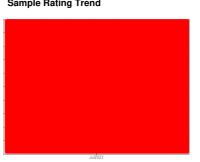


PROBLEM SUMMARY

Sample Rating Trend



WEAR

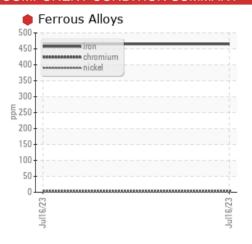
SOUTH SIDE SHIPPING BRIDGE

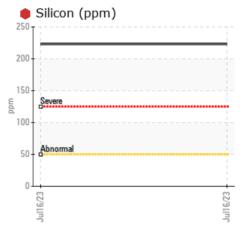
Component

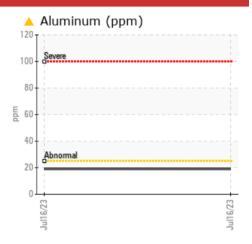
Gearbox

SCHAEFFER MOLY FULL SYN GEAR OIL (--- GAL)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS								
Sample Status				SEVERE				
Iron	ppm	ASTM D5185m	>200	465				
Aluminum	ppm	ASTM D5185m	>25	<u> </u>				
Silicon	ppm	ASTM D5185m	>50	223				
White Metal	scalar	*Visual	NONE	MODER				

Customer Id: NATEAS Sample No.: PCA0100299 Lab Number: 05900110 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 ihester@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS							
Action	Status	Date	Done By	Description			
Inspect Wear Source			?	We advise that you inspect for the source(s) of wear.			
Change Fluid			?	We recommend that you drain the oil from the component if this has not already been done.			
Resample			?	We recommend an early resample to monitor this condition.			
Check Dirt Access			?	We advise that you check all areas where dirt can enter the system.			

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT



SOUTH SIDE SHIPPING BRIDGE

Gearbox

SCHAEFFER MOLY FULL SYN GEAR OIL (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Wear

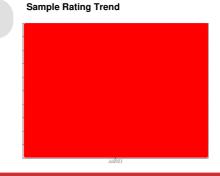
Moderate concentration of visible metal present. Gear wear is indicated.

Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

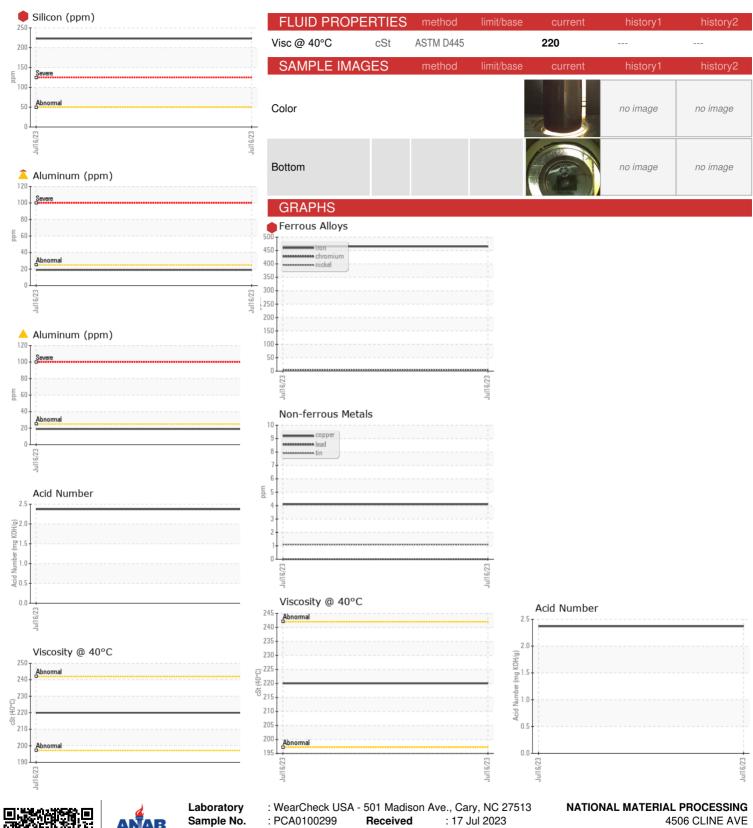


SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0100299		
Sample Date		Client Info		16 Jul 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				SEVERE		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	465		
Chromium	ppm	ASTM D5185m	>15	4		
Nickel	ppm	ASTM D5185m	>15	1		
Titanium	ppm	ASTM D5185m		3		
Silver	ppm	ASTM D5185m		0		
Aluminum	ppm	ASTM D5185m	>25	<u> </u>		
Lead	ppm	ASTM D5185m	>100	0		
Copper	ppm	ASTM D5185m	>200	4		
Tin	ppm	ASTM D5185m	>25	1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 153	history1	history2
	ppm		limit/base		·	•
Boron		ASTM D5185m	limit/base	153		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	153 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	153 0 389		
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	153 0 389 6		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	153 0 389 6 10 31 1381		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	153 0 389 6 10 31		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	153 0 389 6 10 31 1381	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	153 0 389 6 10 31 1381	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		153 0 389 6 10 31 1381 47 25056	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	153 0 389 6 10 31 1381 47 25056		 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	153 0 389 6 10 31 1381 47 25056 current		history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	limit/base >50	153 0 389 6 10 31 1381 47 25056 current 223 5	history1	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	limit/base >50 >20	153 0 389 6 10 31 1381 47 25056 current 223 5 2		history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAE	ppm	ASTM D5185m	limit/base >50 >20	153 0 389 6 10 31 1381 47 25056 current 223 5 2	history1 history1	history2 history2

FLUID DEGRAI	OITAC	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		2.37		
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ MODER		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.2	NEG		
Free Water	scalar	*Visual		NEG		
:18:20) Rev: 1 Contact/Location: RYAN CANO - NATEAS						



OIL ANALYSIS REPORT







Certificate L2367

Lab Number Unique Number

: 05900110

: 10561466 Test Package : IND 2

Diagnosed Diagnostician : Jonathan Hester

: 19 Jul 2023

EAST CHICAGO, IN US 46312

Contact: RYAN CANO rcano@nmlp.com

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T:

F: