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EVALUATION
OF
FPC-1® FUEL PERFORMANCE CATALYST

AT
FARM DEVELOPMENT CORPORATION
GLENN'S FERRY, IDAHO

REPORT PREPARED BY
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FARM DEVELOPMENT CORPORATION TEST SUMMARY

Farm Development Corporation, Glenns Ferry, Idaho, is a large farming operation and includes the growing and distilling of several varieties of mint. The mint is harvested during the months of July through September, is cut like hay, loaded into special carts, and live steam is introduced into the carts to drive off the mint oil in the form of vapor (referred to as the "breaking process"). The vapor, containing primarily water and mint oil, is condensed and the oil is separated and shipped to brokers/producers for further refinement. This operation was experiencing heavy black smoke from their boiler and having trouble maintaining the steam pressure to "break" at or near maximum cart capacity levels. FPC-1 was introduced into their fuel supply with the following results:

Constants

Fuel - #2 Diesel
 Boiler - 800HP Kewanee fire-tube
 Carts - 10 "breaking" stations

Observations

Parameter	Baseline	Treated	
	7/20/92	7/22/92	7/28/92
Fuel Press.	85psi	81psi	72psi
Steam Press.	(1)90-105psi	(2)110-125psi	(3)90-112psi
Stack Temp.	600+deg. F	600+deg. F	555 deg. F
(4)Smoke	Heavy/Black	65-70% Red.	95% Red.

Footnotes:

- (1) Breaking 7-9 carts and struggling to maintain 90psi with heavy black smoke.
- (2) Breaking 6-9 carts, still pushing "hard", and stack temp. still higher than boiler consultant liked to see. Recommended he back off further on fuel pressure setting.
- (3) Stack temperature down, fuel pressure setting reduced 15.3%, essentially no smoke, and able to maintain 6-9 cart breaking operation.
- (4) Smoke reduction based on visual judgement. The only time there was noticeable smoke was when ambient temperatures climbed above 100 deg. F. (usually observed in the afternoon).

The boiler was inspected following the '92 season (after 3 years of operation with no cleaning). Soot and carbon deposits were relatively heavy. Boiler was cleaned and customer plans on using FPC-1 again during the '93 season.