OIL ANALYSIS REPORT

Sample Rating Trend

Dec2021   Feb2023   Aug2023
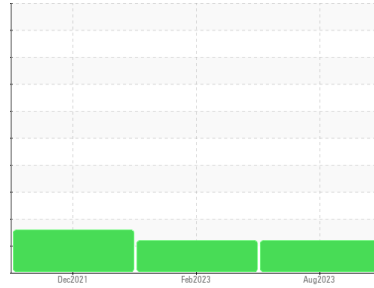
DEGRADATION

Machine Id
719682
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

⚠️ **Recommendation**
The oil is near the end of it`s useful service life, recommend schedule an oil change. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil.

⚠️ **Fluid Condition**
The BN level is low. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0102874**	PCA0093286	PCA0064110
Sample Date		Client Info		**09 Aug 2023**	22 Feb 2023	21 Dec 2021
Machine Age	mls	Client Info		**347426**	293011	159980
Oil Age	mls	Client Info		**347426**	0	0
Oil Changed		Client Info		**Not Changd**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

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	**52**	98	74
Chromium	ppm	ASTM D5185m	>20	**2**	5	5
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	0
Titanium	ppm	ASTM D5185m		**3**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**5**	10	14
Lead	ppm	ASTM D5185m	>40	**0**	<1	1
Copper	ppm	ASTM D5185m	>330	**10**	26	127
Tin	ppm	ASTM D5185m	>15	**<1**	2	2
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**7**	17	12
Barium	ppm	ASTM D5185m	0	**0**	0	1
Molybdenum	ppm	ASTM D5185m	50	**67**	112	21
Manganese	ppm	ASTM D5185m	0	**1**	2	2
Magnesium	ppm	ASTM D5185m	950	**947**	808	694
Calcium	ppm	ASTM D5185m	1050	**1381**	1755	1344
Phosphorus	ppm	ASTM D5185m	995	**1025**	853	929
Zinc	ppm	ASTM D5185m	1180	**1249**	1108	1194
Sulfur	ppm	ASTM D5185m	2600	**3174**	2388	2361

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**5**	11	8
Sodium	ppm	ASTM D5185m		**6**	12	6
Potassium	ppm	ASTM D5185m	>20	**6**	9	32

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.8**	⚠️ 3.7	1.1
Nitration	Abs/cm	*ASTM D7624	>20	**14.5**	26.8	17.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**27.1**	40.4	33

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**30.3**	62.8	36.4
Base Number (BN)	mg KOH/g	ASTM D2896		⚠️ **3.4**	---	⚠️ 3.3

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360 OIL DIAGNOSTICS — TECHNICAL EXPERTISE

Base Number

Viscosity @ 100°C
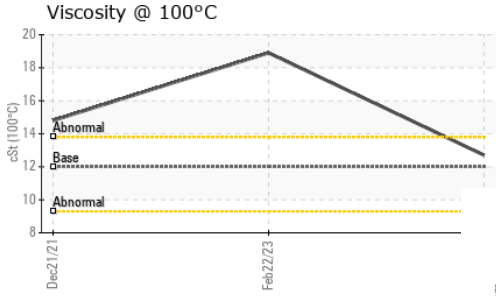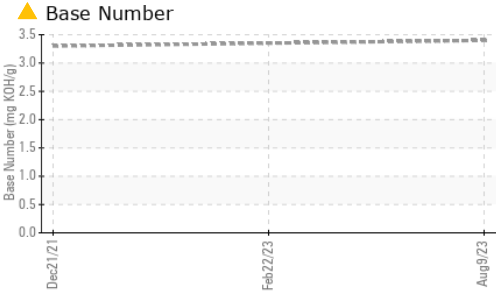
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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	**12.7**	▲ 18.9	▲ 14.8

GRAPHS

Iron (ppm)

Lead (ppm)

Aluminum (ppm)

Chromium (ppm)

Copper (ppm)

Silicon (ppm)

Viscosity @ 100°C

Base Number
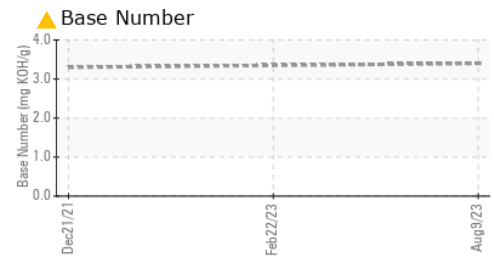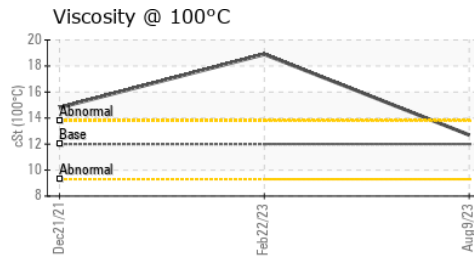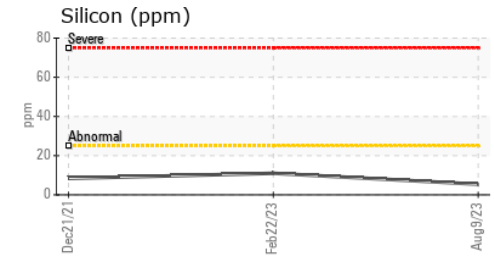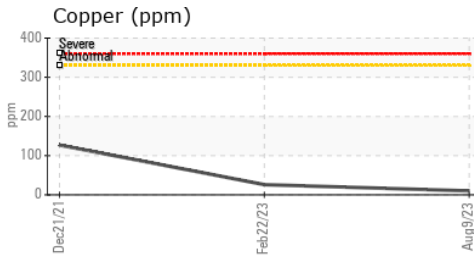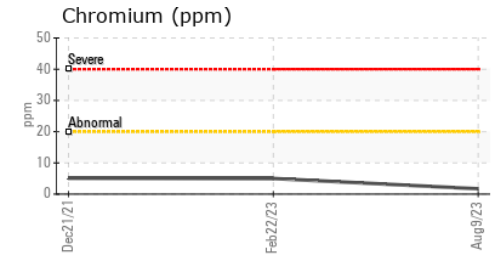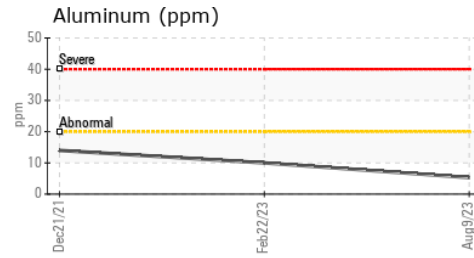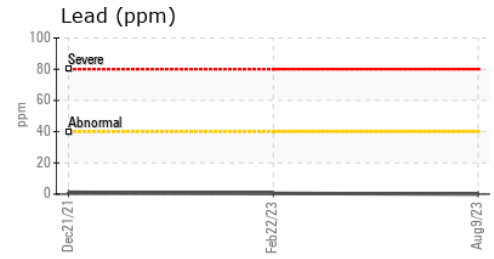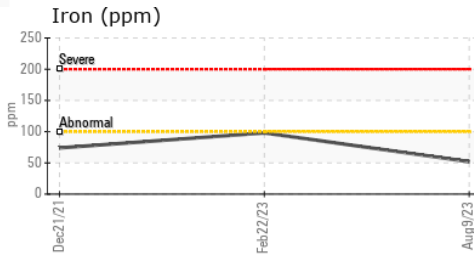
ANAB ACCREDITED TESTING LABORATORY — Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: PCA0102874	**Received**	: 21 Aug 2023
Lab Number	: 05929257	**Diagnosed**	: 24 Aug 2023
Unique Number	: 10609204	**Diagnostician**	: Jonathan Hester
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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