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NATURAL RESOURCES

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Pioneer Natural Resources Protects Turbo Coolant System through Magnetic Filtration

Contaminants collected after 11 hours

At a Glance

Country: USA

Year: 2014

Problem:

- Needed adequate filtration for new oil on turbo coolant system

Approach:

- Install OEI High Pressure Y-Strainer

Results:

- Captured 27% oxygen, 32% non-ferrous, 59% non-ferrous contaminants
- Extended coolant fluid and equipment component life

Application:

New oil filtration on Turbo Coolant System on Frac Unit (#49).

Problem:

Two problems exist in this case: oil, even new, contains ferrous contamination down to submicron levels. And secondly, rotating equipment coolant systems are traditionally not filtered. These harmful ferrous particles cause premature wear and failures in equipment seals and pumps. The contamination also degrades the quality of the oil, by reducing its ability to cool and lubricate the turbo charger.

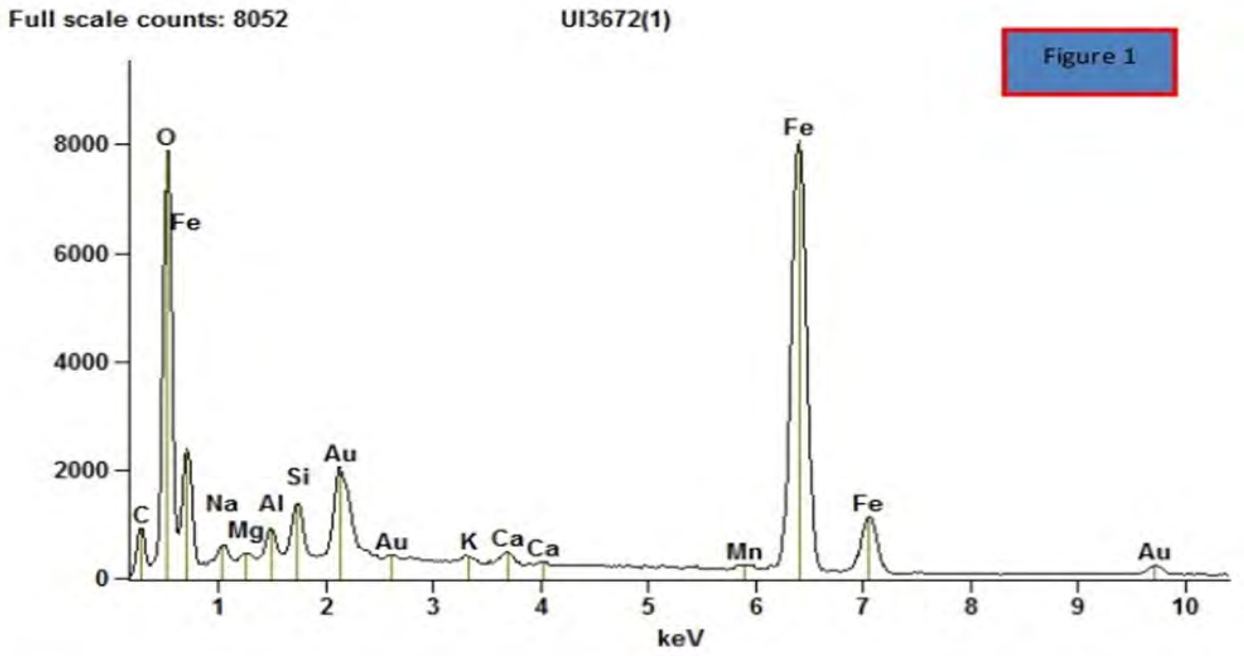
Approach:

Daniel Stoye, Maintenance Manager for Pioneer, tested and now employs OEI Magnetic Filtration systems on much of their equipment. It was recommended that a 1" OEI Magnetic Y-Strainer be installed on the turbo coolant system, to remove damaging submicron particles. This is turn, will protect the coolant and the system's integral components.

Results:

Photo A shows the amount of contamination removed after just 11 hours in operation. Analysis of the trapped contamination (see graph below) shows a high level of oxygen (27%) indicating moisture, as well as ferrous (59%), and non-ferrous material (32%) mainly silica particles. These particles range in size from 40 microns to submicron.

Pioneer Resources: Collected Contamination Analysis



Quantitative Results for: UI3672(1)

Element Line	Net Counts	Weight %	Atom %
C K	6109	4.30	12.80
O K	60631	13.59	30.33
Na K	2785	0.88	1.37
Mg K	1153	0.34	0.50
Al K	4999	1.48	1.96
Si K	10176	2.96	3.77
K K	1422	0.47	0.43
Ca K	2839	0.95	0.85
Mn K	1705	0.88	0.57
Fe K	134017	74.15	47.43
Total		100.00	100.00