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EVALUATION OF BIO-ACTIVATED ENERGY (B.A.E)
WONDER STICKER ON FUEL CONSUMPTION

SERVICE REPORT

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PETRONAS RESEARCH & SCIENTIFIC SERVICES SDN. BHD.

(Company No: 253426 V)
LOT 3288 & 3289, OFF JALAN AYER ITAM, KAWASAN INSTITUSI/BANGI, 43000 KAJANG,
SELANGOR DARUL EHSAN, MALAYSIA. TEL: 03-8252731 TELEFAX: 03-8258821/8258829

 PETRONAS RESEARCH & SCIENTIFIC SERVICES SDN. BHD. LOT 3288 & 3289, KAWASAN INSTITUSI BANGI 43000 KAJANG, SELANGOR TEL:03-8252731 TELEFAX: 03-8258821/8258829 Company No: 253426 V	CLIENT	B.A.E Trading Sdb Bhd
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WONDER STICKER ON FUEL CONSUMPTION**

BY
FARIDON IDRIS
PROCESS & PRODUCT GROUP
PETRONAS RESEARCH & SCIENTIFIC SERVICES SDN BHD

REVIEWED BY
NORDIN B OTHMAN
PROCESS & PRODUCT GROUP
PETRONAS RESEARCH & SCIENTIFIC SERVICES SDN BHD

APPROVED BY
HUSNA HJ KASSIM
ACCOUNT MANAGER, PRODUCT GROUP
PETRONAS RESEARCH & SCIENTIFIC SERVICES SDN. BHD.

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1. BACKGROUND

This report describes the effect of using the Bio-Activated Energy (B.A.E) Wonder Sticker on fuel consumption using the single cylinder HONDA Generator engine.

The tests were conducted on May 10 through 13, 1999 at the PETRONAS Research & Scientific Services Sdn Bhd (PRSS) testing laboratory located in Section 27, Shah Alam, Selangor Darul Ehsan.

2. OBJECTIVE

The objective of this test program is to compare the fuel consumption before and after the B.A.E Wonder Sticker being sticked to the HONDA generator engine.

3. SUMMARY OF TEST PROCEDURES

The fuel consumption test as described in 3.1 were conducted at two (2) different modes:

- (i) Mode 1: Fuel consumption tests without B.A.E Wonder Sticker.
- (ii) Mode 2: Fuel consumption tests with B.A.E Wonder Sticker.

3.1 Fuel consumption test.

Prior to the fuel consumption test, firstly the engine was running-in for 45 minutes in order to ensure the engine is operated at normal engine operating conditions.

The engine was then be set to run at 3,900 rev/min at the load of 1.4 kW. After the engine operation has been stabilised, the fuel consumption measurement were recorded at every 10 minutes. Five (5) fuel consumption readings were taken in order to obtained more representative result. The fuel consumption reading were measured in gram per 10 minutes.

Certain amount of the B.A.E Wonder Stickers were then placed to the fuel tank and also at the air intake system. The measurement of the five (5) fuel consumption readings were taken after the engine has been running-in for 30 minutes.

Besides measuring the fuel consumption of the engine, severals parameters were also been recorded such as air intake temperature, spark plug temperature, ambient temperature and relative humidity.

In order to observe the fuel consumption trending versus time, the fuel consumption readings were monitored until 72 hours stickers have been placed. The program of the fuel consumption test was given in Table 1 of the Appendix.

4. TEST FACILITIES

The test facilities that used for the fuel consumption evaluation were consisting of:

- (a) Weight balance. To measure the fuel consumption by weight.
- (b) Load Bank. To absorb the power generated by the engine.
- (c) A Single cylinder HONDA EG 2500X generator engine.

5. TEST ENGINE

The specification of the engine that was used throughout the testing program were as follows:

No.	Items	Specifications
1	Model	HONDA EG 2500X
2	Displacement, cm ³	163
3	No. of cylinder	1
4	Voltage, V	220
5	Frequency, Hz	50
6	Rated output, kVA	2
7	Max. output, kVA	2.2

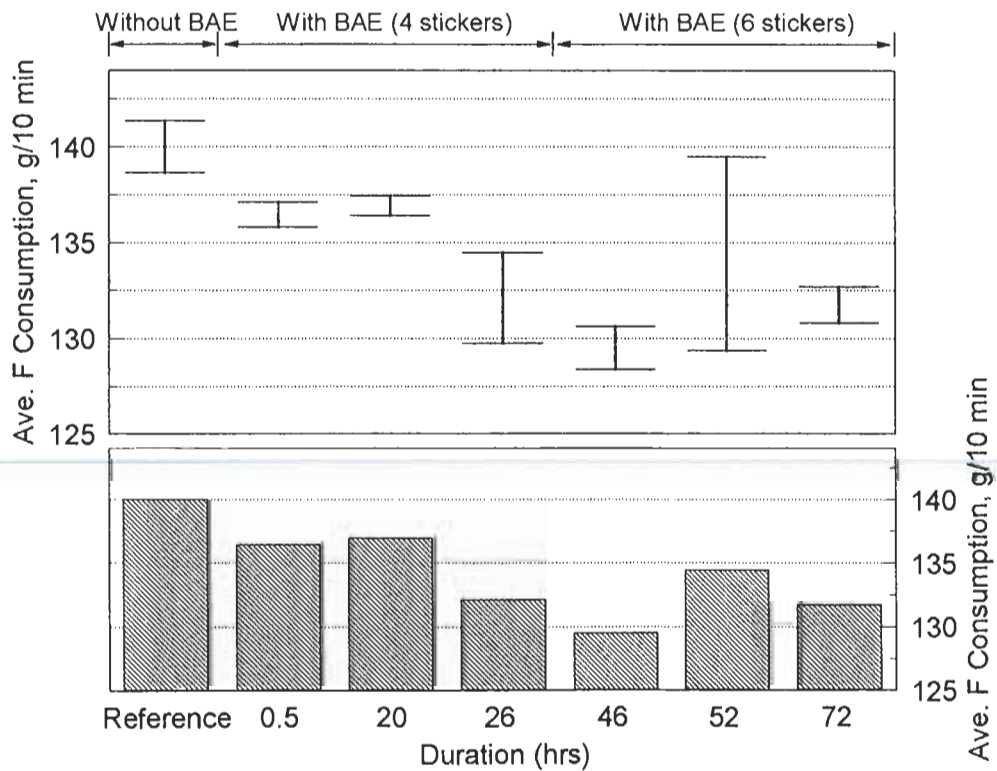
6. TEST FUEL

A commercial PETRONAS Primas PX 2 Unleaded Gasoline (ULG) RON 97 was used as a test fuel.

7. TEST RESULTS

The fuel consumption test results were presented in two (2) different format as shown in the table and figure below.

Measuring Items	Mode 1: Without B.A.E	Mode 2: With B.A.E					
		4 Stickers			6 Stickers		
		0.5 hr	20 hr.	26 hr.	46 hr.	52 hr.	72 hr.
Air Intake Temp. (°C)	39 - 42	43	38 - 39	42 - 44	40	44 - 45	41 - 42
Ambient Temp. (°C)	30 - 33	32 - 33	29 - 30	33	31 - 32	33 - 34	32 - 33
S/plug Temp. (°C)	102 - 104	105 - 106	100 - 101	105 - 106	104 - 105	109 - 110	104 - 106
Relative Humid. (%)	59 - 70	59 - 61	60 - 65	46 - 48	55 - 57	47 - 50	56 - 63
Fuel Consumption (g/10 min.)	140 ± 1.36	136.4 ± 0.64	136.9 ± 0.53	132.1 ± 2.36	129.5 ± 1.13	134.4 ± 5.06	131.7 ± 0.93
F. Consumption % Diff.:		2.53	2.2	5.64	7.51	3.98	5.9



APPENDIX

Table 1: Fuel Consumption Testing Program

NO.	ITEMS	72 Hrs												DAY 5 TO 6				
		0 Hrs	DAY 1			DAY 2			DAY 3			DAY 4						
1	Final check of the overall system and operational.	█																
2	Engine warm-up until it reach operating condition.	█																
3	Mode 1: Fuel consumption test without B.A.E. sticker. - Repeat 10 tests.		█															
4	Sticking of B.A.E Sticker and running-in for 30 min.			█														
5	Mode 2: Fuel consumption test with B.A.E sticker. - Repeat 5 tests.				█													
6	Reporting																	█