

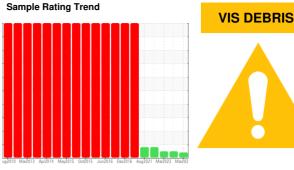
OIL ANALYSIS REPORT



Area KEMP QUARRIES / PRYOR [68552] WL053

Rear Left Final Drive

PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)



SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0109323	PCA0069741	PCA008459
Sample Date		Client Info		22 Mar 2024	12 Oct 2023	03 Mar 2023
Machine Age	hrs	Client Info		38464	38230	37915
Oil Age	hrs	Client Info		38464	37414	284
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL
CONTAMINA	TION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR META	LS	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>800	233	248	293
Chromium	ppm	ASTM D5185m	>10	1	<1	<1
Nickel	ppm	ASTM D5185m	>5	1	<1	0
Titanium	ppm	ASTM D5185m	>15	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>75	2	2	2
Lead	ppm	ASTM D5185m	>10	2	<1	<1
Copper	ppm	ASTM D5185m	>75	12	11	8
Tin	ppm	ASTM D5185m	>8	1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	15	16	16
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	8	5	7
Manganese	ppm	ASTM D5185m	0	2	2	2
Magnesium	ppm	ASTM D5185m	9	89	93	107
Calcium	ppm	ASTM D5185m	3114	1303	1376	1758
Phosphorus	ppm	ASTM D5185m	1099	625	571	646
Zinc	ppm	ASTM D5185m	1245	691	679	745
Sulfur	ppm		7086	4650	4196	6218
CONTAMINA	UTC	and a descent	11 11 11		1.	history2
•••••	115	method	limit/base	current	history1	TIStory2
	ppm	ASTM D5185m		current 18	20	21
Silicon						
Silicon Sodium	ppm	ASTM D5185m	>400	18	20	21
Silicon Sodium	ppm ppm	ASTM D5185m ASTM D5185m	>400	18 <1	20 2	21 1 0
Silicon Sodium Potassium VISUAL White Metal	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	>400 >20	18 <1 2 current NONE	20 2 2 history1 NONE	21 1 0
Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m method	>400 >20 limit/base	18 <1 2 current	20 2 2 history1	21 1 0 history2
Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm scalar	ASTM D5185m ASTM D5185m ASTM D5185m method *Visual	>400 >20 limit/base NONE	18 <1 2 current NONE	20 2 2 history1 NONE	21 1 0 history2 MODER
Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m method *Visual *Visual	>400 >20 limit/base NONE NONE	18 <1 2 current NONE NONE	20 2 2 history1 NONE NONE	21 1 0 history2 MODER NONE
Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m method *Visual *Visual *Visual	>400 >20 limit/base NONE NONE NONE	18 <1 2 current NONE NONE NONE	20 2 2 history1 NONE NONE NONE	21 1 0 history2 MODER NONE NONE
Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris	ppm ppm ppm scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m method *Visual *Visual *Visual *Visual	>400 >20 limit/base NONE NONE NONE NONE	18 <1 2 current NONE NONE NONE NONE	20 2 2 history1 NONE NONE NONE NONE	21 1 0 history2 MODER NONE NONE NONE
Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual	>400 >20 limit/base NONE NONE NONE NONE NONE	18 <1 2 current NONE NONE NONE NONE NONE	20 2 2 history1 NONE NONE NONE NONE NONE	21 1 0 history2 MODER NONE NONE NONE NONE
Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>400 >20 Iimit/base NONE NONE NONE NONE NONE NONE	18 <1 2 current NONE NONE NONE NONE MODER NONE	20 2 2 history1 NONE NONE NONE NONE NONE NONE	21 1 0 history2 MODER NONE NONE NONE NONE NONE
Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm ppm scalar scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>400 >20 Iimit/base NONE NONE NONE NONE NONE NONE NONE NON	18 <1 2 current NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE	20 2 2 history1 NONE NONE NONE NONE NONE NONE NONE	21 1 0 history2 MODER NONE NONE NONE NONE NONE NONE

DIAGNOSIS

Recommendation

We suspect abnormal contamination may be due to sampling method. No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: PM-4 changed fluid)

Fluid

Wear

All component wear rates are normal.

Contamination

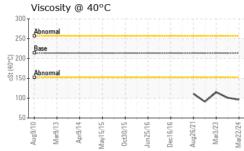
Moderate concentration of visible dirt/debris present in the oil.

Fluid Condition

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



OIL ANALYSIS REPORT



	FLUID PROPERTIE	S method limit/base ASTM D445 213.9	current history 96.3 101	1 history2 115
	SAMPLE IMAGES	method limit/base	current history	
16 16 23 23 23 23	Color		no image no image	e no image
0ct30/15 Jun25/16 Dec16/16 Mar22/24 Mar22/24	Bottom		no image no image	e no image
	GRAPHS			
	Iron (ppm)		Lead (ppm)	
	1500 - Abnormal 500 - Abnormal		0	
	Aug9/10 Mag/13 Ap19/15 May15/15		AugB/10 Aug1/13 Apr3/15/15 May15/15 Oct30/15	Dec16/16Aug26/21 Aug26/21 Mar3/23
	Aluminum (ppm)	2	0-	
			0 + Abnormal	bec16/16 4ug26/21 Mar3/23
	200 200 200 200 200 200 200 200	Dec16/16 Dec16/16 Aug26/21 Mar2/224 000	Silicon (ppm)	Dec16/16 Aug26/21 Mar3/23
	E 100 Abnormal	<u>ور</u> 40 20	0 - Abnormal	
	UL/6 ^{Bm} W Viscosity @ 40°C		Additives	Dec16/16 Aug26/21 - Mar3/23 - Mar3/23 -
	300 250 200 30 200 30 30 200 4 Abnomal 200 200 200 200 200 200 200 200 200 20	250 200 150 8 100	0 calcium phosphorus	\sim
	Aug9/10 6 001 Mar9/13 + Apr9/13/15 + Mar/15/15 + Oct30/15 +		Aug3/10 Mar9/13/13 Aug3/15/15 May15/15 0ct30/15	Dec16/16
Laboratory Sample No. Lab Number Unique Number Test Package	: 06135313 Te: : 10954778 Dia	ison Ave., Cary, NC 27513 ceived : 01 Apr 2024 sted : 02 Apr 2024 ignosed : 04 Apr 2024 - Jona	Kemp Quarries - F	Pryor Stone - Pryo 1050 E 520 R Pryor, Ol US 7436 Contact