



LIEBHERR

OIL ANALYSIS REPORT



Area
(357698)
Machine Id
LIEBHERR LH50M 125637-1216
Component
Hydraulic System
Fluid
PETRO CANADA ENVIRON MV 46 (--- GAL)

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0260570	LH0212575	LH0212561
Sample Date		Client Info		05 Feb 2024	31 Aug 2023	10 Sep 2022
Machine Age	hrs	Client Info		5010	4243	2241
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Chngd	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ATTENTION

WEAR

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

PQ		ASTM D8184*	>40	0	0	---
Iron	ppm	ASTM D5185(m)	>50	▲ 53	▲ 55	43
Chromium	ppm	ASTM D5185(m)	>5	1	1	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>2	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>4	1	<1	<1
Copper	ppm	ASTM D5185(m)	>10	3	4	3
Tin	ppm	ASTM D5185(m)	>2	<1	0	0
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

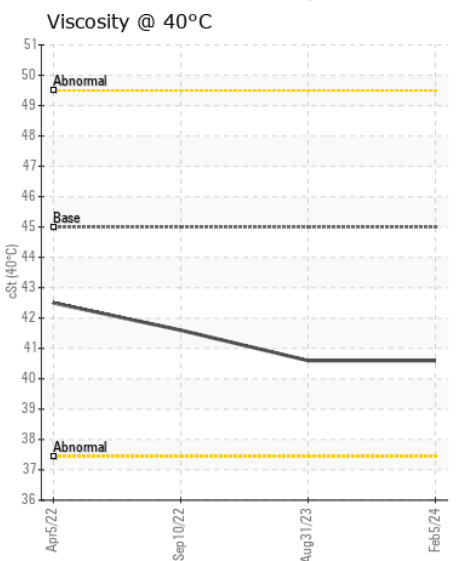
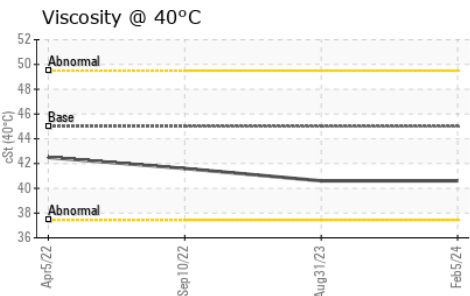
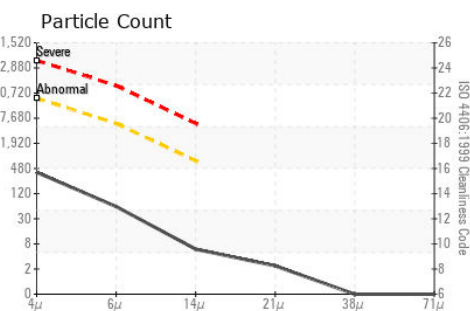
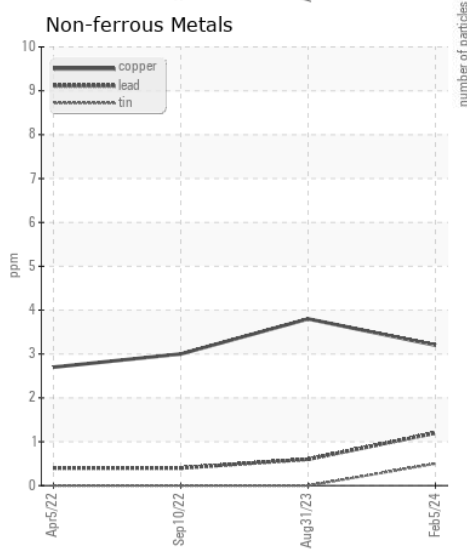
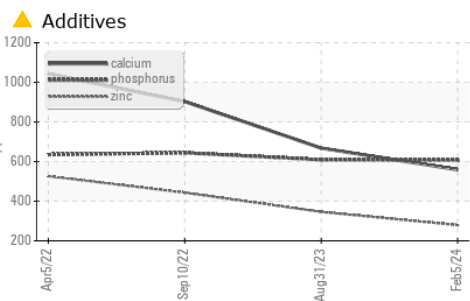
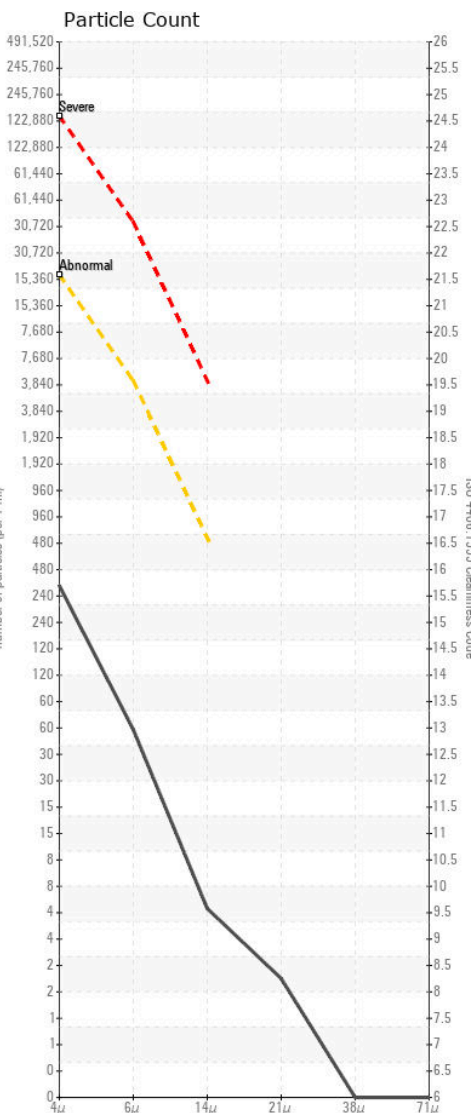
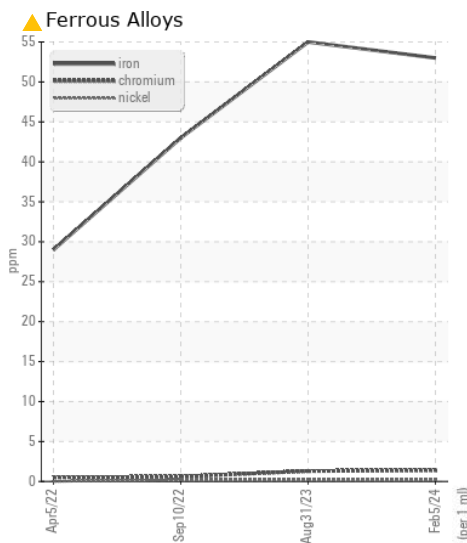
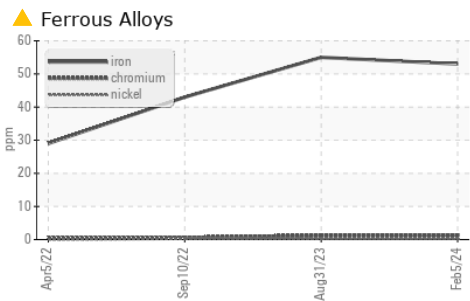
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185(m)	>17	2	2	2
Potassium	ppm	ASTM D5185(m)	>20	1	<1	<1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	342	312	999
Particles >6µm		ASTM D7647	>5000	52	87	156
Particles >14µm		ASTM D7647	>640	5	8	14
Particles >21µm		ASTM D7647	>160	2	4	4
Particles >38µm		ASTM D7647	>40	0	0	1
Particles >71µm		ASTM D7647	>10	0	0	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	16/13/10	15/14/10	17/14/11
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	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

Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		<1	1	1
Boron	ppm	ASTM D5185(m)	0	<1	1	<1
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	<1
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	0	4	4	4
Calcium	ppm	ASTM D5185(m)	0	▲ 559	▲ 668	▲ 903
Phosphorus	ppm	ASTM D5185(m)	650	607	609	644
Zinc	ppm	ASTM D5185(m)	0	▲ 279	▲ 346	▲ 443
Sulfur	ppm	ASTM D5185(m)	1420	▲ 2469	▲ 2502	▲ 2953
Visc @ 40°C	cSt	ASTM D7279(m)	45.0	40.6	40.6	41.6



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0260570 **Received** : 27 Feb 2024
Lab Number : 02618385 **Tested** : 28 Feb 2024
Unique Number : 5735495 **Diagnosed** : 28 Feb 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: PQ, PrtCount)

RADIUS RECYCLING - SURREY
 12301 MUSQUEAM DRIVE
 SURREY, BC
 CA V3V 3T2
 Contact: Service Manager

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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F: