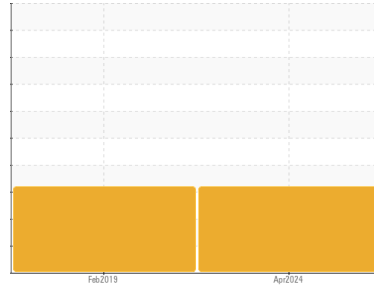




OIL ANALYSIS REPORT

Sample Rating Trend



CONTAMINANT



Area

MANULIFT EMI [02548846]

Machine Id

MERLO R38-16S B8418384

Component

Hydraulic System

Fluid

PANOLIN HLP SYNTH 46 (220 LTR)

DIAGNOSIS

Recommendation

Nous recommandons le remplacement des filtres de ce composant. Nous vous recommandons d'échantillonner de nouveau dès que possible afin de contrôler la situation.

Wear

Les taux d'usure de tous les composants sont normaux.

Contamination

Il y a une quantité modérée de particules (de 4 à 14 microns) dans l'huile. Il y a une concentration modérée (7.0%) d'huile minérale présente dans le fluide. La teneur en eau est négligeable. La propreté du système est supérieure à la limite acceptable pour votre objectif de propreté ISO 4406.

Fluid Condition

Le AN est acceptable pour ce fluide. l'huile peut encore servir si la contamination peut être réduite à un niveau acceptable.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC	WC	---
Sample Date	Client Info	02 Apr 2024	28 Feb 2019	---
Machine Age	hrs Client Info	5771	4805	---
Oil Age	hrs Client Info	0	0	---
Oil Changed	Client Info	N/A	N/A	---
Sample Status		ABNORMAL	SEVERE	---

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185(m)	>20	11	5	---
Chromium ppm ASTM D5185(m)	>10	0	0	---
Nickel ppm ASTM D5185(m)	>10	0	0	---
Titanium ppm ASTM D5185(m)		<1	<1	---
Silver ppm ASTM D5185(m)		0	0	---
Aluminum ppm ASTM D5185(m)	>10	<1	0	---
Lead ppm ASTM D5185(m)	>10	0	<1	---
Copper ppm ASTM D5185(m)	>75	<1	0	---
Tin ppm ASTM D5185(m)	>10	0	0	---
Antimony ppm ASTM D5185(m)		0	0	---
Vanadium ppm ASTM D5185(m)		0	0	---
Beryllium ppm ASTM D5185(m)		0	0	---
Cadmium ppm ASTM D5185(m)		0	<1	---

ADDITIVES

method	limit/base	current	history1	history2
Boron ppm ASTM D5185(m)	0	15	2	---
Barium ppm ASTM D5185(m)	0	0	0	---
Molybdenum ppm ASTM D5185(m)	0	0	0	---
Manganese ppm ASTM D5185(m)	0	0	<1	---
Magnesium ppm ASTM D5185(m)	0	1	<1	---
Calcium ppm ASTM D5185(m)	0	106	118	---
Phosphorus ppm ASTM D5185(m)	1700	891	1048	---
Zinc ppm ASTM D5185(m)	0	63	15	---
Sulfur ppm ASTM D5185(m)	1350	1244	1314	---
Lithium ppm ASTM D5185(m)		<1	0	---

CONTAMINANTS

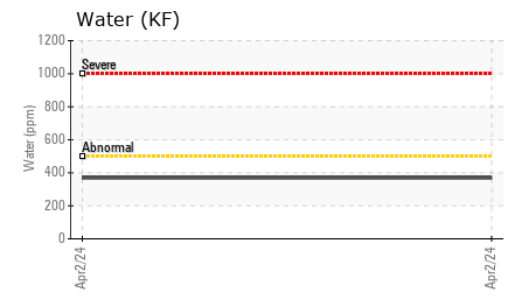
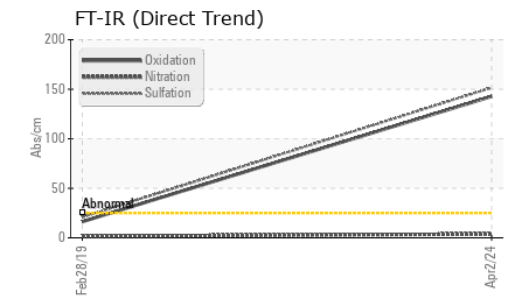
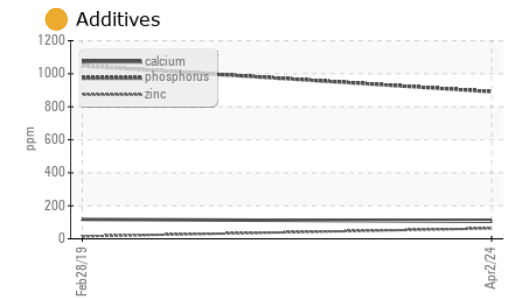
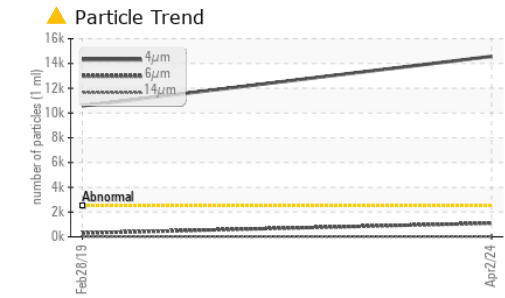
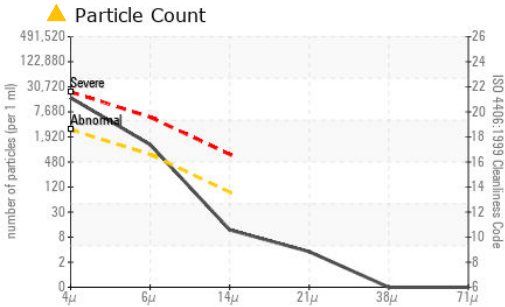
method	limit/base	current	history1	history2
Silicon ppm ASTM D5185(m)	>20	1	2	---
Sodium ppm ASTM D5185(m)		2	<1	---
Potassium ppm ASTM D5185(m)	>20	<1	0	---
Water % ASTM D6304*	>0.05	0.036	---	---
ppm Water ppm ASTM D6304*	>500	369	---	---

INFRA-RED

method	limit/base	current	history1	history2
Soot % ASTM D7844*		0	0	---
Nitration Abs/cm ASTM D7624*		3.8	1.7	---
Sulfation Abs/.1mm ASTM D7415*		151.5	20.8	---
Mineral Oil Content % ASTM D7418*	<5.0%	7.0	15.3	---



OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC
Lab Number : 02627142
Unique Number : 5760274
Test Package : MOB 2 (Additional Tests: TAN Man)
Received : 05 Apr 2024
Tested : 11 Apr 2024
Diagnosed : 15 Apr 2024 - Bill Quesnel

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

Envirolin Canada
 520 rue Adanac
 Quebec, QC
 CA G1C 7B7
 Contact: Patrick Levesque
 patrick.levesque@envirolin.com
 T: (418)623-1216
 F: (418)660-8889

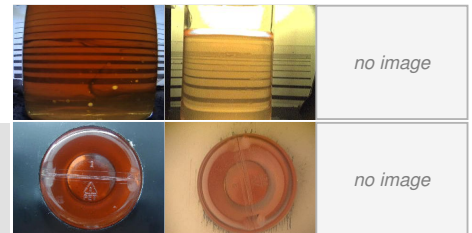
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ 14572	▲ 10579	---
Particles >6µm	ASTM D7647	>640	● 1100	301	---
Particles >14µm	ASTM D7647	>80	10	9	---
Particles >21µm	ASTM D7647	>20	3	2	---
Particles >38µm	ASTM D7647	>4	0	0	---
Particles >71µm	ASTM D7647	>3	0	0	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 21/17/10	▲ 21/15/10	---

FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	142.8	16.3	---
Acid Number (AN)	mg KOH/g	ASTM D974*	0.27	0.414	---

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	---
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*	>0.05	NEG	---
Free Water	scalar	Visual*	NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	47.0	39.4	40.0
Visc @ 100°C	cSt	ASTM D7279(m)	8.1	7.7	7.7
Viscosity Index (VI)	Scale	ASTM D2270*	146	168	165

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					no image
Bottom					no image





MINERAL OIL CONTENT REPORT

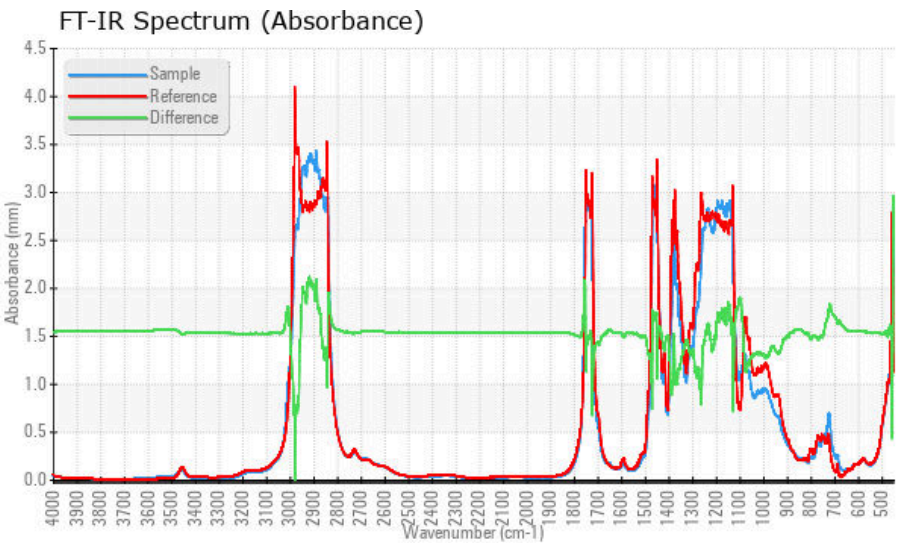
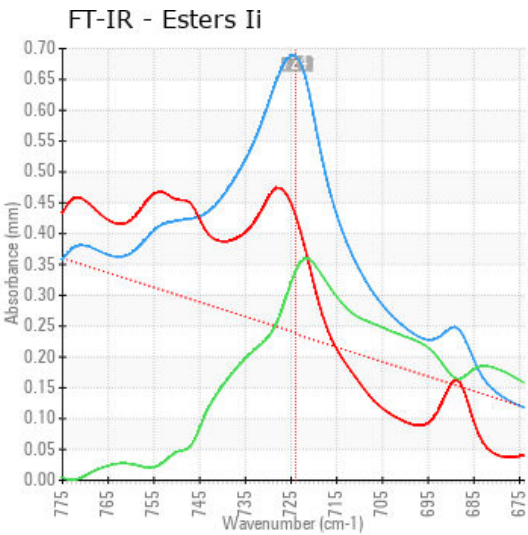
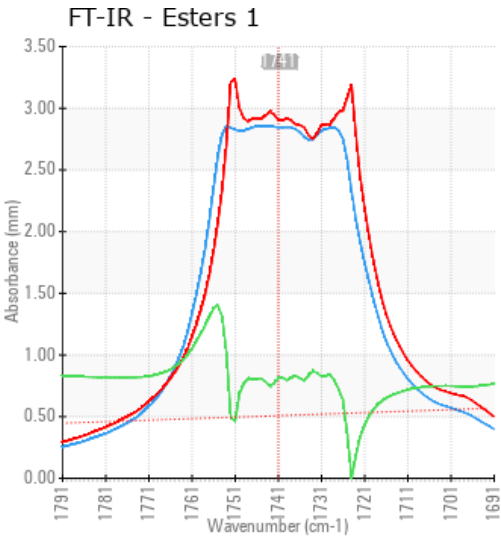
FAIL



Area
MANULIFT EMI [02548846]
 Machine Id
MERLO R38-16S B8418384
 Component
Hydraulic System
 Fluid
PANOLIN HLP SYNTH 46 (220 LTR)

SPECTRAL ANALYSIS

	method	limit/base	current	history1	history2
Zinc	ppm	ASTM D5185(m)	0	63	15
Mineral Oil Content	%	ASTM D7418*	<5.0%	7.0	15.3



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