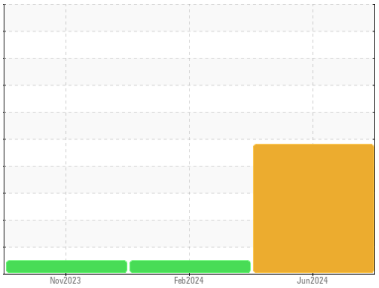
OIL ANALYSIS REPORT

Area
DUMP TRUCKS
Machine Id
[DUMP TRUCKS] 132
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

Sample Rating Trend



GLYCOL

DIAGNOSIS

Recommendation
We advise that you check for the source of the coolant leak. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear
All component wear rates are normal.

Contamination
Test for glycol is positive. There is a moderate concentration of glycol present in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**SBP0006777**	SBP0005830	SBP0005634
Sample Date		Client Info		**04 Jun 2024**	23 Feb 2024	13 Nov 2023
Machine Age	mls	Client Info		**307364**	282259	22000
Oil Age	mls	Client Info		**25000**	22000	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	0.2
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**41**	43	17
Chromium	ppm	ASTM D5185m	>20	**<1**	1	<1
Nickel	ppm	ASTM D5185m	>5	**1**	2	<1
Titanium	ppm	ASTM D5185m	>2	**<1**	2	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**5**	6	2
Lead	ppm	ASTM D5185m	>40	**1**	2	<1
Copper	ppm	ASTM D5185m	>330	**9**	11	5
Tin	ppm	ASTM D5185m	>15	**2**	2	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**<1**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**0**	6	3
Barium	ppm	ASTM D5185m	10	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**71**	90	59
Manganese	ppm	ASTM D5185m		**<1**	1	0
Magnesium	ppm	ASTM D5185m	450	**1007**	1435	911
Calcium	ppm	ASTM D5185m	3000	**1172**	1809	991
Phosphorus	ppm	ASTM D5185m	1150	**1004**	1552	993
Zinc	ppm	ASTM D5185m	1350	**1299**	1918	1200
Sulfur	ppm	ASTM D5185m	4250	**3306**	5020	3174

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**11**	13	5
Sodium	ppm	ASTM D5185m		**84**	8	3
Potassium	ppm	ASTM D5185m	>20	**243**	15	5
Glycol	%	*ASTM D2982		**0.06**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**0.4**	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**9.2**	9.0	8.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.7**	20.5	19.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**17.0**	17.3	15.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**7.5**	7.8	7.2

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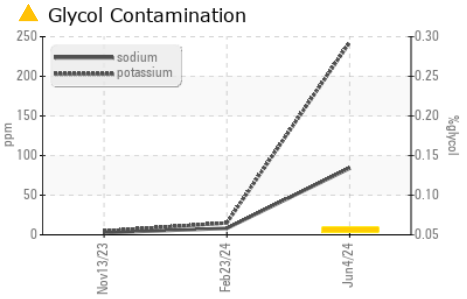
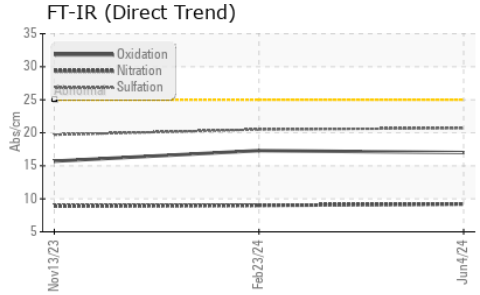
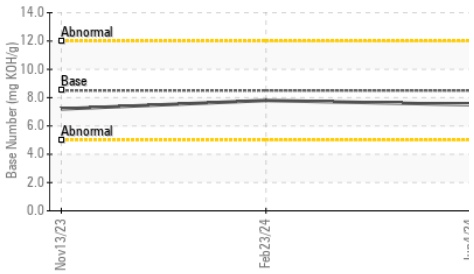
Glycol Contamination



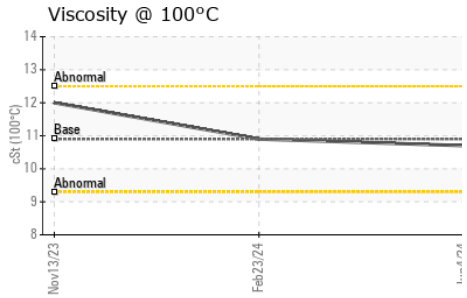
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

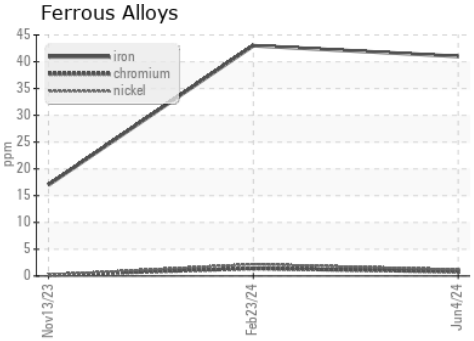


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

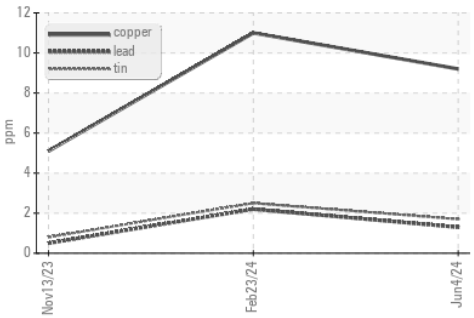
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	**10.7**	10.9	12.0

GRAPHS

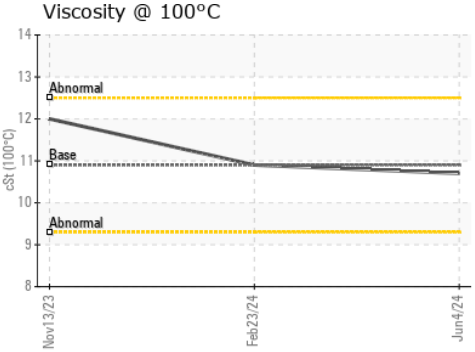
Ferrous Alloys



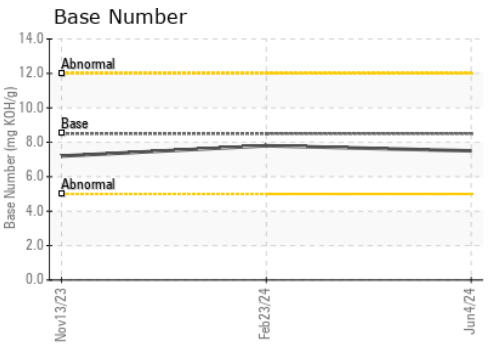
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : SBP0006777
Lab Number : 06207305
Unique Number : 11074766
Test Package : FLEET (Additional Tests: Glycol)

Received : 11 Jun 2024
Tested : 17 Jun 2024
Diagnosed : 17 Jun 2024 - Wes Davis

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: ARMBEANE [WUSCAR] 06207305 (Generated: 06/17/2024 10:55:02) Rev: 1

Submitted By: JOE ARMSTRONG