energy API

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

API Form 19B-Section 1 ☑ Conforms to All Requirements of Section 1 ☐ Special Test - See Remarks/Exceptions below

Service Company: Available to All from Owen Oil Tools
Explosive weight: 39.0 gm, HMX powder, Case Material: Steel
Gun OD & Trade Name: 4 1/2" OD, TAG, 5 spf, 60 deg, 39g, HERO (SDP-4500-411NT3)
Max Temp, °F: 400 1 hr ____ 3 hr ____ 24 hr ____ 100 hr ____ 200 hr
Charge Name: Perforator, 4 1/2", SDP, 39g, HERO, HMX
Maximum Pressure Rating: 18,000 psi, Carrier Material: Steel
Manufacturer Charge Part No.: SDP-4500-411NT3 Date of Manufacture: May 29, 2007
Shot Density Tested: 5 Shots/ft ____
Gun Type: Scalloped, Expendable, Hollow Carrier
Recommended Minimum ID for Running: 5.000 in.
Phasing Tested: 60 degrees, Firing Order: X Top down X Bottom up
Available Firing Mode: X Selective X Simultaneous
Debris Description: Small Steel Pieces
Debris Weight: N/A gm/charge, Debris: N/A in³/charge

Remarks/Exceptions per Section 1.11: RDX Version Available as SDP-4500-311NT3

Casing Data: 7.0" OD, Weight: 32.0 lb/ft, API Grade: L-80 Date of Section 1 Test: July 3, 2007
Target Data: 144" OD, Amount of Cement: 29,346 lb, Amount of Sand: 58,692 lb, Amount of Water: 15,353.7 lb.
Date of Compressive Strength Test: July 3, 2007 Briquette Compressive Strength: 6,853 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.	1.12	0.32	0.00	0.32	1.12	1.60	1.12	0.32	0.00	0.32	1.12
Casing Hole Diameter, Short Axis, in	0.42	0.44	0.39	0.43	0.40	0.35	0.41	0.42	0.38	0.42	0.39
Casing Hole Diameter, Long Axis, in	0.40	0.45	0.40	0.44	0.40	0.35	0.42	0.42	0.38	0.42	0.40
Average Casing Hole Diameter, in.	0.40	0.45	0.40	0.44	0.40	0.35	0.42	0.42	0.38	0.42	0.40
Total Depth, in.	57.45	55.95	51.45	52.45	60.45	56.45	59.95	54.70	52.45	50.20	54.45
Burr Height, in.	0.04	0.12	0.06	0.09	0.07	0.05	0.05	0.10	0.03	0.08	0.08

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.	1.60	1.12	0.32	0.00								XXXXXX
Casing Hole Diameter, Short Axis, in	0.33	0.40	0.41	0.37								0.40
Casing Hole Diameter, Long Axis, in	0.33	0.40	0.42	0.39								0.40
Average Casing Hole Diameter, in.	0.33	0.40	0.42	0.38								0.40
Total Depth, in.	52.45	55.20	52.20	47.20								54.20
Burr Height, in.	0.05	0.10	0.09	0.02								0.07

Remarks

Manufacturer's Certification

Type of Certification: ____ Self Jerry Baldwin - QSD 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.

X CERTIFIED BY / ____ RECERTIFIED — (Company Official) Vice President - Engineering (Title) 9/09/07 (Date) Owen Oil Tools (Company) 12001 CR 1000 Godley, TX USA 76044 (Address)

Name of test as it should appear on website: 4 1/2" OD, TAG, 5 spf, 60 deg, 39g, HERO, (SDP-4500-411NT3)

Name of test as it appears on application and application date: 4 1/2 TAG, 5 spf, 60 deg, SDP-4500-411NT3 HERO