



# WEAR CHECK

## OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id  
**GROVE 68**  
Component  
**Diesel Engine**  
Fluid  
**CHEVRON DELO 400 LE 15W40 (10 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0013205</b>	KL0013196	KL0007260
Sample Date		Client Info		<b>29 Jan 2024</b>	30 Oct 2023	06 Jul 2023
Machine Age	hrs	Client Info		<b>11596</b>	11394	11131
Oil Age	hrs	Client Info		<b>847</b>	645	382
Filter Age	hrs	Client Info		<b>847</b>	645	382
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>ATTENTION</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>39</b>	27	12
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	3	3
Lead	ppm	ASTM D5185m	>40	<b>15</b>	14	4
Copper	ppm	ASTM D5185m	>330	<b>13</b>	10	8
Tin	ppm	ASTM D5185m	>15	<b>7</b>	6	2
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

Fuel content negligible. There is no indication of any contamination in the oil.

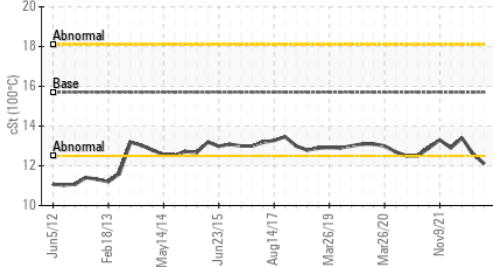
Silicon	ppm	ASTM D5185m	>25	<b>20</b>	20	16
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	2	3
Fuel	%	ASTM D3524	>5	<b>1.1</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.6</b>	0.4	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.2</b>	6.4	5.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.9</b>	20.6	20.0
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

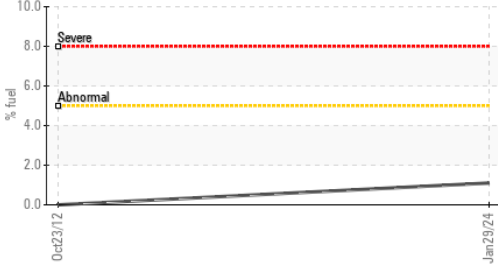
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		<b>2</b>	1	0
Boron	ppm	ASTM D5185m		<b>269</b>	280	321
Barium	ppm	ASTM D5185m		<b>6</b>	7	2
Molybdenum	ppm	ASTM D5185m		<b>59</b>	64	62
Manganese	ppm	ASTM D5185m		<b>2</b>	2	1
Magnesium	ppm	ASTM D5185m		<b>453</b>	487	458
Calcium	ppm	ASTM D5185m		<b>1367</b>	1450	1491
Phosphorus	ppm	ASTM D5185m	1200	<b>876</b>	885	897
Zinc	ppm	ASTM D5185m	1300	<b>976</b>	1122	1037
Sulfur	ppm	ASTM D5185m	3200	<b>2917</b>	3280	3052
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.3</b>	14.3	13.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	<b>7.5</b>	8.2	8.9
Visc @ 100°C	cSt	ASTM D445	15.7	<b>▲ 12.1</b>	12.6	13.4

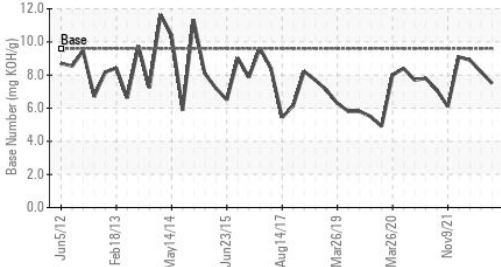
▲ Viscosity @ 100°C



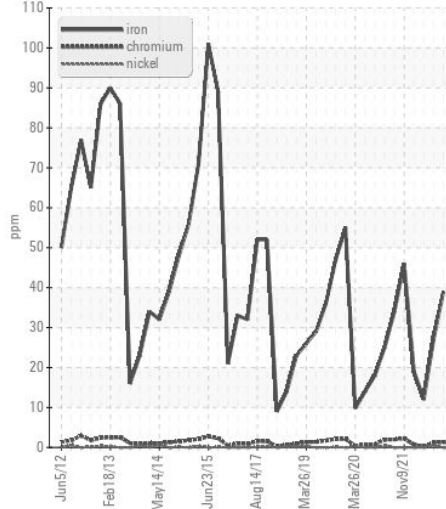
Fuel Dilution



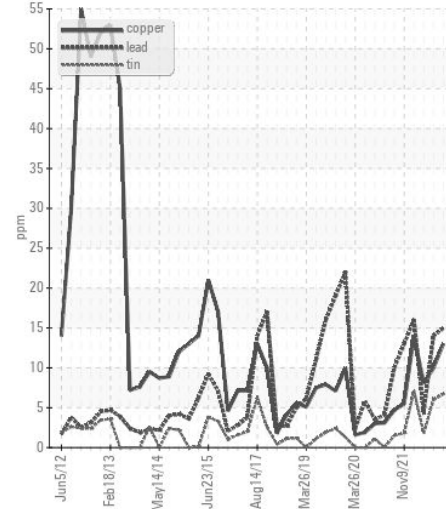
Base Number



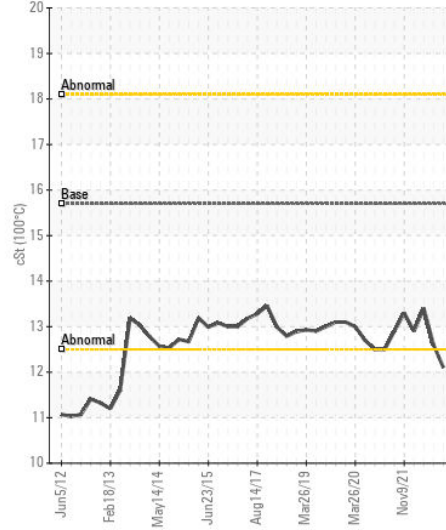
Ferrous Alloys



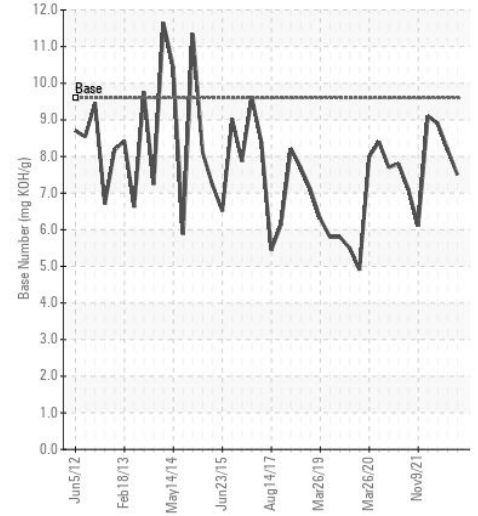
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0013205 **Received** : 01 Feb 2024  
**Lab Number** : 06077468 **Diagnosed** : 05 Feb 2024  
**Unique Number** : 10859559 **Diagnostician** : Don Baldrige  
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

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)

**H. BROWN**  
P.O. BOX 427  
EUNICE, LA  
US 70535  
Contact: CRAIG ARDOIN  
cardoin@hbrown.com  
T: (337)457-8131  
F: (337)546-6354