

OIL ANALYSIS REPORT

Sample Rating Trend





NOT GIVEN (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

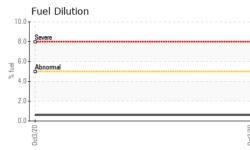
Fluid Condition

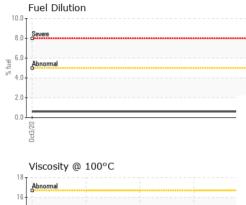
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

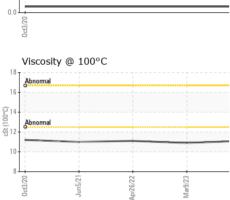
		0ct2020		Apr2022 Mar2023	Oct2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0104891	PCA0085142	PCA0071656
Sample Date		Client Info		18 Oct 2023	09 Mar 2023	26 Apr 2022
Machine Age	mls	Client Info		310524	259981	0
Oil Age	mls	Client Info		310524	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	31	35	33
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	3	4	4
Lead	ppm	ASTM D5185m	>40	<1	1	2
Copper	ppm	ASTM D5185m	>330	6	11	20
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppin					
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 3	<1	nistory2 0
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/dase	3	<1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	3 0	<1 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		3 0 60	<1 0 59	0 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		3 0 60 <1	<1 0 59 1	0 0 58 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		3 0 60 <1 863	<1 0 59 1 902	0 0 58 <1 910
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		3 0 60 <1 863 1040	<1 0 59 1 902 1060	0 0 58 <1 910 1215
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		3 0 60 <1 863 1040 860	<1 0 59 1 902 1060 872	0 0 58 <1 910 1215 933
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	3 0 60 <1 863 1040 860 1185	<1 0 59 1 902 1060 872 1172	0 0 58 <1 910 1215 933 1274
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		3 0 60 <1 863 1040 860 1185 2598	<1 0 59 1 902 1060 872 1172 2744	0 0 58 <1 910 1215 933 1274 2330
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 ASTM D5185m	limit/base	3 0 60 <1 863 1040 860 1185 2598 current	<1 0 59 1 902 1060 872 1172 2744 history1	0 0 58 <1 910 1215 933 1274 2330 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 method	limit/base	3 0 60 <1 863 1040 860 1185 2598 current 5	<1 0 59 1 902 1060 872 1172 2744 history1 5	0 0 58 <1 910 1215 933 1274 2330 history2 4
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 ASTM D5185m ASTM D5185m	limit/base >25 >20	3 0 60 <1 863 1040 860 1185 2598 <u>current</u> 5 1	<1 0 59 1 902 1060 872 1172 2744 history1 5 1	0 0 58 <1 910 1215 933 1274 2330 history2 4 <1
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	3 0 60 <1 863 1040 860 1185 2598 Current 5 1 3	<1 0 59 1 902 1060 872 1172 2744 history1 5 1 3	0 0 58 <1 910 1215 933 1274 2330 history2 4 <1 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	limit/base >25 >20 >5	3 0 60 <1 863 1040 860 1185 2598 <u>current</u> 5 1 3 <1.0 <u>current</u>	<1 0 59 1 902 1060 872 1172 2744 history1 5 1 3 <1.0	0 0 58 <1 910 1215 933 1274 2330 history2 4 <1 6 <1.0
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	3 0 60 <1 863 1040 860 1185 2598 <u>current</u> 5 1 3 <1.0 <u>current</u>	<1 0 59 1 902 1060 872 1172 2744 history1 5 1 3 <1.0 history1 0.6	0 0 58 <1 910 1215 933 1274 2330 history2 4 <1 6 <1.0 history2 0.6
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	3 0 60 <1 863 1040 860 1185 2598 <u>current</u> 5 1 3 <1.0 <u>current</u>	<1 0 59 1 902 1060 872 1172 2744 history1 5 1 3 <1.0 history1	0 0 58 <1 910 1215 933 1274 2330 history2 4 <1 6 <1.0 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	3 0 60 <1 863 1040 860 1185 2598 Current 5 1 3 <1.0 current 0.6 12.1	<1 0 59 1 902 1060 872 1172 2744 history1 5 1 3 <1.0 history1 0.6 12.1	0 0 58 <1 910 1215 933 1274 2330 history2 4 <1 6 <1.0 history2 0.6 10.5
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 TS ppm ppm ppm % % Abs/cm Abs/cm	ASTM D5185m ASTM D5185m	limit/base >25 >20 >20 >5 limit/base >3 >20 >30 >30	3 0 60 <1 863 1040 860 1185 2598 Current 5 1 3 <1.0 current 0.6 12.1 24.4 current	<1 0 59 1 902 1060 872 1172 2744 history1 5 1 3 <1.0 history1 0.6 12.1 24.3 history1	0 0 58 <1 910 1215 933 1274 2330 history2 4 <1 6 <1.0 history2 0.6 10.5 21.8 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 >3	3 0 60 <1 863 1040 860 1185 2598 <u>current</u> 5 1 3 <1.0 <u>current</u> 0.6 12.1 24.4	<1 0 59 1 902 1060 872 1172 2744 history1 5 1 3 <1.0 history1 0.6 12.1 24.3	0 0 58 <1 910 1215 933 1274 2330 history2 4 <1 6 <1.0 history2 0.6 10.5 21.8



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	VISUAL		method				history2
	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
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
/20 -		scalar	*Visual	NORML	NORML	NORML	NORML
0ct3/20	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual	20.L	NEG	NEG	NEG
				limit/base			
	FLUID PROP Visc @ 100°C	cSt	method ASTM D445	limit/base	current	history1 10.9	history2 11.1
	GRAPHS	COL	ASTNI D445		11.1	10.9	11.1
	Ferrous Alloys						
	⁶⁰						
	50						
	40						
	E 30 -						
	20 -						
	10						
	10 -						
		N	er.	53			
	0ct3/20 Jun5/21	Apr26/22	Mar9/23	0ct18/23			
			N	00			
	Non-ferrous Meta	als					
	copper						
	120 - Lead						
	100						
	80						
		\					
	E 80						
	E 80 60 40						
	E 80 60 40 20						
			1/23				
	E 80 60 40 20	Apr26/22	Mat9/23	0et18/23			
	wd 60 40 0 0 0 0 0 0 0 0 0 0 0 0 0	Apr26/22 -	Mar9/23	0ct18/23	Base Number		
	Wiscosity @ 100°	Apr26/22 -	Mat9/23	0et1823	Base Number		
	Wiscosity @ 1000	Apr26/22 -	Mad/23	8.0			
	Wiscosity @ 1000	Apr26/22 -	Mad)23	8.0			
	Viscosity @ 100°	Apr26/22 -	Math)23	8.0			
	Viscosity @ 100°	Apr26/22 -	Mat9.23	8.0			
	Wiscosity @ 1000	Apr26/22 -	Mar2/23	8.0 7.0 (b)(AC) (b)(AC			
	Wiscosity @ 100° Viscosity @ 100° Abnormal Abnormal Abnormal	Apr26/22 -	Marél/23	8.0			
	Wiscosity @ 100°	Apr26/22 -	C2/Gam	8.0 7.0 (b)(AC) (b)(AC			
	Wiscosity @ 100°	Apr26/22		8.0 7.0 (9)HOX but) 4.0 4.0 4.0 92 2.0 1.0 0.0			
	Wiscosity @ 100°	Apr26/22		8.0 7.0 (9)HOX but) 4.0 4.0 4.0 92 2.0 1.0 0.0			1923
	Wiscosity @ 100°	Apr26/22 -	ESIBand	8.0 7.0 (9)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)		Apr2622	Mar923-
	widd 60 40 20 0 0 0 0 0 0 0 0 0 0 0 0 0	Apr26/22 Apr26/22	Mai9/23	8.0 7.0 (9)HOX DBU) 4.0 94UNV seeg 2.0 1.0 0.0 820(1) 100	0ct3/20	Apr26/22	
	ud 80 40 20 0 0 0 0 0 0 0 0 0 0 0 0 0	C 22/92/d¥ 501 Madi	son Ave., Ca	8.0 7.0 (PHO) Du) 4.0 9400 Du) 4.0 9400 Du) 4.0 9400 S.0 9400 S.0	0ct3/20	PERDUE FA	RMS - DILLO
mple No.	WearCheck USA - : PCA0104891	C C 501 Madi Received	son Ave., Ca	8.0 7.0 9400 pm 4.0 9400 pm 4.0 9400 pm 82 2.0 1.0 0.0 82 1.0 0.0 82 1.0 0.0 82 1.0 0.0 82 1.0 0.0 82 1.0 1.0 1.0 9400 pm 9400	0ct3/20	PERDUE FA	RMS - DILLO 7 HWY 9 WES
mple No. o Number	WearCheck USA - : WearCheck USA - : PCA010430	C C 501 Madi Received Diagnos	son Ave., Ca d : 08 ed : 09	8.0 7.0 100 000 5.0 100 000 4.0 100 000 888 2.0 1.0 0.0 100 0.0 100 0000000000	0ct3/20	PERDUE FA	RMS - DILLO 7 HWY 9 WES DILLON, S
poratory mple No. o Number que Number st Package	WearCheck USA - PCA0104891 : 06001430 : 10729790	C C 501 Madi Receive Diagnos Diagnos	son Ave., Ca d : 08 ed : 09 tician : Sea	8.0 7.0 9400 pm 4.0 9400 pm 4.0 9400 pm 82 2.0 1.0 0.0 82 1.0 0.0 82 1.0 0.0 82 1.0 0.0 82 1.0 0.0 82 1.0 1.0 1.0 9400 pm 9400	0ct3/20	PERDUE FA 2047	RMS - DILLO

To discuss this sample repo * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

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Certificate L2367