



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**LIEBHERR R930 052446-1716**  
Component  
**Hydraulic System**  
Fluid  
**PETRO CANADA 10W30 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0286581</b>	LH0274328	LH0202910
Sample Date		Client Info		<b>16 May 2024</b>	10 Nov 2023	12 Jun 2023
Machine Age	hrs	Client Info		<b>3969</b>	3497	2977
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>50	<b>6</b>	6	6
Chromium	ppm	ASTM D5185(m)	>15	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>49</b>	49	47
Silver	ppm	ASTM D5185(m)		<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>8	<b>2</b>	2	2
Lead	ppm	ASTM D5185(m)	>5	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>15	<b>5</b>	5	5
Tin	ppm	ASTM D5185(m)	>5	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

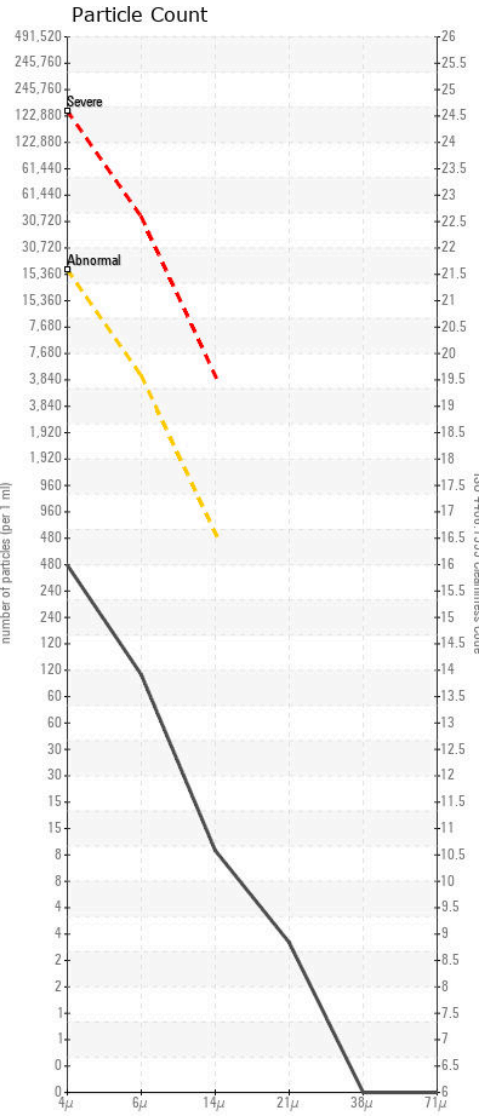
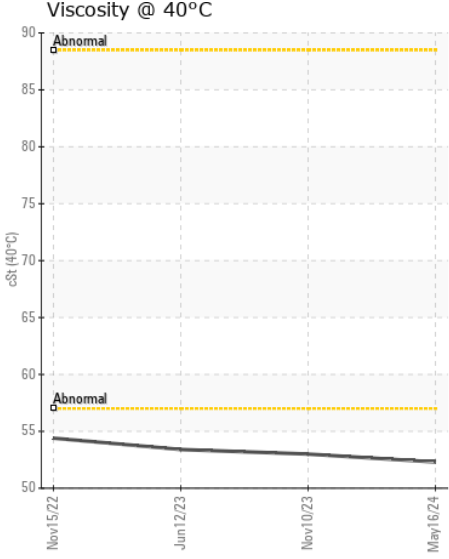
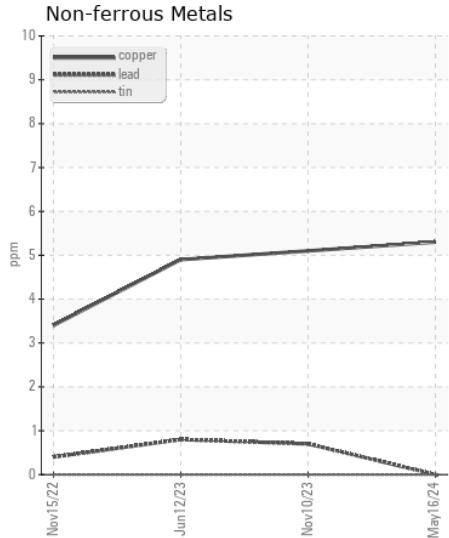
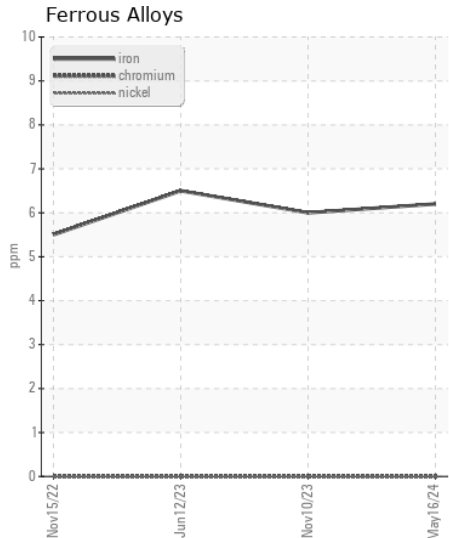
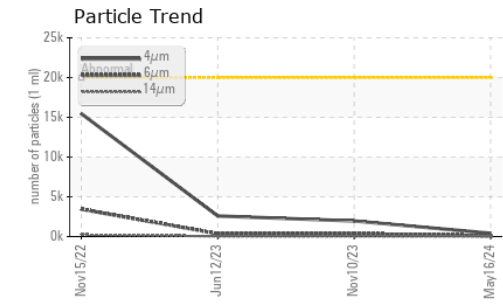
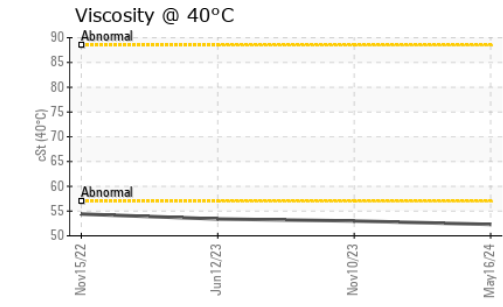
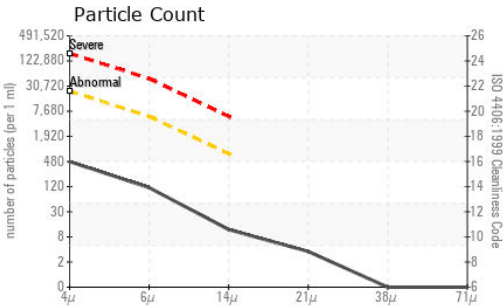
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185(m)	>25	<b>4</b>	5	6
Potassium	ppm	ASTM D5185(m)	>20	<b>2</b>	1	2
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>20000	<b>419</b>	1962	2591
Particles >6µm		ASTM D7647	>5000	<b>100</b>	353	354
Particles >14µm		ASTM D7647	>640	<b>10</b>	21	27
Particles >21µm		ASTM D7647	>160	<b>3</b>	6	11
Particles >38µm		ASTM D7647	>40	<b>0</b>	2	0
Particles >71µm		ASTM D7647	>10	<b>0</b>	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>16/14/10</b>	18/16/12	19/16/12
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

Viscosity of sample indicates oil is within SAE 20 range, advise investigate. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		<b>4</b>	4	4
Boron	ppm	ASTM D5185(m)		<b>83</b>	86	82
Barium	ppm	ASTM D5185(m)		<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185(m)		<b>3</b>	4	4
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185(m)		<b>237</b>	241	254
Calcium	ppm	ASTM D5185(m)		<b>1574</b>	1573	1594
Phosphorus	ppm	ASTM D5185(m)		<b>811</b>	860	915
Zinc	ppm	ASTM D5185(m)		<b>956</b>	993	907
Sulfur	ppm	ASTM D5185(m)		<b>3182</b>	3347	3375
Visc @ 40°C	cSt	ASTM D7279(m)		<b>52.3</b>	53.0	53.4



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : LH0286581  
**Lab Number** : 02637206  
**Unique Number** : 5786368  
**Test Package** : MOB 1 ( Additional Tests: PrtCount )  
**Received** : 23 May 2024  
**Tested** : 27 May 2024  
**Diagnosed** : 27 May 2024 - Kevin Marson

**THOMAS CAVANAGH CONSTRUCTION LTD**  
 RR # 2, 9094 CAVANAGH ROAD  
 ASHTON, ON  
 CA K0A 1B0  
 Contact: Keith

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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