



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
HAL PANNELL (S/N 81-M1-1072)

Component
Port Main Engine

Fluid
CHEVRON DELO 710 LS (380 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0066518	MW0047890	MW0047832
Sample Date		Client Info		16 Jan 2024	15 Nov 2023	07 Jul 2023
Machine Age	hrs	Client Info		2002	511	44871
Oil Age	hrs	Client Info		1112	511	5302
Filter Age	hrs	Client Info		1112	511	1182
Oil Changed		Client Info		N/A	N/A	Not Changd
Filter Changed		Client Info		N/A	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	19	13	11
Chromium	ppm	ASTM D5185m	>8	2	<1	1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m	>3	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	2	2
Lead	ppm	ASTM D5185m	>18	6	4	0
Copper	ppm	ASTM D5185m	>80	24	16	10
Tin	ppm	ASTM D5185m	>14	12	10	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

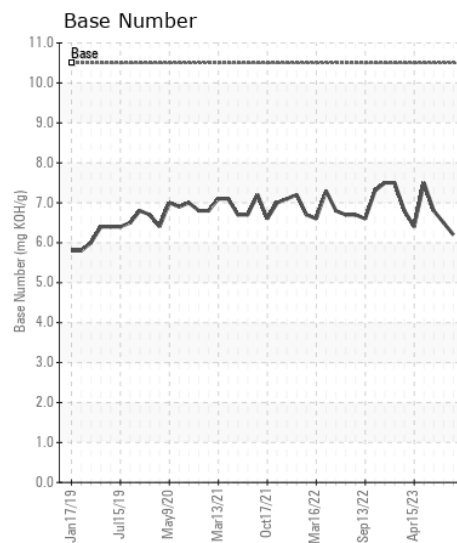
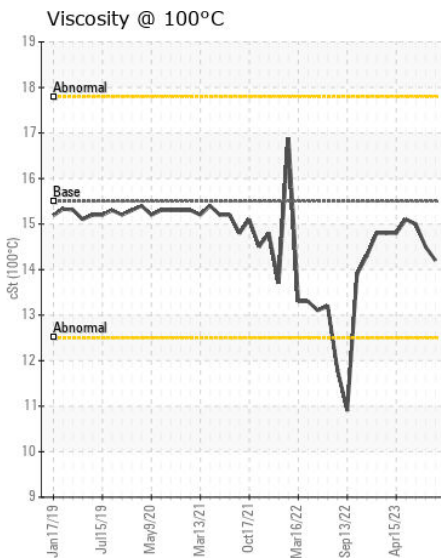
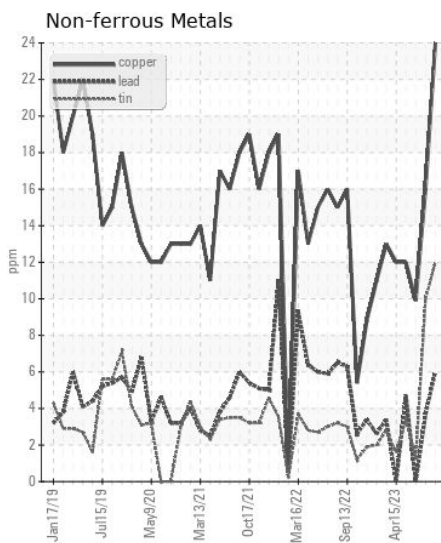
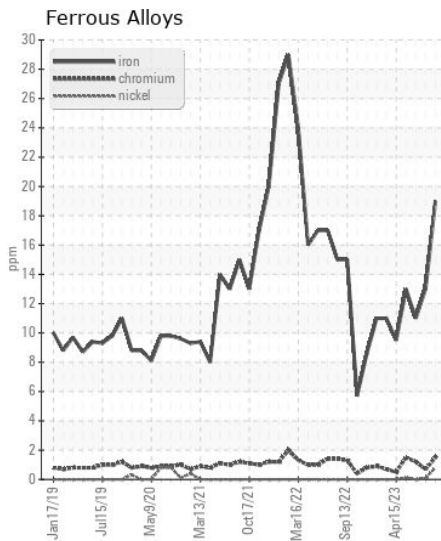
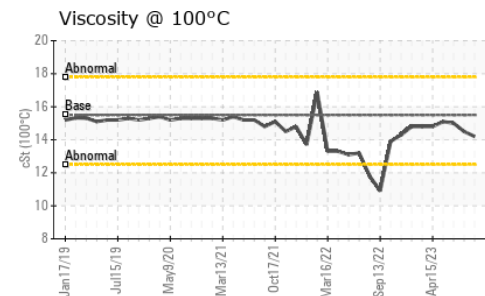
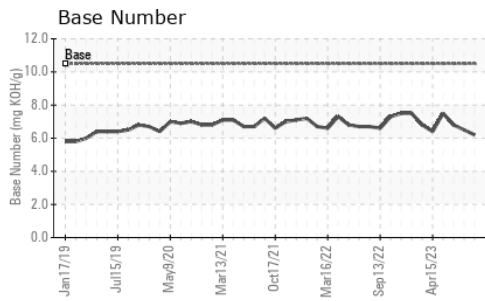
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	6	5	1
Potassium	ppm	ASTM D5185m	>20	2	3	0
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.2	0.6
Nitration	Abs/cm	*ASTM D7624	>20	7.7	7.1	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	15.5	14.8	17.8
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	>0.1	NEG	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	0	2	<1
Boron	ppm	ASTM D5185m		44	41	38
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		49	42	46
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m		22	10	24
Calcium	ppm	ASTM D5185m		3485	3081	3486
Phosphorus	ppm	ASTM D5185m		24	34	18
Zinc	ppm	ASTM D5185m		0	0	11
Sulfur	ppm	ASTM D5185m		2247	2199	2647
Oxidation	Abs/.1mm	*ASTM D7414	>25	9.1	8.0	10.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	6.2	6.5	6.8
Visc @ 100°C	cSt	ASTM D445	15.5	14.2	14.5	15.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0066518
Lab Number : 06085238
Unique Number : 10872683
Test Package : MAR 2

Received : 09 Feb 2024
Tested : 12 Feb 2024
Diagnosed : 12 Feb 2024 - Wes Davis

AMERICAN COMMERCIAL LINES
 PO BOX 610, 1701 E. MARKET STREET
 JEFFERSONVILLE, IN
 US 47130
 Contact: RONALD SCHNEIDER
 ronald.schneider@bargeacbl.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)

T:
 F: (812)288-1644