State of California AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-15-7

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines $IVECO\ N.V.$

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 of the Health and Safety Code; and,

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following Iveco N.V. 1997 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Wheel Loader

<u>Fuel Type</u>: Diesel

Engine Family Liters (Cubic Inches) Exhaust Emission Control
Systems and Special Features

VVE9.5R6DASA 9.5 (580) Turbocharger
Smoke Puff Limiter

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM) certification exhaust emission standards, in grams per brake horsepower-hour (g/bhp-hr), and the opacity of smoke emission standards, in percent (%), during acceleration (Accel), lugging (Lug), and peak (Peak) modes, for this engine family are (Title 13, California Code of Regulations, Section 2423):

| <u>Exh</u> aust | <u>Emissi</u> | ons (g/l | ohp-hp) | Smoke | <u>Opaciity</u> | (%) |
|-----------------|---------------|------------|-----------|--------------|-----------------|-------------|
| THC | <u>co</u> | <u>NOx</u> | <u>PM</u> | <u>Accel</u> | Lug | <u>Peak</u> |
| 1.0 | 8.5 | 6.9 | 0.4 | 20 | 15 | 50 |

The THC, CO, NOx and PM exhaust emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

| <u>Exhaust</u> in | <u>issions</u> | <u>(q/b</u> l | <u> 1p-hr)</u> | | Smok | e Opacity | (%) |
|-------------------|----------------|---------------|----------------|-------------|--------------|------------|-------------|
| Engine Family | THC | <u>CO</u> | <u>N0x</u> | <u>PM</u> | <u>Accel</u> | <u>Luq</u> | <u>Peak</u> |
| VVE9.5R6DASA | 0.4 | 0.8 | 5.8 | 0.2 | 9 | 5 | 18 |

BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "Emission Control Labels--1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2425 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

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Jon R. B. Summerfield, Chief

Mobile Source Operations Division

1997 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET HEAVY-DUTY OFF-ROAD DIESEL ENGINES

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| Manufacturer: | IVEC | CO N.V. | | Engine Family: | VV/E0 5D6 | TD A C A | |
|--|---|--------------------------|---------------------------------------|-------------------------------------|---------------|------------------------------------|--|
| Displacement: | 9.5/58 | 0 Liters | - s/Cubic Inches | Eng. Co | v v E3.5Ku | DASA | |
| All Codes in E | ing Fam: CA | 49S | 508 3 | Cert Test Pro | onlig. 1-0 | — DD - EDA W | |
| Valves/Ports p | er Cylinder: | 2 valves/cv | | e per Combustion | Cl 4 | (B EPA_X_ | |
| Valves/Ports per Cylinder: 2 valves/cyl. Strokes per Combustion Cycle: 4-stroke Maximum Rated Power: 255 HP (190 KW) @ 2200 RPM | | | | | | | |
| Ignition: Compression Compression with Glow Plug X Spark | | | | | | | |
| Fuel Type(s): | Dedicated X | Elex-Fuel | Dual Fuel | Diesel X | Spark | | |
| | CNG | - LNG | Dual-ruel. | Other (specify) | M100 | _ M85 | |
| Diesel Cert Fu | el: 40 CFR 86 | 1313-94 X | , | Other (specify) _ Other (specify) _ | - | | |
| Primary Servic | e Equipment: V | Wheel Loader | <u> </u> | Other (specify) _ | | | |
| Exhaust ECS (c | e.g., MFI, TC (| CAC). | <u> </u> | CDI TC | | <u> </u> | |
| (| Exhaust ECS (e.g., MFI, TC, CAC): SPL, TC (use abbreviations per SAE J1930 JUN93) | | | | | | |
| | | | | - | | , | |
| | - | | | | | | |
| Engine Model (Eng Code) | Rated HP @ RPM | Fuel Rate @ Rated HP | Fuel Pump & Injector | (Governor) ECM/PCM | EGR Valve | PTOX/ | |
| | | mm³ / stroke (lbs/hr) | Part no. | Part no. | Part no. | Catalytic Converter Part no. | |
| 8465.21.014 | 255@2200 | 137.5 | PES6P120A | RQV 450 | N/A | N/A | |
| | | (99.5) | 720RS7409 0402746607 | 1100 PA 1270 | | IVA | |
| | | | / KBEL 96 | | | | |
| | | | P116 646 | [| | 1 | |
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Date Issued:

Revisions: