

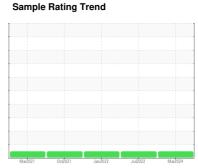
# **OIL ANALYSIS REPORT**



Area [22114] 50-74 Component

**Diesel Engine** 

CONOCO PHILLIPS GUARDOL ECT 15W40 (--- GAL)





## Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

## Contamination

There is no indication of any contamination in the

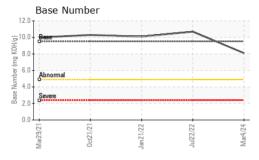
# **Fluid Condition**

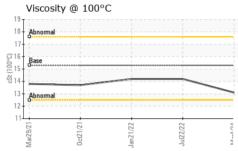
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0836186	WC0619235	WC0619487
Sample Date		Client Info		04 Mar 2024	22 Jul 2022	21 Jan 2022
Machine Age	hrs	Client Info		7700	6860	6637
Oil Age	hrs	Client Info		840	6637	6416
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	V	method	limit/base	current	history1	history2
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	nnm	ASTM D5185m	>51	5	5	5
Chromium	ppm	ASTM D5185m		5 <1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1 <1	<1	0
Titanium	ppm	ASTM D5185m	<i></i>	<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m		2	3	<1
Lead	ppm	ASTM D5185m	>26	0	<1	<1
Copper	ppm	ASTM D5185m		0	<1	<1
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Antimony	ppm	ASTM D5185m				<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	<b>PP</b>	method	limit/base	current	history1	history2
	ppm	ASTM D5185m	85	89	96	108
Boron		ACTM DE10E		^	0	0
Barium	ppm	ASTM D5185m		0	0	0
Barium Molybdenum	ppm	ASTM D5185m		24	10	17
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	350	24	10 <1	17 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	350	24 0 454	10 <1 706	17 <1 710
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800	24 0 454 1563	10 <1 706 1330	17 <1 710 1378
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000	24 0 454 1563 1026	10 <1 706 1330 1002	17 <1 710 1378 1015
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800	24 0 454 1563	10 <1 706 1330	17 <1 710 1378
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000 1100 3500	24 0 454 1563 1026 1199	10 <1 706 1330 1002 1166	17 <1 710 1378 1015 1071 2764
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000 1100 3500 limit/base	24 0 454 1563 1026 1199 4198	10 <1 706 1330 1002 1166 4263 history1	17 <1 710 1378 1015 1071 2764 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	1800 1000 1100 3500 limit/base >22	24 0 454 1563 1026 1199 4198 current	10 <1 706 1330 1002 1166 4263 history1 3	17 <1 710 1378 1015 1071 2764 history2 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1800 1000 1100 3500 limit/base >22 >31	24 0 454 1563 1026 1199 4198 current 3	10 <1 706 1330 1002 1166 4263 history1 3 1	17 <1 710 1378 1015 1071 2764 history2 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1800 1000 1100 3500 limit/base >22 >31 >20	24 0 454 1563 1026 1199 4198 current 3 1	10 <1 706 1330 1002 1166 4263 history1 3 1 2	17 <1 710 1378 1015 1071 2764 history2 4 0 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1800 1000 1100 3500 limit/base >22 >31 >20 limit/base	24 0 454 1563 1026 1199 4198 current 3 1	10 <1 706 1330 1002 1166 4263 history1 3 1 2 history1	17 <1 710 1378 1015 1071 2764 history2 4 0 2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method ASTM D5185m	1800 1000 1100 3500 limit/base >22 >31 >20 limit/base >3	24 0 454 1563 1026 1199 4198 current 3 1 3	10 <1 706 1330 1002 1166 4263 history1 3 1 2 history1 0.2	17 <1 710 1378 1015 1071 2764 history2 4 0 2 history2 0.1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method ASTM D5185m ASTM D5185m  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1800 1000 1100 3500 limit/base >22 >31 >20 limit/base >3 >20	24 0 454 1563 1026 1199 4198 current 3 1 3 current 0.1 6.8	10	17
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D7415	1800 1000 1100 3500 limit/base >22 >31 >20 limit/base >3 >20 >3	24 0 454 1563 1026 1199 4198 current 3 1 3 current 0.1 6.8 17.4	10 <1 706 1330 1002 1166 4263 history1 3 1 2 history1 0.2 7.5 19.6	17 <1 710 1378 1015 1071 2764 history2 4 0 2 history2 0.1 7.0 20.1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  *ASTM D7844 *ASTM D7624 *ASTM D7415  Method	1800 1000 1100 3500 limit/base >22 >31 >20 limit/base >3 >20 >3 limit/base	24 0 454 1563 1026 1199 4198 current 3 1 3 current 0.1 6.8 17.4 current	10 <1 706 1330 1002 1166 4263 history1 3 1 2 history1 0.2 7.5 19.6 history1	17 <1 710 1378 1015 1071 2764 history2 4 0 2 history2 0.1 7.0 20.1 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D7415	1800 1000 1100 3500 limit/base >22 >31 >20 limit/base >3 >20 >30 limit/base	24 0 454 1563 1026 1199 4198 current 3 1 3 current 0.1 6.8 17.4	10 <1 706 1330 1002 1166 4263 history1 3 1 2 history1 0.2 7.5 19.6	17 <1 710 1378 1015 1071 2764 history2 4 0 2 history2 0.1 7.0 20.1



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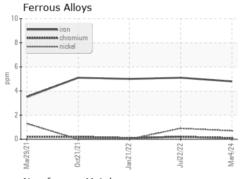


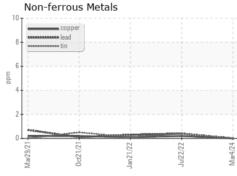


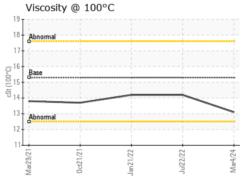
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.21	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

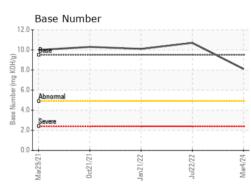
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.3	13.1	14.2	14.2

## **GRAPHS**













Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Lab Number : 06133024

: WC0836186

Received **Tested** Unique Number: 10952489

: 29 Mar 2024 : 31 Mar 2024 Diagnosed Test Package : CONST ( Additional Tests: TBN )

: 31 Mar 2024 - Wes Davis

5601 S 122ND E AVE TULSA, OK US 74146 Contact: BEN CALDWELL kevin.marson@wearcheck.com

MANHATTAN ROAD AND BRIDGE

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)

Submitted By: JAMES STEELMON

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