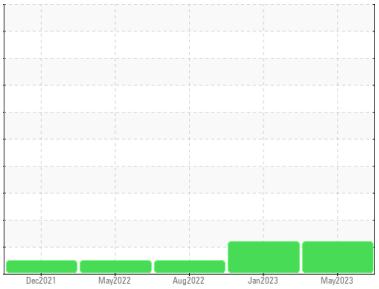
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

Sample Rating Trend



GLYCOL

Area
KEMP QUARRIES / NEOSHO
Machine Id
WL146
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: PM-4 changed fluid and filters)

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0085698**	PCA0086749	PCA0062414
Sample Date		Client Info		**18 May 2023**	17 Jan 2023	24 Aug 2022
Machine Age	hrs	Client Info		**23565**	25143	24576
Oil Age	hrs	Client Info		**23565**	25143	24576
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ATTENTION**	ATTENTION	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**50**	72	52
Chromium	ppm	ASTM D5185m	>20	**1**	1	<1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	1
Titanium	ppm	ASTM D5185m	>2	**0**	0	0
Silver	ppm	ASTM D5185m	>2	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>25	**<1**	0	2
Lead	ppm	ASTM D5185m	>40	**5**	15	9
Copper	ppm	ASTM D5185m	>330	**144**	41	63
Tin	ppm	ASTM D5185m	>15	**1**	2	2
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**4**	7	2
Barium	ppm	ASTM D5185m	10	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**71**	68	64
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**970**	927	965
Calcium	ppm	ASTM D5185m	3000	**1127**	1131	1128
Phosphorus	ppm	ASTM D5185m	1150	**1079**	1043	999
Zinc	ppm	ASTM D5185m	1350	**1321**	1272	1298
Sulfur	ppm	ASTM D5185m	4250	**3352**	2748	2661

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**5**	8	4
Sodium	ppm	ASTM D5185m	>216	▲ **66**	▲ 84	<1
Potassium	ppm	ASTM D5185m	>20	**5**	7	0
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1**	1.6	1.5
Nitration	Abs/cm	*ASTM D7624	>20	**9.4**	12.5	10.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.0**	25.2	24.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**17.6**	19.7	19.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**8.5**	8.0	9.0

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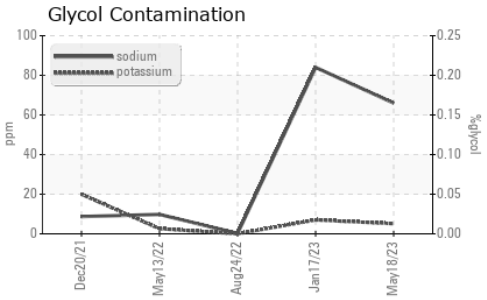
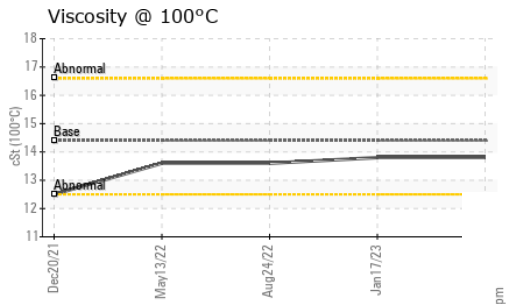
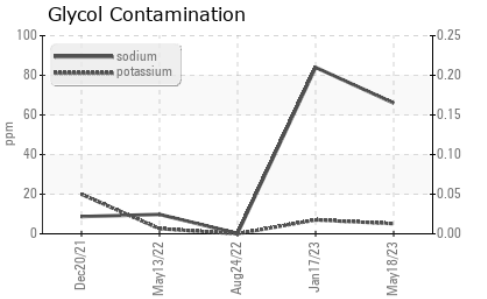
OIL ANALYSIS REPORT



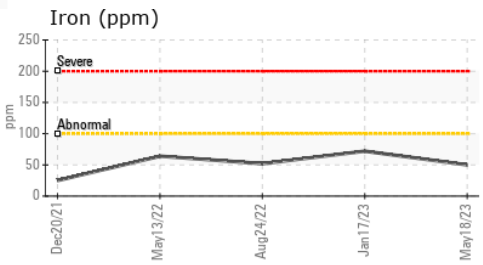


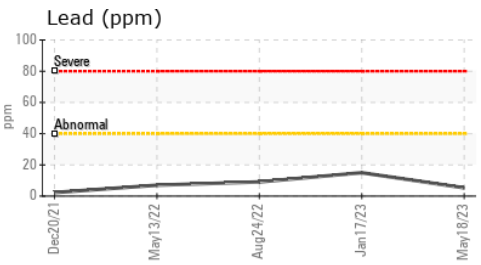


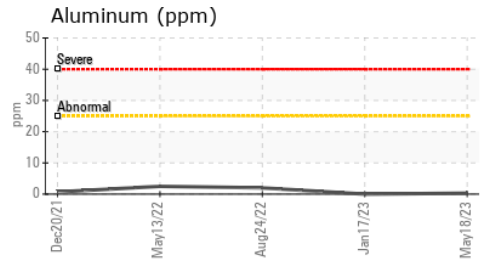
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

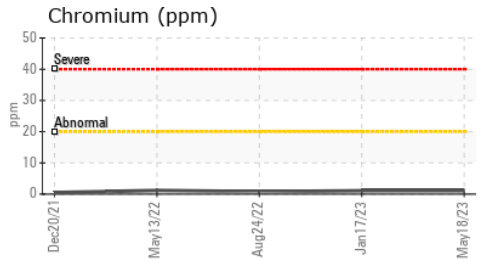
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**13.8**	13.8	13.6

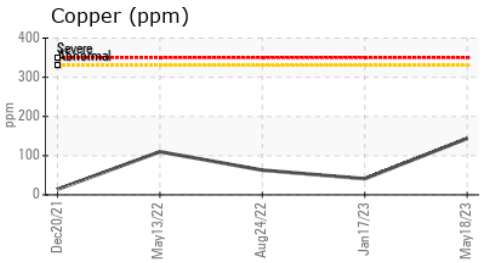
GRAPHS

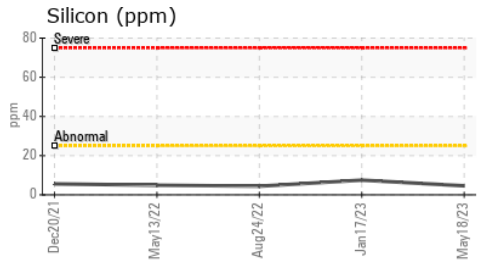


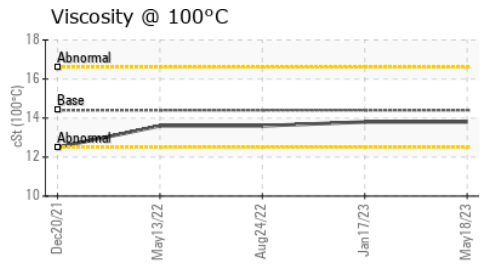


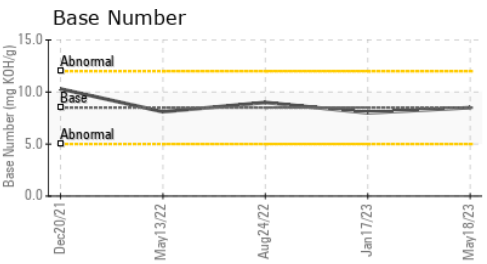












ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0085698 **Received** : 30 May 2023
Lab Number : 05858852 **Diagnosed** : 31 May 2023
Unique Number : 10493317 **Diagnostician** : Don Baldridge
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

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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