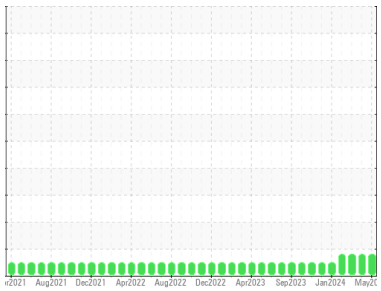
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
FARIBAULT
Machine Id
[FARIBAULT] Unit 03 DB020103E
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON MONOGRADE HD 40W (350 GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: No lube oil added this month.)

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		**PCA0124422**	PCA0124420	PCA0098889
Sample Date		Client Info		**29 May 2024**	30 Apr 2024	02 Apr 2024
Machine Age	hrs	Client Info		**2474**	2474	2334
Oil Age	hrs	Client Info		**2474**	2474	2334
Oil Changed		Client Info		**Oil Added**	Not Changd	Not Changd
Sample Status				**MARGINAL**	MARGINAL	MARGINAL

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	**6**	6	3
Chromium	ppm	ASTM D5185m	>4	**<1**	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**	2	1
Lead	ppm	ASTM D5185m	>30	**1**	1	<1
Copper	ppm	ASTM D5185m	>35	**4**	4	4
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		**1**	0	<1
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**2**	2	2
Manganese	ppm	ASTM D5185m		**0**	0	<1
Magnesium	ppm	ASTM D5185m		**856**	941	905
Calcium	ppm	ASTM D5185m		**979**	1087	1026
Phosphorus	ppm	ASTM D5185m		**1042**	1161	1127
Zinc	ppm	ASTM D5185m		**1218**	1316	1308
Sulfur	ppm	ASTM D5185m		**3408**	3617	3003

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**4**	4	5
Sodium	ppm	ASTM D5185m		**2**	2	2
Potassium	ppm	ASTM D5185m	>20	**1**	0	0
Fuel	%	ASTM D3524	>4.0	▲ **2.9**	▲ 2.9	▲ 3.0

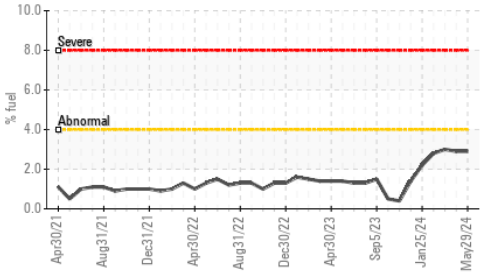
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**4.2**	4.2	4.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**13.6**	13.6	13.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**7.6**	7.4	7.6
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.43**	1.40	1.45
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**8.38**	8.15	8.31

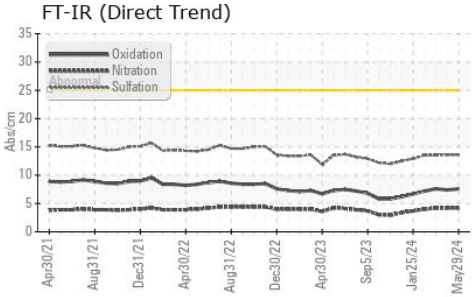
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

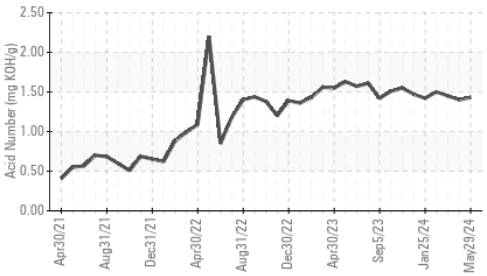
Fuel Dilution



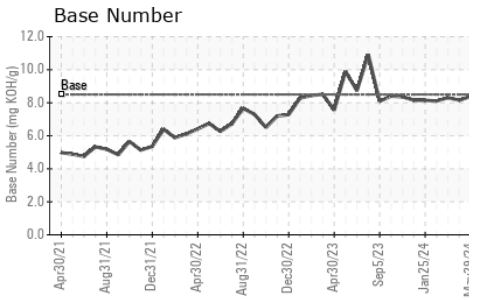
FT-IR (Direct Trend)



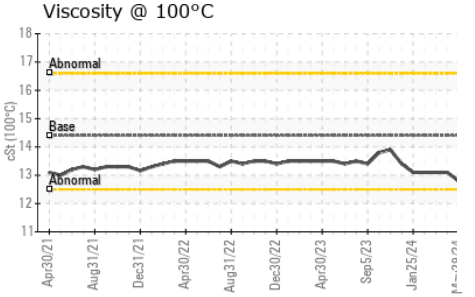
Acid Number



Base Number



Viscosity @ 100°C

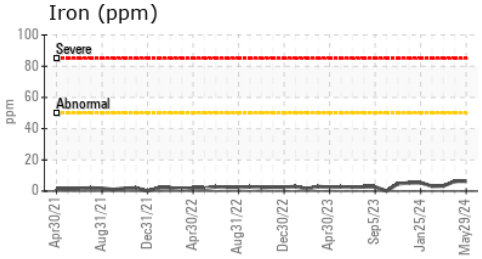


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	LIGHT
Sand/Dirt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

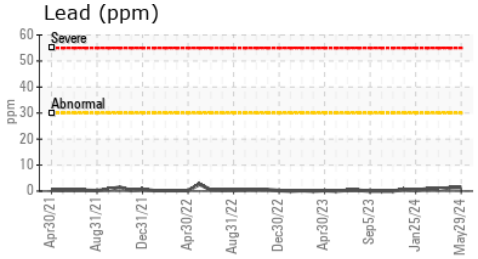
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**12.8**	13.1	13.1

GRAPHS

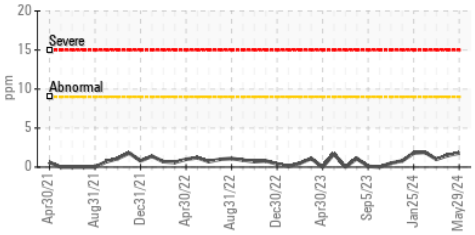
Iron (ppm)



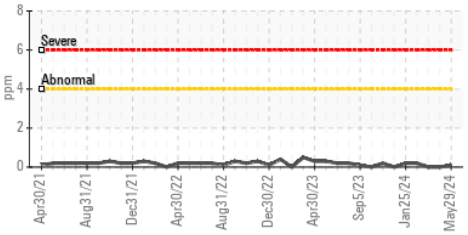
Lead (ppm)



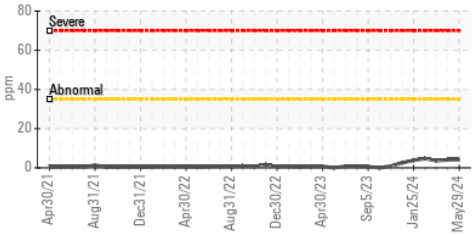
Aluminum (ppm)



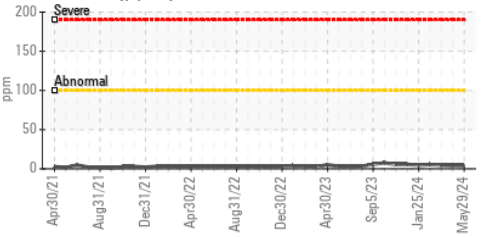
Chromium (ppm)



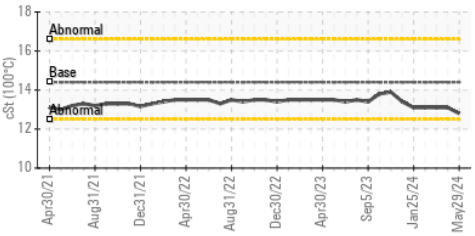
Copper (ppm)



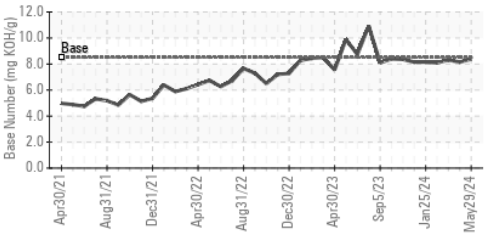
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0124422 **Received** : 03 Jun 2024
Lab Number : 06198330 **Tested** : 05 Jun 2024
Unique Number : 11060453 **Diagnosed** : 05 Jun 2024 - Sean Felton
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

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)

Magellan Midstream LP - Faribault
22535 Bagley Avenue
Faribault, MN
US 55021
Contact: Jon Coulter
Jon.Coulter@magellanlp.com
T: (507)381-9649
F:

Report Id: MAGFAR [WUSCAR] 06198330 (Generated: 06/05/2024 12:54:31) Rev: 1

Submitted By: Jon Coulter