

OIL ANALYSIS REPORT

SAMPLE INFORMATION method

Sample Rating Trend



Machine Id

Blue Bird 2279

Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (18 QTS)

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.

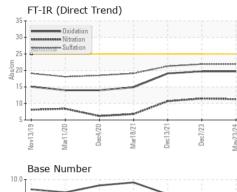
Fluid Condition

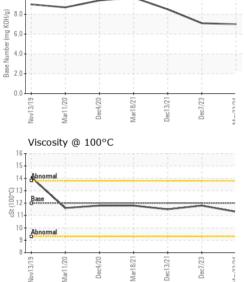
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

				current							
Sample Number		Client Info		PCA0112711	PCA0091618	PCA0045372					
Sample Date		Client Info		23 May 2024	07 Dec 2023	13 Dec 2021					
Machine Age	mls	Client Info		145520	135358	124375					
Oil Age	mls	Client Info		10162	10983	4218					
Oil Changed		Client Info		Changed	Changed	Changed					
Sample Status				NORMAL	NORMAL	NORMAL					
				-							
CONTAMINAT	ION	method	limit/base	current	history1	history2					
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0					
Water		WC Method	>0.2	NEG	NEG	NEG					
Glycol		WC Method		NEG	NEG	NEG					
WEAR METALS method limit/base current history1 history2											
Iron	ppm	ASTM D5185m	>130	27	32	26					
Chromium	ppm	ASTM D5185m	>10	1	1	1					
Nickel		ASTM D5185m	>4	0	0	1					
Titanium	ppm ppm	ASTM D5185m	>4 >2	ں <1	0	0					
Silver		ASTM D5185m	>2	<1	0	<1					
Aluminum	ppm	ASTM D5185m	>20	5	5	5					
	ppm				5 <1	5 1					
Lead	ppm	ASTM D5185m	>20	2		3					
Copper	ppm	ASTM D5185m	>125	2	2	3 <1					
Tin	ppm	ASTM D5185m	>4	0		<					
Antimony	ppm	ASTM D5185m									
Vanadium	ppm	ASTM D5185m		<1	0	0					
Cadmium	ppm	ASTM D5185m		0	0	0					
ADDITIVES		method	limit/base	current	history1	history2					
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current <1	history1 5	history2 3					
	ppm ppm										
Boron		ASTM D5185m	2	<1	5	3					
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	<1 0	5 0	3 0					
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	<1 0 63	5 0 71	3 0 71					
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	<1 0 63 <1	5 0 71 0	3 0 71 <1					
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	<1 0 63 <1 1009	5 0 71 0 1100	3 0 71 <1 1209					
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	<1 0 63 <1 1009 1183	5 0 71 0 1100 1225	3 0 71 <1 1209 1335					
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	2 0 50 0 950 1050 995	<1 0 63 <1 1009 1183 1098	5 0 71 0 1100 1225 995	3 0 71 <1 1209 1335 1224					
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	2 0 50 0 950 1050 995 1180	<1 0 63 <1 1009 1183 1098 1325	5 0 71 0 1100 1225 995 1438	3 0 71 <1 1209 1335 1224 1473					
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 ASTM D5185m	2 0 50 0 950 1050 995 1180 2600	<1 0 63 <1 1009 1183 1098 1325 3463	5 0 71 0 1100 1225 995 1438 3229	3 0 71 <1 1209 1335 1224 1473 3214					
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	2 0 50 950 1050 995 1180 2600	<1 0 63 <1 1009 1183 1098 1325 3463 current	5 0 71 0 1100 1225 995 1438 3229 history1 5	3 0 71 <1 1209 1335 1224 1473 3214 history2					
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 method ASTM D5185m	2 0 50 950 1050 995 1180 2600	<1 0 63 <1 1009 1183 1098 1325 3463 <i>current</i> 4	5 0 71 0 1100 1225 995 1438 3229 history1	3 0 71 <1 1209 1335 1224 1473 3214 history2 3					
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	<1 0 63 <1 1009 1183 1098 1325 3463 <u>current</u> 4 4	5 0 71 0 1100 1225 995 1438 3229 history1 5 <	3 0 71 <1 1209 1335 1224 1473 3214 history2 3 3 3					
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 0 63 <1 1009 1183 1098 1325 3463 current 4 4 3	5 0 71 0 1100 1225 995 1438 3229 history1 5 < <1 1	3 0 71 <1 1209 1335 1224 1473 3214 history2 3 3 3 0					
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	<1 0 63 <1 1009 1183 1098 1325 3463 current 4 4 3 3	5 0 71 0 1100 1225 995 1438 3229 history1 5 <1 1 1 history1	3 0 71 <1 1209 1335 1224 1473 3214 history2 3 3 3 0 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 TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i>	<1 0 63 <1 1009 1183 1098 1325 3463 <u>current</u> 4 3 <u>current</u> 0.7	5 0 71 0 1100 1225 995 1438 3229 history1 5 < 1 1 1 history1 0.5	3 0 71 <1 1209 1335 1224 1473 3214 history2 3 3 0 history2 0.4					
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	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >6 >20	<1 0 63 <1 1009 1183 1098 1325 3463 <u>current</u> 4 4 3 <u>current</u> 0.7 11.3	5 0 71 0 1100 1225 995 1438 3229 history1 5 <1 1 1 history1 0.5 11.5	3 0 71 <1 1209 1335 1224 1473 3214 history2 3 3 3 0 history2 0.4 10.7					
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 ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >20 imit/base >20	<1 0 63 <1 1009 1183 1098 1325 3463 <u>current</u> 4 4 3 <u>current</u> 0.7 11.3 21.9	5 0 71 0 1100 1225 995 1438 3229 history1 5 <1 1 1 history1 0.5 11.5 21.9	3 0 71 <1 1209 1335 1224 1473 3214 history2 3 3 3 0 history2 0.4 10.7 21.3					
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 ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	2 0 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 20 20 20 20 20 30 20 20 20 20 20 20 20 20 20 20 20 20 20	<1 0 63 <1 1009 1183 1098 1325 3463 Current 4 4 3 Current 0.7 11.3 21.9 Current	5 0 71 0 1100 1225 995 1438 3229 history1 5 <1 1 5 <1 1 0.5 11.5 21.9 history1	3 0 71 <1 1209 1335 1224 1473 3214 history2 3 3 3 0 history2 0.4 10.7 21.3 history2					



OIL ANALYSIS REPORT





	VISUAL		method	limit/base	current	history1	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
Dec7/23 May23/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
May	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
I I I I	Free Water	scalar	*Visual		NEG	NEG	NEG
<u> </u>	FLUID PROPE			limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	12.00	11.3	11.8	11.5
	GRAPHS Ferrous Alloys						
	³⁵ T						
Dec7/23 	30 - iron iron iron iron						
De	25 -		1				
	<u></u> ²⁰ 15						
	² 15	1					
	10						
	5						
		ana					
	Nov13/19 Mar11/20 Dec4/20	Mar18/2	Dec13/21 Dec7/23	May23/24			
	2 2		De	Mar			
23	Non-ferrous Meta	s					
Dec7/23 л.с.сл	copper						
2	8 - massasses lead						
	6 -						
	E d d						
	4		~				
	2	/		- AND MAN			
	Construction of the second sec	The second second	No. of Street,				
	a 1 1	8/21.)ec13/21- Dec7/23 -	3/24 -			
	Nov13/19 Mar11/20 Dec4/20	Mar18/21	Dec13/2 Dec7/23	May23/24			
	Viscosity @ 100°C		Base Num				
	¹⁶		10.0				
	15 - 14 - Abnormal			- 8	0		
		1	I I I I	(B/HO)			
	Base	1		B_6.	.0 -		
	ti 11			Base Number (mg KOH/g)	.0		
	10			ase Ni			
	Abnormal 9 -			<u> </u>	.0 +		
	8						
	Nov13/19 Mar11/20 Dec4/20	Mar18/21	Dec13/21 Dec7/23	May23/24	Nov13/19 Mar11/20	Dec4/20 Mar18/21 Dec13/21	Dec7/23 May23/24
	Nov Mar De	Ma	Det	May	Mar	Dec Mai	De May
Laboratory	: WearCheck USA - 50	1 Madiso	on Ave Carv	NC 27513		IC	SB370 - Alton
Sample No.	: PCA0112711	Rece					orth Alby Road
Lab Number	: 06215316	Teste	d : 21 Jun 2024				Godfrey, IL
Unique Number		Diagr	nosed : 21	iosed : 21 Jun 2024 - Wes Davis			US 62035
Test Package	: FLEEI contact Customer Serv	ice at 1.9	300-237-1360	9			ct: Chad Ingold bis-central.com
	are outside of the ISO 1						

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - 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)

Report Id: ICSB370 [WUSCAR] 06215316 (Generated: 06/21/2024 11:57:15) Rev: 1

Certificate L2367

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Submitted By: Chad Ingold

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