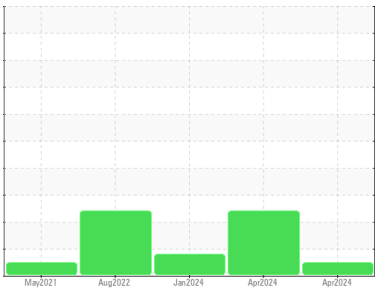
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
40-98
Component
Diesel Engine
Fluid
CONOCO PHILLIPS GUARDOL ECT 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. (Customer Sample Comment: Resample)

Wear
All component wear rates are normal.

Contamination
Fuel content negligible. No other contaminants were detected in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0923396**	WC0836142	WC0836156
Sample Date		Client Info		**17 Apr 2024**	02 Apr 2024	03 Jan 2024
Machine Age	hrs	Client Info		**5378**	5358	5084
Oil Age	hrs	Client Info		**20**	274	491
Oil Changed		Client Info		**Not Changd**	Changed	Changed
Sample Status				**NORMAL**	SEVERE	MARGINAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**5**	16	20
Chromium	ppm	ASTM D5185m	>20	**<1**	1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**<1**	2	2
Lead	ppm	ASTM D5185m	>40	**0**	2	0
Copper	ppm	ASTM D5185m	>330	**<1**	2	1
Tin	ppm	ASTM D5185m	>15	**<1**	1	0
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	85	**116**	36	61
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**3**	4	28
Manganese	ppm	ASTM D5185m		**<1**	<1	0
Magnesium	ppm	ASTM D5185m	350	**749**	482	529
Calcium	ppm	ASTM D5185m	1800	**1286**	1022	1498
Phosphorus	ppm	ASTM D5185m	1000	**1001**	755	1049
Zinc	ppm	ASTM D5185m	1100	**1186**	825	1185
Sulfur	ppm	ASTM D5185m	3500	**4209**	2922	3891

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**5**	4	4
Sodium	ppm	ASTM D5185m		**2**	5	3
Potassium	ppm	ASTM D5185m	>20	**2**	3	3
Fuel	%	ASTM D3524	>5	**0.2**	▲ 22.6	▲ 3.8

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.2**	1.6	1.3
Nitration	Abs/cm	*ASTM D7624	>20	**7.1**	9.7	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**18.8**	20.8	21.2

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**12.9**	12.9	13.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.5	**8.6**	8.0	8.1

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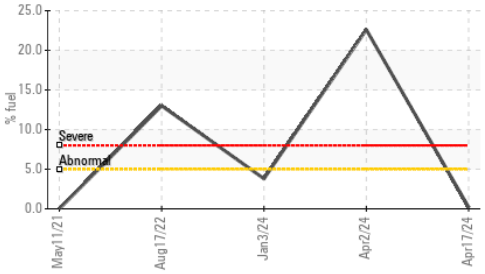
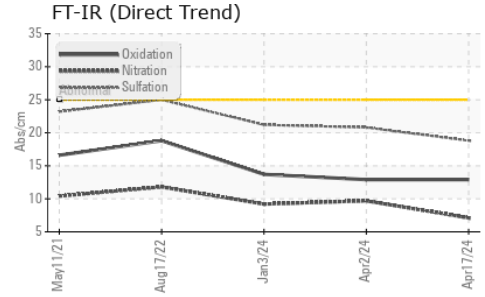
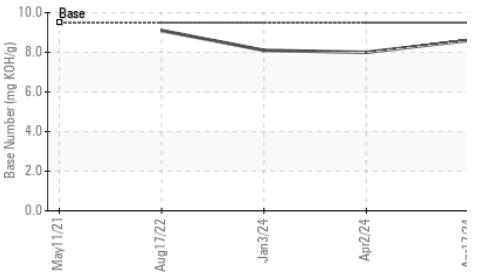
Fuel Dilution



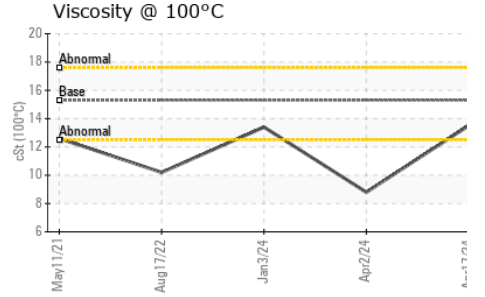
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

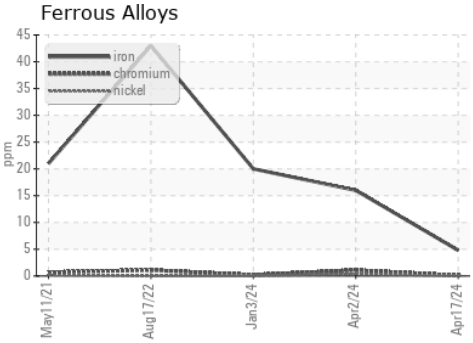


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	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

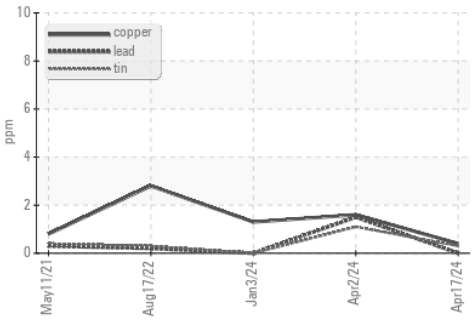
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.3	**13.5**	▲ 8.8	13.4

GRAPHS

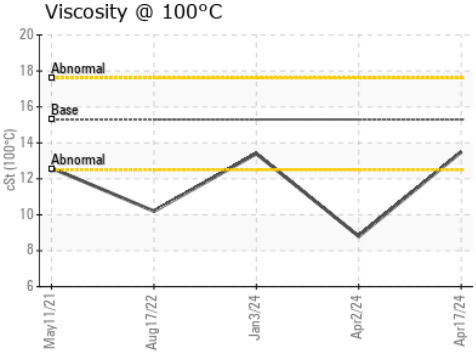
Ferrous Alloys



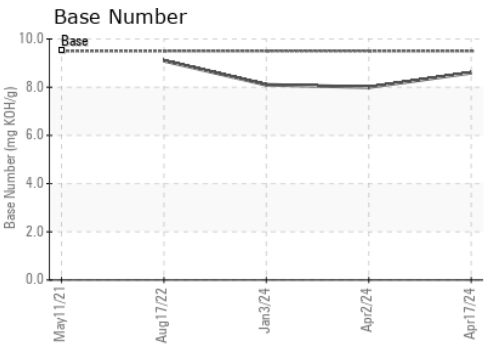
Non-ferrous Metals



Viscosity @ 100°C



Base Number



ANAB ACCREDITED TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0923396
Lab Number : 06183608
Unique Number : 11034934
Test Package : CONST (Additional Tests: PercentFuel, TBN)

Received : 17 May 2024
Tested : 21 May 2024
Diagnosed : 21 May 2024 - Sean Felton

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)

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Report Id: MANTUL [WUSCAR] 06183608 (Generated: 05/21/2024 17:07:06) Rev: 1

Submitted By: JAMES STEELMON