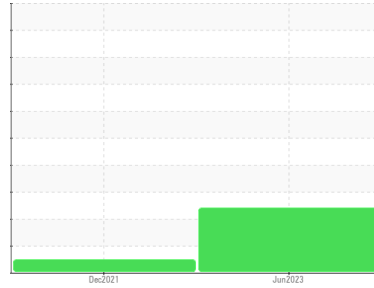


OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
500-175
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	PCA0082161	PCA0050364	---
Sample Date	Client Info	19 Jun 2023	20 Dec 2021	---
Machine Age	hrs	10130	10000	---
Oil Age	hrs	510	500	---
Oil Changed	Client Info	Changed	Changed	---
Sample Status		SEVERE	NORMAL	---

CONTAMINATION

method	limit/base	current	history 1	history 2
Glycol	WC Method	NEG	NEG	---

WEAR METALS

method	limit/base	current	history 1	history 2	
Iron	ppm	ASTM D5185m >51	21	44	---
Chromium	ppm	ASTM D5185m >11	<1	<1	---
Nickel	ppm	ASTM D5185m >5	<1	0	---
Titanium	ppm	ASTM D5185m	<1	<1	---
Silver	ppm	ASTM D5185m >3	0	0	---
Aluminum	ppm	ASTM D5185m >31	2	2	---
Lead	ppm	ASTM D5185m >26	3	3	---
Copper	ppm	ASTM D5185m >26	4	9	---
Tin	ppm	ASTM D5185m >4	2	2	---
Antimony	ppm	ASTM D5185m	---	0	---
Vanadium	ppm	ASTM D5185m	0	0	---
Cadmium	ppm	ASTM D5185m	0	0	---

ADDITIVES

method	limit/base	current	history 1	history 2	
Boron	ppm	ASTM D5185m 0	0	5	---
Barium	ppm	ASTM D5185m 0	0	0	---
Molybdenum	ppm	ASTM D5185m 60	55	56	---
Manganese	ppm	ASTM D5185m 0	<1	<1	---
Magnesium	ppm	ASTM D5185m 1010	892	893	---
Calcium	ppm	ASTM D5185m 1070	977	1097	---
Phosphorus	ppm	ASTM D5185m 1150	898	953	---
Zinc	ppm	ASTM D5185m 1270	1114	1136	---
Sulfur	ppm	ASTM D5185m 2060	3128	2707	---

CONTAMINANTS

method	limit/base	current	history 1	history 2	
Silicon	ppm	ASTM D5185m >22	7	12	---
Sodium	ppm	ASTM D5185m >31	2	2	---
Potassium	ppm	ASTM D5185m >20	0	<1	---
Fuel	%	ASTM D3524 >2.1	8.9	<1.0	---

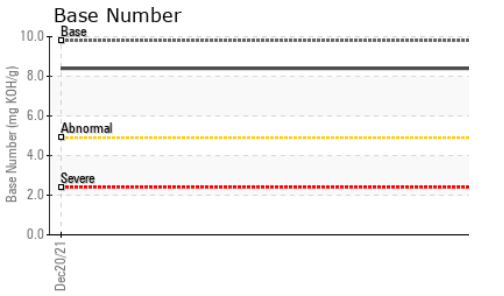
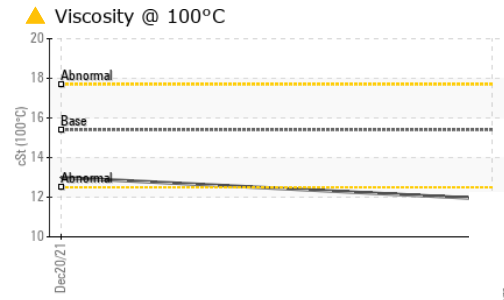
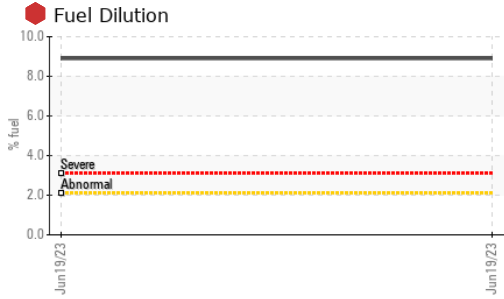
INFRA-RED

method	limit/base	current	history 1	history 2	
Soot %	%	*ASTM D7844 >3	0.3	0.7	---
Nitration	Abs/cm	*ASTM D7624 >20	8.1	7.7	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.7	20	---

FLUID DEGRADATION

method	limit/base	current	history 1	history 2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.2	15.5	---
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.4	8.4	---

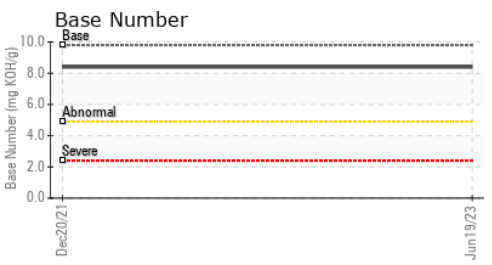
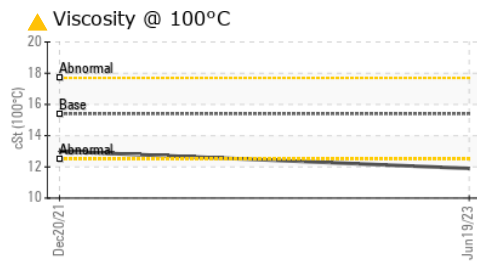
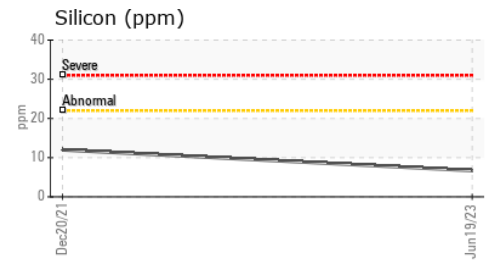
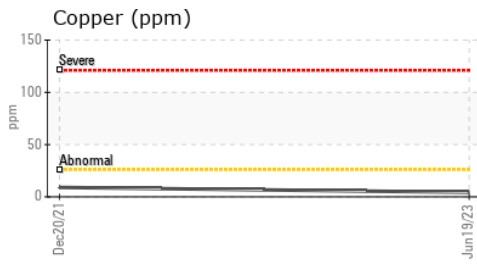
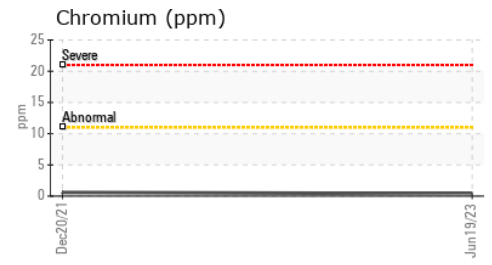
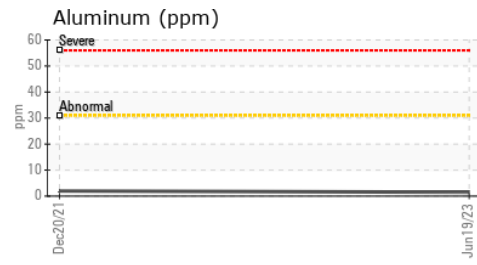
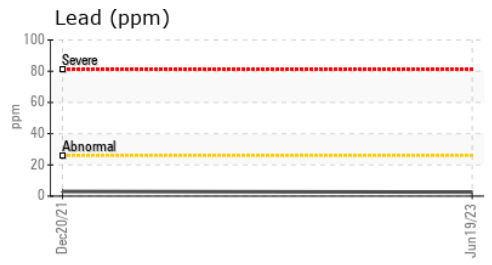
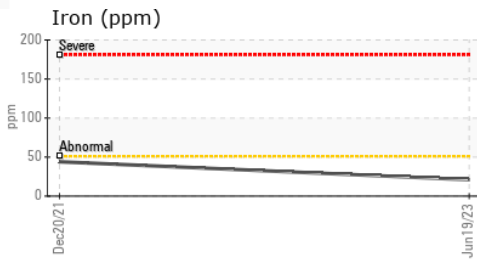
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2
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	>0.21	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	▲ 11.9	13.0	---

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0082161 **Received** : 10 Jul 2023
Lab Number : 05893337 **Diagnosed** : 12 Jul 2023
Unique Number : 10549147 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, TBN)

GE MARSHALL EXCAVATION
 1351 JOLIET RD
 VALPARAISO, IN
 US 46385
 Contact: RICK YUKON
 rick.yukon@gemarshall.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)

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F: