

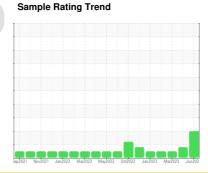
OIL ANALYSIS REPORT



GUAY SON/Yavaros [CONHER] **CATERPILLAR Pacifico Ind Azteca MP**

Component **Diesel Engine**

CHEVRON DELO 400 MULTIGRADE 15W40 (160 LTR)





DIAGNOSIS

Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Wear

Cylinder, crank, or cam shaft wear is indicated.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

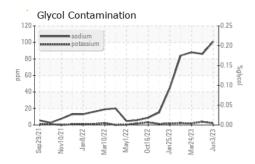
▲ Fluid Condition

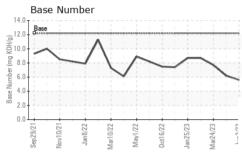
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

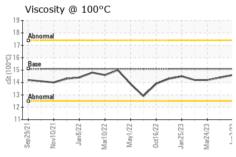
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KL0012247	KL0012234	KL0010265
Sample Date		Client Info		03 Jun 2023	26 Apr 2023	24 Mar 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		345	358	404
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ATTENTION	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	130	9 2	27
Chromium	ppm	ASTM D5185m	>20	2	1	<1
Nickel	ppm	ASTM D5185m	>2	2	2	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	3	2
Lead	ppm	ASTM D5185m	>40	8	5	1
Copper	ppm	ASTM D5185m	>330	73	69	62
Tin	ppm	ASTM D5185m	>15	1	1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITU (EQ						
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 82	history1 86	history2 224
	ppm ppm		limit/base			
Boron	• •	ASTM D5185m	limit/base	82	86	224
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	82 0	86 0 122 <1	224 0 111 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	82 0 141	86 0 122	224 0 111
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	82 0 141 1	86 0 122 <1	224 0 1111 <1 518 1356
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	82 0 141 1 638 1638 891	86 0 122 <1 545 1437 772	224 0 1111 <1 518 1356 862
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		82 0 141 1 638 1638 891 1136	86 0 122 <1 545 1437 772 990	224 0 111 <1 518 1356 862 1069
Boron 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	1360	82 0 141 1 638 1638 891	86 0 122 <1 545 1437 772	224 0 1111 <1 518 1356 862
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1360 1480 Iimit/base	82 0 141 1 638 1638 891 1136	86 0 122 <1 545 1437 772 990	224 0 111 <1 518 1356 862 1069 2885 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1360 1480 Iimit/base	82 0 141 1 638 1638 891 1136 3212 current 12	86 0 122 <1 545 1437 772 990 2630 history1 8	224 0 111 <1 518 1356 862 1069 2885 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1360 1480 limit/base >25	82 0 141 1 638 1638 891 1136 3212 current 12 101	86 0 122 <1 545 1437 772 990 2630 history1 8 86	224 0 111 <1 518 1356 862 1069 2885 history2 7 88
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1360 1480 Iimit/base	82 0 141 1 638 1638 891 1136 3212 current 12 101 2	86 0 122 <1 545 1437 772 990 2630 history1 8 86 4	224 0 111 <1 518 1356 862 1069 2885 history2 7 88 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1360 1480 limit/base >25	82 0 141 1 638 1638 891 1136 3212 current 12 101	86 0 122 <1 545 1437 772 990 2630 history1 8 86	224 0 111 <1 518 1356 862 1069 2885 history2 7 88
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1360 1480 limit/base >25	82 0 141 1 638 1638 891 1136 3212 current 12 101 2	86 0 122 <1 545 1437 772 990 2630 history1 8 86 4	224 0 111 <1 518 1356 862 1069 2885 history2 7 88 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D5185m	1360 1480 limit/base >25 >20	82 0 141 1 638 1638 891 1136 3212 current 12 101 2 NEG current 1	86 0 122 <1 545 1437 772 990 2630 history1 8 86 4 NEG history1 1	224 0 111 <1 518 1356 862 1069 2885 history2 7 88 2 NEG history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D2982 method	1360 1480 limit/base >25 >20	82 0 141 1 638 1638 891 1136 3212 current 12 101 2 NEG	86 0 122 <1 545 1437 772 990 2630 history1 8 86 4 NEG	224 0 111 <1 518 1356 862 1069 2885 history2 7 88 2 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D5185m	1360 1480 limit/base >25 >20 limit/base >3	82 0 141 1 638 1638 891 1136 3212 current 12 101 2 NEG current 1	86 0 122 <1 545 1437 772 990 2630 history1 8 86 4 NEG history1 1	224 0 111 <1 518 1356 862 1069 2885 history2 7 88 2 NEG history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m **ASTM D5185m ASTM D7844 **ASTM D7844	1360 1480 limit/base >25 >20 limit/base >3 >20	82 0 141 1 638 1638 891 1136 3212 current 12 101 2 NEG current 1 13.1	86 0 122 <1 545 1437 772 990 2630 history1 8 86 4 NEG history1 1 12.6	224 0 111 <1 518 1356 862 1069 2885 history2 7 88 2 NEG history2 0.5 9.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624	1360 1480 limit/base >25 >20 limit/base >3 >20 >30	82 0 141 1 638 1638 891 1136 3212 current 12 101 2 NEG current 1 13.1 29.2	86 0 122 <1 545 1437 772 990 2630 history1 8 86 4 NEG history1 1 12.6 28.1	224 0 1111 <1 518 1356 862 1069 2885 history2 7 88 2 NEG history2 0.5 9.4 23.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	1360 1480 limit/base >25 >20 limit/base >3 >20 >30 limit/base	82 0 141 1 638 1638 891 1136 3212 current 12 101 2 NEG current 1 13.1 29.2 current	86 0 122 <1 545 1437 772 990 2630 history1 8 86 4 NEG history1 1 12.6 28.1 history1	224 0 111 <1 518 1356 862 1069 2885 history2 7 88 2 NEG history2 0.5 9.4 23.0 history2

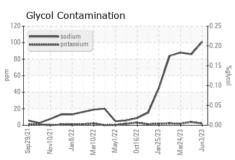


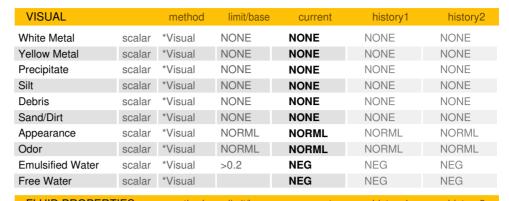
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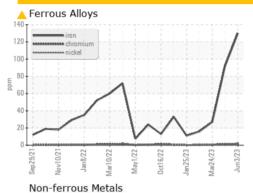


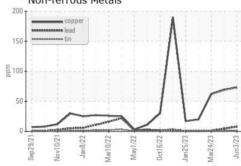


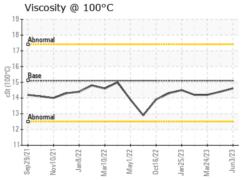


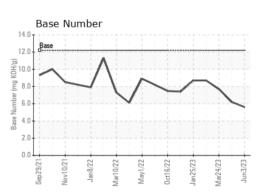
FLUID FROFERITES		memod	IIIIII/Dase	Current	HISTORY	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.1	14.6	14.4	14.2

GRAPHS













Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : KL0012247 Lab Number : 05870110

Unique Number : 10509894

Received **Tested**

: 14 Jun 2023 Diagnosed Test Package: FLEET (Additional Tests: Glycol)

: 14 Jun 2023 - Jonathan Hester

: 09 Jun 2023

JUAREZ 348 HERMOSILLO. MX 83140 Contact: EDUARDO GARCIA

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. egarcia.comsa@gmail.com T: (526)622-1581 x:81

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: EDUARDO GARCIA

CONOR

F: x: