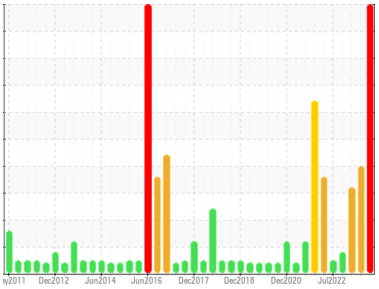
PROBLEM SUMMARY

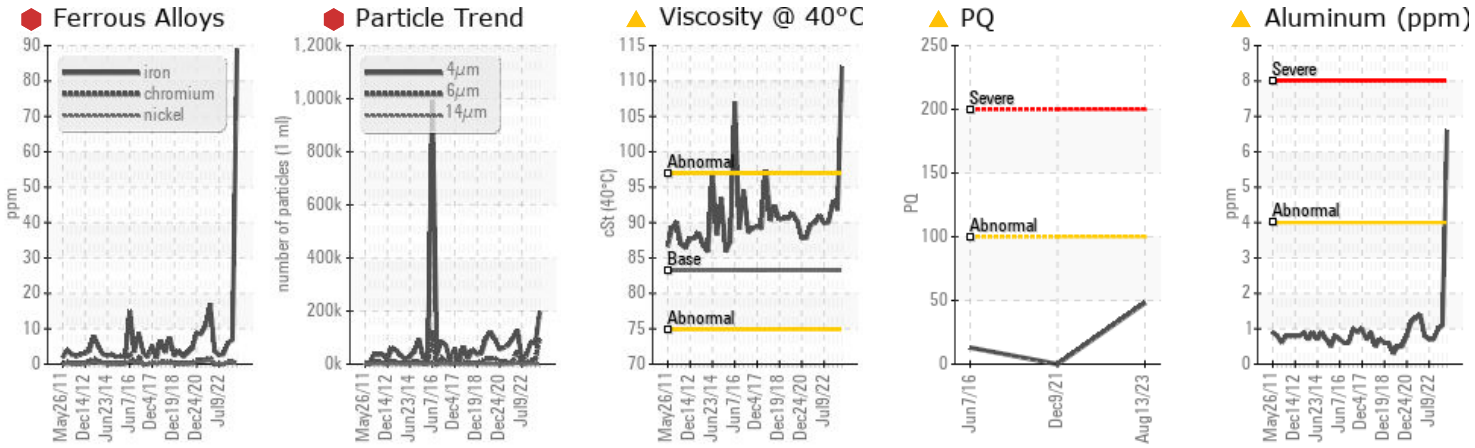
Sample Rating Trend



WEAR

Machine Id
TEL23144 (S/N Propellor & Sterntube)
Component
Sterntube
Fluid
PETRO CANADA DURON MARINE SAE 30 (600 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Due to this condition we recommend the following action... We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	ABNORMAL
PQ		ASTM D8184*		▲ 48	---	---
Iron	ppm	ASTM D5185(m)	>15	⬢ 89	7	6
Aluminum	ppm	ASTM D5185(m)	>4	▲ 7	1	1
Calcium	ppm	ASTM D5185(m)	2540	▲ 2	2124	2054
Phosphorus	ppm	ASTM D5185(m)	1000	▲ 399	1044	1037
Zinc	ppm	ASTM D5185(m)	1110	▲ 4	1036	1017
Sulfur	ppm	ASTM D5185(m)	3700	▲ 152	3403	3221
Particles >6µm		ASTM D7647	>5000	⬢ 102589	▲ 14182	▲ 14040
Oil Cleanliness		ISO 4406 (c)	>--/19/16	⬢ 25/24/16	▲ 23/21/16	▲ 24/21/16
Visc @ 40°C	cSt	ASTM D7279(m)	83.2	▲ 112	91.8	93.1

Customer Id: CCGSTEL
Sample No.: WC0836396
Lab Number: 02578549
Test Package: MAR 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We advise an early resample to confirm this situation.
Alert	---	---	?	NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

HISTORICAL DIAGNOSIS

WATER

08 May 2023 Diag: Kevin Marson

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you follow the water drain-off procedure for this component. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.Lead ppm levels are abnormal. Bearing wear is indicated. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. There is a moderate concentration of water present in the oil. Free water present. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid.

view report

WATER

08 Jan 2023 Diag: Bill Quesnel

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.Lead ppm levels are noted. All other component wear rates are normal. Water and ppm water contamination levels are abnormal. Particles >6µm and oil cleanliness are abnormally high. There is a moderate concentration of water present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

ISO

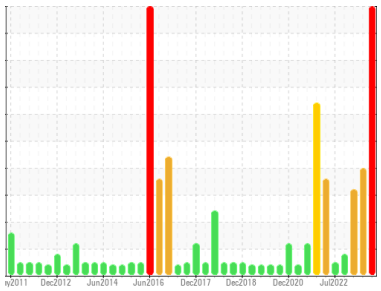
28 Sep 2022 Diag: Kevin Marson

We recommend you service the filters on this component. Resample at the next service interval to monitor.All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
TEL23144 (S/N Propellor & Sterntube)
Component
Sterntube
Fluid
PETRO CANADA DURON MARINE SAE 30 (600 LTR)

DIAGNOSIS

Recommendation
Due to this condition we recommend the following action... We advise an early resample to confirm this situation. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.

Wear
Iron ppm levels are severe. PQ levels are abnormal. Aluminum ppm levels are abnormal. Bearing wear is indicated. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

Contamination
There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition
The viscosity of the oil is higher than normal, possibly indicating the addition of a heavier grade of oil. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0836396**	WC0740097	WC0723535
Sample Date		Client Info		**13 Aug 2023**	08 May 2023	08 Jan 2023
Machine Age	mths	Client Info		**0**	0	0
Oil Age	mths	Client Info		**0**	0	8
Oil Changed		Client Info		**N/A**	N/A	Not Changd
Sample Status				**SEVERE**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		▲ **48**	---	---
Iron	ppm	ASTM D5185(m)	>15	⬢ **89**	7	6
Chromium	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)	>8	**<1**	<1	<1
Silver	ppm	ASTM D5185(m)		**0**	<1	0
Aluminum	ppm	ASTM D5185(m)	>4	▲ **7**	1	1
Lead	ppm	ASTM D5185(m)	>15	**0**	▲ 21	▲ 16
Copper	ppm	ASTM D5185(m)	>25	**4**	11	8
Tin	ppm	ASTM D5185(m)	>10	**4**	2	2
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	<1	0

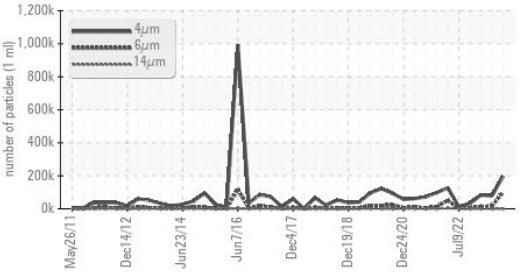
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	1.0	**<1**	4	3
Barium	ppm	ASTM D5185(m)	1.0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	1.0	**0**	<1	<1
Manganese	ppm	ASTM D5185(m)	1	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	15	**<1**	335	318
Calcium	ppm	ASTM D5185(m)	2540	▲ **2**	2124	2054
Phosphorus	ppm	ASTM D5185(m)	1000	▲ **399**	1044	1037
Zinc	ppm	ASTM D5185(m)	1110	▲ **4**	1036	1017
Sulfur	ppm	ASTM D5185(m)	3700	▲ **152**	3403	3221
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**4**	8	6
Sodium	ppm	ASTM D5185(m)		**1**	41	36
Potassium	ppm	ASTM D5185(m)	>20	**<1**	1	2

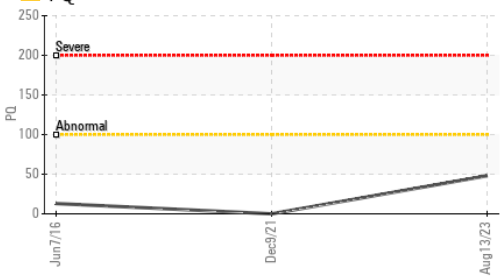
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**196913**	78920	83240
Particles >6µm		ASTM D7647	>5000	⬢ **102589**	▲ 14182	▲ 14040
Particles >14µm		ASTM D7647	>640	**411**	384	445
Particles >21µm		ASTM D7647	>160	**38**	87	127
Particles >38µm		ASTM D7647	>40	**1**	3	6
Particles >71µm		ASTM D7647	>10	**1**	1	0
Oil Cleanliness		ISO 4406 (c)	>--/19/16	⬢ **25/24/16**	▲ 23/21/16	▲ 24/21/16

OIL ANALYSIS REPORT

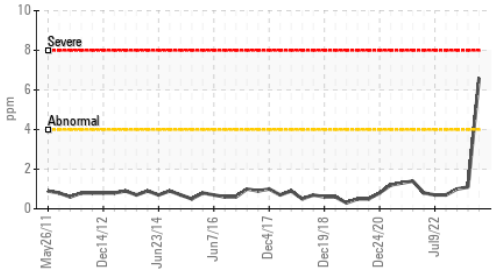
Particle Trend



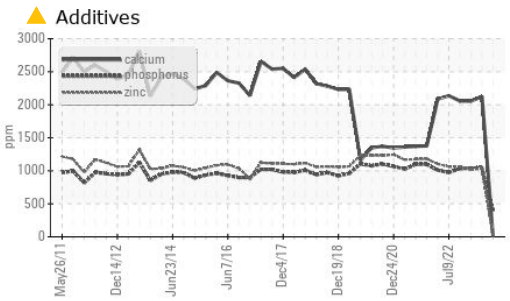
PQ



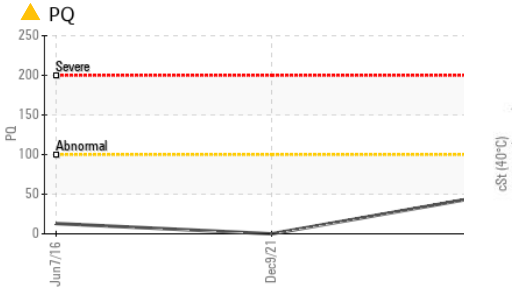
Aluminum (ppm)



Additives



PQ

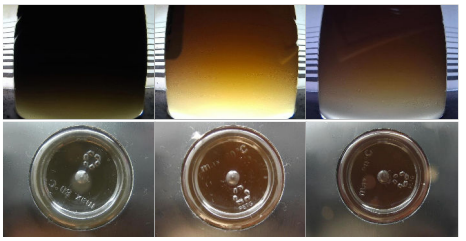


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	2.9	**0.09**	1.68	1.24

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**	▲ WGOIL	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	**NEG**	▲ .2%	.2%
Free Water	scalar	Visual*		**NEG**	▲ 1%	NEG

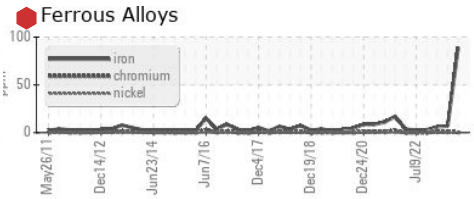
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	83.2	▲ **112**	91.8	93.1

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

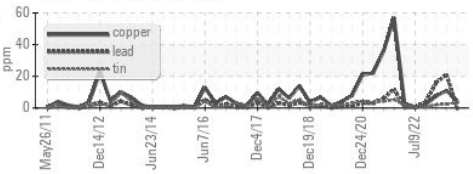


GRAPHS

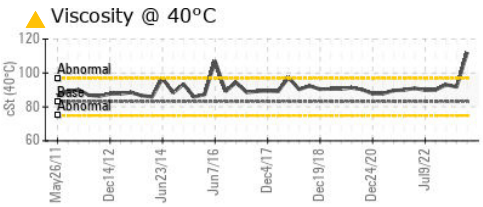
Ferrous Alloys



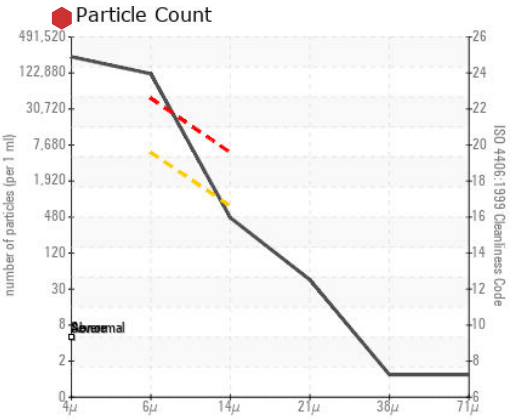
Non-ferrous Metals



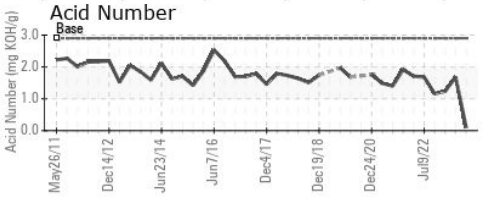
Viscosity @ 40°C



Particle Count



Acid Number



CALA
ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0836396 **Received** : 25 Aug 2023
Lab Number : 02578549 **Diagnosed** : 29 Aug 2023
Unique Number : 5631609 **Diagnostician** : Kevin Marson
Test Package : MAR 2 (Additional Tests: PQ)

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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