SAFEWAY

Canada Safeway Limited

Extended Oil Drain Intervals

Engine oil is changed frequently because of contamination within the engine; once the oil becomes contaminated it breaks down loosing its viscosity.
Most manufactures of oil filters have the capacity to clean oil to approximately 25 microns. The system that the Winnipeg Division has been using for the last two years is the Kleenoil System.
This system has the capabilities of cleaning oil to one micron, and as long as the cartridge is replaced every 20000kms it allows us to achieve our goal, which was 60000km oil, drain interval.
Our department has run on a 60000km interval for the last two years, with excellent results. I have just recently increased our drain intervals to 80000km.
This is not just a question of extending oil drains, and saving money although it does this very well it's become a question of being

- Environmentally responsible
- Reducing waste while
- Reducing costs
- Less dependant on foreign oil
- Less down time
- 136hrs of extra vehicle utilization
- Reduced labour by 136hrs
- Total cost of the Kleenoil system was $10,500.00

As the figures show the cost of installing the Kleenoil System, which is a one-time cost, was almost recovered in the first year.

Please keep in mind that the average cost of an oil change in our division is $200.00 however if you take into consideration the change in our business requirements over the last year, our kilometers traveled would vary.

Below is a table that I have put together to show you just what type of savings that our department has attained over the last two years.

1100 King Edward Street, Winnipeg, Manitoba R3H 0R2
Telephone: (204) 631-4480

Average kms Traveled in one year 3248959

3248959 km @ 30000 km oil change interval = 108 oil changes	$21,600.00 in 2001
3248959 km @ 60000 km oil change interval = 54 oil changes	$10,800.00 in 2002
3248959 km @ 80000 km oil change interval = 40 oil changes	$8,000.00 in 2003
Total Savings	**$13,600.00**

MOB II WEAR CHECK

MOBILE OIL ANALYSIS REPORT

CONTAMINATION	NORMAL
OIL CONDITION	NORMAL
WEAR	NORMAL

210B - Diesel Engine

Unit Make	: INTERNATIONAL				
Unit Model	: 9400	Serial No	: 2HSCNAER5YC072397	Date Rec'd	: Dec 24, 2003
Comp Make	: CUMMINS	Cust. Ref No.	: {n/a}	Sample Date	: Dec 2, 2003
Comp Model	: N14	Stub No.	: WC-0128578	Diagnostician	: Kevin Marson

RECOMMENDATION

Resample at the next service interval to monitor.

Sample Date		12/05/01	01/24/03	Current	UOM
Time on Unit		280517	483552	638957	kms
Time on Oil		62956	79573	82239	kms
Time on Fltr		62956	20000	82239	kms
Oil Maint.		changed	changed	changed	---
Filter Maint.		changed	changed	changed	---

CONTAMINATION

There is no indication of any contamination in the component.

Sample Date		12/05/01	01/24/03	Current	Abn
Silicon		4.4	4.0	3.6	
Potassium		0.0	0.0	1.4	
Sodium		4.8	0.0	1.1	
Fuel (%)		<2.0	<2.0	<2.0	
Glycol (%)		<0.02	<0.02	<0.02	
Water (%)		<0.1	<0.1	<0.1	
Soot (%)		1.5	0.7	1.4	
Sulfation		71	68	76	
Nitration		64	73	82	

OIL CONDITION

Oil Type: 40 GAL of ESSO XD-3 EXTRA 15W40

The condition of the oil is acceptable for the time in service.

Sample Date		12/05/01	01/24/03	Current	Base
Boron		13	11	2.2	0.0
Barium		0.7	0.5	0.1	0.0
Calcium		2924	3104	3142	3800
Magnesium		49	72	17	0.0
Molybdenum		14	20	1.6	0.0
Sodium		4.8	0.0	1.1	0.0
Phosphorus		1093	1144	1015	1350
Sulfur		3907	4154	3780	
Zinc		1434	1319	1429	1500
Visc@40°C		---	---	---	116
Visc@100°C		14.5	13.9	14.4	15.0
Oxidation		55	63	68	---
TAN		---	---	---	2.5
TBN		5.87	6.90	7.81	12.2

WEAR

All component wear rates are normal.

Sample Date		12/05/01	01/24/03	Current	Abn
Iron		38	25	28	90
Nickel		0.0	0.0	0.0	2
Chromium		5.0	3.8	3.9	20
Titanium		0.0	0.1	0.2	2
Copper		3.6	8.8	5.2	330
Aluminum		1.6	1.9	1.9	20
Tin		0.0	0.0	0.3	15
Lead		14	12	16	40
Silver		0.1	0.4	0.2	2

MOB WEAR CHECK

MOBILE OIL ANALYSIS REPORT

CONTAMINATION	NORMAL
WEAR	NORMAL
OIL CONDITION	NORMAL

230B - Diesel Engine

Unit Make	: INTERNATIONAL				
Unit Model	: 9400	Serial No	: 2HSCNAXR12C041510	Date Rec'd	: Feb 19, 2004
Comp Make	: CATERPILLAR	Cust. Ref No.	: {n/a}	Sample Date	: Jan 7, 2004
Comp Model	: C12	Stub No.	: WC-0128573	Diagnostician	: Barry Goslin

RECOMMENDATION

Resample at the next service interval to monitor.

Sample Date	11/28/02	12/12/02	02/17/03	Current	UOM
Time on Unit	132305	143201	166574	335103	kms
Time on Oil	50088	60984	84357	83120	kms
Time on Fltr	50088	13923	84357	83120	kms
Oil Maint.	not chg	not chg	changed	changed	---
Filter Maint.	not chg	not chg	n/a	changed	---

CONTAMINATION

There is no indication of any contamination in the component.

Sample Date	11/28/02	12/12/02	02/17/03	Current	Abn
Silicon	6.2	6.0	7.0	4.4	
Potassium	0.0	0.0	0.0	0.0	
Sodium	0.0	0.0	0.0	0.0	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.1	0.1	0	0.3	
Sulfation	71	76	44	82	
Nitration	73	82	45	91	

WEAR

All component wear rates are normal.

Sample Date	11/28/02	12/12/02	02/17/03	Current	Abn
Iron	25	26	45	62	100
Nickel	0.0	0.0	0.0	0.0	2
Chromium	1.6	1.7	2.4	3.1	20
Titanium	0.2	0.2	0.1	0.1	2
Copper	31	31	43	74	330
Aluminum	2.8	2.6	3.2	2.3	25
Tin	0.1	0.0	0.0	0.0	15
Lead	0.8	0.9	1.6	0.9	40
Silver	0.7	0.7	0.6	0.6	2

OIL CONDITION

Oil Type: 40 GAL of ESSO XD-3 EXTRA 15W40

The condition of oil is suitable for further service.

Sample Date	11/28/02	12/12/02	02/17/03	Current	Base
Boron	14	12	10	1.2	0.0
Barium	0.2	0.2	0.3	0.1	0.0
Calcium	3102	3038	3418	3553	3800
Magnesium	97	85	85	11	0.0
Molybdenum	32	28	27	0.5	0.0
Sodium	0.0	0.0	0.0	0.0	0.0
Phosphorus	1126	1124	1249	1062	1350
Sulfur	4164	4065	4459	3697	
Zinc	1394	1354	1701	1550	1500
Visc@40°C	---	---	---	---	116
Visc@100°C	14.1	14.1	14.6	14.8	15.4
Oxidation	76	76	34	89	---

MOB II WEAR CHECK

MOBILE OIL ANALYSIS REPORT

CONTAMINATION	NORMAL
OIL CONDITION	NORMAL
WEAR	NORMAL

254L - Diesel Engine

Unit Make	: KENWORTH				
Unit Model	: T600	Serial No	: 964552	Date Rec'd	: Feb 3, 2003
Comp Make	: DETROIT	Cust. Ref No.	: {n/a}	Sample Date	: Jan 29, 2003
Comp Model	: SERIES 60	Stub No.	: WC-576806	Diagnostician	: Barry Goslin

RECOMMENDATION

Resample at the next service interval to monitor.

Sample Date		09/04/02	10/15/02	Current	UOM
Time on Unit		441750	482270	576776	kms
Time on Oil		20000	20000	37701	kms
Time on Filt		20000	20000	20000	kms
Oil Maint.		changed	not chg	changed	---
Filter Maint.		n/a	not chg	changed	---

CONTAMINATION

There is no indication of any contamination in the component.

Sample Date		09/04/02	10/15/02	Current	Abn
Silicon		3.7	3.7	3.0	
Potassium		0.2	0.0	0.0	
Sodium		0.0	2.4	0.2	
Fuel (%)		<2.0	<2.0	<2.0	
Glycol (%)		<0.02	<0.02	<0.02	
Water (%)		<0.1	<0.1	<0.1	
Soot (%)		0.7	0.4	0.4	
Sulfation		56	62	71	
Nitration		64	64	73	

OIL CONDITION

Oil Type: 38 GAL of ESSO XD-3 EXTRA 15W40

The condition of the oil is acceptable for the time in service.

Sample Date		09/04/02	10/15/02	Current	Base
Boron		9.7	7.2	4.2	148
Barium		0.0	0.4	0.2	0.8
Calcium		2277	3136	3471	1844
Magnesium		342	75	28	468
Molybdenum		0.7	5.7	3.1	104
Sodium		0.0	2.4	0.2	
Phosphorus		1065	1178	1215	940
Sulfur		8871	5037	4392	5448
Zinc		1217	1374	1350	1044
Visc@40°C		---	---	---	118
Visc@100°C		12.2	12.7	13.1	15.0
Oxidation		42	55	72	---
TAN		---	---	---	2.9
TBN		---	8.39	7.33	10.0

WEAR

All component wear rates are normal.

Sample Date		09/04/02	10/15/02	Current	Abn
Iron		34	20	22	120
Nickel		0.0	0.0	0.0	2
Chromium		2.1	2.8	3.1	20
Titanium		0.1	0.0	0.0	2
Copper		1.3	0.8	1.4	30
Aluminum		3.3	1.0	0.9	20
Tin		0.0	0.0	0.0	15
Lead		3.8	0.2	1.4	40
Silver		0.1	0.2	0.2	2

MOB II WEAR CHECK

MOBILE OIL ANALYSIS REPORT

CONTAMINATION	NORMAL
OIL CONDITION	NORMAL
WEAR	NORMAL

206B - Diesel Engine

Unit Make : INTERNATIONAL
Unit Model : 9400
Comp Make : CUMMINS
Comp Model : N14

Serial No : 2HSCNAER8YC072345
Cust. Ref No. : {n/a}
Stub No. : WC-0128570

Date Rec'd : Mar 15, 2004
Sample Date : Mar 10, 2004
Diagnostician : Barry Goslin

RECOMMENDATION

Resample at the next service interval to monitor.

Sample Date	05/14/02	08/09/02	11/28/02	Current	UOM
Time on Unit	404896	453496	497310	723659	kms
Time on Oil	60891	60841	92414	83986	kms
Time on Fltr	60891	60841	92414	83986	kms
Oil Maint.	changed	n/a	changed	changed	---
Filter Maint.	changed	not chg	changed	changed	---

CONTAMINATION

There is no indication of any contamination in the component.

Sample Date	05/14/02	08/09/02	11/28/02	Current	Abn
Silicon	9.5	6.2	6.2	4.4	
Potassium	0.0	0.6	0.0	1.4	
Sodium	0.0	0.0	0.0	1.7	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.8	1.2	1.1	1.6	
Sulfation	35	62	71	79	
Nitration	36	64	73	82	

OIL CONDITION

Oil Type: 40 GAL of Chevron DELO 400 MULTIGRADE 15W40

The condition of oil is suitable for further service.

Sample Date	05/14/02	08/09/02	11/28/02	Current	Base
Boron	67	85	41	1.2	
Barium	0.2	0.0	0.2	0.0	
Calcium	2419	2752	2786	3582	
Magnesium	273	319	270	9.9	
Molybdenum	91	105	90	0.4	
Sodium	0.0	0.0	0.0	1.7	
Phosphorus	1082	1233	1177	1136	1380
Sulfur	4583	5460	4326	4008	
Zinc	1299	1496	1476	1657	1510
Visc@40°C	---	---	---	---	116
Visc@100°C	14.4	14.5	15.0	15.2	15.6
Oxidation	30	55	63	68	---
TAN	---	---	---	---	
TBN	7.03	---	7.07	6.91	11.3

WEAR

All component wear rates are normal.

Sample Date	05/14/02	08/09/02	11/28/02	Current	Abn
Iron	17	15	26	27	90
Nickel	0.0	0.0	0.0	0.0	2
Chromium	4.2	5.0	7.4	2.6	20
Titanium	0.2	0.1	0.1	0.1	2
Copper	3.3	2.0	3.6	3.6	330
Aluminum	4.5	4.4	3.9	2.0	20
Tin	0.2	0.0	0.0	0.2	15
Lead	4.2	3.0	8.9	7.0	40
Silver	0.3	0.5	0.4	0.3	2