

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 280

Service Description: HR serv/insp

Asset: U53006 GRAVEL TRUCK  
 Last Odometer Reading 306919  
 Interval YR Hours or 1 year maximum service

Scheduled Date: 09/28/2016 Scheduled Odometer: 611  
 Completed Date: 09/30/2016 Completed Odometer: 611

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Complete
Engine oil Filter change every 600 hrs	Complete
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
09/28/2016	A4720900551	TOWER	Materials	1.00	79.00000	0.000%	\$79.00
09/28/2016	A4721800309	TOWER	Materials	1.00	35.99000	0.000%	\$35.99
09/28/2016	3W0696	TOWER	Materials	1.00	17.21000	0.000%	\$17.21
09/28/2016	SPEN0001	1HREG	Labour	1.50	37.10000	21.000%	\$67.34
09/29/2016	SPEN0001	1HREG	Labour	1.00	37.10000	21.000%	\$44.89
09/30/2016	SPEN0001	1HREG	Labour	6.50	37.10000	21.000%	\$291.79
09/30/2016	2312337008	TOWER	Materials	2.00	1.43000	0.000%	\$2.86
10/05/2016	1040	WAREHOUSE	Materials	36.00	5.89000	0.000%	\$212.04

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 5806      Service Description: Serv/Insp

Asset:	U53006	GRAVEL TRUCK	
Last Odometer Reading		306919	
Interval	YR	Hours or 1 year maximum service	
Scheduled Date:	12/13/2022	Scheduled Odometer:	6785
Completed Date:	12/13/2022	Completed Odometer:	6785

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
12/13/2022	HOLM0001	1HREG	Labour	8.00	40.89000	21.000%	\$395.82
12/14/2022	HOLM0001	1HREG	Labour	3.00	40.89000	21.000%	\$148.43
12/13/2022	A4720900551	WAREHOUSE	Materials	1.00	94.56000	0.000%	\$94.56
12/13/2022	14-17927-000	WAREHOUSE	Materials	1.00	38.91000	0.000%	\$38.91
12/13/2022	DEX6	WAREHOUSE	Materials	2.00	7.74000	0.000%	\$15.48
12/13/2022	DEX6	WAREHOUSE	Materials	1.00	7.74000	0.000%	\$7.74
12/13/2022	RD-3-8821-0	WAREHOUSE	Materials	1.00	35.46000	0.000%	\$35.46
12/13/2022	932630Q	WAREHOUSE	Materials	1.00	92.50000	0.000%	\$92.50



**ENGINE**

N030-52364-0251  
 LABEL#: 201229907  
 SHOP JOB NUM : 5806  
 SAMPLE SHIP TIME (days) : 16  
**CYPRESS COUNTY**  
 RECEIVED DATE: 30-Dec-22

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**



**No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Gregory Scribner**  
**Interpreted On: 06-Jan-23**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
Sampled Date	14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
Sample Id	N030-52364-0251	N030-52286-0695	N030-52244-0390	N030-52220-0515
Lab Date	30-Dec-22	13-Oct-22	01-Sep-22	08-Aug-22
Meter [Hr]	6785	6555	6317	6106
Meter On Fluid	230	728	490	279
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	NULL	10W-40	10W-40	10W-40
Fluid Type	DURON UHP E6	DURON UHP	DURON UHP	DURON UHP
Fluid Change	N	Y	N	N
Filter Change	N	Y	N	N
Make Up Fluid []	0			0

**CONDITION / CONTAMINATION**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
<b>VISCOSITY (Centistokes)</b>					
V100	Viscosity at 100 C	15.20	15.10	13.80	14.50
<b>VISCOSITY (Centistokes)</b>					
V40	Viscosity at 40 C	105.2	109.5	103.4	99.70
<b>VISCOSITY INDEX</b>					
VI	Viscosity Index	152	144	134	150

**WEAR LEVELS / ADDITIVES**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
<b>ELEMENTAL ANALYSIS (ppm)</b>					
Na	Sodium	2	2	2	1
K	Potassium	8	15	13	14
Si	Silicon	4	7	5	4
Al	Aluminum	9	16	12	13
Fe	Iron	18	35	24	21
Cr	Chromium	2	3	2	2
Pb	Lead	0	0	0	0
Cu	Copper	3	4	3	3
Sn	Tin	0	0	0	0
Ni	Nickel	2	2	1	2
Ag	Silver	0	0	0	0
Ti	Titanium	0	0	0	0
V	Vanadium	0	0	0	0
Zn	Zinc	1217	1300	1239	1263
Ca	Calcium	1127	1191	1116	1110
Mg	Magnesium	994	1056	1071	982
Ba	Barium	0	0	0	0
B	Boron	1	1	3	0
Mo	Molybdenum	60	67	58	60
P	Phosphorus	1006	1044	1031	1001

**INFRARED (UFM)**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
ST	Soot	29	61	43	27
OXI	Oxidation	18	25	20	17
SUL	Sulfur Products	22	27	24	21
NIT	Nitration	10	13	10	9

**ANTIFREEZE**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
A	Antifreeze	N	N	N	N

**FUEL**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
F	Fuel	N	N	N	N

**WATER**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
W	Water	N	N	N	N

**ENGINE**

**N030-52192-0206**  
 LABEL#: 200957365  
 SHOP JOB NUM : 5509  
 SAMPLE SHIP TIME (days) : 26  
**CYPRESS COUNTY**  
 RECEIVED DATE: 11-Jul-22

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**  
 **No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Gregory Scribner**  
**Interpreted On: 12-Jul-22**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN SOME NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
Sampled Date	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
Sample Id	N030-52192-0206	N030-52145-0314	N030-52024-0942	N030-51302-0024
Lab Date	11-Jul-22	25-May-22	24-Jan-22	29-Oct-21
Meter [Hr]	5827	5672	5465	5239
Meter On Fluid	588	207	226	579
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP		
Fluid Change	Y	N	N	Y
Filter Change	Y	N	N	Y
Make Up Fluid []	0	0		

**PREVIOUS SAMPLE**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN SOME NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**CONDITION / CONTAMINATION**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	13.50	14.20	14.50	13.7
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	99.70	100.0	101.0	98.3

**WEAR LEVELS / ADDITIVES**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	2	2	0	1
K Potassium	27	29	8	30
Si Silicon	4	4	2	3
Al Aluminum	28	29	9	26
Fe Iron	42	45	16	41
Cr Chromium	3	4	1	3
Pb Lead	0	0	0	0
Cu Copper	5	5	2	6
Sn Tin	0	0	0	1
Ni Nickel	2	2	1	1
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1294	1302	1268	1307
Ca Calcium	1146	1133	1077	1140
Mg Magnesium	1008	1173	798	1069
Ba Barium	0	0	0	0
B Boron	0	1	0	1
Mo Molybdenum	62	72	51	68
P Phosphorus	1047	1044	1013	1053

**VISCOSITY INDEX**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
VI Viscosity Index	135	145	148	140

**INFRARED (UFM)**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
ST Soot	47	35	24	48
OXI Oxidation	22	19	17	21
SUL Sulfur Products	26	23	22	25
NIT Nitration	11	10	9	11

**ANTIFREEZE**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
PGC Percent Glycol Con	0.0029	0.0226		0

**FUEL**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
F Fuel	N	N	N	N

**WATER**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
W Water	N	N	N	N



**ENGINE**

**N030-52220-0515**  
 LABEL#: 201023658  
 SHOP JOB NUM : 5550  
 SAMPLE SHIP TIME (days) : 10  
**CYPRESS COUNTY**  
 RECEIVED DATE: 08-Aug-22

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**  
 **No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Greg Eyre**  
**Interpreted On: 10-Aug-22**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
Sampled Date	29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
Sample Id	N030-52220-0515	N030-52192-0206	N030-52145-0314	N030-52024-0942
Lab Date	08-Aug-22	11-Jul-22	25-May-22	24-Jan-22
Meter [Hr]	6106	5827	5672	5465
Meter On Fluid	279	588	207	226
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP	DURON UHP	
Fluid Change	N	Y	N	N
Filter Change	N	Y	N	N
Make Up Fluid []	0	0	0	

**CONDITION / CONTAMINATION**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
<b>VISCOSITY (Centistokes)</b>					
V100	Viscosity at 100 C	14.50	13.50	14.20	14.50
<b>VISCOSITY (Centistokes)</b>					
V40	Viscosity at 40 C	99.70	99.70	100.0	101.0
<b>VISCOSITY INDEX</b>					
VI	Viscosity Index	150	135	145	148

**WEAR LEVELS / ADDITIVES**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
<b>ELEMENTAL ANALYSIS (ppm)</b>					
Na	Sodium	1	2	2	0
K	Potassium	14	27	29	8
Si	Silicon	4	4	4	2
Al	Aluminum	13	28	29	9
Fe	Iron	21	42	45	16
Cr	Chromium	2	3	4	1
Pb	Lead	0	0	0	0
Cu	Copper	3	5	5	2
Sn	Tin	0	0	0	0
Ni	Nickel	2	2	2	1
Ag	Silver	0	0	0	0
Ti	Titanium	0	0	0	0
V	Vanadium	0	0	0	0
Zn	Zinc	1263	1294	1302	1268
Ca	Calcium	1110	1146	1133	1077
Mg	Magnesium	982	1008	1173	798
Ba	Barium	0	0	0	0
B	Boron	0	0	1	0
Mo	Molybdenum	60	62	72	51
P	Phosphorus	1001	1047	1044	1013

**INFRARED (UFM)**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
ST	Soot	27	47	35	24
OXI	Oxidation	17	22	19	17
SUL	Sulfur Products	21	26	23	22
NIT	Nitration	9	11	10	9

**ANTIFREEZE**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
A	Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
PGC	Percent Glycol Con		0.0029	0.0226	

**FUEL**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
F	Fuel	N	N	N	N

**WATER**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
W	Water	N	N	N	N

**ENGINE**

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**N030-52286-0695**

LABEL#: 200957559

SHOP JOB NUM : 5687

SAMPLE SHIP TIME (days) : 10

**CYPRESS COUNTY**

RECEIVED DATE: 13-Oct-22

**No Action Required**

**Interp By: Gregory Scribner**  
**Interpreted On: 17-Oct-22**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
Sampled Date	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
Sample Id	N030-52286-0695	N030-52244-0390	N030-52220-0515	N030-52192-0206
Lab Date	13-Oct-22	01-Sep-22	08-Aug-22	11-Jul-22
Meter [Hr]	6555	6317	6106	5827
Meter On Fluid	728	490	279	588
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP	DURON UHP	DURON UHP
Fluid Change	Y	N	N	Y
Filter Change	Y	N	N	Y
Make Up Fluid [ ]			0	0

**CONDITION / CONTAMINATION**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	15.10	13.80	14.50	13.50
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	109.5	103.4	99.70	99.70
<b>VISCOSITY INDEX</b>				
VI Viscosity Index	144	134	150	135

**WEAR LEVELS / ADDITIVES**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	2	2	1	2
K Potassium	15	13	14	27
Si Silicon	7	5	4	4
Al Aluminum	16	12	13	28
Fe Iron	35	24	21	42
Cr Chromium	3	2	2	3
Pb Lead	0	0	0	0
Cu Copper	4	3	3	5
Sn Tin	0	0	0	0
Ni Nickel	2	1	2	2
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1300	1239	1263	1294
Ca Calcium	1191	1116	1110	1146
Mg Magnesium	1056	1071	982	1008
Ba Barium	0	0	0	0
B Boron	1	3	0	0
Mo Molybdenum	67	58	60	62
P Phosphorus	1044	1031	1001	1047

**INFRARED (UFM)**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
ST Soot	61	43	27	47
OXI Oxidation	25	20	17	22
SUL Sulfur Products	27	24	21	26
NIT Nitration	13	10	9	11

**ANTIFREEZE**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
PGC Percent Glycol Con				0.0029

**FUEL**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
F Fuel	N	N	N	N

**WATER**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
W Water	N	N	N	N



**ENGINE**

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**  
**No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Gregory Scribner**  
**Interpreted On: 17-Oct-22**

**N030-52286-0695**  
 LABEL#: 200957559  
 SHOP JOB NUM : 5687  
 SAMPLE SHIP TIME (days) : 10  
**CYPRESS COUNTY**  
 RECEIVED DATE: 13-Oct-22

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
Sampled Date	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
Sample Id	N030-52286-0695	N030-52244-0390	N030-52220-0515	N030-52192-0206
Lab Date	13-Oct-22	01-Sep-22	08-Aug-22	11-Jul-22
Meter [Hr]	6555	6317	6106	5827
Meter On Fluid	728	490	279	588
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP	DURON UHP	DURON UHP
Fluid Change	Y	N	N	Y
Filter Change	Y	N	N	Y
Make Up Fluid []			0	0

**CONDITION / CONTAMINATION**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	15.10	13.80	14.50	13.50

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	109.5	103.4	99.70	99.70

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>VISCOSITY INDEX</b>				
VI Viscosity Index	144	134	150	135

**WEAR LEVELS / ADDITIVES**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	2	2	1	2
K Potassium	15	13	14	27
Si Silicon	7	5	4	4
Al Aluminum	16	12	13	28
Fe Iron	35	24	21	42
Cr Chromium	3	2	2	3
Pb Lead	0	0	0	0
Cu Copper	4	3	3	5
Sn Tin	0	0	0	0
Ni Nickel	2	1	2	2
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1300	1239	1263	1294
Ca Calcium	1191	1116	1110	1146
Mg Magnesium	1056	1071	982	1008
Ba Barium	0	0	0	0
B Boron	1	3	0	0
Mo Molybdenum	67	58	60	62
P Phosphorus	1044	1031	1001	1047

**INFRARED (UFM)**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
ST Soot	61	43	27	47
OXI Oxidation	25	20	17	22
SUL Sulfur Products	27	24	21	26
NIT Nitration	13	10	9	11

**ANTIFREEZE**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
PGC Percent Glycol Con				0.0029

**FUEL**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
F Fuel	N	N	N	N

**WATER**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
W Water	N	N	N	N

**ENGINE**

**N030-52244-0390**  
 LABEL#: 200957174  
 SAMPLE SHIP TIME (days) : 6  
**CYPRESS COUNTY**  
 RECEIVED DATE: 01-Sep-22

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**

**No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Gregory Scribner**  
**Interpreted On: 02-Sep-22**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
Sampled Date	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
Sample Id	N030-52244-0390	N030-52220-0515	N030-52192-0206	N030-52145-0314
Lab Date	01-Sep-22	08-Aug-22	11-Jul-22	25-May-22
Meter [Hr]	6317	6106	5827	5672
Meter On Fluid	490	279	588	207
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP	DURON UHP	DURON UHP
Fluid Change	N	N	Y	N
Filter Change	N	N	Y	N
Make Up Fluid [ ]		0	0	0

**CONDITION / CONTAMINATION**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	13.80	14.50	13.50	14.20
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	103.4	99.70	99.70	100.0
<b>VISCOSITY INDEX</b>				
VI Viscosity Index	134	150	135	145

**WEAR LEVELS / ADDITIVES**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	2	1	2	2
K Potassium	13	14	27	29
Si Silicon	5	4	4	4
Al Aluminum	12	13	28	29
Fe Iron	24	21	42	45
Cr Chromium	2	2	3	4
Pb Lead	0	0	0	0
Cu Copper	3	3	5	5
Sn Tin	0	0	0	0
Ni Nickel	1	2	2	2
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1239	1263	1294	1302
Ca Calcium	1116	1110	1146	1133
Mg Magnesium	1071	982	1008	1173
Ba Barium	0	0	0	0
B Boron	3	0	0	1
Mo Molybdenum	58	60	62	72
P Phosphorus	1031	1001	1047	1044

**INFRARED (UFM)**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
ST Soot	43	27	47	35
OXI Oxidation	20	17	22	19
SUL Sulfur Products	24	21	26	23
NIT Nitration	10	9	11	10

**ANTIFREEZE**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
PGC Percent Glycol Con			0.0029	0.0226

**FUEL**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
F Fuel	N	N	N	N

**WATER**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
W Water	N	N	N	N

**ENGINE**

**N030-51245-0109**  
 LABEL#: 200786547  
 SAMPLE SHIP TIME (days) : 3  
**CYPRESS COUNTY**  
 RECEIVED DATE: 02-Sep-21

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**  
 **No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Peter Lewandowski**  
**Interpreted On: 03-Sep-21**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	30-Aug-21	16-Jul-21	10-Jun-21	04-May-21
Sampled Date	30-Aug-21	16-Jul-21	10-Jun-21	04-May-21
Sample Id	N030-51245-0109	N030-51208-0407	N030-51172-0616	N030-51138-0028
Lab Date	02-Sep-21	27-Jul-21	21-Jun-21	18-May-21
Meter [Hr]	5012	4816	4639	4460
Meter On Fluid	373	177	649	470
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type				
Fluid Change	N	N	Y	N
Filter Change	N	N	Y	N
Make Up Fluid []	0	0	0	3

**PREVIOUS SAMPLE**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**CONDITION / CONTAMINATION**

	30-Aug-21	16-Jul-21	10-Jun-21	04-May-21
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	14.2	14.5	14.0	13.9
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	98.2	98.8	97.6	97.3

**WEAR LEVELS / ADDITIVES**

		30-Aug-21	16-Jul-21	10-Jun-21	04-May-21
<b>ELEMENTAL ANALYSIS (ppm)</b>					
Na	Sodium	1	1	2	1
K	Potassium	23	16	43	47
Si	Silicon	3	3	3	3
Al	Aluminum	17	14	29	30
Fe	Iron	29	27	63	68
Cr	Chromium	2	2	4	4
Pb	Lead	0	0	0	0
Cu	Copper	4	4	8	7
Sn	Tin	0	0	0	0
Ni	Nickel	1	1	1	1
Ag	Silver	0	0	0	0
Ti	Titanium	0	0	0	0
V	Vanadium	0	0	0	0
Zn	Zinc	1259	1286	1241	1256
Ca	Calcium	1109	1111	1001	1085
Mg	Magnesium	977	998	861	1005
Ba	Barium	0	0	0	0
B	Boron	1	1	0	0
Mo	Molybdenum	58	62	57	63
P	Phosphorus	979	1036	1004	987

**VISCOSITY INDEX**

VI Viscosity Index	148	152	146	145
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**INFRARED (UFM)**

ST Soot	28	12	39	28
OXI Oxidation	17	15	21	18
SUL Sulfur Products	21	21	24	21
NIT Nitration	9	8	10	10

**ANTIFREEZE**

A Antifreeze	N	N	N	N
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**GLYCOL CONTENT (%)**

PGC Percent Glycol Con			0.0133	0
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**FUEL**

F Fuel	N	N	N	N
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**WATER**

W Water	N	N	N	N
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PHONE: 1-888 FINNING (346-6464)

Email: oilsupport@finning.com Web: www.finning.com

CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA	CUSTOMER EQUIP NUM : U72101 SERIAL NUMBER : 97AX39674 MODEL : ACTERA MANUFACTURER : STERLING COMPANY NAME : CYPRESS COUNTY JOBSITE : AREA : REGION :	COMPARTMENT NAME : RADIATOR COMP SERIAL NUM : WAX51878 COMPARTMENT MODEL : C7_CAT LABEL# : 104961 SHOP JOB NUM : SAMPLE TYPE : COOLANT SAMPLE SHIP TIME (days) : 35 SAMPLE LOCATION :

Interp By: Antonia Castillo

**No Action  
Required**

ALL ANALYSIS READINGS ARE WITHIN THE EXPECTED RANGE FOR THIS COOLANT SAMPLE. CONTINUE TO SAMPLE AT THE RECOMMENDED INTERVAL.

LAB #  
N030-48074-2109  
PROCESS DATE 15-Mar-18

CORROSION ELEMENTS - COOLANT FORMULATION																					
SAMPLE DATE	SAMPLE ID	FLUID BRAND	TYPE	NO2	NO3	MoO4	SiO3	BO3	PO4	SAC	TT	K	Na	Al	Cu	Fe	Pb	Sn	Zn	Ca	Mg
05-Mar-18	N030-48074-2109	CATELC		631	68	1019	36	131	14	1435	763	24	3922	0	0	0	0	0	0	17	0
04-Mar-16	N030-48084-2128	UNKNOWN		582	107	1160	51	146	16	1315	828	18	4418	0	0	0	0	0	0		
20-Jan-14	N030-44030-2119	UNKNOWN		717	77	871	26	112	13	1211	897	10	3070	0	0	0	0	1	0		

FREEZE/BOIL PROTECTION - CONTAMINATION																	
SAMPLE DATE	SAMPLE ID	METER ( KM )	METER ON FLUID	FLUID BRAND	TYPE	FLUID CHANGE	GL	FP	BP	pH	CON	CL	GLO	SO4	TH	Foam	
05-Mar-18	N030-48074-2109	10012	10012	CATELC		U	53	-42	108	8.1	3883	16	207	59	44	norm	
04-Mar-16	N030-48084-2128	8686	8686	UNKNOWN		U	52	-41	108	8	3098	21	109	55	40	norm	
20-Jan-14	N030-44030-2119	7288	7288	UNKNOWN		U	51	-38	107	8.2	3138	11	1	38	31	norm	

COOLANT PHYSICALS													
SAMPLE DATE	SAMPLE ID	METER ( KM )	METER ON FLUID	FLUID BRAND	TYPE	Color	App	Odor	Oil	PAmt	PApp	PCol	PProp
05-Mar-18	N030-48074-2109	10012	10012	CATELC		red/orange	clear	norm	none	none			
04-Mar-16	N030-48084-2128	8686	8686	UNKNOWN		red	clear	norm	none	none	none	none	none
20-Jan-14	N030-44030-2119	7288	7288	UNKNOWN		red/orange	clear	norm	none	none	none	none	none

Al = Aluminum, App = Appearance, BO3 = Borate, BP = Boil Point(°C), CL = Chloride, CON = Conductivity, Ca = Calcium, Cu = Copper, FP = Freeze Point(°C), Fe = Iron, GL = Glycol, GLO = Glycolate, K = Potassium, Mg = Magnesium, MoO4 = Molybdate, NO2 = Nitrite, NO3 = Nitrate, Na = Sodium, PAmt = Precipitate Amount, PO4 = Phosphate, Pb = Lead, SAC = Sebacic Acid, SO4 = Sulfate, SiO3 = Silicate, Sn = Tin, TH = Total Hardness, TT = Tolytriazole, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.



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**CONTACT INFORMATION**  
 GREG SJOLIE  
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 BOX 108  
 DUNMORE, AB  
 T0J 1A0  
 PHONE: 4035262888  
 FAX: 4035268958  
 Email: GREG.SJOLIE@CYPRESS.AB.

**EQUIPMENT**  
 EQUIP NUM: U53006  
 SERIAL NUMBER: 4QLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**  
 COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM: 47192750336485  
 COMPARTMENT MODEL :  
 LABEL#: 200549058  
 SHOP JOB NUM : 4221  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days) : 7  
 SAMPLE LOCATION :

Interp By: Greg Eyre

**No Action  
 Required**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-50336-0432  
 PROCESS 01-Dec-20  
 DATE

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
24-Nov-20	N030-50336-0432	4274	284	N	N	2	31	3	18	37	2	0	5	0	0	0	0	0	1243	1021	977	0	1	60	938
15-Sep-20	N030-50268-0254	3990	646	Y	Y	2	62	5	37	108	4	0	13	0	1	0	0	0	1240	1056	1032	0	1	62	1000
29-Jul-20	N030-50224-0174	3785	441	N	N	2	48	4	31	96	4	0	11	0	1	0	0	0	1300	1066	1098	0	0	65	1131
04-Jun-20	N030-50162-0172	3580	236	N	N	2	37	3	24	57	2	0	8	0	1	0	0	0	1256	1040	893	0	0	55	1009

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
24-Nov-20	N030-50336-0432	4274	284	PETRO-CAN		10W-40	N	N	14.3	98.2	150	21	16	20	8	N	0	N
15-Sep-20	N030-50268-0254	3990	646	PETRO-CAN		10W-40	Y	Y	13.7	98.3	144	41	19	23	10	N	0	N
29-Jul-20	N030-50224-0174	3785	441	PETRO-CAN		10W-40	N	N	13.5	98.3	141	32	17	21	9	N	0	N
04-Jun-20	N030-50162-0172	3580	236	PETRO-CAN		10W-40	N	N	14.5	98.8	152	21	15	20	8	N	0.0001	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
24-Nov-20	N030-50336-0432	N	N	N
15-Sep-20	N030-50268-0254	Y	Y	N
29-Jul-20	N030-50224-0174	N	N	N
04-Jun-20	N030-50162-0172	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glyco Content, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.



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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA	CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA: REGION:	COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL#: 4888752 SHOP JOB NUM : SAMPLE TYPE: OIL SAMPLE SHIP TIME (days) : 7 SAMPLE LOCATION :

Interp By: Dallas Livingston

**No Action Required**  
 WEAR METAL ANALYSIS INDICATES ACCEPTABLE WEAR RATE. OIL CONDITION ANALYSIS IS ACCEPTABLE. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-47200-0302  
 PROCESS DATE 19-Jul-17

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																									
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
12-Jul-17	N030-47200-0302	1410	195	N	N	3	15	3	10	17	2	0	65	0	1	0	0	0	1142	1553	623	0	26	33	965
17-Mar-17	N030-47081-0840	1215	603	Y	Y	6	57	4	33	39	4	1	215	<0	1	1	0	<0	1125	2144	152	0	42	9	880
19-Jan-17	N030-47027-0573	1005	394	N	N	5	26	3	17	28	3	1	215	0	0	1	0	<0	1038	2006	165	0	41	9	864
02-Dec-16	N030-48354-0651	807	196	N	N	3	10	2	9	19	1	1	183	1	0	1	0	<0	1124	2109	156	0	50	8	935

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																	
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	F
12-Jul-17	N030-47200-0302	1410	195	PETRO-CAN	DURON-E	10W-40	N	N	14.7	101.5	150	11	14	19	6	N	N
17-Mar-17	N030-47081-0840	1215	603	PETRO-CAN	DURON-E	10W-40	Y	Y	15.4	104.8		30	16	20	8	N	NT
19-Jan-17	N030-47027-0573	1005	394	PETRO-CAN	DURON-E	10W-40	N	N	14.1	102.7		19	17	20	8	N	NT
02-Dec-16	N030-48354-0651	807	196	PETRO-CAN	DURON-E	10W-40	N	N	14.2	101.1		8	16	19	7	N	NT

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
12-Jul-17	N030-47200-0302	N	N	N
17-Mar-17	N030-47081-0840	Y	Y	N
19-Jan-17	N030-47027-0573	N	N	N
02-Dec-16	N030-48354-0651	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

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**Unit Information**

**Service Information**

NIT: U53006  
 Warranty Expiry Date:  
 quip Make: WESTERN STAR  
 Comp Make: DETROIT\_DS  
 quip Model: 4700SB  
 Comp Model: DD13  
 quip Serial: 4GLGS2013  
 Comp Serial: 47192750336485  
 Component: ENGINE

Service Interval:  
 Work Order No:  
 Job Site: Default Site  
 Branch:  
 Sampled Site: Default Site

Customer Comments:

<b>Evaluation Code</b>	<b>Recommendation</b>	<b>Normal</b>	<b>17/03/17</b>	<b>Lab Number</b>	<b>N030-47081-0840</b>
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Elevated potassium and aluminum is common in new engines due to solder used in assembly of inter cooler system. Copper alone usually indicates cooler core leaching and is not normally wear of bronze/brass parts. Wear metal analysis indicates acceptable wear rate. Oil condition analysis is acceptable. Resample at the next service interval.

<b>Days to reach Lab</b>	<b>5</b>	<b>Interpreted By</b>	<b>Dallas Livingston</b>	<b>Analyzed By</b>	<b>gkscribner</b>	<b>Label Number</b>	<b>4633206</b>
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<b>Evaluation Code</b>	<b>Recommendation</b>	<b>Normal</b>	<b>Date</b>	<b>19/01/17</b>	<b>Lab Number</b>	<b>N030-47027-0573</b>
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Elevated copper level may be due to increased oil cooler core leaching, not wear. Oil change or new formulation can restart cooler core leaching. Other readings appear to be normal. Resample at the next service interval.

<b>Days to reach Lab</b>	<b>8</b>	<b>Interpreted By</b>	<b>Peter Leggo</b>	<b>Analyzed By</b>	<b>jnewman</b>	<b>Label Number</b>	<b>4633186</b>
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Sample Information								Sample Reading																		
Evaluation	SMU	CMU	Oil Hours	Oil Chg	Filter Chg	Sample Date	Received Date	Oil Brand	Oil Grade	Na Sodium	K Potassium	Si Silicon	Al Aluminum	Fe Iron	Cr Chromium	Pb Lead	Cu Copper	Sn Tin	Ni Nickel	Ag Silver	Ti Titanium	V Vanadium	ST Soot	OXI Oxidation	SUL Sulfation	
Baseline																										
A	1215	1,215	603	Y	Y	17/03/17	22/03/17	PCDURONE	10W-40	6	57	4	33	39	4	1	215	<0	1	1	0	<0	30	16	20	
A	1005	1,005	394	N	N	19/01/17	27/01/17	PCDURONE	10W-40	5	28	3	17	28	3	1	215	0	0	1	0	<0	19	17	20	
A	807	807	196	N	N	02/12/16	20/12/16	PCDURONE	10W-40	3	10	2	9	19	1	1	183	1	0	1	0	<0	8	16	19	
A	611	611	611	Y	Y	30/09/16	21/10/16	FACTORYFIL		3	1	4	6	19	0	1	6	<0	0	0	0	0	21	17	21	
A	410	410	410	N	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0	<0	11	16	18	

Sample Reading														
NIT	Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	% Water	% Fuel	GLY
Vitration	Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent W	Percent F	GLY
								15	99					
8	1125	2144	152	0	42	9	880	15.4	104.8	NT	N	0.00	0.0	N
8	1038	2006	165	0	41	9	864	14.1	102.7	NT	N	0.00	0.0	N
7	1124	2109	156	0	50	8	935	14.2	101.1	NT	N	0.00	0.0	NT
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N
	1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0

CYPRESS COUNTY  
 Attn: GREG S.JOLIE  
 BOX 108  
 DUNMORE, AB T0J 1A0

<b>P - Positive</b>	<b>T - Trace</b>	<b>N - Negative</b>	<b>NR - Not Required</b>	<b>NT - Not Tested</b>
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<b>A</b>	<b>No Action Required</b>	<b>B</b>	<b>Monitor</b>	<b>C</b>	<b>Action Required</b>	<b>U</b>	<b>Urgent Action Required</b>
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## PROACTIVE FLUID ANALYSIS Lubricant & Component • Predictive Results



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### Unit Information

UNIT: 545 **33006**  
 Equip Make: WESTERN STAR  
 Equip Model: 4900SB  
 Equip Serial: 4GLGS2013  
 Component: ENGINE

Warranty Expiry Date:  
 Comp Make: DETROIT\_DS  
 Comp Model: DD13  
 Comp Serial: 47192750336485

### Service Information

Service Interval:  
 Work Order No:  
 Job Site: Default Site  
 Branch:  
 Sampled Site: Default Site

Customer Comments:

Evaluation Code	<b>A</b>	Recommendation	Normal	30/09/16	Lab Number	N030-46295-0348
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Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab	21	Interpreted By	Peter Leggo	Analyzed By	jnewman	Label Number	4562605
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Evaluation Code	<b>A</b>	Recommendation	Normal	Date	20/05/16	Lab Number	N030-46148-0211
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Elevated copper level may be due to increased oil cooler core leaching, not wear. Oil change or new formulation can restart cooler core leaching. Other readings appear to be normal. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Resample at the next service interval.

Days to reach Lab	7	Interpreted By	Peter Lewandowski	Analyzed By	plewandowski	Label Number	4506810
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Sample Information										Sample Reading																
Evaluation	SMU	CMU	Oil Hours	Oil Chg	Filter Chg	Sample Date	Received Date	Oil Brand	Oil Grade	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL	
										Sodium	Potassium	Silicon	Aluminum	Iron	Chromium	Lead	Copper	Tin	Nickel	Silver	Titanium	Vanadium	Seol	Oxidation	Sulfation	
Baseline																										
A	611	611	611	Y	Y	30/09/16	21/10/16	FACTORYFIL		3	1	4	6	19	0	1	6	<0	0	0	0	0	0	21	17	21
A	410	410	410	N	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0	<0	11	16	18	
A	206	206	206	N	N	29/01/16	11/02/16	FACTORY		5	18	4	6	39	1	0	37	2	1	1	0	<0	5	15	17	

Sample Reading														
NIT	Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	% Water	% Fuel	GLY
Nitration	Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent W	Percent F	GLY
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N
	1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0
	1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT

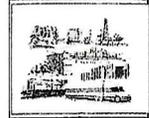
CYPRESS COUNTY  
 Attn: GREG SLOJIE  
 BOX 108  
 DUNMORE AB TOJ 1A0

P - Positive	T - Trace	N - Negative	NR - Not Required	NT - Not Tested
<b>A</b> No Action Required	<b>B</b> Monitor	<b>C</b> Action Required	<b>D</b> Urgent Action Required	



## PROACTIVE FLUID ANALYSIS

### Lubricant & Component • Predictive Results



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#### Unit Information

#### Service Information

UNIT: U53006	Warranty Expiry Date:	Service Interval:
Equip Make: WESTERN STAR	Comp Make: DETROIT_DS	Work Order No:
Equip Model: 4700SB	Comp Model: DD13	Job Site: Default Site
Equip Serial: 4GLGS2013	Comp Serial: 47192750336485	Branch: Default Site
Component: ENGINE		Sampled Site: Default Site

Customer Comments:

Evaluation Code	<b>A</b>	Recommendation	Normal	Date	02/12/16	Lab Number	N030-46354-0651
Copper alone usually indicates cooler core leaching and is not normally wear of bronze/brass parts. Wear metal analysis indicates acceptable wear rate. Oil condition analysis is acceptable. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Re sample at the next service interval.							
Days to reach Lab	18	Interpreted By	Dallas Livingston	Analyzed By	jnewman	Label Number	4562474

Evaluation Code	<b>A</b>	Recommendation	Normal	Date	30/09/16	Lab Number	N030-46295-0348
Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.							
Days to reach Lab	21	Interpreted By	Peter Leggo	Analyzed By	jnewman	Label Number	4562605

Sample Information										Sample Reading															
Evaluation	SMU	CMU	Oil	Oil	Filter	Sample	Receivert	Oil	Oil	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL
			Hours	Chg	Chg	Date	Date	Brand	Grade	Sodium	Potassium	Silicon	Aluminum	Iron	Chromium	Lead	Copper	Tin	Nickel	Silver	Titanium	Vanadium	Soot	Oxidation	Sulfation
Baseline																									
A	807	807	196	N	N	02/12/16	20/12/16	PCDURONE	10W-40	3	10	2	9	19	1	1	183	1	0	1	0	<0	8	16	19
A	611	611	611	Y	Y	30/09/16	21/10/16	FACTORYFIL		3	1	4	6	19	0	1	6	<0	0	0	0	0	21	17	21
A	410	410	410	N	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0	<0	11	16	18
A	206	206	206	N	N	29/01/16	11/02/16	FACTORY		5	18	4	6	39	1	0	37	2	1	1	0	<0	5	15	17

Sample Reading																	
NIT	Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	% Water	% Fuel	GLY			
Nitration	Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent W	Percent F	GLY			
								15	99								
7	1124	2109	156	0	50	8	935	14.2	101.1	NT	N	0.00	0.0	NT			
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N			
	1019	1304	730	0	56	41	808	14.4	108.4	NT	N	0.00	0.0	0.0			
	1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT			

CYPRESS COUNTY  
 Attn: GREG SJOLIE  
 BOX 108  
 DUNMORE, AB T0J 1A0

P - Positive	T - Trace	N - Negative	NR - Not Required	NT - Not Tested
<b>A</b> No Action Required	<b>B</b> Monitor	<b>C</b> Action Required	<b>D</b> Urgent Action Required	



FINNING CANADA LTD. - Fluid Analysis Laboratory, 10910-170th Street, Edmonton, AB, T5S 1H6, CANADA

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Email: oilsupport@finning.com Web: www.finning.com

CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: GREG.SJOLIE@CYPRESS.AB.	CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA : REGION :	COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL#: 200172101 SHOP JOB NUM : 3478 SAMPLE TYPE : OIL SAMPLE SHIP TIME (days) : 7 SAMPLE LOCATION :

Interp By: Gregory Scribner

**No Action  
Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. INCREASED IRON CONTENT. OTHER READINGS APPEAR TO BE NORMAL. OIL CHANGE INDICATED, RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
N030-50051-0404  
PROCESS 2/20/2020  
DATE

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																									
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
13-Feb-20	N030-50051-0404	3344	588	Y	Y	1	39	3	32	91	4	0	23	0	1	0	0	0	1249	1007	885	0	2	59	929
23-Nov-19	N030-49332-0214	3152	336	N	N	2	30	3	25	61	3	0	21	0	1	0	0	0	1248	1086	995	0	3	65	1068
19-Jun-19	N030-49176-0050	2973	157	N	N	1	17	2	12	23	2	0	15	0	0	0	0	0	1267	1091	1078	0	5	59	1042
08-Mar-19	N030-49077-0146	2816	393	N	N	3	90	3	57	62	5	0	68	1	1	1	0	0	1221	970	928	0	3	61	991

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																						
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F				
13-Feb-20	N030-50051-0404	3344	588	PETRO-CAN		10W-40	Y	Y	14.5	96.6	155	29	16	20	9	N	0	N				
23-Nov-19	N030-49332-0214	3152	336	PETRO-CAN		10W-40	N	N	14.2	98.3	148	20	15	20	8	N	0	N				
19-Jun-19	N030-49176-0050	2973	157	PETRO-CAN	DURON UHP	10W-40	N	N	14.0	84.3	172	8	14	19	6	N		N				
08-Mar-19	N030-49077-0146	2816	393	PETRO-CAN	DURON UHP	10W-40	N	N	14.3	98.4	149	24	15	20	8	N	0	N				

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
13-Feb-20	N030-50051-0404	Y	Y	N
23-Nov-19	N030-49332-0214	N	N	N
19-Jun-19	N030-49176-0050	N	N	N
08-Mar-19	N030-49077-0146	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
<p>GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA</p>	<p>CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA : REGION :</p>	<p>COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL# : 4680665 SHOP JOB NUM : SAMPLE TYPE : OIL SAMPLE SHIP TIME (days) : 9 SAMPLE LOCATION :</p>

Interp By: Gregory Scribner

**Monitor Compartment**

PRESENCE OF WATER (0.5%) MAY BE CONDENSATION AND/OR SOURCED TO EXTERNAL ENTRY. ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. EXAMINE HOUSING SEALS, BREATHERS, PLUGS FOR INDICATIONS OF LEAKAGE OR DIRT/ WATER ENTRY. RECOMMEND CHANGING OIL AND RESAMPLING AT THE NEXT SERVICE INTERVAL.

LAB #  
N030-49031-0213  
PROCESS 31-Jan-19  
DATE

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																									
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	899	0	7	51	1059
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																		
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON hp	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
22-Jan-19	N030-49031-0213	N	N	T
01-Nov-18	N030-48317-0131	Y	Y	N
16-Jul-18	N030-48208-0002	N	N	N
13-Mar-18	N030-48085-0155	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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**CONTACT INFORMATION**

GREG SJOLIE  
 CYPRESS COUNTY  
 BOX 108  
 DUNMORE, AB  
 CA T0J 1A0  
 PHONE: 4035262888  
 FAX: 4035268958  
 Email: TIGER@CYPRESS.AB.CA

**EQUIPMENT**

CUSTOMER EQUIP NUM : U53006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL#: 4903413  
 SHOP JOB NUM :  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days) : 11  
 SAMPLE LOCATION :

Interp By: Gregory Scribner

**No Action  
 Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-48208-0002  
 PROCESS DATE 27-Jul-18

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	899	0	7	51	1059
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989
31-Jan-18	N030-48040-0161	1832	617	Y	Y	3	33	0	23	33	4	0	69	0	1	0	0	0	1157	1524	571	0	10	33	919
08-Nov-17	N030-47321-0235	1625	410	N	N	1	28	3	17	25	3	0	74	0	1	0	0	0	1207	1638	617	0	15	36	971

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON hp	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N
31-Jan-18	N030-48040-0161	1832	617	PETRO-CAN	DURON hp	10W-40	Y	Y	14.9	101.6	153	31	17	22	9	N	0	N
08-Nov-17	N030-47321-0235	1625	410	PETRO-CAN	DURON-E	10W-40	N	N	15.1	91.3	175	21	16	20	7	N	0	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
16-Jul-18	N030-48208-0002	N	N	N
13-Mar-18	N030-48085-0155	N	N	N
31-Jan-18	N030-48040-0161	Y	Y	N
08-Nov-17	N030-47321-0235	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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 Email: GREG.SJOLIE@CYPRESS.AB.

**EQUIPMENT**

CUSTOMER EQUIP NUM : U53006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOBSITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL# : 005036915  
 SHOP JOB NUM : 2900  
 SAMPLE TYPE : OIL  
 SAMPLE SHIP TIME (days) : 6  
 SAMPLE LOCATION :

Interp By: Peter Lewandowski

**No Action  
 Required**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-49176-0050  
 PROCESS 25-Jun-19  
 DATE

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
19-Jun-19	N030-49176-0050	2973	157	N	N	1	17	2	12	23	2	0	15	0	0	0	0	0	1267	1091	1078	0	5	59	1042
08-Mar-19	N030-49077-0146	2816	393	N	N	3	90	3	57	62	5	0	68	1	1	1	0	0	1221	970	928	0	3	61	991
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	V1	ST	OXI	SUL	NIT	A	PGC	F
19-Jun-19	N030-49176-0050	2973	157	PETRO-CAN	DURON UHP	10W-40	N	N	14.0	84.3	172	8	14	19	6	N		N
08-Mar-19	N030-49077-0146	2816	393	PETRO-CAN	DURON UHP	10W-40	N	N	14.3	98.4	149	24	15	20	8	N	0	N
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
19-Jun-19	N030-49176-0050	N	N	N
08-Mar-19	N030-49077-0146	N	N	N
22-Jan-19	N030-49031-0213	N	N	T
01-Nov-18	N030-48317-0131	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, V1 = Viscosity Index, W = Water, Zn = Zinc

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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA	CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOBSITE : AREA : REGION :	COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL# : 4902880 SHOP JOB NUM : SAMPLE TYPE : OIL SAMPLE SHIP TIME (days) : 13 SAMPLE LOCATION :

Interp By: Peter Leggo

**No Action  
Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
N030-48085-0155  
PROCESS 26-Mar-18  
DATE

WEAR/CONTAMINATION - ADDITIVES/FORMULATION

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989
31-Jan-18	N030-48040-0161	1832	617	Y	Y	3	33	0	23	33	4	0	69	0	1	0	0	0	1157	1524	571	0	10	33	919
08-Nov-17	N030-47321-0235	1625	410	N	N	1	28	3	17	25	3	0	74	0	1	0	0	0	1207	1638	617	0	15	36	971
12-Jul-17	N030-47200-0302	1410	195	N	N	3	15	3	10	17	2	0	65	0	1	0	0	0	1142	1553	623	0	26	33	965

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON hp	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N
31-Jan-18	N030-48040-0161	1832	617	PETRO-CAN	DURON hp	10W-40	Y	Y	14.9	101.6	153	31	17	22	9	N	0	N
08-Nov-17	N030-47321-0235	1625	410	PETRO-CAN	DURON-E	10W-40	N	N	15.1	91.3	175	21	16	20	7	N	0	N
12-Jul-17	N030-47200-0302	1410	195	PETRO-CAN	DURON-E	10W-40	N	N	14.7	101.5	150	11	14	19	6	N		N

OIL CLEANLINESS

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
13-Mar-18	N030-48085-0155	N	N	N
31-Jan-18	N030-48040-0161	Y	Y	N
08-Nov-17	N030-47321-0235	N	N	N
12-Jul-17	N030-47200-0302	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.



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Email: oilsupport@finning.com Web: www.finning.com

CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
<p>GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA</p>	<p>CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA : REGION :</p>	<p>COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL# : 005023578 SHOP JOB NUM : 2765 SAMPLE TYPE : OIL SAMPLE SHIP TIME (days) : 10 SAMPLE LOCATION :</p>

Interp By: Gregory Scribner

Monitor Compartment	Notes
LAB # N030-49077-0146 PROCESS DATE 18-Mar-19	ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. INCREASED IRON MAY BE ASSOCIATED WITH CAMSHAFT/CYLINDER LINERS/PISTONS/RINGS; ROCKER ARMS; PUSH RODS AND CRANKSHAFT WEAR. COPPER MAY BE SOURCED TO OIL COOLER CORE LEACHING. CONSIDER OIL CHANGE. INSPECT OIL FILTER(S) FOR LARGE VISIBLE METAL/DEBRIS. RESAMPLE AT THE NEXT SERVICE INTERVAL.

WEAR/CONTAMINATION - ADDITIVES/FORMULATION

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
08-Mar-19	N030-49077-0146	2816	393	N	N	3	90	3	57	62	5	0	68	1	1	1	0	0	1221	970	928	0	3	61	991
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	899	0	7	51	1059

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	V1	ST	OXI	SUL	NIT	A	PGC	F
08-Mar-19	N030-49077-0146	2816	393	PETRO-CAN	DURON UHP	10W-40	N	N	14.3	98.4	149	24	15	20	8	N	0	N
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N

OIL CLEANLINESS

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
08-Mar-19	N030-49077-0146	N	N	N
22-Jan-19	N030-49031-0213	N	N	T
01-Nov-18	N030-48317-0131	Y	Y	N
16-Jul-18	N030-48208-0002	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, V1 = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

**ENGINE**

**EQUIP NUM: U53006**

**SERIAL NUMBER: 4GLGS2013**

**WESTERN\_ST 4700SB**

**COMP SERIAL NUM: 47192750336485**

**No Action Required**

**Interp By: Gregory Scribner**

**Interpreted On: 01-Nov-21**

**N030-51302-0024**

LABEL#: 200711541

SHOP JOB NUM : 5033

SAMPLE SHIP TIME (days) : 15

**CYPRESS COUNTY**

RECEIVED DATE: 29-Oct-21

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
Sampled Date	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
Sample Id	N030-51302-0024	N030-51245-0109	N030-51208-0407	N030-51172-0616
Lab Date	29-Oct-21	02-Sep-21	27-Jul-21	21-Jun-21
Meter [Hr]	5239	5012	4816	4639
Meter On Fluid	579	373	177	649
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type				
Fluid Change	Y	N	N	Y
Filter Change	Y	N	N	Y
Make Up Fluid []		0	0	0

**PREVIOUS SAMPLE**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**CONDITION / CONTAMINATION**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	13.7	14.2	14.5	14.0
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	98.3	98.2	98.8	97.6

**WEAR LEVELS / ADDITIVES**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	1	1	1	2
K Potassium	30	23	16	43
Si Silicon	3	3	3	3
Al Aluminum	26	17	14	29
Fe Iron	41	29	27	63
Cr Chromium	3	2	2	4
Pb Lead	0	0	0	0
Cu Copper	6	4	4	8
Sn Tin	1	0	0	0
Ni Nickel	1	1	1	1
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1307	1259	1286	1241
Ca Calcium	1140	1109	1111	1001
Mg Magnesium	1069	977	998	861
Ba Barium	0	0	0	0
B Boron	1	1	1	0
Mo Molybdenum	68	58	62	57
P Phosphorus	1053	979	1036	1004

**VISCOSITY INDEX**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
VI Viscosity Index	140	148	152	146

**INFRARED (UFM)**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
ST Soot	48	28	12	39
OXI Oxidation	21	17	15	21
SUL Sulfur Products	25	21	21	24
NIT Nitration	11	9	8	10

**ANTIFREEZE**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
PGC Percent Glycol Con	0			0.0133

**FUEL**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
F Fuel	N	N	N	N

**WATER**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
W Water	N	N	N	N



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**EQUIPMENT**

CUSTOMER EQUIP NUM : U53006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL#: 005027726  
 SHOP JOB NUM : 2292  
 SAMPLE TYPE : OIL  
 SAMPLE SHIP TIME (days) : 12  
 SAMPLE LOCATION :

Interp By: Peter Leggo

**No Action  
 Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #

N030-48317-0131

PROCESS 13-Nov-18  
 DATE

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	899	0	7	51	1059
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989
31-Jan-18	N030-48040-0161	1832	617	Y	Y	3	33	0	23	33	4	0	69	0	1	0	0	0	1157	1524	571	0	10	33	919

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON hp	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N
31-Jan-18	N030-48040-0161	1832	617	PETRO-CAN	DURON hp	10W-40	Y	Y	14.9	101.6	153	31	17	22	9	N	0	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
01-Nov-18	N030-48317-0131	Y	Y	N
16-Jul-18	N030-48208-0002	N	N	N
13-Mar-18	N030-48085-0155	N	N	N
31-Jan-18	N030-48040-0161	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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 FAX: 4035268958  
 Email: GREG.SJOLIE@CYPRESS.AB.  
 Interp By: Peter Lewandowski

**EQUIPMENT**

CUSTOMER EQUIP NUM : U53006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL#: 200265140  
 SHOP JOB NUM : 3149  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days) : 5  
 SAMPLE LOCATION :

**No Action  
 Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-49332-0214  
 PROCESS DATE 11/28/2019

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
23-Nov-19	N030-49332-0214	3152	336	N	N	2	30	3	25	61	3	0	21	0	1	0	0	0	1248	1086	995	0	3	65	1068
19-Jun-19	N030-49176-0050	2973	157	N	N	1	17	2	12	23	2	0	15	0	0	0	0	0	1267	1091	1078	0	5	59	1042
08-Mar-19	N030-49077-0146	2816	393	N	N	3	90	3	57	62	5	0	68	1	1	1	0	0	1221	970	928	0	3	61	991
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
23-Nov-19	N030-49332-0214	3152	336	PETRO-CAN		10W-40	N	N	14.2	98.3	148	20	15	20	8	N	0	N
19-Jun-19	N030-49176-0050	2973	157	PETRO-CAN	DURON UHP	10W-40	N	N	14.0	84.3	172	8	14	19	6	N		N
08-Mar-19	N030-49077-0146	2816	393	PETRO-CAN	DURON UHP	10W-40	N	N	14.3	98.4	149	24	15	20	8	N	0	N
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
23-Nov-19	N030-49332-0214	N	N	N
19-Jun-19	N030-49176-0050	N	N	N
08-Mar-19	N030-49077-0146	N	N	N
22-Jan-19	N030-49031-0213	N	N	T

A = Anifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus.  
 PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
<p>GREG SJOLIE            CYPRESS COUNTY            BOX 108            DUNMORE, AB            T0J 1A0            PHONE: 4035262888            FAX: 4035268958            Email: GREG.SJOLIE@CYPRESS.AB.</p>	<p>EQUIP NUM: U53006            SERIAL NUMBER: 4GLGS2013            MODEL : 4700SB            MANUFACTURER : WESTERN_ST            COMPANY NAME : CYPRESS COUNTY            JOB SITE :            AREA:            REGION:</p>	<p>COMPARTMENT NAME : ENGINE            COMP SERIAL NUM: 47192750336485            COMPARTMENT MODEL :            LABEL#: 200527986            SHOP JOB NUM : 4109            SAMPLE TYPE: OIL            SAMPLE SHIP TIME (days) : 9            SAMPLE LOCATION :</p>

Interp By: Gregory Scribner

**No Action Required**

FOR OIL SERVICE INDICATED: WEAR METAL ANALYSIS INDICATES ACCEPTABLE WEAR RATE. ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-50268-0254  
 PROCESS DATE 24-Sep-20

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																									
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
15-Sep-20	N030-50268-0254	3990	646	Y	Y	2	62	5	37	108	4	0	13	0	1	0	0	0	1240	1056	1032	0	1	62	1000
29-Jul-20	N030-50224-0174	3785	441	N	N	2	48	4	31	96	4	0	11	0	1	0	0	0	1300	1066	1098	0	0	65	1131
04-Jun-20	N030-50162-0172	3580	236	N	N	2	37	3	24	57	2	0	8	0	1	0	0	0	1258	1040	893	0	0	55	1009
13-Feb-20	N030-50051-0404	3344	588	Y	Y	1	39	3	32	91	4	0	23	0	1	0	0	0	1249	1007	885	0	2	59	929

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																		
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
15-Sep-20	N030-50268-0254	3990	646	PETRO-CAN		10W-40	Y	Y	13.7	96.3	144	41	19	23	10	N	0	N
29-Jul-20	N030-50224-0174	3785	441	PETRO-CAN		10W-40	N	N	13.5	96.3	141	32	17	21	9	N	0	N
04-Jun-20	N030-50162-0172	3580	236	PETRO-CAN		10W-40	N	N	14.5	98.8	152	21	15	20	8	N	0.0001	N
13-Feb-20	N030-50051-0404	3344	588	PETRO-CAN		10W-40	Y	Y	14.5	96.6	155	29	16	20	9	N	0	N

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
15-Sep-20	N030-50268-0254	Y	Y	N
29-Jul-20	N030-50224-0174	N	N	N
04-Jun-20	N030-50162-0172	N	N	N
13-Feb-20	N030-50051-0404	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

**ENGINE**

**EQUIP NUM: U53006**

**SERIAL NUMBER: 4GLGS2013**

**WESTERN\_ST 4700SB**

**COMP SERIAL NUM: 47192750336485**

**No Action Required**

**Interp By: Greg Eyre**

**Interpreted On: 28-Jul-21**

**N030-51208-0407**

LABEL#: 200789009

SHOP JOB NUM : 4881

SAMPLE SHIP TIME (days) : 11

**CYPRESS COUNTY**

RECEIVED DATE: 27-Jul-21

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	16-Jul-21	10-Jun-21	04-May-21	24-Nov-20
Sample Id	N030-51208-0407	N030-51172-0616	N030-51138-0028	N030-50336-0432
Lab Date	27-Jul-21	21-Jun-21	18-May-21	01-Dec-20
Meter [Hr]	4816	4639	4460	4274
Meter On Fluid	177	649	470	284
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type				
Fluid Change	N	Y	N	N
Filter Change	N	Y	N	N
Make Up Fluid []	0	0	3	0

**PREVIOUS SAMPLE**

WEAR METAL ANALYSIS INDICATES ACCEPTABLE WEAR RATE. OIL CONDITION ANALYSIS IS ACCEPTABLE. ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**CONDITION / CONTAMINATION**

	16-Jul-21	10-Jun-21	04-May-21	24-Nov-20
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**VISCOSITY (Centistokes)**

V100	Viscosity at 100 C	14.5	14.0	13.9	14.3
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**VISCOSITY (Centistokes)**

V40	Viscosity at 40 C	98.8	97.6	97.3	98.2
-----	-------------------	------	------	------	------

**WEAR LEVELS / ADDITIVES**

		16-Jul-21	10-Jun-21	04-May-21	24-Nov-20
<b>ELEMENTAL ANALYSIS (ppm)</b>					
Na	Sodium	1	2	1	2
K	Potassium	16	43	47	31
Si	Silicon	3	3	3	3
Al	Aluminum	14	29	30	18
Fe	Iron	27	63	68	37
Cr	Chromium	2	4	4	2
Pb	Lead	0	0	0	0
Cu	Copper	4	8	7	5
Sn	Tin	0	0	0	0
Ni	Nickel	1	1	1	0
Ag	Silver	0	0	0	0
Ti	Titanium	0	0	0	0
V	Vanadium	0	0	0	0
Zn	Zinc	1286	1241	1256	1243
Ca	Calcium	1111	1001	1085	1021
Mg	Magnesium	998	861	1005	977
Ba	Barium	0	0	0	0
B	Boron	1	0	0	1
Mo	Molybdenum	62	57	63	60
P	Phosphorus	1036	1004	987	938

**VISCOSITY INDEX**

VI	Viscosity Index	152	146	145	150
----	-----------------	-----	-----	-----	-----

**INFRARED (UFM)**

ST	Soot	12	39	28	21
OXI	Oxidation	15	21	18	16
SUL	Sulfur Products	21	24	21	20
NIT	Nitration	8	10	10	8

**ANTIFREEZE**

A	Antifreeze	N	N	N	N
---	------------	---	---	---	---

**GLYCOL CONTENT (%)**

PGC	Percent Glycol Con		0.0133	0	0
-----	--------------------	--	--------	---	---

**FUEL**

F	Fuel	N	N	N	N
---	------	---	---	---	---

**WATER**

W	Water	N	N	N	N
---	-------	---	---	---	---



**CONTACT INFORMATION**

GREG SJOLIE  
 CYPRESS COUNTY  
 BOX 108  
 DUNMORE, AB  
 CA T0J 1A0  
 PHONE: 4035262888  
 FAX: 4035268958  
 Email: TIGER@CYPRESS.AB.CA

Interp By: Gregory Scribner

**EQUIPMENT**

CUSTOMER EQUIP NUM: U53006  
 SERIAL NUMBER: 4GLGSS2013  
 MODEL: 47005B  
 MANUFACTURER: WESTERN\_ST  
 COMPANY NAME: CYPRESS COUNTY  
 JOB SITE:  
 AREA:  
 REGION:

**SAMPLE INFORMATION**

COMPARTMENT NAME: ENGINE  
 COMP SERIAL NUM: 47192750336485  
 COMPARTMENT MODEL:  
 LABEL#: 4680665  
 SHOP JOB NUM:  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days): 9  
 SAMPLE LOCATION:

FINNING CANADA LTD. - Fluid Analysis Laboratory, 10910-170th Street, Edmonton, AB, T5S 1H6, CANADA

PHONE: 1-888 FINNING (346-6464)

Email: oilsupport@finning.com Web: www.finning.com

**Monitor Compartment**

PRESENCE OF WATER (0.5%) MAY BE CONDENSATION AND/OR SOURCED TO EXTERNAL ENTRY. ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. EXAMINE HOUSING SEALS, BREATHERS, PLUGS FOR INDICATIONS OF LEAKAGE OR DIRTY WATER ENTRY. RECOMMEND CHANGING OIL AND RESAMPLING AT THE NEXT SERVICE INTERVAL.

*Completed Mar. 08/19 L. Rosendahl*

LAB #  
 N030-49031-0213  
 PROCESS DATE  
 31-Jan-19

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID CHANGE	FLITER CHANGE	Na	K	SI	AI	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	889	0	7	51	1059
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FLITER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON DP	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FLITER CHANGE	W
22-Jan-19	N030-49031-0213	N	N	T
01-Nov-18	N030-48317-0131	Y	Y	N
16-Jul-18	N030-48208-0002	N	N	N
13-Mar-18	N030-48085-0155	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.



**CONTACT INFORMATION**

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 BOX 108  
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 CA T0J 1A0  
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 FAX: 4035268958  
 Email: TIGER@CYPRESS.AB.CA

Interp By: Peter Lewandowski

FINNING CANADA LTD. - Fluid Analysis Laboratory, 10910-170th Street, Edmonton, AB, T5S 1H6, CANADA

PHONE: 1-888 FINNING (346-6464)

Email: oilsupport@finning.com Web: www.finning.com

**EQUIPMENT**

CUSTOMER EQUIP NUM : US3006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL# : 4703399  
 SHOP JOB NUM :  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days) : 9  
 SAMPLE LOCATION :

**No Action Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. ELEVATED COPPER LEVEL MAY BE DUE TO INCREASED OIL COOLER CORE LEACHING; NOT WEAR. OIL CHANGE OR NEW FORMULATION CAN RESTART COOLER CORE LEACHING. GLYCOL TEST IS NEGATIVE. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-48040-0161  
 PROCESS DATE  
 09-Feb-18

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
31-Jan-18	N030-48040-0161	1832	617	Y	Y	3	33	0	23	33	4	0	69	0	1	0	0	0	1157	1524	571	0	10	33	919
08-Nov-17	N030-47321-0235	1625	410	N	N	1	28	3	17	25	3	0	74	0	1	0	0	0	1207	1638	617	0	15	36	971
12-Jul-17	N030-47200-0302	1410	195	N	N	3	15	3	10	17	2	0	65	0	1	0	0	0	1142	1553	623	0	26	33	965
17-Mar-17	N030-47081-0840	1215	603	Y	Y	6	57	4	33	39	4	1	215	<0	1	1	0	<0	1125	2144	152	0	42	9	890

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
31-Jan-18	N030-48040-0161	1832	617	PETRO-CAN	DURON hp	10W-40	Y	Y	14.9	101.6	153	31	17	22	9	N	0	N
08-Nov-17	N030-47321-0235	1625	410	PETRO-CAN	DURON-E	10W-40	N	N	15.1	91.3	175	21	16	20	7	N	0	N
12-Jul-17	N030-47200-0302	1410	195	PETRO-CAN	DURON-E	10W-40	N	N	14.7	101.5	150	11	14	19	6	N		N
17-Mar-17	N030-47081-0840	1215	603	PETRO-CAN	DURON-E	10W-40	Y	Y	15.4	104.8		30	16	20	8	N		NT

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
31-Jan-18	N030-48040-0161	Y	Y	N
08-Nov-17	N030-47321-0235	N	N	N
12-Jul-17	N030-47200-0302	N	N	N
17-Mar-17	N030-47081-0840	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of the piece of equipment or a component thereof.



**CONTACT INFORMATION**

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FINNING CANADA LTD. - Fluid Analysis Laboratory, 10910-170th Street, Edmonton, AB, T5S 1H6, CANADA

PHONE: 1-888 FINNING (346-6464)

Email: oilsupport@finning.com Web: www.finning.com

**EQUIPMENT**

CUSTOMER EQUIP NUM: U53006  
 SERIAL NUMBER: 4GLGS2013  
 MODEL: 4700SB  
 MANUFACTURER: WESTERN\_ST  
 COMPANY NAME: CYPRESS COUNTY

**SAMPLE INFORMATION**

COMPARTMENT NAME: ENGINE  
 COMP SERIAL NUM: 47192750336485  
 COMPARTMENT MODEL:  
 LABEL#: 4885752  
 SHOP JOB NUM:  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days): 7  
 SAMPLE LOCATION:

Interp By: Dallas Livingston

**No Action Required**

WEAR METAL ANALYSIS INDICATES ACCEPTABLE WEAR RATE. OIL CONDITION ANALYSIS IS ACCEPTABLE. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #

N030-47200-0302

PROCESS DATE 19-Jul-17

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
12-Jul-17	N030-47200-0302	1410	195	N	N	3	15	3	10	17	2	0	65	0	1	0	0	0	1142	1553	623	0	26	33	965
17-Mar-17	N030-47081-0840	1215	603	Y	Y	6	57	4	33	39	4	1	215	<0	1	1	0	<0	1125	2144	152	0	42	9	880
19-Jan-17	N030-47027-0573	1005	394	N	N	5	26	3	17	28	3	1	215	0	0	1	0	<0	1038	2006	165	0	41	9	864
02-Dec-16	N030-46354-0651	807	196	N	N	3	10	2	9	19	1	1	183	1	0	1	0	<0	1124	2109	156	0	50	8	935

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	F
12-Jul-17	N030-47200-0302	1410	195	PETRO-CAN	DURON-E	10W-40	N	N	14.7	101.5	150	11	14	19	6	N	N
17-Mar-17	N030-47081-0840	1215	603	PETRO-CAN	DURON-E	10W-40	Y	Y	15.4	104.8		30	16	20	8	N	NT
19-Jan-17	N030-47027-0573	1005	394	PETRO-CAN	DURON-E	10W-40	N	N	14.1	102.7		19	17	20	8	N	NT
02-Dec-16	N030-46354-0651	807	196	PETRO-CAN	DURON-E	10W-40	N	N	14.2	101.1		8	16	19	7	N	NT

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
12-Jul-17	N030-47200-0302	N	N	N
17-Mar-17	N030-47081-0840	Y	Y	N
19-Jan-17	N030-47027-0573	N	N	N
02-Dec-16	N030-46354-0651	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, Ni = Nickel, OXI = Oxidation, P = Phosphorus, Pb = Lead, Si = Silicon, Sn = Tin, Ti = Titanium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.





# PROACTIVE FLUID ANALYSIS

## Lubricant & Component • Predictive Results

1 - 888 FINNING (346 - 6464) www.finning.ca

### Unit Information

UNIT: U53006  
 Equip Make: WESTERN STAR  
 Equip Model: 4700SB  
 Equip Serial: 4GLGS2013  
 Component: ENGINE

### Service Information

Warranty Expiry Date: DETROIT\_DS  
 Comp Make: DD13  
 Comp Model: 47192750336485  
 Service Interval: 7500 Miles  
 Work Order No: 47192750336485  
 Job Site: Default Site  
 Branch: Default Site  
 Sampled Site: Default Site

Evaluation Code: **A** Recommendation: Normal Lab Number: N030-46354-0651

Copper alone usually indicates cooler core leaching and is not normally wear of bronze/brass parts. Wear metal analysis indicates acceptable wear rate. Oil condition analysis is acceptable. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Re sample at the next service interval.

Days to reach Lab: 18 Interpreted By: Dallas Livingston Analyzed By: jnewman Label Number: 4562474

Evaluation Code: **A** Recommendation: Normal Date: 30/09/16 Lab Number: N030-46295-0348

Dirty and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab: 21 Interpreted By: Peter Leggo Analyzed By: jnewman Label Number: 4562605

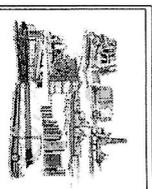
Sample Information										Sample Reading																
Evaluation	SMU	CMU	Oil	Filter	Sample	Received	Oil	Oil	Oil	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL	
Baseline			Hours	Chg	Date	Date	Brand	Grade		Sodium	Potassium	Silicon	Aluminum	Iron	Chromium	Lead	Copper	Tin	Nickel	Silver	Titanium	Vanadium	Soot	Oxidation	Sulfation	
A	807	807	196	N	02/12/16	20/12/16	PCDURONE	10W/40		3	10	2	9	19	1	1	183	1	0	1	0	0	<0	8	16	19
A	611	611	611	Y	30/09/16	21/10/16	FACTORYFILL			3	1	4	6	19	0	1	6	<0	0	0	0	0	0	21	17	21
A	410	410	410	N	20/05/16	27/05/16	FACTORYFILL			6	20	4	19	55	4	1	408	3	1	1	0	0	<0	11	16	18
A	206	206	206	N	29/01/16	11/02/16	FACTORY			5	18	4	6	39	1	0	37	2	1	1	0	0	<0	5	15	17

Sample Reading															
NIT	Zn	Ca	Mg	Ba	B	Mn	P	V100	V40	F	W	% Water	% Fuel	GLY	GLY
Nitration	Zinc	Calcium	Magnesium	Barium	Boron	Manganese	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent Wt	Percent F	GLY	GLY
7	1124	2109	156	0	50	8	935	14.2	101.1	NT	N	0.00	0.0	NT	
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N	
	1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0	
	1119	1405	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT	

P - Positive T - Trace N - Negative NR - Not Required NT - Not Tested

CYPRESS COUNTY  
 Attn: GREG SJOLIE  
 BOX 108  
 DUNMORE, AB T0J 1A0

A No Action Required B Monitor C Action Required X Urgent Action Required



*[Handwritten signature]*

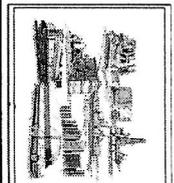


# FINNING



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## PROACTIVE FLUID ANALYSIS Lubricant & Component • Predictive Results



### Unit Information

UNIT: 545  
 Warranty Expiry Date:  
 Equip Make: WESTERN STAR  
 Equip Model: 4900SB  
 Equip Serial: 4GLGS2013  
 Component: ENGINE

### Service Information

Comp Make: DETROIT\_DS  
 Comp Model: DD13  
 Comp Serial: 47192750336485  
 Service Interval:  
 Work Order No:  
 Job Site:  
 Branch:  
 Sampled Site:

Evaluation Code: **A** Recommendation: Normal Date: 20/05/16 Lab Number: N030-46148-0211

Elevated copper level may be due to increased oil cooler core leaching, not wear. Oil change or new formulation can restart cooler core leaching. Other readings appear to be normal. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Resample at the next service interval.

Days to reach Lab: 7 Interpretation By: Peter Lewandowski Analyzed By: plewandowski Label Number: 4506810

Evaluation Code: **A** Recommendation: Normal Date: 29/01/16 Lab Number: N030-46042-0457

Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab: 13 Interpretation By: Peter Leggo Analyzed By: ppspeed Label Number: 4230421

Sample Information										Sample Reading														
Evaluation	SMU	CMU	Oil Chg	Filler Chg	Sample Date	Received Date	Oil Brand	Oil Grade	Na	K	SI	AI	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OxI	SUL
Baseline			Hours						Sodium	Parasulfur	Silicon	Aluminum	Iron	Chromium	Lead	Copper	Tin	Nickel	Silver	Titanium	Vanadium	Soot	Oxidation	Sulfation
A	410	410	410	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0				
A	206	206	206	N	29/01/16	11/02/16	FACTORY		5	18	4	6	39	1	0	37	2	1	1	0				

Sample Reading													
Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	% Water	% Fuel	GLY
Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent W	Percent F	GLY
1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0
1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT

P - Positive T - Trace N - Negative NR - Not Required NT - Not Tested

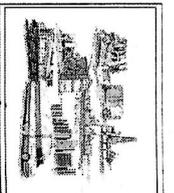
CYPRESS COUNTY  
 Attn: GREG SJOLIE  
 BOX 108  
 DUNMORE, AB T0J 1A0

A No Action Required B Monitor C Action Required X Urgent Action Required

# FINNING



## PROACTIVE FLUID ANALYSIS Lubricant & Component • Predictive Results



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### Unit Information

### Service Information

UNIT: 545      Warranty Expiry Date:      Service Interval:      Customer Comments:

Equip Make: WESTERN STAR      Comp Make: DETROIT\_DS      Work Order No:      Job Site:      Default Site

Equip Model: 4900SB      Comp Model: DD13      Branch:      Sampled Site:      Default Site

Equip Serial: 4GLGSS2013      Comp Serial: 47192750336485

Component: ENGINE

Evaluation Code: A      Recommendation: Normal      Lab Number: N030-46042-0457

Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab: 13      Interpreted By: Peter Leggo      Analyzed By: pspeed      Label Number: 4230421

Evaluation Code:      Recommendation:      Date:      Lab Number:

Days to reach Lab:      Interpreted By:      Analyzed By:      Label Number:

Evaluation	Sample Information										Sample Reading														
	SMU	CMU	Oil	Oil Filler	Sample Date	Received Date	Oil Brand	Oil Grade	Na	K	SI	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL	
Baseline																									
A	206	206	N	N	29/01/16	11/02/16	FACTORY		5	18	4	6	39	1	0	37	2	1	1	0					

Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	Sample Reading		
											% Water	% Fuel	
1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT

P - Positive      T - Trace      N - Negative      NR - Not Required      NT - Not Tested

CYPRESS COUNTY  
Attn: GREG SJOLIE  
BOX 108  
  
DUNMORE, AB T0J 1A0

A: No Action Required      B: Monitor      C: Action Required      X: Urgent Action Required

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 559

Service Description: Service and inspection

Asset: U53006 GRAVEL TRUCK  
 Last Odometer Reading 306919  
 Interval YR Hours or 1 year maximum service

Scheduled Date: 12/01/2016 Scheduled Odometer: 807  
 Completed Date: 12/05/2016 Completed Odometer: 807

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
12/01/2016	ROSE0001	1HREG	Labour	4.00	37.10000	21.000%	\$179.56
12/01/2016	A4720900551	TOWER	Materials	1.00	76.14000	0.000%	\$76.14
12/01/2016	3W0696	TOWER	Materials	1.00	17.24000	0.000%	\$17.24
12/01/2016	MARFAK AP	WAREHOUSE	Materials	1.00	3.36000	0.000%	\$3.36
12/02/2016	ROSE0001	1HREG	Labour	6.50	37.10000	21.000%	\$291.79
12/02/2016	RD-3-8777-0	WAREHOUSE	Materials	1.00	48.91000	0.000%	\$48.91
12/05/2016	SPEN0001	1HREG	Labour	0.50	37.10000	21.000%	\$22.45

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 711

Service Description: Service and inspection

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval YR Hours or 1 year maximum service

Scheduled Date: 01/19/2017 Scheduled Odometer: 1005  
Completed Date: 01/20/2017 Completed Odometer: 1005

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

## COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
01/19/2017	ROSE0001	1HREG	Labour	6.00	37.10000	21.000%	\$269.35
01/19/2017	A4720900551	TOWER	Materials	1.00	76.14000	0.000%	\$76.14
01/19/2017	3W0696	TOWER	Materials	1.00	17.25000	0.000%	\$17.25
01/19/2017	PHE07398	TOWER	Materials	4.00	2.50000	0.000%	\$10.00
01/19/2017	4411	TOWER	Materials	1.00	8.34000	0.000%	\$8.34
01/20/2017	ROSE0001	1HREG	Labour	1.00	37.47000	21.000%	\$45.34

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 891

Service Description: Serv/insp U53006

Asset: U53006 GRAVEL TRUCK  
 Last Odometer Reading 306919  
 Interval YR Hours or 1 year maximum service

Scheduled Date: 03/16/2017 Scheduled Odometer: 48623  
 Completed Date: 03/20/2017 Completed Odometer: 48630

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Complete
Engine oil Filter change every 600 hrs	Complete
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
03/16/2017	A4720900551	TOWER	Materials	1.00	76.14000	0.000%	\$76.14
03/16/2017	A4721800309	TOWER	Materials	1.00	39.65000	0.000%	\$39.65
03/16/2017	3W0696	TOWER	Materials	1.00	17.25000	0.000%	\$17.25
03/16/2017	SPEN0001	1HREG	Labour	1.00	37.47000	21.000%	\$45.34
03/17/2017	1040	WAREHOUSE	Materials	36.00	6.03000	0.000%	\$217.08
03/17/2017	1012845	WAREHOUSE	Materials	3.00	4.81000	0.000%	\$14.43
03/17/2017	SPEN0001	1HREG	Labour	4.50	37.47000	21.000%	\$204.02
03/20/2017	SPEN0001	1HREG	Labour	3.00	37.47000	21.000%	\$136.02

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 1198

Service Description: CVIP U53006

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval CVP CVIP - Alberta Transportation

Scheduled Date: 06/13/2017 Scheduled Odometer: 1390  
Completed Date: 06/16/2017 Completed Odometer: 1391

Task: CVIP Commercial Vehicle Insp.

See attached link for Form Complete  
<https://www.trans.gov.ab.ca/TravisWebLogin> Complete

## COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
06/13/2017	SPEN0001	1HREG	Labour	6.00	37.47000	21.000%	\$272.03
06/14/2017	SPEN0001	1HREG	Labour	5.00	37.47000	21.000%	\$226.69
06/14/2017	HOLM0001	1HREG	Labour	0.50	37.47000	21.000%	\$22.67
06/16/2017	SPEN0001	1HREG	Labour	4.00	37.47000	21.000%	\$181.35
06/19/2017	A22-60723-000	UNIT PARTS	Materials	1.00	82.88000	0.000%	\$82.88

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No:     914          Service Description: Serv/insp U53006

Asset:      U53006                      GRAVEL TRUCK  
 Last Odometer Reading                      306919  
 Interval                                      YR                      Hours or 1 year maximum service

Scheduled Date:    07/11/2017      Scheduled Odometer:                      55629  
 Completed Date:    07/13/2017      Completed Odometer:                      55641

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
07/11/2017	SPEN0001	1HREG	Labour	2.00	37.47000	21.000%	\$90.68
07/11/2017	A4720900551	TOWER	Materials	1.00	77.14000	0.000%	\$77.14
07/11/2017	3W0696	TOWER	Materials	1.00	16.64000	0.000%	\$16.64
07/12/2017	SPEN0001	1HREG	Labour	7.00	37.47000	21.000%	\$317.37
07/13/2017	SPEN0001	1HREG	Labour	2.00	37.47000	21.000%	\$90.68
07/17/2017	A03-38720-000	UNIT PARTS	Materials	1.00	214.77000	0.000%	\$214.77

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 1240

Service Description: Air cond and diff oil leak

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval

Scheduled Date: 07/20/2017 Scheduled Odometer: 55982  
Completed Date: 08/01/2017 Completed Odometer: 56402

Task:

Check out air cond Complete  
Check out an oil leak on front diff Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
07/20/2017	ROSE0001	1HREG	Labour	0.50	37.47000	21.000%	\$22.67
07/21/2017	ROSE0001	1HREG	Labour	2.50	37.47000	21.000%	\$113.35
07/21/2017	P552518	TOWER	Materials	1.00	6.53000	0.000%	\$6.53
07/24/2017	HOLM0001	1HREG	Labour	1.00	37.47000	21.000%	\$45.34
08/01/2017	SPEN0001	1HREG	Labour	1.00	37.47000	21.000%	\$45.34

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 1232

Service Description: Serv/insp U53006

Asset: U53006 GRAVEL TRUCK  
 Last Odometer Reading 306919  
 Interval YR Hours or 1 year maximum service

Scheduled Date: 11/07/2017 Scheduled Odometer: 1625  
 Completed Date: 11/08/2017 Completed Odometer: 1625

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
11/07/2017	SPEN0001	1HREG	Labour	2.00	37.47000	21.000%	\$90.68
11/07/2017	A4720900551	TOWER	Materials	1.00	75.14000	0.000%	\$75.14
11/07/2017	3W0696	TOWER	Materials	1.00	16.66000	0.000%	\$16.66
11/08/2017	10LB	WAREHOUSE	Materials	1.00	27.90000	0.000%	\$27.90
11/08/2017	14-17927-000	TOWER	Materials	1.00	43.26000	0.000%	\$43.26
11/08/2017	SPEN0001	1HREG	Labour	5.00	37.47000	21.000%	\$226.69

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 2590

Service Description: Serv/insp U53006

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval YR Hours or 1 year maximum service

Scheduled Date: 01/22/2019 Scheduled Odometer: 2622  
Completed Date: 01/23/2019 Completed Odometer: 2622

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

## COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
01/22/2019	ROSE0001	1HREG	Labour	2.00	38.78000	21.000%	\$93.85
01/23/2019	ROSE0001	1HREG	Labour	3.50	38.78000	21.000%	\$164.23
01/22/2019	A4720900551	TOWER	Materials	1.00	82.00000	0.000%	\$82.00
01/22/2019	3W0696	TOWER	Materials	1.00	14.91000	0.000%	\$14.91
01/23/2019	MARFAK AP	WAREHOUSE	Materials	1.00	7.59000	0.000%	\$7.59

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 2765      Service Description: Serv/insp U53006

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 03/08/2019      Scheduled Odometer: 2816  
 Completed Date: 03/12/2019      Completed Odometer: 2816

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
02/14/2019	MARFAK AP	WAREHOUSE	Materials	1.00	7.59000	0.000%	\$7.59
03/08/2019	ROSE0001	1HREG	Labour	2.50	38.78000	21.000%	\$117.31
03/11/2019	ROSE0001	1HREG	Labour	6.50	38.78000	21.000%	\$305.00
03/12/2019	ROSE0001	1HREG	Labour	2.00	38.78000	21.000%	\$93.85
03/08/2019	A4720900551	TOWER	Materials	1.00	81.41000	0.000%	\$81.41
03/08/2019	3W0696	TOWER	Materials	1.00	14.91000	0.000%	\$14.91
03/11/2019	MARFAK AP	WAREHOUSE	Materials	1.00	7.59000	0.000%	\$7.59
03/11/2019	1012845	WAREHOUSE	Materials	3.00	4.07000	0.000%	\$12.21

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 2900

Service Description: Serv/insp U53006

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval YR Hours or 1 year maximum service

Scheduled Date: 06/17/2019 Scheduled Odometer: 2973  
Completed Date: 06/19/2019 Completed Odometer: 2973

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

## COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
06/17/2019	SPEN0001	1HREG	Labour	2.00	38.78000	21.000%	\$93.85
06/18/2019	SPEN0001	1HREG	Labour	1.50	38.78000	21.000%	\$70.39
06/19/2019	SPEN0001	1HREG	Labour	5.00	38.78000	21.000%	\$234.62
06/19/2019	3W0696	TOWER	Materials	1.00	22.05000	0.000%	\$22.05
06/24/2019	A4720900551	WAREHOUSE	Materials	1.00	82.28000	0.000%	\$82.28

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 3120 Service Description: CVIP

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval CVP CVIP - Alberta Transportation

Scheduled Date: 06/17/2019 Scheduled Odometer: 2973  
Completed Date: 06/25/2019 Completed Odometer: 2973

Task: CVIP Commercial Vehicle Insp.

See attached link for Form Complete  
<https://www.trans.gov.ab.ca/TravisWebLogin> Complete

### COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
06/18/2019	SPEN0001	1HREG	Labour	6.00	38.78000	21.000%	\$281.54
06/25/2019	SPEN0001	1HREG	Labour	2.00	38.78000	21.000%	\$93.85

### Work Order Charges:

Labour:	\$375.39
Materials:	\$0.00
Fuel:	\$0.00
Other:	\$0.00
-----	
TOTAL:	\$375.39
=====	

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 3149

Service Description: Serv/insp U53006

Asset: U53006 GRAVEL TRUCK  
 Last Odometer Reading 306919  
 Interval YR Hours or 1 year maximum service

Scheduled Date: 11/19/2019 Scheduled Odometer: 3152  
 Completed Date: 11/23/2019 Completed Odometer: 3152

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
11/19/2019	HOLM0001	1HREG	Labour	2.00	38.78000	21.000%	\$93.85
11/19/2019	A4720900551	WAREHOUSE	Materials	1.00	82.69000	0.000%	\$82.69
11/19/2019	P552518	WAREHOUSE	Materials	1.00	7.45000	0.000%	\$7.45
11/19/2019	P616400	WAREHOUSE	Materials	1.00	20.86000	0.000%	\$20.86
11/19/2019	P619498	WAREHOUSE	Materials	1.00	168.58000	0.000%	\$168.58
11/19/2019	PHE07398	TOWER	Materials	3.00	2.00000	0.000%	\$6.00
11/21/2019	P547520	WAREHOUSE	Materials	1.00	65.90000	0.000%	\$65.90
11/21/2019	P616400	WAREHOUSE	Materials	-1.00	20.86000	0.000%	-\$20.86

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 3478      Service Description: Serv/insp U53006

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 02/10/2020      Scheduled Odometer: 3344  
 Completed Date: 02/13/2020      Completed Odometer: 3344

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Complete
Engine oil Filter change every 600 hrs	Complete
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
02/10/2020	SPEN0001	1HREG	Labour	4.00	38.78000	21.000%	\$187.70
02/11/2020	SPEN0001	1HREG	Labour	1.00	38.78000	21.000%	\$46.92
02/10/2020	1040	WAREHOUSE	Materials	36.00	5.80000	0.000%	\$208.80
02/10/2020	A4720900551	WAREHOUSE	Materials	1.00	85.81000	0.000%	\$85.81
02/10/2020	A4721800309	WAREHOUSE	Materials	1.00	38.03000	0.000%	\$38.03
02/10/2020	35	WAREHOUSE	Materials	1.00	3.20000	0.000%	\$3.20
02/10/2020	RD-3-8821-0	WAREHOUSE	Materials	1.00	105.13000	0.000%	\$105.13
02/12/2020	SPEN0001	1HREG	Labour	2.50	38.78000	21.000%	\$117.31

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 3714 Service Description: Serv/insp U53006

Asset: U53006 GRAVEL TRUCK  
 Last Odometer Reading 306919  
 Interval YR Hours or 1 year maximum service

Scheduled Date: 06/01/2020 Scheduled Odometer: 3582  
 Completed Date: 06/12/2020 Completed Odometer: 3582

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
06/01/2020	HOLM0001	1HREG	Labour	3.00	39.53000	21.000%	\$143.49
06/01/2020	SPEN0001	1HREG	Labour	1.00	39.53000	21.000%	\$47.83
06/01/2020	A4720900551	WAREHOUSE	Materials	1.00	88.93000	0.000%	\$88.93
06/01/2020	3W0696	TOWER	Materials	1.00	25.00000	0.000%	\$25.00
06/01/2020	35	WAREHOUSE	Materials	1.00	3.20000	0.000%	\$3.20
06/03/2020	SPEN0001	1HREG	Labour	1.00	39.53000	21.000%	\$47.83
06/03/2020	HOLM0001	1HREG	Labour	4.00	39.53000	21.000%	\$191.33
06/03/2020	60101	TOWER	Materials	1.00	3.89000	0.000%	\$3.89

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 3150 Service Description: CVIP

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval CVP CVIP - Alberta Transportation

Scheduled Date: 06/01/2020 Scheduled Odometer: 3582  
Completed Date: 06/15/2020 Completed Odometer: 3582

Task: CVIP Commercial Vehicle Insp.

See attached link for Form Complete  
<https://www.trans.gov.ab.ca/TravisWebLogin> Complete

## COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
06/04/2020	HOLM0001	1HREG	Labour	8.00	39.53000	21.000%	\$382.65
06/04/2020	75089	WAREHOUSE	Materials	1.00	5.59000	0.000%	\$5.59
06/15/2020	HOLM0001	1HREG	Labour	2.00	39.53000	21.000%	\$95.66

### Work Order Charges:

Labour: \$478.31  
Materials: \$5.59  
Fuel: \$0.00  
Other: \$0.00  
  
TOTAL: \$483.90

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 3981      Service Description: Serv/insp U53006

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 07/29/2020      Scheduled Odometer: 3785  
 Completed Date: 07/30/2020      Completed Odometer: 3785

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
07/29/2020	A4720900551	WAREHOUSE	Materials	1.00	94.51000	0.000%	\$94.51
07/29/2020	3W0696	TOWER	Materials	1.00	25.00000	0.000%	\$25.00
07/29/2020	35	WAREHOUSE	Materials	1.00	3.04000	0.000%	\$3.04
07/29/2020	12053092	WAREHOUSE	Materials	1.00	8.19000	0.000%	\$8.19
07/29/2020	RD-3-8777-0	WAREHOUSE	Materials	1.00	48.18000	0.000%	\$48.18
07/29/2020	HOLM0001	1HREG	Labour	4.00	39.53000	21.000%	\$191.33
07/30/2020	HOLM0001	1HREG	Labour	2.00	39.53000	21.000%	\$95.66
07/30/2020	1040	WAREHOUSE	Materials	2.00	5.66000	0.000%	\$11.32

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 4109      Service Description: Serv/insp U53006

Asset:	U53006	GRAVEL TRUCK	
Last Odometer Reading		306919	
Interval		YR	Hours or 1 year maximum service
Scheduled Date:	09/14/2020	Scheduled Odometer:	3990
Completed Date:	09/16/2020	Completed Odometer:	3990

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Complete
Engine oil Filter change every 600 hrs	Complete
Engine Breather clean or replace every 2 yrs	Complete
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
09/14/2020	1040	WAREHOUSE	Materials	36.00	5.66000	0.000%	\$203.76
09/14/2020	A4720900551	WAREHOUSE	Materials	1.00	94.51000	0.000%	\$94.51
09/14/2020	A4721800309	WAREHOUSE	Materials	1.00	40.38000	0.000%	\$40.38
09/14/2020	3W0696	TOWER	Materials	1.00	25.00000	0.000%	\$25.00
09/14/2020	SPEN0001	1HREG	Labour	2.00	39.53000	21.000%	\$95.66
09/14/2020	RD-3-8821-0	WAREHOUSE	Materials	1.00	105.90000	0.000%	\$105.90
09/15/2020	SPEN0001	1HREG	Labour	6.50	39.53000	21.000%	\$310.90
09/15/2020	6054	TOWER	Materials	1.00	16.16000	0.000%	\$16.16

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 4221

Service Description: Serv/insp U53006

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval YR Hours or 1 year maximum service

Scheduled Date: 11/20/2020 Scheduled Odometer: 4274  
Completed Date: 11/24/2020 Completed Odometer: 4274

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

## COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
11/20/2020	3W0696	TOWER	Materials	1.00	24.47000	0.000%	\$24.47
11/20/2020	A4720900551	WAREHOUSE	Materials	1.00	93.99000	0.000%	\$93.99
11/17/2020	1012844	WAREHOUSE	Materials	2.00	23.24000	0.000%	\$46.48
11/23/2020	HOLM0001	1HREG	Labour	1.00	39.53000	21.000%	\$47.83
11/24/2020	HOLM0001	1HREG	Labour	7.00	39.53000	21.000%	\$334.82
11/24/2020	1012845	WAREHOUSE	Materials	2.00	5.46000	0.000%	\$10.92
11/24/2020	RD-3-8821-0	WAREHOUSE	Materials	1.00	105.90000	0.000%	\$105.90
11/24/2020	2312337008	TOWER	Materials	1.00	1.42000	0.000%	\$1.42

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 4732 Service Description: Water pump leak

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval

Scheduled Date: 04/26/2021 Scheduled Odometer: 4445  
Completed Date: 04/26/2021 Completed Odometer: 4445

Task:

Replace leaking water pump Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
04/26/2021	1012845	WAREHOUSE	Materials	40.00	5.16000	0.000%	\$206.40
04/26/2021	SPEN0001	1HREG	Labour	4.00	39.53000	21.000%	\$191.33

Work Order Charges:

Labour: \$191.33  
Materials: \$206.40  
Fuel: \$0.00  
Other: \$0.00  
TOTAL: \$397.73

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 4743      Service Description: Serv/Insp

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 04/29/2021      Scheduled Odometer: 4460  
 Completed Date: 05/03/2021      Completed Odometer: 4460

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
04/29/2021	SPEN0001	1HREG	Labour	1.00	39.53000	21.000%	\$47.83
05/03/2021	SPEN0001	1HREG	Labour	4.00	39.53000	21.000%	\$191.33
05/03/2021	A4720900551	WAREHOUSE	Materials	1.00	88.66000	0.000%	\$88.66
05/03/2021	3W0696	TOWER	Materials	1.00	24.92000	0.000%	\$24.92

**Work Order Charges:**

Labour:	\$239.16
Materials:	\$113.58
Fuel:	\$0.00
Other:	\$0.00
<b>TOTAL:</b>	<b>\$352.74</b>

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 4786      Service Description: Serv/Insp

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 06/09/2021      Scheduled Odometer: 4639  
 Completed Date: 06/09/2021      Completed Odometer: 4639

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Complete
Engine oil Filter change every 600 hrs	Complete
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
06/09/2021	HOLM0001	1HREG	Labour	4.00	40.04000	21.000%	\$193.79
06/09/2021	A4720900551	WAREHOUSE	Materials	1.00	86.74000	0.000%	\$86.74
06/09/2021	A4721800309	WAREHOUSE	Materials	1.00	38.65000	0.000%	\$38.65
06/09/2021	3W0696	TOWER	Materials	1.00	24.92000	0.000%	\$24.92
06/09/2021	35	WAREHOUSE	Materials	1.00	3.00000	0.000%	\$3.00
06/10/2021	MARFAK AP	WAREHOUSE	Materials	1.00	4.54000	0.000%	\$4.54

Date: 02/13/2023

User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 3980

Service Description: CVIP

Asset: U53006

GRAVEL TRUCK

Last Odometer Reading

306919

Interval

CVP

CVIP - Alberta Transportation

Scheduled Date: 06/10/2021

Scheduled Odometer:

4639

Completed Date: 06/11/2021

Completed Odometer:

4639

Task: CVIP Commercial Vehicle Insp.

See attached link for Form

Complete

<https://www.trans.gov.ab.ca/TravisWebLogin>

Complete

## COMMENTS

<u>Date</u>	<u>Resource</u>	<u>Subresource</u>	<u>Cost Type</u>	<u>Quantity</u>	<u>Cost Per Unit</u>	<u>O/H %</u>	<u>Extended Cost</u>
06/09/2021	HOLM0001	1HREG	Labour	4.00	40.04000	21.000%	\$193.79
06/10/2021	HOLM0001	1HREG	Labour	8.00	40.04000	21.000%	\$387.59
06/11/2021	HOLM0001	1HREG	Labour	4.00	40.04000	21.000%	\$193.79

### Work Order Charges:

Labour: \$775.17

Materials: \$0.00

Fuel: \$0.00

Other: \$0.00

TOTAL: \$775.17

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 4881      Service Description: Serv/Insp

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 07/15/2021      Scheduled Odometer: 4816  
 Completed Date: 07/16/2021      Completed Odometer: 4816

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
07/15/2021	HOLM0001	1HREG	Labour	2.00	40.04000	21.000%	\$96.90
07/16/2021	HOLM0001	1HREG	Labour	7.00	40.04000	21.000%	\$339.14
07/16/2021	1012845	WAREHOUSE	Materials	4.00	5.16000	0.000%	\$20.64

**Work Order Charges:**

Labour:	\$436.04
Materials:	\$20.64
Fuel:	\$0.00
Other:	\$0.00
-----	
TOTAL:	\$456.68
=====	

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 4969      Service Description: Serv/Insp

Asset:	U53006	GRAVEL TRUCK	
Last Odometer Reading		306919	
Interval		YR	Hours or 1 year maximum service
Scheduled Date:	08/18/2021	Scheduled Odometer:	4984
Completed Date:	08/26/2021	Completed Odometer:	5012

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
08/18/2021	SPEN0001	1HREG	Labour	1.00	40.04000	21.000%	\$48.45
08/18/2021	A4720900551	WAREHOUSE	Materials	1.00	84.93000	0.000%	\$84.93
08/25/2021	HOLM0001	1HREG	Labour	8.00	40.04000	21.000%	\$387.59
08/26/2021	HOLM0001	1HREG	Labour	5.00	40.04000	21.000%	\$242.24
08/26/2021	35	WAREHOUSE	Materials	1.00	3.00000	0.000%	\$3.00
08/26/2021	35	WAREHOUSE	Materials	1.00	3.00000	0.000%	\$3.00
08/26/2021	10404	WAREHOUSE	Materials	1.00	25.96000	0.000%	\$25.96

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5072 Service Description: Repair coolant leak

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval

Scheduled Date: 09/20/2021 Scheduled Odometer: 5105  
Completed Date: 09/21/2021 Completed Odometer: 5105

Task:

Repair coolant leak Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
09/20/2021	HOLM0001	1HREG	Labour	1.50	40.04000	21.000%	\$72.67
09/21/2021	HOLM0001	1HREG	Labour	1.00	40.04000	21.000%	\$48.45
09/21/2021	1012844	WAREHOUSE	Materials	3.00	21.49000	0.000%	\$64.47

Work Order Charges:

Labour: \$121.12  
Materials: \$64.47  
Fuel: \$0.00  
Other: \$0.00

TOTAL: \$185.59

Date: 02/13/2023  
 User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5033      Service Description: Serv/Insp

Asset:	U53006	GRAVEL TRUCK	
Last Odometer Reading		306919	
Interval		YR	Hours or 1 year maximum service
Scheduled Date:	10/13/2021	Scheduled Odometer:	5239
Completed Date:	10/13/2021	Completed Odometer:	5239

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Complete
Engine oil Filter change every 600 hrs	Complete
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
10/13/2021	SPEN0001	1HREG	Labour	6.00	40.04000	21.000%	\$290.69
10/13/2021	1040	WAREHOUSE	Materials	36.00	5.80000	0.000%	\$208.80
10/13/2021	A4721800309	WAREHOUSE	Materials	1.00	36.63000	0.000%	\$36.63
10/13/2021	A4720900551	WAREHOUSE	Materials	1.00	84.63000	0.000%	\$84.63
10/13/2021	P619498	WAREHOUSE	Materials	1.00	157.07000	0.000%	\$157.07

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5126

Service Description: Coolant leak

Asset: U53006 GRAVEL TRUCK

Last Odometer Reading 306919  
Interval

Scheduled Date: 10/19/2021 Scheduled Odometer: 5266  
Completed Date: 10/20/2021 Completed Odometer: 5266

Task:

Repair coolant leak

Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
10/19/2021	HOLM0001	1HREG	Labour	6.50	40.04000	21.000%	\$314.91
10/20/2021	HOLM0001	1HREG	Labour	5.00	40.04000	21.000%	\$242.24
10/21/2021	1012845	WAREHOUSE	Materials	40.00	5.16000	0.000%	\$206.40

Work Order Charges:

Labour: \$557.15  
Materials: \$206.40  
Fuel: \$0.00  
Other: \$0.00

TOTAL: \$763.55

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 5133      Service Description: Serv/Insp

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 01/18/2022      Scheduled Odometer: 5465  
 Completed Date: 01/19/2022      Completed Odometer: 5465

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
01/18/2022	SPEN0001	1HREG	Labour	3.00	40.89000	21.000%	\$148.43
01/19/2022	SPEN0001	1HREG	Labour	4.00	40.89000	21.000%	\$197.91
01/18/2022	A4720900551	WAREHOUSE	Materials	1.00	84.28000	0.000%	\$84.28

**Work Order Charges:**

Labour:	\$346.34
Materials:	\$84.28
Fuel:	\$0.00
Other:	\$0.00
-----	
TOTAL:	\$430.62
=====	

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5273 Service Description: Brake pot leak

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval

Scheduled Date: 01/27/2022 Scheduled Odometer: 5473  
Completed Date: 01/27/2022 Completed Odometer: 5473

Task:

Replace leaking brake pot Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
01/27/2022	SPEN0001	1HREG	Labour	2.00	40.89000	21.000%	\$98.95
01/27/2022	3030	TOWER	Materials	1.00	55.86000	0.000%	\$55.86

Work Order Charges:

Labour: \$98.95  
Materials: \$55.86  
Fuel: \$0.00  
Other: \$0.00

TOTAL: \$154.81

=====

Date: 02/13/2023

User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5317 Service Description: Serv/Insp

Asset:	U53006	GRAVEL TRUCK
Last Odometer Reading	306919	
Interval	YR	Hours or 1 year maximum service

Scheduled Date:	05/18/2022	Scheduled Odometer:	5672
Completed Date:	05/19/2022	Completed Odometer:	5672

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

### COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
05/18/2022	3W0696	TOWER	Materials	1.00	25.00000	0.000%	\$25.00
05/18/2022	35	WAREHOUSE	Materials	1.00	3.81000	0.000%	\$3.81
05/18/2022	1012845	WAREHOUSE	Materials	6.00	5.44000	0.000%	\$32.64
05/18/2022	2312337008	TOWER	Materials	1.00	1.24000	0.000%	\$1.24
05/18/2022	HOLM0001	1HREG	Labour	8.00	40.89000	21.000%	\$395.82
05/19/2022	HOLM0001	1HREG	Labour	1.50	40.89000	21.000%	\$74.22

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 4882 Service Description: CVIP

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval CVP CVIP - Alberta Transportation

Scheduled Date: 06/13/2022 Scheduled Odometer: 5827  
Completed Date: 06/15/2022 Completed Odometer: 5827

Task: CVIP Commercial Vehicle Insp.

See attached link for Form Complete  
<https://www.trans.gov.ab.ca/TravisWebLogin> Complete

## COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
06/14/2022	HOLM0001	1HREG	Labour	8.00	40.89000	21.000%	\$395.82
06/15/2022	HOLM0001	1HREG	Labour	4.00	40.89000	21.000%	\$197.91

### Work Order Charges:

Labour: \$593.73  
Materials: \$0.00  
Fuel: \$0.00  
Other: \$0.00  
TOTAL: \$593.73

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5509 Service Description: Serv/Insp

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval YR Hours or 1 year maximum service

Scheduled Date: 06/13/2022 Scheduled Odometer: 5827  
Completed Date: 06/15/2022 Completed Odometer: 5827

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Complete
Engine oil Filter change every 600 hrs	Complete
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

## COMMENTS

<u>Date</u>	<u>Resource</u>	<u>Subresource</u>	<u>Cost Type</u>	<u>Quantity</u>	<u>Cost Per Unit</u>	<u>O/H %</u>	<u>Extended Cost</u>
06/13/2022	HOLM0001	1HREG	Labour	6.50	40.89000	21.000%	\$321.60
06/15/2022	HOLM0001	1HREG	Labour	4.00	40.89000	21.000%	\$197.91
06/13/2022	A4721800309	WAREHOUSE	Materials	1.00	31.97000	0.000%	\$31.97
06/13/2022	3W0696	TOWER	Materials	1.00	25.00000	0.000%	\$25.00
06/13/2022	6054	TOWER	Materials	1.00	10.89000	0.000%	\$10.89
06/13/2022	35	WAREHOUSE	Materials	1.00	3.81000	0.000%	\$3.81
06/13/2022	1040	WAREHOUSE	Materials	36.00	5.78000	0.000%	\$208.08
06/13/2022	RD-3-8821-0	WAREHOUSE	Materials	1.00	33.46000	0.000%	\$33.46

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5576 Service Description: Check code

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval

Scheduled Date: 07/04/2022 Scheduled Odometer: 5929  
Completed Date: 07/04/2022 Completed Odometer: 5929

Task:

Check code Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
07/04/2022	SPEN0001	1HREG	Labour	4.00	40.89000	21.000%	\$197.91

Work Order Charges:

Labour:	\$197.91
Materials:	\$0.00
Fuel:	\$0.00
Other:	\$0.00
TOTAL:	<u>\$197.91</u>

Date: 02/13/2023  
User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5588 Service Description: Coolant leak

Asset: U53006 GRAVEL TRUCK  
Last Odometer Reading 306919  
Interval

Scheduled Date: 07/06/2022 Scheduled Odometer: 5950  
Completed Date: 07/07/2022 Completed Odometer: 5950

Task:

Check coolant leak Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
07/06/2022	SPEN0001	1HREG	Labour	3.00	40.89000	21.000%	\$148.43
07/07/2022	SPEN0001	1HREG	Labour	4.00	40.89000	21.000%	\$197.91

Work Order Charges:

Labour: \$346.34  
Materials: \$0.00  
Fuel: \$0.00  
Other: \$0.00

TOTAL: \$346.34

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 5550      Service Description: Serv/Insp

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 07/27/2022      Scheduled Odometer: 6106  
 Completed Date: 07/29/2022      Completed Odometer: 6106

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
07/27/2022	HOLM0001	1HREG	Labour	1.00	40.89000	21.000%	\$49.48
07/29/2022	HOLM0001	1HREG	Labour	4.00	40.89000	21.000%	\$197.91
07/27/2022	A4720900551	WAREHOUSE	Materials	1.00	86.13000	0.000%	\$86.13
07/29/2022	RD-3-8821-0	WAREHOUSE	Materials	1.00	35.96000	0.000%	\$35.96

**Work Order Charges:**

Labour:	\$247.39
Materials:	\$122.09
Fuel:	\$0.00
Other:	\$0.00
-----	
TOTAL:	\$369.48
=====	

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 5649      Service Description: Serv/Insp

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 08/26/2022      Scheduled Odometer: 6317  
 Completed Date: 08/26/2022      Completed Odometer: 6317

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Complete
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
08/26/2022	SPEN0001	1HREG	Labour	5.00	40.89000	21.000%	\$247.38
08/26/2022	A4720900551	WAREHOUSE	Materials	1.00	86.87000	0.000%	\$86.87
08/26/2022	3W0696	TOWER	Materials	1.00	25.99000	0.000%	\$25.99
08/26/2022	RD-3-8821-0	WAREHOUSE	Materials	1.00	35.96000	0.000%	\$35.96

**Work Order Charges:**

Labour:	\$247.38
Materials:	\$148.82
Fuel:	\$0.00
Other:	\$0.00
-----	
TOTAL:	\$396.20
=====	

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 5687      Service Description: Serv/Insp

Asset: U53006      GRAVEL TRUCK  
 Last Odometer Reading      306919  
 Interval      YR      Hours or 1 year maximum service

Scheduled Date: 09/26/2022      Scheduled Odometer: 6555  
 Completed Date: 09/30/2022      Completed Odometer: 6555

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Complete
Engine oil Filter change every 600 hrs	Complete
Engine Breather clean or replace every 2 yrs	Complete
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
09/26/2022	SPEN0001	1HREG	Labour	1.00	40.89000	21.000%	\$49.48
09/30/2022	SPEN0001	1HREG	Labour	5.00	40.89000	21.000%	\$247.38
09/26/2022	RD-3-8821-0	WAREHOUSE	Materials	1.00	35.46000	0.000%	\$35.46
09/26/2022	A4720900551	WAREHOUSE	Materials	1.00	87.05000	0.000%	\$87.05
09/26/2022	A4721800309	WAREHOUSE	Materials	1.00	32.24000	0.000%	\$32.24
09/26/2022	1040	WAREHOUSE	Materials	36.00	5.78000	0.000%	\$208.08
09/30/2022	3W0696	TOWER	Materials	1.00	25.99000	0.000%	\$25.99

Date: 02/13/2023

User: Trevor

# Cypress County ASSET WORK ORDER

Work Order No: 5822

Service Description: Repair air system

Asset: U53006

GRAVEL TRUCK

Last Odometer Reading  
Interval

306919

Scheduled Date: 11/07/2022

Scheduled Odometer: 6735

Completed Date: 11/14/2022

Completed Odometer: 6735

Task:

Repair air system

Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
11/07/2022	HOLM0001	1HREG	Labour	2.00	40.89000	21.000%	\$98.95
11/08/2022	HOLM0001	1HREG	Labour	7.00	40.89000	21.000%	\$346.34
11/10/2022	HOLM0001	1HREG	Labour	1.00	40.89000	21.000%	\$49.48
11/14/2022	HOLM0001	1HREG	Labour	5.50	40.89000	21.000%	\$272.12

Work Order Charges:

Labour:	\$766.89
Materials:	\$0.00
Fuel:	\$0.00
Other:	\$0.00

TOTAL:	\$766.89
--------	----------

Date: 02/13/2023  
 User: Trevor

## Cypress County ASSET WORK ORDER

Work Order No: 5806      Service Description: Serv/Insp

Asset:	U53006	GRAVEL TRUCK	
Last Odometer Reading		306919	
Interval	YR	Hours or 1 year maximum service	
Scheduled Date:	12/13/2022	Scheduled Odometer:	6785
Completed Date:	12/13/2022	Completed Odometer:	6785

Task: MHDTK Medium/Heavy Duty Truck

CHECKLIST IN CONJUNCTION W/ MFG'S SERVICE MANI	Complete
Engine oil sample every 200 hrs	Complete
Coolant Level 1 sample every 2 years or 2000 hrs	Not Required
Engine oil change every 600 hrs	Not Required
Engine oil Filter change every 600 hrs	Not Required
Engine Breather clean or replace every 2 yrs	Not Required
Fuel Filter(s) change every 200 hrs	Complete
Fuel / Water Separator change every service	Complete

COMMENTS

Date	Resource	Subresource	Cost Type	Quantity	Cost Per Unit	O/H %	Extended Cost
12/13/2022	HOLM0001	1HREG	Labour	8.00	40.89000	21.000%	\$395.82
12/14/2022	HOLM0001	1HREG	Labour	3.00	40.89000	21.000%	\$148.43
12/13/2022	A4720900551	WAREHOUSE	Materials	1.00	94.56000	0.000%	\$94.56
12/13/2022	14-17927-000	WAREHOUSE	Materials	1.00	38.91000	0.000%	\$38.91
12/13/2022	DEX6	WAREHOUSE	Materials	2.00	7.74000	0.000%	\$15.48
12/13/2022	DEX6	WAREHOUSE	Materials	1.00	7.74000	0.000%	\$7.74
12/13/2022	RD-3-8821-0	WAREHOUSE	Materials	1.00	35.46000	0.000%	\$35.46
12/13/2022	932630Q	WAREHOUSE	Materials	1.00	92.50000	0.000%	\$92.50

**ENGINE**

**EQUIP NUM: U53006**

**SERIAL NUMBER: 4GLGS2013**

**WESTERN\_ST 4700SB**

**COMP SERIAL NUM: 47192750336485**

**No Action Required**

**Interp By: Gregory Scribner**  
**Interpreted On: 06-Jan-23**

**N030-52364-0251**  
LABEL#: 201229907  
SHOP JOB NUM : 5806  
SAMPLE SHIP TIME (days) : 16  
**CYPRESS COUNTY**  
RECEIVED DATE: 30-Dec-22

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
Sampled Date	14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
Sample Id	N030-52364-0251	N030-52286-0695	N030-52244-0390	N030-52220-0515
Lab Date	30-Dec-22	13-Oct-22	01-Sep-22	08-Aug-22
Meter [Hr]	6785	6555	6317	6106
Meter On Fluid	230	728	490	279
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	NULL	10W-40	10W-40	10W-40
Fluid Type	DURON UHP E6	DURON UHP	DURON UHP	DURON UHP
Fluid Change	N	Y	N	N
Filter Change	N	Y	N	N
Make Up Fluid [ ]	0			0

**CONDITION / CONTAMINATION**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
<b>VISCOSITY (Centistokes)</b>					
V100	Viscosity at 100 C	15.20	15.10	13.80	14.50
<b>VISCOSITY (Centistokes)</b>					
V40	Viscosity at 40 C	105.2	109.5	103.4	99.70
<b>VISCOSITY INDEX</b>					
VI	Viscosity Index	152	144	134	150

**WEAR LEVELS / ADDITIVES**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
<b>ELEMENTAL ANALYSIS (ppm)</b>					
Na	Sodium	2	2	2	1
K	Potassium	8	15	13	14
Si	Silicon	4	7	5	4
Al	Aluminum	9	16	12	13
Fe	Iron	18	35	24	21
Cr	Chromium	2	3	2	2
Pb	Lead	0	0	0	0
Cu	Copper	3	4	3	3
Sn	Tin	0	0	0	0
Ni	Nickel	2	2	1	2
Ag	Silver	0	0	0	0
Ti	Titanium	0	0	0	0
V	Vanadium	0	0	0	0
Zn	Zinc	1217	1300	1239	1263
Ca	Calcium	1127	1191	1116	1110
Mg	Magnesium	994	1056	1071	982
Ba	Barium	0	0	0	0
B	Boron	1	1	3	0
Mo	Molybdenum	60	67	58	60
P	Phosphorus	1006	1044	1031	1001

**INFRARED (UFM)**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
ST	Soot	29	61	43	27
OXI	Oxidation	18	25	20	17
SUL	Sulfur Products	22	27	24	21
NIT	Nitration	10	13	10	9

**ANTIFREEZE**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
A	Antifreeze	N	N	N	N

**FUEL**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
F	Fuel	N	N	N	N

**WATER**

		14-Dec-22	03-Oct-22	26-Aug-22	29-Jul-22
W	Water	N	N	N	N

**ENGINE**

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**No Action Required**

**Interp By: Gregory Scribner**  
**Interpreted On: 12-Jul-22**

**N030-52192-0206**  
LABEL#: 200957365  
SHOP JOB NUM : 5509  
SAMPLE SHIP TIME (days) : 26  
**CYPRESS COUNTY**  
RECEIVED DATE: 11-Jul-22

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN SOME NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
Sampled Date	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
Sample Id	N030-52192-0206	N030-52145-0314	N030-52024-0942	N030-51302-0024
Lab Date	11-Jul-22	25-May-22	24-Jan-22	29-Oct-21
Meter [Hr]	5827	5672	5465	5239
Meter On Fluid	588	207	226	579
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP		
Fluid Change	Y	N	N	Y
Filter Change	Y	N	N	Y
Make Up Fluid [ ]	0	0		

**PREVIOUS SAMPLE**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN SOME NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**CONDITION / CONTAMINATION**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	13.50	14.20	14.50	13.7
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	99.70	100.0	101.0	98.3

**WEAR LEVELS / ADDITIVES**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	2	2	0	1
K Potassium	27	29	8	30
Si Silicon	4	4	2	3
Al Aluminum	28	29	9	26
Fe Iron	42	45	16	41
Cr Chromium	3	4	1	3
Pb Lead	0	0	0	0
Cu Copper	5	5	2	6
Sn Tin	0	0	0	1
Ni Nickel	2	2	1	1
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1294	1302	1268	1307
Ca Calcium	1146	1133	1077	1140
Mg Magnesium	1008	1173	798	1069
Ba Barium	0	0	0	0
B Boron	0	1	0	1
Mo Molybdenum	62	72	51	68
P Phosphorus	1047	1044	1013	1053

**VISCOSITY INDEX**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
VI Viscosity Index	135	145	148	140

**INFRARED (UFM)**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
ST Soot	47	35	24	48
OXI Oxidation	22	19	17	21
SUL Sulfur Products	26	23	22	25
NIT Nitration	11	10	9	11

**ANTIFREEZE**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
PGC Percent Glycol Con	0.0029	0.0226		0

**FUEL**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
F Fuel	N	N	N	N

**WATER**

	15-Jun-22	18-May-22	21-Jan-22	14-Oct-21
W Water	N	N	N	N



**ENGINE**

**N030-52220-0515**  
 LABEL#: 201023658  
 SHOP JOB NUM : 5550  
 SAMPLE SHIP TIME (days) : 10  
**CYPRESS COUNTY**  
 RECEIVED DATE: 08-Aug-22

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**  
 **No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Greg Eyre**  
**Interpreted On: 10-Aug-22**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
Sampled Date	29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
Sample Id	N030-52220-0515	N030-52192-0206	N030-52145-0314	N030-52024-0942
Lab Date	08-Aug-22	11-Jul-22	25-May-22	24-Jan-22
Meter [Hr]	6106	5827	5672	5465
Meter On Fluid	279	588	207	226
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP	DURON UHP	
Fluid Change	N	Y	N	N
Filter Change	N	Y	N	N
Make Up Fluid []	0	0	0	

**CONDITION / CONTAMINATION**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
<b>VISCOSITY (Centistokes)</b>					
V100	Viscosity at 100 C	14.50	13.50	14.20	14.50
<b>VISCOSITY (Centistokes)</b>					
V40	Viscosity at 40 C	99.70	99.70	100.0	101.0
<b>VISCOSITY INDEX</b>					
VI	Viscosity Index	150	135	145	148

**WEAR LEVELS / ADDITIVES**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
<b>ELEMENTAL ANALYSIS (ppm)</b>					
Na	Sodium	1	2	2	0
K	Potassium	14	27	29	8
Si	Silicon	4	4	4	2
Al	Aluminum	13	28	29	9
Fe	Iron	21	42	45	16
Cr	Chromium	2	3	4	1
Pb	Lead	0	0	0	0
Cu	Copper	3	5	5	2
Sn	Tin	0	0	0	0
Ni	Nickel	2	2	2	1
Ag	Silver	0	0	0	0
Ti	Titanium	0	0	0	0
V	Vanadium	0	0	0	0
Zn	Zinc	1263	1294	1302	1268
Ca	Calcium	1110	1146	1133	1077
Mg	Magnesium	982	1008	1173	798
Ba	Barium	0	0	0	0
B	Boron	0	0	1	0
Mo	Molybdenum	60	62	72	51
P	Phosphorus	1001	1047	1044	1013

**INFRARED (UFM)**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
ST	Soot	27	47	35	24
OXI	Oxidation	17	22	19	17
SUL	Sulfur Products	21	26	23	22
NIT	Nitration	9	11	10	9

**ANTIFREEZE**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
A	Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
PGC	Percent Glycol Con		0.0029	0.0226	

**FUEL**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
F	Fuel	N	N	N	N

**WATER**

		29-Jul-22	15-Jun-22	18-May-22	21-Jan-22
W	Water	N	N	N	N

**ENGINE**

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**N030-52286-0695**

LABEL#: 200957559

SHOP JOB NUM : 5687

SAMPLE SHIP TIME (days) : 10

**CYPRESS COUNTY**

RECEIVED DATE: 13-Oct-22

**No Action Required**

**Interp By: Gregory Scribner**  
**Interpreted On: 17-Oct-22**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
Sampled Date	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
Sample Id	N030-52286-0695	N030-52244-0390	N030-52220-0515	N030-52192-0206
Lab Date	13-Oct-22	01-Sep-22	08-Aug-22	11-Jul-22
Meter [Hr]	6555	6317	6106	5827
Meter On Fluid	728	490	279	588
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP	DURON UHP	DURON UHP
Fluid Change	Y	N	N	Y
Filter Change	Y	N	N	Y
Make Up Fluid [ ]			0	0

**CONDITION / CONTAMINATION**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	15.10	13.80	14.50	13.50
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	109.5	103.4	99.70	99.70
<b>VISCOSITY INDEX</b>				
VI Viscosity Index	144	134	150	135

**WEAR LEVELS / ADDITIVES**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	2	2	1	2
K Potassium	15	13	14	27
Si Silicon	7	5	4	4
Al Aluminum	16	12	13	28
Fe Iron	35	24	21	42
Cr Chromium	3	2	2	3
Pb Lead	0	0	0	0
Cu Copper	4	3	3	5
Sn Tin	0	0	0	0
Ni Nickel	2	1	2	2
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1300	1239	1263	1294
Ca Calcium	1191	1116	1110	1146
Mg Magnesium	1056	1071	982	1008
Ba Barium	0	0	0	0
B Boron	1	3	0	0
Mo Molybdenum	67	58	60	62
P Phosphorus	1044	1031	1001	1047

**INFRARED (UFM)**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
ST Soot	61	43	27	47
OXI Oxidation	25	20	17	22
SUL Sulfur Products	27	24	21	26
NIT Nitration	13	10	9	11

**ANTIFREEZE**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
PGC Percent Glycol Con				0.0029

**FUEL**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
F Fuel	N	N	N	N

**WATER**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
W Water	N	N	N	N



**ENGINE**

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**  
 **No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Gregory Scribner**  
**Interpreted On: 17-Oct-22**

**N030-52286-0695**  
 LABEL#: 200957559  
 SHOP JOB NUM : 5687  
 SAMPLE SHIP TIME (days) : 10  
**CYPRESS COUNTY**  
 RECEIVED DATE: 13-Oct-22

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
Sampled Date	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
Sample Id	N030-52286-0695	N030-52244-0390	N030-52220-0515	N030-52192-0206
Lab Date	13-Oct-22	01-Sep-22	08-Aug-22	11-Jul-22
Meter [Hr]	6555	6317	6106	5827
Meter On Fluid	728	490	279	588
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP	DURON UHP	DURON UHP
Fluid Change	Y	N	N	Y
Filter Change	Y	N	N	Y
Make Up Fluid []			0	0

**CONDITION / CONTAMINATION**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	15.10	13.80	14.50	13.50

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	109.5	103.4	99.70	99.70

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>VISCOSITY INDEX</b>				
VI Viscosity Index	144	134	150	135

**WEAR LEVELS / ADDITIVES**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	2	2	1	2
K Potassium	15	13	14	27
Si Silicon	7	5	4	4
Al Aluminum	16	12	13	28
Fe Iron	35	24	21	42
Cr Chromium	3	2	2	3
Pb Lead	0	0	0	0
Cu Copper	4	3	3	5
Sn Tin	0	0	0	0
Ni Nickel	2	1	2	2
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1300	1239	1263	1294
Ca Calcium	1191	1116	1110	1146
Mg Magnesium	1056	1071	982	1008
Ba Barium	0	0	0	0
B Boron	1	3	0	0
Mo Molybdenum	67	58	60	62
P Phosphorus	1044	1031	1001	1047

**INFRARED (UFM)**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
ST Soot	61	43	27	47
OXI Oxidation	25	20	17	22
SUL Sulfur Products	27	24	21	26
NIT Nitration	13	10	9	11

**ANTIFREEZE**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
PGC Percent Glycol Con				0.0029

**FUEL**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
F Fuel	N	N	N	N

**WATER**

	03-Oct-22	26-Aug-22	29-Jul-22	15-Jun-22
W Water	N	N	N	N

**ENGINE**

**N030-52244-0390**  
 LABEL#: 200957174  
 SAMPLE SHIP TIME (days) : 6  
**CYPRESS COUNTY**  
 RECEIVED DATE: 01-Sep-22

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**

**No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Gregory Scribner**  
**Interpreted On: 02-Sep-22**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
Sampled Date	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
Sample Id	N030-52244-0390	N030-52220-0515	N030-52192-0206	N030-52145-0314
Lab Date	01-Sep-22	08-Aug-22	11-Jul-22	25-May-22
Meter [Hr]	6317	6106	5827	5672
Meter On Fluid	490	279	588	207
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type	DURON UHP	DURON UHP	DURON UHP	DURON UHP
Fluid Change	N	N	Y	N
Filter Change	N	N	Y	N
Make Up Fluid [ ]		0	0	0

**CONDITION / CONTAMINATION**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	13.80	14.50	13.50	14.20
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	103.4	99.70	99.70	100.0
<b>VISCOSITY INDEX</b>				
VI Viscosity Index	134	150	135	145

**WEAR LEVELS / ADDITIVES**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	2	1	2	2
K Potassium	13	14	27	29
Si Silicon	5	4	4	4
Al Aluminum	12	13	28	29
Fe Iron	24	21	42	45
Cr Chromium	2	2	3	4
Pb Lead	0	0	0	0
Cu Copper	3	3	5	5
Sn Tin	0	0	0	0
Ni Nickel	1	2	2	2
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1239	1263	1294	1302
Ca Calcium	1116	1110	1146	1133
Mg Magnesium	1071	982	1008	1173
Ba Barium	0	0	0	0
B Boron	3	0	0	1
Mo Molybdenum	58	60	62	72
P Phosphorus	1031	1001	1047	1044

**INFRARED (UFM)**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
ST Soot	43	27	47	35
OXI Oxidation	20	17	22	19
SUL Sulfur Products	24	21	26	23
NIT Nitration	10	9	11	10

**ANTIFREEZE**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
A Antifreeze	N	N	N	N

**GLYCOL CONTENT (%)**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
PGC Percent Glycol Con			0.0029	0.0226

**FUEL**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
F Fuel	N	N	N	N

**WATER**

	26-Aug-22	29-Jul-22	15-Jun-22	18-May-22
W Water	N	N	N	N

**ENGINE**

**N030-51245-0109**  
 LABEL#: 200786547  
 SAMPLE SHIP TIME (days) : 3  
**CYPRESS COUNTY**  
 RECEIVED DATE: 02-Sep-21

**EQUIP NUM: U53006**  
**WESTERN\_ST 4700SB**  
 **No Action Required**

**SERIAL NUMBER: 4GLGS2013**  
**COMP SERIAL NUM: 47192750336485**

**Interp By: Peter Lewandowski**  
**Interpreted On: 03-Sep-21**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	30-Aug-21	16-Jul-21	10-Jun-21	04-May-21
Sampled Date	30-Aug-21	16-Jul-21	10-Jun-21	04-May-21
Sample Id	N030-51245-0109	N030-51208-0407	N030-51172-0616	N030-51138-0028
Lab Date	02-Sep-21	27-Jul-21	21-Jun-21	18-May-21
Meter [Hr]	5012	4816	4639	4460
Meter On Fluid	373	177	649	470
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type				
Fluid Change	N	N	Y	N
Filter Change	N	N	Y	N
Make Up Fluid []	0	0	0	3

**PREVIOUS SAMPLE**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**CONDITION / CONTAMINATION**

	30-Aug-21	16-Jul-21	10-Jun-21	04-May-21
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	14.2	14.5	14.0	13.9
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	98.2	98.8	97.6	97.3

**WEAR LEVELS / ADDITIVES**

	30-Aug-21	16-Jul-21	10-Jun-21	04-May-21
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	1	1	2	1
K Potassium	23	16	43	47
Si Silicon	3	3	3	3
Al Aluminum	17	14	29	30
Fe Iron	29	27	63	68
Cr Chromium	2	2	4	4
Pb Lead	0	0	0	0
Cu Copper	4	4	8	7
Sn Tin	0	0	0	0
Ni Nickel	1	1	1	1
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1259	1286	1241	1256
Ca Calcium	1109	1111	1001	1085
Mg Magnesium	977	998	861	1005
Ba Barium	0	0	0	0
B Boron	1	1	0	0
Mo Molybdenum	58	62	57	63
P Phosphorus	979	1036	1004	987

**VISCOSITY INDEX**

VI Viscosity Index	148	152	146	145
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**INFRARED (UFM)**

ST Soot	28	12	39	28
OXI Oxidation	17	15	21	18
SUL Sulfur Products	21	21	24	21
NIT Nitration	9	8	10	10

**ANTIFREEZE**

A Antifreeze	N	N	N	N
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**GLYCOL CONTENT (%)**

PGC Percent Glycol Con			0.0133	0
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**FUEL**

F Fuel	N	N	N	N
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**WATER**

W Water	N	N	N	N
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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA	CUSTOMER EQUIP NUM : U72101 SERIAL NUMBER : 97AX39674 MODEL : ACTERA MANUFACTURER : STERLING COMPANY NAME : CYPRESS COUNTY JOBSITE : AREA : REGION :	COMPARTMENT NAME : RADIATOR COMP SERIAL NUM : WAX51878 COMPARTMENT MODEL : C7_CAT LABEL# : 104961 SHOP JOB NUM : SAMPLE TYPE : COOLANT SAMPLE SHIP TIME (days) : 35 SAMPLE LOCATION :

Interp By: Antonia Castillo

**No Action  
Required**

ALL ANALYSIS READINGS ARE WITHIN THE EXPECTED RANGE FOR THIS COOLANT SAMPLE. CONTINUE TO SAMPLE AT THE RECOMMENDED INTERVAL.

LAB #  
N030-48074-2109  
PROCESS DATE 15-Mar-18

CORROSION ELEMENTS - COOLANT FORMULATION																					
SAMPLE DATE	SAMPLE ID	FLUID BRAND	TYPE	NO2	NO3	MoO4	SiO3	BO3	PO4	SAC	TT	K	Na	Al	Cu	Fe	Pb	Sn	Zn	Ca	Mg
05-Mar-18	N030-48074-2109	CATELC		631	68	1019	36	131	14	1435	763	24	3922	0	0	0	0	0	0	17	0
04-Mar-16	N030-48084-2128	UNKNOWN		582	107	1160	51	146	16	1315	828	18	4418	0	0	0	0	0	0		
20-Jan-14	N030-44030-2119	UNKNOWN		717	77	871	26	112	13	1211	897	10	3070	0	0	0	0	1	0		

FREEZE/BOIL PROTECTION - CONTAMINATION																		
SAMPLE DATE	SAMPLE ID	METER ( KM )	METER ON FLUID	FLUID BRAND	TYPE	FLUID CHANGE	GL	FP	BP	pH	CON	CL	GLO	SO4	TH	Foam		
05-Mar-18	N030-48074-2109	10012	10012	CATELC		U	53	-42	108	8.1	3883	16	207	59	44	norm		
04-Mar-16	N030-48084-2128	8686	8686	UNKNOWN		U	52	-41	108	8	3098	21	109	55	40	norm		
20-Jan-14	N030-44030-2119	7288	7288	UNKNOWN		U	51	-38	107	8.2	3138	11	1	38	31	norm		

COOLANT PHYSICALS														
SAMPLE DATE	SAMPLE ID	METER ( KM )	METER ON FLUID	FLUID BRAND	TYPE	Color	App	Odor	Oil	PAmt	PApp	PCol	PProp	
05-Mar-18	N030-48074-2109	10012	10012	CATELC		red/orange	clear	norm	none	none				
04-Mar-16	N030-48084-2128	8686	8686	UNKNOWN		red	clear	norm	none	none	none	none	none	
20-Jan-14	N030-44030-2119	7288	7288	UNKNOWN		red/orange	clear	norm	none	none	none	none	none	

Al = Aluminum, App = Appearance, BO3 = Borate, BP = Boil Point(°C), CL = Chloride, CON = Conductivity, Ca = Calcium, Cu = Copper, FP = Freeze Point(°C), Fe = Iron, GL = Glycol, GLO = Glycolate, K = Potassium, Mg = Magnesium, MoO4 = Molybdate, NO2 = Nitrite, NO3 = Nitrate, Na = Sodium, PAmt = Precipitate Amount, PO4 = Phosphate, Pb = Lead, SAC = Sebacic Acid, SO4 = Sulfate, SiO3 = Silicate, Sn = Tin, TH = Total Hardness, TT = Tolytriazole, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.



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**CONTACT INFORMATION**  
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 BOX 108  
 DUNMORE, AB  
 T0J 1A0  
 PHONE: 4035262888  
 FAX: 4035268958  
 Email: GREG.SJOLIE@CYPRESS.AB.

**EQUIPMENT**  
 EQUIP NUM: U53006  
 SERIAL NUMBER: 4QLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**  
 COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM: 47192750336485  
 COMPARTMENT MODEL :  
 LABEL#: 200549058  
 SHOP JOB NUM : 4221  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days) : 7  
 SAMPLE LOCATION :

Interp By: Greg Eyre

**No Action  
 Required**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-50336-0432  
 PROCESS 01-Dec-20  
 DATE

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
24-Nov-20	N030-50336-0432	4274	284	N	N	2	31	3	18	37	2	0	5	0	0	0	0	0	1243	1021	977	0	1	60	938
15-Sep-20	N030-50268-0254	3990	646	Y	Y	2	62	5	37	108	4	0	13	0	1	0	0	0	1240	1056	1032	0	1	62	1000
29-Jul-20	N030-50224-0174	3785	441	N	N	2	48	4	31	96	4	0	11	0	1	0	0	0	1300	1066	1098	0	0	65	1131
04-Jun-20	N030-50162-0172	3580	236	N	N	2	37	3	24	57	2	0	8	0	1	0	0	0	1256	1040	893	0	0	55	1009

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
24-Nov-20	N030-50336-0432	4274	284	PETRO-CAN		10W-40	N	N	14.3	98.2	150	21	16	20	8	N	0	N
15-Sep-20	N030-50268-0254	3990	646	PETRO-CAN		10W-40	Y	Y	13.7	98.3	144	41	19	23	10	N	0	N
29-Jul-20	N030-50224-0174	3785	441	PETRO-CAN		10W-40	N	N	13.5	96.3	141	32	17	21	9	N	0	N
04-Jun-20	N030-50162-0172	3580	236	PETRO-CAN		10W-40	N	N	14.5	98.8	152	21	15	20	8	N	0.0001	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
24-Nov-20	N030-50336-0432	N	N	N
15-Sep-20	N030-50268-0254	Y	Y	N
29-Jul-20	N030-50224-0174	N	N	N
04-Jun-20	N030-50162-0172	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glyco Content, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
<p>GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA</p>	<p>CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA: REGION:</p>	<p>COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL#: 4888752 SHOP JOB NUM : SAMPLE TYPE: OIL SAMPLE SHIP TIME (days) : 7 SAMPLE LOCATION :</p>

Interp By: Dallas Livingston

**No Action Required** WEAR METAL ANALYSIS INDICATES ACCEPTABLE WEAR RATE. OIL CONDITION ANALYSIS IS ACCEPTABLE. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
N030-47200-0302  
PROCESS DATE 19-Jul-17

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																									
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
12-Jul-17	N030-47200-0302	1410	195	N	N	3	15	3	10	17	2	0	65	0	1	0	0	0	1142	1553	623	0	26	33	965
17-Mar-17	N030-47081-0840	1215	603	Y	Y	6	57	4	33	39	4	1	215	<0	1	1	0	<0	1125	2144	152	0	42	9	880
19-Jan-17	N030-47027-0573	1005	394	N	N	5	26	3	17	28	3	1	215	0	0	1	0	<0	1038	2006	165	0	41	9	864
02-Dec-16	N030-46354-0651	807	196	N	N	3	10	2	9	19	1	1	183	1	0	1	0	<0	1124	2109	156	0	50	8	935

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																	
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	F
12-Jul-17	N030-47200-0302	1410	195	PETRO-CAN	DURON-E	10W-40	N	N	14.7	101.5	150	11	14	19	6	N	N
17-Mar-17	N030-47081-0840	1215	603	PETRO-CAN	DURON-E	10W-40	Y	Y	15.4	104.8		30	16	20	8	N	NT
19-Jan-17	N030-47027-0573	1005	394	PETRO-CAN	DURON-E	10W-40	N	N	14.1	102.7		19	17	20	8	N	NT
02-Dec-16	N030-46354-0651	807	196	PETRO-CAN	DURON-E	10W-40	N	N	14.2	101.1		8	16	19	7	N	NT

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
12-Jul-17	N030-47200-0302	N	N	N
17-Mar-17	N030-47081-0840	Y	Y	N
19-Jan-17	N030-47027-0573	N	N	N
02-Dec-16	N030-46354-0651	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

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**Unit Information**

**Service Information**

NIT: U53006	Warranty Expiry Date:	Service Interval:	
quip Make: WESTERN STAR	Comp Make: DETROIT_DS	Work Order No:	
quip Model: 4700SB	Comp Model: DD13	Job Site: Default Site	
quip Serial: 4GLGS2013	Comp Serial: 47192750336485	Branch:	
omponent: ENGINE		Sampled Site: Default Site	

Evaluation Code	<b>A</b>	Recommendation	Normal	17/03/17	Lab Number	N030-47081-0840
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Elevated potassium and aluminum is common in new engines due to solder used in assembly of inter cooler system. Copper alone usually indicates cooler core leaching and is not normally wear of bronze/brass parts. Wear metal analysis indicates acceptable wear rate. Oil condition analysis is acceptable. Resample at the next service interval.

Days to reach Lab	5	Interpreted By	Dallas Livingston	Analyzed By	gkscribner	Label Number	4633206
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Evaluation Code	<b>A</b>	Recommendation	Normal	Date	19/01/17	Lab Number	N030-47027-0573
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Elevated copper level may be due to increased oil cooler core leaching, not wear. Oil change or new formulation can restart cooler core leaching. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab	8	Interpreted By	Peter Leggo	Analyzed By	jnewman	Label Number	4633186
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Sample Information								Sample Reading																		
Evaluation	SMU	CMU	Oil Hours	Oil Chg	Filter Chg	Sample Date	Received Date	Oil Brand	Oil Grade	Na Sodium	K Potassium	Si Silicon	Al Aluminum	Fe Iron	Cr Chromium	Pb Lead	Cu Copper	Sn Tin	Ni Nickel	Ag Silver	Ti Titanium	V Vanadium	ST Soot	OXI Oxidation	SUL Sulfation	
Baseline																										
A	1215	1,215	603	Y	Y	17/03/17	22/03/17	PCDURONE	10W-40	6	57	4	33	39	4	1	215	<0	1	1	0	<0	30	16	20	
A	1005	1,005	394	N	N	19/01/17	27/01/17	PCDURONE	10W-40	5	28	3	17	28	3	1	215	0	0	1	0	<0	19	17	20	
A	807	807	196	N	N	02/12/16	20/12/16	PCDURONE	10W-40	3	10	2	9	19	1	1	183	1	0	1	0	<0	8	16	19	
A	611	611	611	Y	Y	30/09/16	21/10/16	FACTORYFIL		3	1	4	6	19	0	1	6	<0	0	0	0	0	21	17	21	
A	410	410	410	N	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0	<0	11	16	18	

Sample Reading														
NIT Nitration	Zn Zinc	Ca Calcium	Mg Magnesium	Ba Barium	B Boron	Mo Molybdenum	P Phosphorus	V100 Viscosity	V40 Viscosity	F Fuel	W Water	% Water Percent W	% Fuel Percent F	GLY GLY
								15	99					
8	1125	2144	152	0	42	9	880	15.4	104.8	NT	N	0.00	0.0	N
8	1038	2006	165	0	41	9	864	14.1	102.7	NT	N	0.00	0.0	N
7	1124	2109	156	0	50	8	935	14.2	101.1	NT	N	0.00	0.0	NT
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N
	1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0

CYPRESS COUNTY  
 Attn: GREG S.JOLIE  
 BOX 108  
 DUNMORE, AB T0J 1A0

P - Positive	T - Trace	N - Negative	NR - Not Required	NT - Not Tested
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<b>A</b> No Action Required	<b>B</b> Monitor	<b>C</b> Action Required	<b>D</b> Urgent Action Required
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## PROACTIVE FLUID ANALYSIS Lubricant & Component • Predictive Results



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### Unit Information

UNIT: 545 **33006**  
 Equip Make: WESTERN STAR  
 Equip Model: 4900SB  
 Equip Serial: 4GLGS2013  
 Component: ENGINE

Warranty Expiry Date:  
 Comp Make: DETROIT\_DS  
 Comp Model: DD13  
 Comp Serial: 47192750336485

### Service Information

Service Interval:  
 Work Order No:  
 Job Site: Default Site  
 Branch:  
 Sampled Site: Default Site

Customer Comments:

Evaluation Code: **A** Recommendation: **Normal** Date: 30/09/16 Lab Number: N030-46295-0348

Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab: 21 Interpreted By: Peter Leggo Analyzed By: jnewman Label Number: 4562605

Evaluation Code: **A** Recommendation: **Normal** Date: 20/05/16 Lab Number: N030-46148-0211

Elevated copper level may be due to increased oil cooler core leaching, not wear. Oil change or new formulation can restart cooler core leaching. Other readings appear to be normal. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Resample at the next service interval.

Days to reach Lab: 7 Interpreted By: Peter Lewandowski Analyzed By: plewandowski Label Number: 4506810

Evaluation	Sample Information								Sample Reading																	
	SMU	CMU	Oil Hours	Oil Chg	Filter Chg	Sample Date	Received Date	Oil Brand	Oil Grade	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL	
Baseline																										
A	611	611	611	Y	Y	30/09/16	21/10/16	FACTORYFIL		3	1	4	6	19	0	1	6	<0	0	0	0	0	21	17	21	
A	410	410	410	N	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0	<0	11	16	18	
A	206	206	206	N	N	29/01/16	11/02/16	FACTORY		5	18	4	6	39	1	0	37	2	1	1	0	<0	5	15	17	

Sample Reading														
NIT	Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	% Water	% Fuel	GLY
Nitration	Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent W	Percent F	GLY
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N
	1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0
	1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT

CYPRESS COUNTY  
 Attn: GREG S/OLIE  
 BOX 108  
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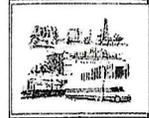
P - Positive      T - Trace      N - Negative      NR - Not Required      NT - Not Tested

**A** No Action Required      **B** Monitor      **C** Action Required      **D** Urgent Action Required



## PROACTIVE FLUID ANALYSIS

### Lubricant & Component • Predictive Results



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#### Unit Information

#### Service Information

UNIT: U53006	Warranty Expiry Date:	Service Interval:
Equip Make: WESTERN STAR	Comp Make: DETROIT_DS	Work Order No:
Equip Model: 4700SB	Comp Model: DD13	Job Site: Default Site
Equip Serial: 4GLGS2013	Comp Serial: 47192750336485	Branch: Default Site
Component: ENGINE		Sampled Site: Default Site

Customer Comments:

Evaluation Code	<b>A</b>	Recommendation	Normal	Date	02/12/16	Lab Number	N030-46354-0651
Copper alone usually indicates cooler core leaching and is not normally wear of bronze/brass parts. Wear metal analysis indicates acceptable wear rate. Oil condition analysis is acceptable. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Re sample at the next service interval.							
Days to reach Lab	18	Interpreted By	Dallas Livingston	Analyzed By	jnewman	Label Number	4562474

Evaluation Code	<b>A</b>	Recommendation	Normal	Date	30/09/16	Lab Number	N030-46295-0348
Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.							
Days to reach Lab	21	Interpreted By	Peter Leggo	Analyzed By	jnewman	Label Number	4562605

Sample Information										Sample Reading															
Evaluation	SMU	CMU	Oil	Oil	Filter	Sample	Receivert	Oil	Oil	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL
			Hours	Chg	Chg	Date	Date	Brand	Grade	Sodium	Potassium	Silicon	Aluminum	Iron	Chromium	Lead	Copper	Tin	Nickel	Silver	Titanium	Vanadium	Soot	Oxidation	Sulfation
Baseline																									
A	807	807	196	N	N	02/12/16	20/12/16	PCDURONE	10W-40	3	10	2	9	19	1	1	183	1	0	1	0	<0	8	16	19
A	611	611	611	Y	Y	30/09/16	21/10/16	FACTORYFIL		3	1	4	6	19	0	1	6	<0	0	0	0	0	21	17	21
A	410	410	410	N	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0	<0	11	16	18
A	206	206	206	N	N	29/01/16	11/02/16	FACTORY		5	18	4	6	39	1	0	37	2	1	1	0	<0	5	15	17

Sample Reading																	
NIT	Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	% Water	% Fuel	GLY			
Nitration	Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent W	Percent F	GLY			
								15	99								
7	1124	2109	156	0	50	8	935	14.2	101.1	NT	N	0.00	0.0	NT			
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N			
	1019	1304	730	0	56	41	808	14.4	108.4	NT	N	0.00	0.0	0.0			
	1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT			

CYPRESS COUNTY  
 Attn: GREG SJOLIE  
 BOX 108  
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P - Positive	T - Trace	N - Negative	NR - Not Required	NT - Not Tested
<b>A</b> No Action Required	<b>B</b> Monitor	<b>C</b> Action Required	<b>D</b> Urgent Action Required	



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Email: oilsupport@finning.com Web: www.finning.com

CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: GREG.SJOLIE@CYPRESS.AB.	CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA : REGION :	COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL#: 200172101 SHOP JOB NUM : 3478 SAMPLE TYPE : OIL SAMPLE SHIP TIME (days) : 7 SAMPLE LOCATION :

Interp By: Gregory Scribner

**No Action  
Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. INCREASED IRON CONTENT. OTHER READINGS APPEAR TO BE NORMAL. OIL CHANGE INDICATED, RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
N030-50051-0404  
PROCESS 2/20/2020  
DATE

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																									
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
13-Feb-20	N030-50051-0404	3344	588	Y	Y	1	39	3	32	91	4	0	23	0	1	0	0	0	1249	1007	885	0	2	59	929
23-Nov-19	N030-49332-0214	3152	336	N	N	2	30	3	25	61	3	0	21	0	1	0	0	0	1248	1086	995	0	3	65	1068
19-Jun-19	N030-49176-0050	2973	157	N	N	1	17	2	12	23	2	0	15	0	0	0	0	0	1267	1091	1078	0	5	59	1042
08-Mar-19	N030-49077-0146	2816	393	N	N	3	90	3	57	62	5	0	68	1	1	1	0	0	1221	970	928	0	3	61	991

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																						
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F				
13-Feb-20	N030-50051-0404	3344	588	PETRO-CAN		10W-40	Y	Y	14.5	96.6	155	29	16	20	9	N	0	N				
23-Nov-19	N030-49332-0214	3152	336	PETRO-CAN		10W-40	N	N	14.2	98.3	148	20	15	20	8	N	0	N				
19-Jun-19	N030-49176-0050	2973	157	PETRO-CAN	DURON UHP	10W-40	N	N	14.0	84.3	172	8	14	19	6	N		N				
08-Mar-19	N030-49077-0146	2816	393	PETRO-CAN	DURON UHP	10W-40	N	N	14.3	98.4	149	24	15	20	8	N	0	N				

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
13-Feb-20	N030-50051-0404	Y	Y	N
23-Nov-19	N030-49332-0214	N	N	N
19-Jun-19	N030-49176-0050	N	N	N
08-Mar-19	N030-49077-0146	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.



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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
<p>GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA</p>	<p>CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA : REGION :</p>	<p>COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL# : 4680665 SHOP JOB NUM : SAMPLE TYPE : OIL SAMPLE SHIP TIME (days) : 9 SAMPLE LOCATION :</p>

Interp By: Gregory Scribner

**Monitor Compartment**

PRESENCE OF WATER (0.5%) MAY BE CONDENSATION AND/OR SOURCED TO EXTERNAL ENTRY. ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. EXAMINE HOUSING SEALS, BREATHERS, PLUGS FOR INDICATIONS OF LEAKAGE OR DIRT/ WATER ENTRY. RECOMMEND CHANGING OIL AND RESAMPLING AT THE NEXT SERVICE INTERVAL.

LAB #  
N030-49031-0213  
PROCESS 31-Jan-19  
DATE

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																									
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	899	0	7	51	1059
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																		
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON hp	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
22-Jan-19	N030-49031-0213	N	N	T
01-Nov-18	N030-48317-0131	Y	Y	N
16-Jul-18	N030-48208-0002	N	N	N
13-Mar-18	N030-48085-0155	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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 DUNMORE, AB  
 CA T0J 1A0  
 PHONE: 4035262888  
 FAX: 4035268958  
 Email: TIGER@CYPRESS.AB.CA

**EQUIPMENT**

CUSTOMER EQUIP NUM : U53006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL#: 4903413  
 SHOP JOB NUM :  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days) : 11  
 SAMPLE LOCATION :

Interp By: Gregory Scribner

**No Action  
 Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-48208-0002  
 PROCESS DATE 27-Jul-18

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	899	0	7	51	1059
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989
31-Jan-18	N030-48040-0161	1832	617	Y	Y	3	33	0	23	33	4	0	69	0	1	0	0	0	1157	1524	571	0	10	33	919
08-Nov-17	N030-47321-0235	1625	410	N	N	1	28	3	17	25	3	0	74	0	1	0	0	0	1207	1638	617	0	15	36	971

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON hp	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N
31-Jan-18	N030-48040-0161	1832	617	PETRO-CAN	DURON hp	10W-40	Y	Y	14.9	101.6	153	31	17	22	9	N	0	N
08-Nov-17	N030-47321-0235	1625	410	PETRO-CAN	DURON-E	10W-40	N	N	15.1	91.3	175	21	16	20	7	N	0	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
16-Jul-18	N030-48208-0002	N	N	N
13-Mar-18	N030-48085-0155	N	N	N
31-Jan-18	N030-48040-0161	Y	Y	N
08-Nov-17	N030-47321-0235	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.



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 Email: GREG.SJOLIE@CYPRESS.AB.

**EQUIPMENT**

CUSTOMER EQUIP NUM : U53006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOBSITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL# : 005036915  
 SHOP JOB NUM : 2900  
 SAMPLE TYPE : OIL  
 SAMPLE SHIP TIME (days) : 6  
 SAMPLE LOCATION :

Interp By: Peter Lewandowski

**No Action  
 Required**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-49176-0050  
 PROCESS 25-Jun-19  
 DATE

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	SI	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
19-Jun-19	N030-49176-0050	2973	157	N	N	1	17	2	12	23	2	0	15	0	0	0	0	0	1267	1091	1078	0	5	59	1042
08-Mar-19	N030-49077-0146	2816	393	N	N	3	90	3	57	62	5	0	68	1	1	1	0	0	1221	970	928	0	3	61	991
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	V1	ST	OXI	SUL	NIT	A	PGC	F
19-Jun-19	N030-49176-0050	2973	157	PETRO-CAN	DURON UHP	10W-40	N	N	14.0	84.3	172	8	14	19	6	N		N
08-Mar-19	N030-49077-0146	2816	393	PETRO-CAN	DURON UHP	10W-40	N	N	14.3	98.4	149	24	15	20	8	N	0	N
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
19-Jun-19	N030-49176-0050	N	N	N
08-Mar-19	N030-49077-0146	N	N	N
22-Jan-19	N030-49031-0213	N	N	T
01-Nov-18	N030-48317-0131	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, V1 = Viscosity Index, W = Water, Zn = Zinc

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FINNING CANADA LTD. - Fluid Analysis Laboratory, 10910-170th Street, Edmonton, AB, T5S 1H6, CANADA

PHONE: 1-888 FINNING (346-6464)

Email: oilsupport@finning.com Web: www.finning.com

CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA	CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA: REGION:	COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL#: 4902880 SHOP JOB NUM : SAMPLE TYPE: OIL SAMPLE SHIP TIME (days) : 13 SAMPLE LOCATION :

Interp By: Peter Leggo

**No Action  
Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
N030-48085-0155  
PROCESS 26-Mar-18  
DATE

WEAR/CONTAMINATION - ADDITIVES/FORMULATION

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989
31-Jan-18	N030-48040-0161	1832	617	Y	Y	3	33	0	23	33	4	0	69	0	1	0	0	0	1157	1524	571	0	10	33	919
08-Nov-17	N030-47321-0235	1625	410	N	N	1	28	3	17	25	3	0	74	0	1	0	0	0	1207	1638	617	0	15	36	971
12-Jul-17	N030-47200-0302	1410	195	N	N	3	15	3	10	17	2	0	65	0	1	0	0	0	1142	1553	623	0	26	33	965

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON hp	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N
31-Jan-18	N030-48040-0161	1832	617	PETRO-CAN	DURON hp	10W-40	Y	Y	14.9	101.6	153	31	17	22	9	N	0	N
08-Nov-17	N030-47321-0235	1625	410	PETRO-CAN	DURON-E	10W-40	N	N	15.1	91.3	175	21	16	20	7	N	0	N
12-Jul-17	N030-47200-0302	1410	195	PETRO-CAN	DURON-E	10W-40	N	N	14.7	101.5	150	11	14	19	6	N		N

OIL CLEANLINESS

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
13-Mar-18	N030-48085-0155	N	N	N
31-Jan-18	N030-48040-0161	Y	Y	N
08-Nov-17	N030-47321-0235	N	N	N
12-Jul-17	N030-47200-0302	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
<p>GREG SJOLIE CYPRESS COUNTY BOX 108 DUNMORE, AB CA T0J 1A0 PHONE: 4035262888 FAX: 4035268958 Email: TIGER@CYPRESS.AB.CA</p>	<p>CUSTOMER EQUIP NUM : U53006 SERIAL NUMBER : 4GLGS2013 MODEL : 4700SB MANUFACTURER : WESTERN_ST COMPANY NAME : CYPRESS COUNTY JOB SITE : AREA : REGION :</p>	<p>COMPARTMENT NAME : ENGINE COMP SERIAL NUM : 47192750336485 COMPARTMENT MODEL : LABEL# : 005023578 SHOP JOB NUM : 2765 SAMPLE TYPE : OIL SAMPLE SHIP TIME (days) : 10 SAMPLE LOCATION :</p>

Interp By: Gregory Scribner

Monitor Compartment	Notes
LAB # N030-49077-0146 PROCESS DATE 18-Mar-19	ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. INCREASED IRON MAY BE ASSOCIATED WITH CAMSHAFT/CYLINDER LINERS/PISTONS/RINGS; ROCKER ARMS; PUSH RODS AND CRANKSHAFT WEAR. COPPER MAY BE SOURCED TO OIL COOLER CORE LEACHING. CONSIDER OIL CHANGE. INSPECT OIL FILTER(S) FOR LARGE VISIBLE METAL/DEBRIS. RESAMPLE AT THE NEXT SERVICE INTERVAL.

WEAR/CONTAMINATION - ADDITIVES/FORMULATION

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
08-Mar-19	N030-49077-0146	2816	393	N	N	3	90	3	57	62	5	0	68	1	1	1	0	0	1221	970	928	0	3	61	991
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	899	0	7	51	1059

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	V1	ST	OXI	SUL	NIT	A	PGC	F
08-Mar-19	N030-49077-0146	2816	393	PETRO-CAN	DURON UHP	10W-40	N	N	14.3	98.4	149	24	15	20	8	N	0	N
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N

OIL CLEANLINESS

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
08-Mar-19	N030-49077-0146	N	N	N
22-Jan-19	N030-49031-0213	N	N	T
01-Nov-18	N030-48317-0131	Y	Y	N
16-Jul-18	N030-48208-0002	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, V1 = Viscosity Index, W = Water, Zn = Zinc

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**ENGINE**

**EQUIP NUM: U53006**

**SERIAL NUMBER: 4GLGS2013**

**WESTERN\_ST 4700SB**

**COMP SERIAL NUM: 47192750336485**

**No Action Required**

**Interp By: Gregory Scribner**

**Interpreted On: 01-Nov-21**

**N030-51302-0024**

LABEL#: 200711541

SHOP JOB NUM : 5033

SAMPLE SHIP TIME (days) : 15

**CYPRESS COUNTY**

RECEIVED DATE: 29-Oct-21

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
Sampled Date	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
Sample Id	N030-51302-0024	N030-51245-0109	N030-51208-0407	N030-51172-0616
Lab Date	29-Oct-21	02-Sep-21	27-Jul-21	21-Jun-21
Meter [Hr]	5239	5012	4816	4639
Meter On Fluid	579	373	177	649
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type				
Fluid Change	Y	N	N	Y
Filter Change	Y	N	N	Y
Make Up Fluid []		0	0	0

**PREVIOUS SAMPLE**

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**CONDITION / CONTAMINATION**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	13.7	14.2	14.5	14.0

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	98.3	98.2	98.8	97.6

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>VISCOSITY INDEX</b>				
VI Viscosity Index	140	148	152	146

**WEAR LEVELS / ADDITIVES**

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>ELEMENTAL ANALYSIS (ppm)</b>				
Na Sodium	1	1	1	2
K Potassium	30	23	16	43
Si Silicon	3	3	3	3
Al Aluminum	26	17	14	29
Fe Iron	41	29	27	63
Cr Chromium	3	2	2	4
Pb Lead	0	0	0	0
Cu Copper	6	4	4	8
Sn Tin	1	0	0	0
Ni Nickel	1	1	1	1
Ag Silver	0	0	0	0
Ti Titanium	0	0	0	0
V Vanadium	0	0	0	0
Zn Zinc	1307	1259	1286	1241
Ca Calcium	1140	1109	1111	1001
Mg Magnesium	1069	977	998	861
Ba Barium	0	0	0	0
B Boron	1	1	1	0
Mo Molybdenum	68	58	62	57
P Phosphorus	1053	979	1036	1004

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>INFRARED (UFM)</b>				
ST Soot	48	28	12	39
OXI Oxidation	21	17	15	21
SUL Sulfur Products	25	21	21	24
NIT Nitration	11	9	8	10

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>ANTIFREEZE</b>				
A Antifreeze	N	N	N	N

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>GLYCOL CONTENT (%)</b>				
PGC Percent Glycol Con	0			0.0133

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>FUEL</b>				
F Fuel	N	N	N	N

	14-Oct-21	30-Aug-21	16-Jul-21	10-Jun-21
<b>WATER</b>				
W Water	N	N	N	N



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**CONTACT INFORMATION**

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 FAX: 4035268958  
 Email: TIGER@CYPRESS.AB.CA

**EQUIPMENT**

CUSTOMER EQUIP NUM : U53006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL#: 005027726  
 SHOP JOB NUM : 2292  
 SAMPLE TYPE : OIL  
 SAMPLE SHIP TIME (days) : 12  
 SAMPLE LOCATION :

Interp By: Peter Leggo

**No Action  
 Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #

N030-48317-0131

PROCESS 13-Nov-18  
 DATE

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	899	0	7	51	1059
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989
31-Jan-18	N030-48040-0161	1832	617	Y	Y	3	33	0	23	33	4	0	69	0	1	0	0	0	1157	1524	571	0	10	33	919

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON hp	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N
31-Jan-18	N030-48040-0161	1832	617	PETRO-CAN	DURON hp	10W-40	Y	Y	14.9	101.6	153	31	17	22	9	N	0	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
01-Nov-18	N030-48317-0131	Y	Y	N
16-Jul-18	N030-48208-0002	N	N	N
13-Mar-18	N030-48085-0155	N	N	N
31-Jan-18	N030-48040-0161	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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 Email: GREG.SJOLIE@CYPRESS.AB.  
 Interp By: Peter Lewandowski

**EQUIPMENT**

CUSTOMER EQUIP NUM : U53006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL#: 200265140  
 SHOP JOB NUM : 3149  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days) : 5  
 SAMPLE LOCATION :

**No Action  
 Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-49332-0214  
 PROCESS DATE 11/28/2019

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
23-Nov-19	N030-49332-0214	3152	336	N	N	2	30	3	25	61	3	0	21	0	1	0	0	0	1248	1086	995	0	3	65	1068
19-Jun-19	N030-49176-0050	2973	157	N	N	1	17	2	12	23	2	0	15	0	0	0	0	0	1267	1091	1078	0	5	59	1042
08-Mar-19	N030-49077-0146	2816	393	N	N	3	90	3	57	62	5	0	68	1	1	1	0	0	1221	970	928	0	3	61	991
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
23-Nov-19	N030-49332-0214	3152	336	PETRO-CAN		10W-40	N	N	14.2	98.3	148	20	15	20	8	N	0	N
19-Jun-19	N030-49176-0050	2973	157	PETRO-CAN	DURON UHP	10W-40	N	N	14.0	84.3	172	8	14	19	6	N		N
08-Mar-19	N030-49077-0146	2816	393	PETRO-CAN	DURON UHP	10W-40	N	N	14.3	98.4	149	24	15	20	8	N	0	N
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
23-Nov-19	N030-49332-0214	N	N	N
19-Jun-19	N030-49176-0050	N	N	N
08-Mar-19	N030-49077-0146	N	N	N
22-Jan-19	N030-49031-0213	N	N	T

A = Anifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus.  
 PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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PHONE: 1-888 FINNING (346-6464)

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CONTACT INFORMATION	EQUIPMENT	SAMPLE INFORMATION
<p>GREG SJOLIE            CYPRESS COUNTY            BOX 108            DUNMORE, AB            T0J 1A0            PHONE: 4035262888            FAX: 4035268958            Email: GREG.SJOLIE@CYPRESS.AB.</p>	<p>EQUIP NUM: U53006            SERIAL NUMBER: 4GLGS2013            MODEL : 4700SB            MANUFACTURER : WESTERN_ST            COMPANY NAME : CYPRESS COUNTY            JOB SITE :            AREA:            REGION:</p>	<p>COMPARTMENT NAME : ENGINE            COMP SERIAL NUM: 47192750336485            COMPARTMENT MODEL :            LABEL#: 200527986            SHOP JOB NUM : 4109            SAMPLE TYPE: OIL            SAMPLE SHIP TIME (days) : 9            SAMPLE LOCATION :</p>

Interp By: Gregory Scribner

**No Action Required**

FOR OIL SERVICE INDICATED: WEAR METAL ANALYSIS INDICATES ACCEPTABLE WEAR RATE. ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEWER ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-50268-0254  
 PROCESS DATE 24-Sep-20

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																									
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
15-Sep-20	N030-50268-0254	3990	646	Y	Y	2	62	5	37	108	4	0	13	0	1	0	0	0	1240	1056	1032	0	1	62	1000
29-Jul-20	N030-50224-0174	3785	441	N	N	2	48	4	31	96	4	0	11	0	1	0	0	0	1300	1066	1098	0	0	65	1131
04-Jun-20	N030-50162-0172	3580	236	N	N	2	37	3	24	57	2	0	8	0	1	0	0	0	1258	1040	893	0	0	55	1009
13-Feb-20	N030-50051-0404	3344	588	Y	Y	1	39	3	32	91	4	0	23	0	1	0	0	0	1249	1007	885	0	2	59	929

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																		
SAMPLE DATE	SAMPLE ID	METER ( HR )	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
15-Sep-20	N030-50268-0254	3990	646	PETRO-CAN		10W-40	Y	Y	13.7	96.3	144	41	19	23	10	N	0	N
29-Jul-20	N030-50224-0174	3785	441	PETRO-CAN		10W-40	N	N	13.5	96.3	141	32	17	21	9	N	0	N
04-Jun-20	N030-50162-0172	3580	236	PETRO-CAN		10W-40	N	N	14.5	98.8	152	21	15	20	8	N	0.0001	N
13-Feb-20	N030-50051-0404	3344	588	PETRO-CAN		10W-40	Y	Y	14.5	96.6	155	29	16	20	9	N	0	N

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
15-Sep-20	N030-50268-0254	Y	Y	N
29-Jul-20	N030-50224-0174	N	N	N
04-Jun-20	N030-50162-0172	N	N	N
13-Feb-20	N030-50051-0404	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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**ENGINE**

**EQUIP NUM: U53006**

**SERIAL NUMBER: 4GLGS2013**

**WESTERN\_ST 4700SB**

**COMP SERIAL NUM: 47192750336485**

**No Action Required**

**Interp By: Greg Eyre**

**Interpreted On: 28-Jul-21**

**N030-51208-0407**

LABEL#: 200789009

SHOP JOB NUM : 4881

SAMPLE SHIP TIME (days) : 11

**CYPRESS COUNTY**

RECEIVED DATE: 27-Jul-21

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**SAMPLE INFORMATION**

	16-Jul-21	10-Jun-21	04-May-21	24-Nov-20
Sampled Date	16-Jul-21	10-Jun-21	04-May-21	24-Nov-20
Sample Id	N030-51208-0407	N030-51172-0616	N030-51138-0028	N030-50336-0432
Lab Date	27-Jul-21	21-Jun-21	18-May-21	01-Dec-20
Meter [Hr]	4816	4639	4460	4274
Meter On Fluid	177	649	470	284
Fluid Brand	PETRO-CAN	PETRO-CAN	PETRO-CAN	PETRO-CAN
Fluid Weight	10W-40	10W-40	10W-40	10W-40
Fluid Type				
Fluid Change	N	Y	N	N
Filter Change	N	Y	N	N
Make Up Fluid []	0	0	3	0

**PREVIOUS SAMPLE**

WEAR METAL ANALYSIS INDICATES ACCEPTABLE WEAR RATE. OIL CONDITION ANALYSIS IS ACCEPTABLE. ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

**CONDITION / CONTAMINATION**

	16-Jul-21	10-Jun-21	04-May-21	24-Nov-20
<b>VISCOSITY (Centistokes)</b>				
V100 Viscosity at 100 C	14.5	14.0	13.9	14.3

<b>VISCOSITY (Centistokes)</b>				
V40 Viscosity at 40 C	98.8	97.6	97.3	98.2

**WEAR LEVELS / ADDITIVES**

		16-Jul-21	10-Jun-21	04-May-21	24-Nov-20
<b>ELEMENTAL ANALYSIS (ppm)</b>					
Na	Sodium	1	2	1	2
K	Potassium	16	43	47	31
Si	Silicon	3	3	3	3
Al	Aluminum	14	29	30	18
Fe	Iron	27	63	68	37
Cr	Chromium	2	4	4	2
Pb	Lead	0	0	0	0
Cu	Copper	4	8	7	5
Sn	Tin	0	0	0	0
Ni	Nickel	1	1	1	0
Ag	Silver	0	0	0	0
Ti	Titanium	0	0	0	0
V	Vanadium	0	0	0	0
Zn	Zinc	1286	1241	1256	1243
Ca	Calcium	1111	1001	1085	1021
Mg	Magnesium	998	861	1005	977
Ba	Barium	0	0	0	0
B	Boron	1	0	0	1
Mo	Molybdenum	62	57	63	60
P	Phosphorus	1036	1004	987	938

<b>VISCOSITY INDEX</b>				
V1 Viscosity Index	152	146	145	150

<b>INFRARED (UFM)</b>					
ST	Soot	12	39	28	21
OXI	Oxidation	15	21	18	16
SUL	Sulfur Products	21	24	21	20
NIT	Nitration	8	10	10	8

<b>ANTIFREEZE</b>					
A	Antifreeze	N	N	N	N

<b>GLYCOL CONTENT (%)</b>					
PGC	Percent Glycol Con		0.0133	0	0

<b>FUEL</b>					
F	Fuel	N	N	N	N

<b>WATER</b>					
W	Water	N	N	N	N

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**CONTACT INFORMATION**

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Interp By: Gregory Scribner

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Email: oilsupport@finning.com Web: www.finning.com

**EQUIPMENT**

CUSTOMER EQUIP NUM: U53006  
 SERIAL NUMBER: 4GLGSS2013  
 MODEL: 47005B  
 MANUFACTURER: WESTERN\_ST  
 COMPANY NAME: CYPRESS COUNTY  
 JOB SITE:  
 AREA:  
 REGION:

**SAMPLE INFORMATION**

COMPARTMENT NAME: ENGINE  
 COMP SERIAL NUM: 47192750336485  
 COMPARTMENT MODEL:  
 LABEL#: 4680665  
 SHOP JOB NUM:  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days): 9  
 SAMPLE LOCATION:

**Monitor Compartment**

PRESENCE OF WATER (0.5%) MAY BE CONDENSATION AND/OR SOURCED TO EXTERNAL ENTRY. ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. OTHER READINGS APPEAR TO BE NORMAL. EXAMINE HOUSING SEALS, BREATHERS, PLUGS FOR INDICATIONS OF LEAKAGE OR DIRTY WATER ENTRY. RECOMMEND CHANGING OIL AND RESAMPLING AT THE NEXT SERVICE INTERVAL.

*Completed Mar. 08/19 L. Rosendahl*

LAB #  
 N030-49031-0213  
 PROCESS DATE  
 31-Jan-19

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID CHANGE	FLITER CHANGE	Na	K	SI	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
22-Jan-19	N030-49031-0213	2622	199	N	N	2	52	2	31	31	3	0	25	0	0	0	0	0	1223	1078	1012	0	4	56	1039
01-Nov-18	N030-48317-0131	2423	591	Y	Y	5	40	3	28	32	4	0	33	0	1	0	0	0	1228	1209	853	0	6	48	976
16-Jul-18	N030-48208-0002	2215	383	N	N	3	30	3	21	24	3	0	31	0	0	0	0	0	1282	1303	889	0	7	51	1059
13-Mar-18	N030-48085-0155	2032	200	N	N	7	28	2	18	18	2	0	27	0	1	0	0	0	1208	1184	851	0	8	51	989

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FLITER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
22-Jan-19	N030-49031-0213	2622	199	PETRO-CAN	DURON UHP	10W-40	N	N	15.4	100.4	162	16	15	19	7	N	0	N
01-Nov-18	N030-48317-0131	2423	591	PETRO-CAN	DURON UHP	10W-40	Y	Y	14.2	102.1	142	31	16	21	8	N	0.0058	N
16-Jul-18	N030-48208-0002	2215	383	PETRO-CAN	DURON	10W-40	N	N	13.7	102.0	135	25	15	20	7	N	0	N
13-Mar-18	N030-48085-0155	2032	200	PETRO-CAN	DURON DP	10W-40	N	N	12.7	98.5	124	19	14	19	7	N	0	N

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FLITER CHANGE	W
22-Jan-19	N030-49031-0213	N	N	T
01-Nov-18	N030-48317-0131	Y	Y	N
16-Jul-18	N030-48208-0002	N	N	N
13-Mar-18	N030-48085-0155	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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**CONTACT INFORMATION**

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Interp By: Peter Lewandowski

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PHONE: 1-888 FINNING (346-6464)

Email: oilsupport@finning.com Web: www.finning.com

**EQUIPMENT**

CUSTOMER EQUIP NUM : US3006  
 SERIAL NUMBER : 4GLGS2013  
 MODEL : 4700SB  
 MANUFACTURER : WESTERN\_ST  
 COMPANY NAME : CYPRESS COUNTY  
 JOB SITE :  
 AREA :  
 REGION :

**SAMPLE INFORMATION**

COMPARTMENT NAME : ENGINE  
 COMP SERIAL NUM : 47192750336485  
 COMPARTMENT MODEL :  
 LABEL# : 4703399  
 SHOP JOB NUM :  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days) : 9  
 SAMPLE LOCATION :

**No Action Required**

ELEVATED POTASSIUM AND ALUMINUM IS COMMON IN NEW 'C' CLASS ENGINES DUE TO SOLDER USED IN ASSEMBLY OF INTERCOOLER SYSTEM. ELEVATED COPPER LEVEL MAY BE DUE TO INCREASED OIL COOLER CORE LEACHING; NOT WEAR. OIL CHANGE OR NEW FORMULATION CAN RESTART COOLER CORE LEACHING. GLYCOL TEST IS NEGATIVE. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #  
 N030-48040-0161  
 PROCESS DATE 09-Feb-18

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID CHANGE	FLITER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
31-Jan-18	N030-48040-0161	1832	617	Y	Y	3	33	0	23	33	4	0	69	0	1	0	0	0	1157	1524	571	0	10	33	919
08-Nov-17	N030-47321-0235	1625	410	N	N	1	28	3	17	25	3	0	74	0	1	0	0	0	1207	1638	617	0	15	36	971
12-Jul-17	N030-47200-0302	1410	195	N	N	3	15	3	10	17	2	0	65	0	1	0	0	0	1142	1553	623	0	26	33	965
17-Mar-17	N030-47081-0840	1215	603	Y	Y	6	57	4	33	39	4	1	215	<0	1	1	0	<0	1125	2144	152	0	42	9	890

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FLITER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	PGC	F
31-Jan-18	N030-48040-0161	1832	617	PETRO-CAN	DURON hp	10W-40	Y	Y	14.9	101.6	153	31	17	22	9	N	0	N
08-Nov-17	N030-47321-0235	1625	410	PETRO-CAN	DURON-E	10W-40	N	N	15.1	91.3	175	21	16	20	7	N	0	N
12-Jul-17	N030-47200-0302	1410	195	PETRO-CAN	DURON-E	10W-40	N	N	14.7	101.5	150	11	14	19	6	N		N
17-Mar-17	N030-47081-0840	1215	603	PETRO-CAN	DURON-E	10W-40	Y	Y	15.4	104.8		30	16	20	8	N		NT

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FLITER CHANGE	W
31-Jan-18	N030-48040-0161	Y	Y	N
08-Nov-17	N030-47321-0235	N	N	N
12-Jul-17	N030-47200-0302	N	N	N
17-Mar-17	N030-47081-0840	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, Ni = Nickel, OXI = Oxidation, P = Phosphorus, PGC = Percent Glycol Content, Pb = Lead, ST = Soot, SUL = Sulfation, Si = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

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Email: oilsupport@finning.com Web: www.finning.com

**EQUIPMENT**

CUSTOMER EQUIP NUM: U53006  
 SERIAL NUMBER: 4GLGS2013  
 MODEL: 4700SB  
 MANUFACTURER: WESTERN\_ST  
 COMPANY NAME: CYPRESS COUNTY

**SAMPLE INFORMATION**

COMPARTMENT NAME: ENGINE  
 COMP SERIAL NUM: 47192750336485  
 COMPARTMENT MODEL:  
 LABEL#: 4885752  
 SHOP JOB NUM:  
 SAMPLE TYPE: OIL  
 SAMPLE SHIP TIME (days): 7  
 SAMPLE LOCATION:

Interp By: Dallas Livingston

**No Action Required**

WEAR METAL ANALYSIS INDICATES ACCEPTABLE WEAR RATE. OIL CONDITION ANALYSIS IS ACCEPTABLE. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB #

N030-47200-0302

PROCESS DATE 19-Jul-17

**WEAR/CONTAMINATION - ADDITIVES/FORMULATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P
12-Jul-17	N030-47200-0302	1410	195	N	N	3	15	3	10	17	2	0	65	0	1	0	0	0	1142	1553	623	0	26	33	965
17-Mar-17	N030-47081-0840	1215	603	Y	Y	6	57	4	33	39	4	1	215	<0	1	1	0	<0	1125	2144	152	0	42	9	880
19-Jan-17	N030-47027-0573	1005	394	N	N	5	26	3	17	28	3	1	215	0	0	1	0	<0	1038	2006	165	0	41	9	864
02-Dec-16	N030-46354-0651	807	196	N	N	3	10	2	9	19	1	1	183	1	0	1	0	<0	1124	2109	156	0	50	8	935

**OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION**

SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	F
12-Jul-17	N030-47200-0302	1410	195	PETRO-CAN	DURON-E	10W-40	N	N	14.7	101.5	150	11	14	19	6	N	N
17-Mar-17	N030-47081-0840	1215	603	PETRO-CAN	DURON-E	10W-40	Y	Y	15.4	104.8		30	16	20	8	N	NT
19-Jan-17	N030-47027-0573	1005	394	PETRO-CAN	DURON-E	10W-40	N	N	14.1	102.7		19	17	20	8	N	NT
02-Dec-16	N030-46354-0651	807	196	PETRO-CAN	DURON-E	10W-40	N	N	14.2	101.1		8	16	19	7	N	NT

**OIL CLEANLINESS**

SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
12-Jul-17	N030-47200-0302	N	N	N
17-Mar-17	N030-47081-0840	Y	Y	N
19-Jan-17	N030-47027-0573	N	N	N
02-Dec-16	N030-46354-0651	N	N	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, Ni = Nickel, OXI = Oxidation, P = Phosphorus, Pb = Lead, Si = Silicon, Sn = Tin, Ti = Titanium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

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### Unit Information

NIT: U53006  
 Warrantly Expiry Date:  
 WUP Make: WESTERN STAR  
 Comp Make: DETROIT\_DS  
 WUP Model: 4700SB  
 Comp Model: DD13  
 WUP Serial: 4GLGS2013  
 Comp Serial: 47192750336485  
 Component: ENGINE

Service Interval:  
 Work Order No:  
 Job Site:  
 Branch:  
 Sampled Site:  
 Default Site

Customer Comments:

### Service Information

Evaluation Code **A** Recommendation **Normal** Lab Number 17/03/17 N030-47081-0840

Elevated potassium and aluminum is common in new engines due to solder used in assembly of inter cooler system. Copper alone usually indicates cooler core leaching and is not normally wear of bronze/brass parts. Wear metal analysis indicates acceptable wear rate. Oil condition analysis is acceptable. Resample at the next service interval.

Days to reach Lab **5** Interpreted By **Dallas Livingston** Analyzed By **gkschrner** Label Number **4633206**

Evaluation Code **A** Recommendation **Normal** Date **19/01/17** Lab Number **N030-47027-0573**

Elevated copper level may be due to increased oil cooler core leaching, not wear. Oil change or new formulation can restart cooler core leaching. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab **8** Interpreted By **Peter Leggo** Analyzed By **jnewman** Label Number **4633186**

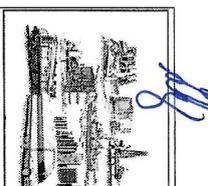
Sample Information										Sample Reading															
Evaluation	SMU	CMU	Oil	Filter	Sample Date	Received Date	Oil Brand	Oil Grade	Oil Sodium	Oil Potassium	Oil Silicon	Oil Aluminum	Oil Iron	Oil Chromium	Oil Lead	Oil Copper	Oil Tin	Oil Nickel	Oil Silver	Oil Titanium	Oil Vanadium	Oil Sulfur	Oil Oxidation	Oil Sulfation	
Baseline																									
A	1215	1,215	603	Y	17/03/17	22/03/17	PCOURONE	10W-40	6	57	4	33	39	4	1	215	<0	1	1	0	0	<0	30	16	20
A	1005	1,005	394	N	19/01/17	27/01/17	PCOURONE	10W-40	5	26	3	17	28	3	1	215	0	0	1	0	0	<0	19	17	20
A	807	807	196	N	02/12/16	20/12/16	PCOURONE	10W-40	3	10	2	9	19	1	1	183	1	0	1	0	0	<0	8	17	19
A	611	611	611	Y	30/09/16	21/10/16	FACTORYFIL		3	1	4	6	19	0	1	6	<0	0	0	0	0	0	21	16	21
A	410	410	410	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0	0	<0	11	16	18

Sample Reading																									
NIT	Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	% Water	% Fuel	GLY											
Nitration	Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent Wt	Percent F	GLY											
8	1125	2144	152	0	42	9	880	15	99	NT	N	0.00	0.0	N											
8	1038	2006	165	0	41	9	864	15.4	102.7	NT	N	0.00	0.0	N											
7	1124	2109	156	0	50	8	935	14.2	101.1	NT	N	0.00	0.0	NT											
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N											
8	1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0											

**P - Positive**      **T - Trace**      **N - Negative**      **NR - Not Required**      **NT - Not Tested**

CYPRESS COUNTY  
 Attn: GREG SJOLIE  
 BOX 108  
 DUNMORE, AB T0J 1A0

**A** No Action Required      **B** Monitor      **C** Action Required      **X** Urgent Action Required





# PROACTIVE FLUID ANALYSIS

## Lubricant & Component • Predictive Results

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### Unit Information

UNIT: U53006  
 Equip Make: WESTERN STAR  
 Equip Model: 4700SB  
 Equip Serial: 4GLGS2013  
 Component: ENGINE

### Service Information

Warranty Expiry Date: \_\_\_\_\_  
 Comp Make: DETROIT\_DS  
 Comp Model: DD13  
 Comp Serial: 47192750336485  
 Service Interval: \_\_\_\_\_  
 Work Order No: \_\_\_\_\_  
 Job Site: \_\_\_\_\_  
 Branch: \_\_\_\_\_  
 Sampled Site: \_\_\_\_\_  
 Default Site: \_\_\_\_\_

Evaluation Code: **A** Recommendation: **Normal** Lab Number: **N030-46354-0651**

Copper alone usually indicates cooler core leaching and is not normally wear of bronze/brass parts. Wear metal analysis indicates acceptable wear rate. Oil condition analysis is acceptable. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Re sample at the next service interval.

Days to reach Lab: **18** Interpreted By: **Dallas Livingston** Analyzed By: **jnewman** Label Number: **4562474**

Evaluation Code: **A** Recommendation: **Normal** Date: **30/09/16** Lab Number: **N030-46295-0348**

Dirty and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab: **21** Interpreted By: **Peter Leggo** Analyzed By: **jnewman** Label Number: **4562605**

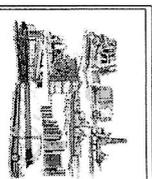
Sample Information										Sample Reading																
Evaluation	SMU	CMU	Oil	Filter	Sample	Received	Oil	Oil	Oil	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL	
Baseline			Hours	Chg	Date	Date	Brand	Grade		Sodium	Potassium	Silicon	Aluminum	Iron	Chromium	Lead	Copper	Tin	Nickel	Silver	Titanium	Vanadium	Soot	Oxidation	Sulfation	
A	807	807	196	N	02/12/16	20/12/16	PCDURONE	10W/40		3	10	2	9	19	1	1	183	1	0	1	0	0	<0	8	16	19
A	611	611	611	Y	30/09/16	21/10/16	FACTORYFILL			3	1	4	6	19	0	1	6	<0	0	0	0	0	0	21	17	21
A	410	410	410	N	20/05/16	27/05/16	FACTORYFILL			6	20	4	19	55	4	1	408	3	1	1	0	0	<0	11	16	18
A	206	206	206	N	29/01/16	11/02/16	FACTORY			5	18	4	6	39	1	0	37	2	1	1	0	0	<0	5	15	17

Sample Reading															
NIT	Zn	Ca	Mg	Ba	B	Mn	P	V100	V40	F	W	% Water	% Fuel	GLY	GLY
Nitration	Zinc	Calcium	Magnesium	Barium	Boron	Manganese	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent Wt	Percent F	GLY	GLY
7	1124	2109	156	0	50	8	935	14.2	101.1	NT	N	0.00	0.0	NT	
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N	
	1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0	
	1119	1405	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT	

P - Positive T - Trace N - Negative NR - Not Required NT - Not Tested

CYPRESS COUNTY  
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A No Action Required B Monitor C Action Required X Urgent Action Required



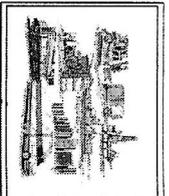
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# FINNING



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## PROACTIVE FLUID ANALYSIS Lubricant & Component • Predictive Results



### Unit Information

UNIT: 545 **53006**  
 Equip Make: WESTERN STAR  
 Equip Model: 4900SB  
 Equip Serial: 4GLGS2013  
 Component: ENGINE

### Service Information

Warranty/Expiry Date:  
 Comp Make: DETROIT\_DS  
 Comp Model: DD13  
 Comp Serial: 47192750336485  
 Service Interval:  
 Work Order No:  
 Job Site:  
 Branch:  
 Sampled Site:

Customer Comments:

### Evaluation Code

**A** Recommendation

Normal

30/09/16

Lab Number

N030-46295-0348

Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

### Days to reach Lab

21 Interpreted By

Peter Leggo

Analyzed By

Jnewman

Label Number

4562605

### Evaluation Code

**A** Recommendation

Normal

20/05/16

Lab Number

N030-46148-0211

Elevated copper level may be due to increased oil cooler core leaching, not wear. Oil change or new formulation can restart cooler core leaching. Other readings appear to be normal. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Resample at the next service interval.

### Days to reach Lab

7 Interpreted By

Peter Lewandowski

Analyzed By

plewandowski

Label Number

4506810

### Sample Information

Evaluation	SMU	CMU	Oil	Oil	Filler	Sample	Received	Oil	Oil	Oil	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL
Baseline			Hours	Chg	Chg	Date	Date	Brand	Grade	Sodium	Potassium	Silicon	Aluminum	Iron	Chromium	Lead	Copper	Tin	Nickel	Silver	Titanium	Vanadium	Scot	Oxidation	Sulfation	
A	611	611			Y	30/09/16	21/10/16	FACTORYFIL		3	1	4	6	19	0	1	6	<0	0	0	0	0	0	21	17	21
A	410	410			N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	1	0	0	11	16	18
A	206	206			N	29/01/16	11/02/16	FACTORY		5	18	4	6	39	1	0	37	2	1	1	0	0	5	15	17	

### Sample Reading

NIT	Zn	Ca	Mg	Ba	B	Mo	P	V:100	V:40	F	W	% Water	% Fuel	GLV
Nitration	Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphor	Viscosity	Viscosity	Fuel	Water	Percent Wt	Percent F	GLV
8	1289	3272	11	0	23	0	1079	13.1	100.6	NT	N	0.00	0.0	N
	1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0
	1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT

### P - Positive

T - Trace

N - Negative

NR - Not Required

NT - Not Tested

CYPRESS COUNTY  
 Attn: GREG SJOLIE  
 BOX 108  
 DUNMORE, AB T0J 1A0

**A** No Action Required

**B**

Monitor

**C**

Action Required

**X**

Urgent Action Required

# FINNING



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## PROACTIVE FLUID ANALYSIS Lubricant & Component • Predictive Results



### Unit Information

UNIT: **545** Warranty Expiry Date: \_\_\_\_\_  
 Equip Make: WESTERN STAR Comp Make: DETROIT\_DS  
 Equip Model: 4900SB Comp Model: DD13  
 Equip Serial: 4GLGS2013 Comp Serial: 47192750336485  
 Component: ENGINE

### Service Information

Service Interval: \_\_\_\_\_  
 Work Order No: \_\_\_\_\_  
 Job Site: \_\_\_\_\_  
 Branch: \_\_\_\_\_  
 Sampled Site: \_\_\_\_\_  
 Default Site: \_\_\_\_\_

Customer Comments:

Evaluation Code **A** Recommendation **Normal** Date **20/05/16** Lab Number **N030-46148-0211**

Elevated copper level may be due to increased oil cooler core leaching, not wear. Oil change or new formulation can restart cooler core leaching. Other readings appear to be normal. Initially elevated "break-in" readings will usually improve after the 2nd, 3rd oil drain intervals. Resample at the next service interval.

Days to reach Lab **7** Interpreted By **Peter Lewandowski** Analyzed By **plewandowski** Label Number **4506810**

Evaluation Code **A** Recommendation **Normal** Date **29/01/16** Lab Number **N030-46042-0457**

Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab **13** Interpreted By **Peter Leggo** Analyzed By **pspeed** Label Number **4230421**

### Sample Information

Evaluation	SMU	CMU	Oil Chg	Filler Chg	Sample Date	Received Date	Oil Brand	Oil Grade	Na	K	SI	AI	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OxI	SUL
Baseline																								
A	410	410	410	N	20/05/16	27/05/16	FACTORYFIL		6	20	4	19	55	4	1	408	3	1	1	0				
A	206	206	206	N	29/01/16	17/02/16	FACTORY		5	18	4	6	39	1	0	37	2	1	1	0				

### Sample Reading

Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	% Water	% Fuel	GLY
1019	1304	730	0	56	41	908	14.4	108.4	NT	N	0.00	0.0	0.0
1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0	NT

P - Positive T - Trace N - Negative NR - Not Required NT - Not Tested

CYPRESS COUNTY  
 Attn: GREG SJOLIE  
 BOX 108  
 DUNMORE, AB T0J 1A0

A No Action Required B Monitor C Action Required X Urgent Action Required

# FINNING



## PROACTIVE FLUID ANALYSIS Lubricant & Component • Predictive Results

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### Unit Information

### Service Information

UNIT: 545      Warranty Expiry Date:      Service Interval:      Customer Comments:

Equip Make: WESTERN STAR      Comp Make: DETROIT\_DS      Work Order No:      Job Site:      Default Site

Equip Model: 4900SB      Comp Model: DD13      Branch:      Sampled Site:      Default Site

Equip Serial: 4GLGSS2013      Comp Serial: 47192750336485

Component: ENGINE

Evaluation Code: A      Recommendation: Normal      Lab Number: N030-46042-0457

Dirt and wear metals appear to be at acceptable levels. Other readings appear to be normal. Resample at the next service interval.

Days to reach Lab: 13      Interpreted By: Peter Leggo      Analyzed By: pspeed      Label Number: 4230421

Evaluation Code:      Recommendation:      Date:      Lab Number:

Days to reach Lab:      Interpreted By:      Analyzed By:      Label Number:

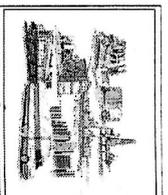
Evaluation	SMU	CMU	Sample Information				Sample Reading																		
			Oil Filler	Sample Date	Received Date	Oil Brand	Oil Grade	Na	K	SI	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	ST	OXI	SUL		
Baseline			Hours Chg	Cng																					
A	206	206	N	N	29/01/16	11/02/16	FACTORY			5	18	4	6	39	1	0	37	2	1	1	0	<0	5	15	17

Zn	Ca	Mg	Ba	B	Mo	P	V100	V40	F	W	Sample Reading	
											% Water	% Fuel
Zinc	Calcium	Magnesium	Barium	Boron	Molybdenum	Phosphorus	Viscosity	Viscosity	Fuel	Water	Percent W	Percent F
1119	1406	737	0	44	41	950	14.4	104.6	NT	N	0.00	0.0

P - Positive      T - Trace      N - Negative      NR - Not Required      NT - Not Tested

CYPRESS COUNTY  
Attn: GREG SJOLIE  
BOX 108  
DUNMORE, AB T0J 1A0

A: No Action Required      B: Monitor      C: Action Required      X: Urgent Action Required



*Handwritten signature*