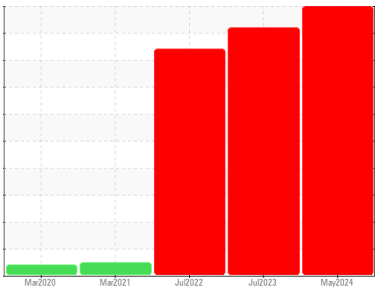
OIL DIAGNOSTICS

PROBLEM SUMMARY

Sample Rating Trend

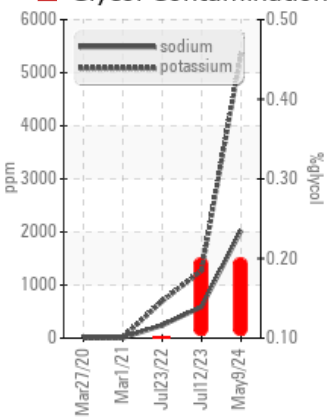


GLYCOL

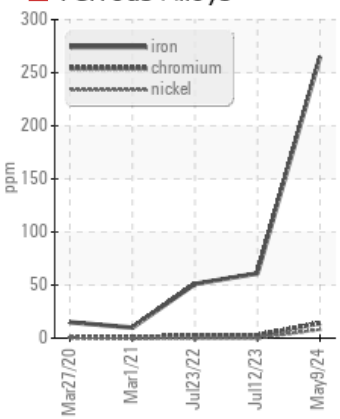
Machine Id
Blue Bird 6
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (18 QTS)

COMPONENT CONDITION SUMMARY

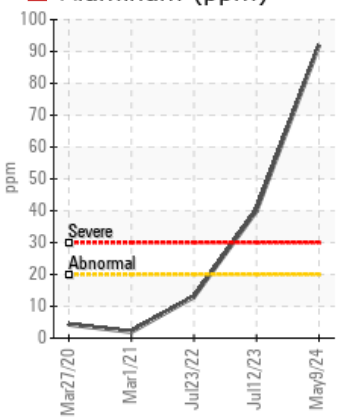
▲ Glycol Contamination



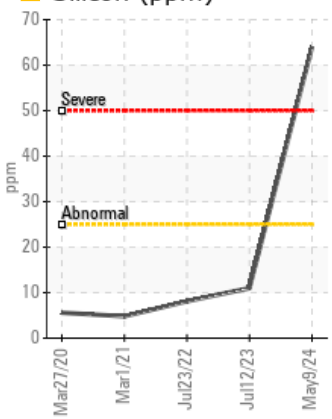
▲ Ferrous Alloys



▲ Aluminum (ppm)



▲ Silicon (ppm)



RECOMMENDATION

Check for low coolant level. We advise that you check for the source of the coolant leak. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>130	▲ **265**	61	51
Chromium	ppm	ASTM D5185m	>10	▲ **14**	3	3
Nickel	ppm	ASTM D5185m	>4	▲ **8**	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ **92**	▲ 40	13
Silicon	ppm	ASTM D5185m	>25	▲ **64**	11	8
Sodium	ppm	ASTM D5185m		▲ **2025**	▲ 590	▲ 241
Potassium	ppm	ASTM D5185m	>20	▲ **5352**	▲ 1272	▲ 699
Glycol	%	*ASTM D2982		▲ **0.20**	▲ 0.20	▲ 0.10

Customer Id: ICSB270
Sample No.: PCA0112705
Lab Number: 06215309
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Sean Felton +1 919-379-4092
sfelton@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

GLYCOL

12 Jul 2023 Diag: Don Baldridge

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.The aluminum level is abnormal. Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report

GLYCOL

23 Jul 2022 Diag: Jonathan Hester

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report

NORMAL

01 Mar 2021 Diag: Jonathan Hester

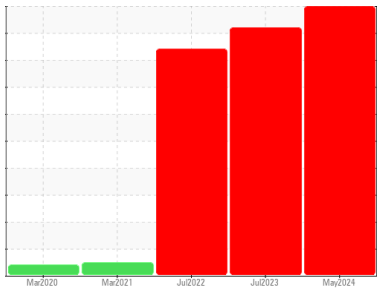
Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
Blue Bird 6
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (18 QTS)

DIAGNOSIS

Recommendation
Check for low coolant level. We advise that you check for the source of the coolant leak. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Wear
Piston, ring and cylinder wear is indicated.

Contamination
Sodium and/or potassium levels are high. Test for glycol is positive. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition
The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0112705**	PCA0071438	PCA0045598
Sample Date		Client Info		**09 May 2024**	12 Jul 2023	23 Jul 2022
Machine Age	mls	Client Info		**147314**	140289	135437
Oil Age	mls	Client Info		**7025**	4852	12725
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	SEVERE

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>130	▲ **265**	61	51
Chromium	ppm	ASTM D5185m	>10	▲ **14**	3	3
Nickel	ppm	ASTM D5185m	>4	▲ **8**	0	0
Titanium	ppm	ASTM D5185m	>2	**<1**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ **92**	▲ 40	13
Lead	ppm	ASTM D5185m	>20	**5**	<1	6
Copper	ppm	ASTM D5185m	>125	**44**	3	2
Tin	ppm	ASTM D5185m	>4	**3**	0	<1
Antimony	ppm	ASTM D5185m		**---**	---	---
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**29**	4	9
Barium	ppm	ASTM D5185m	0	**2**	0	2
Molybdenum	ppm	ASTM D5185m	50	**780**	149	81
Manganese	ppm	ASTM D5185m	0	**4**	<1	<1
Magnesium	ppm	ASTM D5185m	950	**956**	900	824
Calcium	ppm	ASTM D5185m	1050	**1074**	982	1089
Phosphorus	ppm	ASTM D5185m	995	**1540**	824	805
Zinc	ppm	ASTM D5185m	1180	**1297**	1148	1098
Sulfur	ppm	ASTM D5185m	2600	**3680**	2772	2934

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **64**	11	8
Sodium	ppm	ASTM D5185m		▲ **2025**	▲ 590	▲ 241
Potassium	ppm	ASTM D5185m	>20	▲ **5352**	▲ 1272	▲ 699
Glycol	%	*ASTM D2982		▲ **0.20**	▲ 0.20	▲ 0.10

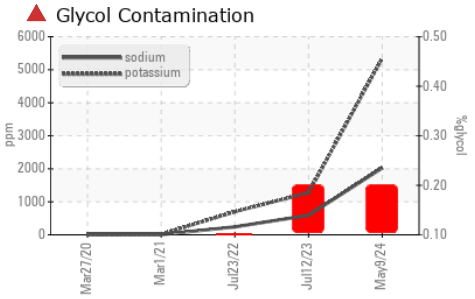
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	**1**	0.5	0.7
Nitration	Abs/cm	*ASTM D7624	>20	**21.3**	13.4	13.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**29.6**	20.5	26.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.7**	17.7	22.7
Base Number (BN)	mg KOH/g	ASTM D2896		**18.0**	12.0	7.9

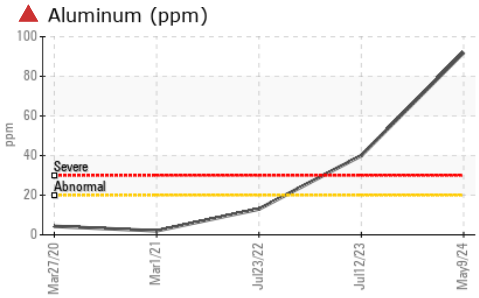
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

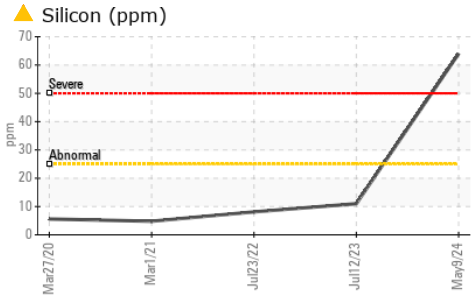
Glycol Contamination



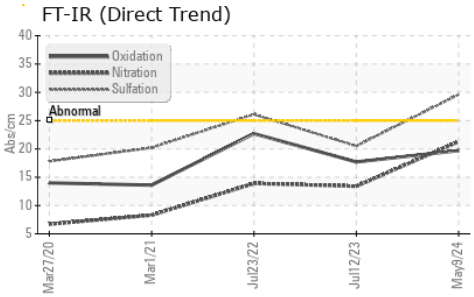
Aluminum (ppm)



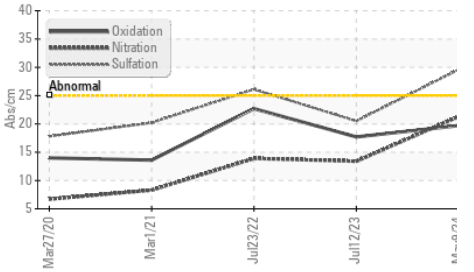
Silicon (ppm)



FT-IR (Direct Trend)



FT-IR (Direct Trend)

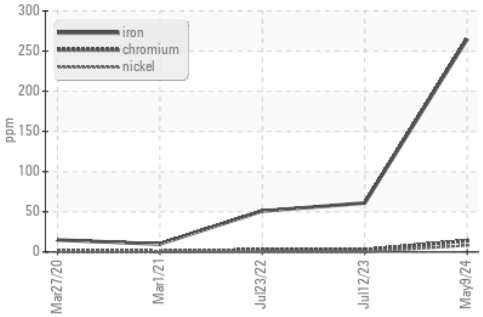


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

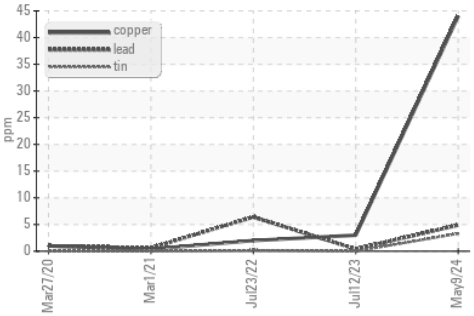
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**12.9**	11.9	11.7

GRAPHS

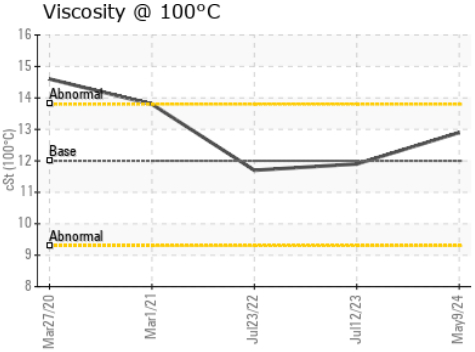
Ferrous Alloys



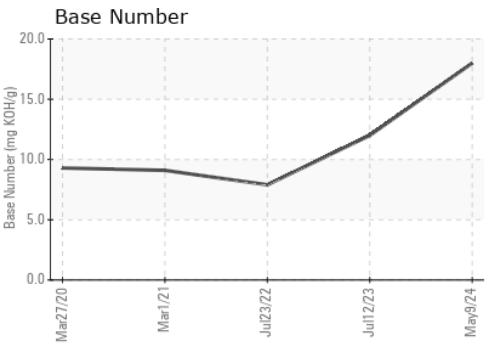
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0112705
Lab Number : 06215309
Unique Number : 11088173
Test Package : FLEET

Received : 20 Jun 2024
Tested : 21 Jun 2024
Diagnosed : 21 Jun 2024 - Sean Felton

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)

ICSB270 - Paxton
501 North Market Street
Paxton, IL
US 55082
Contact: Wayne Justus

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