



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**CAIRO (S/N TSJ00163)**  
Component  
**Port Main Engine**  
Fluid  
**CHEVRON DELO 400 MULTIGRADE 15W40 (245 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0047458</b>	MW0062439	MW0062368
Sample Date		Client Info		<b>20 Feb 2024</b>	27 Dec 2023	20 Nov 2023
Machine Age	hrs	Client Info		<b>84948</b>	83595	82782
Oil Age	hrs	Client Info		<b>306</b>	1032	171
Filter Age	hrs	Client Info		<b>306</b>	1032	171
Oil Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Filter Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>7</b>	7	<1
Chromium	ppm	ASTM D5185m	>8	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m	>3	<b>16</b>	17	15
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	<1
Lead	ppm	ASTM D5185m	>18	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>80	<b>0</b>	<1	0
Tin	ppm	ASTM D5185m	>14	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

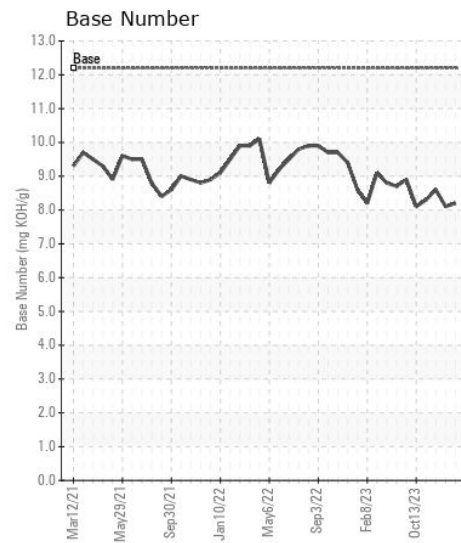
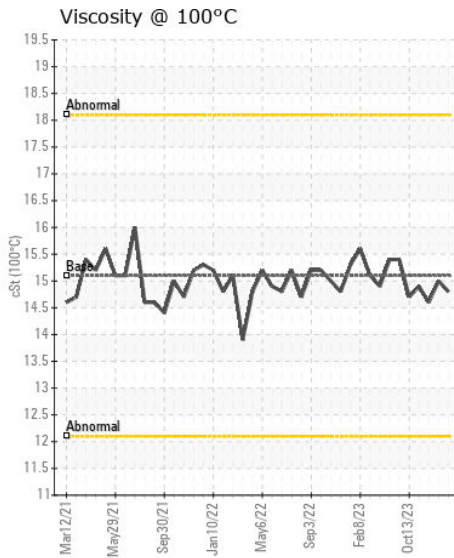
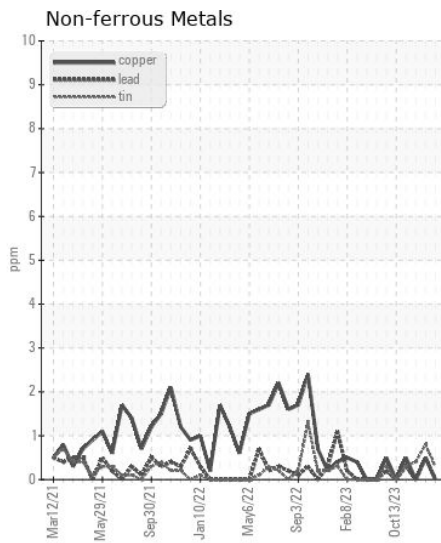
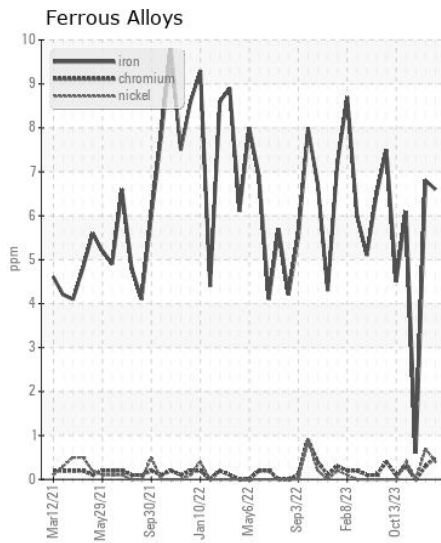
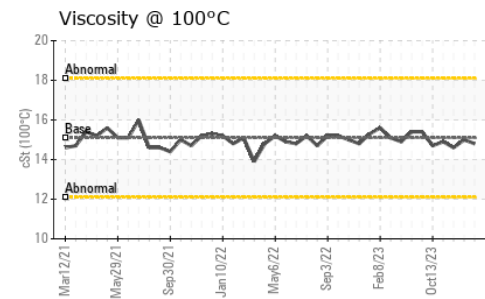
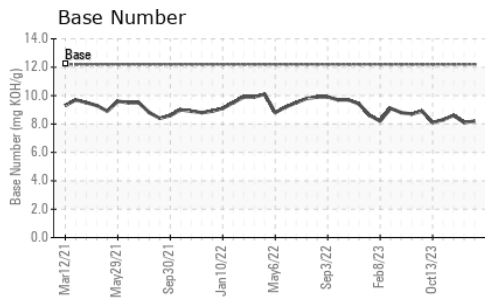
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>4</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	4	3
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.8</b>	1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.2</b>	8.7	7.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.0</b>	19.5	18.2
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	>0.1	<b>NEG</b>	NEG	NEG

**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.

Sodium	ppm	ASTM D5185m	>75	<b>3</b>	0	2
Boron	ppm	ASTM D5185m		<b>80</b>	89	88
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>30</b>	29	25
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>750</b>	738	702
Calcium	ppm	ASTM D5185m		<b>1500</b>	1547	1405
Phosphorus	ppm	ASTM D5185m	1360	<b>742</b>	661	681
Zinc	ppm	ASTM D5185m	1480	<b>879</b>	831	783
Sulfur	ppm	ASTM D5185m		<b>3340</b>	3303	2900
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>12.9</b>	13.0	12.3
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	<b>8.2</b>	8.1	8.6
Visc @ 100°C	cSt	ASTM D445	15.1	<b>14.8</b>	15.0	14.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : MW0047458

**Lab Number** : 06104069

**Unique Number** : 10902299

**Test Package** : MAR 2

**Received** : 29 Feb 2024

**Tested** : 29 Feb 2024

**Diagnosed** : 02 Mar 2024 - Don Baldrige

**AMERICAN COMMERCIAL LINES**

PO BOX 610, 1701 E. MARKET STREET

JEFFERSONVILLE, IN

US 47130

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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)