

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id KENWORTH 2405

Component Diesel Engine

Fluid PETRO CANADA DURON HP 15W40 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

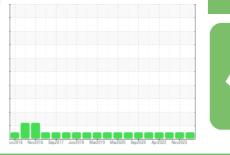
All component wear rates are normal.

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.

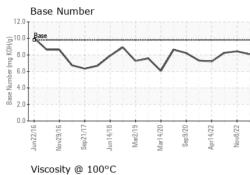


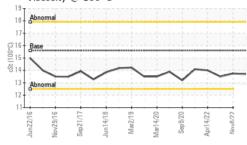


	history2
Sample Number Client Info RW0004875 RW0003931 RW	/0003777
Sample Date Client Info 03 Oct 2023 08 Nov 2022 15 or	Jul 2022
Machine Age hrs Client Info 10446 9891 935	56
Oil Age hrs Client Info 250 535 400)
Oil Changed Client Info Changed Changed Changed	anged
Sample Status NORMAL NORMAL NO	RMAL
CONTAMINATION method limit/base current history1	history2
Fuel WC Method >5 <1.0 <1.0 <	<1.0
Glycol WC Method NEG NEG	NEG
WEAR METALS method limit/base current history1	history2
Iron ppm ASTM D5185m >100 19 26 2	24
Chromium ppm ASTM D5185m >20 <1 <1	<1
Nickel ppm ASTM D5185m >4 <1 0	0
Titanium ppm ASTM D5185m <1	<1
	0
	27
Lead ppm ASTM D5185m >40 <1 <1	0
Copper ppm ASTM D5185m >330 <1 1	<1
Tin ppm ASTM D5185m >15 0 0 <	<1
Vanadium ppm ASTM D5185m 0 0	0
Cadmium ppm ASTM D5185m <1	<1
ADDITIVES method limit/base current history1	history2
	history2 40
Boron ppm ASTM D5185m 16 0 2 Barium ppm ASTM D5185m 2 1 0	40 0
Boron ppm ASTM D5185m 16 0 2 Barium ppm ASTM D5185m 2 1 0	40
Boron ppm ASTM D5185m 16 0 4 Barium ppm ASTM D5185m 2 1 0 Molybdenum ppm ASTM D5185m 65 64 66	40 0
Boron ppm ASTM D5185m 16 0 4 Barium ppm ASTM D5185m 2 1 0 4 Molybdenum ppm ASTM D5185m 65 64 66 Manganese ppm ASTM D5185m 0 <1	40 0 62
Boron ppm ASTM D5185m 16 0 4 Barium ppm ASTM D5185m 2 1 0 4 Boron ppm ASTM D5185m 2 1 0 4 Molybdenum ppm ASTM D5185m 65 64 6 Manganese ppm ASTM D5185m 0 <1	40 0 62 <1
Boron ppm ASTM D5185m 16 0 2 Barium ppm ASTM D5185m 2 1 0 2 Molybdenum ppm ASTM D5185m 65 64 66 Manganese ppm ASTM D5185m 0 <1 <2 Magnesium ppm ASTM D5185m 65 64 66 Calcium ppm ASTM D5185m 1355 1173 11 Phosphorus ppm ASTM D5185m 906 974 55	40 0 62 <1 808 1156 989
Boron ppm ASTM D5185m 16 0 4 Barium ppm ASTM D5185m 2 1 0 4 Barium ppm ASTM D5185m 2 1 0 4 Molybdenum ppm ASTM D5185m 65 64 6 Manganese ppm ASTM D5185m 0 <1	40 0 62 <1 808 1156 989 1223
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Boron ppm ASTM D5185m 16 0 4 Barium ppm ASTM D5185m 2 1 0 4 Barium ppm ASTM D5185m 2 1 0 4 Molybdenum ppm ASTM D5185m 65 64 6 Manganese ppm ASTM D5185m 0 <1 4 Magnesium ppm ASTM D5185m 4655 874 6 Calcium ppm ASTM D5185m 1355 1173 1 Phosphorus ppm ASTM D5185m 906 974 5 Zinc ppm ASTM D5185m 1110 1259 1 Sulfur ppm ASTM D5185m 3124 3459 3 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m<>25 5 4 5	40 0 62 <1 808 1156 989 1223 3407 history2
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Boron ppm ASTM D5185m 16 0 4 Barium ppm ASTM D5185m 2 1 0 4 Barium ppm ASTM D5185m 65 64 6 Molybdenum ppm ASTM D5185m 65 64 6 Maganese ppm ASTM D5185m 0 <1 4 Magnesium ppm ASTM D5185m 465 874 8 Calcium ppm ASTM D5185m 1355 1173 1 Phosphorus ppm ASTM D5185m 906 974 9 Zinc ppm ASTM D5185m 1110 1259 1 Sulfur ppm ASTM D5185m 3124 3459 3 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >20 8 32 5 Sodium ppm ASTM D5185m >20 8 32 5<	40 0 62 <1 808 1156 989 1223 3407 history2 5 <1 57 history2
Boron ppm ASTM D5185m 16 0 4 Barium ppm ASTM D5185m 2 1 0 4 Barium ppm ASTM D5185m 655 64 6 Molybdenum ppm ASTM D5185m 655 64 6 Magnesium ppm ASTM D5185m 0 <1 < Magnesium ppm ASTM D5185m 4655 874 8 Calcium ppm ASTM D5185m 1355 1173 1 Phosphorus ppm ASTM D5185m 906 974 5 Zinc ppm ASTM D5185m 906 974 5 Sulfur ppm ASTM D5185m 3124 3459 3 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m<>25 5 4 5 Sodium ppm ASTM D5185m<>20 8 32 5 <	40 0 62 <1 808 1156 989 1223 3407 history2 55 <1 57 history2 0.8
Boron ppm ASTM D5185m 16 0 4 Barium ppm ASTM D5185m 2 1 0 4 Barium ppm ASTM D5185m 65 64 6 Molybdenum ppm ASTM D5185m 65 64 6 Magnesium ppm ASTM D5185m 0 <1 < Magnesium ppm ASTM D5185m 465 874 8 Calcium ppm ASTM D5185m 1355 1173 1 Phosphorus ppm ASTM D5185m 906 974 5 Zinc ppm ASTM D5185m 906 974 5 Sulfur ppm ASTM D5185m 3124 3459 3 CONTAMINANTS method limit/base current history1 Silicon ppm ASTM D5185m >25 5 4 5 Sodium ppm ASTM D5185m 2 2 2 4	40 0 62 <1 808 1156 989 1223 3407 history2 5 <1 557 history2 0.8 10.5
Boron ppm ASTM D5185m 16 0 2 Barium ppm ASTM D5185m 2 1 0 Molybdenum ppm ASTM D5185m 65 64 6 Manganese ppm ASTM D5185m 65 64 6 Magnesium ppm ASTM D5185m 0 <1 4 Calcium ppm ASTM D5185m 465 874 6 Calcium ppm ASTM D5185m 906 974 9 Zinc ppm ASTM D5185m 906 974 9 Sulfur ppm ASTM D5185m 906 974 9 Sulfur ppm ASTM D5185m 3124 3459 3 Sodium ppm ASTM D5185m >25 5 4 5 Sodium ppm ASTM D5185m >20 8 32 5 INFRA-RED method limit/base current history1 4 </th <th>40 0 62 <1 808 1156 989 1223 3407 history2 5 <1 57 history2 0.8 10.5 21.0</th>	40 0 62 <1 808 1156 989 1223 3407 history2 5 <1 57 history2 0.8 10.5 21.0



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					VISUAL		method	limit/base	current	history1	history2
					White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
~	~ /	~	/		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	\sim				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
Mar2/19	Mar14/20	Sep9/20	Apr14/22	Nov8/22	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
N	Mar	Se	Apı	No	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
					Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
					Free Water	scalar	*Visual		NEG	NEG	NEG
					FLUID PROPER	TIES	method	limit/base	current	history1	history2
					Visc @ 100°C	cSt	ASTM D445	15.6	13.7	13.75	13.5
~	_	\checkmark	\sim	_	GRAPHS						
					Iron (ppm)			100	Lead (ppm)		
6	20	20 -		- 1	250 200 Severe			100	Severe		
Mar2/19	Mar14/20	Sep9/20	Apr14/22	Nav8/22							
	2		4		Abnormal			4(Ab.,		
					50 -			20) <mark>-</mark>		
						\sim	\searrow				
					Jun22/16 Nov29/16 Sep21/17 Jun14/18	Mar2/19 Mar14/20	Sep9/20 Apr14/22	Nav8/22	Jun22/16 - Nov29/16 - Sep21/17 -	Jun 14/18 Mar2/19 Mar1 4/20	Sep 9/20 Apr1 4/22 Nov8/22
					ਤੋਂ ਤੋਂ ਨੂੰ ਤੋਂ Aluminum (ppm)	2 2	SAF	Z	ತ ಶಿ Chromium (pp		AF S
					⁵⁰ T			50		···· <i>)</i>	
					40 - Severe						
					a Abnormal			E 20	Abnormal		
							1				
						\sim	\sim	10			
					Jun22/16 Nov29/16 Sep21/17	Mar2/19	Sep9/20 -	Nov8/22	Jun22/16 -	Jun 14/18 - Mar2/19 - Mar14/20 -	Sep 9/20 - Apr14/22 - Nov8/22 -
					Jun2 Nov2 Sep2 Jun1	Mar Mar1	Sep Apr1	Nov	Jun2 Nov2 Sep2	Jun1 Mar Mar1	Sep Apr1 Nov
					Copper (ppm)			80	Silicon (ppm)		
					Abnormal						
					300			60			
					<u>특</u> 200 -			톱 40	Abnormal		
					100-			20	Abnormal		
						6					
					Jun22/16 Nov29/16 Sep21/17 Jun14/18	Mar2/19 Mar14/20	Sep9/20 Apr14/22	Nov8/22	Jun22/16 Nov29/16 Sep21/17	Jun 14/18 Mar2/19 Mar14/20	Sep 9/20 Apr1 4/22 Nov8/22
					ਤੋਂ ≥ ਂ ਤੋਂ Viscosity @ 100°C	2	S AF	2	ਤੋਂ 💈 🖉 Base Number	Ju M	AF S
					20 T			12.0	L Parts		
					18 Abnormal			(¹⁰ H10.(HOX Bu) as (0, Bu) as		\wedge	\sim \sim
					10-001 16 Base			E 6.0		\sim	\sim
					Abhormai	\sim	\sim	4.0			
					12						
					Jun22/16 - Nov29/16 - Sep21/17 -	Mar2/19 - Mar14/20 -	Sep9/20 .	Nov8/22	Jun22/16 - Nov29/16 - Sep21/17 -	Jun 14/18 . Mar2/19 . Mar14/20 .	Sep9/20 . Apr14/22 . Nov8/22 .
					Jun2 Nov2 Sep2 Jun1	Mar Mar1	Sep Apr1	Nov	Jun2 Nov2 Sep2	Jun1 Mar Mar1	Sep Apr1 Nov
		١c	horot	on	· WoorChook LICA	501 Madi		NC 0751	2		
4			borat mple		: WearCheck USA - : RW0004875	Received		ary, NC 27513 Nov 2023	J		KIRK ELECTRI 5 ROBERTS S [°]
CRED		La	b Nur	nber	: 05999209	Diagnos	ed : 07	Nov 2023			MUSKEGON, N
ESTING LABOR	RATORY			lumber		Diagnosi	tician : We	s Davis		-	US 4944
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	uss th	us sal	npie r	eport,	contact Customer Serv are outside of the ISO 1	ice at 1-b	00-237-136	J.		ewking@new	/kirk-electric.co

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