

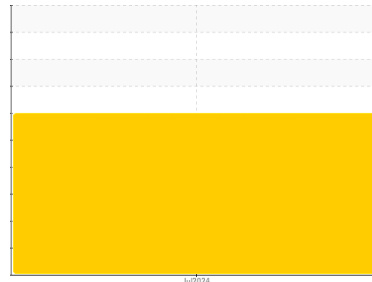


# OIL ANALYSIS REPORT



Area  
**JEAN PROULX ET FILS [02647461]**  
 Machine Id  
**LIEBHERR A924LI 012177**  
 Component  
**Hydraulic System**  
 Fluid  
**PANOLIN HLP SYNTH 46 (320 LTR)**

## Sample Rating Trend



ISO



### DIAGNOSIS

#### ▲ Recommendation

Nous vous recommandons de vérifier tous les endroits par lesquels des contaminants peuvent pénétrer dans le système. Nous vous recommandons de vérifier la présence de particules métalliques visibles dans l'huile. Nous vous recommandons de remplacer le filtre et d'utiliser un système de filtrage hors-ligne afin d'améliorer la propreté du fluide. Le reniflard d'air doit être réparé. S'il n'est pas classé, nous vous recommandons de le remplacer par un reniflard à air adapté au micron et / ou au dessicant. Si évalué, nous vous recommandons de réparer / remplacer le reniflard. Échantillonner de nouveau dans 30 à 45 jours afin de contrôler la situation.

#### ▲ Wear

Présence d'une concentration moyenne de métal visible. Usure de cylindre.

#### ▲ Contamination

Il y a une quantité élevée de matières particulaires (2 à 100 µm de taille) présente dans l'huile. Il y a une faible concentration (<5.0%) d'huile minérale présente dans le fluide. La teneur en eau est négligeable. Le code de propreté du système est beaucoup plus haut que 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		<b>WC0839546</b>	---	---
Sample Date	Client Info		<b>05 Jul 2024</b>	---	---
Machine Age	hrs	Client Info	<b>33554</b>	---	---
Oil Age	hrs	Client Info	<b>0</b>	---	---
Oil Changed	Client Info		<b>N/A</b>	---	---
Sample Status			<b>SEVERE</b>	---	---

### WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>55	<b>21</b>	---
Chromium	ppm	ASTM D5185(m)	>5	<b>4</b>	---
Nickel	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	---
Titanium	ppm	ASTM D5185(m)		<b>2</b>	---
Silver	ppm	ASTM D5185(m)		<b>0</b>	---
Aluminum	ppm	ASTM D5185(m)	>3	<b>&lt;1</b>	---
Lead	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	---
Copper	ppm	ASTM D5185(m)	>10	<b>2</b>	---
Tin	ppm	ASTM D5185(m)	>2	<b>2</b>	---
Antimony	ppm	ASTM D5185(m)		<b>0</b>	---
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	---
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	---
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	---

### ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	<b>2</b>	---
Barium	ppm	ASTM D5185(m)	0	<b>4</b>	---
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	---
Manganese	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	---
Magnesium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	---
Calcium	ppm	ASTM D5185(m)	0	<b>21</b>	---
Phosphorus	ppm	ASTM D5185(m)	1700	<b>1472</b>	---
Zinc	ppm	ASTM D5185(m)	0	<b>111</b>	---
Sulfur	ppm	ASTM D5185(m)	1350	<b>1474</b>	---
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	---

### CONTAMINANTS

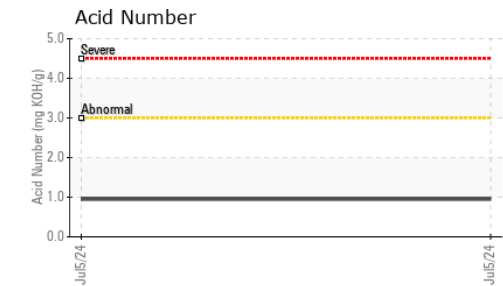
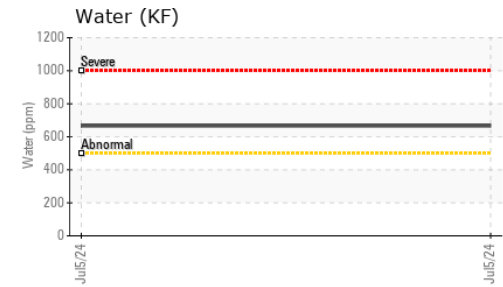
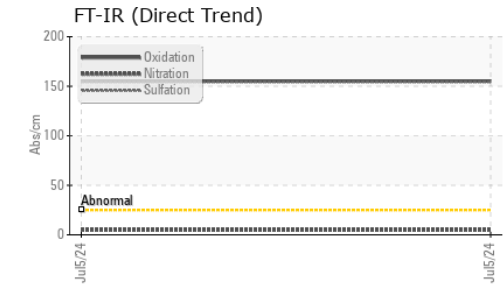
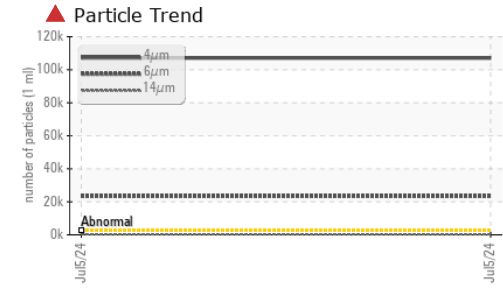
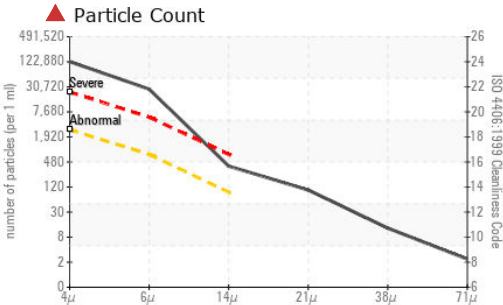
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>11	<b>&lt;1</b>	---
Sodium	ppm	ASTM D5185(m)		<b>1</b>	---
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	---
Water	%	ASTM D6304*	>0.05	<b>0.066</b>	---
ppm Water	ppm	ASTM D6304*	>500	<b>666</b>	---

### INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		<b>0</b>	---
Nitration	Abs/cm	ASTM D7624*		<b>4.9</b>	---
Sulfation	Abs/.1mm	ASTM D7415*		<b>154.4</b>	---
Mineral Oil Content	%	ASTM D7418*	<5.0%	<b>&lt;5.0</b>	---



# OIL ANALYSIS REPORT

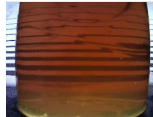



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4μm	ASTM D7647	>2500	▲ 107045	---	---
Particles >6μm	ASTM D7647	>640	▲ 23393	---	---
Particles >14μm	ASTM D7647	>80	▲ 336	---	---
Particles >21μm	ASTM D7647	>20	▲ 90	---	---
Particles >38μm	ASTM D7647	>4	▲ 11	---	---
Particles >71μm	ASTM D7647	>3	2	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 24/22/16	---	---

FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	155.2	---	---
Acid Number (AN)	mg KOH/g	ASTM D974*	0.95	---	---

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	▲ VLITE	---
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	45.4	---
Visc @ 100°C	cSt	ASTM D7279(m)	8.1	8.5	---
Viscosity Index (VI)	Scale	ASTM D2270*	146	167	---

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



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0839546      **Received** : 10 Jul 2024  
**Lab Number** : 02647258      **Tested** : 15 Jul 2024  
**Unique Number** : 5812810      **Diagnosed** : 15 Jul 2024 - Bill Quesnel  
**Test Package** : MOB 2 ( Additional Tests: Bottom, TAN Man )

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.

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# MINERAL OIL CONTENT REPORT

PASS



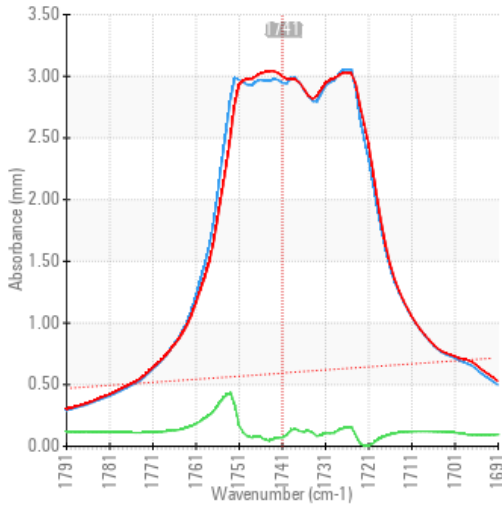
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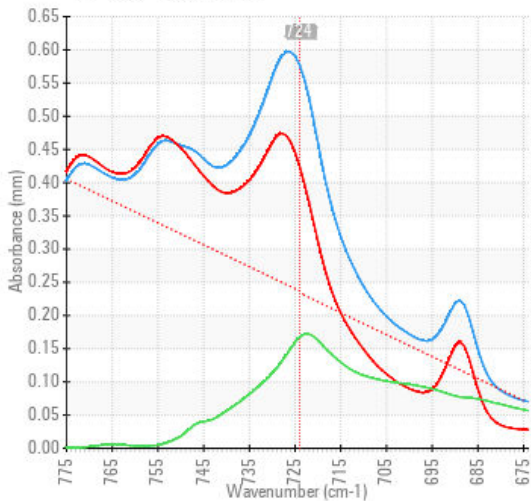
## SPECTRAL ANALYSIS

		method	limit/base	current	history1	history2
Zinc	ppm	ASTM D5185(m)	0	<b>111</b>	---	---
Mineral Oil Content	%	ASTM D7418*	<5.0%	<b>&lt;5.0</b>	---	---

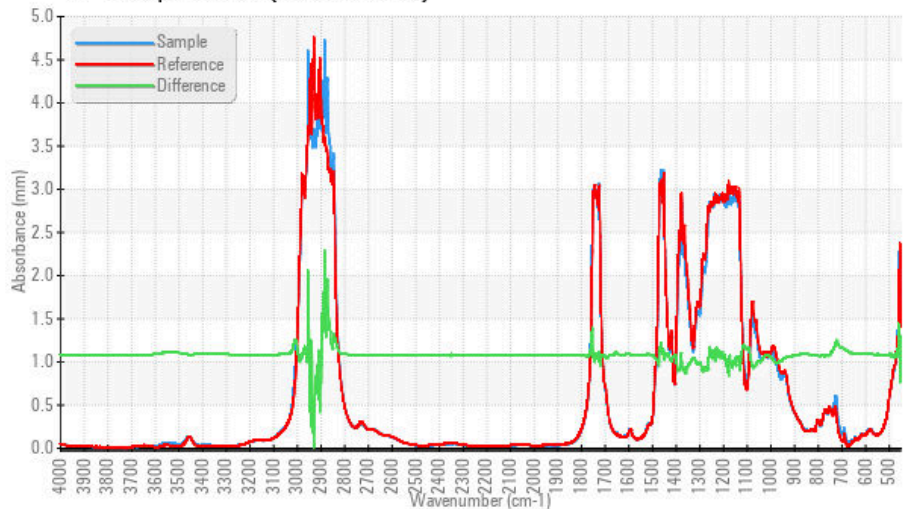
### FT-IR - Esters I



### FT-IR - Esters II



### FT-IR Spectrum (Absorbance)



ISO 17025:2017  
 Accredited  
 Laboratory

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