

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L580 069442-1762 - Diesel Engine

Sample No: LH0247596

Oil Type: SHELL ROTELLA T6 5W40



INFORMATION SUR L'ÉCHANTILLON

Numéro d'échant.	LH0247596	LH0247598	LH0247595	---
Date d'échant.	11 Mar 2024	03 Jan 2024	04 Sep 2023	---
Heures de la Machine	4154	3567	2545	---
Heures de l'huile	0	0	0	---
Huile changée	Changed	N/A	Changed	---
Statut de l'échant.	NORMAL	NORMAL	NORMAL	---

HUBERT ET FILS INC
 1012 CHEMIN DE PARC INDUSTRIEL
 BOIS-FRANC, QC
 CA J9E 3A9
 Contact: Service Manager



ÉTAT D'HUILE

Visc 40°C	cSt	87.8	---	---	---
Visc 100°C	cSt	13.9	14.0	14.0	---
Indice de viscosité (VI)	Scale	162	---	---	---
Oxydation (PA)	%	69	68	82	---

T:
F:

Diagnostic

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



CONTAMINATION

Eau	%	NEG	NEG	NEG	---
% de suie	%	0	0	0.1	---
Nitration (PA)	%	63	63	79	---
Sulfatation (PA)	%	58	58	65	---
Glycol	%	NEG	NEG	NEG	---
Essence	%	<1.0	<1.0	<1.0	---
Silicium	ppm	5	7	8	---
Sodium	ppm	2	2	4	---
Potassium	ppm	3	6	6	---



MÉTAUX D'USURE

Fer	ppm	3	3	9	---
Cuivre	ppm	1	2	63	---
Plomb	ppm	0	<1	6	---
Étain	ppm	0	0	<1	---
Aluminium	ppm	1	2	2	---
Chrome	ppm	0	0	<1	---
Molybdène	ppm	3	<1	<1	---
Nickel	ppm	0	<1	<1	---
Titane	ppm	<1	0	0	---
Argent	ppm	0	0	<1	---
Manganèse	ppm	0	0	0	---
Vanadium	ppm	0	0	0	---



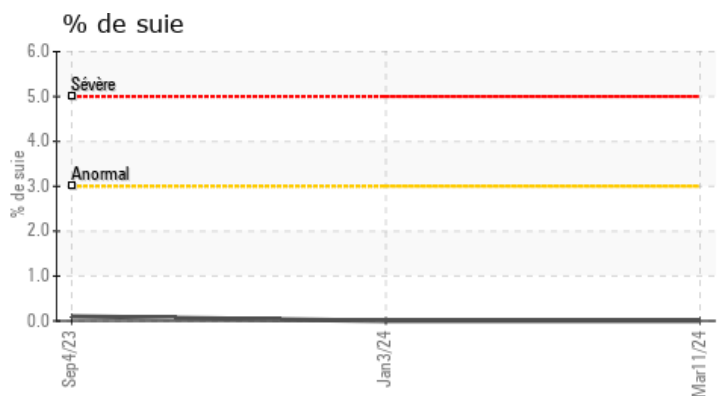
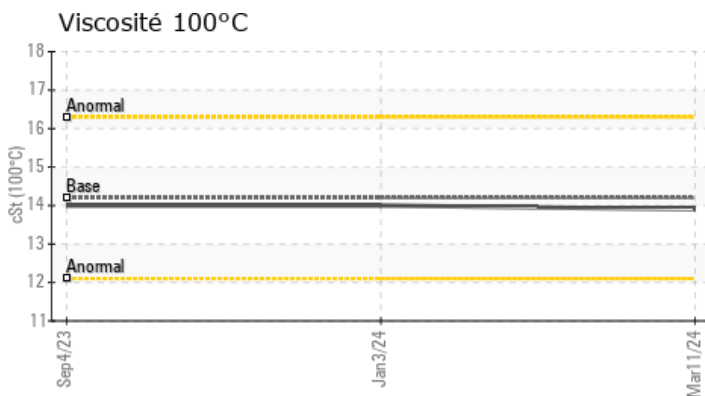
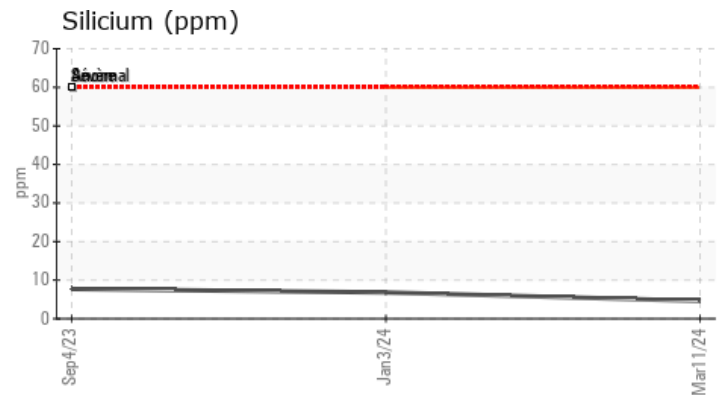
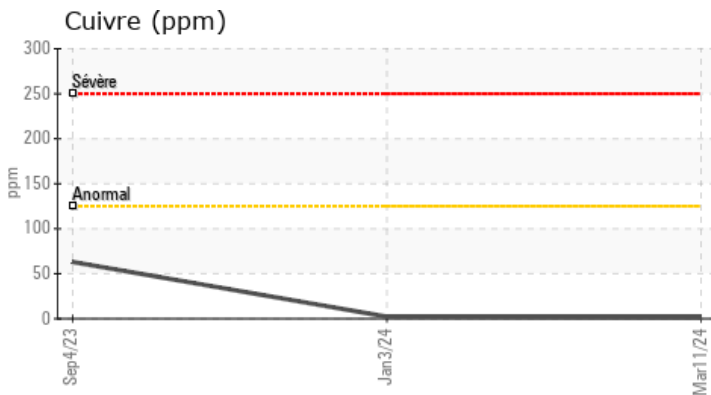
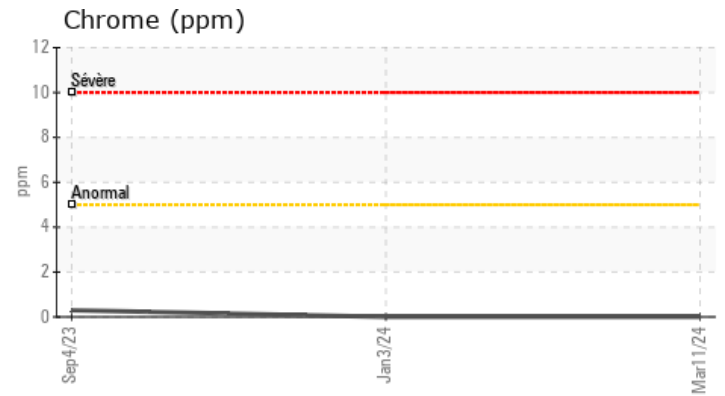
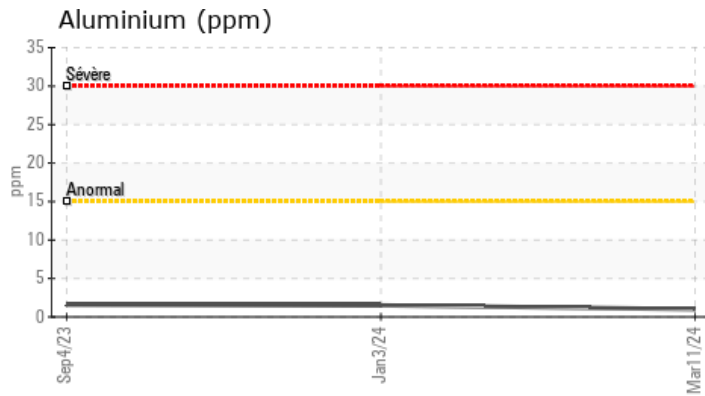
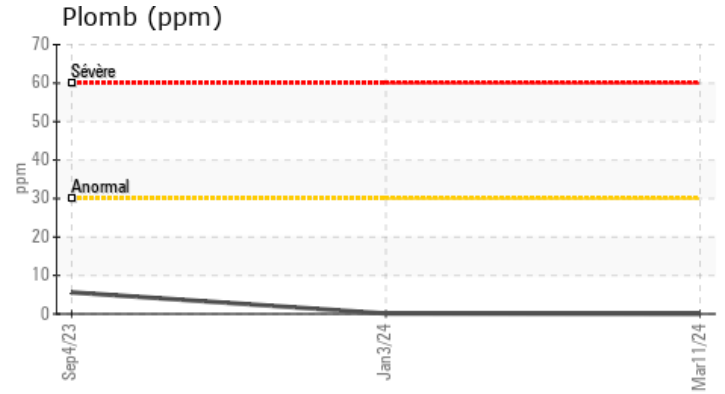
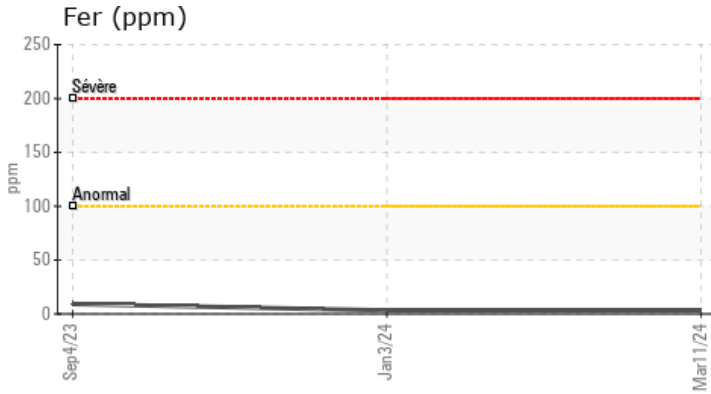
ADDITIFS

Calcium	ppm	2058	2191	2234	---
Magnésium	ppm	83	17	34	---
Zinc	ppm	1099	1124	1147	---
Phosphore	ppm	916	963	897	---
Baryum	ppm	0	0	2	---
Bore	ppm	131	138	55	---

Depot: HUB101BOI
Unique No: 5750295
Signed: Kevin Marson
Report Date: 28 Mar 2024



GRAPHS



LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L580 069442-1762 - Transmission (Manual)

Sample No: LH0247601

Oil Type: TDH FLUID SAE 70W80



Information sur l'échantillon

Numéro d'échant.	LH0247601	---	---	---
Date d'échant.	03 Jan 2024	---	---	---
Heures de la Machine	3567	---	---	---
Heures de l'huile	0	---	---	---
Huile changée	N/A	---	---	---
Statut de l'échant.	NORMAL	---	---	---

HUBERT ET FILS INC

1012 CHEMIN DE PARC INDUSTRIEL

BOIS-FRANC, QC

CA J9E 3A9

Contact: Service Manager



État d'huile

Visc 40°C	cSt	35.8	---	---	---
-----------	-----	------	-----	-----	-----

T:

F:



Contamination

Eau	%	NEG	---	---	---
Silicium	ppm	10	---	---	---
Sodium	ppm	6	---	---	---
Potassium	ppm	1	---	---	---

Diagnostic

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) TDH FLUID SAE 70W80. Please confirm. All component wear rates are normal. There is no indication of any contamination in the fluid. The fluid viscosity is lower than typical, possibly indicating the addition of lighter grade fluid. The condition of the fluid is acceptable for the time in service.



Métaux d'usure

Fer	ppm	52	---	---	---
Cuivre	ppm	2	---	---	---
Plomb	ppm	<1	---	---	---
Étain	ppm	0	---	---	---
Aluminium	ppm	2	---	---	---
Chrome	ppm	0	---	---	---
Molybdène	ppm	0	---	---	---
Nickel	ppm	0	---	---	---
Titane	ppm	0	---	---	---
Argent	ppm	0	---	---	---
Manganèse	ppm	<1	---	---	---
Vanadium	ppm	0	---	---	---



Additifs

Calcium	ppm	3487	---	---	---
Magnésium	ppm	10	---	---	---
Zinc	ppm	1375	---	---	---
Phosphore	ppm	1150	---	---	---
Baryum	ppm	0	---	---	---
Bore	ppm	96	---	---	---

Depot: HUB101BOI

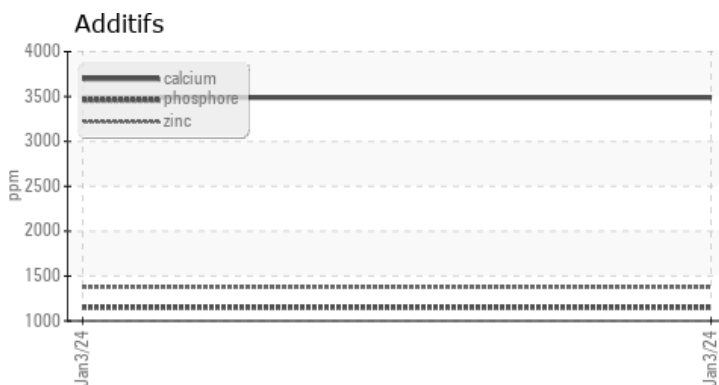
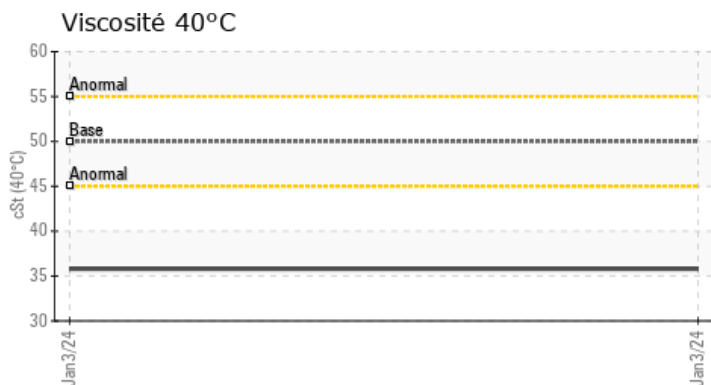
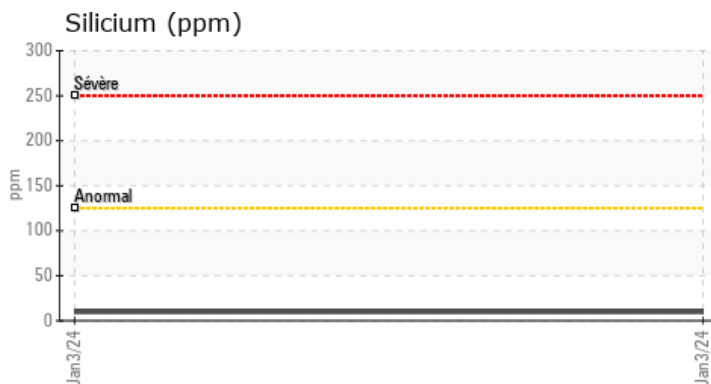
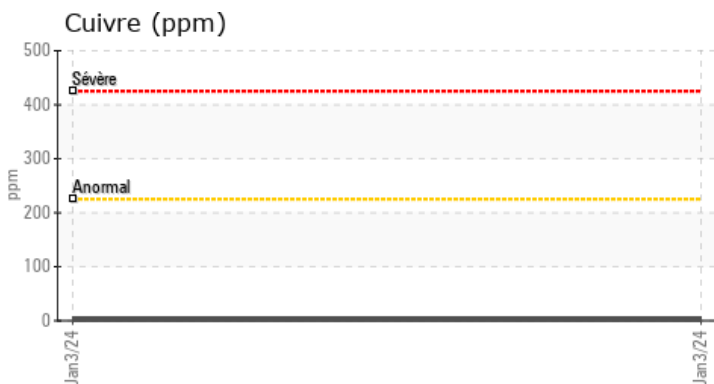
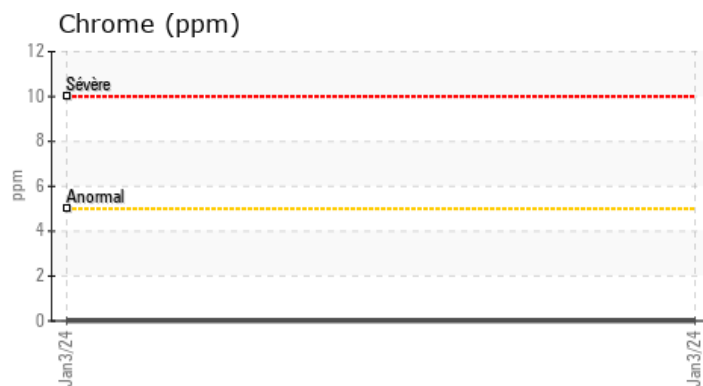
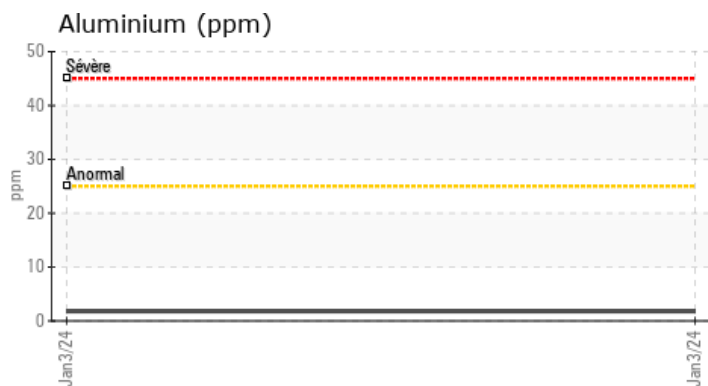
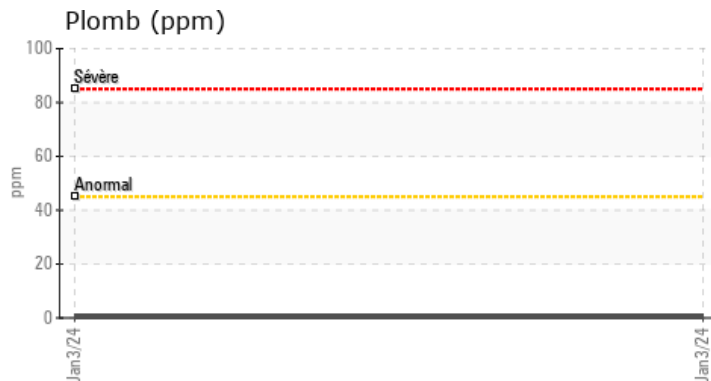
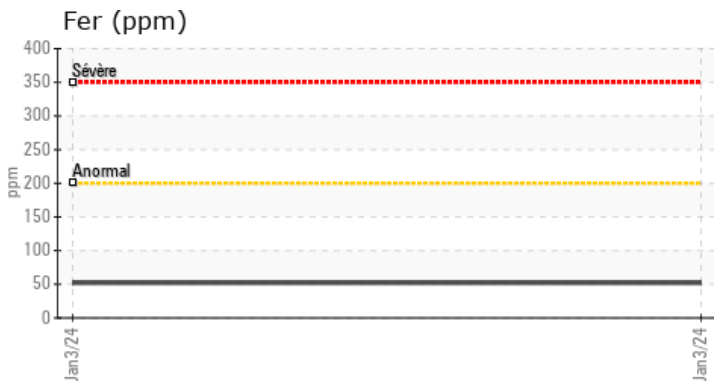
Unique No: 5710208

Signed: Kevin Marson

Report Date: 16 Jan 2024



Graphs





LIEBHERR L580 069442-1762 - Hydraulic System

Sample No: LH0247599

Oil Type: {unknown}



Information sur l'échantillon

Numéro d'échant.	LH0247599	---	---	---
Date d'échant.	03 Jan 2024	---	---	---
Heures de la Machine	3567	---	---	---
Heures de l'huile	0	---	---	---
Huile changée	N/A	---	---	---
Statut de l'échant.	ABNORMAL	---	---	---

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 1012 CHEMIN DE PARC INDUSTRIEL
 BOIS-FRANC, QC
 CA J9E 3A9
 Contact: Service Manager



État d'huile

Visc 40°C	cSt	● 43.6	---	---	---
Indice d'acidité	mg KOH/g	● 0.87	---	---	---

T:
F:



Contamination

Eau	%	NEG	---	---	---
Particules >4μ		● 85366	---	---	---
Particules >6μ		● 24697	---	---	---
Particules >14μ		● 1731	---	---	---
ISO 4406:1999 (c)		24/22/18	---	---	---
Silicium	ppm	● 4	---	---	---
Sodium	ppm	● <1	---	---	---
Potassium	ppm	● 0	---	---	---

Diagnostic

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample. Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. There is a moderate amount of particulates (2 to 100 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



Métaux d'usure

PQ		● 3	---	---	---
Fer	ppm	● 30	---	---	---
Cuivre	ppm	● 2	---	---	---
Plomb	ppm	● 4	---	---	---
Étain	ppm	● 0	---	---	---
Aluminium	ppm	● 2	---	---	---
Chrome	ppm	● 2	---	---	---
Molybdène	ppm	0	---	---	---
Nickel	ppm	● <1	---	---	---
Titane	ppm	0	---	---	---
Argent	ppm	0	---	---	---
Manganèse	ppm	0	---	---	---
Vanadium	ppm	0	---	---	---



Additifs

Calcium	ppm	531	---	---	---
Magnésium	ppm	3	---	---	---
Zinc	ppm	690	---	---	---
Phosphore	ppm	566	---	---	---
Baryum	ppm	<1	---	---	---
Bore	ppm	<1	---	---	---

Depot: HUB101BOI
Unique No: 5710110
Signed: Kevin Marson
Report Date: 17 Jan 2024

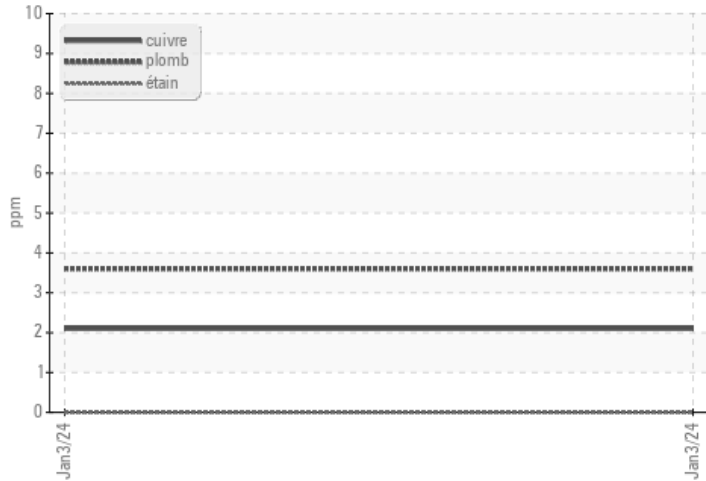


Graphs

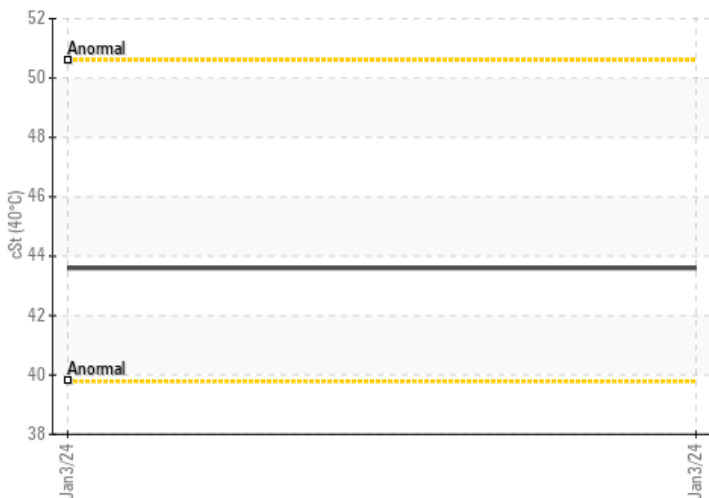
● Alliages ferreux



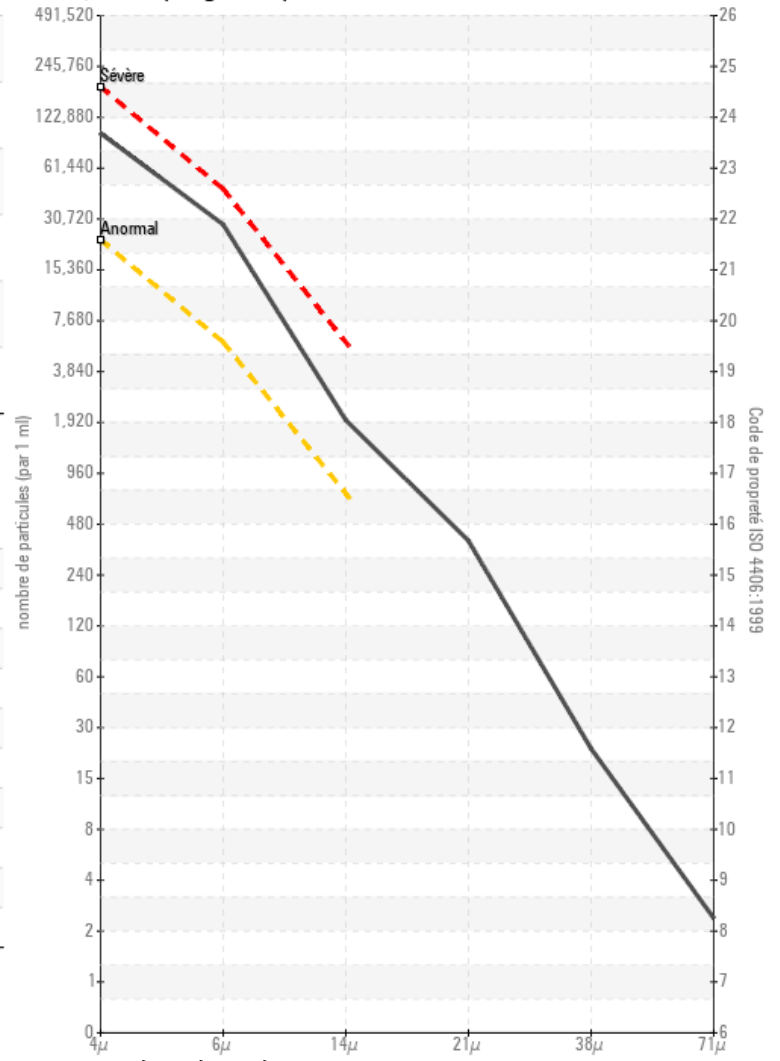
Métaux non-ferreux



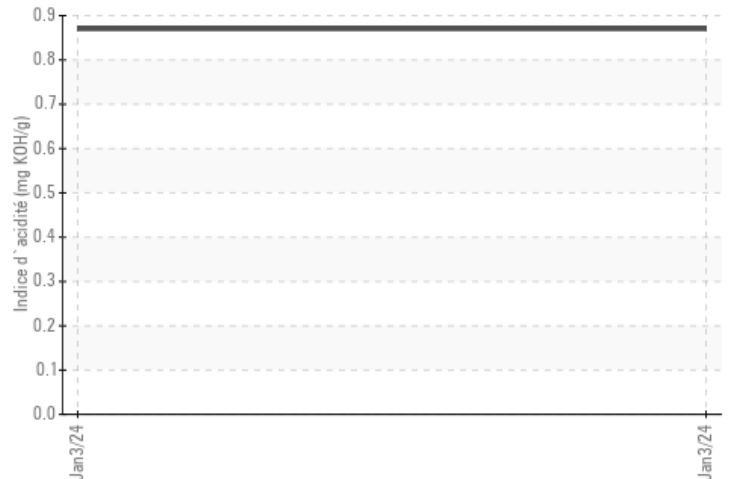
Viscosité 40°C



● Comptage de particules



Indice d'acidité



LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L580 069442-1762 - Front Differential

Sample No: LH0247607

Oil Type: GEAR OIL SAE 80W90



Information sur l'échantillon

Numéro d'échant.	LH0247607	---	---	---
Date d'échant.	15 Jan 2024	---	---	---
Heures de la Machine	3567	---	---	---
Heures de l'huile	0	---	---	---
Huile changée	N/A	---	---	---
Statut de l'échant.	SEVERE	---	---	---

HUBERT ET FILS INC

1012 CHEMIN DE PARC INDUSTRIEL

BOIS-FRANC, QC

CA J9E 3A9

Contact: Service Manager



État d'huile

Visc 40°C	cSt	● 174	---	---	---
-----------	-----	-------	-----	-----	-----

T:

F:



Contamination

Eau	%	NEG	---	---	---
Silicium	ppm	● 14	---	---	---
Sodium	ppm	● 4	---	---	---
Potassium	ppm	● <1	---	---	---

Diagnostic

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) GEAR OIL SAE 80W90. Please confirm. Copper and tin ppm levels are severe. Thrust washer and/or bearing/bushing wear is indicated. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



Métaux d'usure

Fer	ppm	● 354	---	---	---
Cuivre	ppm	● 235	---	---	---
Plomb	ppm	● 6	---	---	---
Étain	ppm	● 19	---	---	---
Aluminium	ppm	● 2	---	---	---
Chrome	ppm	● 2	---	---	---
Molybdène	ppm	● 0	---	---	---
Nickel	ppm	● <1	---	---	---
Titane	ppm	● 0	---	---	---
Argent	ppm	0	---	---	---
Manganèse	ppm	34	---	---	---
Vanadium	ppm	0	---	---	---



Additifs

Calcium	ppm	● 21	---	---	---
Magnésium	ppm	● 1	---	---	---
Zinc	ppm	● 180	---	---	---
Phosphore	ppm	● 2323	---	---	---
Baryum	ppm	● 0	---	---	---
Bore	ppm	● <1	---	---	---

Depot: HUB101BOI

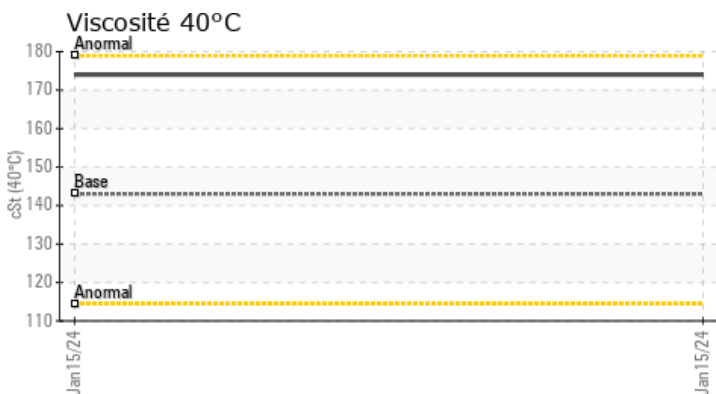
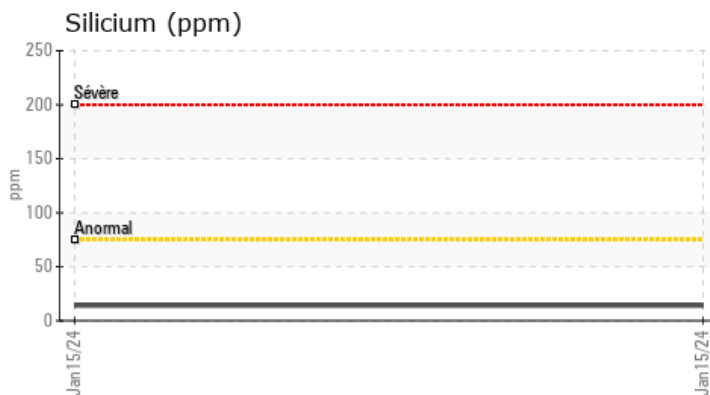
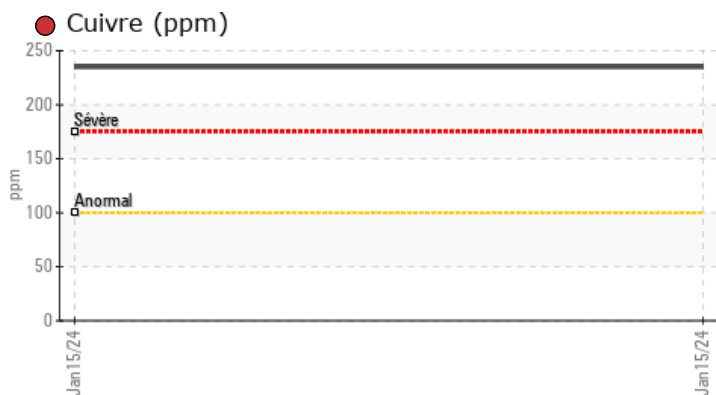
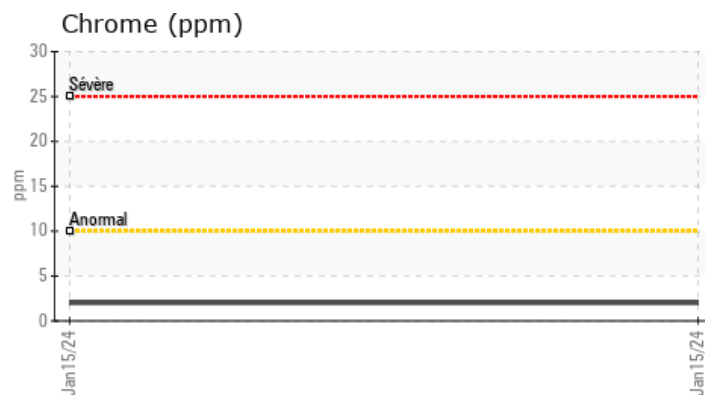
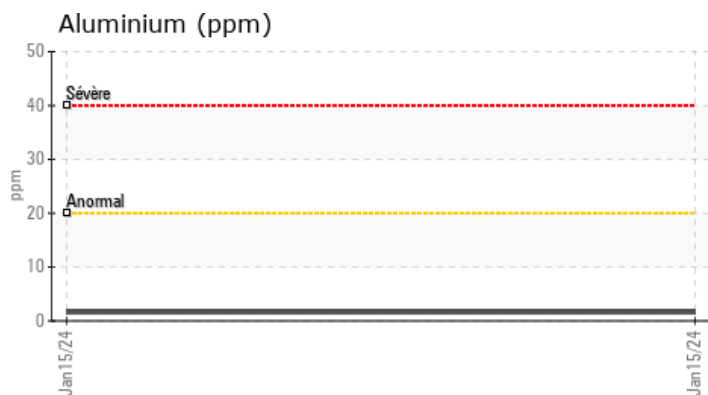
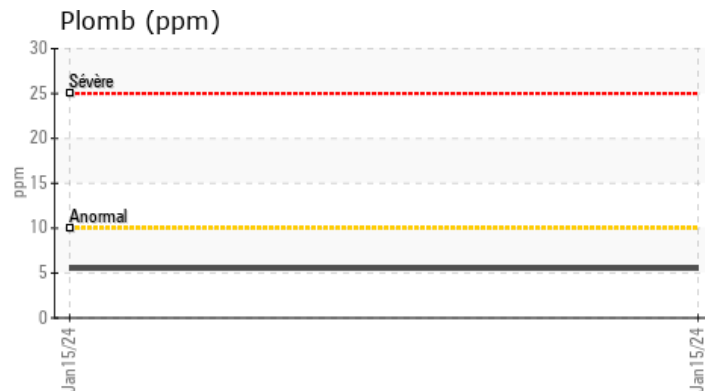
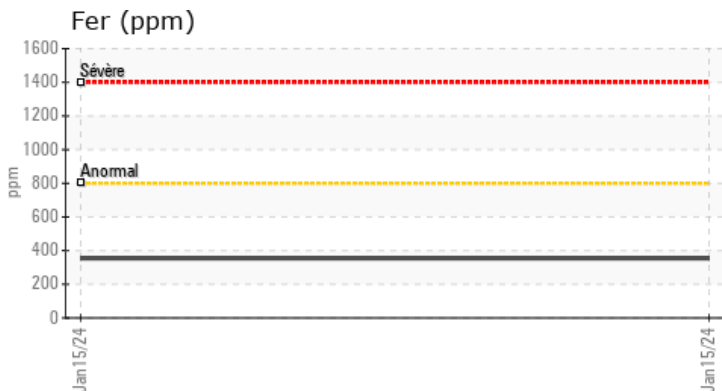
Unique No: 5710209

Signed: Kevin Marson

Report Date: 16 Jan 2024



Graphs



LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L580 069442-1762 - Front Right Wheel Hub

Sample No: LH0247603

Oil Type: GEAR OIL SAE 80W90



Information sur l'échantillon

Numéro d'échant.	LH0247603	---	---	---
Date d'échant.	03 Jan 2024	---	---	---
Heures de la Machine	3567	---	---	---
Heures de l'huile	0	---	---	---
Huile changée	N/A	---	---	---
Statut de l'échant.	ABNORMAL	---	---	---

HUBERT ET FILS INC

1012 CHEMIN DE PARC INDUSTRIEL

BOIS-FRANC, QC

CA J9E 3A9

Contact: Service Manager



État d'huile

Visc 40°C	cSt	● 174	---	---	---
-----------	-----	-------	-----	-----	-----

T:

F:



Contamination

Eau	%	NEG	---	---	---
Silicium	ppm	● 13	---	---	---
Sodium	ppm	● 4	---	---	---
Potassium	ppm	● 0	---	---	---

Diagnostic

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) GEAR OIL SAE 80W90. Please confirm. Copper, lead and tin ppm levels are abnormal. Bearing and/or bushing wear is indicated. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



Métaux d'usure

Fer	ppm	● 353	---	---	---
Cuivre	ppm	● 235	---	---	---
Plomb	ppm	● 6	---	---	---
Étain	ppm	● 19	---	---	---
Aluminium	ppm	● 2	---	---	---
Chrome	ppm	● 2	---	---	---
Molybdène	ppm	● 0	---	---	---
Nickel	ppm	● <1	---	---	---
Titane	ppm	0	---	---	---
Argent	ppm	0	---	---	---
Manganèse	ppm	34	---	---	---
Vanadium	ppm	0	---	---	---



Additifs

Calcium	ppm	● 15	---	---	---
Magnésium	ppm	● 1	---	---	---
Zinc	ppm	● 177	---	---	---
Phosphore	ppm	● 2291	---	---	---
Baryum	ppm	● 0	---	---	---
Bore	ppm	● 1	---	---	---

Depot: HUB101BOI

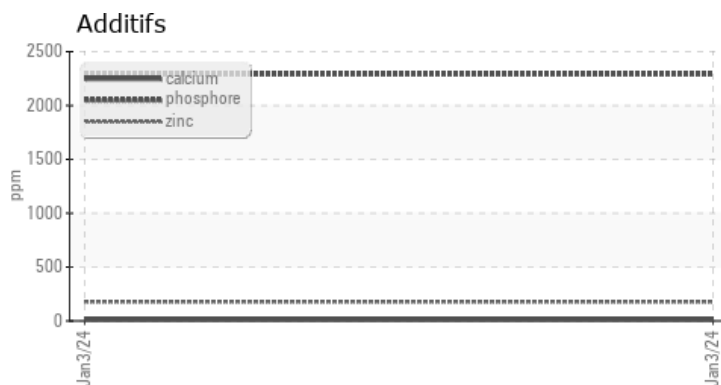
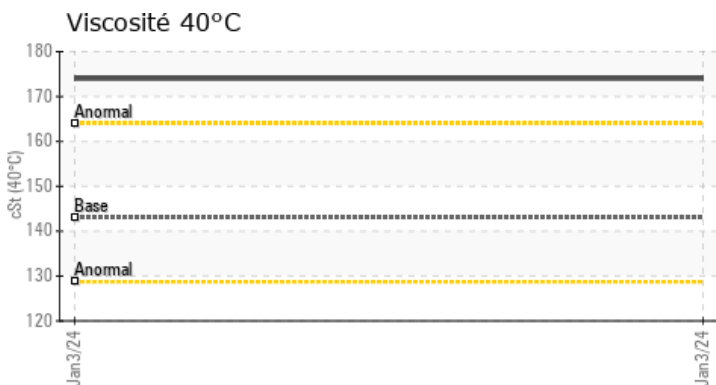
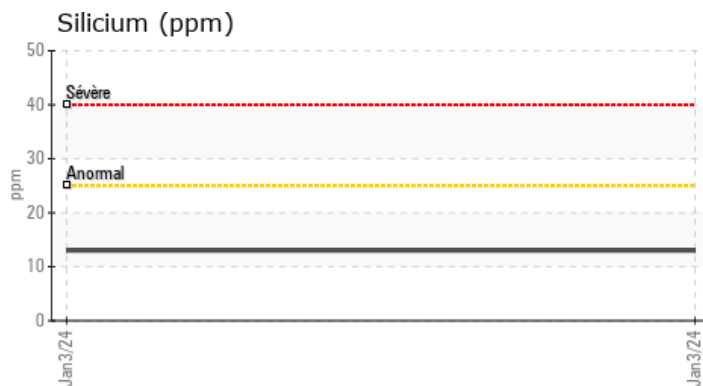
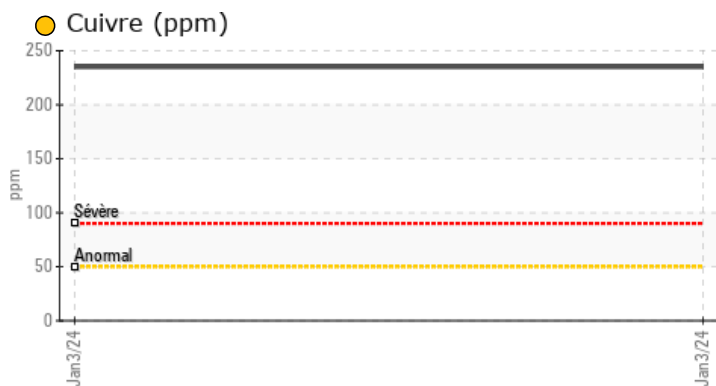
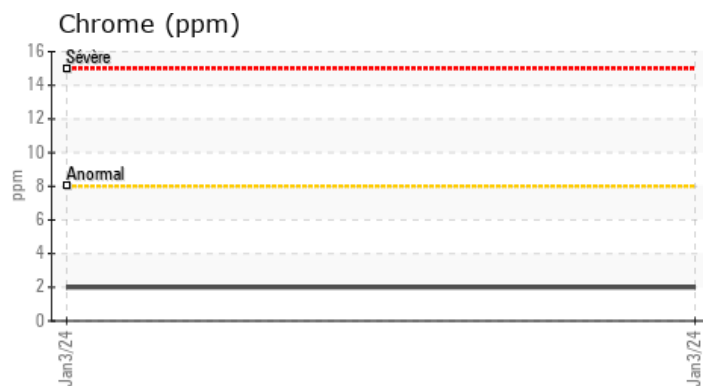
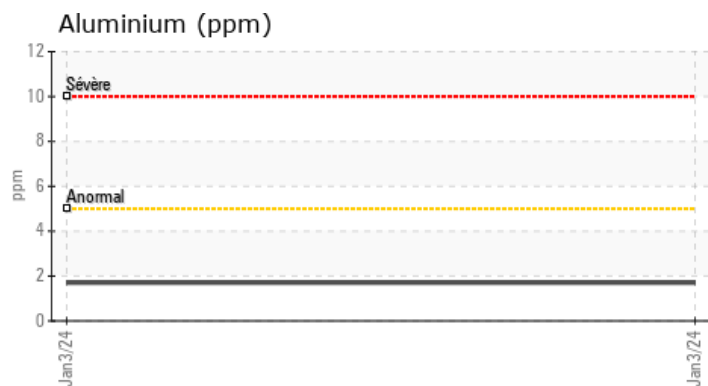
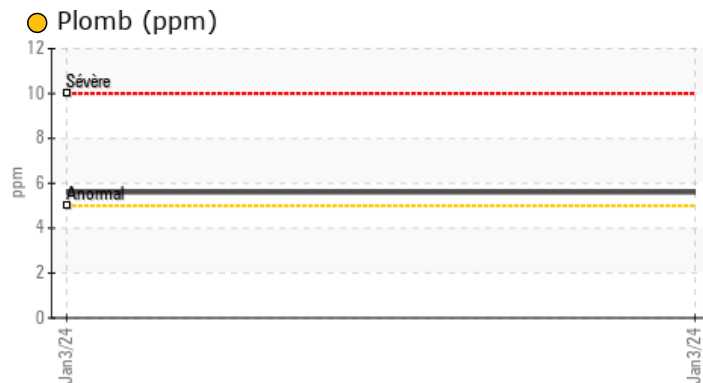
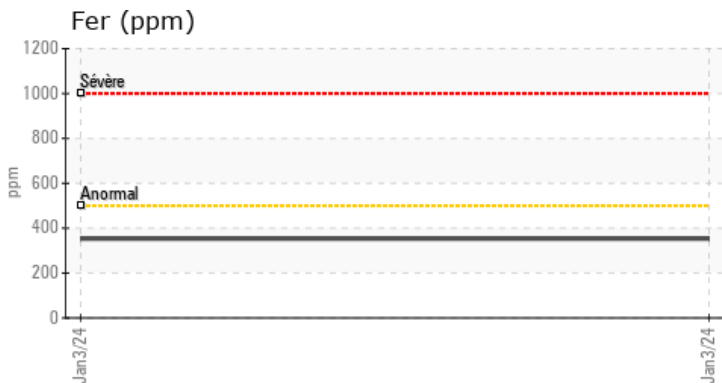
Unique No: 5710187

Signed: Kevin Marson

Report Date: 16 Jan 2024



Graphs



LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L580 069442-1762 - Splitter Box

Sample No: LH0247600

Oil Type: GEAR OIL SAE 80W90



Information sur l'échantillon

Numéro d'échant.	LH0247600	---	---	---
Date d'échant.	03 Jan 2024	---	---	---
Heures de la Machine	3567	---	---	---
Heures de l'huile	0	---	---	---
Huile changée	N/A	---	---	---
Statut de l'échant.	NORMAL	---	---	---

HUBERT ET FILS INC

1012 CHEMIN DE PARC INDUSTRIEL

BOIS-FRANC, QC

CA J9E 3A9

Contact: Service Manager



État d'huile

Visc 40°C	cSt	● 178	---	---	---
-----------	-----	-------	-----	-----	-----

T:

F:



Contamination

Eau	%	NEG	---	---	---
Silicium	ppm	● <1	---	---	---
Sodium	ppm	● <1	---	---	---
Potassium	ppm	● <1	---	---	---

Diagnostic

Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) GEAR OIL SAE 80W90. Please confirm. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



Métaux d'usure

Fer	ppm	● 71	---	---	---
Cuivre	ppm	● <1	---	---	---
Plomb	ppm	● 0	---	---	---
Étain	ppm	● 0	---	---	---
Aluminium	ppm	● 1	---	---	---
Chrome	ppm	● <1	---	---	---
Molybdène	ppm	● 1	---	---	---
Nickel	ppm	● 3	---	---	---
Titane	ppm	● 0	---	---	---
Argent	ppm	● 0	---	---	---
Manganèse	ppm	● <1	---	---	---
Vanadium	ppm	● 0	---	---	---



Additifs

Calcium	ppm	● 10	---	---	---
Magnésium	ppm	● 2	---	---	---
Zinc	ppm	● 74	---	---	---
Phosphore	ppm	● 1925	---	---	---
Baryum	ppm	● 0	---	---	---
Bore	ppm	● 5	---	---	---

Depot: HUB101BOI

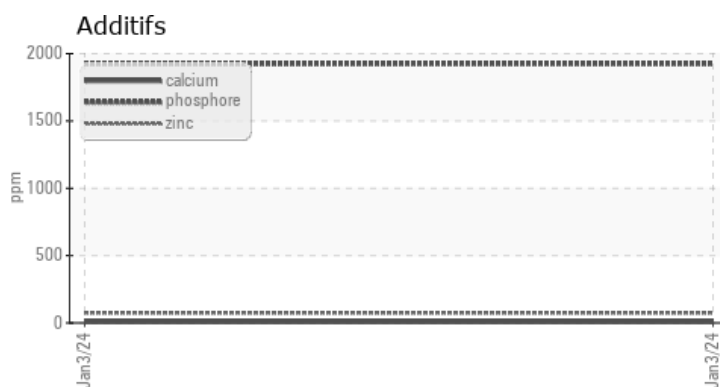
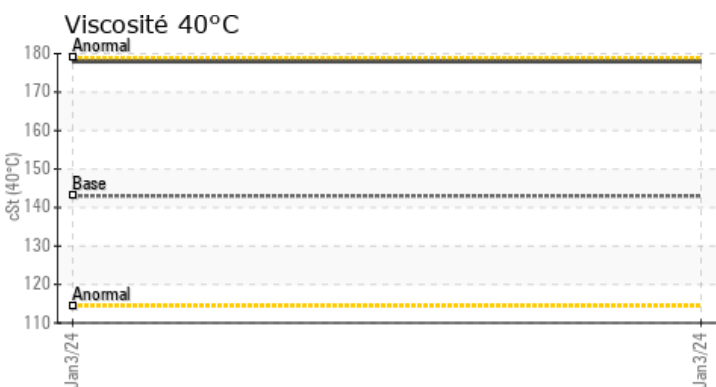
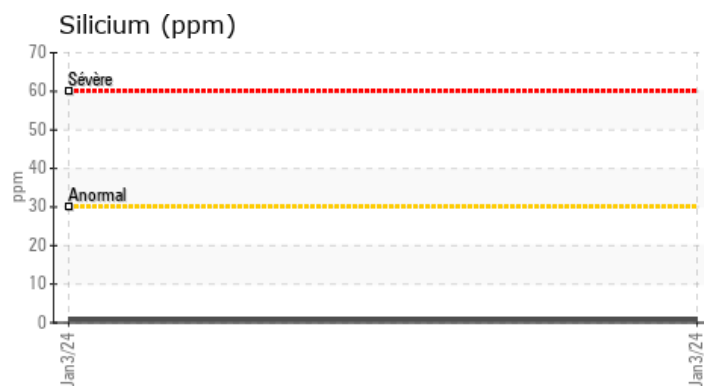
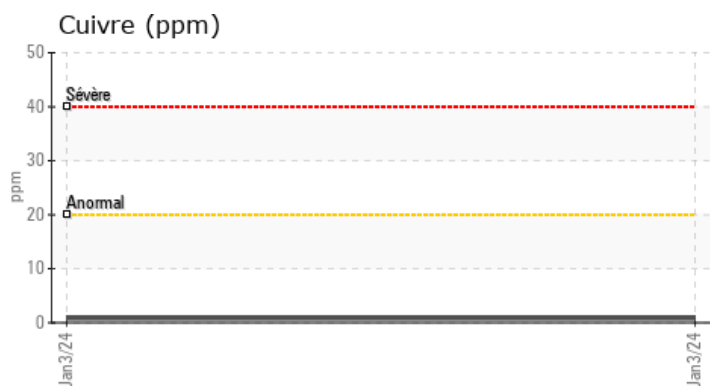
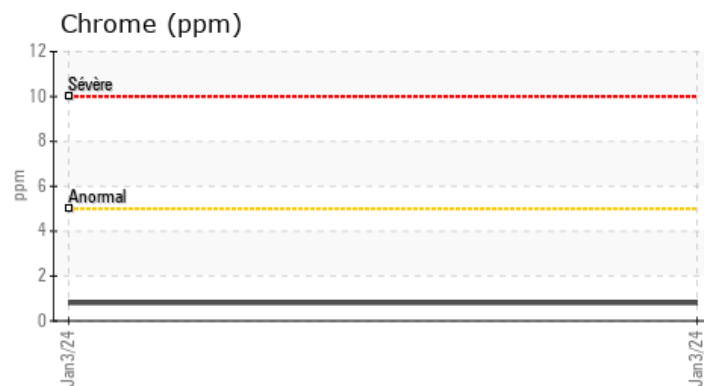
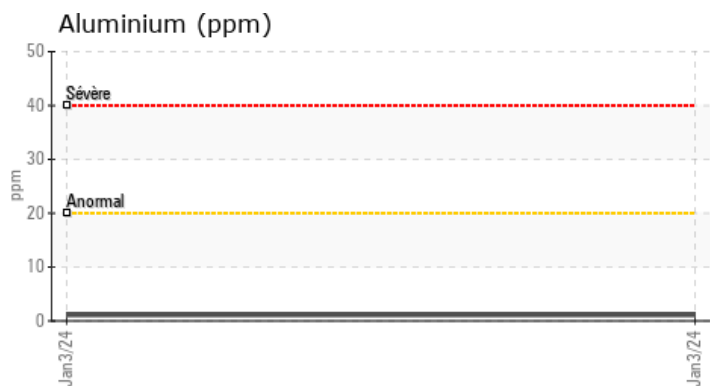
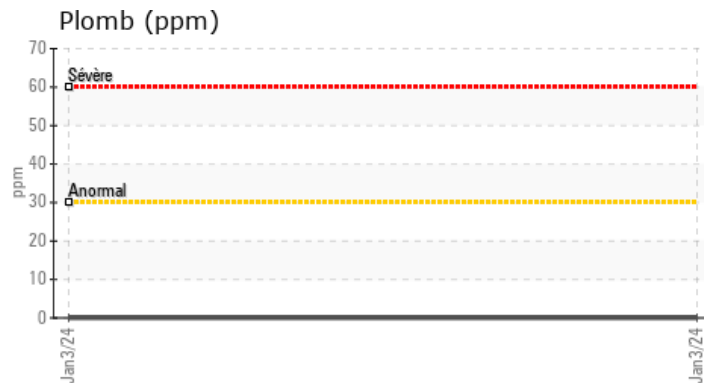
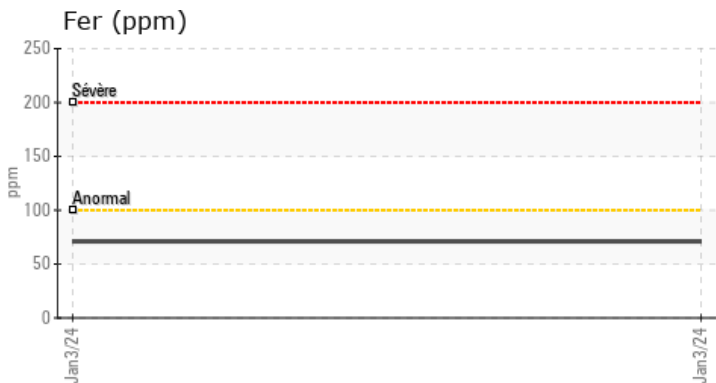
Unique No: 5710213

Signed: Kevin Marson

Report Date: 16 Jan 2024



Graphs





LIEBHERR L580 069442-1762 - Rear Left Wheel Hub

Sample No: LH0247604

Oil Type: GEAR OIL SAE 80W90



Information sur l'échantillon

Numéro d'échant.	LH0247604	---	---	---
Date d'échant.	03 Jan 2024	---	---	---
Heures de la Machine	3567	---	---	---
Heures de l'huile	0	---	---	---
Huile changée	N/A	---	---	---
Statut de l'échant.	ABNORMAL	---	---	---

HUBERT ET FILS INC

1012 CHEMIN DE PARC INDUSTRIEL

BOIS-FRANC, QC

CA J9E 3A9

Contact: Service Manager



État d'huile

Visc 40°C	cSt	● 175	---	---	---
-----------	-----	-------	-----	-----	-----

T:

F:



Contamination

Eau	%	NEG	---	---	---
Silicium	ppm	● 16	---	---	---
Sodium	ppm	● 6	---	---	---
Potassium	ppm	● 0	---	---	---

Diagnostic

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) GEAR OIL SAE 80W90. Please confirm. Copper and tin ppm levels are abnormal. Bearing and/or bushing wear is indicated. Component wear metal level(s) high for break in. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



Métaux d'usure

Fer	ppm	● 390	---	---	---
Cuivre	ppm	● 213	---	---	---
Plomb	ppm	● 5	---	---	---
Étain	ppm	● 18	---	---	---
Aluminium	ppm	● 2	---	---	---
Chrome	ppm	● 2	---	---	---
Molybdène	ppm	● 0	---	---	---
Nickel	ppm	● <1	---	---	---
Titane	ppm	0	---	---	---
Argent	ppm	0	---	---	---
Manganèse	ppm	23	---	---	---
Vanadium	ppm	0	---	---	---



Additifs

Calcium	ppm	● 4	---	---	---
Magnésium	ppm	● 1	---	---	---
Zinc	ppm	● 215	---	---	---
Phosphore	ppm	● 2337	---	---	---
Baryum	ppm	● <1	---	---	---
Bore	ppm	● <1	---	---	---

Depot: HUB101BOI

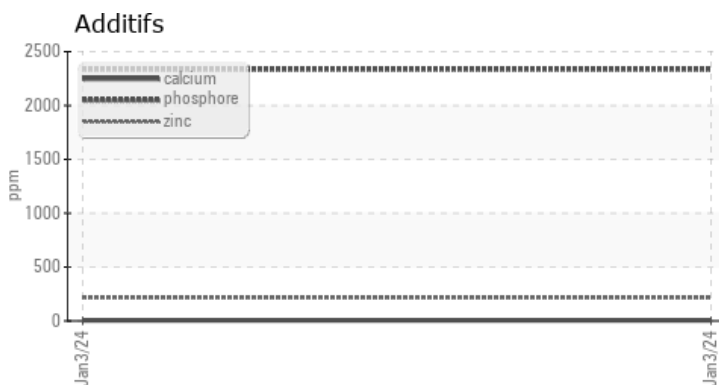
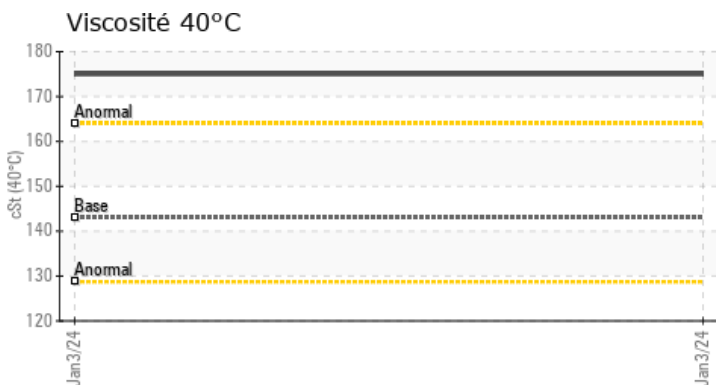
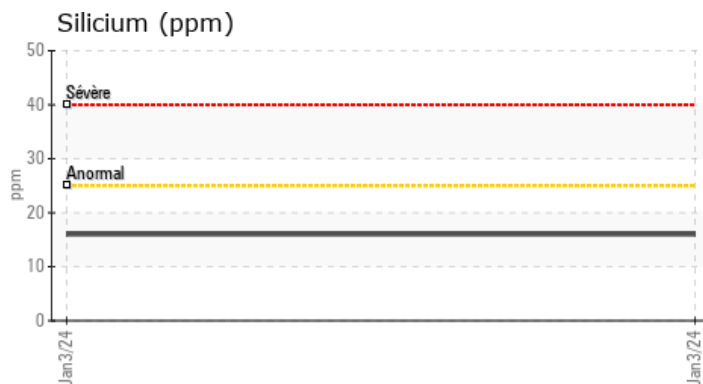
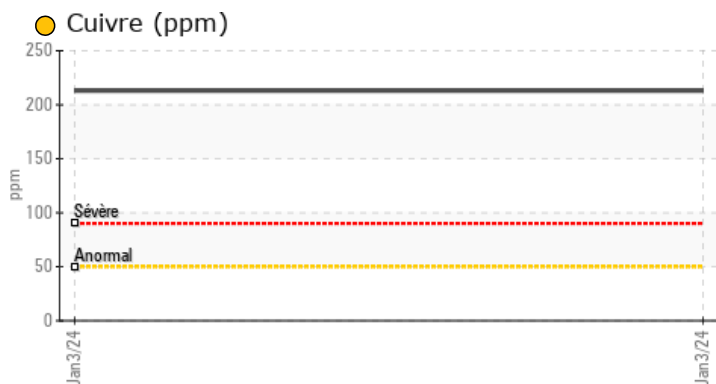
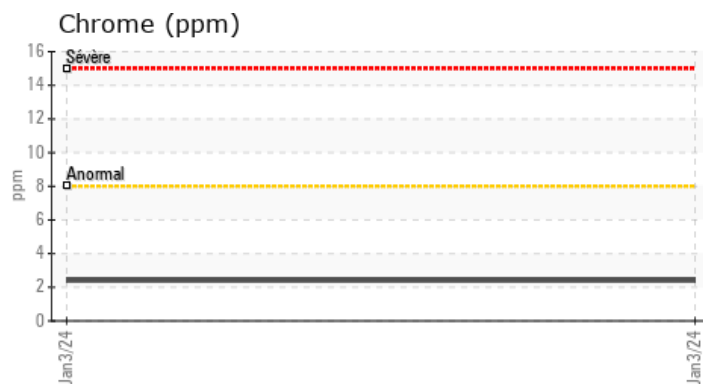
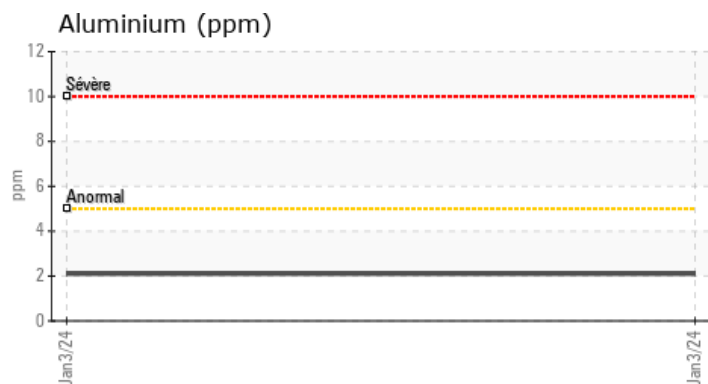
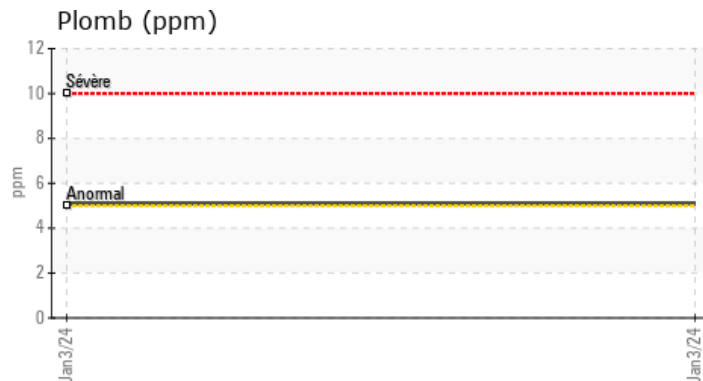
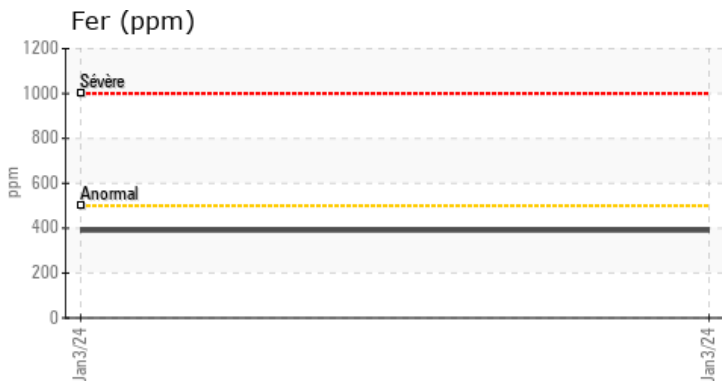
Unique No: 5710214

Signed: Kevin Marson

Report Date: 16 Jan 2024



Graphs



LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR L580 069442-1762 - Rear Differential

Sample No: LH0247597

Oil Type: LIEBHERR GEAR BASIC 90 LS



Information sur l'échantillon

Numéro d'échant.	LH0247597	---	---	---
Date d'échant.	03 Jan 2024	---	---	---
Heures de la Machine	3500	---	---	---
Heures de l'huile	0	---	---	---
Huile changée	Changed	---	---	---
Statut de l'échant.	SEVERE	---	---	---

HUBERT ET FILS INC
 1012 CHEMIN DE PARC INDUSTRIEL
 BOIS-FRANC, QC
 CA J9E 3A9
 Contact: Service Manager



État d'huile

Visc 40°C	cSt	● 175	---	---	---
-----------	-----	-------	-----	-----	-----

T:
F:



Contamination

Eau	%	NEG	---	---	---
Silicium	ppm	● 17	---	---	---
Sodium	ppm	● 6	---	---	---
Potassium	ppm	● 0	---	---	---

Diagnostic

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Copper and tin ppm levels are severe. Thrust washer and/or bearing/bushing wear is indicated. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



Métaux d'usure

Fer	ppm	● 411	---	---	---
Cuivre	ppm	● 240	---	---	---
Plomb	ppm	● 6	---	---	---
Étain	ppm	● 18	---	---	---
Aluminium	ppm	● 2	---	---	---
Chrome	ppm	● 2	---	---	---
Molybdène	ppm	● 0	---	---	---
Nickel	ppm	● <1	---	---	---
Titane	ppm	● 0	---	---	---
Argent	ppm	● 0	---	---	---
Manganèse	ppm	● 24	---	---	---
Vanadium	ppm	● 0	---	---	---



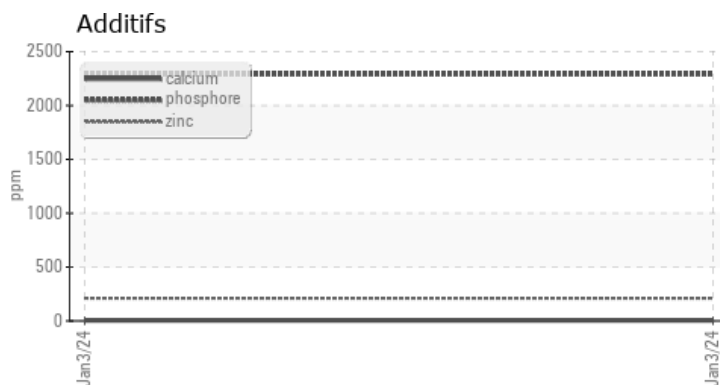
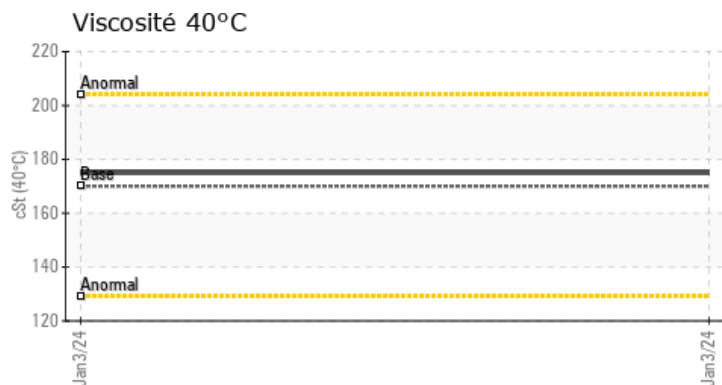
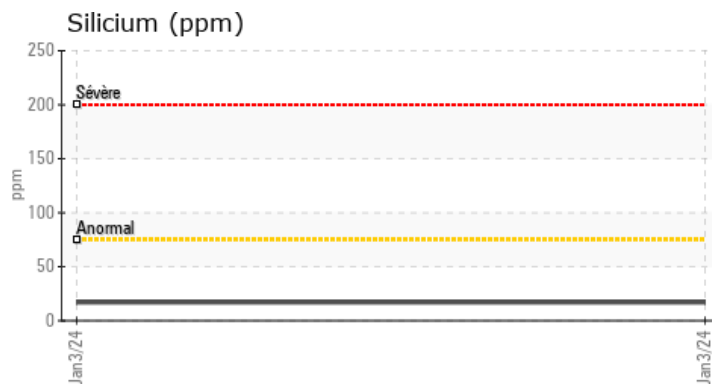
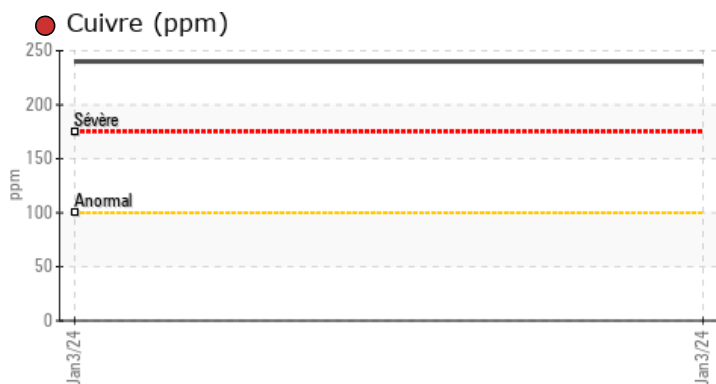
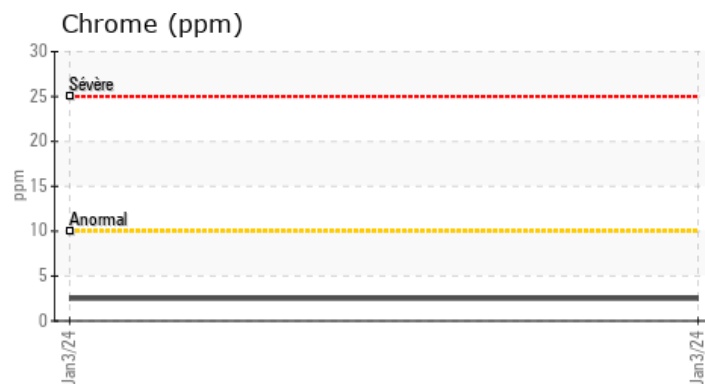
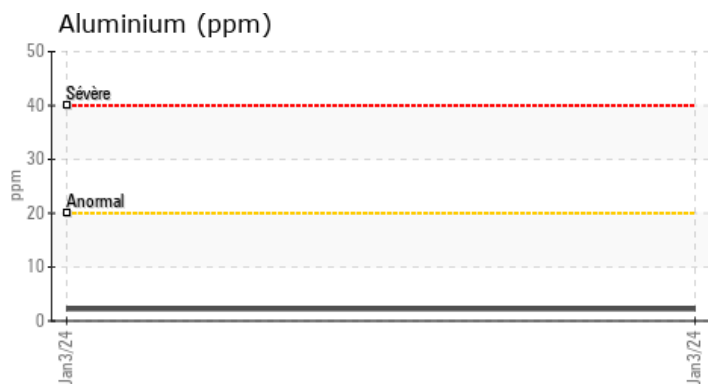
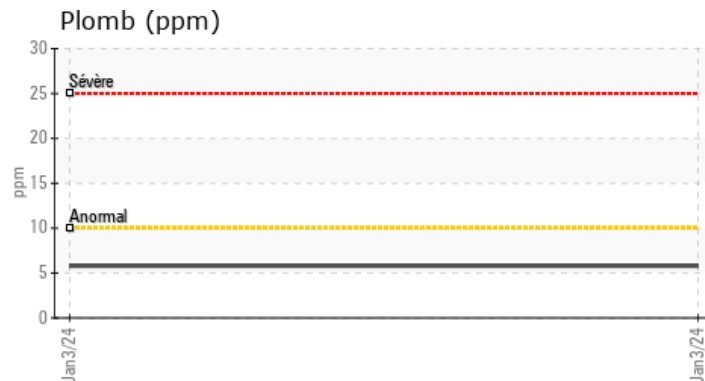
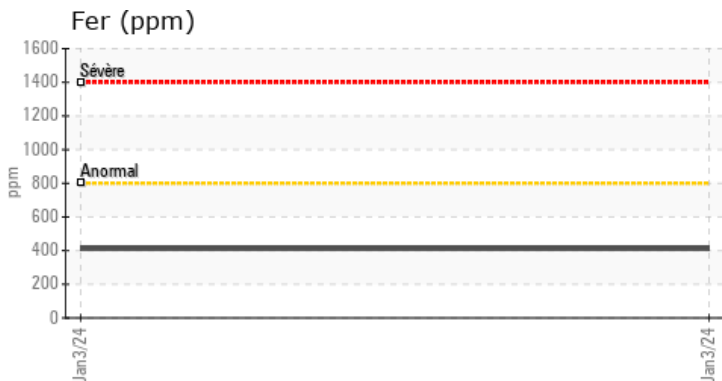
Additifs

Calcium	ppm	● 4	---	---	---
Magnésium	ppm	● 2	---	---	---
Zinc	ppm	● 210	---	---	---
Phosphore	ppm	● 2291	---	---	---
Baryum	ppm	● <1	---	---	---
Bore	ppm	● <1	---	---	---

Depot: HUB101BOI
Unique No: 5710188
Signed: Kevin Marson
Report Date: 17 Jan 2024



Graphs





LIEBHERR L580 069442-1762 - Rear Right Wheel Hub

Sample No: LH0247605

Oil Type: GEAR OIL SAE 80W90



Information sur l'échantillon

Numéro d'échant.	LH0247605	---	---	---
Date d'échant.	03 Jan 2024	---	---	---
Heures de la Machine	3567	---	---	---
Heures de l'huile	0	---	---	---
Huile changée	N/A	---	---	---
Statut de l'échant.	ABNORMAL	---	---	---

HUBERT ET FILS INC

1012 CHEMIN DE PARC INDUSTRIEL

BOIS-FRANC, QC

CA J9E 3A9

Contact: Service Manager



État d'huile

Visc 40°C	cSt	● 175	---	---	---
-----------	-----	-------	-----	-----	-----

T:

F:



Contamination

Eau	%	NEG	---	---	---
Silicium	ppm	● 17	---	---	---
Sodium	ppm	● 6	---	---	---
Potassium	ppm	● 1	---	---	---

Diagnostic

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) GEAR OIL SAE 80W90. Please confirm. Copper, lead and tin ppm levels are abnormal. Bearing and/or bushing wear is indicated. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



Métaux d'usure

Fer	ppm	● 402	---	---	---
Cuivre	ppm	● 224	---	---	---
Plomb	ppm	● 5	---	---	---
Étain	ppm	● 19	---	---	---
Aluminium	ppm	● 2	---	---	---
Chrome	ppm	● 2	---	---	---
Molybdène	ppm	● 0	---	---	---
Nickel	ppm	● <1	---	---	---
Titane	ppm	0	---	---	---
Argent	ppm	0	---	---	---
Manganèse	ppm	24	---	---	---
Vanadium	ppm	0	---	---	---



Additifs

Calcium	ppm	● 4	---	---	---
Magnésium	ppm	● 2	---	---	---
Zinc	ppm	● 215	---	---	---
Phosphore	ppm	● 2342	---	---	---
Baryum	ppm	● <1	---	---	---
Bore	ppm	● <1	---	---	---

Depot: HUB101BOI

Unique No: 5710211

Signed: Kevin Marson

Report Date: 16 Jan 2024



Graphs

