



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 Oiltech Services Pte Ltd Explosive weight 24 gm, HMX powder, Case Material Steel

Gun OD & Trade Name 4" 6 SPF 60° Phase Max Temp, °F 400 1 hr 3 hr 24 hr 100 hr 200 hr

Charge Name HSD Maverick 24g HMX SDP Maximum Pressure Rating 20,000 psi, Carrier Material Steel

Manufacturer Charge Part No. OT60613 Date of Manufacture March 2, 2012 Shot Density Tested 6 Shots/ft _____

Gun Type TCP, Wireline, Retrievable Tubular Carrier with scallop Recommended Minimum ID for Running -- _____ in.

Phasing Tested 60 degrees, Firing Order: X Top down _____ Bottom up Available Firing Mode: N/A Selective X Simultaneous _____

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

Remarks/Exceptions per Section 1.11 _____

Casing Data 5" OD, Weight 15.0 lb/ft, API Grade, L-80 Date of Section 1 Test Apr 04, 2012

Target Data 87" OD, Amount of Cement 7488 lb, Amount of Sand 14976 lb, Amount of Water 3893 lb.

Date of Compressive Strength Test Apr 03, 2012 Briquette Compressive Strength 6957 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.	<u>0.00</u>	<u>0.10</u>	<u>0.30</u>	<u>0.40</u>	<u>0.30</u>	<u>0.10</u>	<u>0.00</u>	<u>0.10</u>	<u>0.30</u>	<u>0.40</u>	<u>0.30</u>
Casing Hole Diameter, Short Axis, in	<u>0.40</u>	<u>0.40</u>	<u>0.39</u>	<u>0.38</u>	<u>0.39</u>	<u>0.41</u>	<u>0.39</u>	<u>0.40</u>	<u>0.40</u>	<u>0.37</u>	<u>0.38</u>
Casing Hole Diameter, Long Axis, in	<u>0.41</u>	<u>0.40</u>	<u>0.41</u>	<u>0.42</u>	<u>0.40</u>	<u>0.42</u>	<u>0.40</u>	<u>0.41</u>	<u>0.42</u>	<u>0.37</u>	<u>0.39</u>
Average Casing Hole Diameter, in.	<u>0.40</u>	<u>0.40</u>	<u>0.40</u>	<u>0.41</u>	<u>0.39</u>	<u>0.41</u>	<u>0.39</u>	<u>0.40</u>	<u>0.41</u>	<u>0.37</u>	<u>0.38</u>
Total Depth, in.	<u>*</u>	<u>34.81</u>	<u>36.81</u>	<u>38.31</u>	<u>*</u>	<u>36.81</u>	<u>35.31</u>	<u>34.31</u>	<u>37.31</u>	<u>37.81</u>	<u>35.31</u>
Burr Height, in.	<u>0.07</u>	<u>0.03</u>	<u>0.03</u>	<u>0.02</u>	<u>0.01</u>	<u>0.03</u>	<u>0.02</u>	<u>0.07</u>	<u>0.03</u>	<u>0.04</u>	<u>0.03</u>

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.	<u>0.10</u>	<u>0.00</u>	<u>0.10</u>	<u>0.30</u>	<u>0.40</u>	<u>0.30</u>	<u>0.10</u>	<u>0.00</u>	<u>0.10</u>	<u>0.30</u>	_____	<u>XXXXXX</u>
Casing Hole Diameter, Short Axis, in	<u>0.39</u>	<u>0.40</u>	<u>0.36</u>	<u>0.40</u>	<u>0.37</u>	<u>0.40</u>	<u>0.38</u>	<u>0.37</u>	<u>0.40</u>	<u>0.41</u>	_____	<u>0.39</u>
Casing Hole Diameter, Long Axis, in	<u>0.40</u>	<u>0.40</u>	<u>0.37</u>	<u>0.41</u>	<u>0.37</u>	<u>0.41</u>	<u>0.39</u>	<u>0.38</u>	<u>0.40</u>	<u>0.42</u>	_____	<u>0.39</u>
Average Casing Hole Diameter, in.	<u>0.39</u>	<u>0.40</u>	<u>0.36</u>	<u>0.40</u>	<u>0.37</u>	<u>0.40</u>	<u>0.38</u>	<u>0.37</u>	<u>0.40</u>	<u>0.41</u>	_____	<u>0.39</u>
Total Depth, in.	<u>35.31</u>	<u>33.31</u>	<u>35.31</u>	<u>36.81</u>	<u>39.81</u>	<u>37.81</u>	<u>35.31</u>	<u>34.81</u>	<u>35.81</u>	<u>*</u>	_____	<u>36.83</u>
Burr Height, in.	<u>0.05</u>	<u>0.04</u>	<u>0.03</u>	<u>0.05</u>	<u>0.02</u>	<u>0.04</u>	<u>0.01</u>	<u>0.01</u>	<u>0.02</u>	<u>0.01</u>	_____	<u>0.03</u>

Remarks 100% penetration marked with "*" could not be determined, and are not included in the average. The average penetration with compressive strength of 5,000psi is 40.5". The above charges were manufactured by Dahana Oiltech Joint Operation (DOJO), Indonesia

Manufacturer's Certification

Type of Certification: _____ Self X 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 Frankie Teo AGM 15 Oct 2012 Oiltech Services Pte Ltd 25 Loyang Crescent, Blk 302 TOPS Ave
 RECERTIFIED _____ _____ _____ _____ 3, #02-06, Singapore 508988
 (Company Official) (Title) (Date) (Company) (Address)

Name of test as it should appear on website: 4", HSD Maverick 24g HMX SDP, 60° Phase Carrier

Name of test as it appears on application and application date: Charge: HSD 24g Maverick HMX SDP, Gun: 4", 6 SPF, 60° Phase Carrier