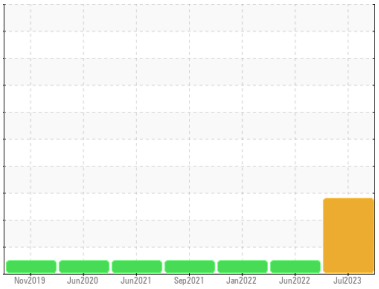
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

Sample Rating Trend



DEGRADATION

Machine Id
309548
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Wear
The lead level is abnormal. All other component wear rates are normal.

Contamination
There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition
The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0100753**	PCA0073234	PCA0064112
Sample Date		Client Info		**05 Jul 2023**	30 Jun 2022	04 Jan 2022
Machine Age	mls	Client Info		**116105**	88197	74009
Oil Age	mls	Client Info		**116105**	14188	9000
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**97**	24	11
Chromium	ppm	ASTM D5185m	>20	**3**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**<1**	0	0
Titanium	ppm	ASTM D5185m		**11**	3	4
Silver	ppm	ASTM D5185m	>3	**0**	<1	<1
Aluminum	ppm	ASTM D5185m	>20	**9**	4	3
Lead	ppm	ASTM D5185m	>40	▲ **53**	4	1
Copper	ppm	ASTM D5185m	>330	**12**	13	24
Tin	ppm	ASTM D5185m	>15	**6**	2	1
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**<1**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**4**	0	6
Barium	ppm	ASTM D5185m	0	**0**	4	0
Molybdenum	ppm	ASTM D5185m	50	**60**	60	57
Manganese	ppm	ASTM D5185m	0	**3**	1	<1
Magnesium	ppm	ASTM D5185m	950	**904**	787	912
Calcium	ppm	ASTM D5185m	1050	**1492**	1196	1193
Phosphorus	ppm	ASTM D5185m	995	**1079**	823	1070
Zinc	ppm	ASTM D5185m	1180	**1341**	1158	1223
Sulfur	ppm	ASTM D5185m	2600	**3578**	3397	2833

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**8**	3	4
Sodium	ppm	ASTM D5185m		**19**	10	4
Potassium	ppm	ASTM D5185m	>20	**6**	<1	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	▲ **4.3**	1.5	0.7
Nitration	Abs/cm	*ASTM D7624	>20	**23.1**	13.4	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**40.6**	25.2	21.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**37.6**	20.2	17.2
Base Number (BN)	mg KOH/g	ASTM D2896		▲ **0.0**	7.7	9.2

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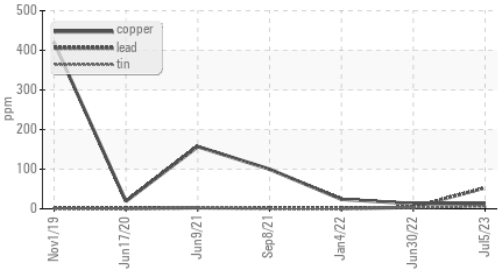
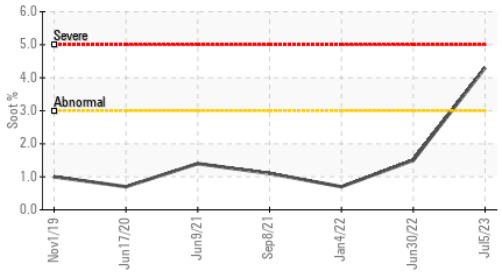
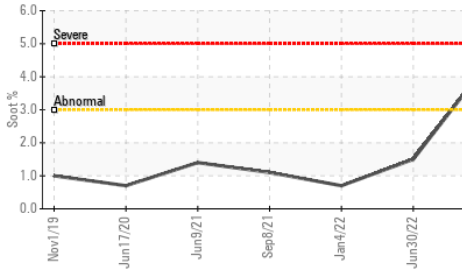
Non-ferrous Metals



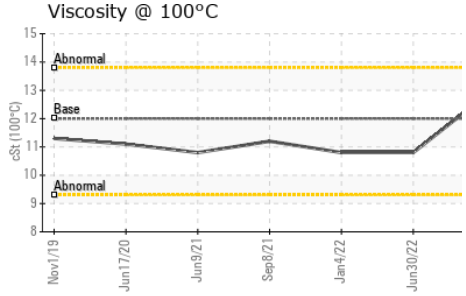
Soot %



Soot %



Viscosity @ 100°C

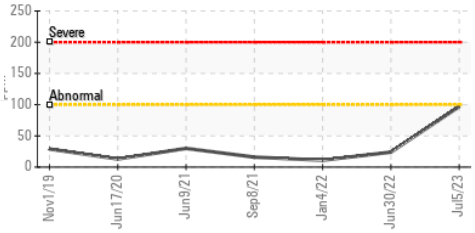


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

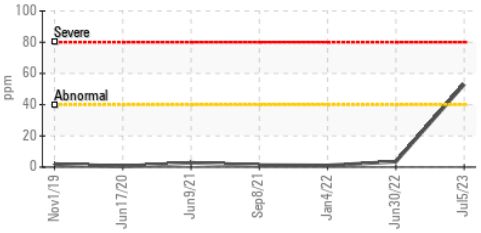
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**12.8**	10.8	10.8

GRAPHS

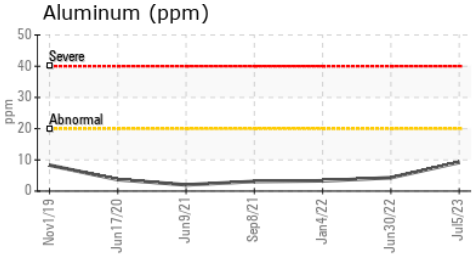
Iron (ppm)



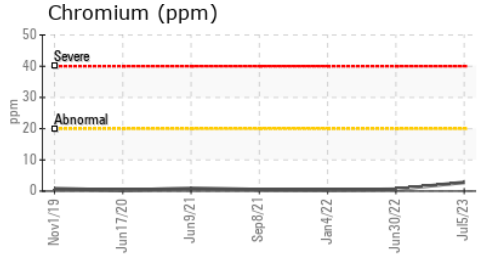
Lead (ppm)



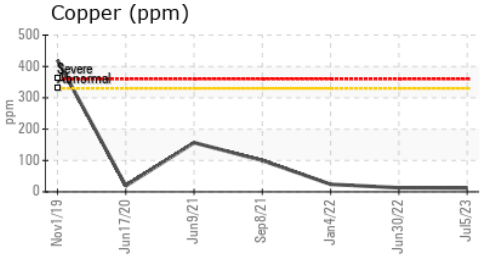
Aluminum (ppm)



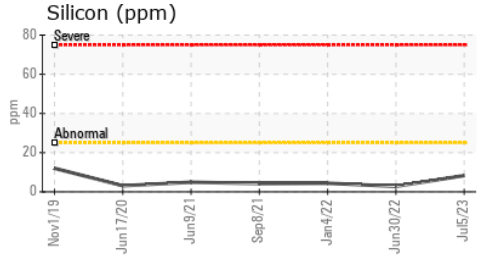
Chromium (ppm)



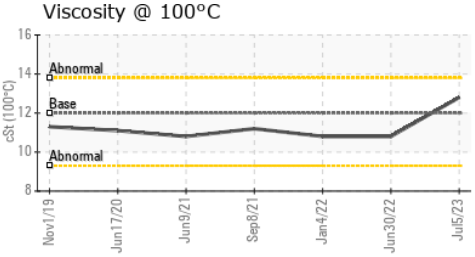
Copper (ppm)



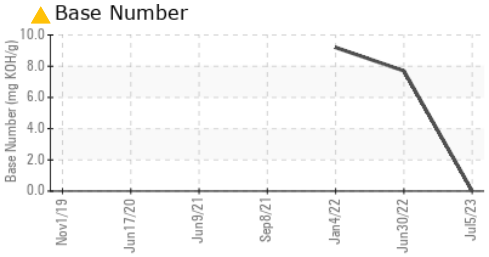
Silicon (ppm)



Viscosity @ 100°C



Base Number



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0100753 **Received** : 20 Jul 2023
Lab Number : 05903042 **Diagnosed** : 21 Jul 2023
Unique Number : 10564398 **Diagnostician** : Don Baldridge
Test Package : MOB 1 (Additional Tests: TBN)

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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