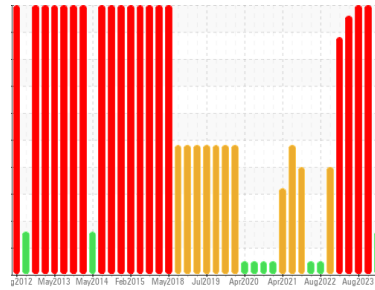


OIL ANALYSIS REPORT



Area
KEMP QUARRIES / MUSKOGEE SAND [67434]
Machine Id
WL056
Component
Rear Differential
Fluid
PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)

Sample Rating Trend



WATER



DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: PM-4 changed fluid)

Wear

All component wear rates are normal.

Contamination

There is a moderate concentration of water present in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PCA0086553	PCA0084751	PCA0070432
Sample Date	Client Info		18 Dec 2023	03 Oct 2023	10 Aug 2023
Machine Age	hrs	Client Info	34606	34177	33775
Oil Age	hrs	Client Info	34606	34177	1190
Oil Changed	Client Info		Changed	Changed	Not Changed
Sample Status			ABNORMAL	SEVERE	SEVERE

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >500	66	▲ 821	▲ 507
Chromium	ppm	ASTM D5185m >3	<1	▲ 3	2
Nickel	ppm	ASTM D5185m >3	0	2	1
Titanium	ppm	ASTM D5185m >2	<1	3	2
Silver	ppm	ASTM D5185m >2	<1	<1	0
Aluminum	ppm	ASTM D5185m >30	5	▲ 64	▲ 56
Lead	ppm	ASTM D5185m >13	<1	10	7
Copper	ppm	ASTM D5185m >103	12	81	68
Tin	ppm	ASTM D5185m >5	1	9	6
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 2	1	10	11
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 0	0	9	9
Manganese	ppm	ASTM D5185m 0	1	10	6
Magnesium	ppm	ASTM D5185m 9	29	115	102
Calcium	ppm	ASTM D5185m 3114	2964	3004	2659
Phosphorus	ppm	ASTM D5185m 1099	921	1038	918
Zinc	ppm	ASTM D5185m 1245	1116	1237	1088
Sulfur	ppm	ASTM D5185m 7086	4028	5519	4761

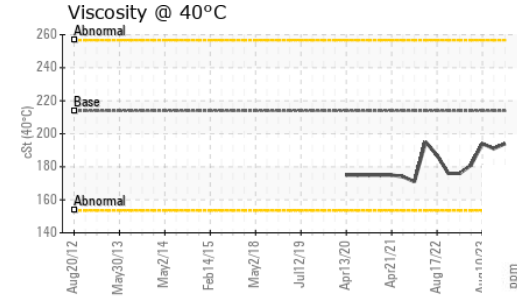
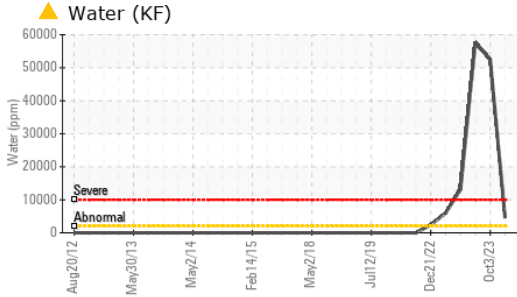
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >100	47	◆ 402	◆ 288
Sodium	ppm	ASTM D5185m	2	38	37
Potassium	ppm	ASTM D5185m >20	2	30	22
Water	%	ASTM D6304 >.2	▲ 0.457	◆ 5.24	◆ 5.77
ppm Water	ppm	ASTM D6304 >2000	▲ 4570	◆ 52400	◆ 57700

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	MODER	NONE
Debris	scalar	*Visual NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual NONE	NONE	NONE	NONE
Appearance	scalar	*Visual NORML	HAZY	NORML	▲ LAYRD
Odor	scalar	*Visual NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual >.2	0.2%	◆ 0.2%	◆ 0.2%
Free Water	scalar	*Visual	NEG	NEG	NEG

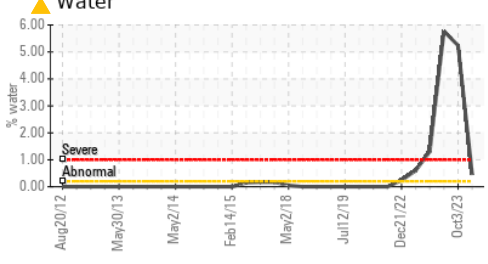
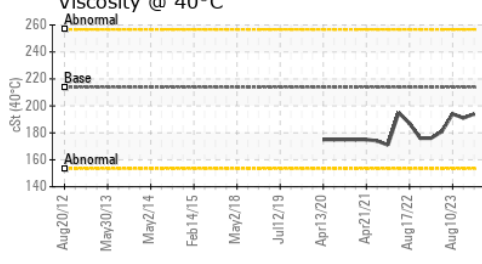
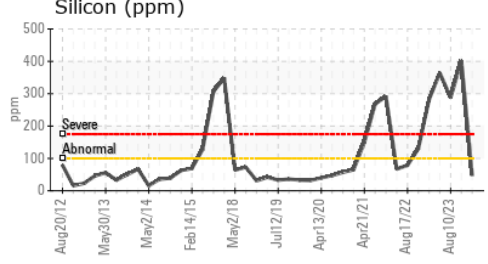
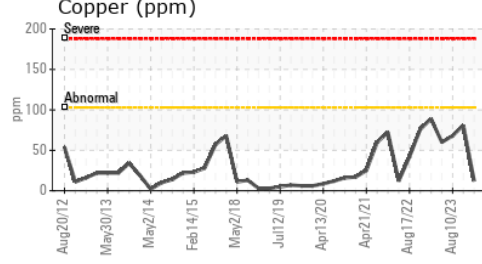
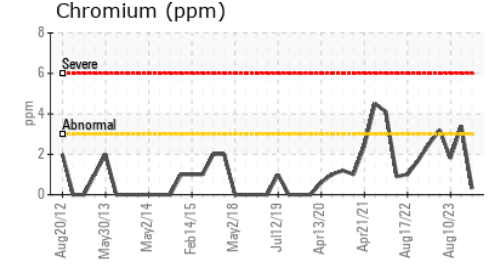
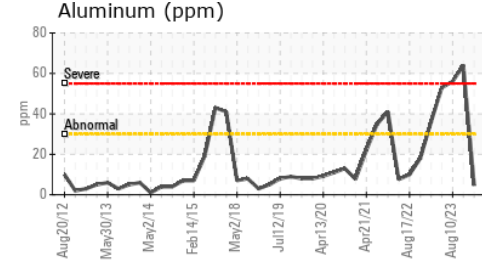
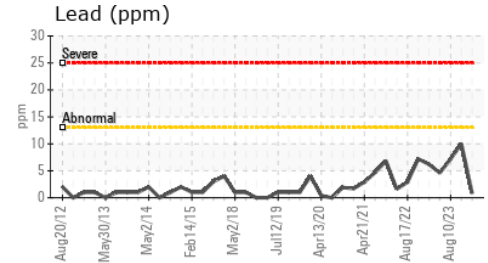
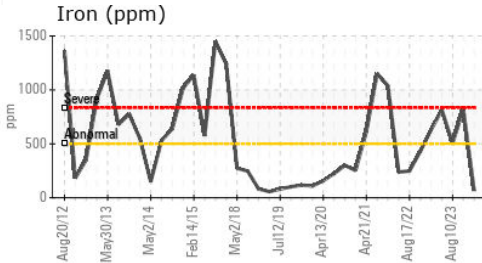
OIL ANALYSIS REPORT



FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	213.9	194	191	194

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				no image		
Bottom				no image		

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0086553 **Received** : 02 Jan 2024
Lab Number : 06049676 **Diagnosed** : 04 Jan 2024
Unique Number : 10810284 **Diagnostician** : Sean Felton
Test Package : MOB 1 (Additional Tests: KF)

Kemp Quarries - Muskogee Sand
 3395 W 50th St N
 Porter, OK
 US 74454

Contact: MUSCOGEE NOTIFICATIONS
 muskogee@muskogeessand.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: