



## 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 11 gm, HMX powder,    Case Material Steel  
 Gun OD & Trade Name 2-1/2 6 SPF 60° Phase    Max Temp, °F 400    1 hr    3 hr    24 hr    100 hr    200 hr  
 Charge Name HSD 11g HMX SDP    Maximum Pressure Rating 20,000 psi,    Carrier Material Steel  
 Manufacturer Charge Part No. OT60615    Date of Manufacture Feb.29,2012    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:  Top down  Bottom up    Available Firing Mode: N/A    Selective     Simultaneous \_\_\_\_\_  
 Debris Description N/A    Debris Weight N/A gm/charge,    Debris N/A in<sup>3</sup>/charge  
 Remarks/Exceptions per Section 1.11 The total depth include the thickness of the casing.

Casing Data 4-1/2" OD,    Weight 11.6 lb/ft,    API Grade, L-80    Date of Section 1 Test April 04,2012  
 Target Data 75" OD,    Amount of Cement 6,609 lb,    Amount of Sand 13,216 lb,    Amount of Water 3,443 lb.  
 Date of Compressive Strength Test April 03,2012    Briquette Compressive Strength 5646 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>0.21</u>	<u>1.02</u>	<u>1.50</u>	<u>1.02</u>	<u>0.27</u>	<u>1.02</u>	<u>0.27</u>	<u>1.02</u>	<u>1.50</u>	<u>1.02</u>
Casing Hole Diameter, Short Axis, in	<u>0.24</u>	<u>0.25</u>	<u>0.25</u>	<u>0.24</u>	<u>0.24</u>	<u>0.23</u>	<u>0.25</u>	<u>0.24</u>	<u>0.25</u>	<u>0.24</u>	<u>0.25</u>
Casing Hole Diameter, Long Axis, in	<u>0.25</u>	<u>0.26</u>	<u>0.26</u>	<u>0.25</u>	<u>0.25</u>	<u>0.24</u>	<u>0.26</u>	<u>0.25</u>	<u>0.26</u>	<u>0.25</u>	<u>0.26</u>
Average Casing Hole Diameter, in.	<u>0.25</u>	<u>0.26</u>	<u>0.26</u>	<u>0.25</u>	<u>0.25</u>	<u>0.24</u>	<u>0.26</u>	<u>0.25</u>	<u>0.26</u>	<u>0.25</u>	<u>0.26</u>
Total Depth, in.	<u>*</u>	<u>19.25</u>	<u>17.75</u>	<u>18.25</u>	<u>23.75</u>	<u>19.25</u>	<u>22.75</u>	<u>12.25</u>	<u>18.75</u>	<u>17.75</u>	<u>23.25</u>
Burr Height, in.	<u>0.03</u>	<u>0.02</u>	<u>0.04</u>	<u>0.03</u>	<u>0.03</u>	<u>0.01</u>	<u>0.04</u>	<u>0.02</u>	<u>0.02</u>	<u>0.03</u>	<u>0.01</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>0.27</u>	<u>0.00</u>	<u>0.27</u>	<u>1.02</u>	<u>1.50</u>	<u>1.02</u>	<u>0.27</u>	<u>0.00</u>	<u>0.27</u>	<u>1.02</u>	_____	<u>XXXXXX</u>
Casing Hole Diameter, Short Axis, in	<u>0.24</u>	<u>0.24</u>	<u>0.25</u>	<u>0.25</u>	<u>0.25</u>	<u>0.24</u>	<u>0.24</u>	<u>0.25</u>	<u>0.24</u>	<u>0.25</u>	_____	<u>0.26</u>
Casing Hole Diameter, Long Axis, in	<u>0.25</u>	<u>0.25</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.25</u>	<u>0.25</u>	<u>0.26</u>	<u>0.25</u>	<u>0.26</u>	_____	<u>0.26</u>
Average Casing Hole Diameter, in.	<u>0.25</u>	<u>0.25</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.25</u>	<u>0.25</u>	<u>0.26</u>	<u>0.25</u>	<u>0.26</u>	_____	<u>0.26</u>
Total Depth, in.	<u>19.25</u>	<u>18.25</u>	<u>17.25</u>	<u>14.25</u>	<u>13.25</u>	<u>13.75</u>	<u>16.75</u>	<u>15.25</u>	<u>15.25</u>	<u>21.25</u>	_____	<u>17.825</u>
Burr Height, in.	<u>0.03</u>	<u>0.05</u>	<u>0.03</u>	<u>0.03</u>	<u>0.04</u>	<u>0.02</u>	<u>0.01</u>	<u>0.01</u>	<u>0.01</u>	<u>0.03</u>	_____	<u>0.03</u>

Remarks Data marked with "\*" is lost and not included in average. Normalised Penetration is 18.36". The above charges were manufactured by Dahana Oiltech Joint Operation (DOJO), Indonesia

### 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 Frankie Teo    AGM    October 15, 2012    Oiltech Services Pte Ltd    25 Loyang Crescent, Blk 302 TOPS Ave  
 RECERTIFIED     (Company Official)    (Title)    (Date)    (Company)    3 #02-06, Singapore 508988    (Address)

Name of test as it should appear on website: 2-1/2", HSD 11g HMX SDP, 60° Phasing, 6 SPF

Name of test as it appears on application and application date: Charge: HSD 11g HMX XDP, Gun: 2-1/2", 6 SPF, 60° Phase Carrier