

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

FLEET Machine Id 2126932 (S/N 4v4nc9eh1nn603215) Component

Diesel Engine

{not provided} (--- GAL)

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.

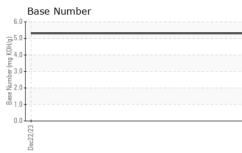
Fluid Condition

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

				Dec2023		
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0112287		
Sample Date		Client Info		22 Dec 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
				22		
Iron	ppm	ASTM D5185m	>100			
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	ppm	ASTM D5185m	>4	1		
Titanium	ppm	ASTM D5185m	. 0	0		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>20	4		
Lead	ppm	ASTM D5185m	>40	2		
Copper	ppm	ASTM D5185m	>330	24		
Tin	ppm	ASTM D5185m	>15	2		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	0		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 61		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 61 1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 61 1 908		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 61 1 908 1027	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 61 1 908 1027 818	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 61 1 908 1027 818 1181	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 61 1 908 1027 818 1181 2579		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m MSTM D5185m	limit/base	0 0 61 1 908 1027 818 1181 2579 current	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 61 1 908 1027 818 1181 2579 current 5	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >25 >20	0 0 61 1 908 1027 818 1181 2579 <u>current</u> 5 0	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	limit/base >25 >20	0 0 61 1 908 1027 818 1181 2579 <u>current</u> 5 0 5	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5	0 0 61 1 908 1027 818 1181 2579 <i>current</i> 5 0 5 <1.0 <i>current</i>	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5 limit/base >3	0 0 61 1 908 1027 818 1181 2579 <i>current</i> 5 0 5 <1.0 <i>current</i> 0.4	 history1 history1 	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 method	limit/base >25 >20 >5 limit/base >3 >20	0 0 61 1 908 1027 818 1181 2579 current 5 0 5 <1.0 current 0.4 9.8	 history1 history1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5 limit/base >3 >20 >3 >20	0 0 61 1 908 1027 818 1181 2579 <i>current</i> 5 0 5 <1.0 <i>current</i> 0.4 9.8 21.4	 history1 history1 history1 	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5 limit/base >3 >20	0 0 61 1 908 1027 818 1181 2579 current 5 0 5 <1.0 current 0.4 9.8	 history1 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5 limit/base >3 >20 >3 >20	0 0 61 1 908 1027 818 1181 2579 <i>current</i> 5 0 5 <1.0 <i>current</i> 0.4 9.8 21.4	 history1 history1 history1 	 history2 history2 history2



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VISUAL		method			history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal		*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
Emulsified W		*Visual	>0.2	NEG		
Free Water	scalar	*Visual		NEG		
FLUID P	ROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°	C cSt	ASTM D445		10.8		
GRAPHS	3					
Ferrous All	oys					
25 iron	1					
20						
20 nickel						
15- E						
10						
5						
0						
0						
Dec22/23			Dec22/23			
Non-ferrou	is Metals					
²⁵ T			, -			
coppe	er					
20 - tin						
15-						
15- E						
15-						
15- E						
15- 10-						
			33			
15- 10-			ec22/23			
15 udd 10 5 0 (277723a0	- 100%C		Dec22/23 -			
) 100°C			Base Number		
Viscosity @) 100°C		Dec25233			
10 10 5 0 Viscosity @) 100°C		6.]		
Viscosity @	₽ 100°C		6.]		
Viscosity @	● 100°C		6.]		
Viscosity @ Viscosity @ 10 5 0 Viscosity @ 18 17 Abnomal 15 15 15 15 15 15 15 15 15 15) 100°C		6.]		
Viscosity @ Viscosity @ Viscosity @ 10 5 Viscosity @ 10 10 5 10 10 5 10 10 10 10 10 10 10 10 10 10	D 100°C		6.]		
Viscosity @ Viscosity @ Viscosity @ 10 5 Viscosity @ 10 10 5 10 10 10 10 10 10 10 10 10 10	9 100°C		6.1)		
Viscosity @ Viscosity @ Viscosity @ 10 5 Viscosity @ 10 10 5 Viscosity @ 10 10 10 10 10 10 10 10 10 10	● 100°C		6.1 (0) HOY HOY HOY HOY HOY HOY HOY HOY HOY HOY			
Viscosity @	• 100°C		6.1 (0) HOX Bu HOX BU H			
Viscosity @ Viscosity @ Viscosity @ 10 5 Viscosity @ 10 10 5 Viscosity @ 10 10 10 10 10 10 10 10 10 10	● 100°C		6.1 (0) HOY HOY HOY HOY HOY HOY HOY HOY HOY HOY			
Viscosity @			6.1 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	Der22/23		
Viscosity @ Viscosity @ Viscosity @ ************************************	USA - 501 Madi		6. (9)(4.) (1.) (1.) (1.) (1.) (1.) (1.) (1.) (1	Der22/23	PERDUE FA	
Viscosity @ Viscosity @ ************************************	USA - 501 Madi 7 Recieve	d :11	6. (9)(4.) (1.) (1.) (1.) (1.) (1.) (1.) (1.) (1	Der22/23	PERDUE FA	' HWY 9 WE
Viscosity @ Viscosity @ ************************************	USA - 501 Madi 7 Recieve Diagnos	d :11 aed :15	6. (9)(4.) (1.) (1.) (1.) (1.) (1.) (1.) (1.) (1	Dec25/23	PERDUE FA	HWY 9 WE DILLON,
Viscosity @ Viscosity @ ¹⁸ ¹⁰ ¹¹ ¹⁰ ¹¹ ¹⁰ ¹¹ ¹⁰ ¹¹ ¹⁰ ¹¹ ¹¹ ¹⁰ ¹¹ ¹¹ ¹⁰ ¹¹	USA - 501 Madi 7 Recieve Diagnos Diagnos	d : 11 ed : 15 tician : Jor uelDilution, F	ary, NC 2751: Jan 2024 Jan 2024 PercentFuel)	Dec25/23	PERDUE FA 2047	HWY 9 WE DILLON, US 295
Viscosity @ Viscosity @ Viscosity @ * WearCheck PCA011228 : 06057864 : 10829246 : FLEET (Add contact Custom	USA - 501 Madi 7 Recieve Diagnos Diagnos ditional Tests: Fu	d : 11 ed : 15 tician : Jor uelDilution, F 300-237-136	ary, NC 27511: Jan 2024 PercentFuel) 9.	Dec25/23	PERDUE FA 2047 Contact: I kevin.hook	HWY 9 WE DILLON, US 295 KEVIN HOO s@perdue.ce
Viscosity @ Viscosity @ * * * * * * * * * * * * * * * * * * *	USA - 501 Madi 7 Recieve Diagnos Diagnos	d : 11 ed : 15 tician : Jor uelDilution, F 300-237-136 ope of accrea	ary, NC 27511 Jan 2024 Jathan Heste PercentFuel) 9. ditation.	Dec2373	PERDUE FA 2047 Contact: I kevin.hook T:	HWY 9 WE DILLON, US 295 KEVIN HOO

18 16 (100°C) 12 12 Abr 10 8. Dec22/23

Viscosity @ 100°C



Unique Test Pa Certificate L2367 To discuss this sample * - Denotes test method Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: KEVIN HOOKS

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