

Misc: Material in accordance with NACE MR0175-2001
Free from Mercury contamination
Addition of filler metal? ☐ No Yes

Steel Making Process: Electric Furnace

WE CERTIFY THIS MATERIAL HAS BEEN MANUFACTURED AND EXAMINED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE SPECIFICATION(S) AND THE RESULTS OF ALL EXAMINATIONS ARE ACCEPTABLE.

CANADIAN REGISTRATION NUMBERS			
ONT	OA8868.5	NB	0A8868.57
QUE	CSA-0A8868.56	NFLD	0A8868.50
ALB	0A8868.52	NS	0A8868.58
BC	0A8868.51	PEI	0A8868.59
SASK	CSA-0A8868.56	NWT	0A8868.5T
MAN	CSA-0A8868.56	YUK	0A8868.5Y
		NUN	0A8868.5N

PRO-FLANGE LIMITED
18 JARVIS STREET, CAMBRIDGE, ONTARIO ,CANADA, N1R 1G8
TEL (519) 621-7900 FAX (519) 740-0673

ISO 9001:2000 REGISTERED

MATERIAL TEST REPORT

CERTIFICATE TO DIN EN 10204 3.1B

Customer: **PINACLE STAINLESS STEEL INC.**
455 Ambassador Drive
ETOBICOKE, ONTARIO, M9W 5Z6

Customer PO# : 28494
Pro Flange SO# : 53375

Heat No.	Item #	Quantity	Description	Specification	Heat Treatment Details
DF403	48	10	6 X 2" S10 WOL	01-SA182F316/316L	Solution Annealed 1050°C
DF350	50	10	18-12 x 2" S40S WOL	01-SA182F316/316L	Solution Annealed 1050°C
TF20	7	83	8-3 x 1/2 3000 TOL	98-SA182F304/304L	SOLUTION ANNEALED 1040°C MIN.

Chemical Properties - All Values in Percent(%)

Heat No.	C	MN	P	S	SI	NI	CR	MO	CB&TA	N
DF403	0.022	1.440	0.038	0.021	0.520	10.12	16.30	2.030		0.066
DF350	0.022	1.440	0.038	0.021	0.520	10.12	16.30	2.030		0.066
TF20	0.020	1.820	0.041	0.020	0.430	8.230	18.45			0.043

Physical Properties

Tensile PSI	Yield PSI	Grain Size
81000.0	38000.0	6.0
81000.0	38000.0	6.0
83830.0	41915.0	

Chemical Properties - All Values in Percent(%)

Heat No.	TI	AL	CU	FE	MG	CO	SN	CB	V	TA
DF403			0.360			0.19				
DF350			0.360			0.19				
TF20										

Physical Properties

EL(%)	RED (%)	BHN
62.0	72.0	160.0
62.0	72.0	160.0
60.0	63.6	163.0

COMMENTS:
MATERIAL COMPLIES WITH NACE MR0175
PMI PERFORMED AS PER WI 117.2

We certify that the material described herein has been manufactured, tested, and examined in accordance with and meets all requirements of referenced specifications, and hereby certify that the above data is a true copy of data as furnished to us by our supplier.

SIGNATURE :

DATE : August 18, 2005

FOR PRO-FLANGE LIMITED

APPROVED
AD 2000 W0
PED 97/23/EC
MANUFACTURER

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER : M/S PINACLE STAINLESS STEEL . 455 AMBASSADOR DRIVE MISSISSAUGA, ONTARIO L5T 2J3	MANUFACTURER'S SYMBOL	MTR NO.	FRG/23399 - D
		DATE	24.12.2006
		MATERIAL SPECIFICATION	ASTM A182/A182M - 02a ASME SA182/SA182 M - A02
		GRADE	F316/316L
		DIMENSIONAL SPECIFICATION	ASME B16.5 2003
		MATERIAL CONFORMS TO NACE MR0 175 - 2002	
ORDER NO.:29721,30512,31065		STAINLESS STEEL FORGED FLANGES	

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	%Cu PPM	REMARKS
29721	14"	BLRF	150#	69444	16	0.029	1.74	0.42	0.023	0.040	16.90	10.02	2.04	700	
30512	2"	BLRF	300#	70756	100	0.026	1.78	0.53	0.017	0.038	16.85	10.02	2.02	600	
30512	3"	LAPJOINT	150#	70633	160	0.022	1.79	0.43	0.017	0.041	16.53	10.08	2.00	700	
30512	10"	SORF	150#	68609	80	0.024	1.77	0.40	0.030	0.039	16.70	10.08	2.02	780	
29721	12"	SORF	150#	70341	25	0.024	1.76	0.46	0.020	0.037	16.57	10.02	2.03	780	
30512	12"	SORF	150#	70341	75	0.024	1.76	0.46	0.020	0.037	16.57	10.02	2.03	780	
29721	16"	SORF	150#	70359	14	0.023	1.99	0.47	0.021	0.041	16.76	10.10	2.04	690	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Rm)	YIELD STRENGTH (Rp0.2)	ELONGATION % L=5D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH Minimum (JOULES) 1	2	3	AVG	HARDNESS (max)
69444	14"	BLRF	150#	555.62	292.84	57.00	73.26	-	-	-	-	150
70756	2"	BLRF	300#	550.16	288.01	57.00	73.89	-	-	-	-	156
70633	3"	LAPJOINT	150#	550.98	271.50	56.40	72.17	-	-	-	/-	152
68609	10"	SORF	150#	552.03	281.97	55.80	70.95	-	-	-	-	156
70341	12"	SORF	150#	558.28	298.01	56.40	73.13	-	-	-	-	154
70341	12"	SORF	150#	558.28	298.01	56.40	73.13	-	-	-	-	154
70359	16"	SORF	150#	551.86	301.92	55.40	72.96	-	-	-	-	151

MELTING PROCESS	: INDUCTION/ARGOD (REV)/CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION	: NO CARBIDE PRESIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

CRN REGISTRATION NOS. FOR FLANGES:

OB-0686-0 - Prince Edward Island	CSA OB-0686-06 - Quebec
OB-0686-00 - Labrador	CSA OB-0686-06 - Saskatchewan
OB-0686-00 - Newfoundland	OB-0686-07 - New Brunswick
OB-0686-02 - Alberta	OB-0686-08 - Nova Scotia
OB-0686-05 - Ontario	OB-0686-0T - Northwest Territories
OB-0686-051 - British Columbia	OB-0686-0Y - Yukon
CSA OB-0686-06 - Manitoba	

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN.

WE CERTIFY

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel. : (+91-22) 2261 4327, 2261 4284, 2265 7678, 2261 3056 Fax : (+91-22) 2261 2980/2265 9713
FACTORY : G-75, MIDC, Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA. Tel.: (+91-2525) 270 143, 271 365 - 68 Fax : (+91-2525) 270 431/272 448 E-MAIL : vfl@viraj.com
Survey No. 140/1, Boisar - Palghar Road, Saravali, Tarapur, Tal. Palghar, Dist. Thane, Maharashtra, India.

T.T.I. - Tubacex Tubos Inoxidables, S.A.

Registro Mercantil de Alava, Tomo 587, Folio 188, Hoja VI 2885 - N.I.F. A-01140227

TUBACEX

Printed on: 28.10.2005

INSPECTION CERTIFICATE
EN 10204 3.1

Number: 374054
Page: 1 / 1

Rev: 0

Date: 28.10.2005 | 28.10.2005

CUSTOMER :UNIFIED ALLOYS (EDMONTON) PO :EP-46436
STANDARD :ASTM A312M-04B
ADDIT.SPECS :NACE MR01.75-03
GRADE :TP316-316L
DIMENSIONS :1" SCH 160
MATERIAL :SEAMLESS STAINLESS STEEL TUBE
COLD ROLLED; PASSIVATED;
PLAIN ENDS SQUARE CUT;

OUR REFERENCE: J3668

-----ITEM------ YOUR	TTI.	-HEAT- NR.	NO. OF PIECES	---WEIGHT-- KG	-TOTAL LENGTH-	--UNIT LENGTH--
	26	34018	2	62	48,00	17'- 24'
	26	35341	8	232	180,08	17'- 24'

RAW MATERIAL

MELTING PROCESS: ELECTRIC FURNACE + A.O.D FROM: ACERALAVA
PEELED BARS; MACROETCH TESTING: GOOD;

1)	C	Mn	Si	P	S	Ni	Cr	Mo	Co
34018	0,017	1,42	0,440	0,028	0,0010	11,25	16,85	2,15	0,065
35341	0,018	1,46	0,500	0,029	0,0020	11,15	16,70	2,09	0,065

(1) L: LADLE; C: PRODUCT

HEAT TREATMENT

SOLUTION ANNEALED 1100 °C WATER QUENCHED

= TESTS = NR. HEAT	NR. TEST	TEMP.	------TENSION------ MPA RM	RP 0,2	RP 1,0	% A	% Z	--I M P A C T T E S T S-- TEMP.	MINIMUM	AVERAGE	HARDNESS HRB
018	409640	20	573,0	274,0	313,0	59,0				86	88
341	507832	20	561,0	267,0	296,0	66,0				75	76

TECHNOLOGICALS

FLATTENING TEST: GOOD

NON DESTRUCTIVE TEST

100 % EDDY CURRENT TEST AT E.426 , GOOD
STEEL GRADE CHECKING ON EACH TUBE BY SPECTROMETRY (PMI)
DIMENSIONAL CHECKING ON EACH TUBE, SATISFACTORY
VISUAL INSPECTION ON EACH TUBE, SATISFACTORY

MARKS

TUBACEX ASTM-A 312 TP316-316L 1" SCH 160 SMLS HEAT/..... NH ET
PMI SPAIN

REMARKS

NO WELD REPAIR WAS PERFORMED
NO MERCURY, MERCURY COMPOUNDS OR MERCURY BEARING INSTRUMENTS AND/OR EQUIPMENT
HAVE BEEN USED ALONG MANUFACTURING AND INSPECTION PROCESS.

1S160316LSPA

EP-46436

ENOR

IQNet

AENOR Gestión Ambiental

We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with above standards and specifications and satisfies the order's requirements.
This certificate is issued by a computerized system and it is valid without signature. On the original certificate the responsible's red coloured signature is stamped.
In case the owner of the original certificate would release a copy of it, he must attest its ... the original one, assuming the responsibility for any unlawful or T.T.I.,S.A. not ... falsification of this certificate shall legally prosecuted.

T.T.I.
Tubacex Tubos Inoxidables, S.A.
INGENIERIA DE CALIDAD
Jon Alonso Zabala

柏雄鐵工股份有限公司
高雄縣仁武鄉烏林村仁心路 303 號
BOTH-WELL STEEL FITTINGS CO., LTD.
NO.303, JEN-HSIN ROAD JEN-WU HSIANG
KAOHSIUNG HSIEN, TAIWAN R.O.C.(81460)
TEL: (07) 371-0497 , 371-1536 , 372-0260 FAX: (886-7) 371-3864 , 371-3882
WEB SITE: http://www.bothwell.com.tw E-MAIL: bothwell@www.bothwell.com.tw or box@mail.bothwell.com.tw

An ISO-9001 Registered Manufacturer

BVQI ANSI-RAB ISO 9001 ACCREDITED

MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN10204/DIN50049/3.1.B

ORIGIN: TAIWAN
DATE: 09/27/06
PAGE: 8

USTOMER: UNIFIED ALLOYS
ERT NO: 62041 ORDER NO: EP-55567
INVOICE NO: BW069507057
L/C NO:

ITEM	RAW MATERIAL HEAT NO.	BOTH WELL HT.CD.	DESCRIPTION	QUANTITY
020	S51508	T785	HEX PLUG 1/2" NPT	2500 PC
021	28194	T717	HEX PLUG 3/4" NPT	1000 PC
022	S54490	T804	HEX PLUG 1" NPT	600 PC
030	9T001	T710	CAP 1/4" 3000# NPT	5 PC
030	U0657	T783	CAP 1/4" 3000# NPT	45 PC
031	9T001	T710	CAP 3/8" 3000# NPT	25 PC
032	9U023	T799	CAP 1/2" 3000# NPT	100 PC

SPECIFICATION:
A182/SA182 -04a
F316 / 316L
DIMENSION:
ASME B16.11 - 2001
SURFACE:
BY VISUAL...GOOD

CHEMICAL COMPOSITION (%)

ITEM	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Cb(Nb)	N
Min	-	-	-	-	-	-	16.000	10.000	2.000	-	-	-
Max	0.030	1.000	2.000	0.045	0.030	-	18.000	15.000	3.000	-	-	0.100
020	0.017	0.380	1.430	0.031	0.017	-	16.620	10.030	2.060	-	-	0.050
021	0.020	0.490	1.410	0.034	0.022	-	17.140	12.130	2.030	-	-	0.020
022	0.020	0.540	1.370	0.030	0.025	-	16.730	10.160	2.190	-	-	0.050
030	0.018	0.360	1.700	0.027	0.025	-	17.510	10.200	2.070	-	-	0.080
030	0.020	0.460	1.460	0.031	0.026	-	16.220	10.300	2.140	-	-	0.100
031	0.018	0.360	1.700	0.027	0.025	-	17.510	10.200	2.070	-	-	0.080
032	0.020	0.400	1.580	0.024	0.027	-	17.260	10.180	2.020	-	-	0.100

MECHANICAL TEST

ITEM	Tensile Strength (KSI)	Yield Strength (KSI)	Elon-Gation (%)	R of A (%)	Hardness (HB)
Min	75.0	30.0	30.0	50.0	-
Max	-	-	-	-	235
020	82.2	32.7	60.0	78.0	152
021	83.9	36.9	60.0	70.0	163
022	85.2	32.4	59.0	75.0	158
030	83.4	40.3	61.6	76.2	163
030	79.8	36.7	60.2	74.5	155
031	83.4	40.3	61.6	76.2	163
032	85.2	40.7	58.0	71.3	161

Remark:
SOLUTION TREATED : 1040 ℃, W.Q.
CONFORMS TO NACE MR0175-2003
STEEL MAKING PROCESS : ELECTRIC FURNACE
MERCURY FREE

WE CERTIFY THE ABOVE MENTIONED FITTINGS HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN

[redacted] [redacted]

Q.C. MANAGER INSPECTOR

[redacted] [redacted]

I-D0839 REV:0

APPROVED
AD 2000 WO
PED 97/23/EC
MANUFACTURER

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1B

CUSTOMER :

M/S. UNIFIED ALLOYS (EDMONTON)
8835 - 60 AVENUE
EDMONTON,ALBERTA T6E 6H6

ORDER NO.: EP - 37982

MANUFACTURER'S SYMBOL

MTR NO.	FRG/21646 - E
DATE	30.01.2004
MATERIAL SPECIFICATION	ASTM A182/A182M - 02
	ASME SA182/SA182 M - A02
GRADE	F316/316L
DIMENSIONAL SPECIFICATION	ASME B16.5 1998
MATERIAL CONFORMS TO NACE MR0 175 - 2002	
STAINLESS STEEL FORGED FLANGES	

CHEMICAL ANALYSIS

	ITEM DESCRIPTION		HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N2 PPM	REMARKS
	12"	WNRF S40S 300#	64646	25	0.023	1.72	0.31	0.015	0.041	16.52	10.15	2.08	450	
3	2"	WNRF S80S 150#	64919	125	0.020	1.77	0.45	0.016	0.040	16.72	10.04	2.05	760	
4	2"	WNRF S40S 150#	64919	20	0.020	1.77	0.45	0.016	0.040	16.72	10.04	2.05	760	
5	2"	WNRF S40S 300#	65239	25	0.020	1.89	0.44	0.009	0.035	16.54	10.12	2.03	955	
6	3"	WNRF S40S 600#	64968	10	0.027	1.72	0.52	0.012	0.037	16.53	10.00	2.05	780	
7	3"	WNRF S10S 150#	64194	20	0.025	1.83	0.35	0.023	0.036	16.56	10.16	2.12	530	
8	3"	WNRF S40S 150#	64194	75	0.025	1.83	0.35	0.023	0.036	16.56	10.16	2.12	530	
9	8"	WNRF S80S 150#	64194	15	0.025	1.83	0.35	0.023	0.036	16.56	10.16	2.12	530	
	8"	WNRF S40S 150#	65036	6	0.022	1.89	0.43	0.021	0.042	16.66	10.05	2.03	600	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION		TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION L=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 10x10mm (JOULES) 1	2	3	AVG	HARDNESS (BHN)
64646	12"	WNRF S40S 300#	558.53	289.31	54.80	72.83	-	-	-	-	154
64919	2"	WNRF S40S 150#	551.01	299.12	56.60	75.79	-	-	-	-	157
64919	2"	WNRF S80S 150#	551.01	299.12	56.60	75.79	-	-	-	-	157
65239	2"	WNRF S40S 300#	564.36	296.29	56.80	73.57	-	-	-	-	150
64968	3"	WNRF S40S 600#	547.47	289.60	55.80	73.89	-	-	-	-	154
64194	3"	WNRF S10S 150#	541.26	278.59	57.80	70.55	-	-	-	-	148
64194	3"	WNRF S40S 150#	541.26	278.59	57.80	70.55	-	-	-	-	148
64194	8"	WNRF S80S 150#	541.26	278.59	57.80	70.55	-	-	-	-	148
[illegible]	8"	WNRF S40S 150#	547.07	299.12	57.00	72.56	-	-	-	-	154

J PROCESS	: REDUCTION4OD plus(CONCAST
HEATMENT	: SOLUTION ANNEALED AT 1080°C AND WATER QUENCHED
IONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH MOBILE SPECTRO)
ICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN.

CRN REGISTRATION NOS. FOR FLANGES :

OB-0688-9
OB-0688-90
OB-0688-92
OB-0688-95
OB-0688-951
OB-0688-96
OB-0688-97
OB-0688-98
OB-0688-9T
OB-0688-9Y

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel. : (+91-22) 2261 4327, 2261 4284, 2265 7678, 22613056 Fax : 91-22-2261 2980 / 22659713
FACTORY : G-34/75 MIDC Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA. Tel. : (+91-2526)2 70143, 271355 - 58 Fax : (+91-2525) 270431 / 272448 E-MAIL : vfl@viraj.com

Pengrowth / Rej. 13-36-63-11 W5 21-3247604.

VIRAJ FORGINGS LTD

G34 MIDC , TARAPUR, MAHARASHTRA, INDIA

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER : M/S PINACLE STAINLESS STEEL , 455 AMBASSADOR DRIVE NISSISSAUGA, ONTARIO L6T 2J3	MANUFACTURER'S SYMBOL	MTR NO.	FRG/23699 - B
		DATE	07.04.2006
		MATERIAL SPECIFICATION	ASTM A182/A182M - 05/EN 10088-3
			ASME SA 182/SA182 M - 04
		GRADE	F316/316L / WNR 1.4404
		DIMENSIONAL SPECIFICATION	ASME B16.5 2003
		MATERIAL CONFORMS TO NACE MR0 175 - 2002	
		STAINLESS STEEL FORGED FLANGES	

ORDER NO : 30512 , 31392 , 32417

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N2 PPM	REMARKS
32417	1-1/2"	BLRF	150#	71468	100	0.025	1.81	0.49	0.007	0.039	16.72	10.00	2.01	680	
30512	12"	BLRF	300#	71012	12	0.024	1.82	0.41	0.017	0.036	16.85	10.70	2.07	825	
32417	4"	BLRF	150#	71425	100	0.028	1.76	0.42	0.009	0.040	16.64	10.00	2.01	678	
32417	1"	SORF	150#	71202	434	0.028	1.69	0.41	0.023	0.036	16.64	10.15	2.03	750	
31392	10"	SORF	150#	71146	50	0.028	1.78	0.39	0.011	0.041	16.90	10.00	2.02	724	
31392	1-1/4"	SORF	150#	71039	100	0.022	1.73	0.43	0.016	0.036	16.58	10.12	2.07	720	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 10x7.5mm (JOULES) 1	2	3	AVG	HARDNESS (BHN)
71468	1-1/2"	BLRF	150#	550.25	282.18	57.00	75.20	-	-	-	-	145
71012	12"	BLRF	300#	561.36	291.59	57.40	73.18	-	-	-	-	155
71425	4"	BLRF	150#	568.39	290.24	55.80	73.57	-	-	-	-	145
71202	1"	SORF	150#	538.60	274.20	55.80	71.86	-	-	-	-	150
71146	10"	SORF	150#	550.10	287.01	57.40	68.74	-	-	-	-	157
71039	1-1/4"	SORF	150#	560.96	279.48	59.20	74.84	-	-	-	-	155

MELTING PROCESS	: INDUCTIONHOD (ESR)/CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1010°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITHIN THE LIMIT OF BACKGROUND RADIATION

CRN REGISTRATION NOS. FOR FLANGES:

OB-0686-9 - Prince Edward Island	CSA OB-0686-95 - Quebec
OB-0686-90 - Labrador	CSA OB-0686-96 - Saskatchewan
OB-0686-90 - Newfoundland	OB-0686-97 - New Brunswick
OB-0686-92 - Alberta	OB-0686-98 - Nova Scotia
OB-0686-95 - Ontario	OB-0686-9T - Northwest Territories
OB-0686-951 - British Columbia	OB-0686-9Y - Yukon
CSA OB-0686-96 - Manitoba	

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN

WORK INSPECTOR

OFFICE:16,Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai-400 038,INDIA TEL: 91-22-2612036/2614284 FAX: 91-22-2612988
FACTORY:G-34 MIDC,Tarapur,Thane(Dist) Maharashtra,INDIA TEL: 91-02525-270453/71385 to 71376 FAX: 91-02525-70431 E-MAIL: viraj@viraj.com

T421

*** Mill Test Report ***

o: PINACLE STAINLESS STEEL INC
9426-39 AVE
EDMONTON
AB T6E 5T9

Cust Ord#: 36725
Our Inv#: 1019273

From: Alloy Piping Products Inc
Corporate Offices
P O Box 7368
Shreveport
LA 71137-7368

Date: 12/15/06

eat Number	Commodity	Size 1	Schd 1	X	Size 2	Schd 2	Alloy	Short PN	Quantity
7612	B/W LR 90° ELBOW	12.0000	40S				316/316L	00006006	2.0000

Finished Goods Spec-SA403 WP S SEAMLESS
Raw Matl--Pipe Seamless ASTM Spec-ASTM-A-403 YR-2004

Mfg Dt 10/06

MECHANICAL PROPERTIES:
Yield Pt PSI---- 31908.00 Tensile Str PSI- 79770.00 Elongation------ 52.0 Reduction------- .0

CHEMICAL COMPOSITION:

Elem - Content	Elem - Content	Elem - Content	Elem - Content	Elem - Content	Elem - Content	Elem - Content
C - .02200	MN - 1.19000	P - .03500	S - .00800	SI - .51000	CR - 16.30000	
NI - 12.05000	MO - 2.05000	CU - .08000	N - .06000	-	-	

TEST RESULTS:
W/O#: 13272 LOAD: TEST SET: 1 Formed
BRINELL HARDNESS TEST
Average Brinell Hardness 153.00

HEAT TREAT STATEMENT:
MATERIAL HEAT TREATED
AT 1950 +/- 25 deg.F. AT ONE (1) HOUR PER INCH OF
THICKNESS,BUT NOT LESS THAN FIFTEEN (15) MINUTES
AND WATER QUENCHED.

8-35 TO 13-36-63-11

Material, when shipped, is free from contamination by mercury, radium, alpha source and low melting elements. Where applicable, welds are 100% radiographed and acceptable to ASME Section VIII - Para UW-51. We hereby certify that the materials listed above have been manufactured, sampled, tested and inspected in accordance with the specification and grades, and was found to meet the requirements.

QA/QC/MTR Specialist 12/15/06 Date

T.T.I. - Tubacex Tubos Inoxidables,S.A.

Regh. Mercantil de Alava, Tomo 587, Folio 189, Hoja VI 2885 - N I F A-01140227

TUBACEX

Printed on: 27.10.2006

INSPECTION CERTIFICATE EN 10204 3.1	Number: 384604 Page: 1 / 1	Rev. 0
	Date. 27.10.2006	27.10.2006

CUSTOMER :PINACLE STAINLESS STEEL INC. PO 33303 OUR REFERENCE:J5354

STANDARD :ASTM-ASME A/SA312 ED.04 ADD.05 + ADD.06

ADDIT.SPECS :NACE MR01.75-03

GRADE :TP316-316L

DIMENSIONS :8" SCH 40 S

MATERIAL :SEAMLESS STAINLESS STEEL TUBE
HOT FINISHED; PASSIVATED;
PLAIN ENDS SQUARE CUT;

----ITEM----- YOUR	TTI.	-HEAT- NR.	NO. OF PIECES	- WEIGHT-- KG	-TOTAL LENGTH-	- UNIT LENGTH--
	2	37123	2	532	39,93	17'- 24'
	2	37281	5	1401	103,87	17'- 24'

RAW MATERIAL

MELTING PROCESS: ELECTRIC FURNACE + A.O.D FROM: ACERALAVA
PEELED BARS; MACROETCH TESTING: GOOD;

(1)	C	Mn	Si	P	S	Ni	Cr	Mo
L 37123	0,016	1,43	0,350	0,030	0,0010	11,10	16,75	2,15
L 37281	0,016	1,37	0,380	0,029	0,0020	12,25	16,85	2,16
C 37123	0,016	1,44	0,340	0,030	0,0010	11,10	16,80	2,16
C 37281	0,016	1,38	0,380	0,030	0,0020	12,30	16,90	2,18

(1) L: LADLE; C: PRODUCT

HEAT TREATMENT

SOLUTION ANNEALED 1040 °C RAPIDLY COOLED

= TESTS = NR. HEAT	NR. TEST	T(°C)	------MPA RM	RP 0,2	RP 1,0	% A	% Z	--IMPACT TESTS-- T(°C)	MINIMUM	AVERAGE	HARDNESS HRB
37123	608595	20	556,0	235,0	276,0	40,0				70	71
37281	608608	20	527,0	221,0	252,0	52,0				72	74

TECHNOLOGICALS

FLATTENING TEST: GOOD

METALLURGICAL TEST

INTERGRANULAR CORROSION: A 262 PRACT."E": NOT OBJECTIONS

NON DESTRUCTIVE TEST

100 % HYDROSTATIC PRESSURE TESTED AT 1100 PSI , DURING 5 SEC, GOOD
STEEL GRADE CHECKING ON EACH TUBE BY SPECTROMETRY (PMI)
DIMENSIONAL CHECKING ON EACH TUBE, SATISFACTORY
VISUAL INSPECTION ON EACH TUBE, SATISFACTORY

MARKS

TUBACEX ASTM-ASME A-SA 312 TP316-316L 8" SCH 40S SMLS HEAT/.....
PMI SPAIN

REMARKS

NO WELD REPAIR WAS PERFORMED
NO MERCURY, MERCURY COMPOUNDS OR MERCURY BEARING INSTRUMENTS AND/OR EQUIPMENT HAVE BEEN USED ALONG MANUFACTURING AND INSPECTION PROCESS.

AENOR ER Empresa Registrada ER 0006/1991

IQNet

AENOR Gestión Ambiental COM 01/127

We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with above standards and specifications and satisfies the order requirements.
This certificate is issued by a computerized system and it is valid without original signature. In case the owner of the certificate would release a copy of it, he must attest its conformity to the issued, assuming the responsibility for any unlawful or T.T.I. S.A. not allowed use.
Any forgery or falsification of this certificate shall legally prosecuted

T.T.I.
Tubacex Tubos Inoxidables S A
INGENIERIA DE CALIDAD
Jun A

CRYSTAL-PALACE

CPI INDUSTRIES CO., LTD

MILL TEST REPORT

ISO9001:2000 CERTIFICATE (Certificate No.:1902Q13362RIM)

DATE OF ISSUE:2004/12/14

CUSTOMER:.NORCA

P.O.NO.: 25150

COMMODITY: STAINLESS STEEL SEAMLESS PIPE.

CONDINTION: COLD FINISH / SOLUTION TREATED / PICKLED / PLAIN END.

CERTIFICATE NO. :2004-11-003-13

ORDER NO. :2004-11-003

GRADE :ASTM A312 -01a TP316/TP316L

HEAT NO. :J0408-95

CHEMICAL CONTENTS (WT%)

ELEMENTS	C	Mn	P	S	Si	Ni	Cr	Mo	
SPECIFICATION	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	10.0~14.0	16.0~18.0	2.00~3.00	
RESULTS (PRODUCT)	0.020	0.63	0.031	0.001	0.45	12.25	16.34	2.14	

PHYSICAL PROPERTIES

Dimensions												
NPS	W.T (SCH)	Length (feet)	Bundle No.	Pieces	Weight (kg)	0.2%YS (Mpa) ≥205	T S (Mpa) ≥515	EL (%) ≥35	FLARING TEST	FLATTENING TEST	HARDNESS HRB ≤90	EDDY CURRENT TEST (100%)
12"	40S	20	04-11-3-4	10	4578	220	540	66.5	OK	OK	67	OK

REMARKS:

AS PER ASTM A312/ASME SA312-01a
WALL THICKNESS TOLERANCE AS PER ASTM A312-01a
SOLUTION HEAT TREATMENT :1050°C X 1.5m/min.
NO WELD REPAIR WAS PERFORMED
FREE FROM MERCURY CONTAMINATION
FREE OF RADIATION CONTAMINATION
MEASUREMENT & SURFACE: OK
IN COMPLIANCE TO NACE MR0175-2002
MILL TEST REPORT CONFORM TO EN 10204/3.1B

1.WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HA. BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT

2.THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVALOF THE COMPANY.

CPI INDUSTRIES CO., LTD

[redacted]

MANAGER OF QUALITY ASSURANCE DEPARTMENT

APPROVED
AD 2000 WD
PED 97/23/EC
MANUFACTURER

RWTUV

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER : M/S PINACLE STAINLESS STEEL . 456 AMBASSADOR DRIVE MISSISSAUGA, ONTARIO L5T 2J3	MANUFACTURER'S SYMBOL	MTR NO. FRG/24299 - B DATE 10.08.2006 MATERIAL SPECIFICATION ASTM A182/A182M - 05 / ASME SA182/SA182 M - 04 GRADE F316/316L DIMENSIONAL SPECIFICATION ASME B16.5 2003 MATERIAL CONFORMS TO NACE MR0 175 - 2002 STAINLESS STEEL FORGED FLANGES

ORDER NO.: 34587

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	NI PPM	REMARKS
34587	6.00	SORF	150#	72535	126	0.023	1.89	0.43	0.012	0.036	16.90	11.10	2.12	690	
34587	8.00	SORF	150#	72613	78	0.022	1.70	0.48	0.013	0.035	16.64	10.11	2.05	740	
34587	8.00	SORF	150#	72613	78	0.022	1.70	0.48	0.013	0.035	16.64	10.11	2.05	740	
34587	8.00	WNRF 40S	300#	11141	25	0.024	1.77	0.47	0.017	0.029	16.56	10.12	2.04	810	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 10x10mm (JOULES) 1	2	3	AVG	HARDNESS (BHN)
72535	6.00	SORF	150#	541.30	245.72	69.98	69.15	-	-	-	-	159
72613	8.00	SORF	150#	517.94	228.74	60.20	68.37	-	-	-	-	170
72613	8.00	SORF	150#	517.94	228.74	60.20	68.37	-	-	-	-	170
11141	8.00	WNRF 40S	300#	522.56	245.97	60.00	74.34	-	-	-	-	148

MELTING PROCESS	: INDUCTION/ADD (RE)CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

CRN REGISTRATION NOS. FOR FLANGES:

OB-0686-9 - Prince Edward Island	CSA.OB-0686-96 - Quebec
OB-0686-00 - Labrador	CSA.OB-0686-96 - Saskatchewan
OB-0686-00 - Newfoundland	OB-0686-97 - New Brunswick
OB-0686-02 - Alberta	OB-0686-98 - Nova Scotia
OB-0686-05 - Ontario	OB-0686-9T - Northwest Territories
OB-0686-051 - British Columbia	OB-0686-9Y - Yukon
CSA.OB-0686-96 - Manitoba	

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN

WORKS INSPECTOR

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel : (+91-22) 2261 4327, 2261 4284, 2265 7678, 2261 3056 Fax : (+91-22) 2261 2980/2265 9713
FACTORY : G-75, MIDC Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA. Tel.: (+91-2525) 279 018 - 24 Fax : (+91-2525) 274 444, 275 587 ✧ E-MAIL : vfl@viraj.com
Survey No. 140/1, Boisar - Palghar Road, Saravali, Tarapur, Tal. Palghar, Dist. Thane, Maharashtra, India

APPROVED
AD 2000 WO
PED 97/23/EC
MANUFACTURER

VIRAJ Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER :

M/S PINACLE STAINLESS STEEL ,
455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L5T 2J3

ORDER NO.:27921,30512

MANUFACTURER'S SYMBOL

MTR NO.	FRG/23316 ; B
DATE	28.11.2005
MATERIAL SPECIFICATION	ASTM A182/A182M - 02a
GRADE	ASME SA182/SA182 M - A02
DIMENSIONAL SPECIFICATION	F316/316L
MATERIAL CONFORMS TO NACE MR0 175 - 2002	ASME B16.5 2003
STAINLESS STEEL FORGED FLANGES	

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION		HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	HB PWI	REMARKS
30512	12"	WNRF 40S 300#	70388	10	0.020	1.73	0.59	0.012	0.045	16.66	10.10	2.02	596	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION		TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=5D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH Test Temp (DEGREES) 1	2	3	AVG	HARDNESS (HB)
70388	12"	WNRF 40S 300#	560.06	289.00	58.20	72.21	-	-	-	-	156

MELTING PROCESS : INDUCTION/ADD (AR)/CONCAST
HEAT TREATMENT : SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION : CONFORM WITH THE SPECIFICATION (100% INSPECTED)
VISUAL INSPECTION : SATISFACTORY
PMI : NO DEFECTION(100% TESTED WITH MOBILE SPECTRO)
MICRO OBSERVATION : NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST : ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN.

CRN REGISTRATION NOS. FOR FLANGES :

OB-0686-0 - Prince Edward Island
OB-0686-60 - Labrador
OB-0686-80 - Newfoundland
OB-0686-02 - Alberta
OB-0686-05 - Ontario
OB-0686-951 - British Columbia
CSA.OB-0686-86 - Manitoba
CSA.OB-0686-01 - Quebec
CSA.OB-0686-06 - Saskatchewan
OB-0686-07 - New Brunswick
OB-0686-08 - Nova Scotia
OB-0686-47 - Northwest Territories
OB-0686-97 - Yukon

WORK INSPECTOR

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel. : (+91-22) 2261 432 7, 2261 4284, 2265 7878, 2261 3056 Fax : (+91-22) 2261 2980/2265 9713
FACTORY : G-75, MIDC Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA. Tel.: (+91-2525) 270 143, 271 365 - 68 Fax : (+91-2525) 270 431/272 448 E-MAIL : vfl@viraj.com
Survey No. 140/1, Boisar - Palghar Road, Saravali, Tarapur. Tal. Palghar, Dist. Thane, Maharashtra, India.

APPROVED
AD 2000 WO
PED 97/23/EC
MANUFACTURER

RWTUV

VIRAJ
Forgings Ltd.

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER : M/S PINACLE STAINLESS STEEL.. 455 AMBASSADOR DRIVE MISSISSAUGA, ONTARIO L5T 2J3	MANUFACTURER'S SYMBOL	MTR NO.	FRG/23492 - F
		DATE	23.01.2006
		MATERIAL SPECIFICATION	ASTM A182/A182M - 02a ASME SA182/SA182 M - A02
		GRADE	F316/316L
		DIMENSIONAL SPECIFICATION	ASME B16.5 2003
		MATERIAL CONFORMS TO NACE MR0 175 - 2002	
ORDER NO.:29721,30512,31392		STAINLESS STEEL FORGED FLANGES	

CHEMICAL ANALYSIS

ORDER NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N2 PPM	REMARKS
31392	1"	WNRF 40S	300#	70894	50	0.026	1.71	0.47	0.018	0.037	16.54	10.04	2.03	730	
31392	1"	WNRF 80S	300#	70894	100	0.026	1.71	0.47	0.018	0.037	16.54	10.04	2.03	730	
31392	10"	WNRF 40S	300#	70774	5	0.025	1.74	0.46	0.022	0.036	16.65	10.10	2.02	810	
29721	10"	WNRF S40S	600#	70774	5	0.025	1.74	0.46	0.022	0.036	16.65	10.10	2.02	810	
31392	1-1/2"	WNRF 40S	150#	70894	150	0.026	1.71	0.47	0.018	0.037	16.54	10.04	2.03	730	
29721	16"	WNRF S40S	150#	68449	10	0.022	1.70	0.43	0.030	0.038	16.65	10.02	2.06	750	
31392	2"	WNRF 40S	300#	70789	200	0.025	1.69	0.45	0.021	0.034	16.63	10.15	2.03	710	

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Rm)	YIELD STRENGTH (Rp0.2)	ELONGATION % Lo=5D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 10x10mm (JOULES) 1	2	3	AVG	HARDNESS (BHN)
70894	1"	WNRF 40S	300#	552.89	289.00	56.40	72.21	-	-	-	-	154
70894	1"	WNRF 80S	300#	552.09	289.00	56.40	72.21	-	-	-	-	154
70774	10"	WNRF 40S	300#	591.86	287.93	57.20	75.40	-	-	-	-	154
70774	10"	WNRF S40S	600#	591.86	287.93	57.20	75.40	-	-	-	-	154
70894	1-1/2"	WNRF 40S	150#	552.09	289.00	56.40	72.21	-	-	-	-	146
68449	16"	WNRF S40S	150#	552.97	287.31	56.60	73.39	-	-	-	-	159
70789	2"	WNRF 40S	300#	549.22	296.50	57.00	74.72					

MELTING PROCESS	: INDUCTION/AOD (DE)/CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO OBJECTION(100% TESTED WITH NOBLE SPECTRO)
MICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN.

CSA REGISTRATION NOS. FOR FLANGES:

OB-0688-9 - Prince Edward Island	CSA OB-0688-96 - Quebec
OB-0688-80 - Labrador	CSA OB-0688-96 - Saskatchewan
OB-0688-00 - Newfoundland	OB-0688-97 - New Brunswick
OB-0688-02 - Alberta	OB-0688-98 - Nova Scotia
OB-0688-05 - Ontario	OB-0688-9T - Northwest Territories
OB-0688-051 - British Columbia	OB-0688-9Y - Yukon
CSA OB-0688-96 - Manitoba	

WORKS INSPECTOR

OFFICE : 10, Imperial Chambers, 1st Floor, Wilson Road, Ballard Estate, Mumbai - 400 038, INDIA. Tel. : (+91-22) 2261 4327, 2261 4284, 2265 7678, 2261 3056 Fax : (+91-22) 2261 2980/2265 9713
FACTORY : G-75, MIDC Tarapur Industrial Area, Dist. Thane, Maharashtra - 401 506, INDIA. Tel.: (+91-2525) 270 143, 271 365 - 68 Fax : (+91-2525) 270 431/272 448 E-MAIL : vfl@virajf.com
Survey No. 140/1, Boisar - Palghar Road, Borsvali, Tarapur, Tal. Palghar, Dist. Thane, Maharashtra, India.

INSPECTION CERTIFICATE AND MILL TEST REPORT

According to
DIN 50049 3 1 B / EN 10204

WENZHOUSHI DONGNAN PIPE MADE FACOTRY
/ DBA OF SC MFG. GROUP INC
No 315 4 , GONGYE BEIJIE, YONGZHONG TOWN, WENZHOU CITY P R. CHINA
Tel 86-22-27319741 Fax : 86-22-27319745

Customer:
PINACLE STAINLESS STEEL INC.
455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L5T 2J3

Manufacturer's Symbol
SCDN

MTR No	SC-1540
Date of issue	30-Jun-2006
Grade	316/316L
Made From	Pipe A/SA 312 - 01a
Material Specification	ASTM A403 WPS - 00a ASME A403 WPS - 98
Dimensional Specification	ASME B16.9 - 01 MSS SP43-91

Order No.33628

SC MFG PO No.SC-1540

Chemical Analysis

Item No	Item Description	Sch.	Heat No.	QTY	%C	%Mn	%P	%S	%Si	%Ni	%Cr	%Mo
13	1" 90 DEG L/R ELBOW	40S	89973	1000	0.027	1.55	0 028	0 027	0 73	13.14	17 2	2.30
14	1-1/2 90 DEG L/R ELBOW	40S	47386	500	0.022	1 64	0.030	0 020	0.35	13.22	17 4	2.11
15	2" 90 DEG L/R ELBOW	40S	65747	500	0.023	1 25	0 025	0 012	0 53	13 23	17 5	2.46
16	8" 90 DEG L/R ELBOW	40S	37654	25	0.021	1.73	0.026	0 022	0.71	13 31	17.6	2.42
17	12" 90 DEG L/R ELBOW	40S	52273	10	0.024	1 38	0.027	0.025	0.47	12 42	17.5	2.12
18	2-1/2 X 1-1/2 CON RED	40S	45321	25	0.030	1 70	0.010	0.010	0 65	12.17	17.4	2.43

Mechanical Properties

Heat No	Item Description	Tensile MPa	Yield MPa	Elong. %	Red. Area %	Bend Test	Flattening Test	Hardness HB	Impact Test	Hydrostat. Test	Xray Test	Visual & Dimension
89973	1" 90 DEG L/R ELBOW	580	223	51	-	ok	ok	155	ok	ok	-	ok
47386	1-1/2 90 DEG L/R ELBOW	555	240	52	-	ok	ok	160	ok	ok	-	ok
65747	2" 90 DEG L/R ELBOW	565	251	54	-	ok	ok	153	ok	ok	-	ok
37654	8" 90 DEG L/R ELBOW	575	268	56	-	ok	ok	164	ok	ok	-	ok
52273	12" 90 DEG L/R ELBOW	550	236	53	-	ok	ok	155	ok	ok	-	ok
45321	2-1/2 X 1-1/2 CON RED	560	246	56	-	ok	ok	154	ok	ok	-	ok

Heat Treatment: SOLUTION TREATED, 1060 °C (20 M nutes) Water Quenched
Misc: Material in accordance with NACE MR0175-2001
Free from Mercury contamination
Addition of filler metal? [ ]No Yes

Steel Making Process: Electric Furnace

WE CERTIFY THIS MATERIAL HAS BEEN MANUFACTURED AND EXAMINED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE SPECIFICATION(S) AND THE RESULTS OF ALL EXAMINATIONS ARE ACCEPTABLE.

CANADIAN REGISTRATION NUMBERS			
ONT	OA8868.5	NB	0A8868 57
QUE	CSA-0A8868 56	NFLD	0A8868.50
ALB	0A8868.52	NS	0A8868.58
BC	0A8868.51	PEI	0A8868.59
SASK	CSA-0A8868 56	NWT	0A8868.5T
MAN	CSA-0A8868 56	YUK	0A8868.5Y
		NUN	0A8868.5N

INSPECTION CERTIFICATE AND MILL TEST REPORT

WENZHOUSHI DONGNAN PIPE MADE FACTORY
/ DBA OF SC MFG. GROUP INC.
No. 315-4, Gongye Beijie, Yongzhong Town, Wenzhou City, P.R. China
Tel.: 86-577-86378822 Fax.: 86-577-86377259

According to
DIN 50049 3. 1. B / EN 10204

Customer:
PINACLE STAINLESS STEEL INC.

455 AMBASSADOR DRIVE
MISSISSAUGA, ONTARIO
L5T 2J3

Order No. 26960

Manufacturer's Symbol

SCDN

SC MFG PO No.SC-1507

MTR No.	5111
Date of issue:	20-Jun-2005
Grade:	316 / 316L
Made From:	Pipe A/SA 312 - 01a
Material Specification:	ASTM A403 WPS - 00a ASME A403 WPS - 98
Dimensional Specification:	ASME B16.9 - 01 MSS-SP43-91

Chemical Analysis

Item No.	Item Description	Sch.	Heat No.	QTY	%C	%Mn	%P	%S	%Si	%Ni	%Cr	%Mo
21	8" 90LR ELBOW	40S	31625	25	0.016	1.250	0.020	0.019	0.600	13.10	16.80	2.3
22	10" 90LR ELBOW	40S	37435	10	0.023	1.350	0.029	0.021	0.340	13.30	17.40	2.15
47	12" X 12" X 10" TEE	40S	57358	2	0.027	1.740	0.025	0.019	0.740	13.70	17.20	2.14
48	12" X 12" X 8" TEE	40S	57358	4	0.027	1.740	0.025	0.019	0.740	13.70	17.20	2.14
52	12" TEE	40S	57358	5	0.027	1.740	0.025	0.019	0.740	13.70	17.20	2.14

Mechanical Properties

Heat No.	Item Description	Tensile MPa	Yield MPa	Elong. %	Red. Area %	Bend Test	Flattening Test	Hardness HB	Impact Test	Hydrostat. Test	Xray Test	Visual & Dimension
31625	8" 90LR ELBOW	540	265	54	-	ok	ok	140	ok	ok	-	ok
37435	10" 90LR ELBOW	585	250	52	-	ok	ok	145	ok	ok	-	ok
57358	12" X 12" X 10" TEE	585	275	55	-	ok	ok	150	ok	ok	-	ok
57358	12" X 12" X 8" TEE	585	275	55	-	ok	ok	150	ok	ok	-	ok
57358	12" TEE	585	275	55	-	ok	ok	150	ok	ok	-	ok

Heat Treatment: SOLUTION TREATED, 1060 °C (20 Minutes) Water Quenched

Misc: Material In accordance with NACE MR0175-2001
Free from Mercury contamination
Addition of filler metal? ☑No ☐Yes

Steel Making Process: Electric Furnace

WE CERTIFY THIS MATERIAL HAS BEEN MANUFACTURED AND EXAMINED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE SPECIFICATION(S) AND THE RESULTS OF ALL EXAMINATIONS ARE ACCEPTABLE

CANADIAN REGISTRATION NUMBERS			
ONT	OA8868.5	NB	0A8868.57
QUE	CSA-0A8868.56	NFLD	0A8868.50
ALB	0A8868.52	NS	0A8868.58
BC	0A8868.51	PEI	0A8868.59
SASK	CSA-0A8868.56	NWT	0A8868.5T
MAN	CSA-0A8868.56	YUK	0A8868.5Y
		NUN	0A8868.5N

PRO-FLANGE LIMITED
18 JARVIS STREET, CAMBRIDGE, ONTARIO ,CANADA. N1R 1G8
TEL (519) 621-7900 FAX (519) 740-0673

ISO 9001:2000 REGISTERED

MATERIAL TEST REPORT

CERTIFICATE TO DIN EN 10204 3.1B

Customer: **PINACLE STAINLESS STEEL INC.**
455 Ambassador Drive
ETOBICOKE, ONTARIO, M9W 5Z6

Customer PO# : **30235**
Pro Flange SO# : **54167**

Heat No.	Item #	Quantity	Description	Specification	Heat Treatment Details
BF564	1	100	36 - 1 x 3/8" 3000 TOL	04-SA182F304/304L	SOLUTION ANNEALED @ 1050°C
DF560	2	25	6 x 2" S40S WOL	04-SA182F316/316L	SOLUTION ANNEALED @ 1900°F
DF507	3	25	10-8 x 2" S40 WOL	98-SA182F316/316L	SOLUTION ANNEALED @ 1050°C
DF507	4	10	3 X 2" 3M SOL	98-SA182F316/316L	SOLUTION ANNEALED @ 1050°C

Chemical Properties - All Values in Percent(%)

Heat No.	C	MN	P	S	SI	NI	CR	MO	CB&TA	N
DF560	0.017	1.530	0.032	0.026	0.840	10.11	16.78	2.020		0.070
BF564	0.027	1.740	0.035	0.030	0.410	8.150	18.15			0.091
DF507	0.028	1.420	0.04	0.021	0.420	10.02	16.40	2.040		0.080

Physical Properties

Tensile PSI	Yield PSI	Grain Size
90700.0	54000.0	7.0
91078.0	46989.0	
84000.0	40000.0	6.0

Chemical Properties - All Values in Percent(%)

Heat No.	TI	AL	CU	FE	MG	CO	SN	CB	V	TA
DF560			0.490			0.09				
BF564			0.470			0.12				
DF507			0.500			0.16				

Physical Properties

EL(%)	RED (%)	BHN
56.0	69.1	170.0
51.0	71.0	179.0
60.0	71.0	167.0

COMMENTS:
MATERIAL COMPLIES WITH NACE MR0175 / MR0103
PMI PERFORMED AS PER WI 117.2

We certify that the material described herein has been manufactured, tested, and examined in accordance with and meets all requirements of referenced specifications, and hereby certify that the above data is a true copy of data as furnished to us by our supplier.

SIGNATURE :

FOR PRO-FLANGE LIMITED

DATE : November 30, 2005

抱閉鐵工股份有限公司
高雄縣仁武鄉烏林村仁心路 303 號
BOTH-WELL STEEL FITTINGS CO., LTD.
NO.303, JEN-HSIN ROAD JEN-WU HSIANG
KAOHSIUNG HSIEN, TAIWAN R.O.C.(81405)
TEL:(07)371-0497,371-1536,372-0260 FAX:(886-7)371-3864,371-3882
WEB SITE:http://www.bothwell.com.tw E-MAIL:bothwell@www.bothwell.com.tw or box@mail.bothwell.com.tw

An ISO-9001 Registered Manufacturer

MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN10204/DIN50049/3.1.B

ORIGIN:TAIWAN

CUSTOMER:PINACLE STAINLESS STEEL INC. INVOICE NO:BW069507081 DATE:11/04/06

CERT NO:62290 ORDER NO:34551 L/C NO: PAGE:2

ITEM	RAW MATERIAL HEAT NO.	BOTH WELL HT.CD.	DESCRIPTION	QUANTITY	SPECIFICATION: A182/SA182 -04a F316 / 316L DIMENSION: MSS-SP-97 - 2001 SURFACE: BY VISUAL...GOOD
106	P0784	T431	OUTLET 3/8"× 1"-36" 3000# NPT	240 PC	
107	S46128	T739	OUTLET 1/2"× 3"-8" 3000# NPT	180 PC	
108	9S157	T659	OUTLET 1"× 4"-5" 3000# NPT	105 PC	
109	S05644	T553	OUTLET 1"× 6"-10" 3000# NPT	105 PC	
110	9M104	T306	OUTLET 1-1/4"× 6"-8" 3000# NPT	40 PC	
111	909107	T369	OUTLET 1-1/2"× 2-1/2 3000# NPT	15 PC	
112	9R051	T581	OUTLET 1-1/2"× 3" 3000# NPT	30 PC	

CHEMICAL COMPOSITION (%)

ITEM	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Cb(Nb)	N
Min	-	-	-	-	-	-	16.000	10.000	2.000	-	-	-
Max	0.030	1.000	2.000	0.045	0.030	-	18.000	15.000	3.000	-	-	0.100
106	0.019	0.450	1.560	0.034	0.025	-	16.400	10.750	2.130	-	-	0.067
107	0.028	0.256	1.404	0.033	0.015	-	16.860	10.039	2.040	-	-	0.038
108	0.030	0.430	1.680	0.029	0.028	-	17.200	10.200	2.100	-	-	0.100
109	0.022	0.389	1.362	0.029	0.017	-	16.705	12.107	2.115	-	-	0.018
110	0.020	0.340	1.480	0.028	0.027	-	16.830	12.350	2.120	-	-	0.069
111	0.024	0.350	1.540	0.036	0.016	-	16.500	12.220	2.600	-	-	0.028
112	0.018	0.450	1.630	0.027	0.028	-	17.150	10.200	2.100	-	-	0.090

MECHANICAL TEST

ITEM	Tensile Strength (KSI)	Yield Strength (KSI)	Elon-Gation (%)	R of A (%)	Hardness (HB)
Min	75.0	30.0	30.0	50.0	-
Max	-	-	-	-	235
106	83.5	47.3	58.0	71.7	163
107	82.8	35.8	62.0	78.3	163
108	78.5	33.1	59.8	74.3	156
109	77.4	36.1	61.2	69.6	152
110	78.2	35.6	61.6	73.3	143
111	81.4	39.3	57.0	73.8	161
112	82.2	41.6	58.6	72.1	163

Remark:
SOLUTION TREATED : 1040 ℃,W.Q.
CONFORMS TO NACE MR0175-2003
STEEL MAKING PROCESS : ELECTRIC FURNACE
MERCURY FREE

WE CERTIFY THE ABOVE MENTIONED FITTINGS HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN

Q.C. MANAGER INSPECTOR

SHIP TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Location: 08-35 TO 13-36

BILL TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Weatherford

WEATHERFORD CANADA PARTNERSHIP
4920 WATSON CRESCENT
SWAN HILLS AB T0G 2C0
CANADA

PACKING SLIP

Order Number: 3138509 SO
Order Date: 01/15/07
Location: 12026 SWAN HILLS
Phone No.: [redacted]
Fax No.: [redacted]
Order By/Appr [redacted]
AFE / Project: 200608025-9620644
Customer PO: VERBAL
Misc 2: REJ

ENTERED BY	SHIPPING INSTRUCTIONS	TAKEN BY
MCCLELLAND, SUZANNE		

LINE NO.	ITEM NUMBER DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	QTY B/O	UNIT PRICE	EXTENDED PRICE
1.000	Part #: 717122 THANK YOU FOR YOUR BUSINESS!	EA	1.00	1.00		0.0000	0.00
2.000	Part #: 893151 FLANGE, 12" 300# RFWN S40S 316L HN: 64646,	EA	2.00	2.00		1,174.8200	2,349.64
3.000	Part #: 893151 FLANGE, 12" 300# RFWN S40S 316L HN: 70386,	EA	1.00	1.00		1,435.5300	1,435.53
4.000	Part #: 893151 FLANGE, 12" 300# RFWN S40S 316L HN: 71524,	EA	1.00	1.00		1,559.4000	1,559.40
5.000	Part #: 893151 FLANGE, 6" 300# RFWN S40S 316L HN: 11141,	EA	1.00	1.00		625.4400	625.44
6.000	Part #: 893150 ELBOW, 6" 90D. LR S40S 316L HN: 37654,	EA	2.00	2.00		809.9200	1,619.84
7.000	Part #: 893150 WELDOLET, 2" ON 12" S40S 316L HN: DF350,	EA	1.00	1.00		89.5500	89.55
8.000	Part #: 893151 FLANGE, 2" 300# RF BLIND 316LF316L HN: 70756,	EA	6.00	6.00		69.9400	419.64
9.000	Part #: 899414 NIPPLE, PIPE 1IN THD X THD3INSCH160S 316L HN: 35341,	EA	5.00	5.00		15.9300	79.65
10.000	Part #: 434845 PLUG, PIPE 1IN NPT 3000 PSI SS 316 HN: T804,	EA	5.00	5.00		6.1000	30.50
11.000	Part #: 392909 STUD, 0.625 IN X 3.5 IN B7MCS	EA	96.00	96.00		0.7680	73.73
12.000	Part #: 392902 NUT, 0.625 - 11 UNC STEEL 2HM	EA	192.00	192.00		0.6360	122.11
13.000	Part #: 437409 STUD, 0.875 IN X 5.5 IN B7MCS	EA	144.00	144.00		2.1600	311.04
14.000	Part #: 419052 NUT, 0.875 - 9 UNC STEEL 2HM	EA	288.00	288.00		1.1040	317.95
15.000	Part #: 437412 STUD, 1.125 IN X 6.75 IN B7MCS	EA	48.00	48.00		4.9440	237.31
16.000	Part #: 419080 STUD, 1.125 IN X 7.5 IN B7MCS	EA	16.00	16.00		5.5320	88.51
17.000	Part #: 419053 NUT, 1.125 - 8 UNC STEEL 2HM	EA	128.00	128.00		1.9080	244.22

CONTINUED

SALES ORDER NUMBER: 3138509 SO

Weatherford

DATE: 01/15/07

LINE NO.	ITEM NUMBER DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	QTY B/O	UNIT PRICE	EXTENDED PRICE
18.000	Part #: 390099 GASKET, FLEX 12 IN 300 PSI 316 SPRL TECH	EA	10.00	10.00		11.0280	110.26
19.000	Part #: 390098 GASKET, FLEX 8 IN 300 PSI 316SPRL TECH	EA	24.00	24.00		6.3480	152.35
20.000	Part #: 399844 GASKET, GRAFOIL 2 IN 600 PSI 316	EA	24.00	24.00		3.3240	79.78
21.000	Part #: 116309 FREIGHT	EA	1.00	1.00		122.0000	122.00
	. . . . . Tax Group Summary						
	GST:89713 4110					6.000	604.11

CUSTOMER SIGNATURE: [signature] JAN 05/07

Weatherford (such term shall include any subsidiary, division or affiliate of Weatherford International, Inc.) will provide the requested equipment, materials or services to its customer. Such provision shall be governed by the terms and conditions of the current applicable master service agreement between the parties. In the event that there is no such master service agreement, Weatherford' s standard terms and conditions, a copy of which can be found at www.weatherford.com/t&c shall be applicable to the provision of such equipment, materials or services. [A paper copy of these standard terms and conditions will be provided to you upon your written request.]

SUBTOTAL	10,068.47
SALES TAX	604.11
TOTAL (CAD)	10,672.58

FSPOSPAKJ R42565 Cover 2.1.2 D 02-21-06 CC83662 JOB# F15849464

SHIP TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Location: 08-35 TO 13-36 HEADER

BILL TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Weatherford

WEATHERFORD CANADA PARTNERSHIP
4920 WATSON CRESCENT
SWAN HILLS AB T0G 2C0
CANADA

PACKING SLIP

Order Number: 3143515 SO
Order Date: 01/17/07
Location: 12026 SWAN HILLS
Phone No.: [redacted]
Fax No.: [redacted]
Order By/Appr [redacted]
AFE / Project: 200608025-9620644
Customer PO: VERBAL
Misc 2: REJ

ENTERED BY	SHIPPING INSTRUCTIONS	TAKEN BY
MCCLELLAND, SUZANNE		

LINE NO.	ITEM NUMBER DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	QTY B/O	UNIT PRICE	EXTENDED PRICE
1.000	Part #: 717122 THANK YOU FOR YOUR BUSINESS!	EA	1.00	1.00		0.0000	0.00
2.000	Part #: 893150 TEE, 12" S40S 316L HN: 57358,	EA	1.00	1.00		3,394.4900	3,394.49
3.000	Part #: 893150 CONC. REDUCER, 12" X8" S40S 316L HN: 05745,	EA	1.00	1.00		1,322.6400	1,322.64
4.000	Part #: 893150 ELBOW, 8" 90D LR S40S 316L HN: 37654,	EA	2.00	2.00		774.7100	1,549.42
5.000	Part #: 893150 FLANGE, 8" 300# RFWN S40S 316L HN: 11141, 69185,	EA	2.00	2.00		598.2400	1,196.48
7.000	Part #: 116309 FREIGHT	EA	1.00	1.00		105.6000	105.60
8.000	Part #: 893151 FLANGE, 12" 300# RFWN STD 316L HN: 66058,	EA	3.00	3.00		1,435.5330	4,306.60
	Tax Group Summary GST:89713 4110					6.000	712.53

CUSTOMER SIGNATURE: [redacted] Jan 25/07

Weatherford (such term shall include any subsidiary, division or affiliate of Weatherford International, Inc.) will provide the requested equipment, materials or services to its customer. Such provision shall be governed by the terms and conditions of the current applicable master service agreement between the parties. In the event that there is no such master service agreement, Weatherford's standard terms and conditions, a copy of which can be found at www.weatherford.com/t&c shall be applicable to the provision of such equipment, materials or services. [A paper copy of these standard terms and conditions will be provided to you upon your written request.]

SUBTOTAL	11,875.23
SALES TAX	712.53
TOTAL (GAD)	12,587.76

SHIP TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Location: 8-35 TO 13-36-63-11

BILL TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Weatherford®
WEATHERFORD CANADA PARTNERSHIP
4920 WATSON CRESCENT
SWAN HILLS AB T0G 2C0
CANADA

PACKING SLIP

Order Number: 3083549 SO
Order Date: 12/12/06
Location: 12026 SWAN HILLS
Phone No.: [redacted]
Fax No.: [redacted]
Order By/Appr [redacted]
Customer PO: [redacted]
Misc 2: REJ

200608025-902004

ENTERED BY	SHIPPING INSTRUCTIONS	TAKEN BY
DUNCOMBE, WAYNE		

LINE NO.	ITEM NUMBER DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	QTY B/O	UNIT PRICE	EXTENDED PRICE
1.000	Part #: 717122 THANK YOU FOR YOUR BUSINESS!	EA	1.00	1.00		0.0000	0.00
2.000	Part #: 893154 FT - 8" SCH 40 F316L SMLS PIPE HN: 37281,	EA	62.76	62.76		219.2200	13,758.25
3.000	Part #: 893154 FT - 12" SCH 40 F316L SMLS PIPE HN: J0408-95,	EA	30.00	30.00		560.4200	16,812.60
4.000	Part #: 893151 8" 300# SCH 40 F316L RFWN FLANGE HN: 11141,	EA	7.00	7.00		543.8600	3,807.02
5.000	Part #: 893151 12" 300# SCH 40 F316L RFWN FLANGE HN: 70386,	EA	1.00	1.00		1,248.2900	1,248.29
6.000	Part #: 893151 2" 300# SCH 40 F316L RFWN FLANGE HN: 70789,	EA	6.00	6.00		69.6000	417.60
7.000	Part #: 893150 12" SCH 40 F316L LR 90 ELBOW HN: K7612,	EA	2.00	2.00		3,082.0000	6,164.00
8.000	Part #: 893150 8" SCH 40 F316L LR 90 ELBOW HN: 37654,	EA	3.00	3.00		704.2800	2,112.84
9.000	Part #: 893150 12" X 8" SCH 40 F316L RED TEE HN: 57358,	EA	3.00	3.00		3,934.9000	11,804.70
10.000	Part #: 893150 2" SCH 40 F316L WOL 8-10 HN: DF507,	EA	6.00	6.00		81.7700	490.62
11.000	Part #: 893150 1" 3000# F316L TOL 6-10 HN: T553,	EA	5.00	5.00		28.4700	142.35
12.000	Part #: 893156 8" 300# RF 316SS WARREN GATE VALVE	EA	2.00	2.00		4,896.1000	9,792.20
13.000	Part #: 893156 8" 300# RF 316SS VAL GATE VALVE	EA	2.00	2.00		7,017.5700	14,035 14
14.000	Part #: 893156 2" 300# RF 316SS GATE VALVE	EA	6.00	6.00		1,113.2000	6,679.20
15.000	Part #: 893156 1" 800# WARREN THRD GATE VALVE	EA	5.00	-5.00		262.8000	1,314.00
16.000	Part #: 116309 FREIGHT	EA	1.00	1.00		913.6000	913 60

FSPOSPAKJ R42565 Covus 2.1.2 D 03-21-06 CCB3952 JOB# F15740051

CONTINUED

SALES ORDER NUMBER: 3083549 SO

Weatherford

DATE: 12/12/06

LINE NO.	ITEM NUMBER DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	QTY B/O	UNIT PRICE	EXTENDED PRICE
	Tax Group Summary						
	GST:89713 4110					6.000	5,369.56

CUSTOMER SIGNATURE:

[illegible] JAN 25/07

Weatherford (such term shall include any subsidiary, division or affiliate of Weatherford International, Inc.) will provide the requested equipment, materials or services to its customer. Such provision shall be governed by the terms and conditions of the current applicable master service agreement between the parties. In the event that there is no such master service agreement, Weatherford's standard terms and conditions, a copy of which can be found at www.weatherford.com/t&c shall be applicable to the provision of such equipment, materials or services. [A paper copy of these standard terms and conditions will be provided to you upon your written request.]

SUBTOTAL	89,492.41
SALES TAX	5,369.56
TOTAL (CAD)	94,861.97

FSPOSPAKJ R42565 Cover 2.1.2 D 02-21-06 CCB3952 JOB# F15740051

SHIP TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Location: 08-35-063-11W5

BILL TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Weatherford®

WEATHERFORD CANADA PARTNERSHIP
4920 WATSON CRESCENT
SWAN HILLS AB T0G 2C0
CANADA

PACKING SLIP

Order Number: 3261735 SO
Order Date: MAR 20 2007
Location: 12026 SWAN HILLS
Phone No.: [redacted]
Fax No.: [redacted]
Order By/Appr [redacted]
AFE / Project: 200808025-8620644
Customer PO: VERBAL
Misc 2: REJ

ENTERED BY	SHIPPING INSTRUCTIONS	TAKEN BY
MCCLELLAND, SUZANNE		

LINE NO.	ITEM NUMBER DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	QTY B/O	UNIT PRICE	EXTENDED PRICE
1.000	Part #: 717122 THANK YOU FOR YOUR BUSINESS!	EA	1.00	1.00		0.0000	0.00
2.000	Part #: 893155 U-BOLT, 16" C/W 4 NUTS	EA	2.00	2.00		20.0500	40.10
	. . . . . Tax Group Summary						
	GST:89713 4110					6.000	2.41

CUSTOMER SIGNATURE: [signature] 28-03-2007

Weatherford (such term shall include any subsidiary, division or affiliate of Weatherford International, Inc.) will provide the requested equipment, materials or services to its customer. Such provision shall be governed by the terms and conditions of the current applicable master service agreement between the parties. In the event that there is no such master service agreement, Weatherford' s standard terms and conditions, a copy of which can be found at www.weatherford.com/t&c shall be applicable to the provision of such equipment, materials or services. [A paper copy of these standard terms and conditions will be provided to you upon your written request.]

SUBTOTAL	40.10
SALES TAX	2.41
TOTAL (CAD)	42.51

SHIP TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Location: 13-36-63-11W5

BILL TO: 1282484
PENGROWTH CORP
P O BOX 390
SWAN HILLS AB T0G 2C0
CANADA

Weatherford®

WEATHERFORD CANADA PARTNERSHIP
4920 WATSON CRESCENT
SWAN HILLS AB T0G 2C0
CANADA

PACKING SLIP

Order Number: 3247604 SO
Order Date: MAR 13 2007
Location: 12026 SWAN HILLS
Phone No.: [redacted]
Fax No.: [redacted]
Order By/Appr [redacted]
Customer PO: VERBAL
Misc 2: REJ

200608025 - 962264

ENTERED BY	SHIPPING INSTRUCTIONS	TAKEN BY
DUNCOMBE, WAYNE		

LINE NO.	ITEM NUMBER DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	QTY B/O	UNIT PRICE	EXTENDED PRICE
1.000	Part #: 717122 THANK YOU FOR YOUR BUSINESS!	EA	1.00	1.00		0.0000	0.00
2.000	Part #: 893151 FLANGE, 12" 300# RF BLIND 316L	EA	1.00	1.00		1,794.8200	1,794.82
3.000	Part #: 118309 FREIGHT	EA	1.00	1.00		44.0000	44.00
	Tax Group Summary						
	GST 89713 4110					6.000	110.33

CUSTOMER SIGNATURE: [redacted] 28-03-2007

Weatherford (such term shall include any subsidiary, division or affiliate of Weatherford International, Inc.) will provide the requested equipment, materials or services to its customer. Such provision shall be governed by the terms and conditions of the current applicable master service agreement between the parties. In the event that there is no such master service agreement, Weatherford' s standard terms and conditions, a copy of which can be found at www.weatherford.com/t&c shall be applicable to the provision of such equipment, materials or services. [A paper copy of these standard terms and conditions will be provided to you upon your written request.)

SUBTOTAL	1,838.82
SALES TAX	110.33
TOTAL (CAD)	1,949.15

FSPOSPAKJ R42565 Covus 2.1.2 D 11-30-06 CCB4480 JOB# F17688414