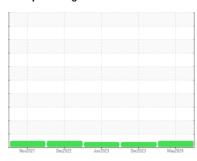


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 91062 Component Diesel Engine Fluid AMERIGUARD 10W30 (10 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

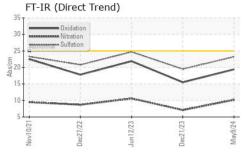
Fluid Condition

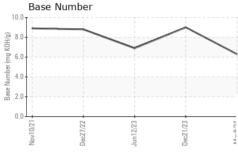
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

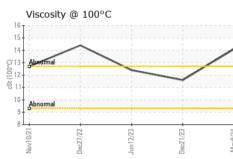
SAMPLE INFORMATION method imit/base current history1 Sample Number Client Info SBP0007027 SBP0006544 SBP0003930 Sample Date Client Info 1108 486696 0 0 0 0 0 0 0 0 0			Nov2021	Dec2022	Jun2023 Dec2023	May2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 09 May 2024 21 Dec 2023 12 Jun 2023 Machine Age mis Client Info 511088 486696 0 Oil Age mis Client Info 24392 56421 0 Oil Changed Client Info Changed Changed Changed Changed ATTENTION Sample Status Image: Company of Changed Chan	Sample Number		Client Info		SBP0007027	SBP0006544	SBP0003930
Machine Age mls Client Info 511088 486696 0 Oil Age mls Client Info 24392 58421 0 Oil Changed Client Info Changed			Client Info		09 May 2024	21 Dec 2023	12 Jun 2023
Oil Age mls Client Info 24392 56421 0 Oil Changed Sample Status Client Info Changed	•	mls	Client Info		511088	486696	0
Oil Changed Sample Status Client Info Changed NORMAL Changed ATTENTION	•	mls	Client Info		24392	56421	0
CONTAMINATION			Client Info		Changed	Changed	Changed
Fuel WC Method S5 C1.0 O.0 O.2 Water WC Method S0.2 NEG Neg	Sample Status				NORMAL	ATTENTION	ATTENTION
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imili/base current history1 history2 WEAR METALS method limil/base current history1 history2 Iron ppm ASTM D5185m >80 14 2 16 Chromium ppm ASTM D5185m >5 1 0 1 Nickel ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >2 1 0 0 Silver ppm ASTM D5185m >30 7 3 8 Lead ppm ASTM D5185m >30 1 0 1 Copper ppm ASTM D5185m >5 <1 1 <1 Tin ppm ASTM D5185m >5 <1 1 <1 Cadmium ppm ASTM D5185m <1 0 <1 <td< th=""><th>CONTAMINATION</th><th>V</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></td<>	CONTAMINATION	V	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	0.0	0.2
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >5 1 0 1 Nickel ppm ASTM D5185m >2 0 0 <1 Titanium ppm ASTM D5185m >2 0 0 <1 Sliver ppm ASTM D5185m >3 <1 0 0 Aluminum ppm ASTM D5185m >3 <1 0 0 Aluminum ppm ASTM D5185m >30 1 0 1 Lead ppm ASTM D5185m >150 5 <1 4 Copper ppm ASTM D5185m >5 <1 1 <1 Vanadium ppm ASTM D5185m <1 0 <1 <1 Vanadium ppm ASTM D5185m <1 0 <1 <1 Vanadium ppm ASTM D5185m <1 0 <1 <1 ADDITIVES method limit/base current history1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	14	2	16
Titanium ppm ASTM D5185m <1	Chromium	ppm	ASTM D5185m	>5	1	0	1
Stiver	Nickel	ppm	ASTM D5185m	>2	0	0	<1
Aluminum ppm ASTM D5185m >30 7 3 8 Lead ppm ASTM D5185m >30 1 0 1 Copper ppm ASTM D5185m >150 5 <1 4 Tin ppm ASTM D5185m >5 <1 1 <1 Vanadium ppm ASTM D5185m <1 0 <1 <1 Cadmium ppm ASTM D5185m <1 0 <1 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 4 <1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1072 921 1092 1022 1080 Zinc ppm ASTM D5185m 1396 1298 <th>Titanium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th><1</th> <th>0</th> <th><1</th>	Titanium	ppm	ASTM D5185m		<1	0	<1
Lead	Silver	ppm	ASTM D5185m	>3		_	
Copper ppm ASTM D5185m >150 5 <1	Aluminum	ppm	ASTM D5185m	>30	7	3	8
Tin ppm ASTM D5185m >5 <1	Lead	ppm	ASTM D5185m	>30	1	0	1
Vanadium ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>150	5	<1	4
Cadmium ppm ASTM D5185m <1	Tin	ppm	ASTM D5185m	>5	<1	1	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 <1 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 66 52 66 Manganese ppm ASTM D5185m 1072 921 1095 Calcium ppm ASTM D5185m 1272 1012 1269 Phosphorus ppm ASTM D5185m 1092 1022 1080 Zinc ppm ASTM D5185m 1396 1298 1444 Sulfur ppm ASTM D5185m 3740 3055 3626 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current<	Vanadium	ppm	ASTM D5185m		<1	0	<1
Boron	Cadmium	ppm	ASTM D5185m		<1	0	<1
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 66 52 66 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 1072 921 1095 Calcium ppm ASTM D5185m 1272 1012 1269 Phosphorus ppm ASTM D5185m 1092 1022 1080 Zinc ppm ASTM D5185m 1396 1298 1444 Sulfur ppm ASTM D5185m 3740 3055 3626 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 <	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 66 52 66 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m			4	<1
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0		0
Magnesium ppm ASTM D5185m 1072 921 1095 Calcium ppm ASTM D5185m 1272 1012 1269 Phosphorus ppm ASTM D5185m 1092 1022 1080 Zinc ppm ASTM D5185m 1396 1298 1444 Sulfur ppm ASTM D5185m 3740 3055 3626 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 <	•	ppm	ASTM D5185m		66		
Calcium ppm ASTM D5185m 1272 1012 1269 Phosphorus ppm ASTM D5185m 1092 1022 1080 Zinc ppm ASTM D5185m 1396 1298 1444 Sulfur ppm ASTM D5185m 3740 3055 3626 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm "ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm "ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1	-	ppm	ASTM D5185m				
Phosphorus ppm ASTM D5185m 1092 1022 1080 Zinc ppm ASTM D5185m 1396 1298 1444 Sulfur ppm ASTM D5185m 3740 3055 3626 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m 7 4 6 Potassium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 </th <th>-</th> <th>ppm</th> <th></th> <th></th> <th></th> <th></th> <th></th>	-	ppm					
Zinc ppm ASTM D5185m 1396 1298 1444 Sulfur ppm ASTM D5185m 3740 3055 3626 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9		ppm					
Sulfur ppm ASTM D5185m 3740 3055 3626 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m 7 4 6 Potassium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9	•						
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m 7 4 6 Potassium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9	-						
Silicon ppm ASTM D5185m >20 6 3 6 Sodium ppm ASTM D5185m 7 4 6 Potassium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9			ASTM D5185m		3740	3055	3626
Sodium ppm ASTM D5185m 7 4 6 Potassium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9			method	limit/base	current	•	history2
Potassium ppm ASTM D5185m >20 11 12 5 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9				>20			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9		ppm					
Soot % % *ASTM D7844 >3 0.5 0.2 0.6 Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9	Potassium	ppm	ASTM D5185m	>20	11	12	5
Nitration Abs/cm *ASTM D7624 >20 10.2 7.1 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 23.2 19.5 24.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9	Nitration	Abs/cm	*ASTM D7624	>20	10.2	7.1	
Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.5 21.9	Sulfation	Abs/.1mm	*ASTM D7415	>30	23.2	19.5	24.7
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 6.3 9.0 6.9	Oxidation	Abs/.1mm	*ASTM D7414	>25	19.4	15.5	21.9
	Base Number (BN)	mg KOH/g	ASTM D2896		6.3	9.0	6.9



OIL ANALYSIS REPORT



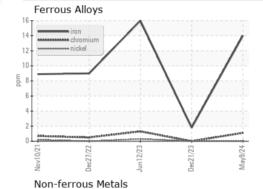


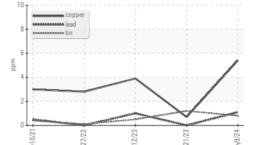


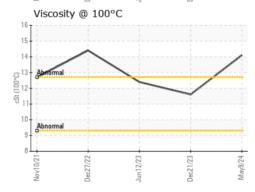
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

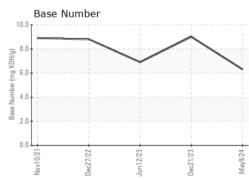
FLUID PROPERTIES		method			history	
Visc @ 100°C	cSt	ASTM D445	14.1	11.6	12.4	

GRAPHS













Certificate 12367

Laboratory Sample No. Lab Number : 06195052 Unique Number : 11057175

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : SBP0007027 Received **Tested**

: 30 May 2024 : 31 May 2024 Diagnosed : 31 May 2024 - Sean Felton

Sapp Bros. Fleet - Omaha Petroleum Location 9915 South 148th OMAHA, NE US 68138

Contact: Stephanie Kelly skelly@sappbros.net T: (800)211-8589

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)