



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

API Form 19B-Section 1 Conforms to All Requirements of Section 1

Service Company Available to all from Hunting

Gun OD & Trade Name 3-1/8" EXP Gun, 6 SPF 60 Degree

Charge Name Charge 3-3/8" 23G HMX

Manufacturer Charge Part No. EXP-3323-471T Date of Manufacture 18 February 2014

Gun Type Hollow Steel Carrier, Expendable (HC, E)

Phasing Tested 60 degrees, Firing Order: Top down Bottom up

Debris Description Small steel chips, usually retained in carrier

Special Test - See Remarks/Exceptions below

Explosive weight 23 gm, HMX powder, Case Material Steel

Max Temp, °F 400 1 hr 375 3 hr 330 24 hr 300 100 hr 200 hr

Maximum Pressure Rating 20,000 psi, Carrier Material H.T. Steel

Shot Density Tested 6 Shots/ft 6

Recommended Minimum ID for Running 3.80 in.

Available Firing Mode: X Selective X Simultaneous

Debris Weight n/a gm/charge, Debris n/a in³/charge

Special casing used. 4-1/2" 13.5# P-110

Remarks/Exceptions per Section 1.11 _____

Casing Data 4 1/2" OD, Weight 13.5 lb/ft, API Grade, P-110 Date of Section 1 Test 18 June 2015

Target Data 84 OD, Amount of Cement 6,204 lb, Amount of Sand 12,408 lb, Amount of Water 3,250 lb.

Date of Compressive Strength Test 17 June 2015 Briquette Compressive Strength 6,460 psi, Age of Target 28 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	0.15	0.41	0.52	0.41	0.15	0.00	0.15	0.41	0.52	0.41
Casing Hole Diameter, Short Axis, in	0.37	0.38	0.38	0.37	0.40	0.42	0.39	0.40	0.37	0.37	0.39
Casing Hole Diameter, Long Axis, in	0.38	0.42	0.38	0.38	0.41	0.42	0.42	0.41	0.38	0.38	0.40
Average Casing Hole Diameter, in.	0.38	0.40	0.38	0.38	0.41	0.42	0.41	0.41	0.38	0.38	0.40
Total Depth, in.	30.29	19.59	17.79	29.79	25.29	21.59	22.59	26.59	31.79	31.09	16.76
Burr Height, in.	0.07	0.07	0.06	0.07	0.04	0.07	0.10	0.07	0.08	0.06	0.04

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.	0.15	0.00	0.15	0.41	0.52	0.41	0.15					XXXXXX
Casing Hole Diameter, Short Axis, in	0.40	0.39	0.40	0.39	0.37	0.38	0.41					0.39
Casing Hole Diameter, Long Axis, in	0.40	0.40	0.40	0.40	0.39	0.38	0.41					0.40
Average Casing Hole Diameter, in.	0.40	0.40	0.40	0.40	0.38	0.38	0.41					0.40
Total Depth, in.	24.09	24.59	16.79	24.29	34.09	28.09	20.29					24.75
Burr Height, in.	0.07	0.07	0.07	0.07	0.08	0.02	0.11					0.07

Remarks _____

Manufacturer's Certification

Type of Certification: Self Third Party

I 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 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 that would be furnished to perforate a well for any operator. API neither endorses these tests nor recommends the use of the perforator system described.

CERTIFIED BY [Signature] President 15 July 2015 Hunting Titan 143 HCR 4361, Milford, TX 76670, USA

RECERTIFIED (Company Official) (Title) (Date) (Company) (Address)

Name of test as it should appear on website: 3.18-in. EXP 6 SPF w/ EXP-3323-471T

Name of test as it appears on application and application date: _____