

Background Information

- Client :** A Global hydraulic pumps and motors manufacturer
- Location:** Spencer, Iowa, USA
- Objective:** Compare performance characteristics of Hocut 795 NSC with Trim E-206
- Metrics to be compared:
- pH stability
 - Emulsion stability
 - Biostability
 - Tool life
 - Filter life
 - Physical Characteristics : Appearance, Odor, Operator feedback

System Information

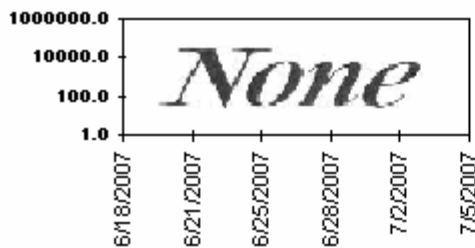
- System Name :** OKUMA 500 – 7976 (Trial Product – Trim E-206)
OKUMA 500 – 8023 (Trial Product – Hocut 795 NSC)
- Location:** Bay – B17
- Size:** 200 Gal each
- Background:** Both machines are identical and machine series-2 end covers. Machine does milling, drilling, tapping and boring on the parts. The tooling is carbide and steel. Both machines were dumped completely and washed. The machine was refilled with water and 3% Sym C and 1 dose (as per label) of Kathon 893 MW. The rinse solution was circulated throughout the system for 3 Hours and dumped. Machine 7976 was filled with 5% conc. pre diluted Trim E-206. Machine 8023 was filled with 5% conc. pre diluted Hocut 795 NSC.
- Trial Period:** 1 Month
- Laboratory:** Houghton International Technical Service Laboratory, Valley Forge - PA

Trial Data

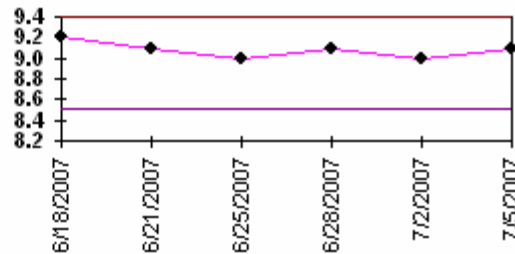
795 NSC Trial Data

Date	CONC.	PH	BACTERIA	Comments
6/18/2007	4.8	9.2	0	Neutral Odor
6/21/2007	5.5	9.1	0	No issues noticed with filter paper... Longlasting
6/25/2007	6.5	9.0	0	No Bacterial activity
6/28/2007	5.4	9.1	0	Stable pH
7/2/2007	5.4	9.0	0	No Rust noticed
7/5/2007	5.4	9.1	0	

795 HSC - Bacteria Data



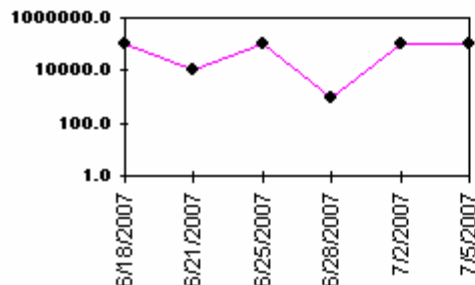
795 HSC pH Data



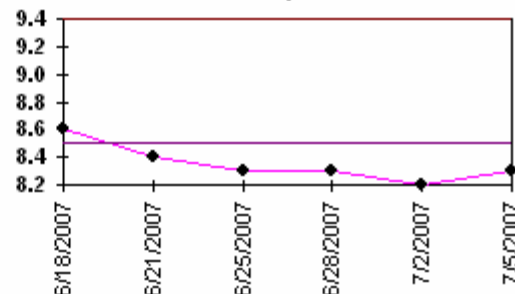
Trim E-206 Trial Data

Date	CONC.	PH	BACTERIA	Comments
6/18/2007	6.2	8.6	100,000	Distinct Mineral Oil / Chlorine Odor
6/21/2007	6.8	8.4	10,000	Filter paper plugging... changed every shift
6/25/2007	7.0	8.3	100,000	Bacterial activity
6/28/2007	6.2	8.3	1,000	Low pH
7/2/2007	6.6	8.2	100,000	Rust on Fixtures
7/5/2007	6.6	8.3	100,000	

Trim E-206 - Bacteria Data



Trim E-206 pH Data



Conclusion

- Hocut 795 delivered superior performance on the trial.
- pH on the 795 system was above 9.0 throughout the trial, while the pH on E-206 was at 8.9 for a week and dropped to as low as 8.3 for a significant period of the trial.
- Low pH on cast iron system is known to result in rust. As such the E- 206 system had rust on fixtures and chips.
- The E-206 fluid had a strong chlorinated mineral oil odor while Hocut 795 had neutral odor.
- Filter paper was getting plugged and was being changed every day on the E-206 system while the Hocut 795 systems ran cleaner and longer.
- Living up to its reputation as a true bio stable coolant, Hocut 795 showed no bacterial activity.
- Plant chose to expand the Hocut 795 program.

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