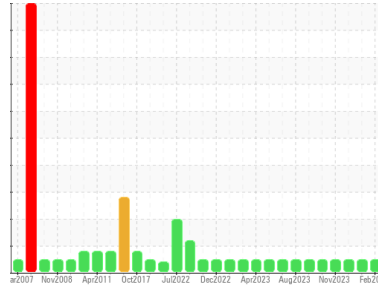


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
1851
Machine Id
1851-5419-8002 - FIRE WATER DIESEL DRIVEN PUMP
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (15 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

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	PC0070742	PC0070678	WC0070677
Sample Date	Client Info	09 Feb 2024	23 Jan 2024	26 Dec 2023
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	Not Changed	Not Changed	Not Changed
Sample Status		NORMAL	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	2	2	1
Chromium	ppm ASTM D5185(m) >20	0	0	0
Nickel	ppm ASTM D5185(m) >4	0	<1	<1
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m) >3	0	0	0
Aluminum	ppm ASTM D5185(m) >20	2	1	1
Lead	ppm ASTM D5185(m) >40	<1	<1	0
Copper	ppm ASTM D5185(m) >330	2	2	<1
Tin	ppm ASTM D5185(m) >15	<1	0	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) 0	<1	<1	<1
Barium	ppm ASTM D5185(m) 0	0	0	0
Molybdenum	ppm ASTM D5185(m) 60	59	58	57
Manganese	ppm ASTM D5185(m) 0	0	0	0
Magnesium	ppm ASTM D5185(m) 1010	976	961	936
Calcium	ppm ASTM D5185(m) 1070	1034	1029	1006
Phosphorus	ppm ASTM D5185(m) 1150	1000	995	987
Zinc	ppm ASTM D5185(m) 1270	1136	1127	1150
Sulfur	ppm ASTM D5185(m) 2060	2703	2679	2744
Lithium	ppm ASTM D5185(m)	<1	<1	<1

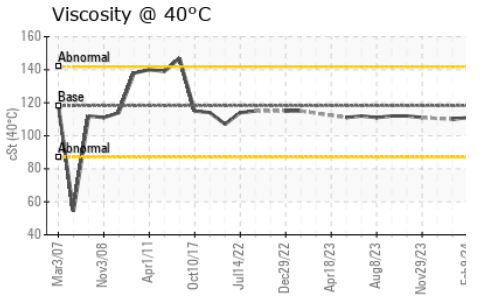
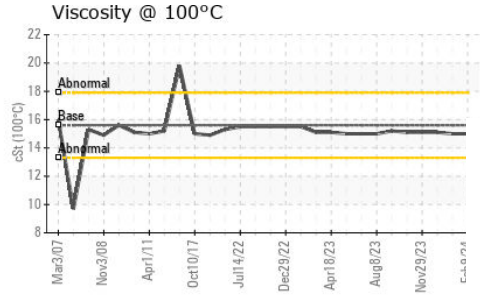
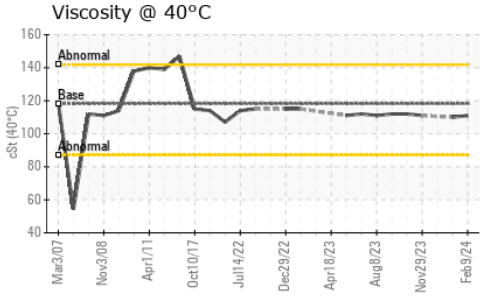
CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >25	4	4	4
Sodium	ppm ASTM D5185(m)	<1	<1	1
Potassium	ppm ASTM D5185(m) >20	<1	<1	<1

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% ASTM D7844* >3	0	0	0
Nitration	Abs/cm ASTM D7624* >20	4.7	4.6	4.2
Sulfation	Abs./1mm ASTM D7415* >30	18.0	17.9	17.7

OIL ANALYSIS REPORT

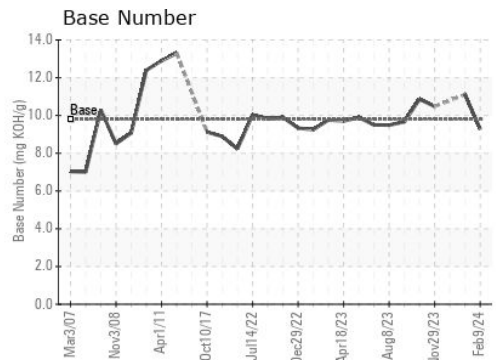
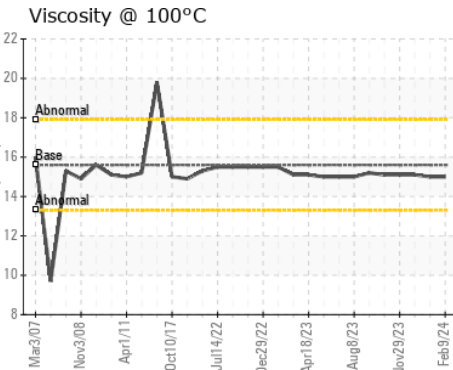
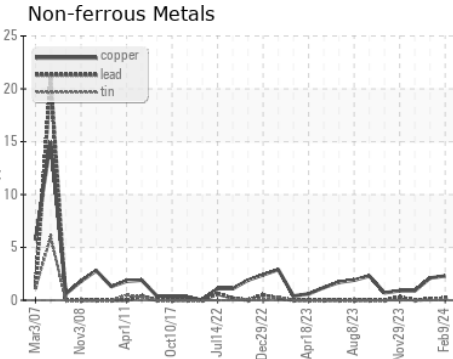
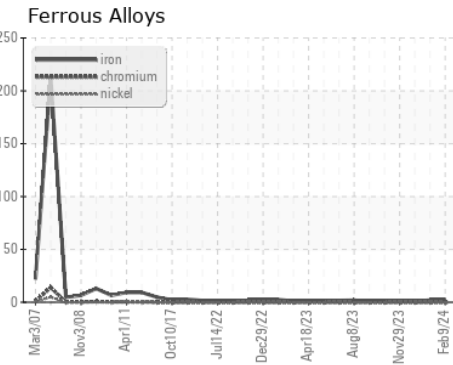


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	13.4	13.0	13.0
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	9.28	11.11	---

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 @ 40°C	cSt	ASTM D7279(m)	118.2	111	110	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	15.0	15.0	15.1
Viscosity Index (VI)	Scale	ASTM D2270*	139	140	141	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0070742
Lab Number : **02615891**
Unique Number : 5733001
Test Package : IND 2 (Additional Tests: KV40, PrtCount, VI)

Vale - Voisey's Bay
 Voisey's Bay Mine Site, P.O. Box 7001, Str. C Happy Valley
 Goose Bay, NL
 CA A0P 1C0
 Contact: Robert Feltham
 robert.feltham@vale.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.*

T:
F: x