



**SOLBERG**  
Filtration & Separation

# Wartsila 20V 34SG Natural Gas Engines

## *The Challenge*

A power plant in the Western United States had an install base of 13 natural gas engines. Their existing open crankcase ventilation filters were static and provided coarse filtration for the vented crankcase blow-by. The low efficiency filters allowed a large amount of visible oil mist emissions into the atmosphere. As the oil mist cooled, it would condense on the side of their building and on the ground. The plant operator wanted to remove the visible oil mist emissions and needed a complete crankcase ventilations system to clean the engine blow-by before discharging to the environment. These engines operate with a slight positive crankcase pressure and the operator wanted the system to maintain this natural pressure during operation.

## *The Solution*

Solberg conducted a site visit to evaluate the current set up and determine the operator's requirements. Because negative pressure in the crankcase was not required, Solberg designed an oil mist eliminator system which included a recirculation piping configuration. This style of piping allows operators to continuously maintain the natural crankcase pressure while capturing the oil mist emissions. The system is self-regulating does not add any additional pressure or vacuum to the crankcase. The recirculation system does not require any adjustments or inputs from operators during normal operations.

## Crankcase Ventilation Retrofit

### *Original Installation*



### *Solberg's Crankcase Ventilation System*



Rev: WW20V34SG-US2110C2

### ***Before: Visible Emissions***



### ***After: No Visible Emissions***



### ***The Results***

The Solberg crankcase ventilation system has proved highly effective at helping the plant operator remove visible oil emissions discharging from the building. The oil mist captured and coalesced by the system is collected in an oil sump where it can be recycled to the engine. The oil mist coalescing elements surpassed 9000 hours of effective operating life for the installation and the system has required minimal maintenance over its entire span of service.

### ***The Product***

Solberg designed a custom open crankcase ventilation system based on the engine's blow-by flow and site constraints. (BAE Series) The system included a heavy duty carbon steel housing with a high efficiency coalescing element to capture the oil mist contained in the blow-by. A regenerative blower with special recirculating piping configuration was used to process the engine's blow-by while allowing the engine to operate at its natural crankcase pressure.



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*All model offerings and design parameters are subject to change without prior notice. Contact your representative or Solberg for the most current information.*