



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR LH40M 112208-1215

Component
Hydraulic System

Fluid
PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (585 GAL)

RECOMMENDATION

We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0278757	LH0278815	LH0256575
Sample Date		Client Info		22 Feb 2024	06 Dec 2023	22 Mar 2023
Machine Age	hrs	Client Info		12935	12376	11044
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

PQ		ASTM D8184*		5	3	2
Iron	ppm	ASTM D5185(m)	>60	▲ 65	▲ 66	▲ 62
Chromium	ppm	ASTM D5185(m)	>40	3	3	3
Nickel	ppm	ASTM D5185(m)	>10	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	<1	0
Aluminum	ppm	ASTM D5185(m)	>5	1	<1	<1
Lead	ppm	ASTM D5185(m)	>5	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>15	3	3	3
Tin	ppm	ASTM D5185(m)	>5	0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

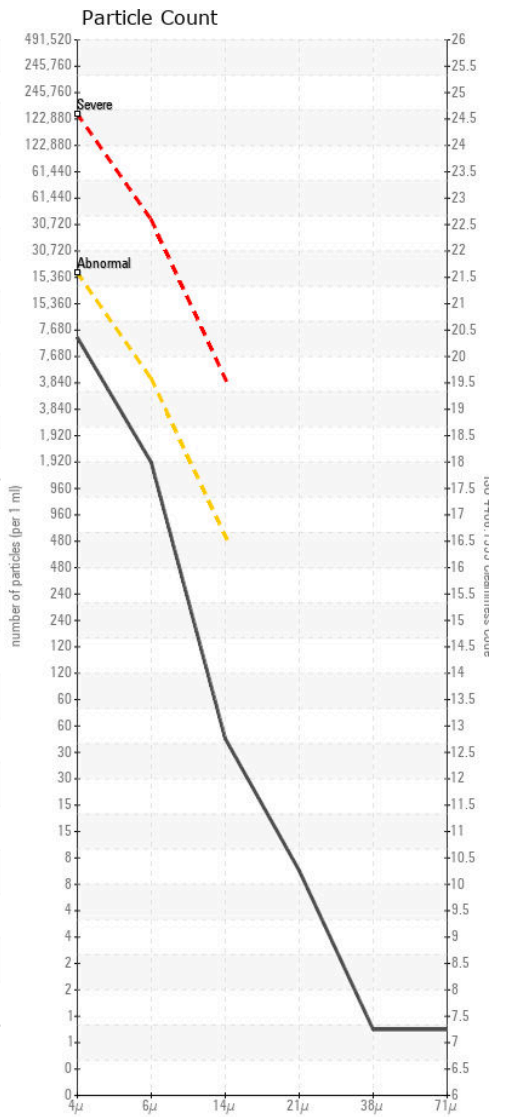
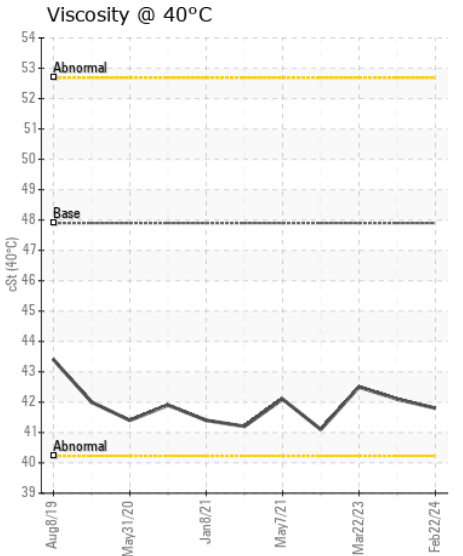
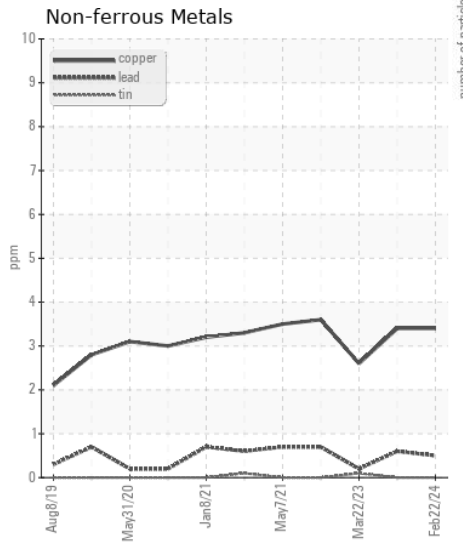
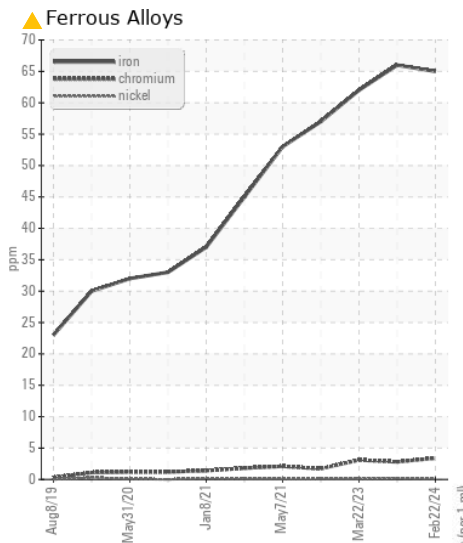
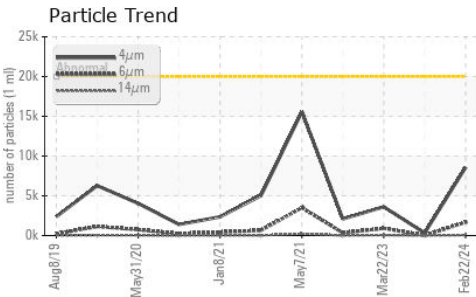
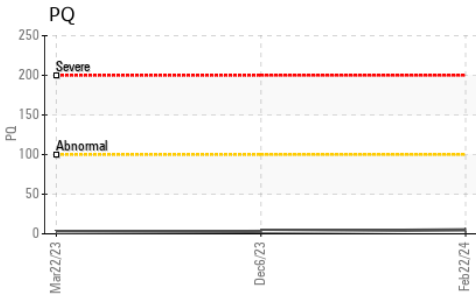
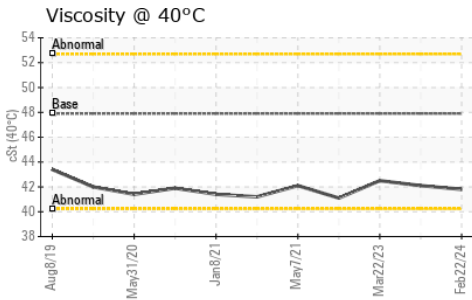
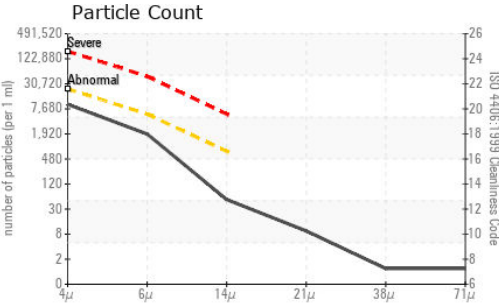
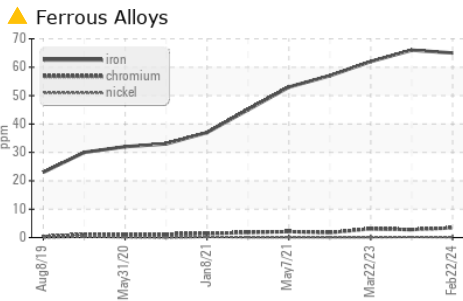
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. NOTE: An increase in the particle count is noted.

Silicon	ppm	ASTM D5185(m)	>15	2	2	2
Potassium	ppm	ASTM D5185(m)	>20	<1	0	<1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	8581	325	3614
Particles >6µm		ASTM D7647	>5000	1670	31	913
Particles >14µm		ASTM D7647	>640	45	5	54
Particles >21µm		ASTM D7647	>160	8	3	14
Particles >38µm		ASTM D7647	>40	1	1	1
Particles >71µm		ASTM D7647	>10	1	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	20/18/13	16/12/10	19/17/13
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		1	1	<1
Boron	ppm	ASTM D5185(m)	0	4	5	4
Barium	ppm	ASTM D5185(m)	0	0	<1	0
Molybdenum	ppm	ASTM D5185(m)	0	2	2	2
Manganese	ppm	ASTM D5185(m)	1	<1	<1	1
Magnesium	ppm	ASTM D5185(m)	0	14	13	13
Calcium	ppm	ASTM D5185(m)	100	434	437	475
Phosphorus	ppm	ASTM D5185(m)	670	559	553	596
Zinc	ppm	ASTM D5185(m)	850	655	686	664
Sulfur	ppm	ASTM D5185(m)	1600	1988	1894	2013
Visc @ 40°C	cSt	ASTM D7279(m)	47.9	41.8	42.1	42.5



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0278757 **Received** : 01 Mar 2024
Lab Number : 02619312 **Tested** : 02 Mar 2024
Unique Number : 5736422 **Diagnosed** : 04 Mar 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: PQ, PrtCount)

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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