

LABORATORY ANALYSIS



11525 Rock Island Court, St. Louis, MO 63043
Tel: 1-800-876-0008 info@englube.com

WOODWARD CORPORATION
6300 WEST HOWARD STREET
NILES, IL
United States 60714
Contact: Daniel Aviles
daniel.aviles@woodward.com
T:
F:

Department **NPI OILS**
Equipment No. **5501 HMC (00020)**
System **Hydraulic System**
Oil Type **ENGINEERED LUBRICANTS ENLUBE 15-AW (--- GAL)**

Diagnosis

Additives are depleting or this is a different hydraulic oil with lower additive treatments. Consider an oil change on this component to replenish the additives in Enlube 15-AW. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. There is no indication of any contamination in the oil. The system and fluid cleanliness is acceptable. Zinc (Zn) ppm levels are severely low.

Sample Information

Lab Number	New	2311-00540	2308-00173	2305-00384
Date of Sample	(Typical)	16 Nov 2023	03 Aug 2023	04 May 2023
Oil Added		UNK	UNK	UNK
Last Drain Date		--	--	--
Last Filter Service		--	--	--
Sample Point		---	---	---
Sample Status		SEVERE	ABNORMAL	ABNORMAL

VISCOSITY @ 100F or 40C (ASTM D-445)

SSU Vis. @ 100F	SSU	149.6	149.4	167.2
cSt Vis. @ 40C	cSt	32.0	28.86	32.32

COLOR (BASED ON ASTM D1500 STANDARDS)

Color	Scale 0-8	1.0	1.0	1.0
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PARTICLE COUNT (PER 1ML)

ISO CODE	ISO 4406(c)	>19/18/14	18/16/12	19/17/14	15/12/9
4 Micron & Larger	particles/ml	>5000	1,720	4,469	254
6 Micron & Larger	particles/ml	>2500	322	929	36
14 Micron & Larger	particles/ml	>160	29	83	3
21 Micron & Larger	particles/ml	>40	8	23	1
38 Micron & Larger	particles/ml	>10	0	2	0
70 Micron & Larger	particles/ml	>3	0	0	0

ICP - OILS (REPORTED IN PARTS PER MILLION)

Aluminum (Al)	ppm	<5	<5	<5	
Antimony (Sb)	ppm	<5	<5	<5	
Cadmium (Cd)	ppm	<5	<5	<5	
Chromium (Cr)	ppm	<5	<5	<5	
Cobalt (Co)	ppm	<5	<5	<5	
Copper (Cu)	ppm	<5	<5	<5	
Iron (Fe)	ppm	<5	<5	<5	
Lead (Pb)	ppm	<5	<5	<5	
Manganese (Mn)	ppm	<5	<5	<5	
Molybdenum(Mo)	ppm	<5	<5	<5	
Nickel (Ni)	ppm	<5	<5	<5	
Silver (Ag)	ppm	<5	<5	<5	
Tin (Sn)	ppm	<5	<5	<5	
Titanium (Ti)	ppm	<5	<5	<5	
Vanadium (V)	ppm	<5	<5	<5	
Barium (Ba)	ppm	<5	<5	<5	
Boron (B)	ppm	<5	<5	<5	
Calcium (Ca)	ppm	52	61	64	
Magnesium (Mg)	ppm	28	29	29	
Phosphorus(P)	ppm	260	296	293	
Silicon (Si)	ppm	<5	<5	<5	
Zinc (Zn)	ppm	668	304	355	361
Sulfur (S)	ppm	532	711	762	

Customer Id: ENC0658001
Sample No.: EN23110540
Lab Number: 23110540
Test Package: TEST



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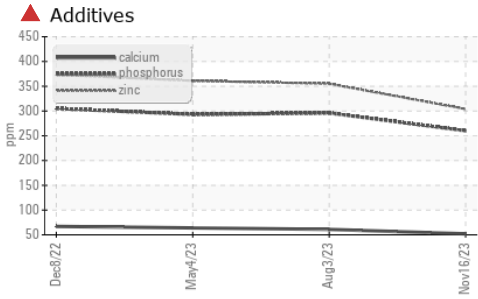
To discuss the diagnosis or test data:

Beau Vuagniaux +1
bvuagniaux@englube.com

To change component or sample information:

Tracy Weaks +1 (314)872-9540
tweaks@englube.com

OIL ANALYSIS REPORT



DR FERROGRAPHY READINGS

L		■ 2.5	■ 6.0	■ 1.2
S		■ 0.8	■ 1.7	■ 0.4
WPC	DL + DS	■ 3.3	■ 7.7	■ 1.6

Contamination

Water	>0.05	NEG	NEG	NEG
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