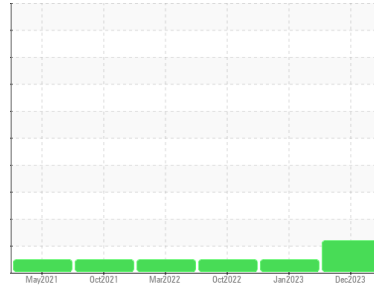




# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area  
**[20420]**  
 Machine Id  
**40-142**  
 Component  
**Diesel Engine**  
 Fluid  
**CONOCO PHILLIPS GUARDOL ECT 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0836233</b>	WC0754796	WC0619471
Sample Date	Client Info		<b>05 Dec 2023</b>	17 Jan 2023	18 Oct 2022
Machine Age	hrs	Client Info	<b>7895</b>	7425	7177
Oil Age	hrs	Client Info	<b>470</b>	248	6945
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	<b>10</b>	14	21
Chromium	ppm	ASTM D5185m	>20	<b>&lt;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>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	2	3
Lead	ppm	ASTM D5185m	>40	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>2</b>	1	2
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	85	<b>44</b>	50	29
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Molybdenum	ppm	ASTM D5185m		<b>24</b>	18	30
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	350	<b>517</b>	795	778
Calcium	ppm	ASTM D5185m	1800	<b>1347</b>	1243	1207
Phosphorus	ppm	ASTM D5185m	1000	<b>925</b>	1061	1034
Zinc	ppm	ASTM D5185m	1100	<b>1123</b>	1235	1214
Sulfur	ppm	ASTM D5185m	3500	<b>3385</b>	4294	3538

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	<b>3</b>	5	5
Sodium	ppm	ASTM D5185m		<b>0</b>	2	1
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	3	3
Fuel	%	ASTM D3524	>5	<b>▲ 6.7</b>	<1.0	<1.0

## INFRA-RED

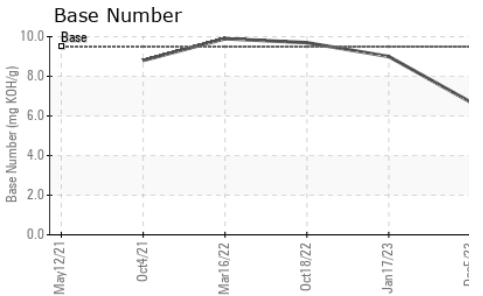
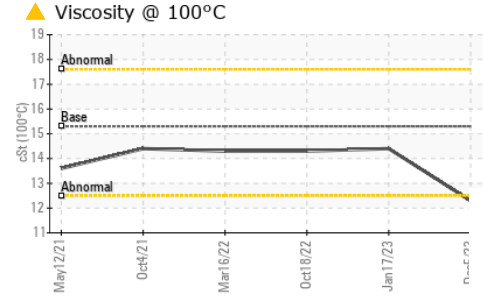
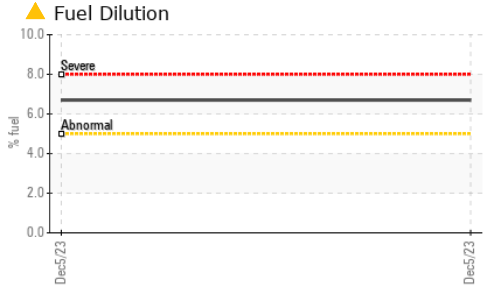
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>3	<b>0.7</b>	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.7</b>	7.8	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.4</b>	19.4	18.2

## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.0</b>	13.1	13.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.5	<b>6.7</b>	9.0	9.7



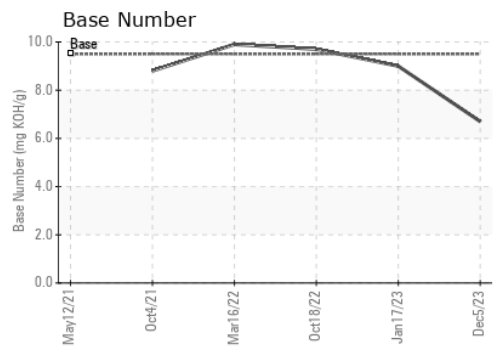
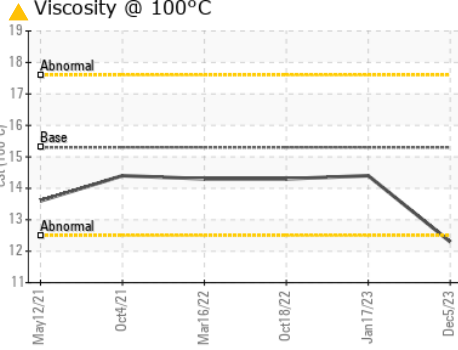
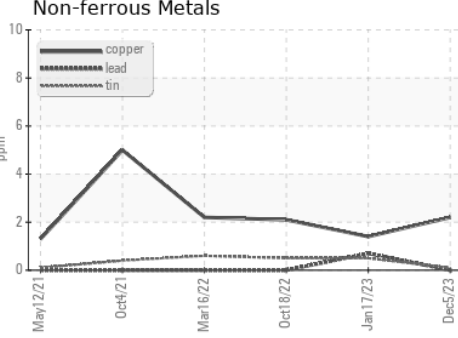
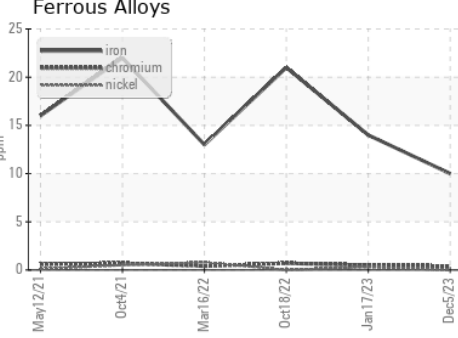
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.3 ▲ 12.3	14.4	14.3

### GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0836233 **Received** : 01 Feb 2024  
**Lab Number** : 06077588 **Tested** : 05 Feb 2024  
**Unique Number** : 10859679 **Diagnosed** : 05 Feb 2024 - Wes Davis  
**Test Package** : CONST ( Additional Tests: FuelDilution, PercentFuel, TBN )

**MANHATTAN ROAD AND BRIDGE**  
 5601 S 122ND E AVE  
 TULSA, OK  
 US 74146  
 Contact: WILL ANDERSON  
 will.anderson@manhattanrb.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)