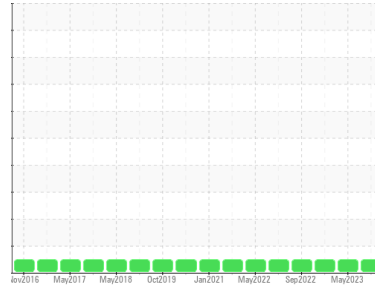


OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL


Machine Id
WESTERN STAR 155-20
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (12 GAL)

DIAGNOSIS
Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

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 condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PCA0106846	PCA0078565	PCA0070796
Sample Date	Client Info			23 Oct 2023	26 May 2023	07 Oct 2022
Machine Age	mls	Client Info		24376	14238	230264
Oil Age	mls	Client Info		10000	14238	18000
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
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>65	20	18	6
Chromium	ppm	ASTM D5185m	>5	2	2	<1
Nickel	ppm	ASTM D5185m	>3	<1	<1	0
Titanium	ppm	ASTM D5185m	>5	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>35	11	7	4
Lead	ppm	ASTM D5185m	>10	0	0	<1
Copper	ppm	ASTM D5185m	>180	2	1	<1
Tin	ppm	ASTM D5185m	>8	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0

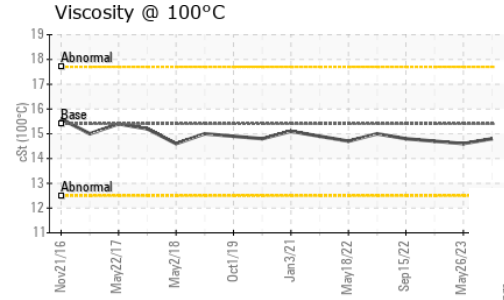
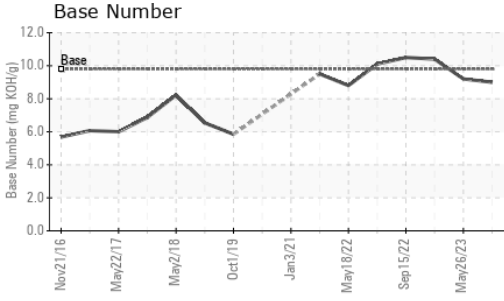
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	2	4
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	60	64	59	58
Manganese	ppm	ASTM D5185m	0	0	<1	<1
Magnesium	ppm	ASTM D5185m	1010	1004	1005	956
Calcium	ppm	ASTM D5185m	1070	1089	1099	1094
Phosphorus	ppm	ASTM D5185m	1150	1061	1063	1017
Zinc	ppm	ASTM D5185m	1270	1312	1325	1211
Sulfur	ppm	ASTM D5185m	2060	3655	3723	3697

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	4	5	3
Sodium	ppm	ASTM D5185m		7	4	4
Potassium	ppm	ASTM D5185m	>20	10	4	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.9	0.9	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.0	7.8	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6	20.0	20.2

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	14.7	14.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.0	9.2	10.4

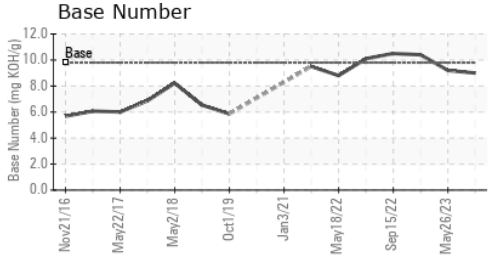
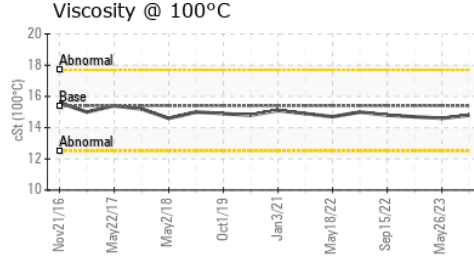
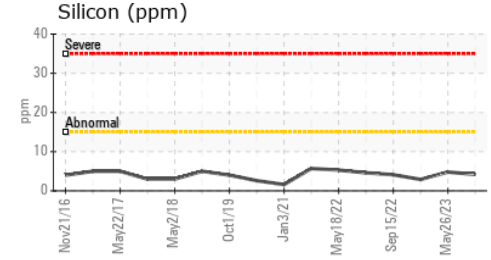
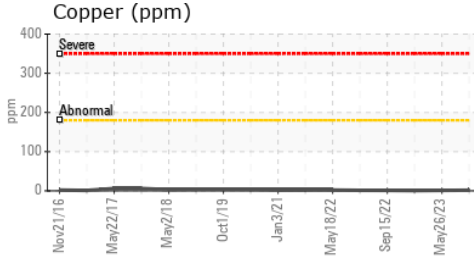
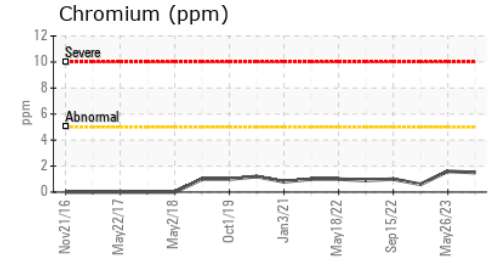
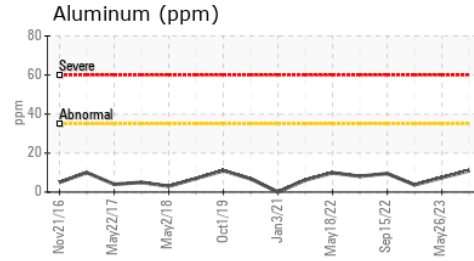
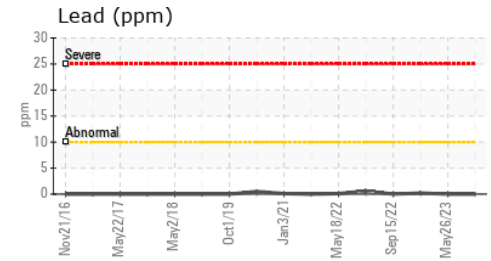
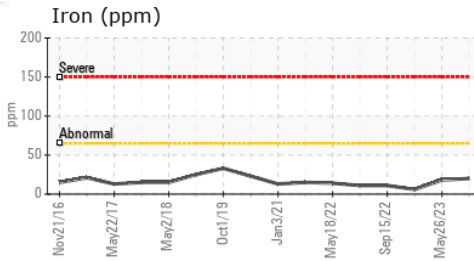
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	14.8	14.6	14.7

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0106846 **Received** : 01 Nov 2023
Lab Number : 05995427 **Diagnosed** : 02 Nov 2023
Unique Number : 10723787 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: TBN)

GE MARSHALL EXCAVATION
 1351 JOLIET RD
 VALPARAISO, IN
 US 46385
 Contact: MARK STEFFEL
 mark.steffel@gemarshall.com

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)

T:
F: