



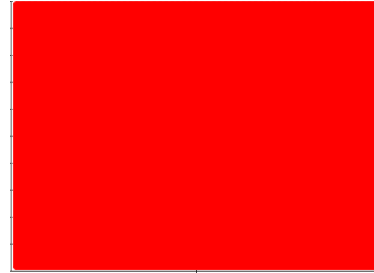
OIL ANALYSIS REPORT

Sample Rating Trend

VISUAL METAL



Area
(368664)
Machine Id
LIEBHERR L550 062917-1756
Component
Splitter Box
Fluid
NOT GIVEN (--- GAL)



DIAGNOSIS

Recommendation

We advise that you check for visible metal particles in the oil. The oil change at the time of sampling has been noted. An inspection for the source(s) of wear may be warranted at this time. We recommend an early resample to monitor this condition. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF). The fluid was not specified, however, a fluid match indicates that this fluid is SAE 50 Gear Oil. Please confirm the oil type and grade, and specify the brand of the oil on your next sample.

Wear

Nickel ppm levels are severe. Wear particle analysis indicates that the ferrous sliding particles are severe. Wear particle analysis indicates that the ferrous black oxides and ferrous cutting and ferrous rolling particles are abnormal. Iron ppm levels are abnormal. Wear particle analysis indicates that the ferrous rubbing particles are abnormal. High concentration of visible metal present. Gear wear is indicated.

Contaminants

There is no indication of any contamination in the oil.

Oil Condition

Viscosity of sample indicates oil is within SAE 50 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history 1	history 2
Sample Number			LH0242587	---	---
Sample Date			08 Nov 2022	---	---
Machine Age	hrs		2133	---	---
Oil Age	hrs		0	---	---
Oil Changed			Changed	---	---
Sample Status			SEVERE	---	---

WEAR METALS

	method	limit/base	current	history 1	history 2
PQ	ASTM D8184	>80	9	---	---
Iron	ppm ASTM D5185(m)	>100	▲ 107	---	---
Chromium	ppm ASTM D5185(m)	>5	<1	---	---
Nickel	ppm ASTM D5185(m)	>5	● 16	---	---
Titanium	ppm ASTM D5185(m)		0	---	---
Silver	ppm ASTM D5185(m)		0	---	---
Aluminum	ppm ASTM D5185(m)	>20	2	---	---
Lead	ppm ASTM D5185(m)	>30	1	---	---
Copper	ppm ASTM D5185(m)	>20	<1	---	---
Tin	ppm ASTM D5185(m)	>10	0	---	---
Antimony	ppm ASTM D5185(m)	>5	<1	---	---
Vanadium	ppm ASTM D5185(m)		0	---	---
Beryllium	ppm ASTM D5185(m)		0	---	---
Cadmium	ppm ASTM D5185(m)		0	---	---

ADDITIVES

	method	limit/base	current	history 1	history 2
Boron	ppm ASTM D5185(m)		4	---	---
Barium	ppm ASTM D5185(m)		5	---	---
Molybdenum	ppm ASTM D5185(m)		3	---	---
Manganese	ppm ASTM D5185(m)		7	---	---
Magnesium	ppm ASTM D5185(m)		13	---	---
Calcium	ppm ASTM D5185(m)		59	---	---
Phosphorus	ppm ASTM D5185(m)		2239	---	---
Zinc	ppm ASTM D5185(m)		146	---	---
Sulfur	ppm ASTM D5185(m)		23606	---	---
Lithium	ppm ASTM D5185(m)		1	---	---

CONTAMINANTS

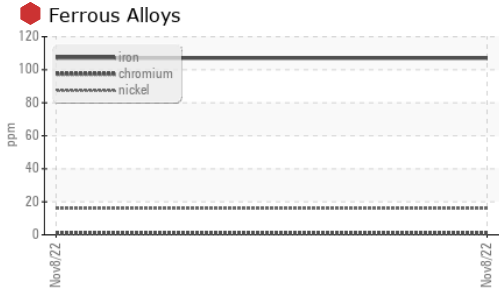
	method	limit/base	current	history 1	history 2
Silicon	ppm ASTM D5185(m)	>30	1	---	---
Sodium	ppm ASTM D5185(m)	>25	10	---	---
Potassium	ppm ASTM D5185(m)	>20	4	---	---

VISUAL

	method	limit/base	current	history 1	history 2
White Metal	scalar Visual	NONE	● HEAVY	---	---
Yellow Metal	scalar Visual	NONE	NONE	---	---
Precipitate	scalar Visual	NONE	NONE	---	---
Silt	scalar Visual	NONE	NONE	---	---
Debris	scalar Visual	NONE	NONE	---	---
Sand/Dirt	scalar Visual	NONE	NONE	---	---
Appearance	scalar Visual	NORML	NORML	---	---
Odor	scalar Visual	NORML	NORML	---	---
Emulsified Water	scalar Visual	>0.1	NEG	---	---
Free Water	scalar Visual		NEG	---	---



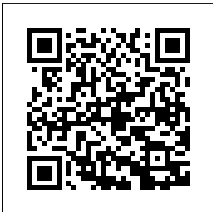
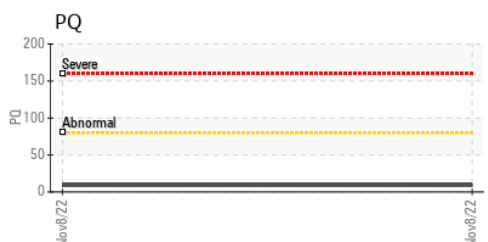
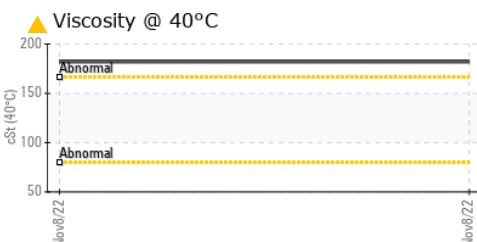
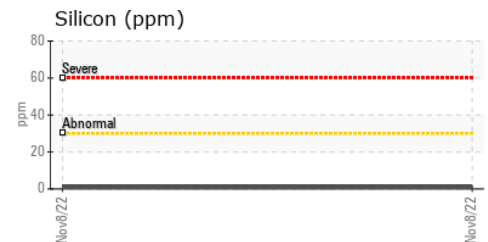
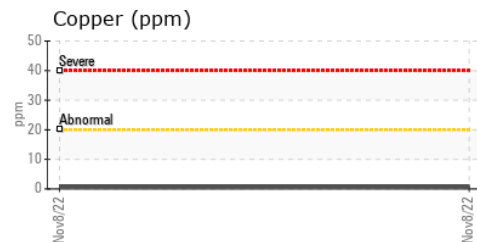
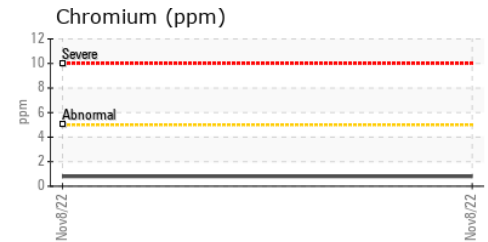
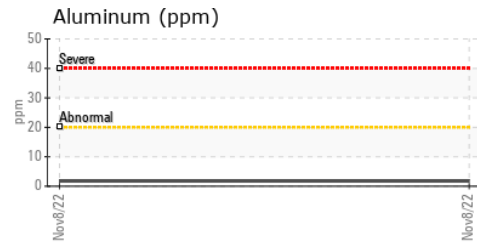
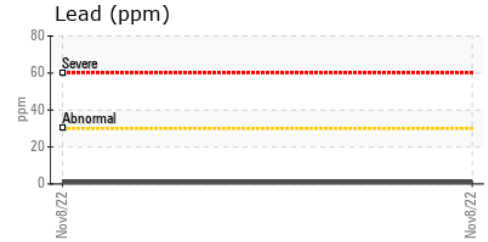
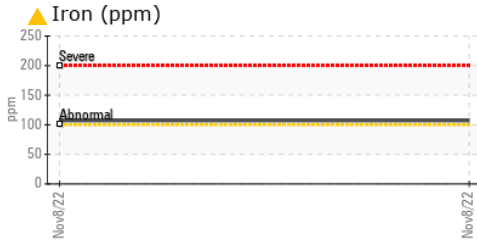
OIL ANALYSIS REPORT



FLUID PROPERTIES	method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D7279(m)	▲ 182	---	---

SAMPLE IMAGES	method	limit/base	current	history 1	history 2
Color				no image	no image
Bottom				no image	no image
PrtFilter				no image	no image

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC1234567 **Received** : 11 Nov 2022
Lab Number : 01234567 **Diagnosed** : 29 Nov 2022
Unique Number : 12345678 **Diagnostician** : Bill Quesnel
Test Package : MOB 1 (Additional Tests: A-Ferr, Bottom, BottomAnalysis, FilterPatch, PQ)
To discuss this sample report, contact Customer Service at 1-800-268-2131.
(m) Denotes a modified test method, (e) Denotes a test conducted using an external laboratory.

Cusany Logistics Inc.
 1212 Industrial Place
 Centerville, OH
 USA 75900
 Contact: Jim Leduc
 jim.leduc@cusanylogisticsinc.com
 T: (305)555-1212
 F: (305)555-1222

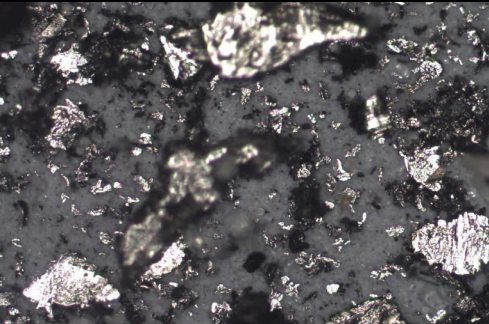


PARTICLE FILTER REPORT

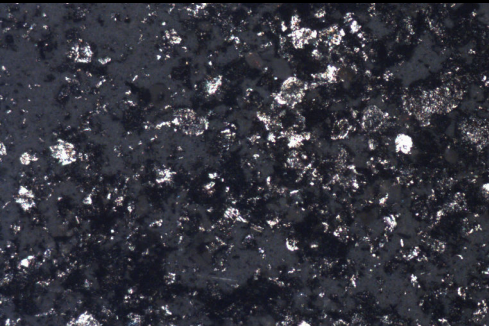


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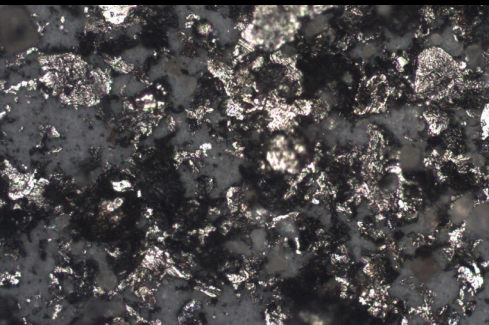
Particle Filter (Magn: 100 x)



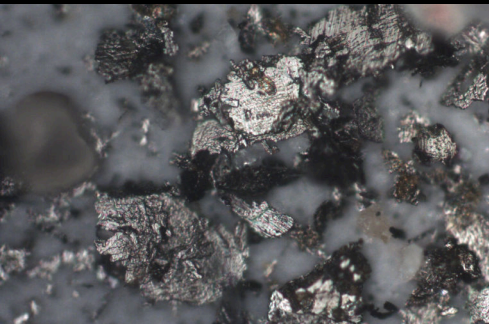
Particle Filter (Magn: 50 x)



Particle Filter (Magn: 100 x)



Particle Filter (Magn: 200 x)



FERROGRAPHY		method	limit/base	current	history 1	history 2
Ferrous Rubbing	Scale 0-10	ASTM D7684		▲ 4		
Ferrous Sliding	Scale 0-10	ASTM D7684		● 6		
Ferrous Cutting	Scale 0-10	ASTM D7684		▲ 2		
Ferrous Rolling	Scale 0-10	ASTM D7684		▲ 3		
Ferrous Break-in	Scale 0-10	ASTM D7684				
Ferrous Spheres	Scale 0-10	ASTM D7684				
Ferrous Black Oxides	Scale 0-10	ASTM D7684		▲ 3		
Ferrous Red Oxides	Scale 0-10	ASTM D7684				
Ferrous Corrosive	Scale 0-10	ASTM D7684				
Ferrous Other	Scale 0-10	ASTM D7684				
Nonferrous Rubbing	Scale 0-10	ASTM D7684				
Nonferrous Sliding	Scale 0-10	ASTM D7684				
Nonferrous Cutting	Scale 0-10	ASTM D7684				
Nonferrous Rolling	Scale 0-10	ASTM D7684				
Nonferrous Other	Scale 0-10	ASTM D7684				
Carbonaceous Material	Scale 0-10	ASTM D7684				
Lubricant Degradation	Scale 0-10	ASTM D7684				
Sand/Dirt	Scale 0-10	ASTM D7684		■ 2		
Fibres	Scale 0-10	ASTM D7684				
Spheres	Scale 0-10	ASTM D7684				
Other	Scale 0-10	ASTM D7684				

WEAR

Nickel ppm levels are severe. Wear particle analysis indicates that the ferrous sliding particles are severe. Wear particle analysis indicates that the ferrous black oxides and ferrous cutting and ferrous rolling particles are abnormal. Iron ppm levels are abnormal. Wear particle analysis indicates that the ferrous rubbing particles are abnormal. High concentration of visible metal present. Gear wear is indicated.

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