



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
(366409)
Machine Id
LIEBHERR R945 053994-1866
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		LH0285027	LH0237712	LH0202862
Sample Date		Client Info		08 Feb 2024	11 Aug 2023	25 May 2023
Machine Age	hrs	Client Info		4053	3069	2611
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	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>50	10	8	7
Chromium	ppm	ASTM D5185(m)	>15	<1	<1	0
Nickel	ppm	ASTM D5185(m)	>5	<1	0	0
Titanium	ppm	ASTM D5185(m)		17	22	18
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>8	2	1	1
Lead	ppm	ASTM D5185(m)	>5	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>15	5	5	5
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	<1	<1
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

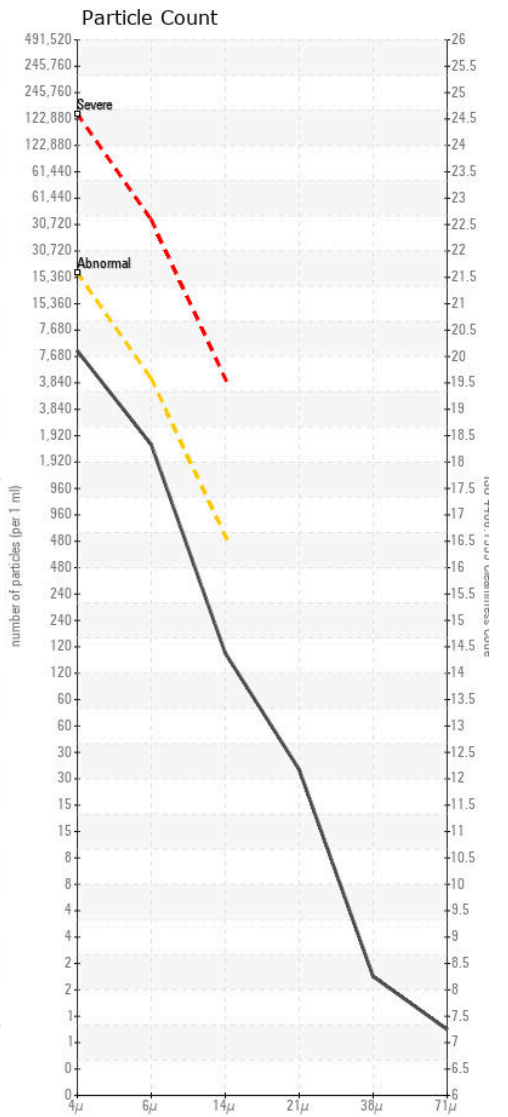
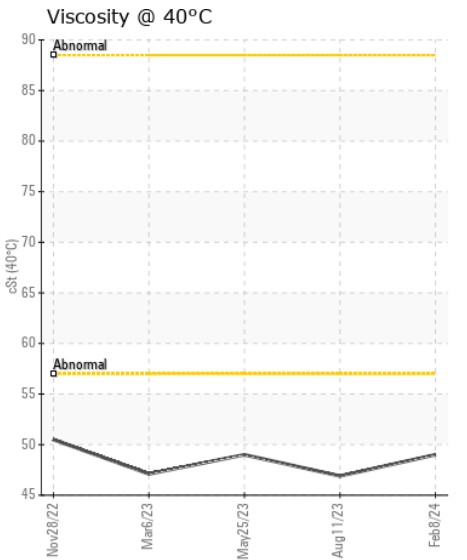
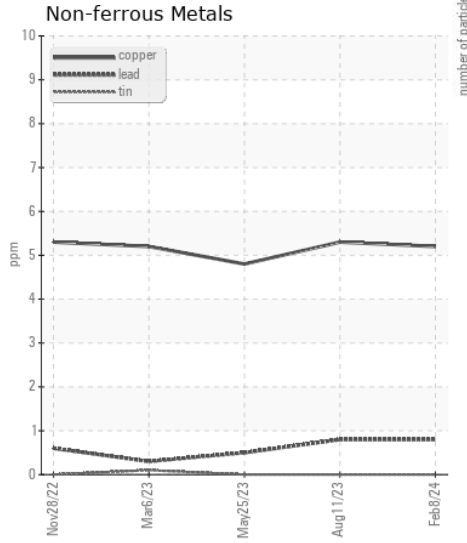
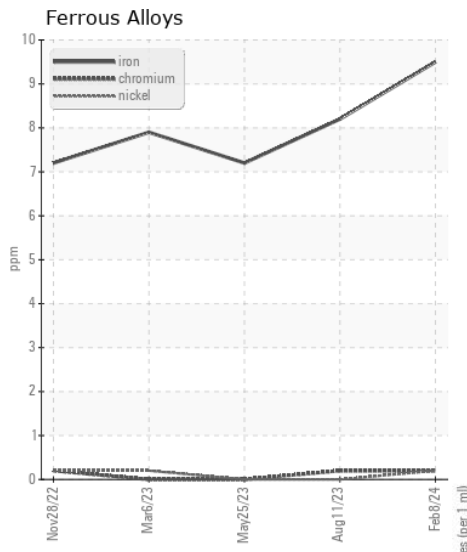
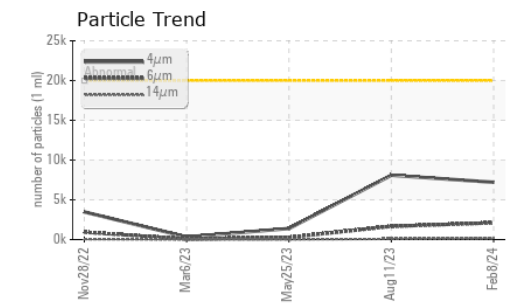
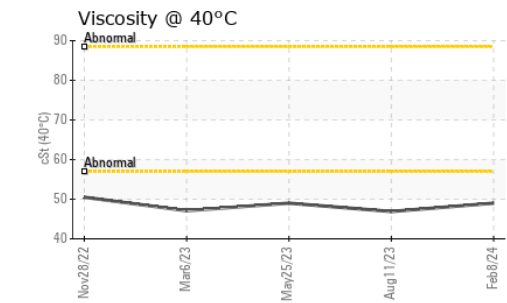
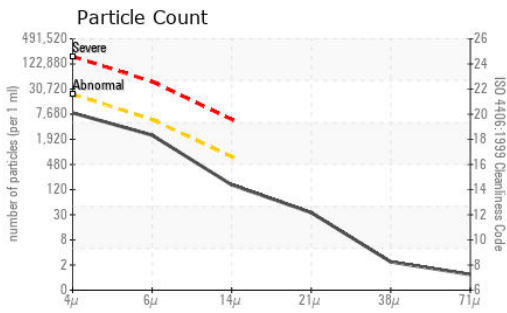
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185(m)	>25	6	6	6
Potassium	ppm	ASTM D5185(m)	>20	2	2	1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	7205	8090	1391
Particles >6µm		ASTM D7647	>5000	2110	1662	282
Particles >14µm		ASTM D7647	>640	138	79	17
Particles >21µm		ASTM D7647	>160	30	26	4
Particles >38µm		ASTM D7647	>40	2	2	0
Particles >71µm		ASTM D7647	>10	1	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	20/18/14	20/18/13	18/15/11
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE	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

Viscosity of sample indicates oil is within SAE 10W range, advise investigate. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		4	4	3
Boron	ppm	ASTM D5185(m)		51	61	55
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		21	19	20
Manganese	ppm	ASTM D5185(m)		0	<1	<1
Magnesium	ppm	ASTM D5185(m)		363	338	330
Calcium	ppm	ASTM D5185(m)		1252	1333	1400
Phosphorus	ppm	ASTM D5185(m)		848	880	901
Zinc	ppm	ASTM D5185(m)		925	935	944
Sulfur	ppm	ASTM D5185(m)		3507	3446	3546
Visc @ 40°C	cSt	ASTM D7279(m)		49.0	46.9	49.0



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0285027
Lab Number : 02617430
Unique Number : 5734540
Test Package : MOB 1 (Additional Tests: PrtCount)
Received : 22 Feb 2024
Tested : 23 Feb 2024
Diagnosed : 23 Feb 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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