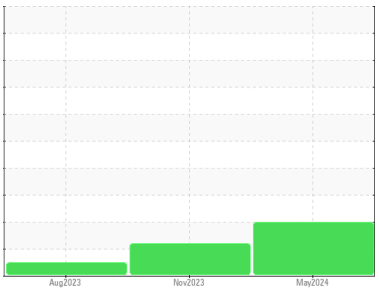
PROBLEM SUMMARY

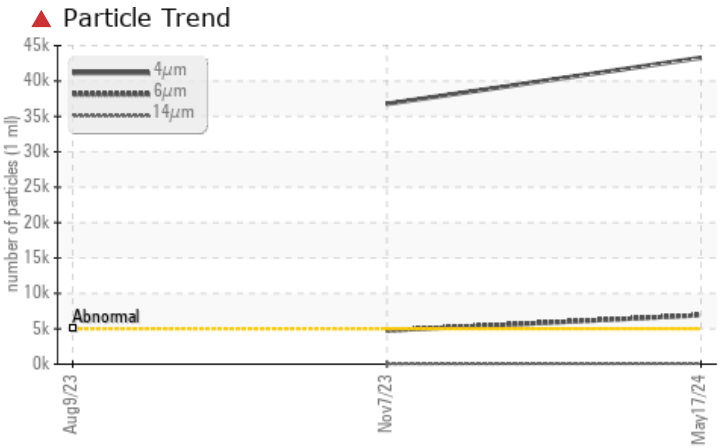
Area
REFRIGERATION EQUIPMENT
Machine Id
TEKNOTHERM MYCOM REFRIGERATION COMPRESSOR #3 (CAL018) (S/N 3626-3)
Component
Hydraulic System
Fluid
PETRO CANADA REFLO 68A AMMONIA OIL (80 LTR)

Sample Rating Trend



ISO

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. (Customer Sample Comment: Warning ammonia)

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	NORMAL
Particles >4µm		ASTM D7647	>5000	**43284**	36769	---
Particles >6µm		ASTM D7647	>1300	**6922**	4756	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**23/20/14**	22/19/13	---

Customer Id: MVCALVERT
Sample No.: PC0080226
Lab Number: 02638005
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
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
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Check Breathers	---	---	?	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.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.

HISTORICAL DIAGNOSIS

ISO

07 Nov 2023 Diag: Kevin Marson

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. 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

NORMAL

09 Aug 2023 Diag: Kevin Marson

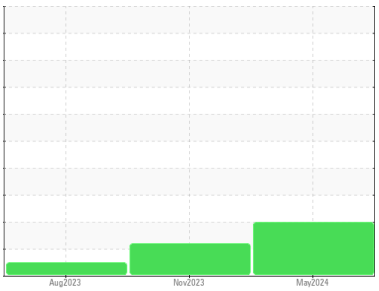
Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 2 test kits, this testkit includes Particle Count to determine the ISO cleanliness of the fluid.All component wear rates are normal. There is no indication of any contamination in the component(unconfirmed). The condition of the oil is acceptable for the time in service.

view report

LUBE 360 DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
REFRIGERATION EQUIPMENT
Machine Id
TEKNOTHERM MYCOM REFRIGERATION COMPRESSOR #3 (CAL018) (S/N 3626-3)
Component
Hydraulic System
Fluid
PETRO CANADA REFLO 68A AMMONIA OIL (80 LTR)

DIAGNOSIS

Recommendation
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 recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. (Customer Sample Comment: Warning ammonia)

Wear
All component wear rates are normal.

Contamination
There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
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		**PC0080226**	PC0076333	PC0010700
Sample Date		Client Info		**17 May 2024**	07 Nov 2023	09 Aug 2023
Machine Age	hrs	Client Info		**3969**	3969	3741
Oil Age	hrs	Client Info		**0**	3969	3741
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.05	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**4**	4	4
Chromium	ppm	ASTM D5185(m)	>10	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>10	**0**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	<1
Aluminum	ppm	ASTM D5185(m)	>10	**0**	<1	0
Lead	ppm	ASTM D5185(m)	>20	**0**	0	<1
Copper	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>10	**0**	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

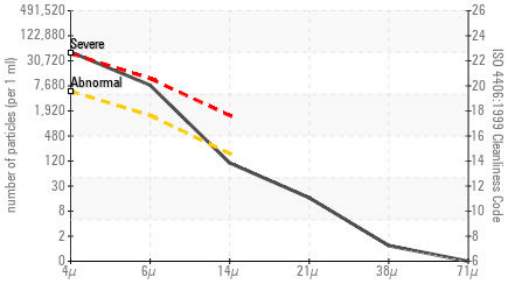
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**0**	0	<1
Barium	ppm	ASTM D5185(m)	0	**0**	0	<1
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)	0	**<1**	<1	0
Calcium	ppm	ASTM D5185(m)	0	**0**	0	<1
Phosphorus	ppm	ASTM D5185(m)	0	**2**	2	2
Zinc	ppm	ASTM D5185(m)	0	**1**	<1	2
Sulfur	ppm	ASTM D5185(m)	0	**5**	0	15
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**<1**	<1	12
Sodium	ppm	ASTM D5185(m)		**0**	0	0
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	0

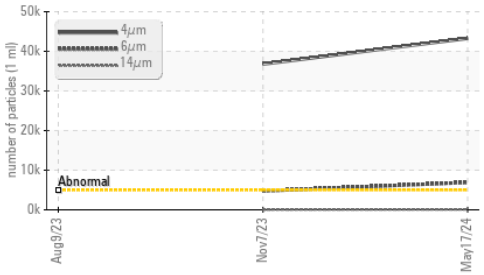
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **43284**	▲ 36769	---
Particles >6µm		ASTM D7647	>1300	▲ **6922**	▲ 4756	---
Particles >14µm		ASTM D7647	>160	**95**	58	---
Particles >21µm		ASTM D7647	>40	**14**	12	---
Particles >38µm		ASTM D7647	>10	**1**	1	---
Particles >71µm		ASTM D7647	>3	**0**	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **23/20/14**	▲ 22/19/13	---

OIL ANALYSIS REPORT

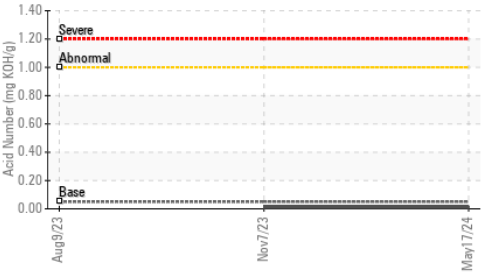
Particle Count



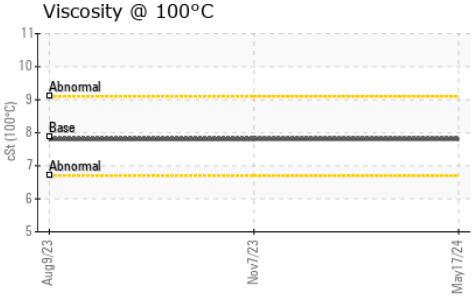
Particle Trend



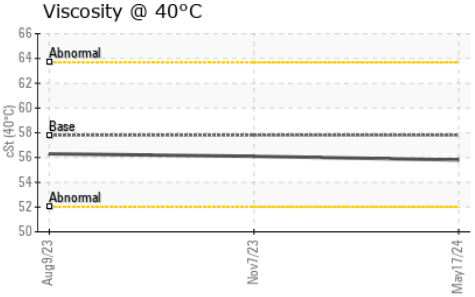
Acid Number



Viscosity @ 100°C



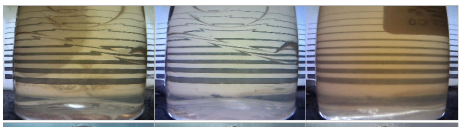
Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.05	**0.01**	0.01	---

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	**VLITE**	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	**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)	57.8	**55.8**	56.1	56.3
Visc @ 100°C	cSt	ASTM D7279(m)	7.86	**7.8**	7.8	7.8
Viscosity Index (VI)	Scale	ASTM D2270*	101	**104**	103	102

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
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ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080226
Lab Number : 02638005
Unique Number : 5787167
Test Package : IND 2 (Additional Tests: KV100, TAN Man, VI)

Received : 28 May 2024
Tested : 29 May 2024
Diagnosed : 29 May 2024 - Kevin Marson

Ocean Choice International - MV Calvert
1315 Topsail Rd, P.O. Box 8190
St. John`s, NL
CA A1B 3N4
Contact: Calvert Engine Control Room
calvertengine@oceanchoice.com
T:
F:

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.