

OIL ANALYSIS REPORT

Sample Rating Trend



30-49 Component Diesel Engine Fluid

Area [23357] Machine Id

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

Dirtartoolo

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

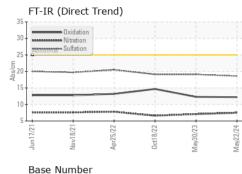
Fluid Condition

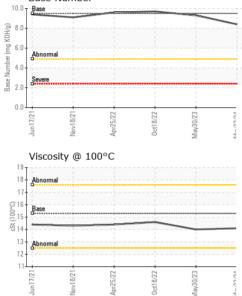
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0940711	WC0818783	WC0619470
Sample Date		Client Info		22 May 2024	30 May 2023	18 Oct 2022
Machine Age	hrs	Client Info		7785	7548	7314
Oil Age	hrs	Client Info		237	234	6808
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	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	ppm	ASTM D5185m	>51	13	11	14
Chromium	ppm	ASTM D5185m	>11	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>31	3	2	2
Lead	ppm	ASTM D5185m	>26	<1	0	<1
Copper	ppm	ASTM D5185m	>26	<1	0	<1
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
	pp	AO INI DO IOOIII		<1	0	0
ADDITIVES	pp	method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base 85		-	-
		method		current	history1	history2
Boron	ppm	method ASTM D5185m		current 78	history1 62	history2 29
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m		current 78 1	history1 62 <1	history2 29 <1
Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m		current 78 1 31	history1 62 <1 17	history2 29 <1 38
Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85	current 78 1 31 <1	history1 62 <1 17 <1	history2 29 <1 38 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350	current 78 1 31 <1 531	history1 62 <1 17 <1 798 1236 1092	history2 29 <1 38 <1 824 1186 1033
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800	current 78 1 31 <1 531 1557	history1 62 <1 17 <1 798 1236	history2 29 <1 38 <1 824 1186
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500	current 78 1 31 <1 531 1557 991	history1 62 <1 17 <1 798 1236 1092	history2 29 <1 38 <1 824 1186 1033
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000 1100	current 78 1 31 <1 531 1557 991 1205	history1 62 <1 17 <1 798 1236 1092 1230	history2 29 <1 38 <1 824 1186 1033 1222
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	85 350 1800 1000 1100 3500	current 78 1 31 <1 531 1557 991 1205 3644	history1 62 <1 17 <1 798 1236 1092 1230 3536	history2 29 <1 38 <1 824 1186 1033 1222 3587
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500	current 78 1 31 <1 531 1557 991 1205 3644 current 4 1	history1 62 <1 17 <1 798 1236 1092 1230 3536 history1 4 0	history2 29 <1 38 <1 824 1186 1033 1222 3587 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	85 350 1800 1000 1100 3500 Imit/base >22	current 78 1 31 <1 531 1557 991 1205 3644 current 4	history1 62 <1 17 <1 798 1236 1092 1230 3536 history1 4	history2 29 <1 38 <1 824 1186 1033 1222 3587 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >22 >31	current 78 1 31 <1 531 1557 991 1205 3644 current 4 1	history1 62 <1 17 <1 798 1236 1092 1230 3536 history1 4 0	history2 29 <1 38 <1 824 1186 1033 1222 3587 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >22 >31 >20 limit/base	current 78 1 31 <1 531 1557 991 1205 3644 current 4 1 5	history1 62 <1 17 <1 798 1236 1092 1230 3536 history1 4 0 2	history2 29 <1 38 <1 824 1186 1033 1222 3587 history2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >22 >31 >20 limit/base	current 78 1 31 <1 531 1557 991 1205 3644 current 4 1 5 current	history1 62 <1 17 <1 798 1236 1092 1230 3536 history1 4 0 2 history1	history2 29 <1 38 <1 824 1186 1033 1222 3587 history2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 history2
Boron 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	method ASTM D5185m	85 350 1800 1000 1100 3500 limit/base >22 >31 >20 limit/base >3	current 78 1 31 <1 531 1557 991 1205 3644 current 4 1 5 current 0.6	history1 62 <1 17 <1 798 1236 1092 1230 3536 history1 4 0 2 history1 0.7	history2 29 <1 38 <1 824 1186 1033 1222 3587 history2 3 2 3 2 3 2 3 0.3
Boron 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	method ASTM D5185m	85 350 1800 1000 1100 3500 <i>limit/base</i> >22 >31 >20 <i>limit/base</i> >3 >20	current 78 1 31 <1 531 1557 991 1205 3644 current 4 1 5 current 0.6 7.5	history1 62 <1 17 <1 798 1236 1092 1230 3536 history1 4 0 2 history1 0.7 7.1	history2 29 <1 38 <1 824 1186 1033 1222 3587 history2 3 2 3 2 3 2 3 0.3 6.6
Boron 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	method ASTM D5185m ASTM D5185m	85 350 1800 1000 1100 3500 imit/base >22 >31 >20 imit/base >3 >20 >3	current 78 1 31 <1 531 1557 991 1205 3644 current 4 1 5 current 0.6 7.5 18.6	history1 62 <1 17 <1 798 1236 1092 1230 3536 history1 4 0 2 history1 0.7 7.1 19.1	history2 29 <1 38 <1 824 1186 1033 1222 3587 history2 3 2 3 2 3 2 3 0.3 6.6 19.1

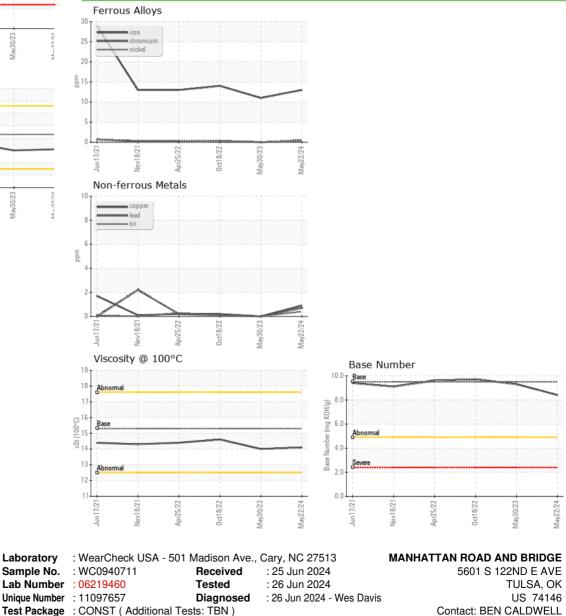


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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
Emulsified Water	scalar	*Visual	>0.21	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.3	14.1	14.0	14.6
GRAPHS						



 Certificate 12367
 Test Package
 : CONST (Additional Tests: TBN)
 Co

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
 kevin.m

 * - 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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Submitted By: JAMES STEELMON

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