



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
1851
Machine Id
1851-5419-8002 - FIRE WATER DIESEL DRIVEN PUMP

Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (15 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PC0070682	PC0070742	PC0070678
Sample Date		Client Info		20 Feb 2024	09 Feb 2024	23 Jan 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	2	2	2
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>4	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	1	2	1
Lead	ppm	ASTM D5185(m)	>40	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>330	2	2	2
Tin	ppm	ASTM D5185(m)	>15	0	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

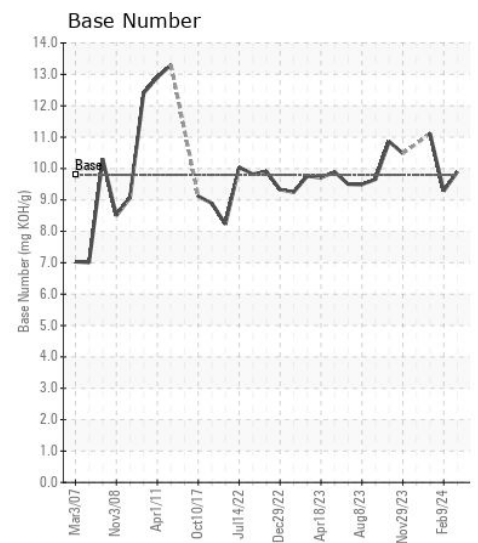
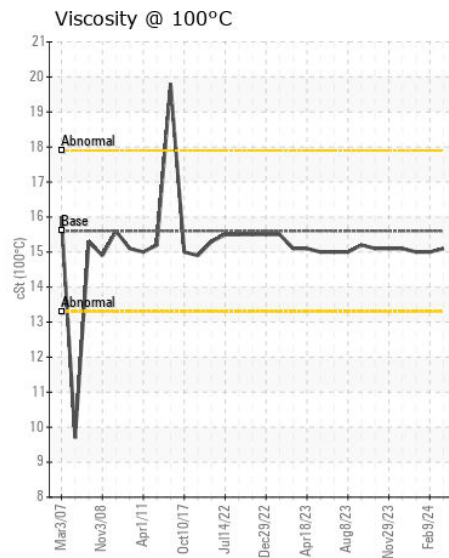
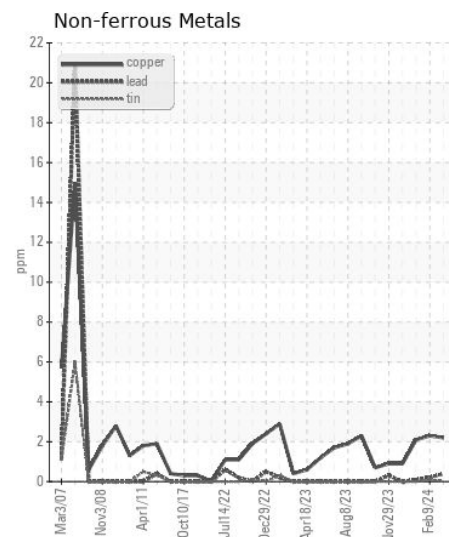
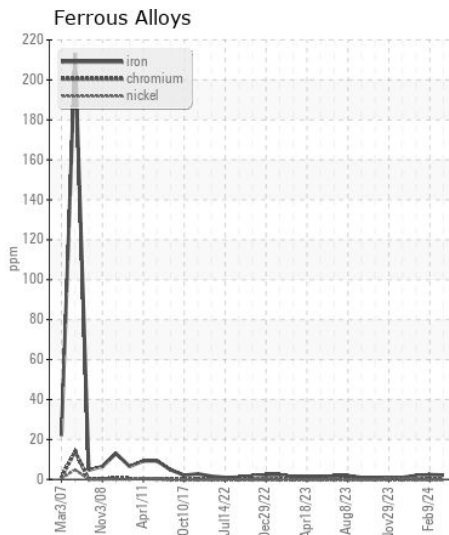
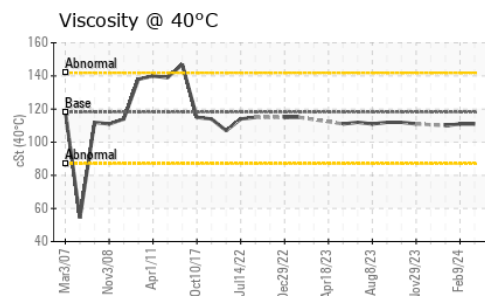
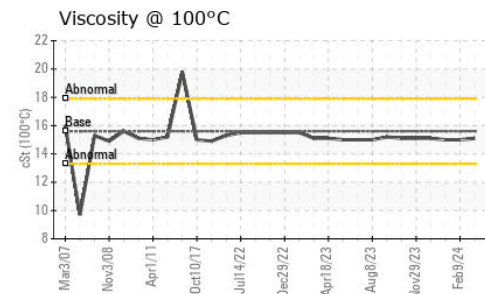
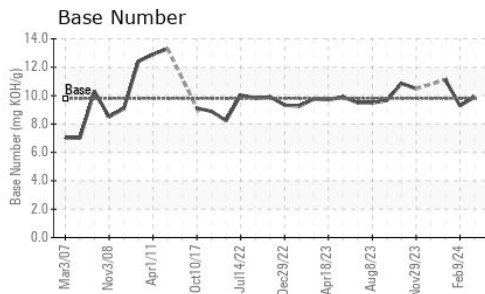
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	4	4	4
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	4.6	4.7	4.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	17.8	18.0	17.9
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

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.

Sodium	ppm	ASTM D5185(m)		1	<1	<1
Boron	ppm	ASTM D5185(m)	0	1	<1	<1
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	58	59	58
Manganese	ppm	ASTM D5185(m)	0	0	0	0
Magnesium	ppm	ASTM D5185(m)	1010	956	976	961
Calcium	ppm	ASTM D5185(m)	1070	1024	1034	1029
Phosphorus	ppm	ASTM D5185(m)	1150	984	1000	995
Zinc	ppm	ASTM D5185(m)	1270	1133	1136	1127
Sulfur	ppm	ASTM D5185(m)	2060	2669	2703	2679
Oxidation	Abs/.1mm	ASTM D7414*	>25	13.2	13.4	13.0
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	9.90	9.28	11.11
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	111	111	110
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	15.1	15.0	15.0
Viscosity Index (VI)	Scale	ASTM D2270*	139	141	140	141



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0070682
Lab Number : 02620081
Unique Number : 5737191
Test Package : MOB 2 (Additional Tests: KV40, PrtCount, VI)

Received : 06 Mar 2024
Tested : 07 Mar 2024
Diagnosed : 07 Mar 2024 - Kevin Marson

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.

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F: x: