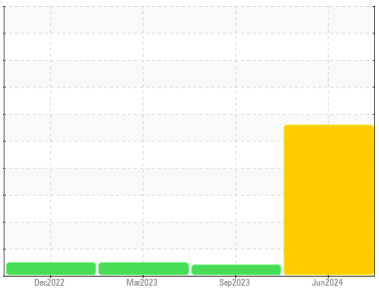
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
503
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0905907**	WC0792662	WC0792801
Sample Date		Client Info		**05 Jun 2024**	19 Sep 2023	16 Mar 2023
Machine Age	mls	Client Info		**201782**	189789	179893
Oil Age	mls	Client Info		**5000**	5000	0
Oil Changed		Client Info		**Not Changd**	N/A	Not Changd
Sample Status				**SEVERE**	ATTENTION	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	0.3	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**87**	28	39
Chromium	ppm	ASTM D5185m	>20	**3**	2	2
Nickel	ppm	ASTM D5185m	>4	**1**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**20**	<1	5
Lead	ppm	ASTM D5185m	>40	**5**	1	<1
Copper	ppm	ASTM D5185m	>330	**244**	2	1
Tin	ppm	ASTM D5185m	>15	**2**	1	<1
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		**11**	51	10
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**53**	1	53
Manganese	ppm	ASTM D5185m		**2**	<1	<1
Magnesium	ppm	ASTM D5185m		**666**	678	595
Calcium	ppm	ASTM D5185m		**1648**	1371	1827
Phosphorus	ppm	ASTM D5185m		**998**	645	1055
Zinc	ppm	ASTM D5185m		**1271**	764	1307
Sulfur	ppm	ASTM D5185m		**3392**	3992	3023

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**79**	5	5
Sodium	ppm	ASTM D5185m		**41**	3	0
Potassium	ppm	ASTM D5185m	>20	**55**	2	2
Glycol	%	*ASTM D2982		**0.0**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.9**	2.1	0.8
Nitration	Abs/cm	*ASTM D7624	>20	**9.0**	16.3	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.5**	30.8	22.2

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**13.1**	28.6	17.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**8.94**	7.9	8.8

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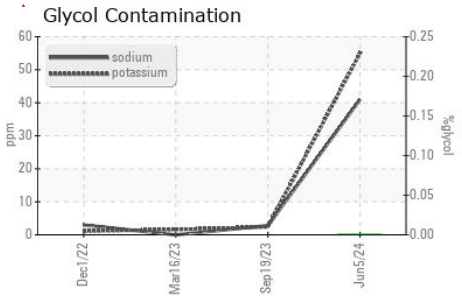
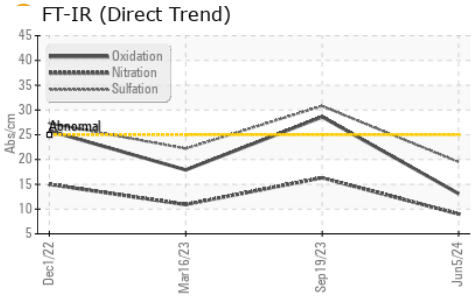
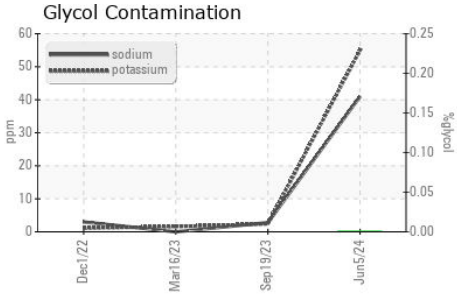
Glycol Contamination



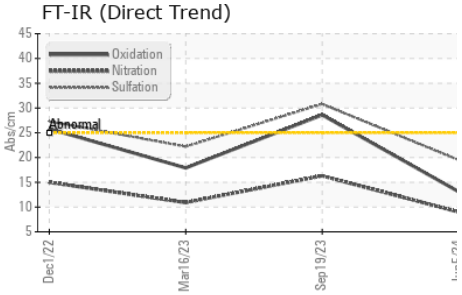
FT-IR (Direct Trend)



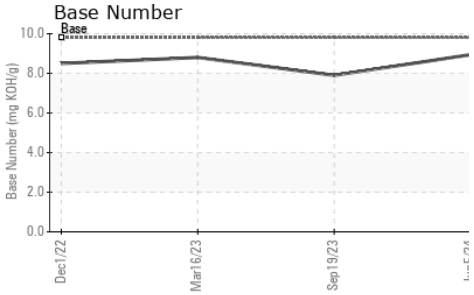
Glycol Contamination



FT-IR (Direct Trend)



Base Number

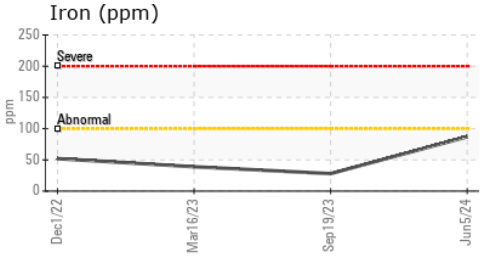


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

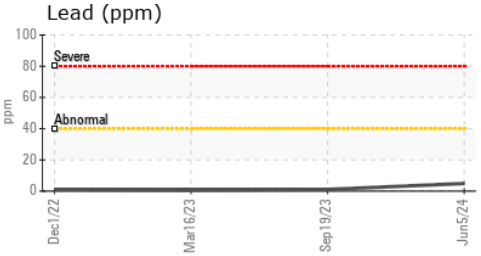
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	**15.2**	11.3	15.3

GRAPHS

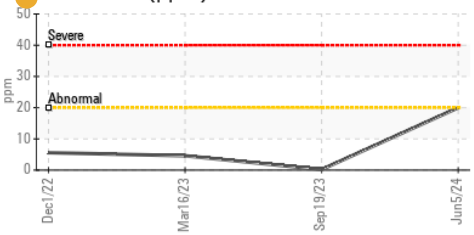
Iron (ppm)



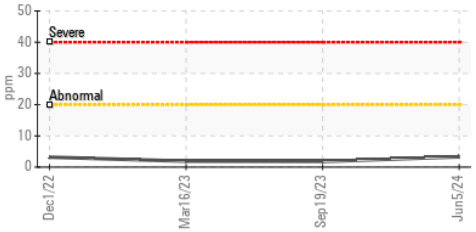
Lead (ppm)



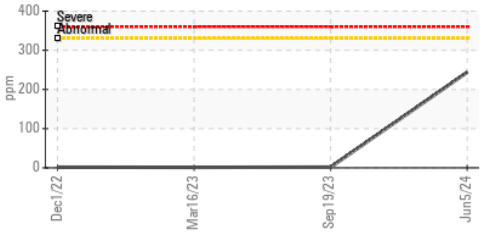
Aluminum (ppm)



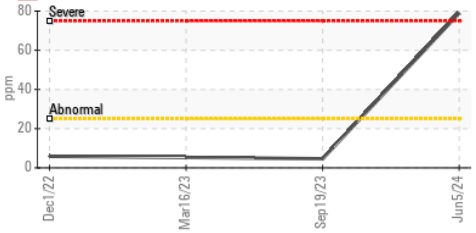
Chromium (ppm)



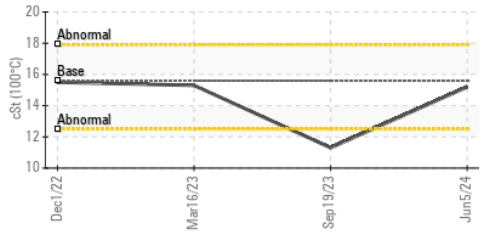
Copper (ppm)



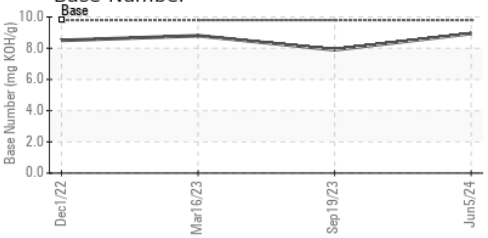
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0905907
Lab Number : 06207336
Unique Number : 11074797
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

Received : 11 Jun 2024
Tested : 19 Jun 2024
Diagnosed : 19 Jun 2024 - Jonathan Hester

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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