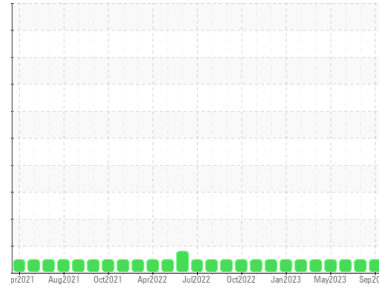


Area
ALBERT LEA
Machine Id
Unit 05 DB010105E

Component
Natural Gas Engine
Fluid
PETRO CANADA DURON MONOGRADE HD 40W (350 GAL)



DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. (Customer Sample Comment: 46 gallons of lube oil added this month.)

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		PCA0106481	PCA0106479	PCA0088289
Sample Date	Client Info		30 Sep 2023	04 Sep 2023	30 Jun 2023
Machine Age	hrs	Client Info	469	226	18172
Oil Age	hrs	Client Info	469	226	18172
Oil Changed	Client Info		Oil Added	Oil Added	Not Chngd
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	2	5	3
Chromium	ppm	ASTM D5185m >4	<1	<1	0
Nickel	ppm	ASTM D5185m >2	<1	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >9	0	5	2
Lead	ppm	ASTM D5185m >30	2	1	0
Copper	ppm	ASTM D5185m >35	3	3	<1
Tin	ppm	ASTM D5185m >4	<1	1	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	<1	<1
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	2	2	2
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	910	909	923
Calcium	ppm	ASTM D5185m	1002	1008	1030
Phosphorus	ppm	ASTM D5185m	1141	1130	1187
Zinc	ppm	ASTM D5185m	1352	1307	1403
Sulfur	ppm	ASTM D5185m	3395	3780	3939

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	10	6	8
Sodium	ppm	ASTM D5185m	0	3	<1
Potassium	ppm	ASTM D5185m >20	2	0	1
Fuel	%	ASTM D3524 >4.0	1.5	1.5	2.0

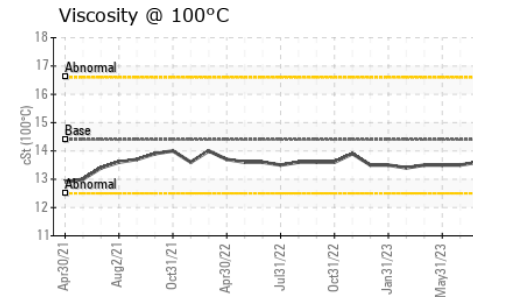
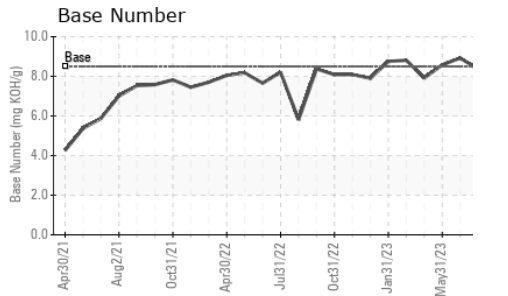
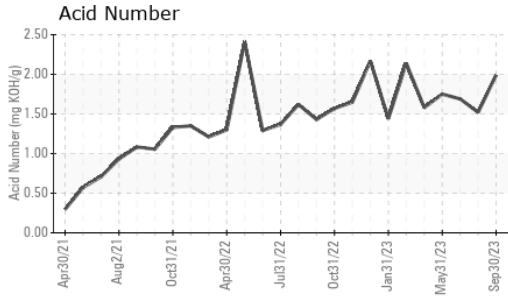
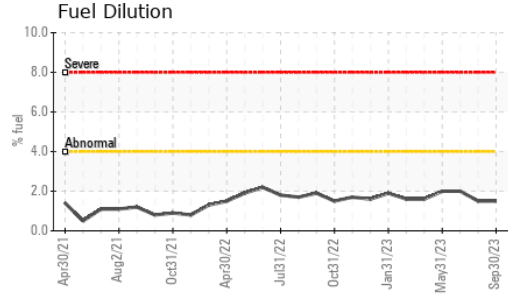
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0	0.1
Nitration	Abs/cm	*ASTM D7624 >20	3.4	3.2	4.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	12.0	12.2	13.7

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	6.0	5.8	7.0
Acid Number (AN)	mg KOH/g	ASTM D8045	1.99	1.52	1.69
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	9.50	8.37	8.92

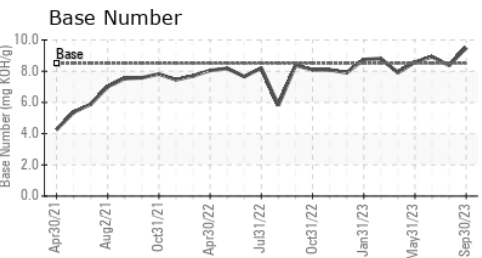
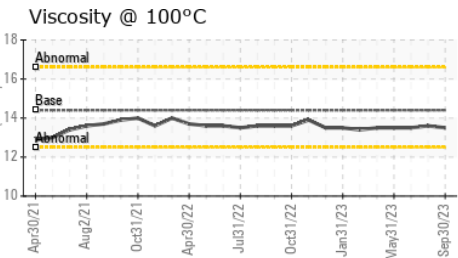
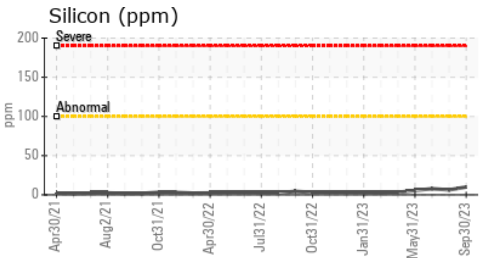
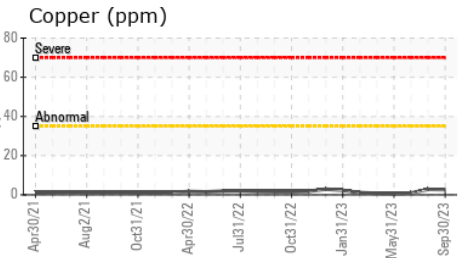
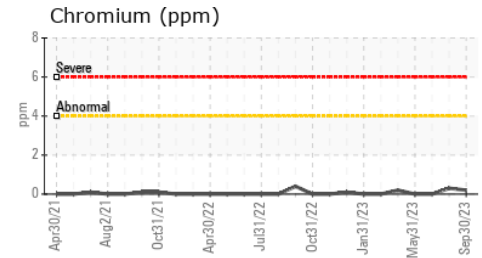
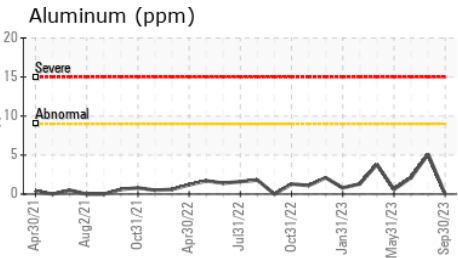
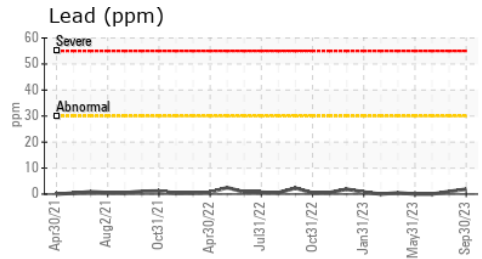
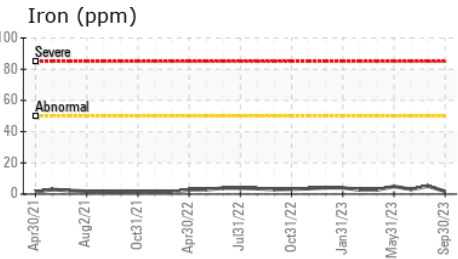
OIL ANALYSIS REPORT



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	13.5	13.6

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0106481 **Received** : 09 Oct 2023
Lab Number : 05973169 **Diagnosed** : 11 Oct 2023
Unique Number : 10685119 **Diagnostician** : Sean Felton
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

Magellan Midstream LP - Albert Lea
 11406 755th Avenue
 Glenville, MN
 US 56036
 Contact: Shawn Duren
 shawn.duren@magellanlp.com
 T: (641)231-6666
 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)