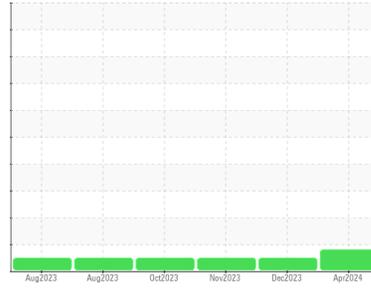




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
KDAC
 Machine Id
200276
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 10W30 (40 LTR)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

Aluminum ppm levels are abnormal. Piston wear is indicated.

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 BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0888917	WC0888925	WC0864687
Sample Date	Client Info		04 Apr 2024	22 Dec 2023	19 Nov 2023
Machine Age	kms	Client Info	129656	100664	87893
Oil Age	kms	Client Info	69981	40989	28218
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>100	48	27	19
Chromium	ppm	ASTM D5185(m)	>20	1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	▲ 26	18	13
Lead	ppm	ASTM D5185(m)	>40	1	2	2
Copper	ppm	ASTM D5185(m)	>330	51	48	44
Tin	ppm	ASTM D5185(m)	>15	0	<1	0
Antimony	ppm	ASTM D5185(m)		0	0	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)	2	3	3	4
Barium	ppm	ASTM D5185(m)	0	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	50	64	61	61
Manganese	ppm	ASTM D5185(m)	0	0	<1	<1
Magnesium	ppm	ASTM D5185(m)	950	973	948	949
Calcium	ppm	ASTM D5185(m)	1050	1177	1154	1143
Phosphorus	ppm	ASTM D5185(m)	995	919	979	998
Zinc	ppm	ASTM D5185(m)	1180	1215	1197	1200
Sulfur	ppm	ASTM D5185(m)	2600	2015	2379	2377
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

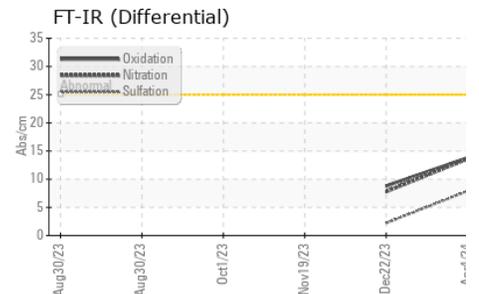
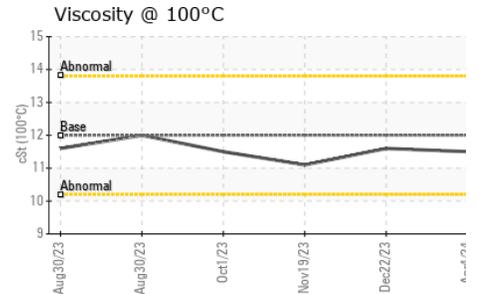
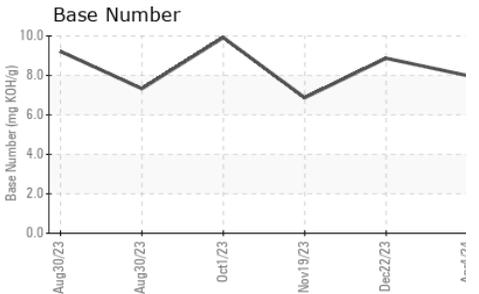
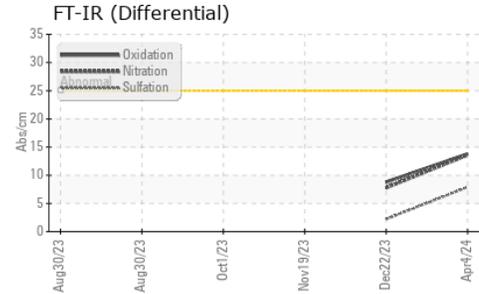
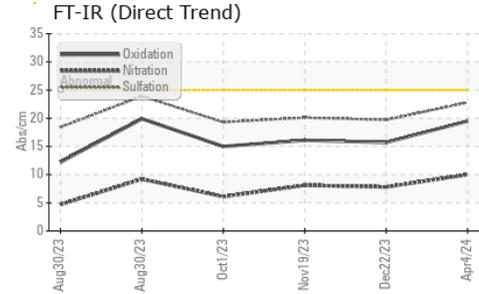
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	6	7	7
Sodium	ppm	ASTM D5185(m)		3	3	3
Potassium	ppm	ASTM D5185(m)	>20	36	34	26

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	0.9	0.4	0.3
Nitration	Abs/cm	ASTM D7624*	>20	10.0	7.8	8.1
Nitration(Diff)	Abs/cm	ASTM E2412*	< 25	13.6	7.8	---
Sulfation	Abs./1mm	ASTM D7415*	>30	22.8	19.7	20.1
Sulfation(Diff)	Abs/cm	ASTM E2412*		7.9	2.2	---



OIL ANALYSIS REPORT

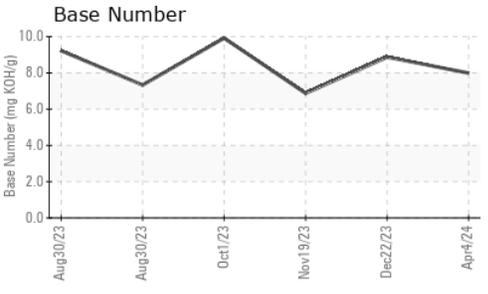
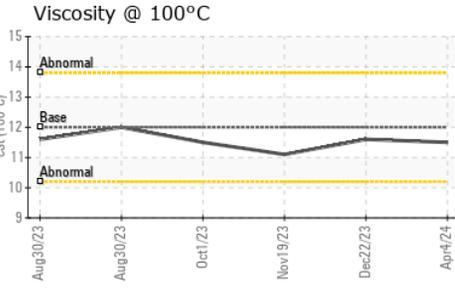
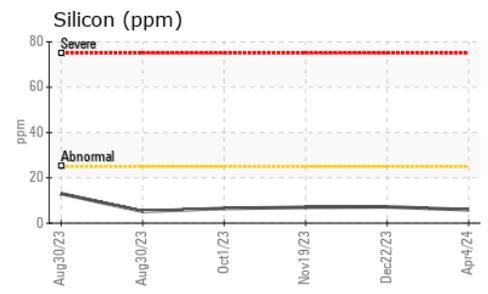
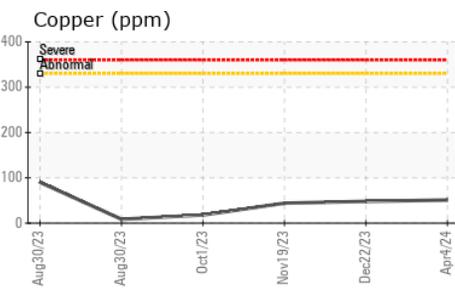
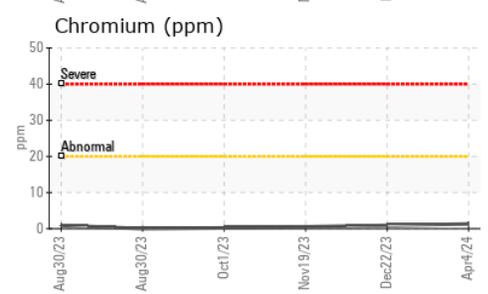
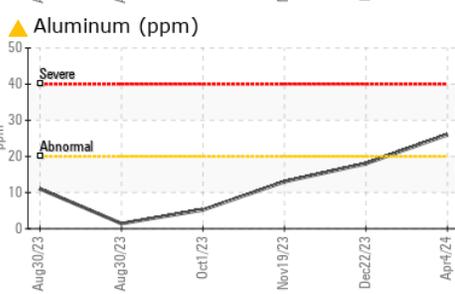
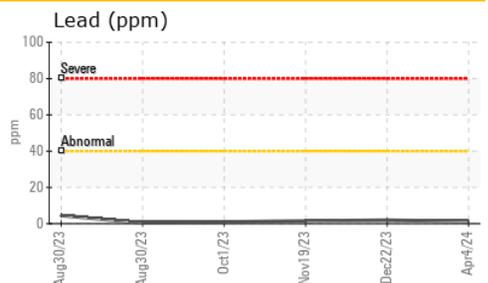
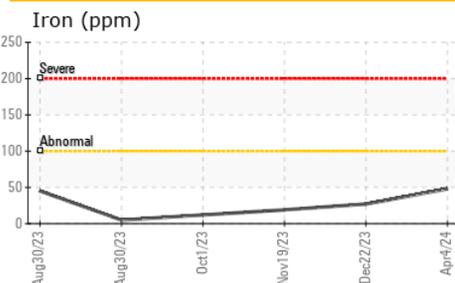


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	19.5	15.7	16.1
Oxidation(Diff)	Abs/cm	ASTM E2412*	< 25	13.8	8.8	---
Base Number (BN)	mg KOH/g	ASTM D2896*		7.99	8.87	6.87

VISUAL	method	limit/base	current	history1	history2	
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 D7279(m)	12.00	11.5	11.6	11.1

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0888917 **Received** : 08 Apr 2024
Lab Number : **02627187** **Tested** : 09 Apr 2024
Unique Number : 5760319 **Diagnosed** : 09 Apr 2024 - Kevin Marson
Test Package : MOB 2 (Additional Tests: FT-IR(Diff))

WFR Technical Services
 5389 Riverside Drive
 Burlington, ON
 CA L7L 3Y1
 Contact: William Ridley
 wfr.technical.services@gmail.com

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.