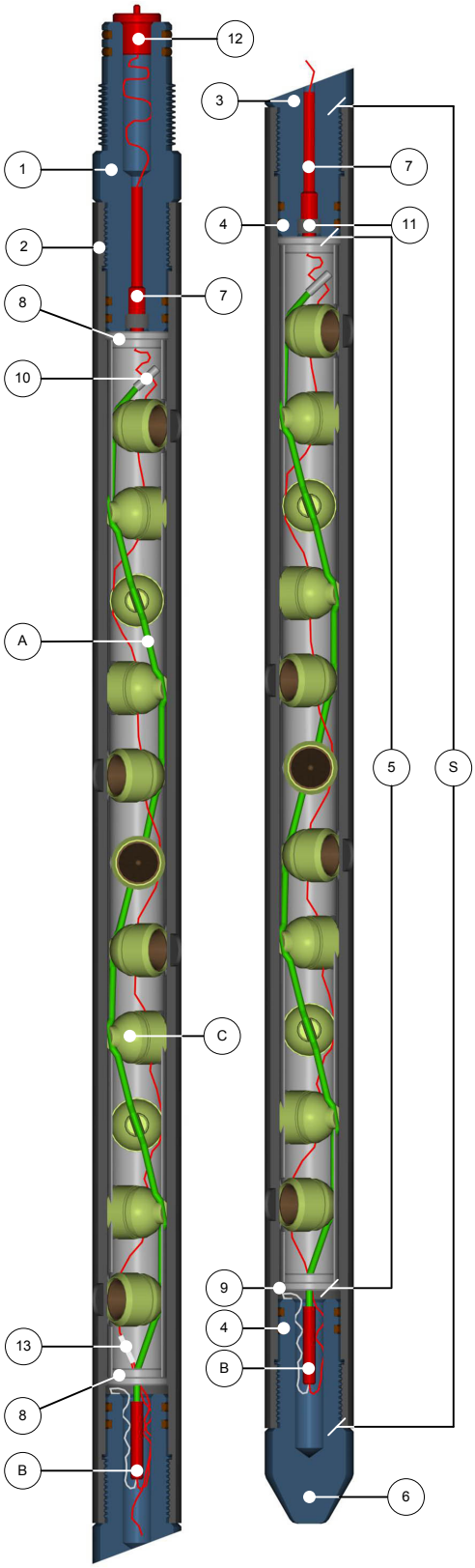
RETIEVABLE THROUGH TUBING GUN SYSTEM

1 9/16" Retrievable Through Tubing Gun
6 SPF 60º BOTTOM FIRE



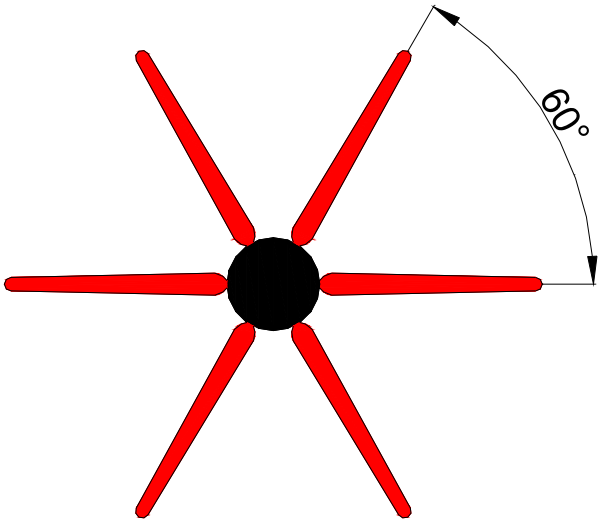
ITEM	Part Nbr.	DESCRIPTION
1	ERT-1563-001	Top Sub 1 9/16" For WL
2	ERT-1563-006	1 9/16" Scalloped Gun Body 21´, 6 SPF, 60º
	ERT-1563-007	1 9/16" Scalloped Gun Body 15´, 6 SPF, 60º
	ERT-1563-008	1 9/16" Scalloped Gun Body 11´, 6 SPF, 60º
	ERT-1563-009	1 9/16" Scalloped Gun Body 7´, 6 SPF, 60º
	ERT-1563-010	1 9/16" Scalloped Gun Body 4´, 6 SPF, 60º
3	ERT-1563-011	1 9/16" Tandem Sub
4	ERT-1563-016	O-rings Kit
5	ERT-1563-021	Loading tube 21´, 6 SPF, 60º
	ERT-1563-022	Loading tube 15´, 6 SPF, 60º
	ERT-1563-023	Loading tube 11´, 6 SPF, 60º
	ERT-1563-024	Loading tube 7´, 6 SPF, 60º
	ERT-1563-025	Loading tube 4´, 6 SPF, 60º
6	ERT-1563-026	1 9/16" Bull Plug
7	ERT-2000-031	Dart seal - Simultaneous firing mode
	ERT-2000-032	Diode assy. - Selective firing mode
8	ERT-1563-036	End Plates
9	ERT-1563-041	Snap Rings
10	ERT-1563-046	Detonating Cord End Cover
11	ERT-2000-033	Dart seal or Diode assy. Retainer Nut
12	ERT-2000-034	Lead wire assy w/contact spring
13	ERT-2000-035	Lead wire splice
A		40 Grains High Velocity Detonating Cord
C	RT37H	1 9/16" RTG, HMX
	RT37HBH	1 9/16" RTG, HMX BH
S	ERT-1563-061	Shipping Assy 21´, 6 SPF, 60º
	ERT-1563-062	Shipping Assy 15´, 6 SPF, 60º
	ERT-1563-063	Shipping Assy 11´, 6 SPF, 60º
	ERT-1563-064	Shipping Assy 7´, 6 SPF, 60º
	ERT-1563-065	Shipping Assy 4´, 6 SPF, 60º

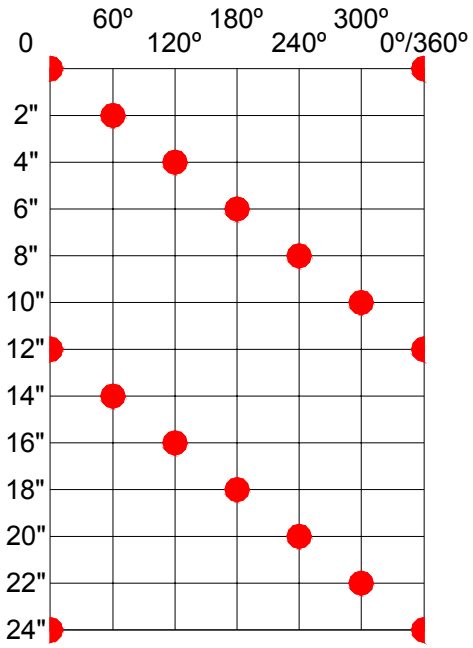
SYSTEM PRESSURE RATING 20,000 PSI

API RP 19B Certified

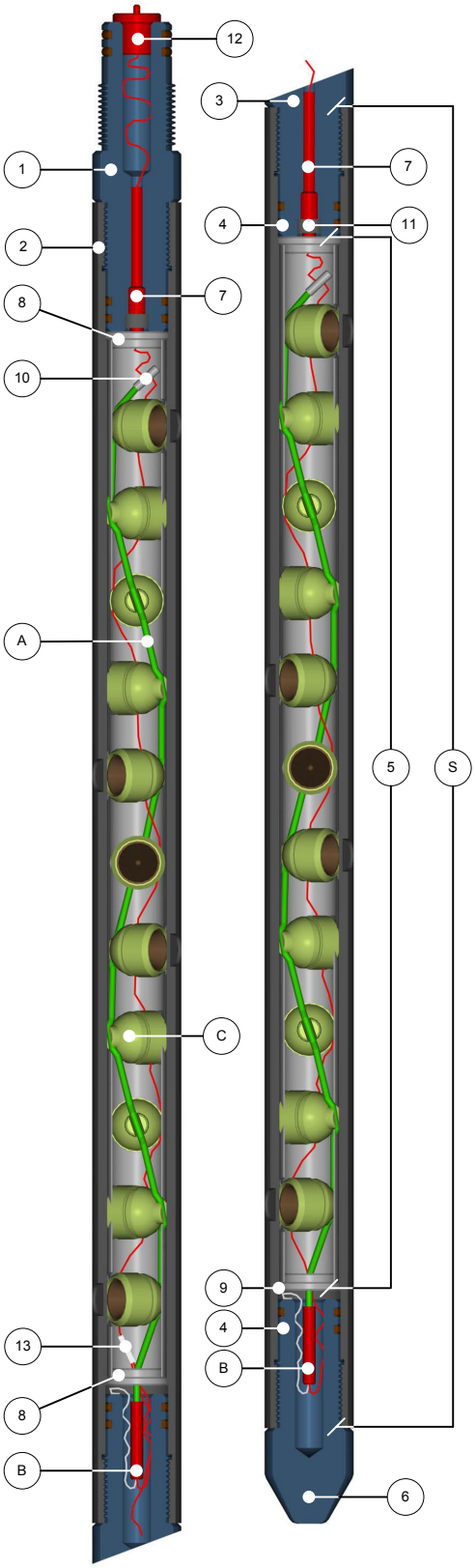
Explosivos Tecnológicos Argentinos Sociedad Anónima. Ruta 25 Km. 13 Pilar, Buenos Aires, Argentina Tel. +54 2322 494382
+54 2322 494311 +54 2322 494167 Fax. +54 2322 494165
www.etasa.com

6 SPF 60º





2" Retrievable Through Tubing Gun 6 SPF 60º
BOTTOM FIRE



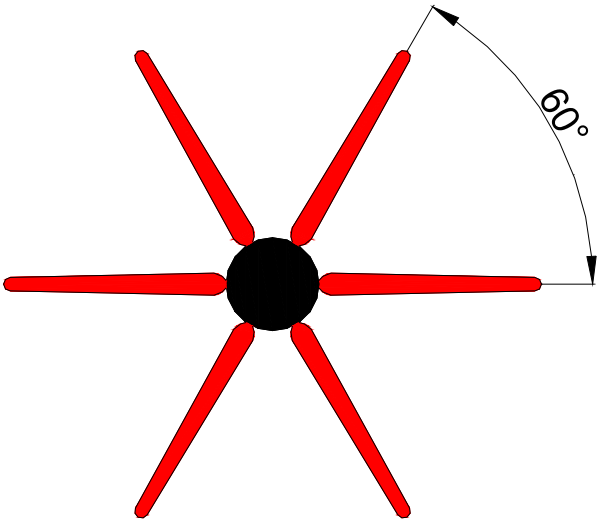
ITEM	Part Nbr.	DESCRIPTION
1	ERT-2000-001	Top Sub 2" For WL
2	ERT-2000-006	2" Scalloped Gun Body 21´, 6 SPF, 60º
	ERT-2000-007	2" Scalloped Gun Body 15´, 6 SPF, 60º
	ERT-2000-008	2" Scalloped Gun Body 11´, 6 SPF, 60º
	ERT-2000-009	2" Scalloped Gun Body 7´, 6 SPF, 60º
	ERT-2000-010	2" Scalloped Gun Body 4´, 6 SPF, 60º
3	ERT-2000-011	2" Tandem Sub
4	ERT-2000-016	O-rings Kit
5	ERT-2000-021	Loading tube 21´, 6 SPF, 60º
	ERT-2000-022	Loading tube 15´, 6 SPF, 60º
	ERT-2000-023	Loading tube 11´, 6 SPF, 60º
	ERT-2000-024	Loading tube 7´, 6 SPF, 60º
	ERT-2000-025	Loading tube 4´, 6 SPF, 60º
6	ERT-2000-026	2" Bull Plug
7	ERT-2000-031	Dart seal - Simultaneous firing mode
	ERT-2000-032	Diode assy. - Selective firing mode
8	ERT-2000-036	End Plates
9	ERT-2000-041	Snap Rings
10	ERT-2000-046	Detonating Cord End Cover
11	ERT-2000-033	Dart seal or Diode assy. Retainer Nut
12	ERT-2000-034	Lead wire assy w/contact spring
13	ERT-2000-035	Lead wire splice
A		40 Grains High Velocity Detonating Cord
C	RT36H	2" RTG, HMX
	RT36RBH	2" RTG BH RDX
S	ERT-2000-061	Shipping Assy 21´, 6 SPF, 60º
	ERT-2000-062	Shipping Assy 15´, 6 SPF, 60º
	ERT-2000-063	Shipping Assy 11´, 6 SPF, 60º
	ERT-2000-064	Shipping Assy 7´, 6 SPF, 60º
	ERT-2000-065	Shipping Assy 4´, 6 SPF, 60º

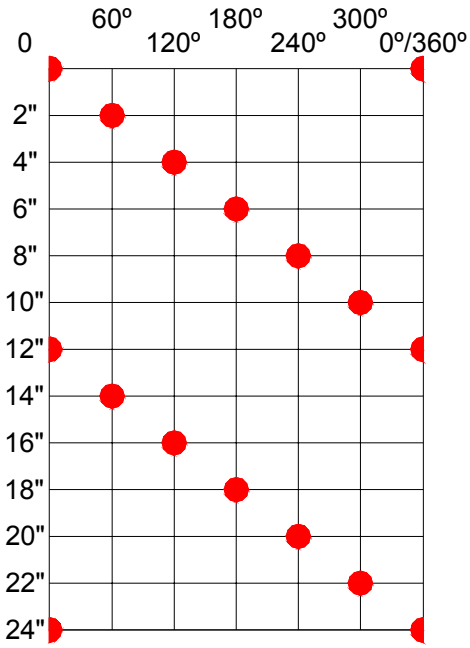
SYSTEM PRESSURE RATING 20,000 PSI

API RP 19B Certified

Explosivos Tecnológicos Argentinos Sociedad Anónima. Ruta 25 Km. 13 Pilar, Buenos Aires, Argentina Tel. +54 2322 494382
+54 2322 494311 +54 2322 494167 Fax. +54 2322 494165
www.etasa.com

6 SPF 60º





American Petroleum Institute

REGISTERED DATA SHEET PERFORATING SYSTEM EVALUATION, API RP 19B SECTION 1

Service Company: Available to all — Design Number

Gun OD & Trade Name: 1 9/16" RTTG 6 SPF 60°

Charge Name: 1 9/16" RTG HMX BH (DSC 04-07-40)

Manufacturer Charge Part No.: RT37HBH — Date of Manufacture: July 30th 2004

Gun Type: Retrievable Trough Tubing Gun 6 SPF 60°

Phasing Tested: 60 degrees, Firing Order: X Top Down, ____ Bottom Up

Debris Description: Case Debris kept inside the gun after shooting

Remarks: * Gun OD after shooting 1.74 in.

Explosive Weight: 3.5 gm, HMX powder, Case Material: Steel

Max. Temp, °F: 400 — 1 hr ____ 3 hr ____ 24 hr ____ 100 hr ____ 200 hr

Maximum Pressure Rating: 20,000 psi, Carrier Material: Steel

Shot Density Tested: 6 Shots/ft

Recommended Minimum ID for Running: * in.

Available Firing Mode: ____ Selective, ____ Simultaneous

Debris Weight: N/A gm/charge, Debris: N/A in³/charge

SECTION 1 - CONCRETE TARGET

Casing Data: 2 7/8" OD, Weight: 6.4 lb/ft, L-80 API Grade, Date of Section 1 Test: August 30th 2004

Target Data: 40.5" OD, Amount of Cement: 1900 lb., Amount of Sand: 3800 lb., Amount of Water: 990 lb.

Date of Compressive Strength Test: August 31st 2004, Briquette Compressive Strength: 5861 psi, Age of Target: 31 days

Shot No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11
Clearance, in.	0.00	0.159	0.598	0.879	0.598	0.159	0.00	0.159	0.598	0.879	0.598
Casing Hole Diameter, Short Axis, in.	0.38	0.40	0.32	0.29	0.31	0.33	0.40	0.44	0.35	0.30	0.29
Casing Hole Diameter, Long Axis, in.	0.40	0.42	0.35	0.32	0.32	0.38	0.43	0.45	0.38	0.33	0.32
Average Casing Hole Diameter, in.	0.390	0.410	0.335	0.305	0.315	0.355	0.415	0.445	0.365	0.315	0.305
Total Depth, in.	4.749	3.999	4.249	4.499	3.999	4.749	3.749	4.749	4.249	4.499	3.749
Burr Height, in.	0.083	0.060	0.068	0.052	0.046	0.054	0.081	0.082	0.063	0.058	0.034

Shot No.	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	No. 21	No. 22	Average
Clearance, in.	0.159	0.00	0.159									0.353
Casing Hole Diameter, Short Axis, in.	0.37	0.041	0.38									0.355
Casing Hole Diameter, Long Axis, in.	0.38	0.044	0.40									0.380
Average Casing Hole Diameter, in.	0.375	0.425	0.390									0.368
Total Depth, in.	4.749	3.999	5.249									4.374
Burr Height, in.	0.093	0.058	0.034									0.062

WITNESSING INFORMATION

Date of Notice of Intent to Test: July 27th 2004 — Witnessed by: J. Smirnoff (API Certified)

Other Activities Witnessed: Target Pouring ____ Briquette: Preparation ____ Testing X Burr Height Measurement X Samples Taken: Concrete X Casing X

CERTIFICATION

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, First Edition, November 2000. All of the equipment used in these tests, such as the guns, jet charges detonator cord, etc., was standard equipment with our company for the use in the gun being tested and was not changed in any manner for the test. Furthermore, the equipment was chosen at random from stock and therefore will be substantially the same as the equipment, which would be furnished to perforate a well for any operator. The American Petroleum Institute neither endorses these test results nor recommends the use of the perforator system described.

X CERTIFIED BY ____ RECERTIFIED	T. A. S. A. (Company Official)	Perforating Provect Manager (Title)	Sept 1st 2004 (Date)	Explosivos Tecnologicos Argentinos S.A. (Company)	Ruta 25Km.13 Pilar- Bs.As. Argentina (Address)

MARIO E. LAYANZO
GERENTE PRODUCTO Y SISTEMAS
PERFORATING PROJECTS MANAGER

American Petroleum Institute

REGISTERED DATA SHEET PERFORATING SYSTEM EVALUATION, API RP 19B SECTION 1

Service Company: Available to all — Design Number

Gun OD & Trade Name: 1 9/16" RTTG 6 SPF 60°

Charge Name: 1 9/16" RTG HMX (DSC 02-12-24)

Manufacturer Charge Part No.: RT-37- H — Date of Manufacture: Dec 18th 2002

Gun Type: Retrievable trough tubing gun

Phasing Tested: 60 degrees, Firing Order: X Top Down, ____ Bottom Up

Debris Description: Case Debris kept inside the gun after shooting

Remarks: * Gun OD after shooting 1.74 in.

Explosive Weight: 3.5 gm, HMX powder, Case Material: Steel

Max. Temp, °F: 400 — 1 hr ____ 3 hr ____ 24 hr ____ 100 hr ____ 200 hr

Maximum Pressure Rating: 20.000 psi, Carrier Material: Steel

Shot Density Tested: 6 Shots/ft

Recommended Minimum ID for Running: * in.

Available Firing Mode: X Selective, X Simultaneous

Debris Weight: N/A gm/charge, Debris: N/A in³/charge

SECTION 1 - CONCRETE TARGET

Casing Data: 2 7/8" OD, Weight: 6.4 lb/ft, L-80 API Grade, Date of Section 1 Test: ____

Target Data: 54 ¾" OD, Amount of Cement: 3525 lb., Amount of Sand: 7050 lb., Amount of Water: 1833 lb.

Date of Compressive Strength Test: 01-20-2003, Briquette Compressive Strength: 6.922 psi, Age of Target: 31 days

Shot No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11
Clearance, in.	0.00	0.159	0.598	0.879	0.598	0.159	0.00	0.159	0.598	0.879	0.598
Casing Hole Diameter, Short Axis, in.	0.169	0.250	0.152	0.149	0.147	0.156	0.149	0.137	0.147	0.150	0.162
Casing Hole Diameter, Long Axis, in.	0.171	0.267	0.165	0.156	0.149	0.157	0.174	0.154	0.161	0.160	0.163
Average Casing Hole Diameter, in.	0.170	0.258	0.158	0.152	0.148	0.156	0.161	0.145	0.154	0.155	0.162
Total Depth, in.	9.52	8.146	11.896	12.271	9.396	9.396	9.771	9.646	8.146	11.521	8.521
Burr Height, in.	0.033	0.103	0.039	0.032	0.032	0.029	0.043	0.041	0.038	0.056	0.046

Shot No.	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	No. 21	No. 22	Average
Clearance, in.	0.159	0.00	0.159	0.598	0.879	0.598	0.159	0.00	0.159			0.366
Casing Hole Diameter, Short Axis, in.	0.154	0.158	0.160	0.157	0.158	0.162	0.160	0.163	0.150			0.160
Casing Hole Diameter, Long Axis, in.	0.170	0.180	0.180	0.167	0.160	0.180	0.165	0.170	0.170			0.171
Average Casing Hole Diameter, in.	0.162	0.169	0.170	0.162	0.159	0.171	0.162	0.166	0.160			0.165
Total Depth, in.	8.271	8.021	6.396	9.771	13.396	7.521	8.021	10.771	9.458			9.493
Burr Height, in.	0.021	0.033	0.038	0.041	0.032	0.029	0.040	0.036	0.038			0.040

WITNESSING INFORMATION

Date of Notice of Intent to Test: April 22th 2002 — Witnessed by: J. Smirnoff (API Certified)

Other Activities Witnessed: Target Pouring ____ Briquette: Preparation ____ Testing X Burr Height Measurement X Samples Taken: Concrete X Casing X

CERTIFICATION

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, First Edition, November 2000. All of the equipment used in these tests, such as the guns, jet charges detonator cord, etc., was standard equipment with our company for the use in the gun being tested and was not changed in any manner for the test. Furthermore, the equipment was chosen at random from stock and therefore will be substantially the same as the equipment, which would be furnished to perforate a well for any operator. The American Petroleum Institute neither endorses these test results nor recommends the use of the perforator system described.

X CERTIFIED BY	Oscar Migliorata	Explosives Plant Manager	Jan 20 th 2003	Explosivos Tecnologicos Argentinos S.A.	Ruta 25Km.13 Pilar- Bs.As. Argentina
____ RECERTIFIED	(Company Official)	(Title)	(Date)	(Company)	(Address)

American Petroleum Institute

REGISTERED DATA SHEET PERFORATING SYSTEM EVALUATION, API RP 19B SECTION 1

Service Company Available to all Design Number

Gun OD & Trade Name 2 " RTTG, BH HMX

Charge Name 2" RTG. BH HMX (DSC 04-07-39)

Manufacturer Charge Part No. RT 36 HBH Date of Manufacture July 28th 2004

Gun Type Retrievable Through Tubing Gun, 6 SPF 60°

Phasing Tested 60 degrees, Firing Order X Top Down, ____ Bottom Up

Debris Description N/A

Explosive Weight 6.5 gm, HMX powder, Case Material Steel

Max. Temp, °F 400 1 hr ____ 3 hr ____ 24 hr ____ 100 hr ____ 200 hr

Maximum Pressure Rating 20.000 psi, Carrier Material Steel

Shot Density Tested 6 Shots/ft

Recommended Minimum ID for Running * in.

Available Firing Mode ____ Selective, ____ Simultaneous

Debris Weight N/A gm/charge, Debris N/A in^3/charge

Remarks * Gun OD after shooting in liquid is 2.17In., in air 2.23In.

SECTION 1 - CONCRETE TARGET

Casing Data 3 1/2" OD, Weight 9.2 lb/ft, L-80 API Grade, Date of Section 1 Test August 30th 2004

Target Data 40" OD, Amount of Cement 1900 lb., Amount of Sand 3800 lb., Amount of Water 990 lb.

Date of Compressive Strength Test August 31st 2004, Briquette Compressive Strength 6105 psi, Age of Target 31 days

Shot No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11
Clearance, in.	0.00	0.180	0.656	0.953	0.656	0.180	0.00	0.180	0.656	0.953	0.656
Casing Hole Diameter, Short Axis, in.	0.40	0.43	0.40	0.38	0.41	0.40	0.39	0.42	0.44	0.38	0.37
Casing Hole Diameter, Long Axis, in.	0.46	0.47	0.41	0.40	0.44	0.47	0.42	0.44	0.47	0.41	0.40
Average Casing Hole Diameter, in.	0.430	0.450	0.405	0.390	0.425	0.435	0.405	0.430	0.455	0.395	0.385
Total Depth, in.	6.006	6.506	5.256	5.506	5.006	7.006	5.756	6.256	5.006	6.006	6.506
Burr Height, in.	0.081	0.073	0.068	0.062	0.059	0.071	0.053	0.042	0.069	0.088	0.045

Shot No.	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	No. 21	No. 22	Average
Clearance, in.	0.180	0.00	0.180									0.388
Casing Hole Diameter, Short Axis, in.	0.39	0.36	0.43									0.400
Casing Hole Diameter, Long Axis, in.	0.41	0.40	0.44									0.431
Average Casing Hole Diameter, in.	0.400	0.380	0.435									0.416
Total Depth, in.	5.756	5.506	5.756									5.845
Burr Height, in.	0.054	0.050	0.068									0.063

WITNESSING INFORMATION

Date of Notice of Intent to Test: July 27th 2004 Witnessed by: J. Smirnoff (API Certified)

Other Activities Witnessed: Target Pouring ____ Briquette: Preparation ____ Testing X Burr Height Measurement X Samples Taken: Concrete X Casing X

CERTIFICATION

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, First Edition, November 2000. All of the equipment used in these tests, such as the guns, jet charges detonator cord, etc., was standard equipment with our company for the use in the gun being tested and was not changed in any manner for the test. Furthermore, the equipment was chosen at random from stock and therefore will be substantially the same as the equipment, which would be furnished to perforate a well for any operator. The American Petroleum Institute neither endorses these test results nor recommends the use of the perforator system described.

X CERTIFIED BY ____ RECERTIFIED

P.T.A. S.A. (Company Official) Perforating Projects Manager (Title) Sept 1st 2004 (Date) Explosivos Tecnologicos Argentinos S.A. (Company) Ruta 25Km.13 Pilar- Bs.As. Argentina (Address)

MARIO E. LATTANZIO
GERENTE PRODUCTO Y SISTEMAS
PERFORATING PROJECTS MANAGER

American Petroleum Institute

REGISTERED DATA SHEET PERFORATING SYSTEM EVALUATION, API RP 19B SECTION 1

Service Company Available to all Design Number

Gun OD & Trade Name 2 " RTTG, HMX

Charge Name 2" RTG, HMX (DSC 03-02-19)

Manufacturer Charge Part No. RT 36 H Date of Manufacture Feb 06th 2003

Gun Type Retrievable Trough Tubing Gun, 6 SPF 60°

Phasing Tested 60 degrees, Firing Order X Top Down, ____ Bottom Up

Debris Description N/A

Explosive Weight 6.5 gm, HMX powder, Case Material Steel

Max. Temp, °F 400 1 hr ____ 3 hr ____ 24 hr ____ 100 hr ____ 200 hr

Maximum Pressure Rating 20.000 psi, Carrier Material Steel

Shot Density Tested 6 Shots/ft

Recommended Minimum ID for Running * in.

Available Firing Mode ____ Selective, ____ Simultaneous

Debris Weight N/A gm/charge, Debris N/A in^3/charge

Remarks * Gun OD after shooting in liquid is 2.17In., in air 2.23In.

SECTION 1 - CONCRETE TARGET

Casing Data 2 7/8" OD, Weight 6.4 lb/ft, L-80 API Grade, Date of Section 1 Test March 10th 2003

Target Data 54 ½" OD, Amount of Cement 3570 lb., Amount of Sand 7140 lb., Amount of Water 1856 lb.

Date of Compressive Strength Test March 10th 2003, Briquette Compressive Strength 5531 psi, Age of Target 31 days

Shot No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11
Clearance, in.	0.00	0.095	0.315	0.440	0.315	0.095	0.00	0.095	0.315	0.440	0.315
Casing Hole Diameter, Short Axis, in.	0.202	0.190	0.202	0.205	0.192	0.202	0.192	0.194	0.180	0.210	0.215
Casing Hole Diameter, Long Axis, in.	0.204	0.220	0.209	0.223	0.198	0.223	0.195	0.196	0.200	0.224	0.225
Average Casing Hole Diameter, in.	0.203	0.205	0.206	0.214	0.195	0.213	0.194	0.195	0.190	0.217	0.220
Total Depth, in.	20.723	19.723	20.723	18.973	18.973	18.223	18.223	18.473	19.535	19.723	19.598
Burr Height, in.	0.028	0.024	0.039	0.053	0.029	0.031	0.049	0.032	0.029	0.031	0.051

Shot No.	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	No. 21	No. 22	Average
Clearance, in.	0.095	0.00	0.095	0.315	0.440	0.315	0.095	0.00	0.095			0.194
Casing Hole Diameter, Short Axis, in.	0.204	0.206	0.212	0.205	0.223	0.210	0.207	0.210	0.196			0.203
Casing Hole Diameter, Long Axis, in.	0.228	0.216	0.218	0.216	0.230	0.212	0.213	0.215	0.230			0.215
Average Casing Hole Diameter, in.	0.216	0.211	0.215	0.211	0.227	0.211	0.210	0.213	0.213			**0.209**
Total Depth, in.	16.473	21.723	19.973	18.973	18.223	19.473	18.473	19.973	18.223			**19.219**
Burr Height, in.	0.030	0.028	0.035	0.038	0.049	0.020	0.032	0.053	0.021			0.035

WITNESSING INFORMATION

Date of Notice of Intent to Test: Jan 03rd 2003 Witnessed by: S. Smirnoff (API Certified)

Other Activities Witnessed: Target Pouring ____ Briquette: Preparation ____ Testing X Burr Height Measurement X Samples Taken: Concrete X Casing X

CERTIFICATION

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, First Edition, November 2000. All of the equipment used in these tests, such as the guns, jet charges detonator cord, etc., was standard equipment with our company for the use in the gun being tested and was not changed in any manner for the test. Furthermore, the equipment was chosen at random from stock and therefore will be substantially the same as the equipment, which would be furnished to perforate a well for any operator. The American Petroleum Institute neither endorses these test results nor recommends the use of the perforator system described.

X CERTIFIED BY ____ RECERTIFIED	DARIO E. LATTANZIO (Certifying Official)	Perforating Projects Manager (Title)	03/10/03 (Date)	Explosivos Tecnologicos Argentinos S.A. (Company)	Ruta 25Km.13 Pilar- Bs.As. Argentina (Address)

E.T.A. S.A.
GERENTE PRODUCTOS Y SISTEMAS
PERFORATING PROJECTS MANAGER

American Petroleum Institute

API Perforator Design Registration

REGISTERED DATA SHEET PERFORATING SYSTEM EVALUATION, API RP 19B SECTION 1

Service Company Available to SCHLUMBERGER Design Number

Gun OD & Trade Name 2 " Retrievable Thrugh Tubing Gun, UltraJet 2006 HMX

Charge Name UltraJet 2006, HMX (DSC 04-10-54)

Manufacturer Charge Part No. P447623 Date of Manufacture October 28th 2004

Gun Type Retrievable Through Tubing Gun, 6 SPF 60°

Phasing Tested 60 degrees, Firing Order X Top Down, ____ Bottom Up

Debris Description N/A

Explosive Weight 6.5 gm, HMX powder, Case Material Steel

Max. Temp, °F 400 1 hr ____ 3 hr ____ 24 hr ____ 100 hr ____ 200 hr

Maximum Pressure Rating 20.000 psi, Carrier Material Steel

Shot Density Tested 6 Shots/ft

Recommended Minimum ID for Running * in.

Available Firing Mode ____ Selective, ____ Simultaneous

Debris Weight N/A gm/charge, Debris N/A in^3/charge

Remarks * Gun OD after shooting in liquid is 2.17In., in air 2.23In.

SECTION 1 - CONCRETE TARGET

Casing Data 3 1/2" OD, Weight 9.2 lb/ft, L-80 API Grade, Date of Section 1 Test December 20th 2004

Target Data 45" OD, Amount of Cement 2450 lb., Amount of Sand 4900 lb., Amount of Water 1275 lb.

Date of Compressive Strength Test December 21st 2004, Briquette Compressive Strength 6050 psi, Age of Target 32 days

Shot No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11
Clearance, in.	0.00	0.180	0.656	0.953	0.656	0.180	0.00	0.180	0.656	0.953	0.656
Casing Hole Diameter, Short Axis, in.	0.22	0.20	0.20	0.19	0.20	0.23	0.23	0.23	0.22	0.22	0.22
Casing Hole Diameter, Long Axis, in.	0.23	0.25	0.20	0.23	0.23	0.25	0.24	0.25	0.24	0.23	0.25
Average Casing Hole Diameter, in.	0.230	0.225	0.200	0.210	0.215	0.240	0.230	0.240	0.230	0.225	0.235
Total Depth, in.	17.254	15.504	14.504	16.504	17.754	16.254	17.754	15.754	17.504	17.004	16.004
Burr Height, in.	0.026	0.052	0.041	0.015	0.026	0.042	0.050	0.048	0.032	0.035	0.05

Shot No.	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	No. 21	No. 22	Average
Clearance, in.	0.180											0.438
Casing Hole Diameter, Short Axis, in.	0.25											0.217
Casing Hole Diameter, Long Axis, in.	0.27											0.240
Average Casing Hole Diameter, in.	0.260											**0.228**
Total Depth, in.	17.254											**16.587**
Burr Height, in.	0.043											0.038

WITNESSING INFORMATION

Date of Notice of Intent to Test: November 15th 2004 Witnessed by: J. Smirnoff (API Certified)

Other Activities Witnessed: Target Pouring ____ Briquette: Preparation ____ Testing X Burr Height Measurement X Samples Taken: Concrete X Casing X

CERTIFICATION

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, First Edition, November 2000. All of the equipment used in these tests, such as the guns, jet charges detonator cord, etc., was standard equipment with our company for the use in the gun being tested and was not changed in any manner for the test. Furthermore, the equipment was chosen at random from stock and therefore will be substantially the same as the equipment, which would be furnished to perforate a well for any operator. The American Petroleum Institute neither endorses these test results nor recommends the use of the perforator system described.

X CERTIFIED BY ____ RECERTIFIED

E.T.A. S.A. (Signature) DARIO [illegible] GERENTE PRODUCTO Y SISTEMAS PERFORATING PROJECTS MANAGER

Perforating Projects Manager (Title) Dec 21st 2004 (Date) Explosivos Tecnologicos Argentinos S.A. (Company) Ruta 25Km.13 Pilar- Bs.As. Argentina (Address)