



REGISTERED DATA SHEET PERFORATING SYSTEM EVALUATION, API RP 19B SECTION 1

Service Company AVAILABLE TO ALL FROM OWEN OIL TOOLS Explosive Weight 14.5 gm, HMX powder, Case Material STEEL
 Gun OD & Trade Name 2 3/4" SDP, NT3, HERO Max. Temp, °F 400 1 hr 3 hr 24 hr 100 hr 200 hr
 Charge Name 2 3/4" SDP HERO, NT3, HMX Maximum Pressure Rating 22,500 psi, Carrier Material STEEL
 Manufacturer Charge Part No. SDP-2750-402NT3 Date of Manufacture 19-AUG-2003 Shot Density Tested 6 Shots/ft
 Gun Type SCALLOPED, RETRIEVABLE EXPENDABLE HOLLOW CARRIER Recommended Minimum ID for Running 3.00 in.
 Phasing Tested 60 degrees, Firing Order X Top Down, X Bottom Up Available Firing Mode X Selective, X Simultaneous
 Debris Description N/A Debris Weight N/A gm/charge, Debris N/A in³/charge
 Remarks _____

SECTION 1 - CONCRETE TARGET

Casing Data 4.5" OD, Weight 11.6 lb/ft, L-80 API Grade, Date of Section 1 Test 22-SEP-2003
 Target Data 84" OD, Amount of Cement 7610 lb., Amount of Sand 15280 lb., Amount of Water 3960.1 lb.
 Date of Compressive Strength Test 23-SEP-2003, Briquette Compressive Strength 6346 psi, Age of Target 32 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.....	0.24	0.86	1.25	0.86	0.24	0.00	0.24	0.86	1.25	0.86	0.24
Casing Hole Diameter, Short Axis, in.	0.39	0.23	0.20	0.20	0.32	0.36	0.31	0.23	0.24	0.24	0.34
Casing Hole Diameter, Long Axis, in.....	0.39	0.24	0.20	0.21	0.33	0.38	0.31	0.25	0.25	0.26	0.35
Average Casing Hole Diameter, in.	0.39	0.24	0.20	0.21	0.33	0.37	0.31	0.24	0.25	0.25	0.35
Total Depth, in.	29.45	36.00	26.25	33.00	35.75	32.25	36.25	35.88	35.88	34.45	35.75
Burr Height, in.....	0.10	0.06	0.03	0.06	0.04	0.06	0.06	0.05	0.05	0.10	0.06

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.....	0.00	0.24	0.86	1.25	0.86	0.24	0.00					xxx
Casing Hole Diameter, Short Axis, in.	0.36	0.32	0.23	0.21	0.24	0.32	0.37					0.28
Casing Hole Diameter, Long Axis, in.....	0.38	0.35	0.24	0.21	0.25	0.32	0.38					0.29
Average Casing Hole Diameter, in.	0.37	0.34	0.24	0.21	0.25	0.32	0.38					0.29
Total Depth, in.	30.38	35.38	29.38	32.63	33.5	28.00	30.75					32.83
Burr Height, in.....	0.07	0.05	0.05	0.04	0.06	0.06	0.07					0.06

WITNESSING INFORMATION

Date of Notice of Intent to Test: September 8, 2003 Witnessed by: Ray Feigenbutz
 Other Activities Witnessed: Target Pouring _____ Briquette: Preparation _____ Testing _____ Burr Height Measurements X Samples Taken: Concrete X Casing X

CERTIFICATION

I certify that these tests were made according to the procedures as outlined in API RP 19B: Recommended Practices for Evaluation of Well Perforators, First Edition, November 2000. 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, which would be furnished to perforate a well for any operator. The American Petroleum Institute neither endorses these test results nor recommends the use of the perforator system described.

X CERTIFIED BY Ray Feigenbutz VICE PRESIDENT - ENGINEERING 9-23-03 OWEN OIL TOOLS 12001 County Road 1000 Godley, TX, USA 76044
 _____ RECERTIFIED _____ (Company Official) (Title) (Date) (Company) (Address)