

OIL ANALYSIS REPORT

Sample Rating Trend





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

Metal levels are typical for a new component breaking in.

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.

		<u> </u>	Jun2023	Nov2023		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		RW0004658	RW0004605	
Sample Date		Client Info		16 Nov 2023	15 Jun 2023	
Machine Age	hrs	Client Info		469	338	
Oil Age	hrs	Client Info		150	150	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	2	10	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	3	5	
Lead	ppm	ASTM D5185m	>40	0	0	
Copper	ppm	ASTM D5185m	>330	<1	2	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250	current 8	history1 19	history2
	ppm ppm					
Boron		ASTM D5185m	250	8	19	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	8 0	19 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	8 0 58	19 0 68	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	8 0 58 <1	19 0 68 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	8 0 58 <1 881	19 0 68 <1 788	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	8 0 58 <1 881 1049	19 0 68 <1 788 1361	
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	250 10 100 450 3000 1150	8 0 58 <1 881 1049 1073	19 0 68 <1 788 1361 1047	
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	250 10 100 450 3000 1150 1350	8 0 58 <1 881 1049 1073 1199	19 0 68 <1 788 1361 1047 1226	
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	250 10 100 450 3000 1150 1350 4250	8 0 58 <1 881 1049 1073 1199 3111	19 0 68 <1 788 1361 1047 1226 3413	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	8 0 58 <1 881 1049 1073 1199 3111 current	19 0 68 <1 788 1361 1047 1226 3413 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25	8 0 58 <1 881 1049 1073 1199 3111 current 13	19 0 68 <1 788 1361 1047 1226 3413 history1 13	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158	8 0 58 <1 881 1049 1073 1199 3111 current 13 2	19 0 68 <1 788 1361 1047 1226 3413 history1 13 0	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	8 0 58 <1 881 1049 1073 1199 3111 current 13 2 1	19 0 68 <1 788 1361 1047 1226 3413 history1 13 0 2	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Imit/base >25 >158 >20 Imit/base	8 0 58 <1 881 1049 1073 1199 3111 current 13 2 1 1 current	19 0 68 <1 788 1361 1047 1226 3413 history1 13 0 2 2 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Iimit/base >25 >158 >20 Iimit/base >3	8 0 58 <1 881 1049 1073 1199 3111 current 13 2 1 1 2 1 1 current 0.1	19 0 68 <1 788 1361 1047 1226 3413 history1 13 0 2 <u>history1</u> 0.1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	8 0 58 <1 881 1049 1073 1199 3111 current 13 2 1 1 current 0.1 5.6	19 0 68 <1 788 1361 1047 1226 3413 history1 13 0 2 history1 0.1 7.0	history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20	8 0 58 <1 881 1049 1073 1199 3111 <u>current</u> 13 2 1 1 <u>current</u> 0.1 5.6 17.6	19 0 68 <1 788 1361 1047 1226 3413 history1 13 0 2 <u>history1</u> 0.1 7.0 17.3	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 imit/base >25 >158 >20 imit/base >3 >20 >30 <i>imit/base</i>	8 0 58 <1 881 1049 1073 1199 3111 current 13 2 1 1 current 0.1 5.6 17.6	19 0 68 <1 788 1361 1047 1226 3413 history1 13 0 2 history1 0.1 7.0 17.3 history1	history2 history2 history2 history2 history2



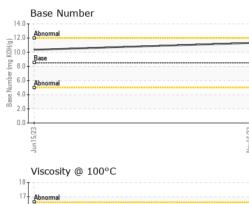
16 (0.001) 14 Base

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OIL ANALYSIS REPORT

VISUAL



	VISUAL		methoa	iimit/base	current	nistory i	riistoryz
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
- 23	-		*Visual	NORML	NORML	NORML	
Nov16/23	Appearance	scalar					
2	000	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPERT	IES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	14.4	13.8	12.8	
	GRAPHS						
	Iron (ppm)			100	Lead (ppm)		
	200 Severe			80	Severe		
	150			60			
	Abnormal			E 40	Abaran		
	50			20			
	0			0			
	15/23			Vov16/23	Jun15/23		
	un C			Nov	-		
	Aluminum (ppm)			, - 50	Chromium (p	pm)	
	40 Severe			40	Severe		
	B 20 - Abnormal			30			
	Abnormal			³⁰ ع	Abnormal		
	10			10			
	0						
	5/23 -			Nov16/23 .	Jun15/23 -		
	, unc			Nov	Jun		
	Copper (ppm)				Silicon (ppm)		
	400 Severe			80	Severe		
	300			60	-		
	톱 200			튭.40			
					Abnormal		
	100 -			20			
	Jun 15/23			Nov16/23	Jun 15/23		
	⊰ Viscosity @ 100°C			Nc	⊰ Base Number	r	
	18 T						
	Abnormal			Base Number (mg KOH/(d)	Abnormal		
	Do Base	*****		E ^{10.0}	Base		
	0 014 න්ති <u>Abnermal</u>			Langer 5.0	Abnormal		
	12-			ase N			
	10				L+		
	Jun 15/23			Nov16/23	Jun 15/23		
	Jun			Nov	Jun		
						NEWKI	RK ELECTR
Laboratory Sample No. Lab Number		Received	: 24	Nov 2023	5	1875	ROBERTS S
Sample No. Lab Number	: RW0004658 : 06016655	Received Diagnose	:24 d:28		\$	1875	ROBERTS S USKEGON,
Sample No.	: RW0004658 : 06016655 r : 10755799	Received	:24 d:28	Nov 2023 Nov 2023	5	1875 M	ROBERTS S USKEGON, US 494
Sample No. Lab Number Unique Number	: RW0004658 : 06016655 r : 10755799 : MOB 2 contact Customer Servit	Received Diagnose Diagnosti	: 24 ed : 28 cian : Wes	Nov 2023 Nov 2023 s Davis D.	5	1875 M Conta ewking@newk	ROBERTS S USKEGON, US 494 act: ERIC KIN

Contact/Location: ERIC KING - NEWMUS