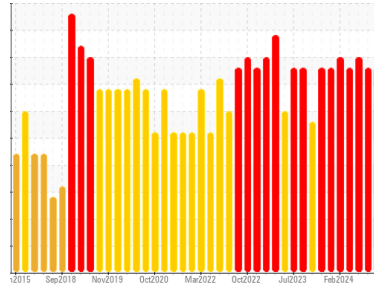




PROBLEM SUMMARY

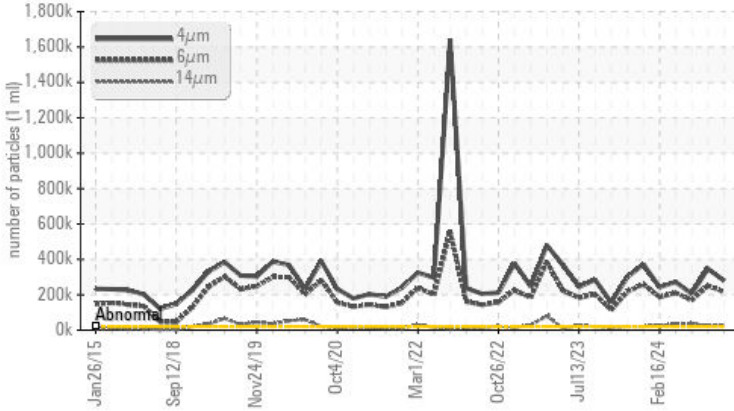
Area
BOF/VESSELS
 Machine Id
A - 8 Vessel Drive Lube System
 Component
Drive End Gearbox
 Fluid
ESSO SPARTAN EP 320 (710 GAL)

Sample Rating Trend



COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	SEVERE	SEVERE
Particles >4µm	ASTM D7647	>20000	▲ 279714	▲ 347212	▲ 204516
Particles >6µm	ASTM D7647	>5000	▲ 216395	▲ 250843	▲ 168208
Particles >14µm	ASTM D7647	>640	▲ 29742	▲ 21873	▲ 39293
Particles >21µm	ASTM D7647	>160	▲ 2678	▲ 1572	▲ 5934
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 25/25/22	▲ 26/25/22	▲ 25/25/22

Customer Id: LEWBOSC
 Sample No.: WC0956535
 Lab Number: 02642681
 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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
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 Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

ISO



17 May 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 contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. Component wear rates appear to be normal (unconfirmed). There is a high amount of particulates (2 to 100 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



ISO



15 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. All component wear rates are normal. There is a high amount of particulates (2 to 100 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



ISO



22 Mar 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 contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. Component wear rates appear to be normal (unconfirmed). There is a high amount of particulates (2 to 100 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.

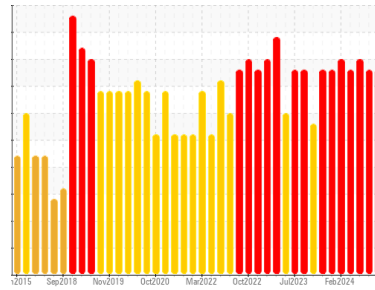
view report





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area

BOF/VESSELS

Machine Id

A - 8 Vessel Drive Lube System

Component

Drive End Gearbox

Fluid

ESSO SPARTAN EP 320 (710 GAL)

DIAGNOSIS

▲ Recommendation

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.

Wear

All component wear rates are normal.

▲ Contamination

There is a high amount of particulates (2 to 100 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		WC0956535	WC0947081	WC0934087
Sample Date	Client Info		18 Jun 2024	17 May 2024	15 Apr 2024
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			SEVERE	SEVERE	SEVERE

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>5	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*	>99999	186	113	192
Iron	ppm	ASTM D5185(m) >200	117	107	121
Chromium	ppm	ASTM D5185(m) >15	<1	<1	<1
Nickel	ppm	ASTM D5185(m) >15	2	1	2
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >25	<1	<1	<1
Lead	ppm	ASTM D5185(m) >100	0	0	0
Copper	ppm	ASTM D5185(m) >200	<1	<1	<1
Tin	ppm	ASTM D5185(m) >25	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

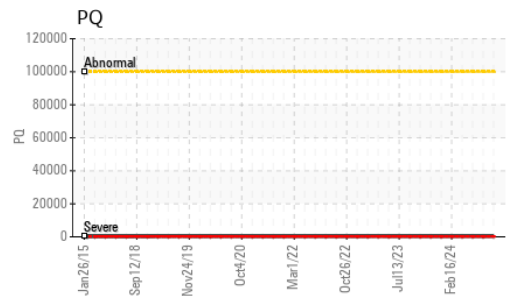
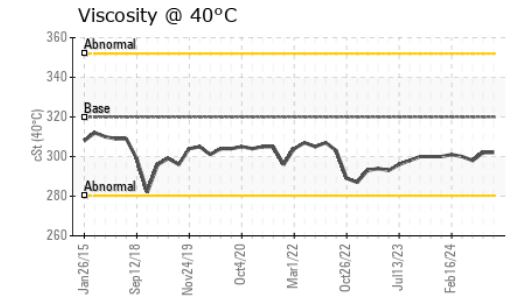
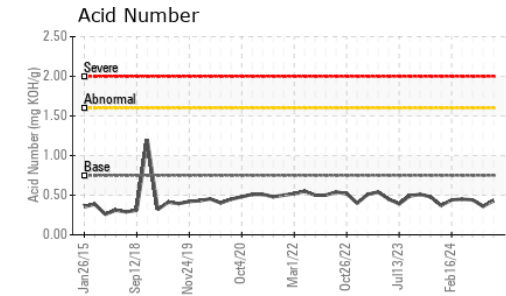
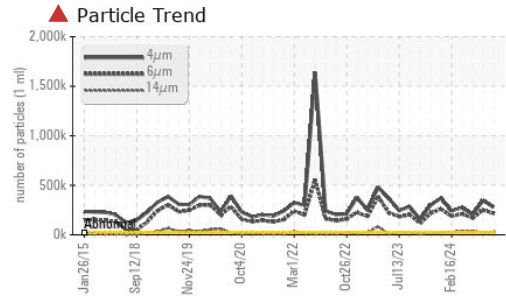
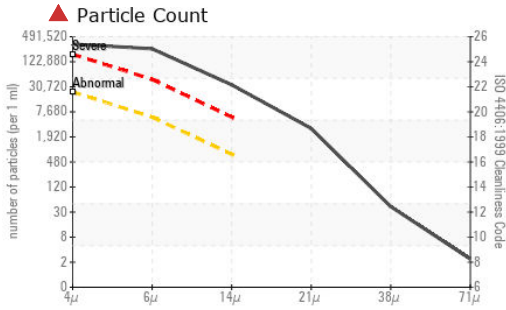
	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) .4	2	5	2
Barium	ppm	ASTM D5185(m)	0	0	0
Molybdenum	ppm	ASTM D5185(m) 0	1	1	<1
Manganese	ppm	ASTM D5185(m)	1	<1	1
Magnesium	ppm	ASTM D5185(m) 0	2	2	2
Calcium	ppm	ASTM D5185(m) 0	6	6	6
Phosphorus	ppm	ASTM D5185(m) 250	267	264	261
Zinc	ppm	ASTM D5185(m) 0	15	16	15
Sulfur	ppm	ASTM D5185(m)	9189	9103	8773
Lithium	ppm	ASTM D5185(m)	2	2	2

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >50	3	2	2
Sodium	ppm	ASTM D5185(m)	1	4	1
Potassium	ppm	ASTM D5185(m) >20	0	<1	<1



OIL ANALYSIS REPORT



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 279714	▲ 347212	▲ 204516
Particles >6µm	ASTM D7647	>5000	▲ 216395	▲ 250843	▲ 168208
Particles >14µm	ASTM D7647	>640	▲ 29742	▲ 21873	▲ 39293
Particles >21µm	ASTM D7647	>160	▲ 2678	▲ 1572	▲ 5934
Particles >38µm	ASTM D7647	>40	36	8	▲ 93
Particles >71µm	ASTM D7647	>10	2	0	6
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 25/25/22	▲ 26/25/22	▲ 25/25/22

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.75	0.43	0.36	0.44

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar Visual*	NONE	VLITE	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	VLITE
Sand/Dirt	scalar Visual*	NONE	NONE	VLITE	NONE
Appearance	scalar Visual*	NORML	NORML	NORML	NORML
Odor	scalar Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar Visual*	>5	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	302	302	298

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color



Bottom



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0956535
Lab Number : 02642681
Unique Number : 5800220
Test Package : IND 2 (Additional Tests: PQ, TAN Man)

STELCO - BOSC - Basic Oxygen Slab Caster
 2330 Regional Road #3, Door: BOSC8
 NANTICOKE, ON
 CA N0A 1L0
 Contact: Tom Walden
 Thomas.Walden@stelco.com
 T: (519)587-4541
 F: (519)587-7702

*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.*