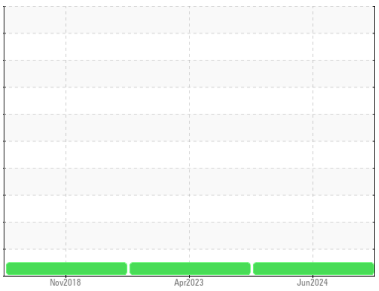
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
SPARTAN 28019
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Fluid Condition
The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0085029**	PC0075269	AP103746
Sample Date		Client Info		**14 Jun 2024**	14 Apr 2023	01 Nov 2018
Machine Age	mths	Client Info		**0**	155996	58486
Oil Age	mths	Client Info		**6**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	0.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>165	**33**	24	36
Chromium	ppm	ASTM D5185(m)	>5	**2**	1	2
Nickel	ppm	ASTM D5185(m)	>4	**<1**	<1	0
Titanium	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**21**	3	7
Lead	ppm	ASTM D5185(m)	>150	**7**	6	4
Copper	ppm	ASTM D5185(m)	>90	**1**	2	19
Tin	ppm	ASTM D5185(m)	>5	**<1**	<1	1
Antimony	ppm	ASTM D5185(m)		**0**	<1	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

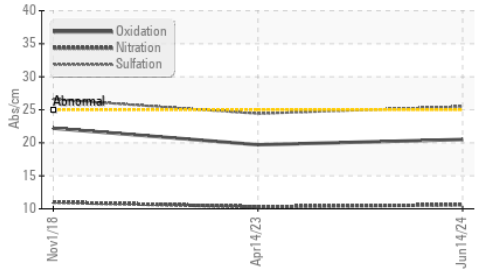
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**2**	25	6
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**64**	64	54
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**1023**	1050	810
Calcium	ppm	ASTM D5185(m)	1070	**1115**	1112	1336
Phosphorus	ppm	ASTM D5185(m)	1150	**1019**	1063	944
Zinc	ppm	ASTM D5185(m)	1270	**1264**	1235	1259
Sulfur	ppm	ASTM D5185(m)	2060	**2495**	2644	2392
Lithium	ppm	ASTM D5185(m)		**<1**	<1	0

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>35	**6**	6	10
Sodium	ppm	ASTM D5185(m)		**4**	2	4
Potassium	ppm	ASTM D5185(m)	>20	**59**	4	22

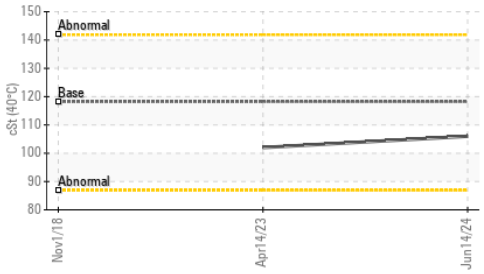
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>7.5	**1.7**	1.4	1.2
Nitration	Abs/cm	ASTM D7624*	>20	**10.6**	10.3	11.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	**25.5**	24.4	26.6

OIL ANALYSIS REPORT

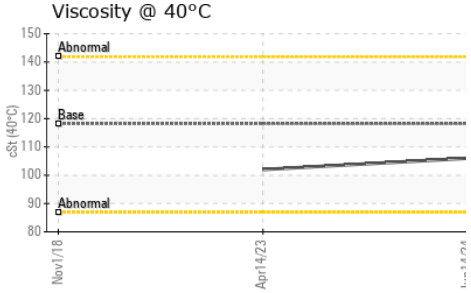
FT-IR (Direct Trend)



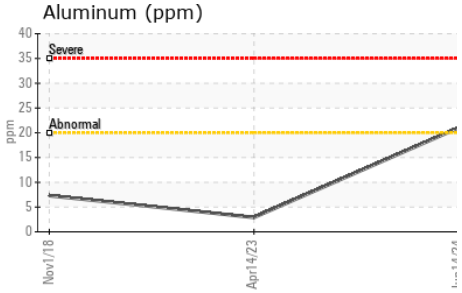
Viscosity @ 40°C



Viscosity @ 40°C



Aluminum (ppm)



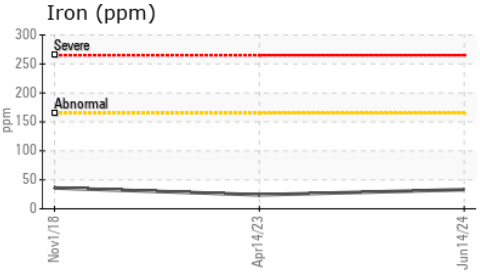
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**20.5**	19.7	22.2

VISUAL		method	limit/base	current	history1	history2
Odor	scalar	Visual*	NORML	**NORML**	NORML	---
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

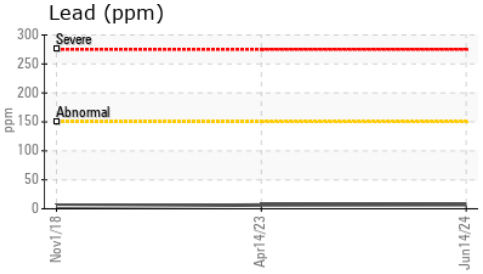
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	**106**	102	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	**13.9**	13.5	14.2
Viscosity Index (VI)	Scale	ASTM D2270*	139	**131**	131	---

GRAPHS

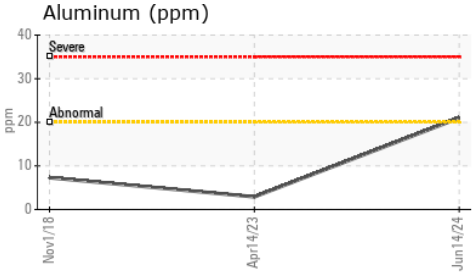
Iron (ppm)



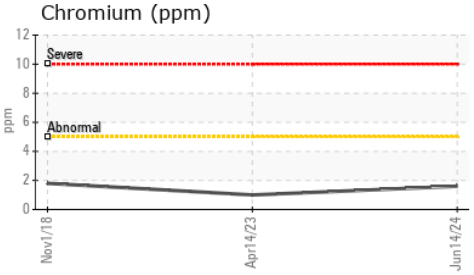
Lead (ppm)



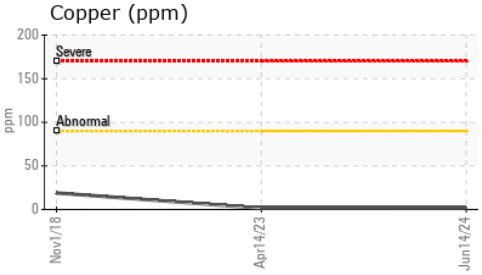
Aluminum (ppm)



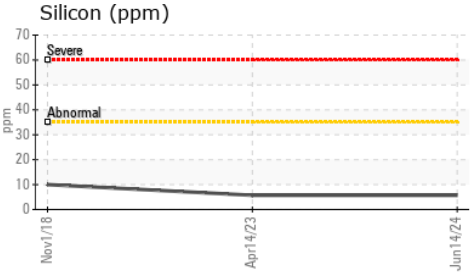
Chromium (ppm)



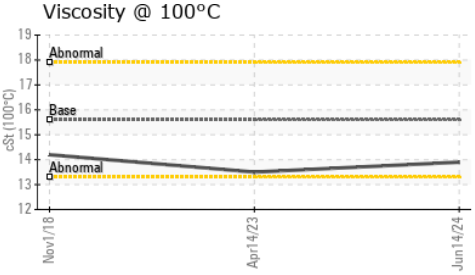
Copper (ppm)



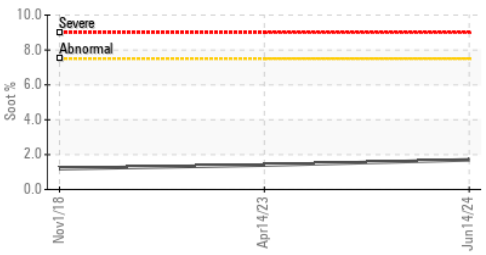
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0085029 **Received** : 18 Jun 2024
Lab Number : 02642520 **Tested** : 18 Jun 2024
Unique Number : 5800059 **Diagnosed** : 18 Jun 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: KV40, VI, Visual)

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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