



TECNICOS TUBULARES, S.A. DE C.V.
ARRAYANES LOTE 4, MANZANA 14.
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TUBOSCOPE VETCO INT'L - MEXICO

FINAL INSPECTION REPORT

Report No. VER-035-02

Issued on: MAY. 29, 2002

Inspection Period: APRIL 09 to
MAY. 04, 2002

Customer P.O.: TAMSA PO: Tenaris No 52008 (RFP 128)
Customer I.O.: 4500121804 / 04 / 02 / 2002

Customer

Address P.O. BOX 60, 4033 FORUS, NORWAY

Vendor/Subvendor Location Order No.

Manufacturer TAMSA MILL Location VERACRUZ, MEX. Order No. 51038

TVI Project No: 4500121804/ 04/ 02/ 2002 Inspector A. FRIAL, O. BERMUDEZ, E. ROJAS, R. CONTRERAS

Scope of Delivery

Item No.	Quantity	Subject
RFP 128	480 JTS. 6,114.990 MTS. 20,062.303 FT. 484.063 M. TON	NEW SEAMLESS CSG. 9 5/8", 53.50 LBS./ FT. , L-80-1, HYD-563, RANGE 3 (RESTRICTED) THIS MATERIAL WAS MANUFACTURED ACCORDING TO API 5CT SIXTH EDITION APRIL 15, 1999, AND QUALITY CONTROL PLAN N° 1543 REV.1 and HYDRIL QUALITY PLAN NO. 230 / 02 REV. C

For Customer's Internal purpose:

Copy in compliance with
ORIGINAL



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TAMSA PO: Tenaris No. 52008 (RFP 128) Customer P.O.: Customer I.O.: 4500121804 / 04 / 02 / 2002
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I. MILL SURVEILLANCE

1-. SCOPE OF WORK:

- MILL SURVEILLANCE AS PER QUALITY PLAN 1543 REV. 1, HYDRIL'S QP 230/02 REV. C AND SCOPE OF WORK AS PER SERVICE AGREEMENT C31512
- RELEASE NOTE FOR SHIPMENT
- FINAL INSPECTION REPORT
- LOADING SUPERVISION

2. RESULTS OF INSPECTION:

2.1. MANUFACTURING PROCESS

2.1.1. Rolling process was first witnessed on initial operation then randomly monitored verifying dimensions on O.D. and wall thickness. The seamless pipes supplied for this order were made by the piercing and retained mandrel MPM (Multistand Pipe Mill) process. Bars used for the pipes are API grade L-80 type 1.

2.1.2. HEAT TREATMENT

Pipes and couplings were quenched and tempered. Heat treatment process was randomly witnessed and reviewed charts on every visit. Observed quenching temperatures were 890°C, +/- 10°C (1,634 °F) and tempering at 655 °C, +/- 10 °C (1,211 °F). Final pipe outside diameter after re-sizing was also verified and found to be within API specifications

3 -Lengths were re-processed in heat treatment (2- jts. from heat 95602 & 1- jt. from heat 95572) for temperature variations. Mechanical test was witnessed and found acceptable for grade L-80-1.

2.1.3. CHEMICAL COMPOSITION

Chemical analysis of round bars for each heat used in the manufacture of pipes has been controlled according to requirements of API 5CT and Tamsa's instructions T.I.N. NC-031. Analysis was reviewed for ladle and product, which were accepted by TVI Inspector. Chemical analysis of coupling materials under heats 94511 were provided by Hydril for review and were found to comply with API grade L-80-1.



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2.1.5. PHYSICAL PROPERTIES

Sample selection after heat treatment was carried out by Tamsa at the presence of TVI-Inspector. Machining of test samples were monitored for conformance to API. Mechanical testing for tensile/yield and hardness were witnessed and obtained results reviewed and endorsed for acceptance by TVI-Inspector.

MTC no. 2002902, dated Mar. 2, 2002 for Hydril's couplings were provided for review and accepted in compliance to API for L-80-1 grade. Coupling stocks were manufactured by Tamsa.

2.2. IDENTIFICATION AND NON-DESTRUCTIVE TESTING

2.2.1. TRACEABILITY

Traceability in the mill was by heat basis and according to T.I.N. PF-001 of Tamsa's procedures in compliance to API 5CT.

2.2.2. NDT INSPECTION (MILL ANALOG)

Pipe Body: Tubular goods were inspected plain end before cropping ends according to T.I.N. NC-022, and API Spec. 5CT, for Full Length Electromagnetic Inspection and wall thickness verification with the "WALL MONITOR". Inspection was first witnessed on initial calibration process then randomly monitored finding acceptance criteria in accordance to Spec. 5CT. Test joint O.D. notches were cut 10% of nominal wall both transverse and longitudinal plus a drilled 1/8" hole, which were verified and accepted. Random check on dimensions of pipes like O.D. and wall thickness was found to comply with API. NDE system capability on drilled hole vs. internal notch was reviewed and accepted.

2.2.3. END CUTTING AND DIMENSIONAL INSPECTION (Drifting, O.D. and Wall Thickness Verifications and Check on Straightness):

DIMENSIONAL:

Pipes are furnished in size, wall thickness, and weight as per P.O. Spec. 5CT.

MEASUREMENTS IN INCHES-FT.

	<u>WALL THICK</u>	<u>PIPE O.D.</u>	<u>LENGTH</u>
MIN. SPEC.	0.477"	9.577"	36'
NOM.	0.545"	9.625"	---
MAX. SPEC.	---	9.721"	42.70'
FOUND	IN TOLERANCE	IN TOLERANCE	IN TOLERANCE



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FULL LENGTH DRIFT TESTING ALTERNATE DRIFT SIZE:

Drift testing process was first witnessed in the beginning then monitored in compliance to SPEC. 5CT. Random check on drift dimensions were found to comply with specifications.

	<u>O.D.</u>	<u>MIN.LENGTH</u>
SPEC.	8.500"	12.00"
FOUND	IN TOLERANCE	IN TOLERANCE

2.3. HYDROSTATIC TEST

Hydrostatic testing was witnessed and found each length of casing supplied in this order tested in plain end condition at min. 7,200 PSI and held min. of 5 secs. according to API Spec. 5CT and T.I.N. NC-030. Test was found recorded in a calibrated chart recorder and pressure gauge with a valid calibration at the time of the test. Charts were reviewed and accepted.

2.4. THREADING PROCESS

- 2.4.1. Couplings were threaded and inspected according to HYD-563 specific manufacturing drawings. Supplementary requirement SR-14 for MPI (WET) inspection was performed after threading. All couplings were phosphated according to Hydril procedures AC-07 and painted outside diameter with a Red and Brown paint band.

Pipes were threaded in accordance to HYD-563 specific premium thread procedures. Pertinent gauges were checked for proper calibration, which were found valid at the time of inspection. Threading and inspection process was first witnessed verifying compliance to parameters of HYD 563 threads of Hydril and QP 230/02 Rev. C.

- 2.4.2. Special end area inspection (SEA) wet type for transverse and longitudinal defects on threaded ends were monitored. Process was found satisfactory.

2.5. COUPLING MAKE-UP, PLUS END AREA DRIFT TEST:

Coupling production were first witnessed then randomly monitored and were found to comply with Hydril's specification for HYD 563. Finished couplings were inspected as per SR-14 for wet MPI before installation. Couplings were found torqued in accordance with Hydril Procedures. Mill ends after make-up were end drifted with mandrel, 8.500" O.D x 12.0" in length.



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TORQUE VALUES SPEC. FOUND	MINIMUM 26,000 FT-LB IN TOLERANCE	MAXIMUM 30,000 FT-LB IN TOLERANCE
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2.6. THREAD COMPOUND AND PROTECTOR:

API thread compound was applied on engaged threads and Kendex storage dope was applied on exposed threads. Composite type, closed end without ventilation hole and non-liftable thread protectors were installed.

2.7. WEIGHING MEASUREMENTS AND MARKINGS:

Weighing and measurements were randomly monitored and found in accordance to T.I.N. NC-021/NC-027 and API 5CT. Markings were done as per SPEC. 5CT and as per purchase order for shipping marks:

ESSO NORWAY CONTRACT NO.46000372 RFP 128

2.8. PROTECTIVE COATING

Standard mill varnish was applied externally on all pipes for temporary protection against rust. Random check on varnish application was found acceptable.

II.- TAMSA MILL ATTENDANCE ACCEPTANCE / REJECTION

PROCESS	INSPECTED	ACCEPTED	SCRAPPED	REPAIRED
ROLLING	503	503		
HEAT TREATMENT	506	503		(a) 3 REPROCESSED
EMI MILL	498	498		
HYDROTEST	498	498		
DRIFTING	498	498		
COUPLING PRODUCTION	488	483	5	
THREADING	498	480		18 (b)
MARKING & VARNISH	480	480		

NOTES:

- 3 -Lengths were re-processed in heat treatment (2- jts. from heat 95602 & 1- jt. from heat 95572) for temperature variations. Mechanical test was witnessed and found acceptable for grade L-80-1.
- 18 -Lengths were repaired on ends by re-threading for pitch diameter, seal dimensions and stepped threads.



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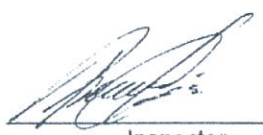
480 - Total lengths were shipped in vessel "FRIGGA" with 20,062.303 Ft. or 6,114.990 mts. and 484.063 metric tons, which left Veracruz port last MAY. 10, 2002.

ATTACHMENTS:

- Mill Test Certificates
- Release note for Shipment
- Packing list
- Loading supervision report with photos.

Copy in compliance with
ORIGINAL


Inspector
ALAN FRIAL


Inspector
RAMON CONTRERAS


Inspector
OMAR BERMUDEZ S.


Inspector
ENRIQUE ROJAS P.

MILL TEST CERTIFICATE

Tubos de Acero de México, S.A.
Km 433.7 Carr. México-Veracruz
Via Xalapa
(91697) Veracruz, Ver. México
(52) 229 989 1100 tel
(52) 229 989 1120 fax

CLIENTE / PURCHASER		Confirmación de Venta / Sales Confirmation		Número / Number	Fecha / Date	Pág. / Page
Tipo de Tubo / Type of Pipe		Orden Cliente / Purchaser Order		02007133	20/05/2002	1/6
REVESTIMIENTO / CASING		Compañía de Inspección / Inspection Company		Inspector / Inspector		
Norma / Standard or Specification		TUBOSCOPE		- ALAN FRIAL		
API 5CT, APRIL 15, 1999		Grado de Acero / Steel Grade		HYDRIL 563		
Dimensiones / Dimensions		Cédula / Schedule		/ HYDRIL 563		
9-5/8 X 0.545 INCH		Peso Nominal / Nominal Weight		Superficie / Surface		
244.50 X 13.84 MM		53.50 LB/FT		BARNIZADO / VARNISHED		
		79.69 KG/M		Longitud / Length		
				36.00 / 42.70 FT		
				10.97 / 13.00 MTS		
				Cantidad / Quantities		
				480 Pzas / Pcs		

PRUEBAS DE TENSION / TENSILE TEST

Colada / Heat	Probeta / Sample	Característica de la Probeta / Specimen Characteristics						Temp de Ens / Temp	Fluencia / Yield Strength		Resistencia / Tensile Strength PSI	Relación F/R / Rate YS/UTS	Alargamiento / Elongation		Reducción de Área / Reduction of Area	Dureza / Hardness Tipo / Type
		Dimensiones / Dimensions			Sección / Area MM2	PSI	EUL 0.5 %		Lo MM	In 2 inches						
		Zona / Zone	Estado / State	Tipo / Type									Ori			
														TMin TMax LMin LMax	TMin TMax LMin LMax	
95571	00452	C/B	TR	Rec	L	37.80 x 14.30	540.54	TA		87,918.54	101,658.93	0.86	38			TECNICOS TUBULARES, S.A. DE C.V. TUBOSCOPE - VETULO INTL MEXICO DIVISION P.O. BOX 1112 VERACRUZ VER. MEXICO C.P. 91700
95571	00453	C/B	TR	Rec	L	38.40 x 13.90	533.76	TA		91,602.56	104,461.06	0.88	38			
95572	00450	C/B	TR	Rec	L	38.00 x 13.40	509.20	TA		86,325.46	100,791.26	0.86	38			
95572	00451	C/B	TR	Rec	L	38.30 x 13.70	524.71	TA		89,582.75	103,095.55	0.87	36			
95572	00516	C/B	TR	Rec	L	37.80 x 13.40	506.52	TA		84,661.25	98,743.01	0.86	38			
95573	00446	C/B	TR	Rec	L	38.30 x 13.60	520.88	TA		86,766.40	101,246.43	0.86	39			
95573	00447	C/B	TR	Rec	L	38.50 x 14.40	554.40	TA		91,360.75	103,394.26	0.88	37			
95575	00454	C/B	TR	Rec	L	37.80 x 13.70	517.86	TA		91,431.87	104,318.82	0.88	37			
95575	00648	C/B	TR	Rec	L	38.00 x 13.60	516.80	TA		90,806.02	104,489.50	0.87	37			
95575	00649	C/B	TR	Rec	L	38.00 x 13.90	528.20	TA		91,204.29	104,389.94	0.87	37			
95575	00650	C/B	TR	Rec	L	38.00 x 13.50	513.00	TA		90,094.82	102,540.82	0.88	38			
95602	00448	C/B	TR	Rec	L	37.90 x 13.50	511.65	TA		80,849.22	98,970.59	0.82	36			
95602	00449	C/B	TR	Rec	L	38.10 x 13.50	514.35	TA		84,590.13	99,539.55	0.85	38			
95602	00517	C/B	TR	Rec	L	37.90 x 13.50	511.65	TA		81,987.14	96,723.20	0.85	40			

ENSAYOS TECNOLOGICOS / TECHNOLOGICAL TEST

Aplastamiento / Flattening Test	Curvado / Bend Test	Abocardado / Flaring Test	Pestañado / Flange Test	Anillo Extendido / Ring Expanding Test	Tracción de Anillo / Ring Tensile Test
N/A	N/A	N/A			
C/B = Cuerpo / Body L = Longitudinal / Longitudinal Tr = Probeta tratada en laboratorio / Specimen with heat treatment at laboratory Min = Mínimo / Minimum LMin = Longitudinal Mínimo / Longitudinal Minimum	R/U = Recalque / Upset T = Transversal / Transverse TR = Templado y Revenido / Quenched and Tempered Max = Máximo / Maximum LMax = Longitudinal Máximo / Longitudinal Maximum		Rec = Rectangular / Strip specimen 1-API 2=ISO 3=ASTM 4=DN 5=AFNOR 6=UNI N = Normalizado / Normalized	Cil = Cilíndrica / Round bar specimen A = Recocido / Annealed	NR = Normalizado y Revenido / Normalized and Tempered SR = Relevado de Esfuerzo ST = Sin Tratamiento / As / Stress Relief N/A=No Aplica / Does Not Apply
Este documento certifica que los productos descritos aquí fueron manufacturados, probados y/o inspeccionados de acuerdo con la especificación de referencia y satisfacen los correspondientes requerimientos. Este certificado es válido con firma electrónica. En el certificado original el logotipo Tamsa (verde) está impreso en la hoja. En caso de que el poseedor del certificado entregue una fotocopia del mismo, deberá garantizar la conformidad con el original, y se hace responsable por cualquier uso ilegal o indebido. Cualquier alteración o falsificación de este documento será sancionada. This is to certify that the products described here in were manufactured, sampled, tested, and/or inspected in accordance with the specification referenced and meets the requirements in all respects. This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trademark green coloured Tamsa is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one, being upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.					



Tenaris Group

MILL TEST CERTIFICATE

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CLIENTE / PURCHASER		Confirmación de Venta / Sales Confirmation		Número / Number	Fecha / Date	Pág / Page
Tipo de Tubo / Type of Pipe		043519/01		02007133	20/05/2002	3/6
REVESTIMIENTO / CASING		SEAMLESS		Inspector / Inspector		
Norma / Standard or Specification		TUBOSCOPE		Company - ALAN FRIAL		
API 5CT, APRIL 15, 1999		Grado de Acero / Steel Grade		Extremos / Ends		
		L80 1		HYDRIL 563 / HYDRIL 563		
Dimensiones / Dimensions		Cédula / Schedule		Superficie / Surface		
9-5/8 X 0.545 INCH		Peso Nominal / Nominal Weight		BARNIZADO / VARNISHED		
244.50 X 13.84 MM		53.50 LB/FT				
		79.69 KG/M				
		Longitud / Length		Cantidad / Quantities		
		36.00 / 42.70 FT		480 Pzas / Pcs		
		10.97 / 13.00 MTS				

ENSAYOS DE DUREZAS / HARDNESS TEST

Colada / Heat	Probeta / Sample	Lecturas Obtenidas / Obtained Readings					Colada / Heat	Probeta / Sample	Lecturas Obtenidas / Obtained Readings					
		1	2	3	P/A	Var			1	2	3	P/A	Var	
Cuadrante / Quadrant	1	DE / OD	17.4	16.9	17.1	17.1	Cuadrante / Quadrant	1	DE / OD	16.1	16.5	18.4	17.0	
		C / MW	18.6	18.8	18.4	18.6			C / MW	18.3	19.2	18.7	18.7	
		DI / ID	16.2	17.2	16.9	16.8			1.8	DI / ID	17.1	18.2	16.8	17.4
		HRC								HRC				
REQUERIDO / REQUIRED		Min	Max	P/A	Var	REQUERIDO / REQUIRED		Min	Max	P/A	Var			
HRC			23.00			HRC			23.00					

Colada / Heat	Probeta / Sample	Lecturas Obtenidas / Obtained Readings					Colada / Heat	Probeta / Sample	Lecturas Obtenidas / Obtained Readings					
		1	2	3	P/A	Var			1	2	3	P/A	Var	
Cuadrante / Quadrant	1	DE / OD	18.3	18.1	17.7	18.0	Cuadrante / Quadrant	1	DE / OD	16.1	16.5	18.4	17.0	
		C / MW	19.1	19.5	20.1	19.6			C / MW	18.3	19.2	18.7	18.7	
		DI / ID	18.4	18.6	18.3	18.4			1.5	DI / ID	17.1	18.2	16.8	17.4
		HRC								HRC				
REQUERIDO / REQUIRED		Min	Max	P/A	Var	REQUERIDO / REQUIRED		Min	Max	P/A	Var			
HRC			23.00			HRC			23.00					

Colada / Heat	Probeta / Sample	95572	Lecturas Obtenidas / Obtained Readings					95573	Colada / Heat	Probeta / Sample	95575	Lecturas Obtenidas / Obtained Readings							
			1	2	3	P/A	Var					1	2	3	P/A	Var	1	2	3
Cuadrante / Quadrant	1	DE / OD	16.6	16.6	16.6	16.6	16.6		DE / OD	18.3	18.6	18.6	18.5		DE / OD	16.7	16.5	17.5	17.5
		C / MW	18.0	17.8	17.6	17.8		C / MW	20.0	20.0	20.0	20.0		C / MW	19.4	19.0	18.3	18.9	
		DI / ID	16.8	16.1	17.0	16.6	1.2	DI / ID	18.7	18.4	18.6	18.6	1.5	DI / ID	18.0	18.1	17.6	17.9	
		HRC						HRC						HRC					
REQUERIDO / REQUIRED			Min	Max	P/A	Var		REQUERIDO / REQUIRED	Min	Max	P/A	Var		REQUERIDO / REQUIRED	Min	Max	P/A	Var	
HRC				23.00				HRC			23.00			HRC			23.00		

NOTES:	P/A = Promedio / Average	Var = Variación / Variation	Min = Mínimo / Minimum	Max = Máximo / Maximum
	DE/OD = Diámetro Exterior / Outside Diameter	C/MW = Centro / Mid Wall	DI/ID = Diámetro Interior / Internal Diameter	N/A = No Aplica / Does Not Apply

Este documento certifica que los productos descritos aquí fueron manufacturados, probados y/o inspeccionados de acuerdo con la especificación de referencia y sellados por los correspondientes inspectores. Este certificado es emitido mediante un sistema computarizado y es válido con firma electrónica. En el certificado original el logotipo Tenaris (verde) está impreso en la hoja. En caso de que el poseedor del certificado entregue una fotocopia del mismo, deberá garantizar la conformidad con el original, y se debe sellar con la firma electrónica. This is to certify that the products described here in were manufactured, sampled, tested, and/or inspected in accordance with the specification referenced and meets the requirements in all respects. This certificate is issued by a computerized system. On the original certificate the trade-mark green coloured Tenaris is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one, taking upon himself the responsibility for any re-label or not allowed use. Any alteration and/or falsification will be subjected to the law.

DICA 777 04 0

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TUBOSCOPE - VETCO INTL
MEXICO DIVISION
P.O. BOX 1112 VERACRUZ VER.
MEXICO C.P. 91700



Tamsa

fenaris Group

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MILL TEST CERTIFICATE

CLIENTE / PURCHASER		Confirmación de Venta / Sales Confirmation		Número / Number	Fecha / Date	Pág / Page
		043519/01		02007133	20/05/2002	4/6
Tipo de Tubo / Type of Pipe			Orden Cliente / Purchaser Order			
REVESTIMIENTO / CASING			TUBOSCOPE			
Norma / Standard or Specification			Extremos / Ends			
API 5CT, APRIL 15, 1999			HYDRIL 563 / HYDRIL 563			
Dimensiones / Dimensions			Superficie / Surface			
9-5/8 X 0.545 INCH			BARNIZADO / VARNISHED			
244.50 X 13.84 MM			Cantidades / Quantities			
			480 Pzas / Pcs			
Cédula / Schedule			Grado de Acero / Steel Grade			
			L80 1			
Peso Nominal / Nominal Weight			Longitud / Length			
53.50 LB/FT			36.00 / 42.70 FT			
79.69 KG/M			10.97 / 13.00 MTS			

ENSAYOS DE DUREZAS / HARDNESS TEST

Colada / Heat	95575	Lecturas Obtenidas / Obtained Readings			95575	Lecturas Obtenidas / Obtained Readings			95602	Lecturas Obtenidas / Obtained Readings		
		1	2	3		1	2	3		1	2	3
Probeta / Sample	00648	14.8	16.6	15.8	00650	16.5	17.9	17.0	00448	15.4	14.5	14.7
Cuadrante / Quadrant	DE / OD	14.8	16.6	15.8	DE / OD	16.5	17.9	17.0	DE / OD	15.4	14.5	14.7
1	C / MW	16.6	17.1	17.2	C / MW	17.0	17.9	17.8	C / MW	15.3	15.9	15.8
HRc	DI / ID	15.7	17.4	16.4	DI / ID	17.0	17.0	17.4	DI / ID	16.7	16.7	16.6
REQUERIDO / REQUIRED		Min	Max	P/A	REQUERIDO / REQUIRED	Min	Max	P/A	REQUERIDO / REQUIRED	Min	Max	P/A
HRc		23.00			HRc	23.00			HRc	23.00		

Colada / Heat	95575	Lecturas Obtenidas / Obtained Readings			95575	Lecturas Obtenidas / Obtained Readings			95602	Lecturas Obtenidas / Obtained Readings		
		1	2	3		1	2	3		1	2	3
Probeta / Sample	00517	15.3	15.3	15.6	00517	15.3	15.3	15.6	00517	15.3	15.3	15.6
Cuadrante / Quadrant	DE / OD	15.3	15.3	15.6	DE / OD	15.3	15.3	15.6	DE / OD	15.3	15.3	15.6
1	C / MW	16.0	16.2	15.8	C / MW	16.0	16.2	15.8	C / MW	15.8	15.8	15.8
HRc	DI / ID	15.1	15.1	15.4	DI / ID	15.1	15.1	15.4	DI / ID	15.1	15.1	15.4
REQUERIDO / REQUIRED		Min	Max	P/A	REQUERIDO / REQUIRED	Min	Max	P/A	REQUERIDO / REQUIRED	Min	Max	P/A
HRc		23.00			HRc	23.00			HRc	23.00		

NOTES:	P/A = Promedio / Average	Var = Variación / Variation	Min = Mínimo / Minimum	Max = Máximo / Maximum
	DE/OD = Diámetro Exterior / Outside Diameter	CMW = Centro / Mid Wall	DI/ID = Diámetro Interior / Internal Diameter	N/A = No Aplica / Does Not Apply

Este documento certifica que los productos descritos aquí fueron manufacturados, probados y/o inspeccionados de acuerdo con la especificación de referencia y satisfacen los correspondientes requerimientos. Este certificado se emite mediante un sistema computarizado y es válido con firma electrónica. En el certificado original el logotipo Tamsa (verde) está impreso en la hoja. En caso de que el proveedor del producto no sea Tamsa, este certificado no es válido. Cualquier alteración o falsificación será sujeta a la ley. This is to certify that the products described here in were manufactured, sampled, tested, and/or inspected in accordance with the specification reference. On the original certificate the trade-mark green coloured Tamsa's is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one, taking upon himself the responsibility for any alteration and/or falsification will be subjected to the law.

DICA 777 04 0

TECNICOS TUBULARES, S.A. DE C.V.
TUBOSCOPE - VETCO INTL
MEXICO DIVISION
P.O. BOX 1112 VERACRUZ VER
MEXICO C.P. 91700



Tenaris Group

MILL TEST CERTIFICATE

Tubos de Acero de México, S.A.
Km 433.7 Carr. México-Veracruz
Vía Xalapa
(91697) Veracruz, Ver. México
(52) 229 989 1100 tel
(52) 229 989 1120 fax

CLIENTE / PURCHASER		Confirmación de Venta / Sales Confirmation		Número / Number	Fecha / Date	Pág. / Page
Tipo de Tubo / Type of Pipe		043519/01		02007133	20/05/2002	5/6
REVESTIMIENTO / CASING		TUBOSCOPE		Inspector / Inspector		
Norma / Standard or Specification		TUBOSCOPE		Compañía de Inspección / Inspection Company		
API 5CT, APRIL 15, 1999		Extremos / Ends		- ALAN FRIAL		
Dimensiones / Dimensions		Grado de Acero / Steel Grade		Superficie / Surface		
9-5/8 X 0.545 INCH		L80 1		HYDRIL 563 / HYDRIL 563		
244.50 X 13.84 MM		Peso Nominal / Nominal Weight		BARNIZADO / VARNISHED		
		53.50 LB/FT		Cantidad / Quantities		
		79.69 KG/M		480 Pzas / Pcs		

Fabricado por / Manufactured by Tamsa

Fabricación de acero / Steel making process Horno de Arco Eléctrico-Horno de Afinación-Máquina de Colada Continua. Acero calado con aluminio. / Electric Arc Furnace-Ladle Furnace-Continuous Casting Machine. Fully Killed Steel.

Fabricación de tubo / Pipe manufacturing process Laminado en caliente sin costura / Seamless hot rolled

Material libre de contaminación de Mercurio / Material free from Mercury contamination

No reparado por soldadura / No repair by welding

Tratamiento térmico / Heat treatment

Control no destructivo / Non destructive test

Método de inspección / Inspection method

Mandril Especial / Special Drift Diámetro / Diameter 215.90 MM / 8.500 INCH

Prueba hidráulica / Hydrostatic test pressure 7200 PSI 05 SEG / SEC

Longitud / Length 304.8 MM / 12.000 INCH

Notas / Notes

CERT: Q.

TECNICOS TUBULARES, S.A. DE C.V.
TUBOSCOPE - VETCO INTL
MEXICO DIVISION
P.O. BOX 1112 VERACRUZ VER
MEXICO C.P. 91700

Este documento certifica que los productos descritos aquí fueron manufacturados, probados y/o inspeccionados de acuerdo con la especificación de referencia y satisface los correspondientes requerimientos logísticos. Este certificado es emitido mediante un sistema computarizado y es válido con firma electrónica. En el certificado original el logotipo Tenaris (verde) está impreso en la hoja. En caso de que el poseedor del certificado entregue una fotocopia del mismo, deberá garantizar la conformidad con el original, y se le recomienda que lo compare con el original. Cualquier alteración o falsificación será sujeta a la ley. This is to certify that the products described here in were manufactured, sampled, tested, and/or inspected in accordance with the specification referenced and meets the requirements in all respects. This certificate is issued by a computerized system and is valid with electronic signature. On the original certificate the trade-mark green coloured Tenaris is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one, taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.

DICA 777 04 0

MILL TEST CERTIFICATE

Tubos de Acero de México, S.A.
Km 433 7 Carr. México-Veracruz
Vía Xalapa
(91697) Veracruz, Ver. México

(52) 229 989 1100 tel
(52) 229 989 1120 fax

CLIENTE / PURCHASER		Confirmación de Venta / Sales Confirmation		Número / Number	Fecha / Date	Pág / Page
		043519/01		02007133	20/05/2002	6/6
Tipo de Tubo / Type of Pipe		Orden Cliente / Purchaser Order	Compañía de Inspección / Inspection Company		Inspector	
REVESTIMIENTO / CASING		TUBOSCOPE		- ALAN FRIAL		
Norma / Standard or Specification		Extremos / Ends				
API 5CT, APRIL 15, 1999		HYDRIL 563				
Dimensiones / Dimensions		Grado de Acero / Steel Grade	Superficie / Surface		Cantidades / Quantities	
9-5/8 X 0.545 INCH		L80 1	BARNIZADO / VARNISHED		480 Pzas / Pcs	
244.50 X 13.84 MM		Peso Nominal / Nominal Weight	Longitud / Length			
		53.50 LB/FT	36.00 / 42.70 FT			
		79.69 KG/M	10.97 / 13.00 MTS			

Notas / Notes

MARCADURAS / MARKING:
MASCARILLA DE TUBO ESTARCIDO / PIPE STENCIL:
= ! TAMSA SCT-0124 ? #FE2 \$ 9-5/8 53.50 L S S1 ST D 8.500 HEAT #C**** O.P 51038 / #N***** #P*** FT HABILITADA MADE IN MEXICO
Donde/Where:
! : Monograma TAMSA/TAMSA Monogram
#C****: Numero de colada / Heat number
#FE2: Fecha de Fabricación / Manufacturing Date
#N*****: Número de secuencia / Pipe number
#P***: Longitud de tubo en Fts / Pipe length in Fts.
\$: Símbolo UF / UF Symbol
=: Numero de cuadrilla / Shift number
?: Monograma API/API Monogram
HABILITADA: ESSO NORWAY CONTRACT NO. 46000372 RFP 128

HEAT	PCS	FT	MTS	TONS
95571	26	1,079.987	329.180	26.130
95572	143	5,983.104	1,823.650	144.616
95573	138	5,773.360	1,759.720	139.378
95575	51	2,124.836	647.650	51.072
95602	122	5,101.017	1,554.790	122.867

Copy in compliance with
ORIGINAL

Certificate reviewed
TECNICOS TUBULARES, S.A. DE C.V.
TUBOSCOPE - VETCO INTL
Insp. No.: 13
Sign: *[Signature]*
Date: May 21, 2002

TAMSA REF: 000051038
Fin del Informe / End of Report

ING. SARA GARCIA PAJARES
CERTIFICACION DE CALIDAD NOMBRE Y FIRMA /
QUALITY CERTIFICATION NAME AND SIGNATURE

Este documento certifica que los productos descritos aquí fueron manufacturados, probados y/o inspeccionados de acuerdo con la especificación de referencia y satisfacen los correspondientes requerimientos. Este certificado es emitido mediante un sistema computarizado y es válido con firma electrónica. En el certificado original el logotipo Tenaris (verde) está impreso en la hoja. En caso de alteración o falsificación, el certificado será sujeto a la ley. This is to certify that the products described here in were manufactured, sampled, tested and approved in accordance with the reference specification and meets the requirements in all respects. This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green coloured 'Tenaris' is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one, taking upon himself the responsibility for any fraud or not allowed use. Any alteration and/or falsification will be subjected to the law.