

OIL ANALYSIS REPORT

Area MINING ME-25 JOHN DEERE SKID STEER 153225

Diesel Engine

Fluid SHELL ROTELLA T3 15W40 (--- GAL)

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 acceptable for the time in service.



Sample Rating Trend



NORMAL

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0938181		
Sample Date		Client Info		24 May 2024		
Machine Age	hrs	Client Info		5260		
Oil Age	hrs	Client Info		136		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>2.1	<1.0		
Water		WC Method	>0.21	NEG		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>51	4		
Chromium	ppm	ASTM D5185m	>11	<1		
Nickel	ppm	ASTM D5185m	>5	<1		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>31	7		
Lead	ppm	ASTM D5185m	>26	<1		
Copper	ppm	ASTM D5185m	>26	<1		
Tin	ppm	ASTM D5185m	>4	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		<1		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		history1	history2
				current		· · · · ·
Boron	ppm	ASTM D5185m	10	current 104		
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	10 0	current 104 1		
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	10 0	current 104 1 84		
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 0 10	current 104 1 84 0		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 0 10 10 2600 1050	Current 104 1 84 0 77 2014 1041		
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	10 0 10 10 2600 1050 1250	Current 104 1 84 0 77 2014	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	10 0 10 2600 1050 1250 3900	Current 104 1 84 0 77 2014 1041		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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 ASTM D5185m	10 0 10 10 2600 1050 1250	Current 104 1 84 0 77 2014 1041 1129		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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	10 0 10 2600 1050 1250 3900	current 104 1 84 0 77 2014 1041 1129 3608 current 11		
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 method ASTM D5185m	10 0 10 2600 1050 1250 3900	current 104 1 84 0 77 2014 1041 1129 3608 current 11 2	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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	10 0 10 10 2600 1050 1250 3900 limit/base	current 104 1 84 0 77 2014 1041 1129 3608 current 11	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	10 0 10 2600 1050 1250 3900 limit/base >22 >31	current 104 1 84 0 77 2014 1041 1129 3608 current 11 2	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	10 0 10 2600 1050 1250 3900 limit/base >22 >31 >20	current 104 1 84 0 77 2014 1041 1129 3608 current 11 2 2	 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	10 0 10 2600 1050 1250 3900 limit/base >22 >31 >20 limit/base	Current 104 1 84 0 77 2014 1041 1129 3608 Current 11 2 2 2	 history1 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	10 0 10 2600 1050 1250 3900 limit/base >22 >31 >20 limit/base	current 104 1 84 0 77 2014 1041 1129 3608 current 11 2 2 current 0 0.1	 history1 history1 history1	 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	10 0 10 2600 1050 1250 3900 <i>limit/base</i> >22 >31 >20 <i>limit/base</i> >3 >20	current 104 1 84 0 77 2014 1041 1129 3608 current 11 2 2 current 0.1 8.3	 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	10 0 10 2600 1050 1250 3900 imit/base >22 >31 >20 imit/base >3 >20	current 104 1 84 0 77 2014 1041 1129 3608 current 11 2 current 0.1 8.3 18.3	 history1 history1	 history2 history2 history2



35.

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25 Abs/cm 15 10 5. May24/24

12.0 Base

0.0 Base Number (mg KOH/g)

19 m 18 Abnormal 17.

() 16 () 15 15 14 Base

13. Abnormal 12 -11L May24/24

Abnormal Severe 2.0 0.0 May24/24

OIL ANALYSIS REPORT

	VISUAL		method	limit/base	current	history1	history2
Oxidation	White Metal	scalar	*Visual	NONE	NONE		
Nitration	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		
/24 +	Appearance	scalar	*Visual	NORML	NORML		
May24/24	Odor	scalar	*Visual	NORML	NORML		
_	Emulsified Water	scalar	*Visual	>0.21	NEG		
ase Number	Free Water	scalar	*Visual	20.E1	NEG		
ase	FLUID PROPER		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445		13.1		
onormal		001	AOTIVI D445	10.0	10.1		
	GRAPHS						
vere	Ferrous Alloys						
	iron						
	8 - newsease chromium						
794							
scosity @ 100°C	6						
nomal	4						
normal							
198	2						
	0						
	May24/24			May24/24			
bnormal	Mayi			Mayi			
	Non-ferrous Meta	als					
9 C. 9 C.	10 copper						
h A an	8 -						
	un						
	6						
	ă. 4						
	2						
	0						
	,24,24			sy24/24 .			
	May2			May2			
	Real Provide P			<u> </u>			
	Viscosity @ 100°	С			Base Number	-	
		С		12.0		-	
	Viscosity @ 100°	с		12.0	T	-	
	Viscosity @ 100°	с		12.0	T		
	Viscosity @ 100°	c		12.0	Base		
	Viscosity @ 100°	c		12.0	T		
	Viscosity @ 100°	c		12.0 (0)HOX 8.0 Bull 36.0 9 Bull 36.0 9 Bu	Base	-	
	Viscosity @ 100%	c		12.0	Base	-	
	Viscosity @ 100°	C		12.0 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0	Base Abnormal Severe	-	
	Viscosity @ 100°	C		12.0 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0	Base Abnormal Severe	-	
	Viscosity @ 100°	C		12.0 (0,0) (Base	-	
Laboratory	Viscosity @ 100° Abnomal Base Abnomal Abnomal Abnomal Control of the second seco	D1 Madisc		12.0 (0)H00 8.0 10.0 (0)H00 8.0 10.0	Base Abnormal Severe	COVIA - MC	NTYRE - 02
Sample No.	Viscosity @ 100° Abnomal Base Abnomal Abnomal Abnomal Control of the second seco	01 Madisc Recei	ived : 30	12.0 10.0	Base Abnormal Severe	COVIA - MC 107 N	XINTYRE - 02 MACON ROA
Sample No. Lab Number	Viscosity @ 100° Abnomal Base Abnomal Abnomal Abnomal Content of the second seco	01 Madiso Recei Teste	ived : 30 ed : 31	12.0 10.0	Abnormal Severe	COVIA - MC 107 N	CINTYRE - 02 MACON ROA ICINTYRE, G
Sample No. Lab Number Unique Number	Viscosity @ 100° Abnomal Base Abnomal Abnomal Abnomal Content of the second seco	01 Madiso Rece Teste Diagr	ived : 30 ed : 31 nosed : 31	12.0 10.0	Abnormal Severe	COVIA - MC 107 M	ACON ROA CINTYRE, C US 315
Sample No. Lab Number Unique Number	Viscosity @ 100%	01 Madiso Rece Teste Diagr Tests: TBI vice at 1-8	ived : 30 ed : 31 nosed : 31 N) 800-237-1369	12.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	Abnormal Severe	COVIA - MC 107 M Contact: M narty.beacham@	ACON ROA CINTYRE, C US 315 Aarty Beacha