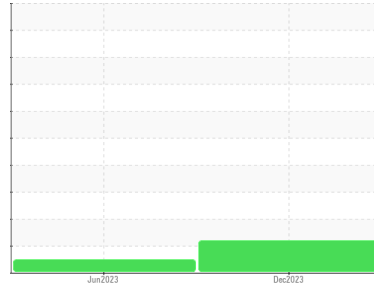


OIL ANALYSIS REPORT

Sample Rating Trend

FUEL



Area
CHICAGO 95TH
 Machine Id
LIEBHERR L546P L-149 (S/N 1755-62514)
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

▲ Contamination

There is a moderate amount of fuel present in the oil.

▲ Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0102685	PCA0097267	---
Sample Date	Client Info	27 Dec 2023	01 Jun 2023	---
Machine Age	hrs	4379	3400	---
Oil Age	hrs	2000	500	---
Oil Changed	Client Info	Changed	N/A	---
Sample Status		ABNORMAL	NORMAL	---

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	NEG	NEG	---
Glycol	WC Method	NEG	NEG	---

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	32	26	---
Chromium	ppm ASTM D5185m >5	1	<1	---
Nickel	ppm ASTM D5185m >5	<1	1	---
Titanium	ppm ASTM D5185m	2	<1	---
Silver	ppm ASTM D5185m >3	0	0	---
Aluminum	ppm ASTM D5185m >15	2	2	---
Lead	ppm ASTM D5185m >30	2	1	---
Copper	ppm ASTM D5185m >125	2	3	---
Tin	ppm ASTM D5185m >5	1	<1	---
Vanadium	ppm ASTM D5185m	<1	<1	---
Cadmium	ppm ASTM D5185m	0	<1	---

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	<1	2	---
Barium	ppm ASTM D5185m	0	0	---
Molybdenum	ppm ASTM D5185m	38	53	---
Manganese	ppm ASTM D5185m	<1	<1	---
Magnesium	ppm ASTM D5185m	645	905	---
Calcium	ppm ASTM D5185m	1090	1438	---
Phosphorus	ppm ASTM D5185m	856	1050	---
Zinc	ppm ASTM D5185m	1011	1364	---
Sulfur	ppm ASTM D5185m	2115	3597	---

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >60	5	4	---
Sodium	ppm ASTM D5185m	5	4	---
Potassium	ppm ASTM D5185m >20	<1	2	---
Fuel	% ASTM D3524 >5	▲ 5.7	<1.0	---

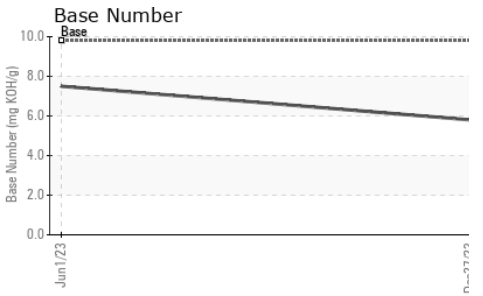
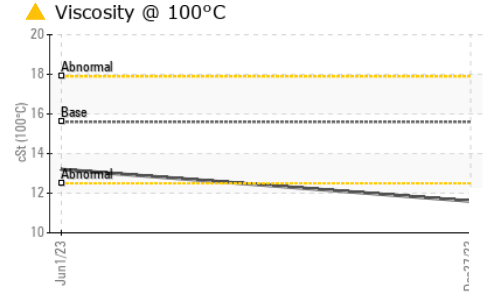
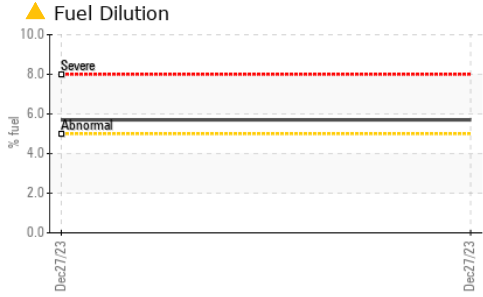
INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.6	0.4	---
Nitration	Abs/cm *ASTM D7624 >20	11.2	9.7	---
Sulfation	Abs/.1mm *ASTM D7415 >30	23.4	21.5	---

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	20.6	17.5	---
Base Number (BN)	mg KOH/g ASTM D2896 9.8	5.8	7.5	---

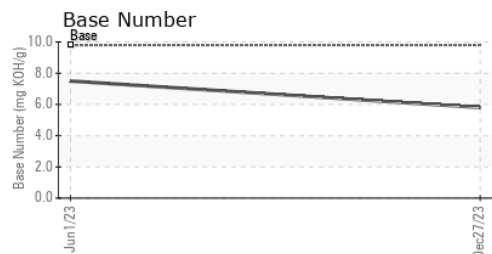
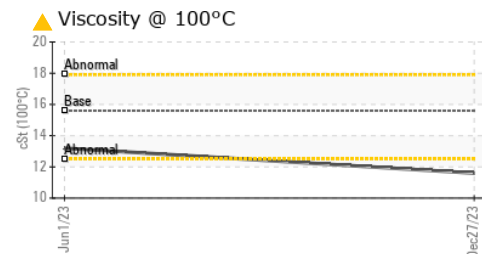
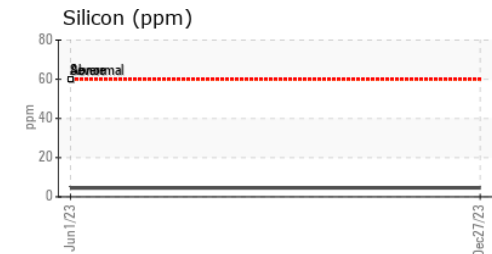
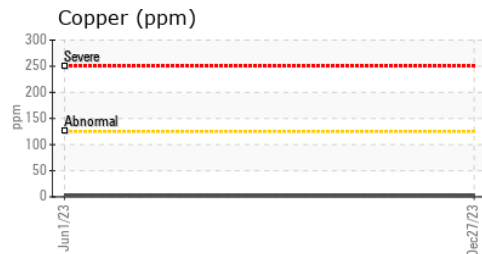
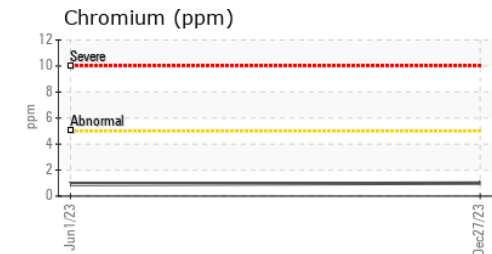
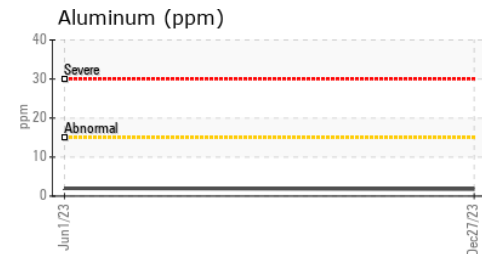
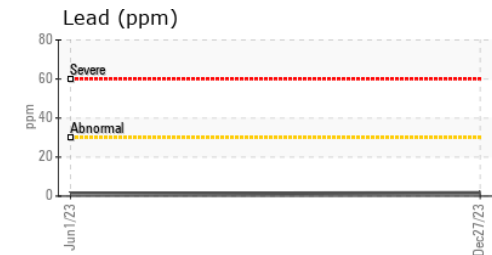
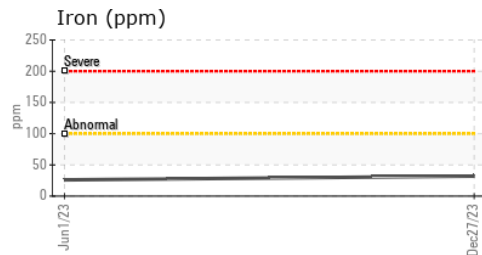
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 11.6	13.2	---

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0102685 **Received** : 01 Feb 2024
Lab Number : 06076516 **Tested** : 05 Feb 2024
Unique Number : 10858607 **Diagnosed** : 05 Feb 2024 - Jonathan Hester
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, TBN)

NORTH AMERICAN STEVEDORING CO
 9301 S KREITER AVE
 CHICAGO, IL
 US 60617
 Contact: PACO MARTINEZ
 paco.martinez@qsl.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)