

## Registered Data Sheet Perforating System Evaluation, API RP 19B Section 1

							18 SPF 140%20° - Big Hole - HMX	/20° - Big	SPF 1409	- 4 5/8" 18	TC54HBH - 4 5/8"		Name of test as it should appear on website:
	ss)	(Address)					(Date)		Utitle)	-	Official)	(Company Official)	RECERTIFIED
Ruta 25 Klm 13- Villa Rosa-Bs.AsArgentina	Rosa-Bs.A	Klm 13- Villa	Ruta 25	TASA (Argentina)SA		E	0-04-2017	10-	e Plantul	Manager Explosive Plan		Gabriel Scipioni	X CERTIFIED BY
								<u>`</u>		ped.	stem descri	e of the perforator sy	nor recommends the use of the perforator system described
Furthermore, these tests	r for the test. her endorses	in any manne rator. API neith	ot changed for any oper	sted and was nerforate a well	gun being te ırnished to p	the use in the o	ir company for he equipment t	pment with οι h <b>e⁄</b> same as tl	tandard equi	ord, etc., was s refore will be	detonator co	he guns, jet charges sen at random from s	n 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 that would be furnished to perforate a well for any operator. API neither endorses these tests
quipment used	3. All of the ed	ptember 2006	Edition, Se	orators, Second	of Well Perf	for Evaluation	ended Practice	9B: Recomme	ined in API	edures as out	g to the proc	were made according	certify that these tests were made according to the procedures as outlined in API 19B: Recommended Practice for Evaluation of Well Perforators, Second Edition, September 2006. All of the equipment used
							/.	1	ird Party	Carlos J. Caste API W Third Party	Self Carlos	(0)	Type of Certification:
							W.					Certification	Manufacturer's Certif
0.074		800.0	0.046	0.000	2.000	0.090	0.000	0.007				1	Remarks
7.987		7.910	0.000		0.410	0.008	0.003	0.067	0.083	0.065	0.084		Burr Height, in.
0.704		7046	666		7 416	7016	8 016	8 416	7 416	8.416	6 916		Total Depth, in.
0.784		0.825	0.840		).745	0.755	0.760	0.800	0.775	0.805	. 0.820	meter, in	Average Casing Hole Diameter, in.
0.802		0.830	0.880		0.760	0.770	0.780	0.810	0.800	0.820	. 0.840	ong Axis, in	Casing Hole Diameter, Long Axis, in
0.767		0.820	0.800		0.730	0.740	0.740	0.790	0.750	0.790	. 0.800	hort Axis, in	Casing Hole Diameter, Short Axis, in
XXXXXX		0.520	1.260	0.000	1.260	0.520	0.300	1.414	0.034	1.035	0.775		Clearance, in
Average	No 22	No 21	No 20	No 19	No 18	No 17	No 16	No 15	No 14	No 13	No 12		Shot No
	0.107	0.083	0.091	0.083	0.092	0.055	0.049	0.055	0.093	0.090	. 0.066		ban neight, iii
	7.166	8.666	8.166	7.416	7.416	7.916	8.416	9.416	6.916	7.916	. 8.916		Burn Height in
	0.785	0.795	0.820	0.772	0.802	0.715	0.798	0.754	0.757	0.822	0.774	ameter, in	Average Casing Hole Diameter, in.
	0.820	0.810	0.830	0.793	0.823	0.730	0.815	0.788	0.770	0.826	0.764	ong Axis, in	casing Hole Diameter, Long Axis, in
	0.750	0.780	0.810	0.750	0.780	0.700	0.780	0.720	0.743	0.817	0.763	nort Axis, in	Casing Hole Diameter, Snort Axis, in
	0.135	1.469	0.135	0.775	1.035	0.034	1.414	0.300	0.520	1.260	. 0.000		Clearance, in
	No 11	No 10	No 9	No 8	No 7	No 6	No 5	No 4	No 3	No 2	No 1		Shot No.
days		2	aiget	vde of failber	l psi,			9					
lb.				,,		-		Compressive	Rriguette	017	10/03/2017	enath Test	Date of Compressive Strength Test
		Vater 725	Amount of Water	<u>-</u>	0	d 2780	Amount of Sand	lb,	1390	Amount of Cement	Amour	OD,	Target Data 40"
			2/2017	Date of Section 1 Test 10/02/2017	Date of Sect	L-80	API Grade, L	lь/ft,		32	Weight	OD,	Casing Data 7"
												Section 1.11	Remarks/Exceptions per Section 1.11
in³/charge			Debris N/A	gm/charge, De	2		Veight N/A	Debris Weight			side the gun	el pieces remains in	Debris Description Steel pieces remains inside the gun.
Simultaneous				Selective X			Available Firing Mode:		Bottom up	Top down	Firing Order: X	o degrees, Firi	Phasing Tested 140°/20°
;		311013/11			9	m ID for Runnin	Recommended Minimum ID for Running	Recomn		usable	ier, Non Re	/ireline Hollow Cari	Gun Type TCP and Wireline Hollow Carrier, Non Reusable
							Shot Density Tested 18	Shot De	06/21/2017	Date of Manufacture 06/21/2017	Date	art No. TC54HBH	Manufacturer Charge Part No. TC54HBH
		-	Carrier Material STEEL	psi, Carrier		ng 20000	Maximum Pressure Rating	Maximu			-06-24)	4 5/8" Big Hole HMX (DSC 17-06-24)	Charge Name 4 5/8" I
200 hr	100 hr	24 hr		3 hr	1 hr		0	Max Temp, °F	O° BH HMX	18SPF 140°/20	DENSITY GUI	4 5/8" HIGH SHOT DENSITY GUN 18SPF 140°/20° BH HMX	Gun OD & Trade Name
		Case Material STEEL	Case N	powder,	n, HMX	gm,	Explosive weight 18	Explosiv	Argetina) SA	ed by ETASA(	s. Manufactu	Available to all companies. Manufactured by ETASA(Argetina) SA	Service Company Ava
				WC	eptions below	e Remarks/Exc	☐ Special Test - See Remarks/Exc	□ Sp	ection 1	Conforms to All Requirements of Section 1	ns to All Req		API Form 19B-Section 1

Name of test as it appears on application and application date: TC54HBH - 4 5/8" 18 SPF 140°/20° - Big Hole - HMX