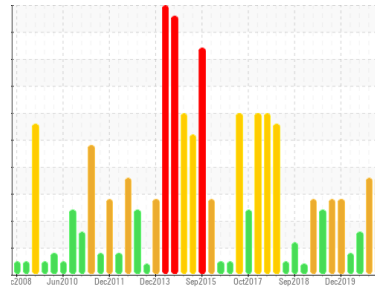


PROBLEM SUMMARY

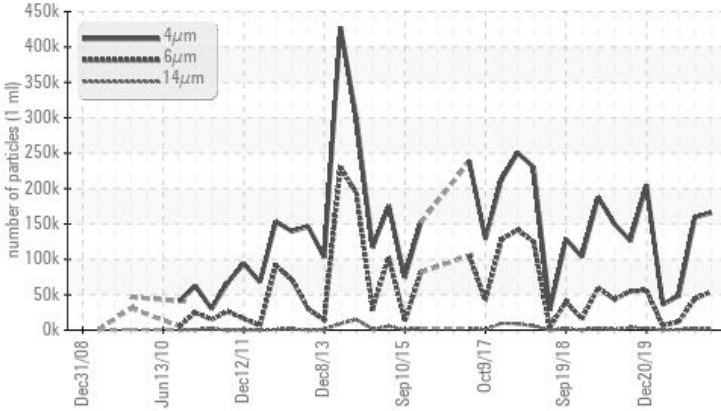
Area
Gas Compression [450310863]
 Machine Id
Methanol Wellhead Injection Pump B - Gearbox (S/N Sample Tag PD-42010B-S1)
 Component
Gearbox
 Fluid
GEAR OIL ISO 320 (120 LTR)

Sample Rating Trend



COMPONENT CONDITION SUMMARY

▲ Particle Trend



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. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	SEVERE	ABNORMAL
Particles >6µm	ASTM D7647	>5000	▲ 44064	▲ 54580	▲ 11701
Particles >14µm	ASTM D7647	>640	▲ 1576	▲ 2081	● 940
Oil Cleanliness	ISO 4406 (c)	>--/19/16	▲ 24/23/18	▲ 25/23/18	▲ 23/21/17

Customer Id: TERHAM
 Sample No.: PC
 Lab Number: 02631773
 Test Package: MAR 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.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample.
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




09 Apr 2024 Diag: Kevin Marson
 We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is a high amount of particulates (2 to 100 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. 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




09 Jan 2024 Diag: Kevin Marson
 We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) 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



08 Jan 2024 Diag: Kevin Marson
 We recommend you service the filters on this component. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. 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



Area

Gas Compression [450310863]

Machine Id

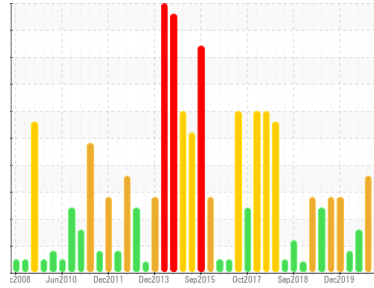
Methanol Wellhead Injection Pump B - Gearbox (S/N Sample Tag PD-42010B-S1)

Component

Gearbox

Fluid

GEAR OIL ISO 320 (120 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. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

▲ 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 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	PC	PC	PC0076325
Sample Date	Client Info	09 Apr 2024	09 Apr 2024	09 Jan 2024
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		SEVERE	SEVERE	ABNORMAL

CONTAMINATION method limit/base current history1 history2

Water	WC Method	>0.2	NEG	NEG	NEG
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WEAR METALS method limit/base current history1 history2

PQ	ASTM D8184*		0	2	0
Iron	ppm	ASTM D5185(m) >150	6	7	3
Chromium	ppm	ASTM D5185(m) >10	0	0	0
Nickel	ppm	ASTM D5185(m) >10	0	<1	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >5	0	<1	<1
Lead	ppm	ASTM D5185(m) >65	0	0	<1
Copper	ppm	ASTM D5185(m) >80	6	4	12
Tin	ppm	ASTM D5185(m) >8	0	0	0
Antimony	ppm	ASTM D5185(m) >5	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

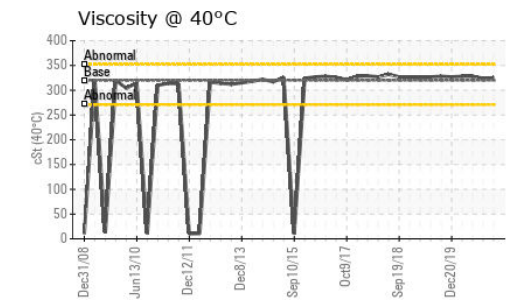
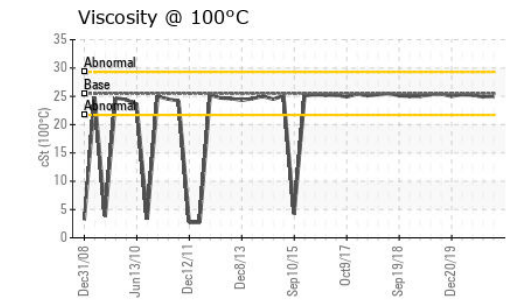
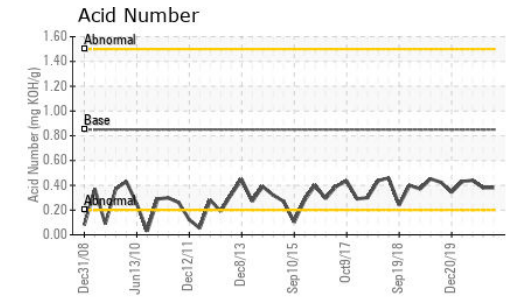
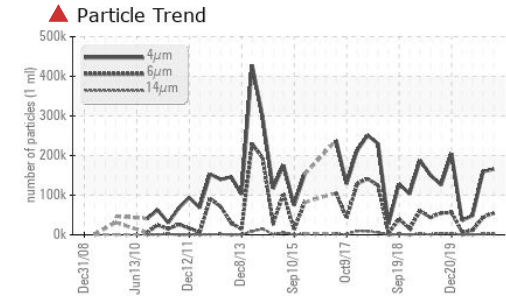
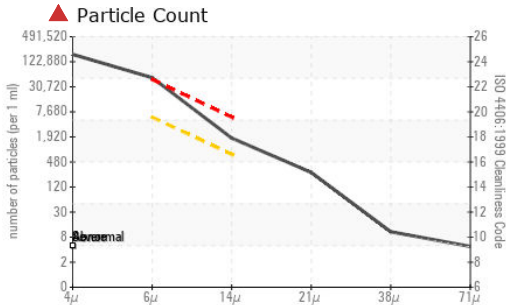
ADDITIVES method limit/base current history1 history2

Boron	ppm	ASTM D5185(m) 50	65	64	64
Barium	ppm	ASTM D5185(m) 15	<1	<1	0
Molybdenum	ppm	ASTM D5185(m) 15	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m) 50	<1	<1	<1
Calcium	ppm	ASTM D5185(m) 50	<1	<1	2
Phosphorus	ppm	ASTM D5185(m) 350	260	253	272
Zinc	ppm	ASTM D5185(m) 100	6	7	7
Sulfur	ppm	ASTM D5185(m) 12500	10045	6979	14314
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS method limit/base current history1 history2

Silicon	ppm	ASTM D5185(m) >20	6	8	1
Sodium	ppm	ASTM D5185(m)	<1	<1	1
Potassium	ppm	ASTM D5185(m) >20	<1	<1	<1

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : 02631773
Unique Number : 5772926
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, VI)

Received : 26 Apr 2024
Tested : 29 Apr 2024
Diagnosed : 29 Apr 2024 - Kevin Marson

Suncor - Terra Nova Projects
 Scotia Centre, 235 Water Street
 St. John's, NL
 CA A1C 1B6
 Contact: Josh Hynes
 joshynes@suncor.com
 T: (709)778-3575
 F: (709)724-2835

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.

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		159245	165902	48516
Particles >6µm	ASTM D7647	>5000	▲ 44064	▲ 54580	▲ 11701
Particles >14µm	ASTM D7647	>640	▲ 1576	▲ 2081	● 940
Particles >21µm	ASTM D7647	>160	● 237	▲ 341	● 268
Particles >38µm	ASTM D7647	>40	9	14	24
Particles >71µm	ASTM D7647	>10	4	3	6
Oil Cleanliness	ISO 4406 (c)	>--/19/16	▲ 24/23/18	▲ 25/23/18	▲ 23/21/17

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.85	0.38	0.38	0.44

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar Visual*	NONE	NONE	NONE	VLITE
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	NORML	NORML
Odor	scalar Visual*	NORML	NORML	NORML	NORML
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)	320	325	324	328
Visc @ 100°C	cSt ASTM D7279(m)	25.5	25.0	24.9	25.2
Viscosity Index (VI)	Scale ASTM D2270*	103	99	98	99

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					