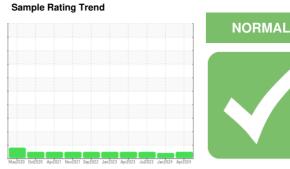


OIL ANALYSIS REPORT

Area KEMP QUARRIES / BCS - GRAVETTE [69469]





WL134 Component Rear Differential PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Pm2)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

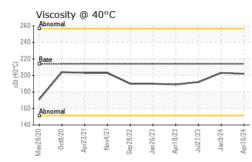
Fluid Condition

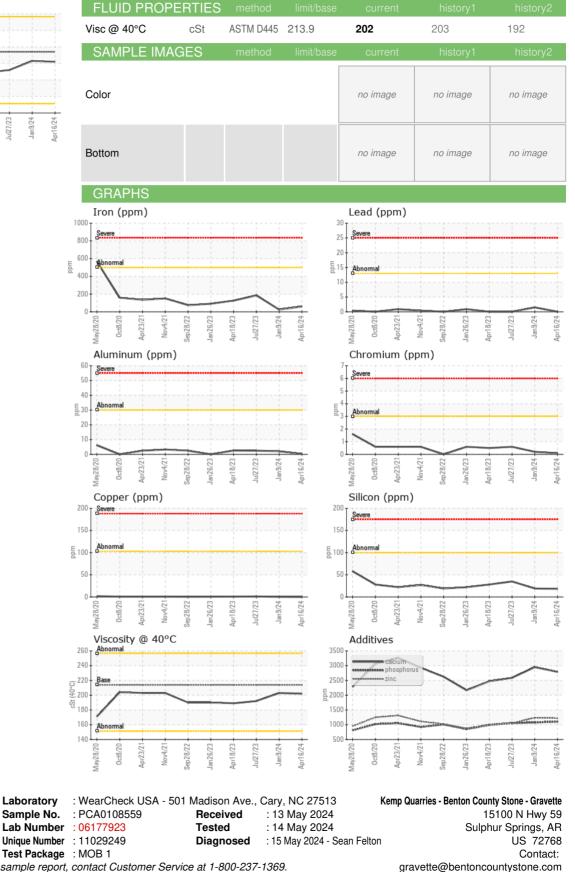
The condition of the oil is acceptable for the time in service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0108559	PCA0069861	PCA0084527
Sample Date		Client Info		16 Apr 2024	09 Jan 2024	27 Jul 2023
Machine Age	hrs	Client Info		27092	26559	26117
Oil Age	hrs	Client Info		26650	442	26117
Oil Changed		Client Info		N/A	N/A	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>.2	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	60	25	185
Chromium	ppm	ASTM D5185m	>3	<1	<1	<1
Nickel	ppm	ASTM D5185m	>3	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>30	<1	2	2
Lead	ppm	ASTM D5185m	>13	0	2	0
Copper	ppm	ASTM D5185m	>103	0	<1	1
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Daran						~~~
Boron	ppm	ASTM D5185m	2	6	9	60
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	2	6 1	9 0	0
Barium	ppm	ASTM D5185m	0	1	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	1 0	0 <1	0 3
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	1 0 <1	0 <1 <1	0 3 2
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 9	1 0 <1 13	0 <1 <1 15	0 3 2 13
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 9 3114	1 0 <1 13 2788	0 <1 <1 15 2946	0 3 2 13 2589
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 9 3114 1099	1 0 <1 13 2788 1107	0 <1 <1 15 2946 1078	0 3 2 13 2589 1056
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 9 3114 1099 1245	1 0 <1 13 2788 1107 1222	0 <1 <1 15 2946 1078 1236	0 3 2 13 2589 1056 1050
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 9 3114 1099 1245 7086	1 0 <1 13 2788 1107 1222 6221	0 <1 <1 15 2946 1078 1236 5831	0 3 2 13 2589 1056 1050 11307
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 9 3114 1099 1245 7086	1 0 <1 13 2788 1107 1222 6221 current	0 <1 <1 15 2946 1078 1236 5831 history1	0 3 2 13 2589 1056 1050 11307 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	0 0 0 9 3114 1099 1245 7086 <i>limit/base</i> >100	1 0 <1 13 2788 1107 1222 6221 current 18	0 <1 <1 15 2946 1078 1236 5831 history1 19	0 3 2 13 2589 1056 1050 11307 <u>history2</u> 35
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 0 9 3114 1099 1245 7086 <i>limit/base</i> >100	1 0 <1 13 2788 1107 1222 6221 current 18 1	0 <1 <1 15 2946 1078 1236 5831 history1 19 2	0 3 2 13 2589 1056 1050 11307 history2 35 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 9 3114 1099 1245 7086 limit/base >100	1 0 <1 13 2788 1107 1222 6221 current 18 1 0	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0	0 3 2 13 2589 1056 1050 11307 <u>history2</u> 35 2 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 9 3114 1099 1245 7086 <i>limit/base</i> >100 >20 <i>limit/base</i>	1 0 <1 13 2788 1107 1222 6221 current 18 1 0 current	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 0 history1	0 3 2 13 2589 1056 1050 11307 history2 35 2 0 0 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 9 3114 1099 1245 7086 <i>limit/base</i> >100 <i>s</i> 20 <i>limit/base</i> NONE	1 0 <1 13 2788 1107 1222 6221 current 18 1 0 current NONE	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 0 history1 NONE NONE NONE NONE	0 3 2 13 2589 1056 1050 11307 history2 35 2 0 0 history2 NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 9 3114 1099 1245 7086 <i>limit/base</i> >100 <i>s</i> 20 <i>limit/base</i> NONE NONE	1 0 <1 13 2788 1107 1222 6221 current 18 1 0 current NONE NONE NONE	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 0 history1 NONE NONE	0 3 2 13 2589 1056 1050 11307 <u>history2</u> 35 2 0 <u>history2</u> NONE NONE NONE NONE NONE NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m Yisual *Visual	0 0 0 9 3114 1099 1245 7086 limit/base >100 limit/base NONE NONE NONE NONE	1 0 <1 13 2788 1107 1222 6221 current 18 1 0 current NONE NONE NONE NONE	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 0 history1 NONE NONE NONE NONE	0 3 2 13 2589 1056 1050 11307 <u>history2</u> 35 2 0 0 <u>history2</u> NONE NONE NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual	0 0 0 10 9 3114 1099 1245 7086 imit/base >100 imit/base NONE NONE NONE NONE NONE	1 0 <1 13 2788 1107 1222 6221 current 18 1 0 current NONE NONE NONE NONE NONE	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 history1 NONE NONE NONE NONE NONE	0 3 2 13 2589 1056 1050 11307 <u>history2</u> 35 2 0 <u>history2</u> NONE NONE NONE NONE NONE NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yuisual *Visual *Visual *Visual *Visual	0 0 0 9 3114 1099 1245 7086 limit/base >100 s 20 limit/base NONE NONE NONE NONE NONE NONE NONE	1 0 <1 13 2788 1107 1222 6221 <i>current</i> 18 1 0 <i>current</i> NONE NONE NONE NONE NONE NONE	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 history1 NONE NONE NONE NONE NONE NONE NONE	0 3 2 13 2589 1056 1050 11307 <u>history2</u> 35 2 0 <u>history2</u> NONE NONE NONE NONE NONE NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yisual *Visual *Visual *Visual *Visual *Visual	0 0 0 9 3114 1099 1245 7086 <i>limit/base</i> >100 <i>limit/base</i> >20 <i>limit/base</i> NONE NONE NONE NONE NONE NONE NONE	1 0 <1 13 2788 1107 1222 6221 <i>current</i> 18 1 0 <i>current</i> NONE NONE NONE NONE NONE NONE NONE NON	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 history1 NONE NONE NONE NONE NONE NONE NONE NONE NONE	0 3 2 13 2589 1056 1050 11307 history2 35 2 0 history2 NONE NONE NONE NONE NONE NONE NONE NON
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	0 0 0 9 3114 1099 1245 7086 ////////////////////////////////////	1 0 <1 13 2788 1107 1222 6221 <i>current</i> 18 1 0 <i>current</i> 18 1 0 <i>current</i> NONE NONE NONE NONE NONE NONE NONE NON	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 history1 NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE	0 3 2 13 2589 1056 1050 11307 history2 35 2 0 history2 NONE NONE NONE NONE NONE NONE NONE NON
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm ppm ppm ppm ppm ppm ppm ppm TS TS TS S scalar scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	0 0 0 3 1 3 114 1099 1245 7086 imit/base >100 imit/base >100 imit/base NONE NONE NONE NONE NONE NONE NONE NON	1 0 <1 13 2788 1107 1222 6221 current 18 1 0 current NONE NONE NONE NONE NONE NONE NONE NON	0 <1 <1 15 2946 1078 1236 5831 history1 19 2 0 history1 NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NONE NORML	0 3 2 13 2589 1056 1050 11307 history2 35 2 0 history2 0 NONE NONE NONE NONE NONE NONE NONE NONE



OIL ANALYSIS REPORT





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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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