

# **OIL ANALYSIS REPORT**

### Sample Rating Trend



## Machine Id 410017

#### Component **Diesel Engine**

Fluic PETRO CANADA DURON SHP 15W40 (--- G

# 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.

AL)     Sample Number     Client Info     GFL0101110     GFL0098464     GFL0098464       Sample Number     Client Info     22 Nov 2023     01 Nov 2023     10 Oct 2023       Machine Age     hrs     Client Info     0     0     000       Oll Age     hrs     Client Info     0     0     600       Oll Age     hrs     Client Info     0     0     600       Oll Age     hrs     Client Info     0     0     600       CONTAMINATION     method     Imit/base     current     history1     history2       Fuel     WC Method     >0     1.0     -1.0     -1.0     -1.0       Wetar     WC Method     >0.2     NEG     NEG     NEG       Wetar     WC Method     >0.2     NEG     NEG     NEG       Tranum     ppm     ASTM05185m     >2     -1     0     -1       Staver     ppm     ASTM05185m     >2     0     0     -1       Staver     ppm     ASTM05185m														
Sample Number     Client Info     GFL0101110     GFL0098464     GFL0098464     GFL0098464     GFL0098486       Sample Date     Client Info     0     0     0     0       Machine Age     hrs     Client Info     0     0     0     0       Oil Age     hrs     Client Info     0     0     0     0     0       Oil Age     Client Info     Not Changd     Not Changd     Not Changd     Changed     Changed       Sample Status     Imithon     Nor Changd     Not Changd     Nor Changed     Changed     Changed       Water     WC Method     S5     <1.0														
Sample Date     Client Info     22 Nov 2023     01 Nov 2023     10 Oct 2023       Machine Age     hrs     Client Info     0     0     0       Oil Age     hrs     Client Info     0     0     0     0       Sample Status     Client Info     Not Changd     Not Changd     Nor MAL     NORMAL     NORMAL       CONTAMINATION     method     limit/base     current     history1     history2       Fuel     WC Method     >0.2     NEG     NEG     NEG     NEG       Water     ppm     ASTM D5165m     >10     6     3     14       Chromium     ppm     ASTM D5165m     >2     <1	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2							
Machine Age     hrs     Client Info     0     0     600       Oil Age     hrs     Client Info     Not Changd     Not Changd     Not Changd       Sample Status     Imit/base     current     History1     History2       Fuel     WC Method     >5     <1.0	Sample Number		Client Info			GFL0098464	GFL0098486							
Oil Age     irs     Client Info     0     600     600       Oil Changed     Client Info     Not Changd     Not Changd     Changed       Sample Status     Imit/bass     current     history1     history2       Fuel     WC Method     >5     <1.0	Sample Date		Client Info		22 Nov 2023	01 Nov 2023	10 Oct 2023							
Oil Changed Sample Status Client Info Not Changd NORMAL Not Changd NORMAL Not Changd NORMAL Changed NORMAL   CONTAMINATION method imit/base current history1 history2   Fuel WC Method >5 <1.0 <1.0 <1.0   Water WC Method >5 <1.0 <1.0 <1.0   Wear WC Method >5 <1.0 <1.0 <1.0   Wear WC Method >5 <1.0 Story1 history1   Iron ppm ASTM D5185m >110 6 3 14   Chromium ppm ASTM D5185m >2 0 0   Aluminum ppm ASTM D5185m >2 0 0   Cadmium ppm ASTM D5185m >4 1 0   Cadmium ppm ASTM D5185m 0 0 0 0   Cadmium ppm ASTM D5185m 0 13 4 1   Mor	Machine Age	hrs	Client Info		0	0	0							
Sample Status     NORMAL     NORMAL     NORMAL     NORMAL       CONTAMINATION     method     imil/base     current     history1     history2       Fuel     WC Method     >5     <1.0	Oil Age	hrs	Client Info		0	0	600							
CONTAMINATION     method     imit/base     current     history1     history2       Fuel     WC Method     >5     <1.0	Oil Changed		Client Info		•	Not Changd	Changed							
Fuel     WC Method     >5     <1.0     <1.0     <1.0       Water     WC Method     >0.2     NEG     NEG     NEG       Glycol     WC Method     NEG     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5186m     >10     6     3     14       Chromium     ppm     ASTM D5186m     >2     1     0     0       Titanium     ppm     ASTM D5186m     >2     0     0     1       Silver     ppm     ASTM D5186m     >25     4     4     16       Lead     ppm     ASTM D5186m     >45     1     0     1       Copper     ppm     ASTM D5186m     >4     2     7       Tin     pm     ASTM D5185m     >4     2     7       Tin     ppm     ASTM D5185m     0     13     4     1       Vanadium     ppm     ASTM D5185m0	Sample Status				NORMAL	NORMAL	NORMAL							
Water     WC Method     >0.2     NEG     NEG     NEG     NEG       Glycol     WC Method     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >110     6     3     14       Chromium     ppm     ASTM D5185m     >4     <1	CONTAMINAT	ION	method	limit/base	current	history1	history2							
Glycol     WC Method     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >4     <1	Fuel		WC Method	>5	<1.0	<1.0	<1.0							
WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >110     6     3     14       Chromium     ppm     ASTM D5185m     >4     <1	Water		WC Method	>0.2	NEG	NEG	NEG							
Iron     ppm     ASTM D5185m     >110     6     3     14       Chromium     ppm     ASTM D5185m     >4     <1	Glycol		WC Method		NEG	NEG	NEG							
Chromium     ppm     ASTM D5185m     >4     <1     <1       Nickel     ppm     ASTM D5185m     >2     <1	WEAR METAL	S	method	limit/base	current	history1	history2							
Nickel     ppm     ASTM D5185m     >2     <1     0     0       Titanium     ppm     ASTM D5185m      <1	Iron	ppm	ASTM D5185m	>110	6	3								
Titanium     ppm     ASTM D5185m     <1     0     <1       Silver     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >25     4     4     16       Lead     ppm     ASTM D5185m     >45     <1		ppm	ASTM D5185m	>4	<1									
Silver     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >25     4     4     16       Lead     ppm     ASTM D5185m     >45     <1     0     1       Copper     ppm     ASTM D5185m     >45     <1     0     1       Vanadium     ppm     ASTM D5185m     >4     <1     0     1       Vanadium     ppm     ASTM D5185m     >4     <1     0     0       Cadmium     ppm     ASTM D5185m     0     13     4     <1     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     13     4     <1       Barium     ppm     ASTM D5185m     0     0     13     4     <1       Calcium     ppm     ASTM D5185m     0     21     0     0       Calcium     ppm     ASTM D5185m	Nickel	ppm		>2										
Aluminum     pm     ASTM D5185m     >25     4     4     16       Lead     ppm     ASTM D5185m     >45     <1	Titanium	ppm	ASTM D5185m		<1	0	<1							
Lead     ppm     ASTM D5185m     >45     <1     0     1       Copper     ppm     ASTM D5185m     >85     4     2     7       Tin     ppm     ASTM D5185m     >4     <1     0     1       Vanadium     ppm     ASTM D5185m     >4     <1     0     0       Cadmium     ppm     ASTM D5185m     0     13     4     <1       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     13     4     <1       Barium     ppm     ASTM D5185m     0     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     <11     0     11       Magnesium     ppm     ASTM D5185m     1010     924     896     871       Calcium     ppm     ASTM D5185m     1070     1153     1130     1046       Phosphorus     ppm     ASTM D5185m     2060 <t< td=""><td>Silver</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td>0</td><td>÷</td></t<>	Silver	ppm	ASTM D5185m		0	0	÷							
Copper     ppm     ASTM D5185m     >85     4     2     7       Tin     ppm     ASTM D5185m     >4     <1	Aluminum	ppm	ASTM D5185m	>25	4	4	16							
Tin     ppm     ASTM D5185m     >4     <1     0     1       Vanadium     ppm     ASTM D5185m     0     0     0     <1       Cadmium     ppm     ASTM D5185m     0     13     4     <1       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     13     4     <1       Barium     ppm     ASTM D5185m     0     0     0     0     0       Magnese     ppm     ASTM D5185m     0     <13     4     <1       Magnesium     ppm     ASTM D5185m     0     <1     0     1       Calcium     ppm     ASTM D5185m     1010     924     8966     871       Calcium     ppm     ASTM D5185m     1070     1153     1130     1046       Phosphorus     ppm     ASTM D5185m     2060     2867     3039     2569       CONTAMINANTS     method     limit/base     cur	Lead	ppm	ASTM D5185m											
Vanadium     ppm     ASTM D5185m     <1     0     0       Cadmium     ppm     ASTM D5185m     0     0     <1       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     13     4     <1       Barium     ppm     ASTM D5185m     0     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     13     4     <1       Barium     ppm     ASTM D5185m     0     21     0     1       Maganese     ppm     ASTM D5185m     1010     924     896     871       Calcium     ppm     ASTM D5185m     1070     1153     1130     1046       Phosphorus     ppm     ASTM D5185m     1070     1241     1212     1157       Sulfur     ppm     ASTM D5185m     2060		ppm			4									
Cadmium     ppm     ASTM D5185m     0     0     <1       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     13     4     <1       Barium     ppm     ASTM D5185m     0     0     0     0     0     0       Magnaese     ppm     ASTM D5185m     0     <11     0     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     <1     0     11       Magnesium     ppm     ASTM D5185m     1010     924     896     871       Calcium     ppm     ASTM D5185m     1070     1153     1130     1046       Phosphorus     ppm     ASTM D5185m     150     1025     1025     862       Zinc     ppm     ASTM D5185m     2060     2867     3039     2569       CONTAMINANTS     method     limit/base     current     history1     history2       Solium		ppm		>4										
ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     13     4     <1		ppm					÷							
Boron     ppm     ASTM D5185m     0     13     4     <1       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     60     59     57     52       Manganese     ppm     ASTM D5185m     0     <1		ppm	ASTM D5185m		0	0	<1							
Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     60 <b>59</b> 57     52       Manganese     ppm     ASTM D5185m     0     <1	ADDITIVES		method	limit/base	current	history1	history2							
Molybdenum     ppm     ASTM D5185m     60     59     57     52       Manganese     ppm     ASTM D5185m     0     <1	Boron	ppm		0	13									
Manganese     ppm     ASTM D5185m     0     <1     0     1       Magnesium     ppm     ASTM D5185m     1010     924     896     871       Calcium     ppm     ASTM D5185m     1010     924     896     871       Calcium     ppm     ASTM D5185m     1070     1153     1130     1046       Phosphorus     ppm     ASTM D5185m     1070     125     1025     862       Zinc     ppm     ASTM D5185m     1270     1241     1212     1157       Sulfur     ppm     ASTM D5185m     2060     2867     3039     2569       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >30     6     3     5       Sodium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844	Barium	ppm	ASTM D5185m	0	0	0	0							
Magnesium     ppm     ASTM D5185m     1010     924     896     871       Calcium     ppm     ASTM D5185m     1070     1153     1130     1046       Phosphorus     ppm     ASTM D5185m     1070     1153     1130     1046       Phosphorus     ppm     ASTM D5185m     1150     1025     1025     862       Zinc     ppm     ASTM D5185m     1270     1241     1212     1157       Sulfur     ppm     ASTM D5185m     2060     2867     3039     2569       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >30     6     3     5       Sodium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/.1mm     *ASTM	-	ppm			59									
Calcium     ppm     ASTM D5185m     1070     1153     1130     1046       Phosphorus     ppm     ASTM D5185m     1150     1025     1025     862       Zinc     ppm     ASTM D5185m     1270     1241     1212     1157       Sulfur     ppm     ASTM D5185m     2060     2867     3039     2569       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >30     6     3     5       Sodium     ppm     ASTM D5185m     >30     6     3     6       Potassium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limi	-	ppm	ASTM D5185m	0	<1	0								
Phosphorus     ppm     ASTM D5185m     1150     1025     1025     862       Zinc     ppm     ASTM D5185m     1270     1241     1212     1157       Sulfur     ppm     ASTM D5185m     2060     2867     3039     2569       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >30     6     3     5       Sodium     ppm     ASTM D5185m     >30     6     3     6       Sodium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/	0	ppm		1010	924	896	871							
Zinc     ppm     ASTM D5185m     1270     1241     1212     1157       Sulfur     ppm     ASTM D5185m     2060     2867     3039     2569       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >30     6     3     5       Sodium     ppm     ASTM D5185m     >30     6     3     6       Sodium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414 </td <td></td> <td>ppm</td> <td></td> <td></td> <th></th> <td></td> <td></td>		ppm												
Sulfur     ppm     ASTM D5185m     2060     2867     3039     2569       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >30     6     3     5       Sodium     ppm     ASTM D5185m     >30     6     3     6       Potassium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7615     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4	•													
CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >30     6     3     5       Sodium     ppm     ASTM D5185m     >30     6     3     6       Potassium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4	-	ppm												
Silicon     ppm     ASTM D5185m     >30     6     3     5       Sodium     ppm     ASTM D5185m     >30     3     6     3     5       Sodium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/cm     *ASTM D7615     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4					2867									
Sodium     ppm     ASTM D5185m     3     3     6       Potassium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4		ITS				, , , , , , , , , , , , , , , , , , ,	· · · · · ·							
Potassium     ppm     ASTM D5185m     >20     11     8     47       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4				>30										
INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4		ppm												
Soot %     %     *ASTM D7844     >3     0.2     0.1     0.4       Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4	Potassium	ppm	ASTM D5185m	>20	11	8	47							
Nitration     Abs/cm     *ASTM D7624     >20     6.4     5.7     8.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4	INFRA-RED			limit/base	current	history1	history2							
Sulfation     Abs/.1mm     *ASTM D7415     >30     19.0     18.7     21.2       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.7     14.4     17.4														
FLUID DEGRADATION method limit/base current history1 history2   Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.4 17.4														
Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.4 17.4	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	18.7	21.2							
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2							
Base Number (BN)     mg KOH/g     ASTM D2896     9.8     8.2     8.5     6.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.7	14.4	17.4							
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.2	8.5	6.8							



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Nov29/21 Mar23/22 Nov25/22 -Dec30/22

# **OIL ANALYSIS REPORT**

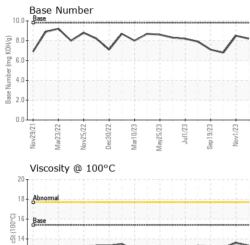
scalar

\*Visual

NONE

VISUAL

White Metal



$\sim$		white wetai	scalar	visuai	NONE	NONE	NONE	NONE
Y	$\smile$	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
0/22 -	Jul1/23 - Sep 19/23 - Nov1/23 -	Appearance		*Visual	NORML	NORML	NORML	NORML
Dec30/22 Mar1 0/23 May25/23	Jul1/23 Sep19/23 Nov1/23	Odor		*Visual	NORML	NORML	NORML	NORML
		Emulsified Water		*Visual	>0.2	NEG	NEG	NEG
0°C		Free Water		*Visual	20.2	NEG	NEG	NEG
		FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	****	Visc @ 100°C	cSt A	ASTM D445	15.4	13.3	13.6	13.1
		GRAPHS						
		Ferrous Alloys						
Dec30/22	Juli/23 + - Sep 19/23 + - 8 - 8 - 9 - 9 - 9 - 9 - 9 - 9 - 9 - 9	Non-ferrous Metals	Mar(25/23	Juli (23 Sepi 19/23 Sepi 19/23	Nov1/23			
		Uiscosity @ 100°C	Mart 0.23	Juli/23	10.0 8.0 (B)HOX MUNPer (m) 8 Base Munuber (m) 8 Base 2.0	Base Number Base	/~~~	$\leq$
		0023/21	Mar10/23	Jul1/23 Sep19/23	0.0	Nov29/21 Mar23/22 Nov25/22	Mar10/23	Sep 19/23
Certificate L2367 To discuss this * - Denotes test	Laboratory Sample No. Lab Number Unique Number Test Packag	:06026014 [ er :10775805 ] e :FLEET	Received Diagnosec Diagnostic	:06 [ 1 :07 [ cian :Wes	Dec 2023 Dec 2023 S Davis	GFL Enviro		Mayfield, KY US 42066 Jack Lindsey

NONE

NONE

NONE

Contact/Location: Jack Lindsey - GFL846