



Tecnimont S.p.A.

4274\_CONST

ALBA PROJECT-PP AND PEL PLANTS



MOD-ITP-XL_220		RELEASE OF SPOOLS FROM WORKSHOP	Report n° IP-WSR-P-310-000420_RFI5573_MOD-ITP-XL_220
Rev.1			RFI Nr.: Date :
Unit -			
Plant Area -			
Isometric Number			
Inspection Package Number	IP-WSR-P-310-000420_RFI5573 - IP Spool Release From Workshop		

Sheet 01/01

The Present Inspection Package contains the following Elements:

2211-PCW71A01-1-SP12-01162;2121-LO40B03-1-SP01-00997;2121-LO40B02-2-SP05-01147;2121-IA91F62-7-SP16-00477;1122-O15011-1-SP01-00546;1121-LS50001-4-SP07-01094;2211-PCW70B04-3-SP06-00407;2121-LO40B03-1-SP03-00998;2121-LO40B02-3-SP09-01150;1121-LS50001-4-SP08-01132;1113-PN52018-1-SP02-00862;2211-PCW70B04-3-SP05-01158;2211-VA71A01-1-SP01-00442;2211-PCW71A01-2-SP04-01104;2121-LO40B02-3-SP10-00505;2121-LO40B02-2-SP07-01149;1121-LS50006-2-SP02-01129;1121-LS50002-2-SP08-01126;2211-VA71A01-1-SP02-00443;2211-PCW71A01-2-SP05-01105;2121-LO40B02-3-SP11-00506;2121-LO40B02-3-SP08-00503;1121-PR34029-3-SP03-01131;1121-LS50005-3-SP05-00192;2121-LO40B02-2-SP06-01148;2121-LO40B02-2-SP04-01146;1211-VA81004-1-SP01-01095;1127-LS50009-2-SP01-01130;2211-PCW70B04-3-SP04-00406;2121-LO40B04-1-SP02-01069;2121-LO40B04-1-SP01-01068;2121-LO40B01-1-SP01-00498;2121-IA91F63-4-SP05-00488;2211-PCW70B04-3-SP07-00409;2121-LO40B03-1-SP02-01153;2121-LO40B01-1-SP02-00499;1211-PX86033-2-SP04-01145;1121-LS50002-2-SP05-01125;2211-LS50A05-1-SP02-00385;2121-LO40B04-1-SP03-01155;2121-IA91F63-4-SP04-00487;2121-IA91F62-8-SP17-00478;1113-PN52018-1-SP01-00861

Spool No.	Ready for destination to: P: Painting (1) W: Wrapping F: Field	NDE Class	Check List					
			Visual Inspect	Traceability OK (2)	Pending NDE / PMI (Yes/No/NA)	PWHT / HARDNESS (Yes/No/NA)	Inside Cleaning (3) (Yes/No/NA)	Spool Identified (Yes/No/NA)

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
29.10.2024

LEGEND OF CHECK RESULT	<input checked="" type="checkbox"/> Checked & NOT Accepted	<input type="checkbox"/> Checked & Accepted	N.A.	Not Applicable	Y / N	Punch List Produced
SUBCONTRACTOR	Date [DD-MMM-YYYY] 29-10-2024	Name Sergio Morales Collantes	Signature			
CONTRACTOR						
COMPANY						
(Free)						



Tecnimont S.p.A.

4274\_CONST

ALBA PROJECT-PP AND PEL PLANTS



<b>MOD-ITP-XL_220</b>		<b>RELEASE OF SPOOLS FROM WORKSHOP</b>	Report n° <b>IP-WSR-P-310-000420_RFI5573_MOD-ITP-XL_220</b>
Rev.1			RFI Nr.: Date :
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NOTES (\*) : 4274-XH-PQ-00000001

- 1) Painting cycle to be indicated.
- 2) Refer to: **4274-LZ-PC-00000214** (COMPANY 4001008GEN-PC-214) "Management of Site Metallic Welding Activities" and **4274-LZ-PC-00000215** (COMPANY 4001008GEN-PC-215) "Procedure for Traceability of Piping Material"
- 3) Refer to: **4274-XH-SG-00000003** (COMPANY 45-L-45-000-2-00-80005) "Specification for Piping Fabrication & Erection Amendment to EC-L-51.01 and EC-L-51.02" and **4274-XH-PQ-00000001** (COMPANY 45-L-45-000-2-00-80081) "Inspection and Test Plan for Steel Piping Works"

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu C. Sandu  
29.10.2024

LEGEND OF CHECK RESULT	<input checked="" type="checkbox"/> Checked & NOT Accepted	<input checked="" type="checkbox"/> Checked & Accepted	N.A.	Not Applicable	Y / N	Punch List Produced
			Date [DD-MMM-YYYY]	Name	Signature	
SUBCONTRACTOR	29-10-2024		Sergio Morales Collantes			
CONTRACTOR						
COMPANY						
(Free)						

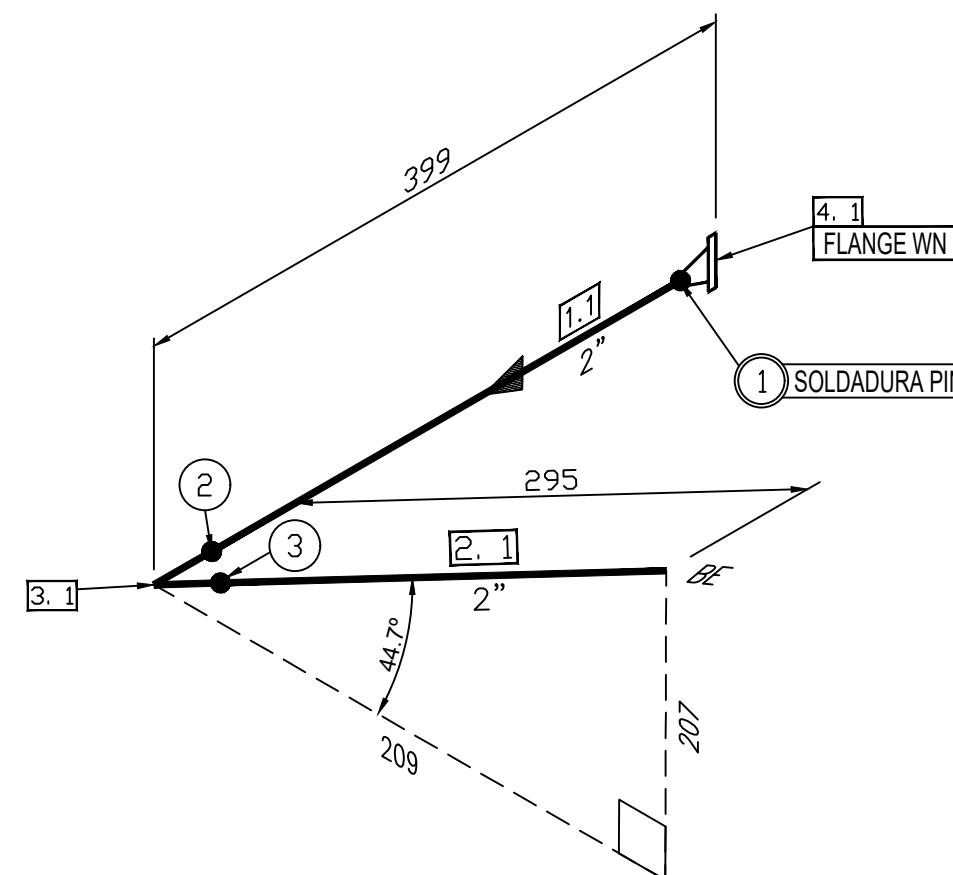
 <b>Tecnimont</b>	<p style="text-align: center;"><b>Punch List</b></p> <p style="text-align: center;"><b>PUNCH LIST</b></p>	<p style="text-align: center;"><b>IDENTIFICATION CODE</b></p>			
		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>SHEET 1 / 1</td> <td>DOC.CLASS 1</td> <td>ISSUE 01</td> </tr> </table>	SHEET 1 / 1	DOC.CLASS 1	ISSUE 01
SHEET 1 / 1	DOC.CLASS 1	ISSUE 01			
 <b>MECWIDE</b> <small>Engineering Services</small>	<p><b>ISO ID:</b> <b>2121-LO40B01-1</b></p>				

## NOTES AND REMARKS

On behalf of Technimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

	DATE (dd-Mmm-YYYY)	NAME	SIGNATURE
SUBCONTRACTOR			
CONTRACTOR			
COMPANY			
(Free)			



<div style="text-align: center; padding: 10px;">    <b>N</b> </div> <div style="text-align: center; padding: 10px;">  <p>1.1 2"</p> <p>2.1 2"</p> <p>3.1 2"</p> <p>4.1 FLANGE WN RF 150#</p> <p>1 SOLDADURA PINGADA</p> </div> <div style="text-align: left; padding: 10px;"> <p>On behalf of Tecnimont / R Piping Supervisor Cristi Sandu <i>C. Sandu</i> 25.10.2024</p> </div> <div style="text-align: left; padding: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Rev.</th> <th>Date</th> <th>DRW</th> <th>Check 1</th> <th>Check 2</th> <th>Marking Color:</th> <th>GREEN</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <th>Weld Class:</th> <td>QXB-55-M</td> </tr> <tr> <td>00</td> <td>04/03/2024</td> <td>ANP</td> <td>LRG</td> <td>PCO</td> <th>Paint System:</th> <td>NR</td> </tr> </table> </div> <div style="text-align: left; padding: 10px;"> <p>Sergio Morales Date: 23-10-24</p> <p></p> </div> <div style="text-align: right; padding: 10px;"> <p><b>BILL OF MATERIAL</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6">PIPE</th> </tr> <tr> <th>ITEM</th> <th>LENGTH</th> <th>DIAMETER</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIAL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>1.1</td> <td>0,258</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, PExBE</td> <td>I3364302</td> </tr> <tr> <td>2.1</td> <td>0,217</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> </tbody> </table>   <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6">FLANGES</th> </tr> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMÉTRE</th> <th>PRESSION</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIEL</th> </tr> </thead> <tbody> <tr> <td>4.1</td> <td>1</td> <td>2"</td> <td>150#</td> <td>S-10S</td> <td>WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125 -250 AARH</td> </tr> </tbody> </table>   <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6">WELD FITTINGS</th> </tr> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMETER</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIAL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>3.1</td> <td>1</td> <td>2"</td> <td>S-10S</td> <td>90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259133</td> </tr> </tbody> </table> </div> <div style="text-align: right; padding: 10px;"> <p>P2308S 00498    2121-LO40B01-1-SP01-00498</p> </div> <div style="text-align: right; padding: 10px;"> <p><b>Weld Map Sticker</b></p> <p></p> </div> <div style="text-align: right; padding: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Ref. Drawing</th> <th>Job #</th> <th>Spool #</th> <th>Project</th> </tr> <tr> <td>2121-LO40B01-1</td> <td>P2308S</td> <td>00498</td> <td>REPSOL PROJETO ALBA NERVION</td> </tr> </table> </div>	Rev.	Date	DRW	Check 1	Check 2	Marking Color:	GREEN						Weld Class:	QXB-55-M	00	04/03/2024	ANP	LRG	PCO	Paint System:	NR	PIPE						ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	1.1	0,258	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, PExBE	I3364302	2.1	0,217	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	FLANGES						ITEM	QT	DIAMÉTRE	PRESSION	SCH/mm	DESCRIPTION / MATERIEL	4.1	1	2"	150#	S-10S	WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125 -250 AARH	WELD FITTINGS						ITEM	QT	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	3.1	1	2"	S-10S	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133	Ref. Drawing	Job #	Spool #	Project	2121-LO40B01-1	P2308S	00498	REPSOL PROJETO ALBA NERVION
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# Spool Material List

Contract : P2308

Client NERVION

Job : P2308S

Project ALBA

Job	Spool	Piece Mark	Drawing	Rev			
Item No Tag No ID No	Qty	Size1 Sch1	Size2 Sch2	Description	Heat No MTR No Folder No	Unit Weight Kgs	Weight Kgs
<b>P2308S 00498</b>		<b>2121-LO40B01-1-SP01-00498</b>		<b>2121-LO40B01-1</b>		<b>00</b>	
2.1	,217 2.0000 S10S	0.0000 NA		PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	0,85
40391							
1.1	,258 2.0000 S10S	0.0000 NA		PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	1,01
40391							
4.1	1 2.0000 S10S	0.0000 NA		WN FLG, RAISED FACE, 150#, A182-F304L	CH-18449 0393	2,72	2,72
37867							
3.1	1 2.0000 S10S	0.0000 NA		90 LR ELL, SEAMLESS, A403-WP304L	M220696 0410	0,49	0,49
42965							

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 *C. Sandu*

Number of Items : 4

Total Weight : 5,08

Signature	QA	Client
	Date	Date
	 <i>[Signature]</i>	Sergio Morales Date: 23-10-24 

<b>CTA Group</b>	Kg 1138	Mt 305,57	Pz No.: 49
This document is reproduced by a computerized system and is conform to the original	Heat No.: S-23594	Cta's job: OC0000319	Date: 29/02/2024
Customer : TECNIMONT SPA AFC	P.O. No.: PO:		Item: I3364302

12

7500118753 N.PRO: 4274 - PP+PE SINES (PORTUGAL) EPC



F / QA / 24

REV. NO. 10

WORKS :  
 Survey No. 779/A, Thol, Kadi - Sanand Highway,  
 Tal.-Kadi, Dist. Mehsana, Gujarat (India)  
 Tel. : (02764) 274216 / 27417 Fax : (02764) 274419  
 Email : quality@surajgroup.com  
 Visit us at www.surajgroup.com

### INSPECTION CERTIFICATE

In Accordance with EN 10204/3.1

<b>Customer:</b> Commerciale Tubi Acciaio S.P.A.	<b>T.C No :</b> 680	<b>Date:</b> 26.03.2022
<b>Product :</b> Austenitic S.S Seamless Cold Finish,Solution Annealed,Pickled & Passivated Pipes.	<b>P.O.No :</b> OS-0000175	<b>Date:</b> 14.10.2021
	<b>W.O.No :</b> 2122/OEP400035	<b>Date:</b> 16.10.2021

Sr. No	Specification	Grade	Heat No.	Dimensions		Quantity			Hydro Test Pressure (Psi)
				NPS	SCH	Length Mtr	Pcs	Total Meter	
27	ASTM A-312 Ed.2019 SA-312 of ASME Sec.II Part "A" Ed.2019 ASME B36.19, EN 10216-5 TC1 NACE MR 0175/ISO 15156, NACE MR 0103	TP 304/304L 1.4301/ 1.4307	S-23594	2	10S	RL	171	1075.220	1400

### Chemical Analysis %

Heat No.	Required	C	Mn	P	S	Si	Cr	Ni	Mo	N	Ti
	Min	--	--	--	--	--	18.00	8.00	--	--	--
	Max	0.030	2.00	0.040	0.015	1.00	19.50	10.00	--	0.100	--
S-23594	Heat Analysis	0.025	1.72	0.038	0.008	0.41	18.20	8.08	--	0.079	--

### Mechanical Test

Heat No.	Required			Gauge Width	Flattening Test	Hardness Test	Impact Test		IGC Test					
	Tensile strength Mpa	Yield strength					Max-90 HRB	100 Joule Min.(AVG)	ASTM A-262 Practice"E" & ISO 3651-2 Method "A"					
		Rp0.2% Mpa	Rp1 % Mpa						N/A					
MAX	690	--	--	--										
MIN	515	205	230	40										
S-23594	624.31	316.22	322.57	55.21	25.40	Satisfactory	76-78							
	623.05	315.91	320.42	54.89			73-75							

**Heat Treatment :** Solution annealing conducted at 1045-1060°C temperature and rapid water quenching after final cold process.

**Marking on pipes:** SURAJ LTD SPECIFICATION GRADE SIZE

CFD EN 10216-5 TC1 EN GRADE SL NO. \_\_\_\_\_ HEAT NO. \_\_\_\_\_ P O NO. \_\_\_\_\_

**Remarks:**

- \* 100% Hydro test done at required pressure for 10 second holding time found satisfactory without any leakage.
- \* 100% Visual, Dimensions(OD/THK/LENGTH) & Product Marking checked-satisfy the requirement of specification.
- \* 100% Positive Material Identification (PMI) done by SL & conforming to grade as per specification.
- \* Intergranular Corrosion Test (IGC) Conducted as per ASTM A262 Pr"E" & ISO 3651-2 method-A-No crack observed on bend portion at 20X.
- \* Pickling and Passivation Conducted as per ASTM A-380.
- \* "Approved acc.to AD 2000-MERKBLATT W0 and certified acc.to PED (2014/68/EU) by certification body for pressure equipment of TUV NORD SYSTEMS (NOTIFIED BODY,REG NO.;0045)"
- \* Tensile test piece taken from the same lot as certified and tested in longitudinal direction.
- \* Melting process:EIF+AOD & Material is free of mercury & radioactive contamination.

Prepared by

COMMERCIALE TUBI ACCIAIO S.P.A.  
QUALITY CONTROL DEPARTMENT

SURAJ LTD  
THOL  
For, Suraj Limited.  
C.I.Nayak  
Dept,Head Quality

Page no. 01 of 12

We hereby certify that the material described herein are in accordance with the specification and results comply with the requirements of the purchase order.

APPLUS OBO TCM  
28 03 24



**CHANDAN STEEL LIMITED**  
(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

ISO 9001:2015 CERTIFICATE No. 04100011022

**ADM. OFFICE:** 504, SUGHISAGAR, N. S. PATKAR MARG,  
MUMBAI 400 007, INDIA  
Tel: 91-22-66150600, Fax: 91-22-66150633/34  
Website: [www.chandansteel.net](http://www.chandansteel.net)  
Email: [rcv@chandansteel.net](mailto:rcv@chandansteel.net)  
**L/c. No. :**  
**L/c. Date:**

**WORKS:** Plot No. 35, G. I. D. C., Umbergaon  
Dist. Vadodara, Gujarat - 396 171, INDIA  
Tel.: 91-260-256 2066/4267/1166, Fax: 91-260-256 2287  
E-mail: [export@chandansteel.net](mailto:export@chandansteel.net)

**INSPECTION CERTIFICATE 3.1**  
**ACCORDING TO EN 10204**

RACCORDUBI SPA  
VIALE DE GASPERI, 194  
20010 MARCALLO CON CASONE  
(MILANO) - ITALIA

Test Certificate No. : EXP/22-23/01571 - 32  
Date of Issue : 18.03.2023  
P. O. No. : 00000350 Dt. 02-12-2022  
Invoice No. & Date : EXP/22-23/01571 Date- 18.03.2023

**ITEM DESCRIPTION**  
**STAINLESS STEEL FORGED & FULLY MACHINED FLANGES**

Po Sr No.	Heat No.	Pcs	Box No.	Wt.Kgs	Grade	Item	Process Route
9	CH-18449	158	5 & 7	409.41	ASTM/ASME A/SA182 F304/304L	2" WNRF150 LBS 10S	
-	-	-	-	-	-	-	Electric Induction Melting, A.O.D. Refining, Continuous Casting & Hot Forging
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	

CHEMICAL COMPOSITION (Weight %)

Po Sr No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N	OTHERS
9	0.023	0.52	1.74	0.036	0.005	18.23	-	8.07	-	-	0.077	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

MECHANICAL PROPERTIES

Po Sr No.	0.2% Yield Strength N/mm <sup>2</sup> (Rp0.2)	Tensile Strength N/mm <sup>2</sup> (R <sub>m</sub> )	Elongation %	Reduction of Area %	Hardness (H. B. W.)
9	261	566	57	74	162-166
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

**Remarks:**

- The material is solution annealed at minimum 1050 °C and water quenched.
- Visual and Dimensions inspection OK.
- PMI Test 100%- Satisfactory.
- No welding was performed on this material.
- Material is free from mercury and radio-active contamination and is found within the limits of the background radiation.
- Inter-Granular Corrosion Test (ASTM A262- 17 (Pt.B))- Satisfactory.
- The material conforms to ASTM A 182 - 22, ASME SECTION II PART A SA 182 - 21 & Dimension confirms to ASME B16.5-20 Specification.
- The material hardness conforms to NACE MR0175/ISO 15156-3:2015 & NACE MR0103-2015.
- Surface roughness quality checked by comparator & found 125 - 250 AARH
- Visual , Dimension and PMI performed by CSL.
- Mechanical Testing perfomed by CSL.

We hereby certify that, the material described herein,  
and supplied are in compliance with the requirements of the order.



*V.Y. Narayanan*  
V.Y.NARAYANAN  
WORKS INSPECTOR

Customer: TECNIMONT S.p.A.  
Description: W.N. 2" S.150 RF SCH.10/S  
I2260686

Order: 7500118979 - 26.01.24 - Item n.: 184 - Project: 4274 - PP+PE Sines (Portugal) EPC - Our ref.: OCVEIT202400000475

Protocol: CTCERC202400003069 \* CERTIFIED TRUE COPY

\* Issued 14-03-2024



Heat num. or Pcs. marking: CH-18449 - Qty:22,00

Protocol: CTCERC202400003069 \* CERTIFIED TRUE COPY

\* Issued 14-03-2024





Contract : P2300

Drawing : 2121-LO40B01-1

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Spool : 00498

Spec : QXB-55-M

Project : ALBA

Piece Mark : 2121-LO40B01-1-SP01-00498

Weld data					Welding										Control													
Weld No.	Type	Dia /Thk	Sch	Weld Proc.	1st Pass	1st MTR	Final Pass	Final MTR	Dim	Date DIM	Visual	Date Visual	PT	Date PT	MT	Date MT	PMI	Date PMI	Ferite	Date Ferrite	PWHT	Date PWHT	BHN	Date BHN	Ultra	Date UT	Xray	Date Xray
0001	TW	2	S10S								001093	08-10-2024																
0002	BW	2	S10S	MW.26_BW	AY	15-07-2024	4712055	AY	15-07-2024	4712055						001144	14-10-2024											
0003	BW	2	S10S	MW.26_BW	AY	15-07-2024	4712055	AY	15-07-2024	4712055						001144	14-10-2024											

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024

Notes:

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Signature	Boccard Portugal QC	Client
		Sergio Morales Date: 23-10-24
Date	15-10-2024 14:44:06	



# Shop QC Inspection Report

P2308-001130

Client : NERVION  
 Contract : P2308 / Project : ALBA  
 Material: Stainless Steel 304, 316, 317

Job number: P2308S  
 Spool N°: 00498  
 Piece Mark: 2121-LO40B01-1-SP01-00498

Procedure / Instruction reference: 20.2 IT 011 MF 324 - Rev: A

Control Date: 08-10-2024

Remarks: The results refer to the controlled items

Actions / Tasks List	Required		Done/ Identified
	Yes	No	
Welder / weld list labels printed and pasted on the spool sheet	X	<input type="checkbox"/>	X
Spool Barcode label printed	X	<input type="checkbox"/>	X
Spool is identified with the metal tag	X	<input type="checkbox"/>	X
Spool stencil required (hard stamp low stress)	<input type="checkbox"/>	X	<input type="checkbox"/>
Joint preparation & cleanliness / spool dimensions checked	X	<input type="checkbox"/>	X
Level, plumb, Two holes, flanges and internal alignment, Squareness	X	<input type="checkbox"/>	X
Material checked (type of material, rate, heat numbers, filler material, etc.)	X	<input type="checkbox"/>	X
Welders list match with actual welder stencil / Id. on pipe	X	<input type="checkbox"/>	X
PWHT- Spool identified as per Procedure / Instruction for PWHT	<input type="checkbox"/>	X	<input type="checkbox"/>
HT ( Hardness Test)- Welds identified as per Procedure / Instruction	<input type="checkbox"/>	X	<input type="checkbox"/>
MT - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	X	<input type="checkbox"/>
PT - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	X	<input type="checkbox"/>
PMI - Welds identified as per Procedure / Instruction	X	<input type="checkbox"/>	X
FE (Ferrite test) - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	X	<input type="checkbox"/>
RT - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	X	<input type="checkbox"/>
UT - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	X	<input type="checkbox"/>
Spool identified (by marker) as per Procedure / Instruction (Job number, sheet number and Paint type if required)	X	<input type="checkbox"/>	X
Hydro - Spool identified as per Procedure / Instruction	<input type="checkbox"/>	X	<input type="checkbox"/>
Cleanliness - Cleaned inside free of slag, scale, sand, weld spatter, cutting chips, etc. and blow out by compressed air	X	<input type="checkbox"/>	X

Comments:

Performed by: RODRIGUES(ST), VITOR (N2 VT/PT)  Date: 08-10-2024  Signature 	QA/QC Inspection: RAIMUNDO, MARIANA  Date: 15-10-2024 14:44:06  Signature 	Customer Inspection:  <b>Sergio Morales</b>  Date: 23-10-24  
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On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 *C. Sandu*



# Visual Examination Report (Welds)

P2308-001093

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00498

Procedure &amp; Instructions: 4274-LZ-VF-W31010370QAC04 - Rev: 1

Project : ALBA

Piece Mark: 2121-LO40B01-1-SP01-00498

Testing Date: 08-10-2024

Remarks: The results refer to the controlled items

Unacceptable indications for welding

ACCEPTANCE CRITERIA : ASME B31.3	Weld reinforcement greater than specified in project procedure
The illumination of the surface must be at least 500 lux. However, a value of 1000lux is recommended	Any linear indications greater than specified in project procedure, surface porosity with rounded indications having a dimension greater than specified project procedure
Indications of lack of fusion open to the surface / Cracks located on external surfaces	Surface finish that could interfere with other testing required
Incomplete penetration of welds / Indications of undercut on surfaces which are greater than specified in project procedure	Misalignment greater than specified in applicable code or poor fit up of weld joints

Weld No.	Weld Desc.	Welder	Temp. (°F/°C)	Technique Used			Comments
				Accepted	Rejected	Defect	
0001	2.0000 S10S TW-Tack Weld ()		21	X			Direct
0002	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	21	X			Direct
0003	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	21	X			Direct

Sketch / Photo:

Defects									
Clustered Porosity	CP	Porosity	P	Cap	C	Lack of Cleanup	LC	Hollow in Cap	W
Unibmly Porosity	UP	Slag	S	Undercut	UC	Crack	CR	Surface	SU

Test Performed by: RODRIGUES(ST), VITOR (N2 VT/PT)

QA/QC Inspection: RAIMUNDO, MARIANA

Customer Inspection:

Date: 08-10-2024

Date: 15-10-2024 14:44:06

Sergio Morales

Signature



Signature



Date: 23-10-24



On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 C. Sandu



# Positive Material Identification Report (PMI)

P2308-001144

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00498

Piece Mark: 2121-LO40B01-1-SP01-00498

Material: Stainless Steel 304, 316, 317

Procedure / Instruction reference: 4274-LZ-VD-FW31010370QAC11 - Rev: 1

PMI Equipment : Niton XL3t800 Serial N° 32735 (FP01)

Equipment Deviation : + - 5%

Testing Date: 14-10-2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0002	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	150	0	0	0	8	70	1	19	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0003	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	151	0	0	0	8	70	1	18	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.1	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	148	0	0	0	8	71	1	17	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	146	0	0	0	8	71	1	18	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	147	0	0	0	7	71	1	18	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1	2.0000 S10S WN FLG, RAISED FACE, 150#, A182-F304L (CH-18449)	149	0	0	0	8	70	1	17	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 

Test Performed by: GONCALVES(QA), J. (N2 PT/RT) QA/QC Inspection: RAIMUNDO, MARIANA

Date: 14-10-2024

Signature 

Date: 15-10-2024 14:44:06

Signature 

Customer Inspection:

Sergio Morales

Date:

Signature Date: 23-10-24



Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	150
Mode	ALLOY
Time	2024-10-14 10:29
Duration	10.02
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.052
Pd	< LOD	:	0.038
Ag	< LOD	:	0.135
Al	< LOD	:	80.000
Mo	0.031	±	0.007
Nb	< LOD	:	0.008
Zr	< LOD	:	0.004
Bi	< LOD	:	0.006
Pb	< LOD	:	0.002
Se	< LOD	:	0.009
W	< LOD	:	0.093
Zn	< LOD	:	0.028
Cu	< LOD	:	0.157
Ni	8.930	±	0.305
Co	< LOD	:	0.493
Fe	70.145	±	0.456
Mn	1.381	±	0.203
Cr	19.128	±	0.267
V	< LOD	:	0.119
Ti	< LOD	:	0.138

Sergio Morales

Date: 23-10-24



On behalf of Tecnímont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	151
Mode	ALLOY
Time	2024-10-14 10:29
Duration	10.34
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.053
Pd	< LOD	:	0.039
Ag	< LOD	:	0.160
Al	< LOD	:	80.000
Mo	0.033	±	0.007
Nb	< LOD	:	0.008
Zr	< LOD	:	0.004
Bi	< LOD	:	0.012
Pb	< LOD	:	0.014
Se	< LOD	:	0.008
W	< LOD	:	0.086
Zn	< LOD	:	0.042
Cu	< LOD	:	0.159
Ni	8.885	±	0.303
Co	< LOD	:	0.487
Fe	70.056	±	0.454
Mn	1.641	±	0.206
Cr	18.978	±	0.266
V	< LOD	:	0.130
Ti	< LOD	:	0.142

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	148
Mode	ALLOY
Time	2024-10-14 10:28
Duration	10.76
Sequence	Final
Alloy1	304SS : 1.76
Alloy2	No Match : *2.49
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.040
Sn	< LOD	:	0.049
Pd	< LOD	:	0.036
Ag	< LOD	:	0.183
Al	< LOD	:	80.000
Mo	< LOD	:	0.006
Nb	< LOD	:	0.007
Zr	< LOD	:	0.003
Bi	< LOD	:	0.005
Pb	< LOD	:	0.032
Se	< LOD	:	0.008
W	< LOD	:	0.091
Zn	< LOD	:	0.033
Cu	< LOD	:	0.131
Ni	8.106	±	0.281
Co	0.571	±	0.239
Fe	71.574	±	0.433
Mn	1.438	±	0.191
Cr	17.960	±	0.247
V	< LOD	:	0.125
Ti	< LOD	:	0.146

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	146
Mode	ALLOY
Time	2024-10-14 10:28
Duration	8.67
Sequence	Final
Alloy1	304SS : 0.68
Alloy2	No Match : *2.22
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.052
Pd	< LOD	:	0.041
Ag	< LOD	:	0.164
Al	< LOD	:	80.000
Mo	0.039	±	0.008
Nb	< LOD	:	0.008
Zr	< LOD	:	0.004
Bi	< LOD	:	0.012
Pb	< LOD	:	0.026
Se	< LOD	:	0.010
W	< LOD	:	0.110
Zn	< LOD	:	0.033
Cu	< LOD	:	0.177
Ni	8.216	±	0.321
Co	< LOD	:	0.542
Fe	71.157	±	0.494
Mn	1.340	±	0.217
Cr	18.330	±	0.285
V	< LOD	:	0.144
Ti	< LOD	:	0.145

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	147
Mode	ALLOY
Time	2024-10-14 10:28
Duration	9.80
Sequence	Final
Alloy1	304SS : 1.63
Alloy2	301SS : 1.71
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.052
Pd	< LOD	:	0.041
Ag	< LOD	:	0.172
Al	< LOD	:	80.000
Mo	< LOD	:	0.011
Nb	< LOD	:	0.007
Zr	< LOD	:	0.003
Bi	< LOD	:	0.011
Pb	0.027	±	0.013
Se	< LOD	:	0.007
W	< LOD	:	0.096
Zn	< LOD	:	0.030
Cu	0.302	±	0.090
Ni	7.819	±	0.301
Co	< LOD	:	0.513
Fe	71.805	±	0.469
Mn	1.335	±	0.207
Cr	18.096	±	0.270
V	0.186	±	0.075
Ti	< LOD	:	0.141

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	149
Mode	ALLOY
Time	2024-10-14 10:28
Duration	10.71
Sequence	Final
Alloy1	304SS : 1.76
Alloy2	No Match : *1.92
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

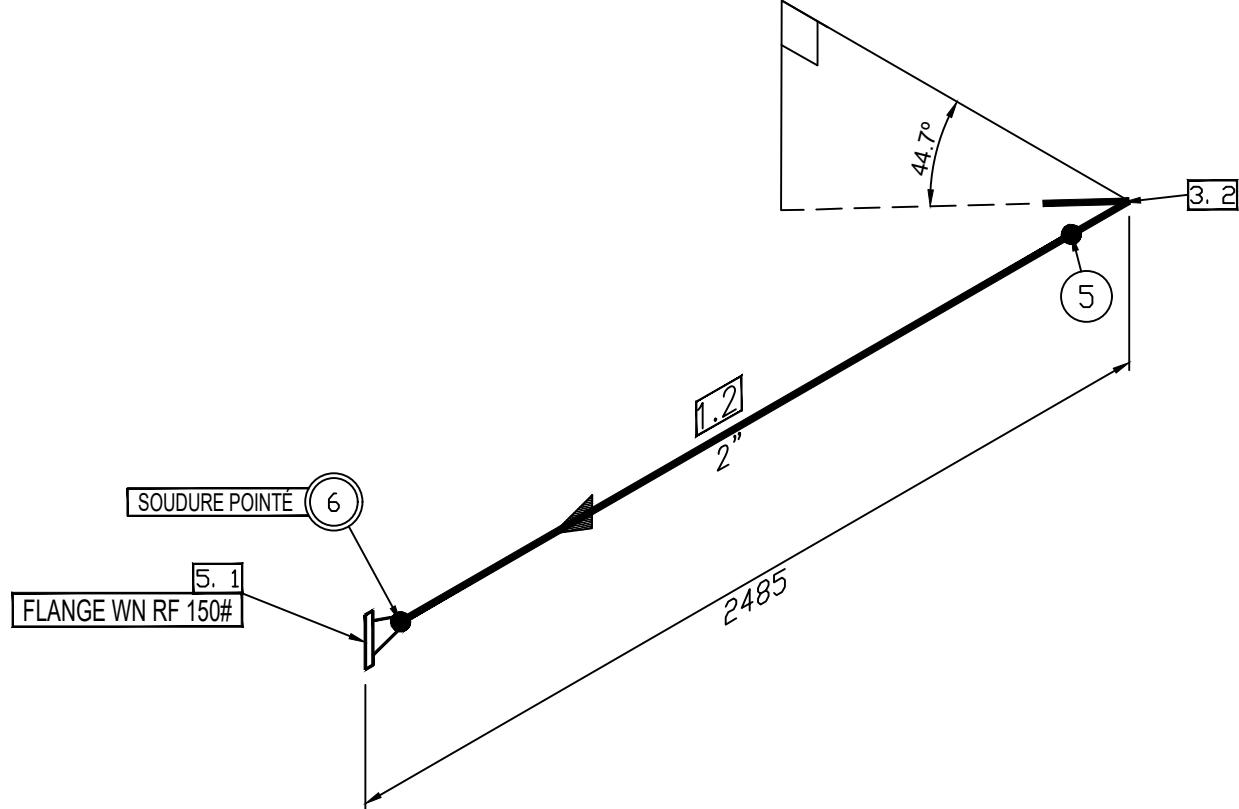
	%	±	Error
Sb	< LOD	:	0.043
Sn	< LOD	:	0.055
Pd	< LOD	:	0.040
Ag	< LOD	:	0.185
Al	< LOD	:	80.000
Mo	0.310	±	0.019
Nb	0.020	±	0.006
Zr	< LOD	:	0.003
Bi	< LOD	:	0.015
Pb	< LOD	:	0.018
Se	< LOD	:	0.008
W	< LOD	:	0.106
Zn	< LOD	:	0.039
Cu	0.400	±	0.094
Ni	8.137	±	0.299
Co	< LOD	:	0.503
Fe	70.801	±	0.460
Mn	1.836	±	0.210
Cr	17.785	±	0.262
V	< LOD	:	0.133
Ti	< LOD	:	0.134

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

	<p><b>BILL OF MATERIAL</b></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th colspan="6">PIPE</th> </tr> <tr> <th>ITEM</th> <th>LENGTH</th> <th>DIAMETER</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIAL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>1.2</td> <td>2,344</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExPE</td> <td>I3364302</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th colspan="6">FLANGES</th> </tr> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMÉTRE</th> <th>PRESSION</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIEL</th> </tr> </thead> <tbody> <tr> <td>5.1</td> <td>1</td> <td>2"</td> <td>150#</td> <td>S-10S</td> <td>WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125-250 AARH</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th colspan="6">WELD FITTINGS</th> </tr> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMETER</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIAL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>3.2</td> <td>1</td> <td>2"</td> <td>S-10S</td> <td>90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259133</td> </tr> </tbody> </table>	PIPE						ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	1.2	2,344	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExPE	I3364302	FLANGES						ITEM	QT	DIAMÉTRE	PRESSION	SCH/mm	DESCRIPTION / MATERIEL	5.1	1	2"	150#	S-10S	WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125-250 AARH	WELD FITTINGS						ITEM	QT	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	3.2	1	2"	S-10S	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133
PIPE																																																							
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<p>On behalf of Tecnimont / R Piping Supervisor Cristi Sandu <i>C. Sandu</i> 25.10.2024</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td>Rev.</td> <td>Date</td> <td>DRW</td> <td>Check 1</td> <td>Check 2</td> <td>Marking Color: GREEN</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Weld Class: QXB-55-M</td> </tr> <tr> <td>00</td> <td>04/03/2024</td> <td>ANP</td> <td>LRG</td> <td>PCO</td> <td>Paint System: NR</td> </tr> </table> <p>Sergio Morales Date: 23-10-24</p> <p></p>		Rev.	Date	DRW	Check 1	Check 2	Marking Color: GREEN						Weld Class: QXB-55-M	00	04/03/2024	ANP	LRG	PCO	Paint System: NR																																				
Rev.	Date	DRW	Check 1	Check 2	Marking Color: GREEN																																																		
					Weld Class: QXB-55-M																																																		
00	04/03/2024	ANP	LRG	PCO	Paint System: NR																																																		
<b>Ref. Drawing</b> 2121-LO40B01-1-SP02-00499 <b>Job #</b> P2308S 00499 <b>Spool #</b> 00499 <b>Project</b> REPSOL PROJETO ALBA NERVION																																																							
  Alliance for success Boccard Portugal, Lda.																																																							
F324-302-0																																																							

# Spool Material List

Contract : P2308

Client NERVION

Job : P2308S

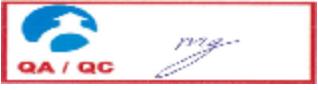
Project ALBA

Job	Spool	Piece Mark	Drawing	Rev					
Item No	Qty	Size1	Sch1	Size2	Sch2	Description	Heat No	Unit	Weight
Tag No							MTR No	Weight	Kgs
ID No							Folder No		
P2308S	00499	2121-LO40B01-1-SP02-00499	2121-LO40B01-1	00					
1.2	2,344	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	9,21
40391									
5.1	1	2.0000	S10S	0.0000	NA	WN FLG, RAISED FACE, 150#, A182-F304L	CH-18449 0393	2,72	2,72
37867									
3.2	1	2.0000	S10S	0.0000	NA	90 LR ELL, SEAMLESS, A403-WP304L	M220696 0410	0,49	0,49
42965									

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu *C. Sandu*  
 25.10.2024

Number of Items : 3

Total Weight : 12,42

Signature	QA	Client
		Sergio Morales Date: 23-10-24
Date	2024-09-10 13:53:44	

<b>CTA Group</b>	Kg 1138	Mt 305,57	Pz No.: 49
This document is reproduced by a computerized system and is conform to the original	Heat No.: S-23594	Cta's job: OC0000319	Date: 29/02/2024
Customer : TECNIMONT SPA AFC	P.O. No.: PO:		Item: I3364302

12

7500118753 N.PRO: 4274 - PP+PE SINES (PORTUGAL) EPC

**SURAJ** LIMITED(AN ISO 9001 : 2015 COMPANY)  
(AN ISO 14001 : 2015 COMPANY)

(AN ISO 45001 : 2018 COMPANY)

(AN PED 2014/68/EU APPROVED COMPANY)

**WORKS :**Survey No. 779/A, Thol, Kadi - Sanand Highway,  
Tal.-Kadi, Dist. Mehsana, Gujarat (India)  
Tel. : (02764) 274216 / 27417 Fax : (02764) 274419  
Email : quality@surajgroup.com  
Visit us at www.surajgroup.com**F / QA / 24****REV. NO. 10**

REGD. OFFICE :  
'Suraj House',  
Opp. Usmanpura Garden, Ashram Road,  
Ahmedabad - 380 014, Gujarat (INDIA)  
Tel. : 0091-79-2754 0720 / 2754 0721  
Fax : 0091-79-2754 0722  
Email : suraj@surajgroup.com

**INSPECTION CERTIFICATE****In Accordance with EN 10204/3.1**

<b>Customer:</b> Commerciale Tubi Acciaio S.P.A.	<b>T.C No :</b> 680	<b>Date:</b> 26.03.2022
<b>Product :</b> Austenitic S.S Seamless Cold Finish,Solution Annealed,Pickled & Passivated Pipes.	<b>P.O.No :</b> OS-0000175	<b>Date:</b> 14.10.2021
	<b>W.O.No :</b> 2122/OEP400035	<b>Date:</b> 16.10.2021

Sr. No	Specification	Grade	Heat No.	Dimensions		Quantity			Hydro Test Pressure (Psi)
				NPS	SCH	Length Mtr	Pcs	Total Meter	
27	ASTM A-312 Ed.2019 SA-312 of ASME Sec.II Part "A" Ed.2019 ASME B36.19, EN 10216-5 TC1 NACE MR 0175/ISO 15156, NACE MR 0103	TP 304/304L 1.4301/ 1.4307	S-23594	2	10S	RL	171	1075.220	1400

**Chemical Analysis %**

Heat No.	Required	C	Mn	P	S	Si	Cr	Ni	Mo	N	Ti
	Min	--	--	--	--	--	18.00	8.00	--	--	--
	Max	0.030	2.00	0.040	0.015	1.00	19.50	10.00	--	0.100	--
S-23594	Heat Analysis	0.025	1.72	0.038	0.008	0.41	18.20	8.08	--	0.079	--

**Mechanical Test**

Heat No.	Required			Gauge Width	Flattening Test	Hardness Test	Impact Test			IGC Test				
	Tensile strength Mpa	Yield strength					Max-90 HRB	100 Joule Min.(AVG)	N/A	ASTM A-262 Practice"E" & ISO 3651-2 Method "A"				
		Rp0.2% Mpa	Rp1 % Mpa							Satisfactory				
MAX	690	--	--	--										
MIN	515	205	230	40										
S-23594	624.31	316.22	322.57	55.21	25.40	Satisfactory	76-78							
	623.05	315.91	320.42	54.89			73-75							

Heat Treatment : Solution annealing conducted at 1045-1060°C temperature and rapid water quenching after final cold process.

Marking on pipes: **SURAJ LTD SPECIFICATION GRADE SIZE**CFD EN 10216-5 TC1 **EN GRADE SL NO. \_\_\_\_\_ HEAT NO. \_\_\_\_\_ P O NO. \_\_\_\_\_****Remarks:**

- \* 100% Hydro test done at required pressure for 10 second holding time found satisfactory without any leakage.
- \* 100% Visual, Dimensions(OD/THK/LENGTH) & Product Marking checked-satisfy the requirement of specification.
- \* 100% Positive Material Identification (PMI) done by SL & conforming to grade as per specification.
- \* Intergranular Corrosion Test (IGC) Conducted as per ASTM A262 Pr"E" & ISO 3651-2 method-A-No crack observed on bend portion at 20X.
- \* Pickling and Passivation Conducted as per ASTM A-380.
- \* "Approved acc.to AD 2000-MERKBLATT W0 and certified acc.to PED (2014/68/EU) by certification body for pressure equipment of TUV NORD SYSTEMS (NOTIFIED BODY,REG NO.;0045)"
- \* Tensile test piece taken from the same lot as certified and tested in longitudinal direction.
- \* Melting process:EIF+AOD & Material is free of mercury & radioactive contamination.

Prepared by

**COMMERCIALE TUBI ACCIAIO S.P.A.****QUALITY CONTROL DEPARTMENT**

For, Suraj Limited.  
C.I.Nayak  
Dept,Head Quality

Page no. 01 of 12

We hereby certify that the material described herein are in accordance with the specification and results comply with the requirements of the purchase order.

**APPLUS OBO TCM**  
28 03 24



**CHANDAN STEEL LIMITED**  
(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

ISO 9001:2015 CERTIFICATE No. 04100011022

**ADM. OFFICE:** 504, SUGHISAGAR, N. S. PATKAR MARG,  
MUMBAI 400 007, INDIA  
Tel: 91-22-66150600, Fax: 91-22-66150633/34  
Website: [www.chandansteel.net](http://www.chandansteel.net)  
Email: [rcv@chandansteel.net](mailto:rcv@chandansteel.net)  
**L/c. No. :**  
**L/c. Date:**

**WORKS:** Plot No. 35, G. I. D. C., Umbergaon  
Dist. Vadodara, Gujarat - 396 171, INDIA  
Tel.: 91-260-256 2066/4267/1166, Fax: 91-260-256 2287  
E-mail: [export@chandansteel.net](mailto:export@chandansteel.net)

**INSPECTION CERTIFICATE 3.1**  
**ACCORDING TO EN 10204**

RACCORDUBI SPA  
VIALE DE GASPERI, 194  
20010 MARCALLO CON CASONE  
(MILANO) - ITALIA

Test Certificate No. : EXP/22-23/01571 - 32  
Date of Issue : 18.03.2023  
P. O. No. : 00000350 Dt. 02-12-2022  
Invoice No. & Date : EXP/22-23/01571 Date- 18.03.2023

**ITEM DESCRIPTION**  
**STAINLESS STEEL FORGED & FULLY MACHINED FLANGES**

Po Sr No.	Heat No.	Pcs	Box No.	Wt.Kgs	Grade	Item	Process Route
9	CH-18449	158	5 & 7	409.41	ASTM/ASME A/SA182 F304/304L	2" WNRF150 LBS 10S	
-	-	-	-	-	-	-	Electric Induction Melting, A.O.D. Refining, Continuous Casting & Hot Forging
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	

CHEMICAL COMPOSITION (Weight %)

Po Sr No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N	OTHERS
9	0.023	0.52	1.74	0.036	0.005	18.23	-	8.07	-	-	0.077	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

MECHANICAL PROPERTIES

Po Sr No.	0.2% Yield Strength N/mm <sup>2</sup> (Rp0.2)	Tensile Strength N/mm <sup>2</sup> (R <sub>m</sub> )	Elongation %	Reduction of Area %	Hardness (H. B. W.)
9	261	566	57	74	162-166
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

**Remarks:**

- The material is solution annealed at minimum 1050 °C and water quenched.
- Visual and Dimensions inspection OK.
- PMI Test 100%- Satisfactory.
- No welding was performed on this material.
- Material is free from mercury and radio-active contamination and is found within the limits of the background radiation.
- Inter-Granular Corrosion Test (ASTM A262- 17 (Pt.B))- Satisfactory.
- The material conforms to ASTM A 182 - 22, ASME SECTION II PART A SA 182 - 21 & Dimension confirms to ASME B16.5-20 Specification.
- The material hardness conforms to NACE MR0175/ISO 15156-3:2015 & NACE MR0103-2015.
- Surface roughness quality checked by comparator & found 125 - 250 AARH
- Visual , Dimension and PMI performed by CSL.
- Mechanical Testing perfomed by CSL.

We hereby certify that, the material described herein,  
and supplied are in compliance with the requirements of the order.



*V.Y. Narayanan*  
V.Y.NARAYANAN  
WORKS INSPECTOR

Customer:

TECNIMONT S.p.A.

Order: 7500118979 - 26.01.24 - Item n.: 184 - Project: 4274 - PP+PE Sines (Portugal) EPC - Our ref.:

OCVEIT202400000475

Description:

W.N. 2" S.150 RF SCH.10/S

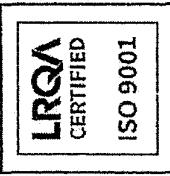
I2260686



Heat num. or Pcs. marking: CH-18449 - Qty:22,00

Protocol: CTCERC202400003069 \* CERTIFIED TRUE COPY

\* Issued 14-03-2024



Approve No:1509001-00400  
RCO Cert No:0343/P/2014/UW/101007/3

## INSPECTION CERTIFICATE



RACCORDIUBIS P.A.

Order No.: 22TEC003  
(注文番号)

P.O. No. : 000000150 S

### Chemical Composition of Pipe (Raw Material) %

Remarks \* Hardness acc to NACE MR0175 / ISO 15156-3: 2015. MRO103:2015

INTERGRAN® II AR CORROSION TEST (ASTM A262(E)) - OK, PMI CHECKS GOOD ISO 9001/EN 10204-3.1 PIED2014/08/EU ANNEX 1 SECTION 4.3

INORGANIC CONDENSATION TEST (ASTM D2857-01), 100°C FOR 1 HOUR,  
HEAT TREATMENT 1050 DEGREE CELSIUS QUENCHED IN WATER WITHIN 1 MINUTES TO 40°C.  
MATERIAL WAS MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH INDICATED SPECIFICATIONS AND WAS FOUND TO MEET THE REQUIREMENTS. NO  
WELD REPAIR WAS PERFORMED AND ALL ITEMS SUPPLIED ARE FREE OF WELD REPAIR.  
MATERIAL IS FREE OF MERCURY CONTAMINATION AND RADIOACTIVITY.

We hereby certify that the above products meet the requirements of the relevant standard and of the customer order.

We herewith certify that the above products meet the requirements of the relevant standard and of the customer order.

Head of QA/QC Dept  
總質管部經理

Protocol: CTCERC202400003104 \* CERTIFIED TRUE COPY

\* Issued 03-04-2024



Contract : P2300

Drawing : 2121-LO40B01-1

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Spool : 00499

Spec : QXB-55-M

Project : ALBA

Piece Mark : 2121-LO40B01-1-SP02-00499

Weld data

Welding

Control

Weld No.	Type	Dia	Sch	Weld /Thk	1st Proc.	Pass	1st MTR	Final Pass	Final MTR	Dim	Date DIM	Visual	Date Visual	PT	Date PT	MT	Date MT	PMI	Date PMI	Ferite	Date Ferrite	PWHT	Date PWHT	BHN	Date BHN	Ultra	Date UT	Xray	Date Xray	
0005	BW	2	S10S	MW.26_BW	AE	12/07/2024	4712055	AE	12/07/2024	4712055			000784	09/08/2024				000824	07/09/2024											
0006	TW	2	S10S										000784	09/08/2024																

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 *C. Sandu*

Notes:

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Boccard Portugal QC	Client
 <i>my</i>	Sergio Morales Date: 23-10-24
10/09/2024 13:53:44	



# Shop QC Inspection Report

P2308-000808

Client : NERVION  
 Contract : P2308 / Project : ALBA  
 Material: Stainless Steel 304, 316, 317

Job number: P2308S  
 Spool N°: 00499  
 Piece Mark: 2121-LO40B01-1-SP02-00499

Procedure / Instruction reference: 20.2 IT 011 MF 324 - Rev: A

Control Date: 09/08/2024

Remarks: The results refer to the controlled items

Actions / Tasks List	Required		Done/ Identified
	Yes	No	
Welder / weld list labels printed and pasted on the spool sheet	X		X
Spool Barcode label printed	X		X
Spool is identified with the metal tag	X		X
Spool stencil required (hard stamp low stress)		X	
Joint preparation & cleanliness / spool dimensions checked	X		X
Level, plumb, Two holes, flanges and internal alignment, Squareness	X		X
Material checked (type of material, rate, heat numbers, filler material, etc.)	X		X
Welders list match with actual welder stencil / Id. on pipe	X		X
PWHT- Spool identified as per Procedure / Instruction for PWHT		X	
HT ( Hardness Test)- Welds identified as per Procedure / Instruction		X	
MT - Welds identified as per Procedure / Instruction		X	
PT - Welds identified as per Procedure / Instruction		X	
PMI - Welds identified as per Procedure / Instruction	X		X
FE (Ferrite test) - Welds identified as per Procedure / Instruction		X	
RT - Welds identified as per Procedure / Instruction		X	
UT - Welds identified as per Procedure / Instruction		X	
Spool identified (by marker) as per Procedure / Instruction (Job number, sheet number and Paint type if required)	X		X
Hydro - Spool identified as per Procedure / Instruction		X	
Cleanliness - Cleaned inside free of slag, scale, sand, weld spatter, cutting chips, etc. and blow out by compressed air	X		X

Comments:

Performed by: MATOS, MARCO (N2 VT/PT)  Date: 09/08/2024  Signature 	QA/QC Inspection: GIL, MIGUEL  Date: 10/09/2024 13:53:44  Signature 	Customer Inspection: <b>Sergio Morales</b>  Date: 23-10-24  
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On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu   
 25.10.2024

# Visual Examination Report (Welds)

P2308-000784

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00499

Procedure &amp; Instructions: 4274-LZ-VF-W31010370QAC04 - Rev: 1

Project : ALBA

Piece Mark: 2121-LO40B01-1-SP02-00499

Testing Date: 09/08/2024

Remarks: The results refer to the controlled items

Unacceptable indications for welding

ACCEPTANCE CRITERIA : ASME B31.3	Weld reinforcement greater than specified in project procedure
The illumination of the surface must be at least 500 lux. However, a value of 1000lux is recommended	Any linear indications greater than specified in project procedure, surface porosity with rounded indications having a dimension greater than specified project procedure
Indications of lack of fusion open to the surface / Cracks located on external surfaces	Surface finish that could interfere with other testing required
Incomplete penetration of welds / Indications of undercut on surfaces which are greater than specified in project procedure	Misalignment greater than specified in applicable code or poor fit up of weld joints

Weld No.	Weld Desc.	Welder	Temp. (°F/°C)	Technique Used			Comments
				Accepted	Rejected	Defect	
0005	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	30	X			Direct
0006	2.0000 S10S TW-Tack Weld ()		30	X			Direct

Sketch / Photo:

Defects							
Clustered Porosity	CP	Porosity	P	Cap	C	Lack of Cleanup	LC
Unibmly Porosity	UP	Slag	S	Undercut	UC	Crack	CR
						Hollow in Cap	W
Test Performed by: MATOS, MARCO (N2 VT/PT)				QA/QC Inspection: GIL, MIGUEL		Customer Inspection:	
Date: 09/08/2024				Date: 10/09/2024 13:53:44		Signature: Sergio Morales	
Signature					Date: 23-10-24		

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 



# Positive Material Identification Report (PMI)

P2308-000824

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00499

Piece Mark: 2121-LO40B01-1-SP02-00499

Material: Stainless Steel 304, 316, 317

Procedure / Instruction reference: 4274-LZ-VF-FW31010370QAC11 - Rev: 1

PMI Equipment : Niton XL3t800 Serial N° 32735 (FP01)

Equipment Deviation : + - 5%

Testing Date: 07/09/2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0005	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	717	0	0	0	8	69	1	19	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	716	0	0	0	8	71	1	17	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	719	0	0	0	8	71	1	18	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.1	2.0000 S10S WN FLG, RAISED FACE, 150#, A182-F304L (CH-18449)	715	0	0	0	7	70	1	18	0	0	0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024

Test Performed by: GONCALVES(QA), J. (N2 PT/RT) QA/QC Inspection: GIL, MIGUEL

Customer Inspection:

Date: 07/09/2024

Date: 10/09/2024 13:53:44

Date:

Sergio Morales

Signature

Signature

Signature

Date: 23-10-24



Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	717
Mode	ALLOY
Time	2024-09-07 13:39
Duration	6.53
Sequence	Final
Alloy1	304SS : 0.51
Alloy2	No Match : 1.70
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.056
Sn	< LOD	:	0.069
Pd	< LOD	:	0.052
Ag	< LOD	:	0.119
Al	< LOD	:	80.000
Mo	0.038	±	0.010
Nb	< LOD	:	0.010
Zr	< LOD	:	0.004
Bi	< LOD	:	0.021
Pb	< LOD	:	0.032
Se	< LOD	:	0.016
W	< LOD	:	0.093
Zn	< LOD	:	0.034
Cu	< LOD	:	0.189
Ni	8.552	±	0.391
Co	< LOD	:	0.646
Fe	69.808	±	0.596
Mn	1.801	±	0.274
Cr	19.208	±	0.351
V	< LOD	:	0.188
Ti	< LOD	:	0.214

Sergio Morales



Date: 23-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	716
Mode	ALLOY
Time	2024-09-07 13:39
Duration	23.07
Sequence	Final
Alloy1	304SS : 1.27
Alloy2	No Match : *2.06
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.031
Sn	< LOD	:	0.036
Pd	< LOD	:	0.029
Ag	< LOD	:	0.179
Al	< LOD	:	80.000
Mo	< LOD	:	0.007
Nb	< LOD	:	0.005
Zr	< LOD	:	0.004
Bi	< LOD	:	0.008
Pb	< LOD	:	0.008
Se	< LOD	:	0.008
W	< LOD	:	0.070
Zn	< LOD	:	0.027
Cu	< LOD	:	0.107
Ni	8.321	±	0.234
Co	0.420	±	0.174
Fe	71.322	±	0.366
Mn	1.550	±	0.149
Cr	17.921	±	0.339
V	0.174	±	0.072
Ti	< LOD	:	0.123

Sergio Morales



Date: 23-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	719
Mode	ALLOY
Time	2024-09-07 13:39
Duration	12.64
Sequence	Final
Alloy1	304SS : 0.28
Alloy2	No Match : *2.11
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.038
Sn	< LOD	:	0.049
Pd	< LOD	:	0.035
Ag	< LOD	:	0.136
Al	< LOD	:	80.000
Mo	0.039	±	0.007
Nb	< LOD	:	0.005
Zr	< LOD	:	0.004
Bi	< LOD	:	0.004
Pb	< LOD	:	0.007
Se	< LOD	:	0.008
W	< LOD	:	0.088
Zn	< LOD	:	0.029
Cu	0.297	±	0.080
Ni	8.124	±	0.268
Co	< LOD	:	0.448
Fe	71.590	±	0.412
Mn	1.247	±	0.180
Cr	18.097	±	0.237
V	0.139	±	0.064
Ti	< LOD	:	0.146

Sergio Morales



Date: 23-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	715
Mode	ALLOY
Time	2024-09-07 13:38
Duration	6.29
Sequence	Final
Alloy1	304SS : 1.72
Alloy2	No Match : *2.06
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.050
Sn	< LOD	:	0.061
Pd	< LOD	:	0.051
Ag	< LOD	:	0.161
Al	< LOD	:	80.000
Mo	0.299	±	0.024
Nb	0.017	±	0.007
Zr	< LOD	:	0.006
Bi	< LOD	:	0.010
Pb	< LOD	:	0.020
Se	< LOD	:	0.012
W	< LOD	:	0.115
Zn	< LOD	:	0.042
Cu	0.452	±	0.122
Ni	7.838	±	0.377
Co	< LOD	:	0.644
Fe	70.827	±	0.586
Mn	1.769	±	0.269
Cr	18.335	±	0.340
V	< LOD	:	0.160
Ti	< LOD	:	0.188

Sergio Morales



Date: 23-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu