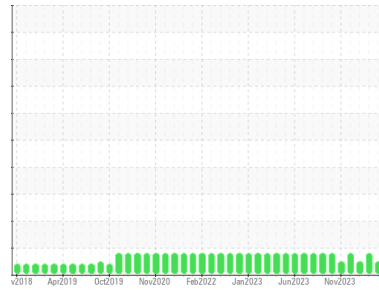


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
MARSHALL
 Machine Id
[MARSHALL] DB100101E Unit 01
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON MONOGRADE HD 40W (250 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0114501	PCA0114492	PCA0073216
Sample Date	Client Info	29 Mar 2024	29 Feb 2024	30 Jan 2024
Machine Age	hrs Client Info	788694	788694	15539
Oil Age	hrs Client Info	16039	15774	15539
Oil Changed	Client Info	Filtered	Filtered	Filtered
Sample Status		NORMAL	MARGINAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.1	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >50	3	2	3
Chromium	ppm ASTM D5185m >4	0	0	0
Nickel	ppm ASTM D5185m >2	0	0	0
Titanium	ppm ASTM D5185m	0	0	0
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >9	2	1	2
Lead	ppm ASTM D5185m >30	<1	0	<1
Copper	ppm ASTM D5185m >35	<1	<1	<1
Tin	ppm ASTM D5185m >4	<1	0	<1
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	2	0	1
Barium	ppm ASTM D5185m	0	0	0
Molybdenum	ppm ASTM D5185m	3	0	2
Manganese	ppm ASTM D5185m	<1	<1	0
Magnesium	ppm ASTM D5185m	892	884	871
Calcium	ppm ASTM D5185m	1031	1012	998
Phosphorus	ppm ASTM D5185m	1129	1091	1051
Zinc	ppm ASTM D5185m	1305	1280	1239
Sulfur	ppm ASTM D5185m	3656	2949	2947

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >+100	2	2	3
Sodium	ppm ASTM D5185m	2	<1	<1
Potassium	ppm ASTM D5185m >20	<1	0	1
Fuel	% ASTM D3524 >4.0	1.9	▲ 2.1	1.8

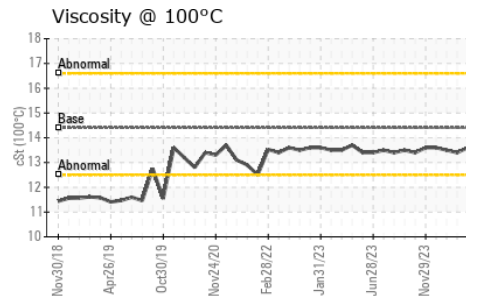
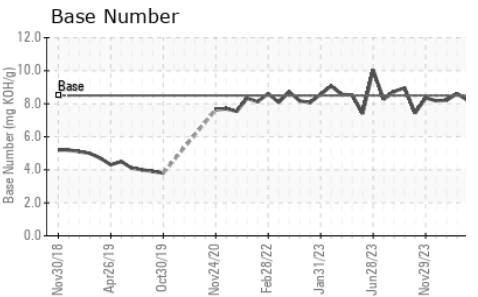
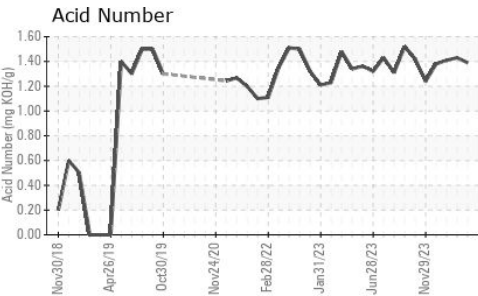
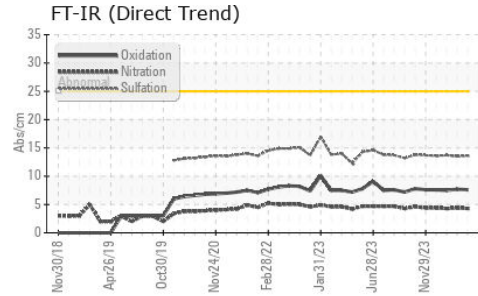
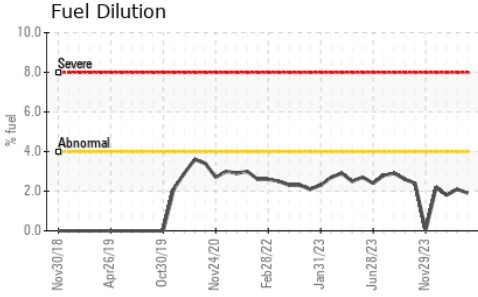
INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844	0	0	0
Nitration	Abs/cm *ASTM D7624 >20	4.3	4.4	4.3
Sulfation	Abs/.1mm *ASTM D7415 >30	13.6	13.5	13.7

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	7.6	7.7	7.5
Acid Number (AN)	mg KOH/g ASTM D8045	1.39	1.43	1.41
Base Number (BN)	mg KOH/g ASTM D2896 8.5	8.20	8.61	8.21

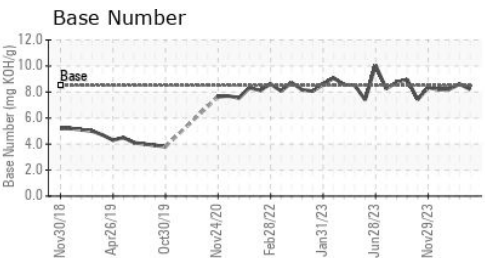
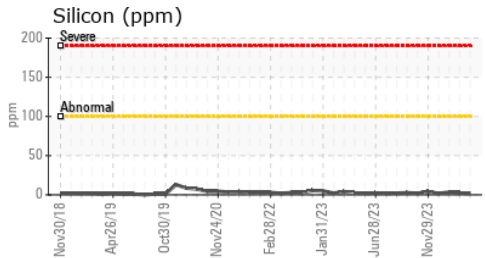
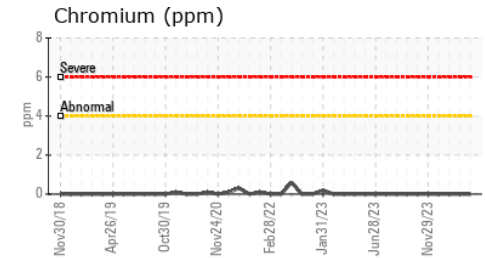
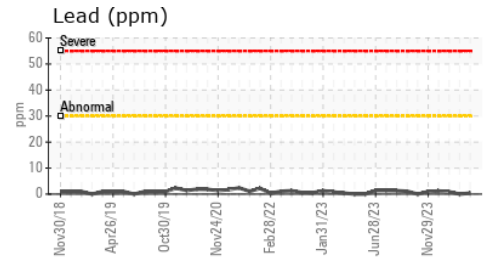
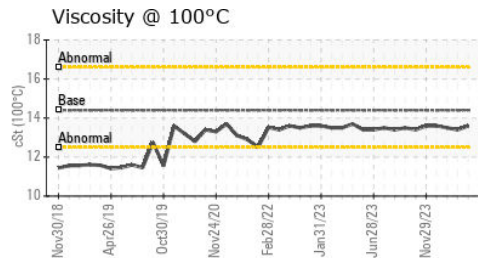
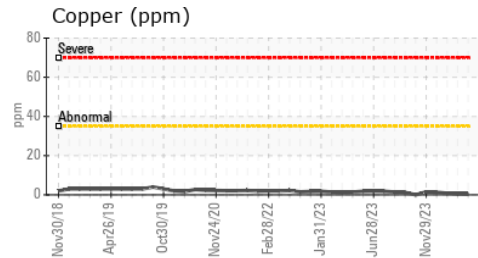
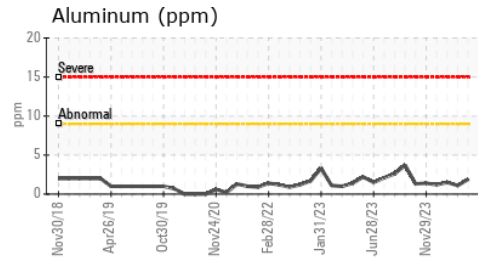
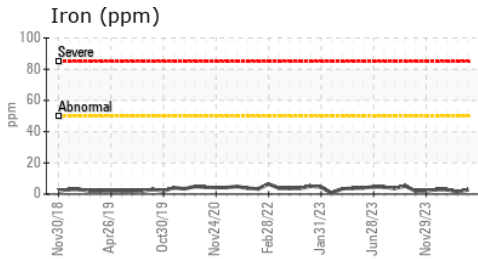
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	13.6	13.4	13.5

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0114501 **Received** : 05 Apr 2024
Lab Number : **06140688** **Tested** : 09 Apr 2024
Unique Number : 10965496 **Diagnosed** : 09 Apr 2024 - Don Baldrige
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

Magellan Midstream LP - Marshall
 1601 West College Drive
 Marshall, MN
 US 56258
 Contact: Brett Erickson
 brett.erickson@magellanlp.com
 T: (519)822-1260
 F:

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)