

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



GM SEATTLE OFF RAOD SHOP [GM SEATTLE OFF RAOD SHOP] 24-172

Component Diesel Engine Fluid

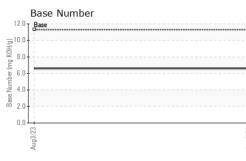
CAT DIESEL ENGINE OIL 10W30 (--- GAL)

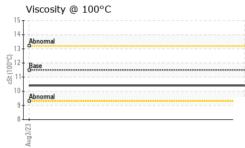
DIAGNOSIS	SAMPLE INFORM	IATION	method				history2
Recommendation	Sample Number		Client Info		PE0002306		
Resample at the next service interval to monitor.	Sample Date		Client Info		03 Aug 2023		
Wear	Machine Age	hrs	Client Info		1024		
All component wear rates are normal.	Oil Age	hrs	Client Info		1024		
Contamination	Oil Changed		Client Info		Changed		
There is no indication of any contamination in the	Sample Status				NORMAL		
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.	CONTAMINATION	J	method	limit/base	current	history1	history2
	Fuel		WC Method	>5	<1.0		
	Glycol		WC Method		NEG		
	WEAR METALS		method	limit/base	current	history1	history2
		nnm		× 100	28		
	Iron Chromium	ppm	ASTM D5185m ASTM D5185m		28		
	Nickel	ppm	ASTM D5185m		0		
	Titanium	ppm	ASTM D5185m		0		
	Silver	ppm	ASTM D5185m ASTM D5185m		0		
	Aluminum	ppm	ASTM D5185m ASTM D5185m		2		
	Lead	ppm	ASTM D5185m		2		
	Copper	ppm ppm	ASTM D5185m		30		
	Tin	ppm	ASTM D5185m		<1		
	Vanadium	ppm	ASTM D5185m	>15	0		
	Cadmium	ppm	ASTM D5185m		0		
		ppin					
	ADDITIVES		method				
				limit/base		history1	history2
	Boron	ppm	ASTM D5185m	145	15		
	Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	145 0.0	15 1		
	Boron Barium Molybdenum		ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0	15 1 29		
	Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0	15 1 29 3		
	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0 248	15 1 29 3 368		
	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0 248 2203	15 1 29 3 368 2077		
	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	145 0.0 0.0 248 2203 731	15 1 29 3 368 2077 880		
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0 248 2203 731 1460	15 1 29 3 368 2077 880 1123	 	
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0 248 2203 731	15 1 29 3 368 2077 880	 	
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0 248 2203 731 1460	15 1 29 3 368 2077 880 1123 4035 current	 	
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0 248 2203 731 1460 5088	15 1 29 3 368 2077 880 1123 4035 current 10		
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	145 0.0 0.0 248 2203 731 1460 5088 <i>limit/base</i>	15 1 29 3 368 2077 880 1123 4035 <u>current</u> 10 1	 history1	 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0 248 2203 731 1460 5088 <i>limit/base</i>	15 1 29 3 368 2077 880 1123 4035 current 10	 history1	 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	145 0.0 0.0 248 2203 731 1460 5088 <i>limit/base</i>	15 1 29 3 368 2077 880 1123 4035 current 10 1 1 <1	 history1 	 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	145 0.0 248 2203 731 1460 5088 Imit/base >25 >20	15 1 29 3 368 2077 880 1123 4035 current 10 1 1 <1	 history1 	 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	145 0.0 248 2203 731 1460 5088 255 >25 >25 >20 Limit/base >3	15 1 29 3 368 2077 880 1123 4035 current 10 1 <1 current	 history1 history1	 history2 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	145 0.0 0.0 248 2203 731 1460 5088 limit/base >25 >20 limit/base >3 >20	15 1 29 3 368 2077 880 1123 4035 current 10 1 1 <1 current 0.2	 history1 history1 	 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	145 0.0 0.0 248 2203 731 1460 5088 limit/base >25 >20 limit/base >3 >20	15 1 29 3 368 2077 880 1123 4035 current 10 1 <1 current 0.2 12.0 23.5	 history1 history1 history1	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	145 0.0 248 2203 731 1460 5088 25 5088 25 20 220 imit/base >3 >20 >30	15 1 29 3 368 2077 880 1123 4035 current 10 1 <1 current 0.2 12.0 23.5	 history1 history1 history1	 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	145 0.0 248 2203 731 1460 5088 25 30 225 20 1imit/base >3 20 30 30 1imit/base	15 1 29 3 368 2077 880 1123 4035 Current 10 1 10 1 <1 Current 0.2 12.0 23.5 Current	 history1 history1 history1 history1	 history2 history2 history2 history2



OIL ANALYSIS REPORT

VISUAL





			method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
0	Appearance	scalar	*Visual	NORML	NORML		
	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
				Proc 14 /le conce		h to to mod	la la tama d
	FLUID PROPER		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	11.5	10.4		
	GRAPHS						
	Ferrous Alloys						
	iron						
	25 - nanonana chromium						
	20 -						
	튭 15 -						
	10-						
	5						
	0						
	Aug3/23			Aug3/23			
				AL			
	Non-ferrous Met	als					
	copper						
	25 - terester lead						
	20						
	<u>۾</u> 15-						
	10						
	10 - 5 - 0 -						
	10 - 5 - 0 -			g3/23			
	10 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			Aug3/23			
	10 5 0 EZZEDBAY Viscosity @ 100°	C			Base Number		
	10 5 0 EZZ/E ^{BIN} Viscosity @ 100°	с		6276 Buy 12.0-	Base Number		
	Viscosity @ 100°	с		12.0-			
	Viscosity @ 100°	C		12.0-			
	Viscosity @ 100°	c		12.0-			
	Viscosity @ 100°	c		12.0-			
	10 5 0 Viscosity @ 100° Viscosity @ 100° Abnormal 15 14 13 10 10 10 10 10 10 10 10 10 10 10 10 10	C		12.0-			
	Viscosity @ 100°	C		12.0 10.0 (0)HOX 8.0 8.0 9 9 9 9 9 9 9 9 9			
	Viscosity @ 100° Viscosity @ 100° Abnormal	c		12.0- 10.0- 00H 00 9 00H 8.0- 9 0			
	Viscosity @ 100°	C		12.0- 10.0- (0)H0 8.0- ba 6.0- ba 6.0- ba 6.0- 2.0- 2.0- 0.0	Base		
	Viscosity @ 100° Viscosity @ 100° Abnormal	C		12.0- 10.0- 00H 00 9 00H 8.0- 9 0			
Laboratory	Viscosity @ 100° Viscosity @ 100° Abnomal Base EZCEPTY S	501 Madis		12.0- 10	Base EZ/EBny	lino Construction	
Sample No.	Viscosity @ 100° Viscosity @ 100° Abnomal Base EZCENT Solution Sol	501 Madia Received	d :11/	12.0- 10	Base EZ/EBny	9125 10T	H AVE SOUT
Sample No. Lab Number	Viscosity @ 100° Viscosity @ 100°	501 Madia Received Diagnose	d :11/	12.0- 10.0- 0(HO 8.0- 10.0- 0(HO 8.0- 10- 10- 10- 10- 10- 10- 10- 10- 10- 1	Base EZ/EBny	9125 10T	H AVE SOUT SEATTLE, V
Sample No.	Viscosity @ 100° Viscosity @ 100°	501 Madia Received Diagnose Diagnose	1 : 11 / ed : 14 / i ician : Dor	12.0 10.0 0 0 10.0 0 0 10.0 0 0 10.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Gary Mer	9125 10T	a - Off Road Sh H AVE SOUT SEATTLE, V US 981 esse Patters

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

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