



## MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

**NORMAL**  
**NORMAL**  
**NORMAL**

## Arkholo-Apac - Diesel Engine

Unit Make : KENWORTH

Unit Model : W900

Comp Make : CUMMINS

Comp Model : ISM-320V

Serial No : {n/a}

Cust. Ref No. : {n/a}

Stub No. : KL-M2204052

Date Rec'd : Feb 11, 2008

Sample Date : Jan 31, 2008

Diagnostician : Doug Bogart

**RECOMMENDATION**

Resample at the next service interval to monitor.

| Sample Date   | 04/19/07 | 07/11/07 | 11/12/07 | Current | UOM |
|---------------|----------|----------|----------|---------|-----|
| Time on Unit  | 506      | 965      | 1700     | 2012    | hrs |
| Time on Oil   | 200      | 365      | 1100     | 1502    | hrs |
| Time on Fltr  | 200      | 665      | 800      | 300     | hrs |
| Oil Maint.    | changed  | not chg  | not chg  | not chg | --- |
| Filter Maint. | not chg  | not chg  | not chg  | not chg | --- |

**CONTAMINATION**

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

| Sample Date | 04/19/07 | 07/11/07 | 11/12/07 | Current | Abn |
|-------------|----------|----------|----------|---------|-----|
| Silicon     | 18       | 10       | 10       | 9.2     |     |
| Fuel (%)    | <2.0     | <2.0     | <2.0     | <2.0    |     |
| Glycol      | ---      | ---      | ---      | ---     |     |
| Water (%)   | <0.1     | <0.1     | <0.1     | <0.1    |     |
| Soot (%)    | 0.7      | 0.9      | 1.5      | 1.8     |     |
| >2µm        | 538      | 1474     | 884      | 141     |     |
| >5µm        | 293      | 803      | 481      | 76      |     |
| >15µm       | 49       | 136      | 82       | 13      |     |
| >25µm       | 16       | 46       | 27       | 4       |     |
| >50µm       | 2        | 7        | 4        | 0       |     |
| >100µm      | 0        | 0        | 0        | 0       |     |
| ISO 4406    | 15/13    | 17/14    | 16/14    | 13/11   |     |

**OIL CONDITION**

Oil Type: VALVOLINE 15W40

The condition of oil is suitable for further service.

| Sample Date | 04/19/07 | 07/11/07 | 11/12/07 | Current | Base |
|-------------|----------|----------|----------|---------|------|
| Potassium   | 5.1      | 0.0      | 9.5      | 0.0     |      |
| Boron       | 276      | 54       | 26       | 15      |      |
| Barium      | 7.1      | 1.4      | 0.9      | 1.6     |      |
| Calcium     | 1835     | 1715     | 1688     | 1576    |      |
| Magnesium   | 311      | 524      | 535      | 534     |      |
| Molybdenum  | 106      | 44       | 42       | 36      |      |
| Sodium      | 6.2      | 2.4      | 3.2      | 4.1     |      |
| Phosphorus  | 1068     | 1064     | 1052     | 1016    |      |
| Sulfur      | 3375     | 4152     | 3296     | 3475    |      |
| Zinc        | 1171     | 1206     | 1237     | 1147    |      |
| Visc@100°C  | 13.00    | 12.9     | 13.4     | 13.5    |      |
| TBN         | 7.78     | 7.72     | 6.33     | 6.27    |      |

**WEAR**

All component wear rates are normal.

| Sample Date | 04/19/07 | 07/11/07 | 11/12/07 | Current | Abn |
|-------------|----------|----------|----------|---------|-----|
| Iron        | 41       | 42       | 73       | 78      | --- |
| Nickel      | 0.1      | 0.2      | 0.5      | 0.5     | --- |
| Chromium    | 1.5      | 2.0      | 3.3      | 3.5     | --- |
| Titanium    | 0.0      | 0.2      | 0.2      | 0.2     | --- |
| Copper      | 12       | 13       | 65       | 56      | --- |
| Aluminum    | 5.2      | 2.0      | 2.8      | 2.9     | --- |
| Tin         | 4.3      | 0.0      | 1.1      | 0.0     | --- |
| Lead        | 2.7      | 3.4      | 3.8      | 5.5     | --- |
| Silver      | 0.0      | 0.0      | 0.0      | 0.0     | --- |