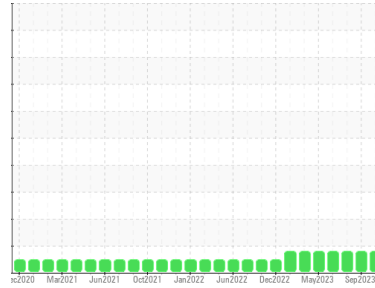


OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area
INDEPENDENCE
Machine Id
Unit 05 DB200105E

Component
Natural Gas Engine
Fluid
PETRO CANADA DURON MONOGRADE HD 40W (250 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring.

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		PCA0097025	PCA0097027	PCA0097021
Sample Date	Client Info		12 Oct 2023	07 Sep 2023	02 Aug 2023
Machine Age	hrs	Client Info	2259	2088	1948
Oil Age	hrs	Client Info	2259	2088	1948
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			MARGINAL	MARGINAL	MARGINAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	8	9	4
Chromium	ppm	ASTM D5185m >4	<1	<1	<1
Nickel	ppm	ASTM D5185m >2	0	0	<1
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >9	<1	<1	2
Lead	ppm	ASTM D5185m >30	<1	2	2
Copper	ppm	ASTM D5185m >35	3	2	2
Tin	ppm	ASTM D5185m >4	<1	<1	<1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	4	5	4
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	3	4	4
Manganese	ppm	ASTM D5185m	0	<1	0
Magnesium	ppm	ASTM D5185m	785	978	940
Calcium	ppm	ASTM D5185m	958	1138	1145
Phosphorus	ppm	ASTM D5185m	924	1096	1163
Zinc	ppm	ASTM D5185m	1070	1360	1353
Sulfur	ppm	ASTM D5185m	2467	3674	3258

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	5	6	6
Sodium	ppm	ASTM D5185m	4	5	3
Potassium	ppm	ASTM D5185m >20	0	<1	<1
Fuel	%	ASTM D3524 >4.0	▲ 2.9	▲ 3.1	▲ 3.1

INFRA-RED

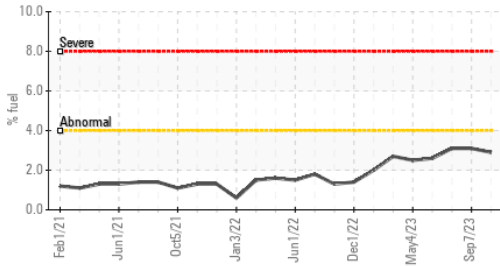
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0.1	0
Nitration	Abs/cm	*ASTM D7624 >20	4.4	4.6	4.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	13.4	13.0	13.2

FLUID DEGRADATION

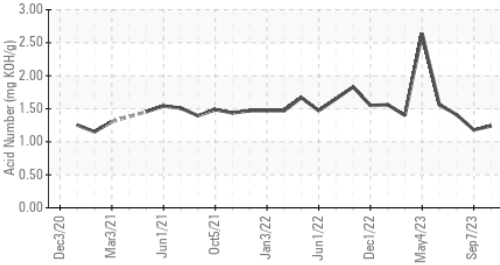
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	7.2	6.7	7.1
Acid Number (AN)	mg KOH/g	ASTM D8045	1.24	1.18	1.41
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	7.65	8.46	8.78

OIL ANALYSIS REPORT

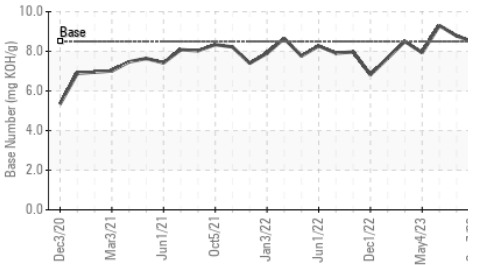
▲ Fuel Dilution



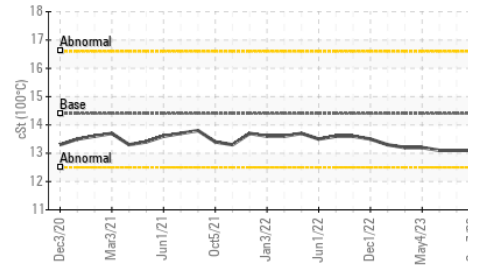
Acid Number



Base Number



Viscosity @ 100°C

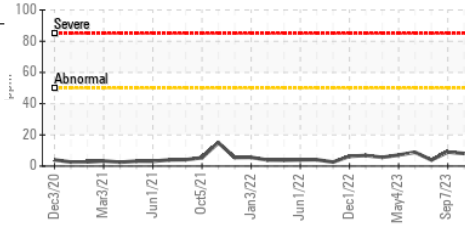


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

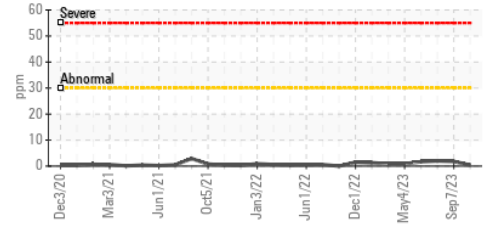
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	13.1	13.1	13.1

GRAPHS

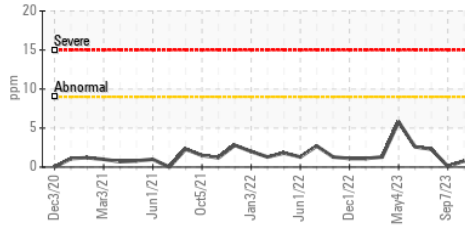
Iron (ppm)



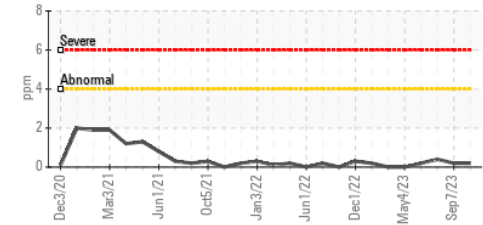
Lead (ppm)



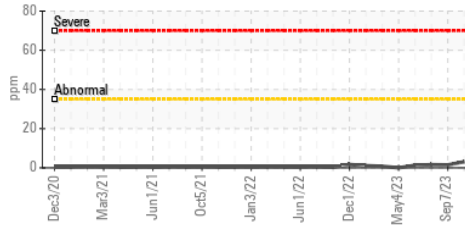
Aluminum (ppm)



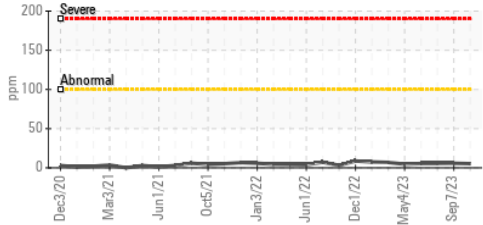
Chromium (ppm)



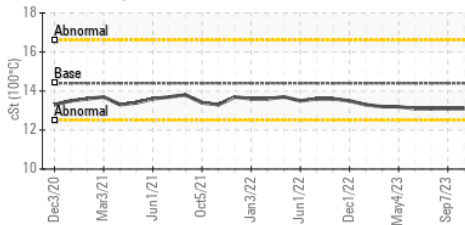
Copper (ppm)



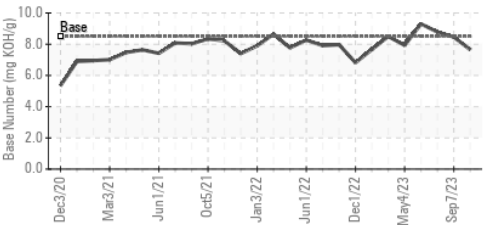
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0097025 **Received** : 17 Oct 2023
Lab Number : 05981315 **Diagnosed** : 19 Oct 2023
Unique Number : 10698610 **Diagnostician** : Sean Felton
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

Magellan Midstream LP - Independence
 836 South Rosser Road
 Independence, KS
 US 67301
 Contact: Heath James
 heath.james@magellanlp.com
 T: (620)779-2040
 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)