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LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR L586 053143-1334
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

WEAR

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

CONTAMINATION

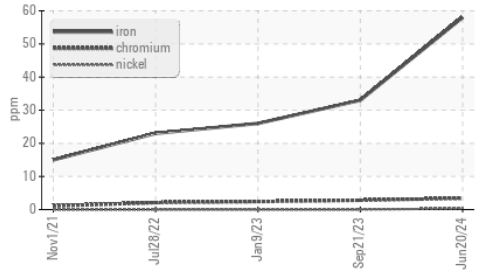
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

FLUID CONDITION

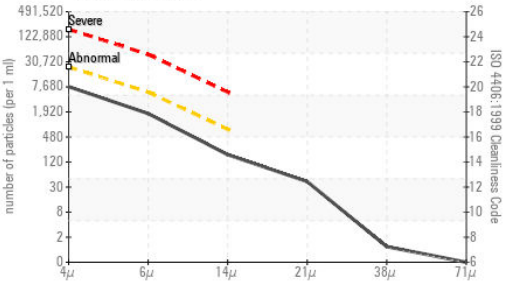
Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0291232	LH0225800	LH0251339
Sample Date		Client Info		20 Jun 2024	21 Sep 2023	09 Jan 2023
Machine Age	hrs	Client Info		5171	4021	2980
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL
PQ		ASTM D8184*	>50	0	---	---
Iron	ppm	ASTM D5185(m)	>50	▲ 58	33	26
Chromium	ppm	ASTM D5185(m)	>5	3	3	2
Nickel	ppm	ASTM D5185(m)	>2	<1	0	0
Titanium	ppm	ASTM D5185(m)		<1	0	<1
Silver	ppm	ASTM D5185(m)		<1	<1	0
Aluminum	ppm	ASTM D5185(m)	>5	4	4	3
Lead	ppm	ASTM D5185(m)	>15	10	11	9
Copper	ppm	ASTM D5185(m)	>10	5	6	4
Tin	ppm	ASTM D5185(m)	>2	<1	<1	<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
Silicon	ppm	ASTM D5185(m)	>15	9	8	7
Potassium	ppm	ASTM D5185(m)	>20	3	9	2
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	6772	4758	9103
Particles >6µm		ASTM D7647	>5000	1535	619	1985
Particles >14µm		ASTM D7647	>640	159	37	211
Particles >21µm		ASTM D7647	>160	36	11	47
Particles >38µm		ASTM D7647	>40	1	1	0
Particles >71µm		ASTM D7647	>10	0	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	20/18/14	19/16/12	20/18/15
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
Sodium	ppm	ASTM D5185(m)		1	2	2
Boron	ppm	ASTM D5185(m)	0	5	6	7
Barium	ppm	ASTM D5185(m)	0	<1	<1	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	1	1	<1	<1
Magnesium	ppm	ASTM D5185(m)	0	8	8	8
Calcium	ppm	ASTM D5185(m)	100	1291	1459	1504
Phosphorus	ppm	ASTM D5185(m)	670	540	535	578
Zinc	ppm	ASTM D5185(m)	850	640	620	599
Sulfur	ppm	ASTM D5185(m)	1600	3413	3679	3791
Visc @ 40°C	cSt	ASTM D7279(m)	47.9	42.4	42.2	42.6

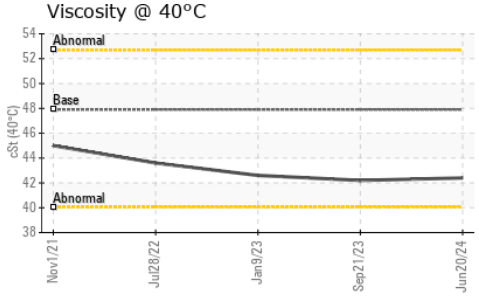
Ferrous Alloys



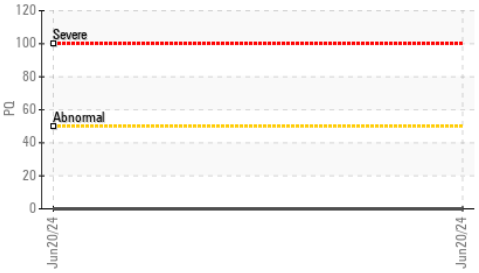
Particle Count



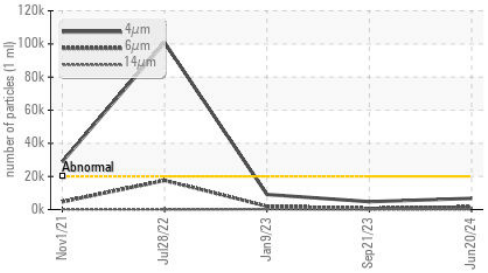
Viscosity @ 40°C



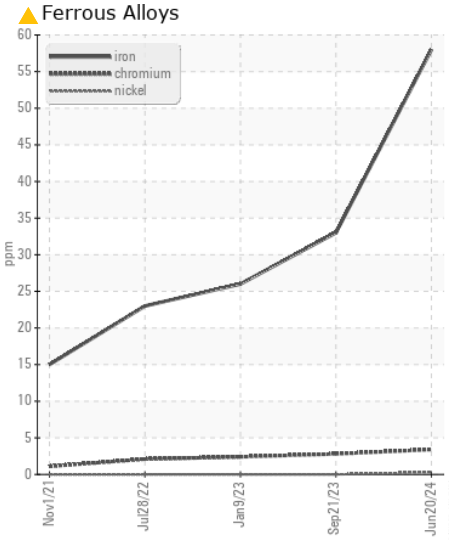
PQ



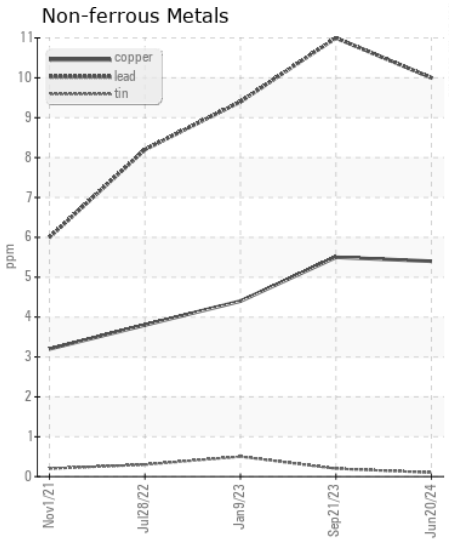
Particle Trend



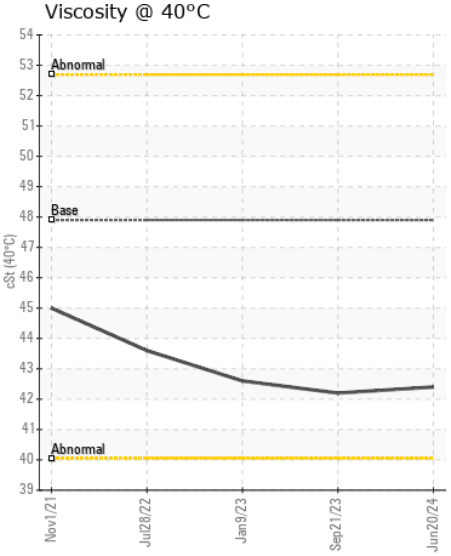
Ferrous Alloys



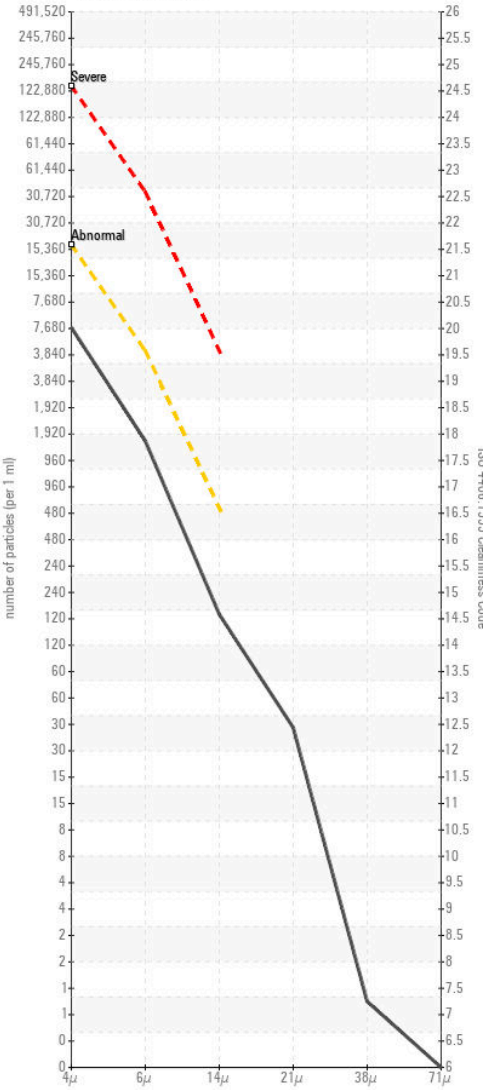
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0291232
Lab Number : 02643429
Unique Number : 5800968
Test Package : MOB 1 (Additional Tests: PQ, PrtCount)

Received : 21 Jun 2024
Tested : 24 Jun 2024
Diagnosed : 24 Jun 2024 - Kevin Marson

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.

WILLIS KERR CONTRACTING
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OSGOODE, ON
CA K0A 2W0
Contact: Service Manager

T:
F:

Report Id: WILMOU [WCAMIS] 02643429 (Generated: 06/24/2024 11:42:26) Rev: 1

Submitted By: ?