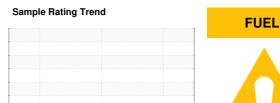


## **OIL ANALYSIS REPORT**



JOHN DEERE D462

Diesel Engine

PETRO CANADA DURON HP 15W40 (--- GAL)

### DIAGNOSIS

#### Recommendation

We advise that you check the fuel injection system. We recommend an early resample to monitor this condition. ( Customer Sample Comment: sampled need results asap please )

#### Wear

All component wear rates are normal.

#### Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

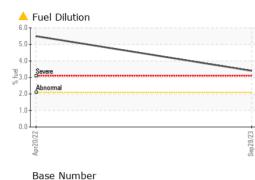
#### Fluid Condition

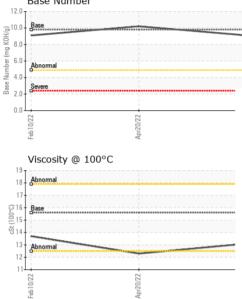
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORM		method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0079089	PCA0067837	PCA0063205
Sample Date		Client Info		28 Sep 2023	20 Apr 2022	10 Feb 2022
Machine Age	hrs	Client Info		1478	617	280
Oil Age	hrs	Client Info		50	337	280
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>51	3	12	12
Chromium	ppm	ASTM D5185m	>11	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>31	<1	2	4
Lead	ppm	ASTM D5185m	>26	0	<1	2
Copper	ppm	ASTM D5185m	>26	<1	2	3
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Antimony	ppm	ASTM D5185m				<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 3	history1 39	history2 249
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	3	39	249
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	3 0	39 0	249 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 52	39 0 77	249 0 235
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 52 <1	39 0 77 <1	249 0 235 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 52 <1 916	39 0 77 <1 873	249 0 235 <1 863
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	3 0 52 <1 916 1007	39 0 77 <1 873 1180	249 0 235 <1 863 1508
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	limit/base	3 0 52 <1 916 1007 999	39 0 77 <1 873 1180 996	249 0 235 <1 863 1508 925
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 52 <1 916 1007 999 1225	39 0 77 <1 873 1180 996 1148	249 0 235 <1 863 1508 925 1072
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	limit/base	3 0 52 <1 916 1007 999 1225 3069	39 0 77 <1 873 1180 996 1148 2668	249 0 235 <1 863 1508 925 1072 2888
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 >22	3 0 52 <1 916 1007 999 1225 3069 current	39 0 77 <1 873 1180 996 1148 2668 history1	249 0 235 <1 863 1508 925 1072 2888 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >22	3 0 52 <1 916 1007 999 1225 3069 current 2	39 0 77 <1 873 1180 996 1148 2668 history1 3	249 0 235 <1 863 1508 925 1072 2888 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >22 >31	3 0 52 <1 916 1007 999 1225 3069 <u>current</u> 2 0	39 0 77 <1 873 1180 996 1148 2668 history1 3 1	249 0 235 <1 863 1508 925 1072 2888 history2 6 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20	3 0 52 <1 916 1007 999 1225 3069 current 2 0 0	39 0 77 <1 873 1180 996 1148 2668 history1 3 1 0	249 0 235 <1 863 1508 925 1072 2888 history2 6 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20 >2.1	3 0 52 <1 916 1007 999 1225 3069 current 2 0 0 0 0 3.4	39 0 77 <1 873 1180 996 1148 2668 history1 3 1 0 0 ► 5.5	249 0 235 <1 863 1508 925 1072 2888 history2 6 2 2 2 2 2 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20 >2.1 limit/base >3	3 0 52 <1 916 1007 999 1225 3069 current 2 0 0 0 3.4 current 0.1	39 0 77 <1 873 1180 996 1148 2668 history1 3 1 0 0 ▲ 5.5 history1	249 0 235 <1 863 1508 925 1072 2888 history2 6 2 2 2 <1.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Solium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20 >2.1 limit/base >3	3 0 52 <1 916 1007 999 1225 3069 current 2 0 0 0 3.4	39 0 77 <1 873 1180 996 1148 2668 history1 3 1 0 5.5 history1 0.2	249 0 235 <1 863 1508 925 1072 2888 history2 6 2 2 2 <1.0 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Solicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >22 >31 >20 >2.1 limit/base >3 >20	3 0 52 <1 916 1007 999 1225 3069 current 2 0 0 0 3.4 current 0.1 5.5	39 0 77 <1 873 1180 996 1148 2668 history1 3 1 0 5.5 history1 0.2 8.4	249 0 235 <1 863 1508 925 1072 2888 history2 6 2 2 2 <1.0 history2 0.3 8.0
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 >22 >31 >20 >2.1 limit/base >3 >20 >3 >20	3 0 52 <1 916 1007 999 1225 3069 current 2 0 0 3.4 current 0.1 5.5 17.3	39 0 77 <1 873 1180 996 1148 2668 history1 3 1 0 ▲ 5.5 history1 0.2 8.4 19.2	249 0 235 <1 863 1508 925 1072 2888 history2 6 2 2 <1.0 history2 0.3 8.0 21.4



# **OIL ANALYSIS REPORT**





	۱L		method	limit/bas	se	current	history1	history2
White Me	tal	scalar	*Visual	NONE	1	NONE	NONE	NONE
Yellow Me	etal	scalar	*Visual	NONE	1	NONE	NONE	NONE
Precipitate	е	scalar	*Visual	NONE	1	NONE	NONE	NONE
Silt		scalar	*Visual	NONE		NONE	NONE	NONE
Debris		scalar	*Visual	NONE	1	NONE	NONE	NONE
Sand/Dirt		scalar	*Visual	NONE	1	NONE	NONE	NONE
Appearan	ice	scalar	*Visual	NORML	1	NORML	NORML	NORML
Odor		scalar	*Visual	NORML		NORML	NORML	NORML
Emulsified		scalar	*Visual	>0.21		NEG	NEG	NEG
Free Wate		scalar	*Visual		1	NEG	NEG	NEG
	PROPE		method	limit/bas		current	history1	history2
Visc @ 10		cSt	ASTM D445	15.6	1	13.1	12.3	13.7
GRAP								
Iron (pp <sup>200</sup> ] Severe	om)				100 T 31	ead (ppm)		
150-					80 - Se	evere		
Ē 100 -					60			
Abnormal					40 +	bnormal		
50 - 0		1			20-			
22 0		22		23	27		- 22	
Feb 10/22		Apr20/22		Sep 28/23	Feb10/22		Apr20/22	
	ım (ppm)	A		õ		hromium (		
60 T Severe	ini (bbin)			,-	25 T 1	ii oi ii ui ii (	ppin)	
50-					20 - Se	svere		
40 E 30 Abnormal					E 15			
20					10 At	bnormal		
10-					5			
		2		33	12		22	
Feb 10/22		Apr20/22		Sep28/23	Feb 10/22		Apr20/22	
Copper	(nnm)	4		õ		licon (ppm		
150 T	(PPIII)				40 T	icon (ppin	,	
Severe					30 - Se	evere		
100- E					E 20	bnormal		
50 -								
Abnormal		 		1	10			
0		22		23	0		22 -	
Feb10/22		Apr20/22		Sep28/23	Feb 10/22		Apr20/22	
	y @ 100°C	4		63		ase Numbe		
20 T					12.0 T			
				KOHV	10.0 -	ase		
18 - Abnormal				ar (ma	8.0 6.0 - Δι	bnormal		
18 - Abnormal					AD	und III di		
18 - Abnormal					4.0			
18 - Abnormal (0-001) 30-16 - Base 				Base Number (mo KOH/o)	4.0 - Se 2.0 -	evere		
18 - Abnomal		Apr20/22		Sep28/23	4.0 0.0		Apr20/22	

**Test Package** Certificate L2367 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)

F:

T: (815)722-3201