

# Application Data: Petroleum Industry

## Computrac<sup>®</sup> Vapor Pro<sup>®</sup> Fx Moisture Specific Analyzer

### *Green Karl Fischer Alternative*

#### Crude Oil

| MATERIAL  | RESULT     | COMPUTRAC <sup>®</sup> | STATISTIC          | KARL FISCHER |
|-----------|------------|------------------------|--------------------|--------------|
| Crude Oil | % Moisture | 0.3671                 | Mean               | 0.3695       |
|           |            | 0.0023                 | Standard Deviation | 0.0008       |

#### Lubricating Oil

| MATERIAL                    | RESULT     | COMPUTRAC <sup>®</sup> | STATISTIC          | KARL FISCHER        |
|-----------------------------|------------|------------------------|--------------------|---------------------|
| Lube Oil<br>(Low Moisture)  | % Moisture | 0.0133                 | Mean               | 0.0094              |
|                             |            | 0.0003                 | Standard Deviation | 0.0004              |
| Lube Oil<br>(High Moisture) | % Moisture | 0.0393                 | Mean               | 0.0366              |
|                             |            | 0.0007                 | Standard Deviation | 0.0017              |
| Lube Oil<br>(Heavy Fuel)    | % Moisture | 0.0773                 | Mean               | 0.0902              |
|                             |            | 0.0051                 | Standard Deviation | 0.0053              |
| Lube Oil                    | % Moisture | 0.0727                 | Mean               | 0.4427 <sup>1</sup> |
|                             |            | 0.0043                 | Standard Deviation | 0.0022              |
| Engine Oil                  | % Moisture | 0.0430                 | Mean               | 0.0412              |
|                             |            | 0.0018                 | Standard Deviation | 0.0016              |
| Fuel Oil                    | % Moisture | 0.1890                 | Mean               | 0.2107 <sup>2</sup> |
|                             |            | 0.0032                 | Standard Deviation | 0.0257              |
| Recycled Oil                | % Moisture | 0.9472                 | Mean               | 1.1185 <sup>2</sup> |
|                             |            | 0.0389                 | Standard Deviation | 0.0510              |
| Gear Oil                    | % Moisture | 0.0615                 | Mean               | 0.3780 <sup>3</sup> |
|                             |            | 0.0018                 | Standard Deviation | 0.0056              |
| Transformer Oil             | % Moisture | 0.0006                 | Mean               | 0.0007              |
|                             |            | 0.0000                 | Standard Deviation | 0.0001              |
| Turbine Oil                 | % Moisture | 0.0032                 | Mean               | 0.0031              |
|                             |            | 0.0002                 | Standard Deviation | 0.0003              |

## Fuels

| MATERIAL                     | RESULT     | COMPUTRAC® | STATISTIC          | KARL FISCHER        |
|------------------------------|------------|------------|--------------------|---------------------|
| <b>Jet A, Wet</b>            | % Moisture | 0.0050     | Mean               | 0.0051              |
|                              |            | 0.0003     | Standard Deviation | 0.0001              |
| <b>Jet A, Dry</b>            | % Moisture | 0.0025     | Mean               | 0.0024              |
|                              |            | 0.0001     | Standard Deviation | 0.0001              |
| <b>Diesel</b>                | % Moisture | .0042      | Mean               | 0.0042              |
|                              |            | 0.0002     | Standard Deviation | 0.0003              |
| <b>Fuel Oil</b>              | % Moisture | 0.1890     | Mean               | 0.2107 <sup>2</sup> |
|                              |            | 0.0032     | Standard Deviation | 0.0257              |
| <b>Unleaded Gasoline</b>     | % Moisture | 0.0938     | Mean               | 0.0939              |
|                              |            | 0.0024     | Standard Deviation | 0.0016              |
| <b>Petroleum Hydrocarbon</b> | % Moisture | 0.6812     | Mean               | 2.2446 <sup>2</sup> |
|                              |            | 0.0109     | Standard Deviation | 0.3583              |
| <b>Petroleum Distillate</b>  | % Moisture | 0.0068     | Mean               | 0.0069              |
|                              |            | 0.0003     | Standard Deviation | 0.0007              |

### Footnotes:

<sup>1</sup> – Karl Fischer results biased high due to mercaptan interferences.

<sup>2</sup> – Karl Fischer results biased high due to hydrogen sulfide or mercaptan interferences.

<sup>3</sup> – Karl Fischer results biased high due to potassium borate interferences.



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