

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

SENNEBOGEN 840E MH-82

Diesel Engine Fluid DIESEL ENGINE OIL 10W40 (--- LTR)

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.

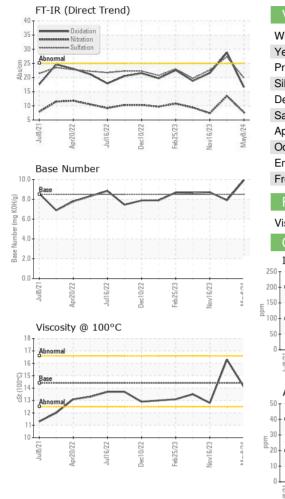
Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0124481	PCA0113931	PCA0112792
Sample Date		Client Info		08 May 2024	19 Mar 2024	16 Nov 2023
Machine Age	hrs	Client Info		2811	1966	230
Oil Age	hrs	Client Info		500	500	230
Oil Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	29	<u> </u>	17
Chromium	ppm	ASTM D5185m	>20	2	4	<1
Nickel	ppm	ASTM D5185m	>4	<1	2	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	3	5	2
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	2	8	8
Tin	ppm	ASTM D5185m	>15	1	2	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	<1	0
	1010					-
ADDITIVES	FF	method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base 250			-
		method		current	history1	history2
Boron	ppm	method ASTM D5185m	250	current 4	history1 7	history2 49
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	250 10	current 4 0	history1 7 0	history2 49 <1
Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	250 10	current 4 0 61	history1 7 0 69	history2 49 <1 40
Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	current 4 0 61 <1	history1 7 0 69 3	history2 49 <1 40 8
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	current 4 0 61 <1 1004	history1 7 0 69 3 1099	history2 49 <1 40 8 558
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	current 4 0 61 <1 1004 1134	history1 7 0 69 3 1099 1307	history2 49 <1 40 8 558 1516
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	current 4 0 61 <1 1004 1134 1148	history1 7 0 69 3 1099 1307 1202	history2 49 <1 40 8 5558 1516 903 1095 2806
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350	current 4 0 61 <1 1004 1134 1148 1323	history1 7 0 69 3 1099 1307 1202 1469 3241 history1	history2 49 <1 40 8 558 1516 903 1095
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250	current 4 0 61 <1 1004 1134 1323 3778 current 5	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	current 4 0 61 <1 1004 1134 1323 3778 current 5 3	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10 6	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	current 4 0 61 <1 1004 1134 1323 3778 current 5	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	current 4 0 61 <1 1004 1134 1323 3778 current 5 3 2 current	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10 6 2 history1	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15 4 1 history2
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	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >20 Imit/base >3	current 4 0 61 <1 1004 1134 1134 1323 3778 current 5 3 2 current 0.3	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10 6 2 history1 1.3	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15 4 1 history2 0.1
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	250 10 100 450 3000 1150 1350 4250 i mit/base >25 >20 i mit/base >3 >20	current 4 0 61 <1 1004 1134 1323 3778 current 5 3 2 current 0.3 7.7	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10 6 2 history1 1.3 1.3 13.5	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15 4 1 history2 0.1 7.4
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	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >20 Imit/base >3	current 4 0 61 <1 1004 1134 1134 1323 3778 current 5 3 2 current 0.3	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10 6 2 history1 1.3	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15 4 1 history2 0.1
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 TS ppm ppm ppm	method ASTM D5185m	250 10 100 450 3000 1150 1350 4250 i mit/base >25 >20 i mit/base >3 >20	current 4 0 61 <1 1004 1134 1323 3778 current 5 3 2 current 0.3 7.7	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10 6 2 history1 1.3 1.3 13.5	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15 4 1 history2 0.1 7.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	method ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >25 imit/base >3 >20 >30	current 4 0 61 <1 1004 1134 1134 1323 3778 current 5 3 2 current 0.3 7.7 19.8	history1 7 0 69 3 1099 1307 1202 1469 3241 history1 10 6 2 history1 1.3 13.5 27.3	history2 49 <1 40 8 558 1516 903 1095 2806 history2 15 4 1 history2 0.1 7.4 22.6



OIL ANALYSIS REPORT



)		VISUAL		method	limit/base	current				
		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	-	
1		Debris	scalar	*Visual	NONE	NONE	NONE	NONE		
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	=	
Dec10/22 Feb25/23	Nov16/23 - May8/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORM	ЛL	
Dec1 Feb2	Nov1 May	Odor	scalar	*Visual	NORML	NORML	NORML	NORM	ЛL	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG		
		Free Water	scalar	*Visual		NEG	NEG	NEG		
		FLUID PROPE	RTIES	method	limit/base	current	history1	histo	ory2	
		Visc @ 100°C	cSt	ASTM D445	14.4	14.1	16.3	12.8		
		GRAPHS								
	Iron (ppm)	Lead (ppm)								
3 2	23	250 Severe			10	Severe			i.	
Dec10/22 Feb25/23	Nov16/23	200				0				
ă Ĕ	Nc Nc	150 100 - Abnormal				Abnormal				
		50 -		/		0				
		30 0		\sim		0				
	∧	Jul8/21 Apr20/22 Jul16/22	Dec10/22	Feb25/23	May8/24	Jul8/21 Apr20/22	Jul16/22 Dec10/22	Feb25/23 Nov16/23		
		Jul Jul	Dec	Nov	Ma	Apri	Dec	Nov		
	\sim	Aluminum (ppm)			-	Chromium (p	om)			
		40 Severe				Severe				
722	16/23	20 Abnormal			und 2	Abnormal				
Dec10/22 Feb25/23	Nov16/23	10				0				
					~	0			\sim	
		Jul8/21 Apr20/22 Jul16/22	Dec10/22	Feb25/23 Nov16/23	May8/24	Jul8/21 Apr20/22	Jul16/22 Dec10/22	Feb25/23 Nov16/23		
		Jul	Deci	Feb2 Nov1	May	Ju Aprá	Deci	Feb2 Nov1		
		Copper (ppm)			Silicon (ppm) ⁸⁰ T <u>Severe</u>					
		Abnormal				0				
		300 -								
		톱 200 -			Ed 4	0 - Abnormal				
		100-			2	0		~		
			5		-	مليكي				
		Jul8/21 Apr20/22 Jul16/22	Dec10/22	Feb25/23 Nov16/23	May8/24	Jul8/21 Apr20/22	Jul16/22 Dec10/22	Feb25/23 Nov16/23		
		ء ت Viscosity @ 100°C		No Fe	2	⊲ Base Number	r å	No Fe		
	18 _T									
	Abnormal 16			N HOX 8	0	\sim		1		
		16 (2,001)14 8ase Abnormal		/	Base Number (mg K0H/g)	0				
		Abnormal	-	\sim	quny 4.	0				
					as 2					
			722	/23-		22 23	722+	723		
		Jul8/21 Apr20/22 Jul16/22	Dec10/22	Feb25/23 Nov16/23	May8/24	Jul8/21 Apr20/22	Jul16/22 Dec10/22	Feb25/23 Nov16/23		
ISO/ICC 17025		e No. : PCA0124481 imber : 06186396 lumber : 11043148		Madison Ave., Cary, NC 27513 Received : 21 May 2024 Tested : 22 May 2024 Diagnosed : 23 May 2024 - Sean			SCRAP METAL SERVICES (SMS Mill Services LLO 250 WEST U.S. HWY 1 CHESTERTON, II n Felton US 4630			
tificate L2367	Test Package	· MOB 2	ce at 1-800-237-1369.				Contact:	Contact: DOMINIC WHIT te@scrapmetalservices.com		

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

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Contact/Location: DOMINIC WHITE - SCRBURIN

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