

# LABORATORY ANALYSIS



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

Department **WINDING**  
 Equipment No. **INSE15 COIL INSERTER-1ST PHASE (00138)**  
 System **Hydraulic System**  
 Oil Type **ENGINEERED LUBRICANTS ENLUBE 20-AW (--- GAL)**

**COPELAND (MHDS)**  
 6001 S. 35TH STREET, SUITE D"  
 REYNOSA, ZZ  
 US  
 Contact: GERARDO GUERRERO  
 francisco.castillo@Copeland.com  
 T:  
 F:

## Diagnosis

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. L and severity index levels are severe. WPC and % large particles levels are abnormal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

## Sample Information

Lab Number	New	<b>2405-00145</b>	2312-00760	2202-00524
Date of Sample	(Typical)	<b>28 Apr 2024</b>	14 Dec 2023	01 Feb 2022
Oil Added		<b>UNK</b>	UNK	UNK
Last Drain Date		--	--	--
Last Filter Service		--	--	--
Sample Point		---	---	---
Sample Status		<b>SEVERE</b>	ABNORMAL	ABNORMAL

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

SSU Vis. @ 100F	SSU	<b>219.2</b>	219.4	217.4
cSt Vis. @ 40C	cSt	46	42.51	42.12

## COLOR (BASED ON ASTM D1500 STANDARDS)

Color	Scale 0-8	<b>1.0</b>	0.5	1.0
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## PARTICLE COUNT (PER 1ML)

ISO CODE	ISO 4406(c)	>19/18/14	<b>22/19/14</b>	21/19/15	21/18/15
4 Micron & Larger	particles/ml	>5000	<b>▲ 20,856</b>	▲ 11,833	▲ 10,060
6 Micron & Larger	particles/ml	>2500	<b>● 3,143</b>	▲ 3,306	■ 1,884
14 Micron & Larger	particles/ml	>160	■ <b>103</b>	▲ 238	▲ 196
21 Micron & Larger	particles/ml	>40	■ <b>24</b>	▲ 72	55
38 Micron & Larger	particles/ml	>10	■ <b>0</b>	■ 6	■ 3
70 Micron & Larger	particles/ml	>3	■ <b>0</b>	■ 0	■ 1

## ICP - OILS (REPORTED IN PARTS PER MILLION)

Aluminum (Al)	ppm	<b>&lt;5</b>	<5	<5
Antimony (Sb)	ppm	<b>&lt;5</b>	<5	<5
Cadmium (Cd)	ppm	<b>&lt;5</b>	<5	<5
Chromium (Cr)	ppm	<b>&lt;5</b>	<5	<5
Cobalt (Co)	ppm	<b>&lt;5</b>	<5	<5
Copper (Cu)	ppm	■ <b>&lt;5</b>	■ <5	■ <5
Iron (Fe)	ppm	■ <b>&lt;5</b>	■ <5	■ <5
Lead (Pb)	ppm	<b>&lt;5</b>	<5	<5
Manganese (Mn)	ppm	<b>&lt;5</b>	<5	<5
Molybdenum(Mo)	ppm	<b>&lt;5</b>	<5	<5
Nickel (Ni)	ppm	<b>&lt;5</b>	<5	<5
Silver (Ag)	ppm	<b>&lt;5</b>	<5	<5
Tin (Sn)	ppm	<b>&lt;5</b>	<5	<5
Titanium (Ti)	ppm	<b>&lt;5</b>	<5	<5
Vanadium (V)	ppm	<b>&lt;5</b>	<5	<5
Barium (Ba)	ppm	<b>&lt;5</b>	<5	<5
Boron (B)	ppm	<b>&lt;5</b>	<5	<5
Calcium (Ca)	ppm	<b>96</b>	104	109
Magnesium (Mg)	ppm	<b>&lt;5</b>	<5	<5
Phosphorus(P)	ppm	<b>512</b>	554	494
Silicon (Si)	ppm	<b>&lt;5</b>	<5	<5
Zinc (Zn)	ppm	715	617	658
Sulfur (S)	ppm	<b>1,430</b>	1,450	1,690

Customer Id: MOTMCA  
 Sample No.: EN24050145  
 Lab Number: 24050145  
 Test Package: TEST

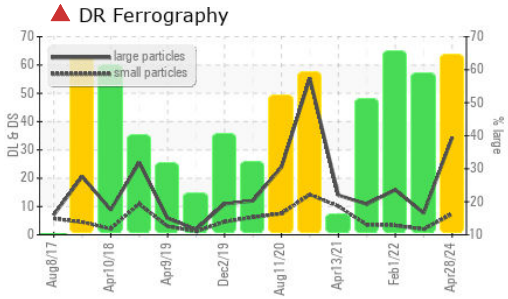


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To discuss the diagnosis or test data:  
 Brian Klutenkamper +1 (314)872-9540  
[bkutenkamper@englube.com](mailto:bkutenkamper@englube.com)

To change component or sample information:  
 Tracy Weaks +1 (314)872-9540  
[tweaks@englube.com](mailto:tweaks@englube.com)

# OIL ANALYSIS REPORT



### DR FERROGRAPHY READINGS

L		▲ <b>34.4</b>	■ 7.7	■ 15.9
S		■ <b>7.4</b>	■ 2.0	■ 3.3
WPC	DL + DS	▲ <b>41.8</b>	■ 9.7	■ 19.2

### Contamination

Water	>0.05	<b>NEG</b>	NEG	NEG
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