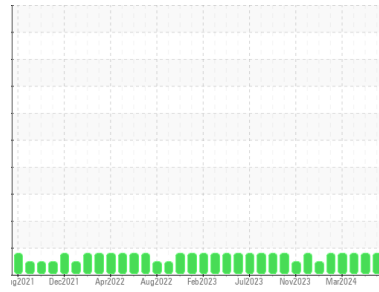


# OIL ANALYSIS REPORT

Area  
**SIoux CITY**  
 Machine Id  
**[SIoux CITY] DB090102E Unit 02**  
 Component  
**Natural Gas Engine**  
 Fluid  
**PETRO CANADA DURON MONOGRADE HD 40W (250 GAL)**

Sample Rating Trend



**FUEL**



## 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	<b>PCA0096542</b>	PCA0096541	PCA0096540
Sample Date	Client Info	<b>27 Jun 2024</b>	31 May 2024	30 Apr 2024
Machine Age	hrs	<b>108368</b>	108276	108181
Oil Age	hrs	<b>9511</b>	9419	9324
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>MARGINAL</b>	MARGINAL	MARGINAL

## CONTAMINATION

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

## WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >50	<b>8</b>	6	6
Chromium	ppm	ASTM D5185m >4	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m >2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m >3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >9	<b>2</b>	1	1
Lead	ppm	ASTM D5185m >30	<b>1</b>	1	<1
Copper	ppm	ASTM D5185m >35	<b>2</b>	<1	<1
Tin	ppm	ASTM D5185m >4	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	<1	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	<b>2</b>	0	0
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>&lt;1</b>	1	2
Manganese	ppm	ASTM D5185m	<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m	<b>912</b>	877	960
Calcium	ppm	ASTM D5185m	<b>1101</b>	1026	1104
Phosphorus	ppm	ASTM D5185m	<b>1204</b>	1094	1185
Zinc	ppm	ASTM D5185m	<b>1410</b>	1242	1339
Sulfur	ppm	ASTM D5185m	<b>3788</b>	3346	3723

## CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >+100	<b>2</b>	2	2
Sodium	ppm	ASTM D5185m	<b>2</b>	2	1
Potassium	ppm	ASTM D5185m >20	<b>2</b>	0	0
Fuel	%	ASTM D3524 >4.0	<b>▲ 2.0</b>	▲ 2.1	▲ 2.0

## INFRA-RED

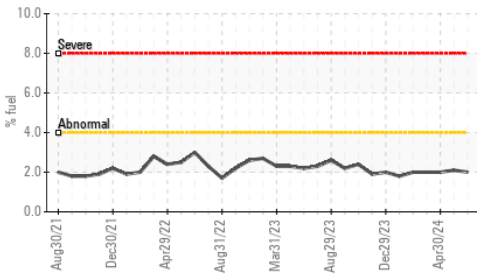
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	<b>0.1</b>	0.1	0
Nitration	Abs/cm	*ASTM D7624 >20	<b>4.2</b>	4.1	5.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>12.9</b>	12.8	14.7

## FLUID DEGRADATION

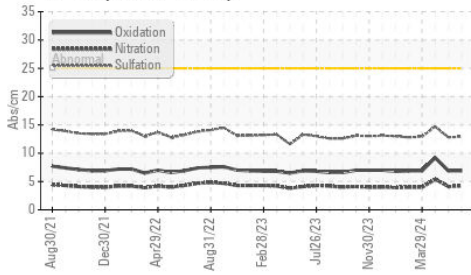
method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>6.9</b>	6.9	9.2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>1.63</b>	1.64	1.57
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	<b>8.31</b>	8.24	8.21

# OIL ANALYSIS REPORT

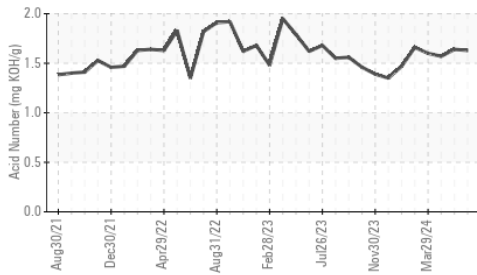
## Fuel Dilution



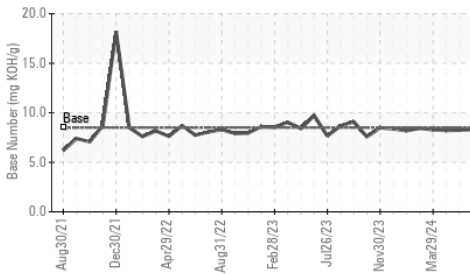
## FT-IR (Direct Trend)



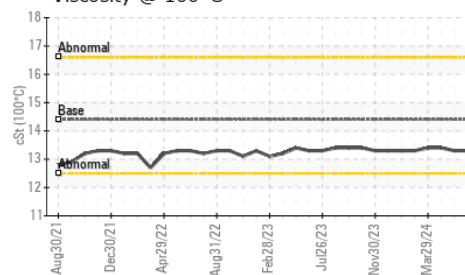
## Acid Number



## Base Number



## Viscosity @ 100°C



## VISUAL

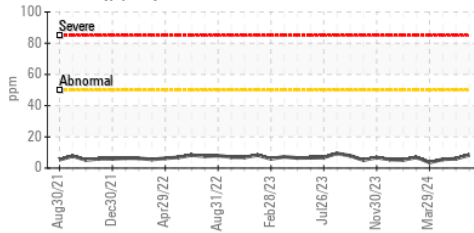
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

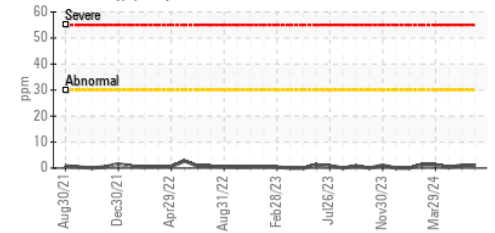
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.3	13.4

## GRAPHS

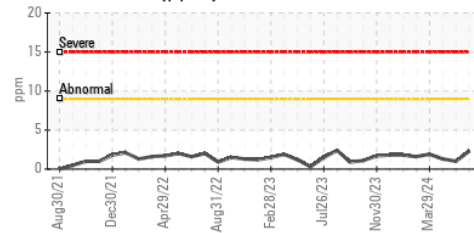
### Iron (ppm)



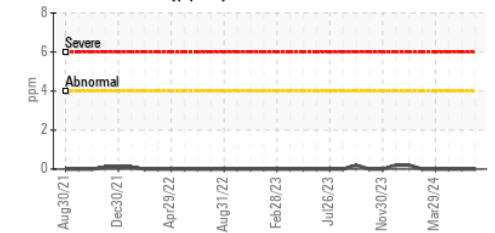
### Lead (ppm)



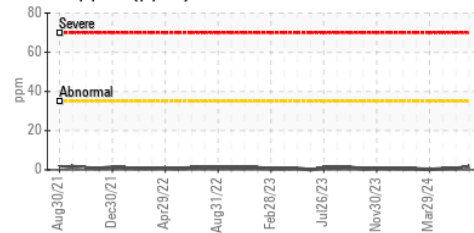
### Aluminum (ppm)



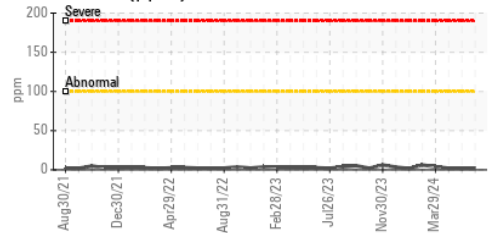
### Chromium (ppm)



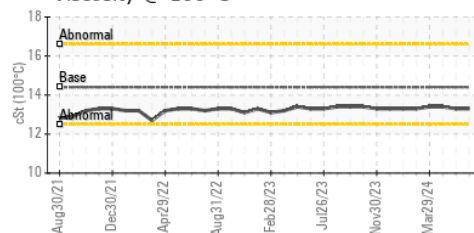
### Copper (ppm)



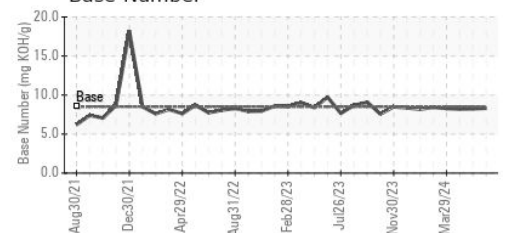
### Silicon (ppm)



### Viscosity @ 100°C



### Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : PCA0096542

**Lab Number** : 06229272

**Unique Number** : 11112765

**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)

**Received** : 05 Jul 2024

**Tested** : 09 Jul 2024

**Diagnosed** : 09 Jul 2024 - Sean Felton

**Magellan Midstream LP - Sioux City**

4300 41st Street

Sioux Falls, IA

US 51108

Contact: Scott Guthmiller

scott.guthmiller@magellanlp.com

T: (721)251-8554

F: