

CERTIFICATION DATA SHEET

7" OD, TAG, 12 SPF, 135/45°, 39G, SUPER-HERO (SDP-4500-411NT3)

FORM 43F

PERFORATING SYSTEM EVALUATION, RP 43, SECTIONS 1 AND 2

SDP-4500-411NT3

Service Company AVAILABLE TO ALL FROM OWEN OIL TOOLS, INC.
 Gun OD & Trade Name 7" OD, TAG, 12 SPF, 135/45°, 39G, SUPER-HERO (SDP-4500-411NT3)
 Charge Name PERFORATOR, 4-1/2", SDP SUPER-HERO, 39G, RDX
 Manufacturer Charge Part No. SDP-4500-411NT3 Date of Manufacture 12-Dec-08
 Gun Type SCALLPOED, EXPENDABLE
 Phasing Tested 135/45 degrees, Firing Order X Top down, _____ Bottom up
 Debris Description SMALL STEEL PIECES
 Remarks RDX VERSION AVAILABLE AS SDP-4500-311NT3

Explosive Weight 39 gm, HMX powder, Case Material STEEL
 Max. Temp, F 400 1 hr _____ 3 hr _____ 24 hr _____ 100 hr _____ hr
 Maximum Pressure Rating 13,000 psi, Carrier Material STEEL
 Shot Density 12 shots/ft
 Recommended Minimum ID for Running 7.630 in.
 Available Firing Mode _____ Selective, _____ X _____ Simultaneous.
 Debris Weight N/A gm/charge, Debris N/A in.3/charge

SECTION 1 - CONCRETE TARGET

Casing Data	<u>9-5/8"</u>	OD, Weight	<u>47</u>	lb/ft,	<u>L-80</u>	API Grade, Date of Concrete Test	<u>30-Jan-08</u>
Target Data	<u>144</u>	OD, Briquet Compressive Strength	<u>6100</u>	psi, Age of Target	<u>28</u>	days	

Shot No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
Clearance, in.	<u>0.00</u>	<u>1.39</u>	<u>0.76</u>	<u>0.21</u>	<u>1.68</u>	<u>0.21</u>	<u>0.76</u>	<u>1.39</u>	<u>0.00</u>	<u>1.39</u>
Casing Hole Diameter, Short Axis, in.	<u>0.45</u>	<u>0.45</u>	<u>0.50</u>	<u>0.42</u>	<u>0.44</u>	<u>0.42</u>	<u>0.49</u>	<u>0.44</u>	<u>0.45</u>	<u>0.44</u>
Casing Hole Diameter, Long Axis, in.	<u>0.45</u>	<u>0.44</u>	<u>0.51</u>	<u>0.43</u>	<u>0.44</u>	<u>0.44</u>	<u>0.50</u>	<u>0.44</u>	<u>0.45</u>	<u>0.44</u>
Average Casing Hole Diameter, in.	<u>0.45</u>	<u>0.45</u>	<u>0.51</u>	<u>0.43</u>	<u>0.44</u>	<u>0.43</u>	<u>0.50</u>	<u>0.44</u>	<u>0.45</u>	<u>0.44</u>
Total Depth, in.	<u>65.10</u>	<u>68.10</u>	<u>57.80</u>	<u>66.30</u>	<u>70.20</u>	<u>66.30</u>	<u>59.20</u>	<u>65.30</u>	<u>69.10</u>	<u>66.80</u>
Burr Height, in.	<u>0.04</u>	<u>0.05</u>	<u>0.04</u>	<u>0.04</u>	<u>0.03</u>	<u>0.04</u>	<u>0.02</u>	<u>0.04</u>	<u>0.05</u>	<u>0.03</u>

Shot No.	No. 11	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	Average
Clearance, in.	<u>0.76</u>	<u>0.21</u>	_____	_____	_____	_____	_____	_____	_____	_____	_____
Casing Hole Diameter, Short Axis, in.	<u>0.48</u>	<u>0.42</u>	_____	_____	_____	_____	_____	_____	_____	_____	<u>0.45</u>
Casing Hole Diameter, Long Axis, in.	<u>0.48</u>	<u>0.44</u>	_____	_____	_____	_____	_____	_____	_____	_____	<u>0.46</u>
Average Casing Hole Diameter, in.	<u>0.48</u>	<u>0.43</u>	_____	_____	_____	_____	_____	_____	_____	_____	<u>0.45</u>
Total Depth, in.	<u>59.30</u>	<u>63.50</u>	_____	_____	_____	_____	_____	_____	_____	_____	<u>64.75</u>
Burr Height, in.	<u>0.03</u>	<u>0.04</u>	_____	_____	_____	_____	_____	_____	_____	_____	<u>0.04</u>

Remarks PENETRATION NORMALIZED TO 5000 PSI CONCRETE WOULD BE 68.34" (5% PER 1000 PSI)

SECTION 2 - BEREA SANDSTONE CORE TARGET

	Shot No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	Average
Berea Bulk Porosity, _____	Faceplate Hole Diameter, Short Axis, in.	_____	_____	_____	_____	_____	_____	_____
	Faceplate Hole Diameter, Long Axis, in.	_____	_____	_____	_____	_____	_____	_____
Date of Beria Test _____	Average Faceplate Hole Diameter, in.	_____	_____	_____	_____	_____	_____	_____
	Total Depth, in.	_____	_____	_____	_____	_____	_____	_____

CERTIFICATION

Type of Certification: Self Third Party

I certify that these tests were made according to the procedures as outlined in RP 43: Recommended Practices for Evaluation of Well Perforators, Fifth Edition, January 1991. All of the equipment used in these tests, such as the guns, jet charges, detonator cord, etc., was standard with our company for 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.

CERTIFIED BY *Dan W. Pratt* DAN W. PRATT VICE PRESIDENT - ENGINEERING 30-Jan-08 OWEN OIL TOOLS, INC 8900 FORUM WAY, FT. WORTH TX. 76140
 RECERTIFIED _____ (Company Officer) _____ (Title) _____ (Date) _____ (Company) _____ (Address)