

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

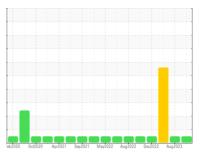


KEMP QUARRIES / RIVER VALLEY BACKBONE WL135

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Moor

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

Fluid Condition

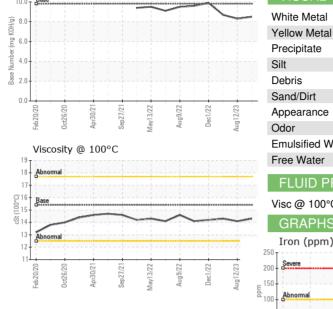
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATIO <u>N</u>	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0084861	PCA0084832	PCA0037133
Sample Date		Client Info		25 Oct 2023	12 Aug 2023	13 Jan 2023
Machine Age	hrs	Client Info		52934	52602	52005
Oil Age	hrs	Client Info		332	300	300
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	18	<u></u> 118
Chromium	ppm	ASTM D5185m	>20	<1	<1	3
Nickel	ppm	ASTM D5185m	>2	<1	0	<u></u> 5
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	2	1	1 4
Lead	ppm	ASTM D5185m	>40	2	3	1
Copper	ppm	ASTM D5185m	>330	15	33	4 99
Tin	ppm	ASTM D5185m	>15	<1	<1	<u> </u>
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
Caumum	ppiii	710 TWI DOTOOIII		\ 1	U	O
ADDITIVES	ppiii	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current	history1 <1	history2 29
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current <1 5	history1 <1 0	history2 29 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current <1 5 61	history1 <1 0 65	history2 29 0 95
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current <1 5 61 <1	history1 <1 0 65 <1	history2 29 0 95 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current <1 5 61 <1 887 1019 1051	history1 <1 0 65 <1 978	history2 29 0 95 5 621
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current <1 5 61 <1 887 1019	history1 <1 0 65 <1 978 1118	history2 29 0 95 5 621 1463 634 810
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current <1 5 61 <1 887 1019 1051	history1 <1 0 65 <1 978 1118 1015 1249 3615	history2 29 0 95 5 621 1463 634
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current <1 5 61 <1 887 1019 1051 1173 3269 current	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1	history2 29 0 95 5 621 1463 634 810 1729
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current <1 5 61 <1 887 1019 1051 1173 3269 current	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3	history2 29 0 95 5 621 1463 634 810 1729 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current <1 5 61 <1 887 1019 1051 1173 3269 current 4 21	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3 46	history2 29 0 95 5 621 1463 634 810 1729 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current <1 5 61 <1 887 1019 1051 1173 3269 current	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3	history2 29 0 95 5 621 1463 634 810 1729 history2 77 4 45
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current <1 5 61 <1 887 1019 1051 1173 3269 current 4 21	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3 46	history2 29 0 95 5 621 1463 634 810 1729 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current <1 5 61 <1 887 1019 1051 1173 3269 current 4 21 6	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3 46 11	history2 29 0 95 5 621 1463 634 810 1729 history2 77 4 45
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current <1 5 61 <1 887 1019 1051 1173 3269 current 4 21 6 current	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3 46 11 history1	history2 29 0 95 5 621 1463 634 810 1729 history2 177 4 45 history2 0.9 6.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	current <1 5 61 <1 887 1019 1051 1173 3269 current 4 21 6 current 1.2	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3 46 11 history1 0.9	history2 29 0 95 5 621 1463 634 810 1729 history2 77 4 45 history2 0.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D76185m ASTM D76185m ASTM D76185m ASTM D76185m ASTM D76185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	current <1 5 61 <1 887 1019 1051 1173 3269 current 4 21 6 current 1.2 6.9	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3 46 11 history1 0.9 6.4	history2 29 0 95 5 621 1463 634 810 1729 history2 177 4 45 history2 0.9 6.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D76185m ASTM D76185m ASTM D76185m ASTM D76185m ASTM D76185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	current <1 5 61 <1 887 1019 1051 1173 3269 current 4 21 6 current 1.2 6.9 20.1	history1 <1 0 65 <1 978 1118 1015 1249 3615 history1 3 46 11 history1 0.9 6.4 18.8	history2 29 0 95 5 621 1463 634 810 1729 history2 77 4 45 history2 0.9 6.2 18.8



Base Number

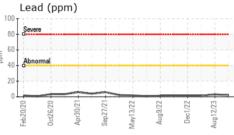
OIL ANALYSIS REPORT

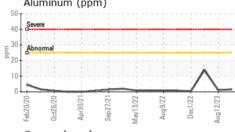


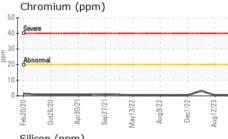
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

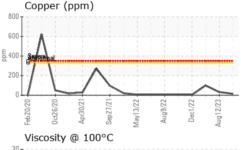
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	14.1	14.3

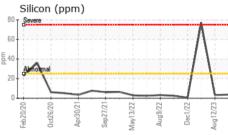
Severe						
4-4-4-						
Abnormal					/	1
	_	_	_		/	1
			\rightarrow		\preceq	
0 0	2	5	2	6-4	2	~
Feb20/20 -	Apr30/21	Sep27/21	May13/22	Aug9/22	Dec1/22	Aug12/23

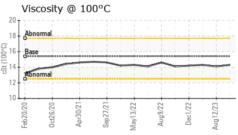


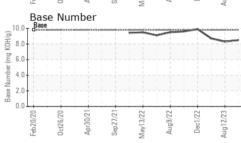














Laboratory Sample No. Lab Number **Unique Number**

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0084861

: 05999772 : 10728132 Test Package : MOB 1 (Additional Tests: TBN)

Received Diagnosed

: 06 Nov 2023 : 07 Nov 2023 Diagnostician : Wes Davis

Kemp Quarries - River Valley - Backbone 5600 S Hwy 253 Huntington, AR

US 72940 Contact:

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. backbone@rivervalleyquarries.com T:

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

Report Id: KEMHUN [WUSCAR] 05999772 (Generated: 11/07/2023 14:52:35) Rev: 1

F: