

## Area (89684X) Walgreens - Tractor [Walgreens - Tractor] 136A69105

**Diesel Engine** 

Fluid PETRO CANADA DURON SHP 10W30 (11 GAL)

### DIAGNOSIS

#### A Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

#### Wear

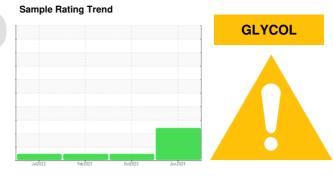
All component wear rates are normal.

#### Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

#### Fluid Condition

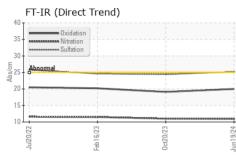
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

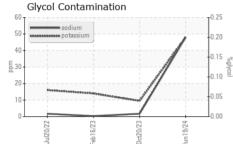


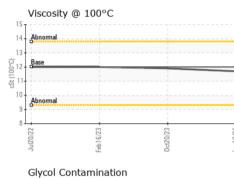
Sample Date     Client Info     19 Jun 2024     20 Oct 2023     16 Feb 2023       Machine Age     mis     Client Info     728531     674026     629059       Oil Age     mis     Client Info     54505     48967     64798       Oil Changed     Client Info     Changed     Changed     Changed     Changed     Changed     Changed       Sample Status     Client Info     Changed     Changed     Changed     Changed     Changed       CONTAMINATION     method     limit/base     current     history1     history2       Fuel     WC Method     >5.2     <1.0	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age     mis     Client Info     728531     674026     629059       Oil Age     mis     Client Info     54505     48967     64798       Oil Changed     Client Info     ABNORMAL     NORMAL     NORMAL     NORMAL       Sample Status     Imit/base     current     history1     history2       Fuel     WC Method     >5     <1.0	Sample Number		Client Info		PCA0128197	PCA0106162	PCA0090855
Oil Age mis Client Info 54505 48967 64798   Oil Changed Client Info Changed Changed Changed Changed   Sample Status method limit/base current history1 history2   Fuel WC Method >5 <1.0	Sample Date		Client Info		19 Jun 2024	20 Oct 2023	16 Feb 2023
Dil Changed Client Info Changed Changed Changed Changed Changed Changed NORMAL   Sample Status Image Image Current Nistory1 Normal.   CONTAMINATION wethod >5.5 <1.0	Machine Age	mls	Client Info		728531	674026	629059
Sample Status     ABNORMAL     NORMAL     NORMAL       CONTAMINATION     method     limit/base     current     history1     history2       Fuel     WC Method     >5     <1.0	Oil Age	mls	Client Info		54505	48967	64798
Sample Status     ABNORMAL     NORMAL     NORMAL       CONTAMINATION     method     limit/base     current     history1     history2       Fuel     WC Method     >5     <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel     WC Method     >5     <1.0     <1.0     <1.0       Water     WC Method     >0.2     NEG     NEG     NEG       Wear     WC Method     >0.2     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >5     2     2     2       Nickel     ppm     ASTM D5185m     >2     1     <1	Sample Status				-	NORMAL	
Water     WC Method     >0.2     NEG     NEG     NEG       Wear METALS     method     limi/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     2     2     2       Nickel     ppm     ASTM D5185m     >2     1     <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Water     WC Method     >0.2     NEG     NEG     NEG       WEAR METALS     method     limi/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     2     2     2       Nickel     ppm     ASTM D5185m     >2     1     <1	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Iron     ppm     ASTM D5185m     >80     56     42     46       Chromium     ppm     ASTM D5185m     >5     2     2     2       Nickel     ppm     ASTM D5185m     >2     1     <1	Water						
Iron     ppm     ASTM D5185m     >80     56     42     46       Chromium     ppm     ASTM D5185m     >5     2     2     2       Nickel     ppm     ASTM D5185m     >2     1     <1	WEAR METAL	S	method	limit/base	current	history1	history2
Dromium     ppm     ASTM D5185m     >5     2     2     2       Nickel     ppm     ASTM D5185m     >2     1     <1	Iron	nnm	ASTM D5185m	~80	56		
Nickel     ppm     ASTM D5185m     >2     1     <1     <1       Titanium     ppm     ASTM D5185m     >3     <1							
Titanium     ppm     ASTM D5185m     <1     0     0       Silver     ppm     ASTM D5185m     >3     <1							
Silver     ppm     ASTM D5185m     >3     <1     0     0       Aluminum     ppm     ASTM D5185m     >30     24     23     29       Lead     ppm     ASTM D5185m     >30     0     <1				>2			
Aluminumpm pmASTM D5185m>30242329LeadppmASTM D5185m>300<1				. 0			
Lead     ppm     ASTM D5185m     >30     0     <1     <1       Copper     ppm     ASTM D5185m     >150     20     5     5       Tin     ppm     ASTM D5185m     >5     2     <1							
Copper     ppm     ASTM D5185m     >150     20     5     5       Tin     ppm     ASTM D5185m     >5     2     <1							
Tin     ppm     ASTM D5185m     >5     2     <1     <1       Vanadium     ppm     ASTM D5185m     <1					-		
Vanadium     ppm     ASTM D5185m     <1     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     2     8     4     3       Barium     ppm     ASTM D5185m     0     0     0     0     0       Magnese     ppm     ASTM D5185m     0     67     63     70       Manganese     ppm     ASTM D5185m     0     2     <1     <1       Magnesium     ppm     ASTM D5185m     950     964     945     969       Calcium     ppm     ASTM D5185m     955     1029     997     1060       Zinc     ppm     ASTM D5185m     950     3330     2575     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Solicon     ppm     ASTM D5185m     >20     8	••	ppm	ASTM D5185m	>150	-		
Cadmium     ppm     ASTM D5185m     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     2     8     4     3       Barium     ppm     ASTM D5185m     0     0     0     0     0       Maganese     ppm     ASTM D5185m     0     67     63     70       Magnesium     ppm     ASTM D5185m     0     2     <1     <1       Magnesium     ppm     ASTM D5185m     0     2     <1     <1     <1       Phosphorus     ppm     ASTM D5185m     0     2     <1     <1     <1315       Sulfur     ppm     ASTM D5185m     1050     1302     1072     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Solicon     ppm     ASTM D5185m     >20     8     8     7       Solicicon     ppm     ASTM D5185m	Tin	ppm	ASTM D5185m	>5	2		
ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     2     8     4     3       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     50     67     63     70       Manganese     ppm     ASTM D5185m     0     2     <1	Vanadium	ppm	ASTM D5185m			0	0
Boron     ppm     ASTM D5185m     2     8     4     3       Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     50     67     63     70       Manganese     ppm     ASTM D5185m     0     2     <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     50     67     63     70       Manganese     ppm     ASTM D5185m     0     2     <1     <1       Magnesium     ppm     ASTM D5185m     950     964     945     969       Calcium     ppm     ASTM D5185m     1050     1302     1072     1231       Phosphorus     ppm     ASTM D5185m     1050     1302     1072     1231       Sulfur     ppm     ASTM D5185m     1050     1337     1251     1315       Sulfur     ppm     ASTM D5185m     2600     3330     2575     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     48     10     14  Glycol     %     *ASTM D5185m	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum     ppm     ASTM D5185m     50     67     63     70       Manganese     ppm     ASTM D5185m     0     2     <1	Daran	0.0.00	ASTM D5185m	2	8	4	3
Maganese     ppm     ASTM D5185m     0     2     <1     <1       Magnesium     ppm     ASTM D5185m     950     964     945     969       Calcium     ppm     ASTM D5185m     1050     1302     1072     1231       Phosphorus     ppm     ASTM D5185m     995     1029     997     1060       Zinc     ppm     ASTM D5185m     918     1337     1251     1315       Sulfur     ppm     ASTM D5185m     2600     3330     2575     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Solium     ppm     ASTM D5185m     >20     8     8     7       Solium     ppm     ASTM D5185m     >20     48     10     14       Potassium     ppm     ASTM D5185m     >20     48     10     14       Glycol     %     *ASTM D7844     >3     1.2     1.5     1.4       Nitration     Abs/cm     *ASTM D7624	DOIOII	ррпі	AOTIVI DOTODITI	<u>_</u>	0	-	÷
Manganese     ppm     ASTM D5185m     0     2     <1     <1       Magnesium     ppm     ASTM D5185m     950     964     945     969       Calcium     ppm     ASTM D5185m     1050     1302     1072     1231       Phosphorus     ppm     ASTM D5185m     995     1029     997     1060       Zinc     ppm     ASTM D5185m     995     1337     1251     1315       Sulfur     ppm     ASTM D5185m     2600     3330     2575     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     48     10     14       Potassium     ppm     ASTM D5185m     >20     48     10     14       Glycol     %     *ASTM D7844     >3     1.2     1.5     1.4       Ntration     Abs/cm     *ASTM D7624							
Magnesium     ppm     ASTM D5185m     950     964     945     969       Calcium     ppm     ASTM D5185m     1050     1302     1072     1231       Phosphorus     ppm     ASTM D5185m     995     1029     997     1060       Zinc     ppm     ASTM D5185m     9185     1029     997     1060       Zinc     ppm     ASTM D5185m     9102     3330     2575     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     48     10     14       Glycol     %     *ASTM D2982     NEG     NEG     NEG       INFRA-RED     method     limit/base     current	Barium	ppm	ASTM D5185m	0	0	0	0
Calcium     ppm     ASTM D5185m     1050     1302     1072     1231       Phosphorus     ppm     ASTM D5185m     995     1029     997     1060       Zinc     ppm     ASTM D5185m     1180     1337     1251     1315       Sulfur     ppm     ASTM D5185m     2600     3330     2575     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     48     10     14       Glycol     %     *ASTM D2982     NEG     NEG     NEG       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     1.2	Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 50	0 67	0 63	0 70
Phosphorus     ppm     ASTM D5185m     995     1029     997     1060       Zinc     ppm     ASTM D5185m     1180     1337     1251     1315       Sulfur     ppm     ASTM D5185m     2600     3330     2575     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     48     10     14       Potassium     ppm     ASTM D5185m     >20     48     10     14       Glycol     %     *ASTM D2982     NEG     NEG     NEG       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     1.2     1.5     1.4       Nitration     Abs/.1mm     *ASTM D7415     >30     25	Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0	0 67 2	0 63 <1	0 70 <1
Zinc     ppm     ASTM D5185m     1180     1337     1251     1315       Sulfur     ppm     ASTM D5185m     2600     3330     2575     2852       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     48     10     14       Potassium     ppm     ASTM D5185m     >20     48     10     14       Glycol     %     *ASTM D2982     NEG     NEG     NEG       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     1.2     1.5     1.4       Nitration     Abs/.1mm     *ASTM D7414     >30     25.2     24.4     24.6       FLUID DEGRADATION     method     limit/base     current	Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950	0 67 2 964	0 63 <1 945	0 70 <1 969
SulfurppmASTM D5185m2600333025752852CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>20887SodiumppmASTM D5185m>20482<1	Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050	0 67 2 964 1302	0 63 <1 945 1072	0 70 <1 969 1231
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>20887SodiumppmASTM D5185m▲ 482<1	Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995	0 67 2 964 1302 1029	0 63 <1 945 1072 997	0 70 <1 969 1231 1060
Silicon     ppm     ASTM D5185m     >20     8     8     7       Sodium     ppm     ASTM D5185m     >20     48     2     <1	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	0 50 0 950 1050 995 1180	0 67 2 964 1302 1029 1337	0 63 <1 945 1072 997 1251	0 70 <1 969 1231 1060 1315
Sodium     ppm     ASTM D5185m     ▲ 48     2     <1       Potassium     ppm     ASTM D5185m     >20     ▲ 48     10     14       Glycol     %     *ASTM D2982     NEG     NEG     NEG       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     1.2     1.5     1.4       Nitration     Abs/cm     *ASTM D7624     >20     10.9     11.0     11.5       Sulfation     Abs/.1mm     *ASTM D7615     >30     25.2     24.4     24.6       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.0     19.1     20.2	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	0 50 0 950 1050 995 1180 2600	0 67 2 964 1302 1029 1337 3330	0 63 <1 945 1072 997 1251 2575	0 70 <1 969 1231 1060 1315 2852
Potassium     ppm     ASTM D5185m     >20     ▲ 48     10     14       Glycol     %     *ASTM D2982     NEG     NEG     NEG       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     1.2     1.5     1.4       Nitration     Abs/cm     *ASTM D7624     >20     10.9     11.0     11.5       Sulfation     Abs/.1mm     *ASTM D7615     >30     25.2     24.4     24.6       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.0     19.1     20.2	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	0 50 0 950 1050 995 1180 2600 limit/base	0 67 2 964 1302 1029 1337 3330 current	0 63 <1 945 1072 997 1251 2575 history1	0 70 <1 969 1231 1060 1315 2852 history2
Glycol%*ASTM D2982NEGNEGINFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>31.21.51.4NitrationAbs/cm*ASTM D7624>2010.911.011.5SulfationAbs/.1mm*ASTM D7115>3025.224.424.6FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2520.019.120.2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN 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	0 50 0 950 1050 995 1180 2600 limit/base	0 67 2 964 1302 1029 1337 3330 current 8	0 63 <1 945 1072 997 1251 2575 history1 8	0 70 <1 969 1231 1060 1315 2852 history2 7
Soot %     %     *ASTM D7844     >3     1.2     1.5     1.4       Nitration     Abs/cm     *ASTM D7624     >20     10.9     11.0     11.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     25.2     24.4     24.6       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.0     19.1     20.2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b>	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >20	0 67 2 964 1302 1029 1337 3330 current 8 ▲ 48	0 63 <1 945 1072 997 1251 2575 history1 8 2	0 70 <1 969 1231 1060 1315 2852 history2 7 <1
Soot %     %     *ASTM D7844     >3     1.2     1.5     1.4       Nitration     Abs/cm     *ASTM D7624     >20     10.9     11.0     11.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     25.2     24.4     24.6       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.0     19.1     20.2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >20	0 67 2 964 1302 1029 1337 3330 <u>current</u> 8 ▲ 48 ▲ 48	0 63 <1 945 1072 997 1251 2575 history1 8 2 2 10	0 70 <1 969 1231 1060 1315 2852 history2 7 <1 14
Nitration     Abs/cm     *ASTM D7624     >20     10.9     11.0     11.5       Sulfation     Abs/.1mm     *ASTM D7615     >30     25.2     24.4     24.6       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.0     19.1     20.2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >20	0 67 2 964 1302 1029 1337 3330 current 8 ▲ 48 ▲ 48 ▲ 8 NEG	0 63 <1 945 1072 997 1251 2575 history1 8 2 2 10 NEG	0 70 <1 969 1231 1060 1315 2852 history2 7 <1 14 NEG
Sulfation     Abs/.1mm     *ASTM D7415     >30     25.2     24.4     24.6       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.0     19.1     20.2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982 method	0 50 0 950 1050 995 1180 2600 limit/base >20 >20	0 67 2 964 1302 1029 1337 3330 current 8 ▲ 48 ▲ 48 NEG current	0 63 <1 945 1072 997 1251 2575 history1 8 2 10 NEG history1	0 70 <1 969 1231 1060 1315 2852 history2 7 <1 14 NEG history2
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     20.0     19.1     20.2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844	0 50 0 950 1050 995 1180 2600 limit/base >20 >20 limit/base >3	0 67 2 964 1302 1029 1337 3330 current 8 ▲ 48 ▲ 48 NEG current 1.2	0 63 <1 945 1072 997 1251 2575 history1 8 2 10 NEG history1 1.5	0 70 <1 969 1231 1060 1315 2852 history2 7 <1 14 NEG history2 1.4
Oxidation Abs/.1mm *ASTM D7414 >25 20.0 19.1 20.2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D2982 *ASTM D2982 *ASTM D7844	0 50 0 950 1050 995 1180 2600 limit/base >20 	0 67 2 964 1302 1029 1337 3330 current 8 ▲ 48 ▲ 48 ▲ 48 ► EG Current 1.2 10.9	0 63 <1 945 1072 997 1251 2575 history1 8 2 10 NEG NEG 1.5 11.0	0 70 <1 969 1231 1060 1315 2852 history2 7 <1 14 NEG history2 1.4 11.5
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982 *ASTM D2982 *ASTM D7844 *ASTM D7844	0 50 950 1050 995 1180 2600 imit/base >20 >20 imit/base >3 >20 >3 >20	0 67 2 964 1302 1029 1337 3330 current 8 ▲ 48 ▲ 48 NEG current 1.2 10.9 25.2	0 63 <1 945 1072 997 1251 2575 history1 8 2 10 NEG history1 1.5 1.5 11.0 24.4	0 70 <1 969 1231 1060 1315 2852 history2 7 <1 14 NEG history2 1.4 11.5 24.6
Base Number (BN)     mg KOH/g     ASTM D2896     5.2     5.4     6.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	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 ASTM D5185m *ASTM D2982 *ASTM D2982 *ASTM D7844 *ASTM D7624 *ASTM D7624	0 50 950 1050 995 1180 2600 imit/base >20 >20 imit/base >3 >20 >30 imit/base	0 67 2 964 1302 1029 1337 3330 current 8 ▲ 48 ▲ 48 ▲ 48 ▲ 48 ▲ 10.9 25.2 current	0 63 <1 945 1072 997 1251 2575 history1 8 2 10 NEG 10 NEG 1.5 11.0 24.4 history1	0 70 <1 969 1231 1060 1315 2852 history2 7 <1 14 NEG history2 1.4 11.5 24.6 history2
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI Oxidation	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 ASTM D5185m *ASTM D2982 *ASTM D2982 *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	0 50 950 1050 995 1180 2600 imit/base >20 >20 imit/base >3 >20 >30 imit/base	0 67 2 964 1302 1029 1337 3330 current 8 ▲ 48 ▲ 48 ▲ 48 ▲ 48 ▲ 48 ► Current 1.2 10.9 25.2 current 20.0	0 63 <1 945 1072 997 1251 2575 history1 8 2 10 NEG 10 NEG 11.5 11.0 24.4 history1 19.1	0 70 <1 969 1231 1060 1315 2852 history2 7 <1 14 NEG history2 1.4 11.5 24.6 history2 20.2

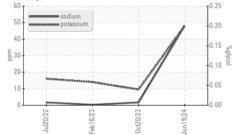


# **OIL ANALYSIS REPORT**

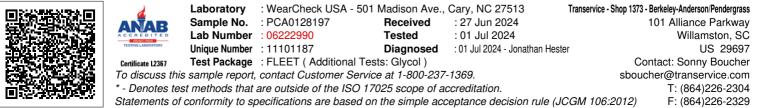








VISUAL		method	limit/base	current	history1	history
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	scalar	*Visual	NONE	NONE	NONE	NONE
	scalar	*Visual	NORML	NORML	NORML	NORML
	scalar	*Visual	NORML	NORML	NORML	NORML
	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER	RTIES	method	limit/base	current	history1	history
Visc @ 100°C	cSt	ASTM D445	12.00	11.7	11.9	12.0
GRAPHS						
Ferrous Alloys						
60 iron 1			-			
50- chromium						
40-						
30 -						
20 -						
10-						
0						
0		20/23	19/24			
		0ct20/23	Jun19/24			
Jul20/22		0ct20/23	Jun19/24			
0		0ct20/23	Jun19/24			
Non-ferrous Metals		0ct20/23	Jun19/24			
Non-ferrous Metals		0420/23	Jun 19/24			
Non-ferrous Metals		0420/23	Jun 19/24			
Non-ferrous Metals		0420/23	Juni 924			
Non-ferrous Metals		0420/23	Junt9/24			
Non-ferrous Metals		0e2023	Jun19/24			
Non-ferrous Metals		0420/23	Jun19/24			
Non-ferrous Metals		0420/23	Jun19/24			
Non-ferrous Metals		0et20723	Jun19/24			
Non-ferrous Metals						
Non-ferrous Metals						
Non-ferrous Metals		0ct20/23	Jun19/24 Jun19/24			
Non-ferrous Metals				Base Number	r	
Non-ferrous Metals				Base Number	r	
Non-ferrous Metals			42/61/un		r	
Non-ferrous Metals			42661unr 7.0 6.0		r	
Non-ferrous Metals			42661unr 7.0 6.0		r	
Non-ferrous Metals			42661unr 7.0 6.0			
Non-ferrous Metals			42661unr 7.0 6.0			
Non-ferrous Metals			42/6junn 7.0 6.0		r	
Non-ferrous Metals			42/6junn 7.0 6.0			
Non-ferrous Metals			42/61/un		r	
Non-ferrous Metals			7.0 6.0 (b)HOX 00) 4.0 900 4.0 900 900 900 900 900 900 900 900 900 90		r	
Non-ferrous Metals		Oct2023	7.0 6.0 (b)HOO Bub Jack 40 9898 1.0 0.0			
Non-ferrous Metals			7.0 6.0 (b)HOX 00) 4.0 900 4.0 900 900 900 900 900 900 900 900 900 90			



Report Id: TSV1373 [WUSCAR] 06222990 (Generated: 07/02/2024 04:33:55) Rev: 1

Submitted By: Sonny Boucher