

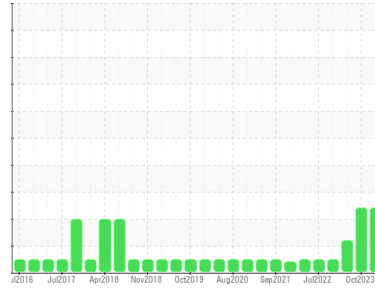
# OIL ANALYSIS REPORT

Sample Rating Trend

FUEL



Area  
**KEMP QUARRIES / NEOSHO [68014]**  
Machine Id  
**WL111**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA 15W40 (--- GAL)**



## DIAGNOSIS

### Recommendation

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. ( Customer Sample Comment: PM-1 changed filters and fluid (Oil was changed last week due to fuel) )

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of fuel present in the oil.

### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>PCA0086530</b>	PCA0084711	PCA0086325
Sample Date	Client Info		<b>06 Feb 2024</b>	10 Oct 2023	19 Jun 2023
Machine Age	hrs	Client Info	<b>30222</b>	29750	29243
Oil Age	hrs	Client Info	<b>30222</b>	29750	29243
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>SEVERE</b>	SEVERE	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	<b>2</b>	19	18
Chromium	ppm	ASTM D5185m >20	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m >2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m >2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>&lt;1</b>	1	0
Lead	ppm	ASTM D5185m >40	<b>0</b>	4	2
Copper	ppm	ASTM D5185m >330	<b>3</b>	173	9
Tin	ppm	ASTM D5185m >15	<b>&lt;1</b>	<1	1
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>1</b>	0	0
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>51</b>	51	56
Manganese	ppm	ASTM D5185m	<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m	<b>838</b>	796	868
Calcium	ppm	ASTM D5185m	<b>896</b>	861	998
Phosphorus	ppm	ASTM D5185m	<b>894</b>	850	940
Zinc	ppm	ASTM D5185m	<b>1077</b>	1029	1122
Sulfur	ppm	ASTM D5185m	<b>2785</b>	2476	2863

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>4</b>	8	7
Sodium	ppm	ASTM D5185m	<b>1</b>	2	<1
Potassium	ppm	ASTM D5185m >20	<b>1</b>	3	<1
Fuel	%	ASTM D3524 >5	<b>13.5</b>	18.6	6.0

## INFRA-RED

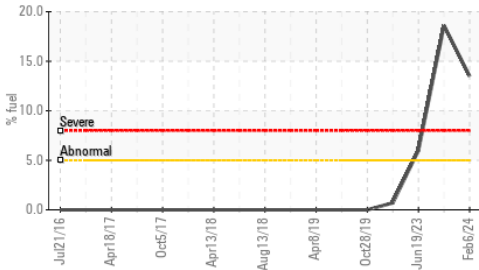
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.1</b>	0.4	0.3
Nitration	Abs/cm	*ASTM D7624 >20	<b>4.8</b>	6.7	17.5
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>16.3</b>	17.4	23.8

## FLUID DEGRADATION

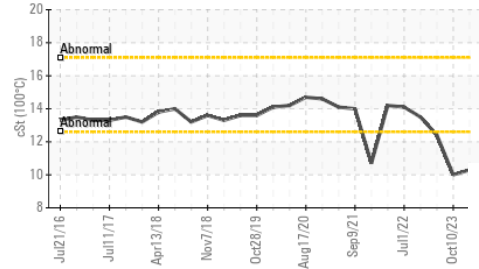
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>11.5</b>	12.7	16.4
Base Number (BN)	mg KOH/g	ASTM D2896	<b>8.1</b>	7.4	12.0

# OIL ANALYSIS REPORT

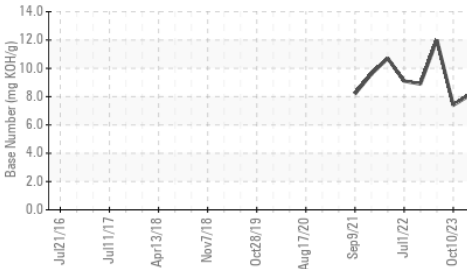
## Fuel Dilution



## Viscosity @ 100°C



## Base Number



## VISUAL

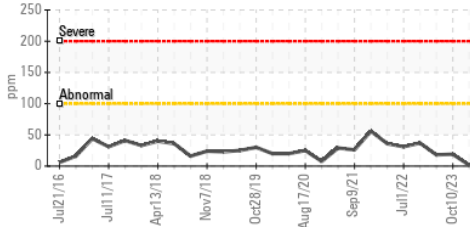
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

## FLUID PROPERTIES

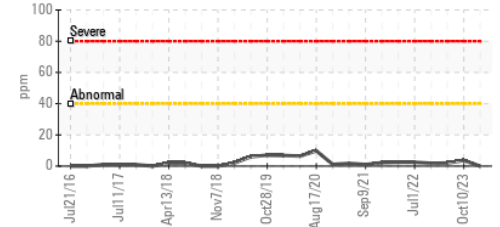
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 10.3	▲ 10.0	▲ 12.4

## GRAPHS

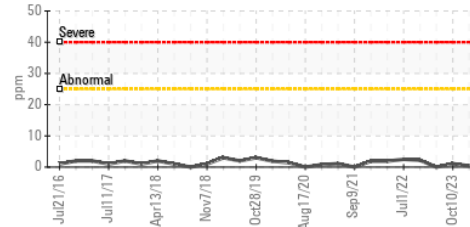
### Iron (ppm)



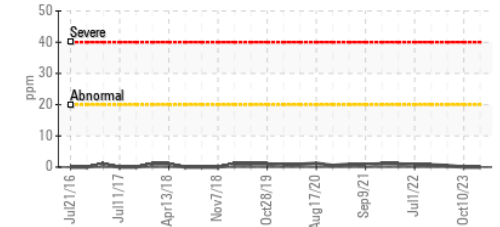
### Lead (ppm)



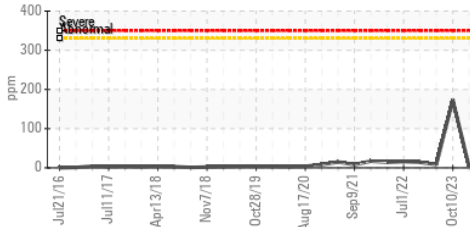
### Aluminum (ppm)



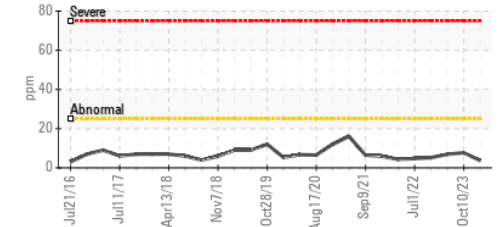
### Chromium (ppm)



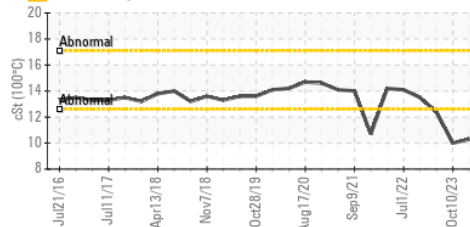
### Copper (ppm)



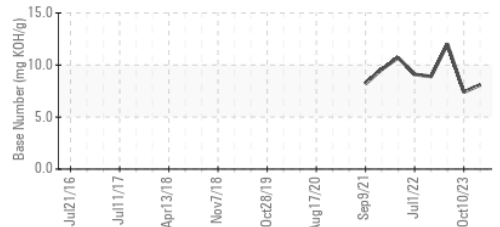
### Silicon (ppm)



## Viscosity @ 100°C



## Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0086530 **Received** : 08 Feb 2024  
**Lab Number** : 06084288 **Tested** : 09 Feb 2024  
**Unique Number** : 10871733 **Diagnosed** : 12 Feb 2024 - Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: PercentFuel, TBN )

**Kemp Quarries - Kemp Stone - Neosho**  
 19148 Ingersol Lane  
 Neosho, MO  
 US 64850  
 Contact:  
 neosho@kempstone.com

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)

T:  
F: