



OIL REPORT

LAB NUMBER: H43008
 REPORT DATE: 4/8/2016
 CODE: 20/32

UNIT ID: 08 CUMMINS
 CLIENT ID:
 PAYMENT:

| | | |
|------|---------------------------------------|---|
| UNIT | MAKE/MODEL: Cummins ISB 6.7L (Pickup) | OIL TYPE & GRADE: Valvoline Premium Blue 15W/40 |
| | FUEL TYPE: Diesel | OIL USE INTERVAL: 403 Miles |
| | ADDITIONAL INFO: 2008 | |

| | | |
|--------|----------------------|------------|
| CLIENT | CARBONITECUMMINS.COM | PHONE: |
| | | FAX: |
| | | ALT PHONE: |
| | | EMAIL: |
| | | |

COMMENTS JOHN: This is an odd one - it looks like the coolant leak is fixed (no potassium is present), but now chrome has jumped. It's a big enough change that we ran the test twice to make sure, and it's indicative of piston ring wear (we see no other possibility than rings with a head gasket change). We suppose it's possible the chrome is from initial startup after the repair, but just chrome reading high isn't typical of wear-in. Silicon remained high, but is probably just from sealants used during the repair. Resample in ~1,000 miles to see if we can figure out the chrome.

| ELEMENTS IN PARTS PER MILLION | MI/HR on Oil | 403 | UNIT / LOCATION AVERAGES | 1,326 | 7,557 | 7,358 | 8,014 | 6,709 | UNIVERSAL AVERAGES |
|-------------------------------|-------------------|-----------|--------------------------|-----------|------------|-----------|----------|-----------|--------------------|
| | MI/HR on Unit | 110,857 | | 110,454 | 109,128 | 101,571 | 94,213 | 86,199 | |
| | Sample Date | 3/19/2016 | | 2/27/2016 | 12/12/2015 | 5/23/2015 | 8/3/2014 | 5/31/2014 | |
| | Make Up Oil Added | 0 qts | | 0 qts | 0 qts | 0 qts | 0 qts | 0 qts | |
| ALUMINUM | 3 | 4 | 2 | 3 | 3 | 3 | 4 | 3 | |
| CHROMIUM | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| IRON | 24 | 29 | 7 | 14 | 14 | 15 | 18 | 24 | |
| COPPER | 1 | 7 | 1 | 2 | 3 | 1 | 3 | 7 | |
| LEAD | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | |
| TIN | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | |
| MOLYBDENUM | 45 | 45 | 52 | 54 | 53 | 49 | 45 | 33 | |
| NICKEL | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | |
| MANGANESE | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SILVER | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 0 | |
| TITANIUM | 30 | 17 | 27 | 28 | 27 | 26 | 24 | 2 | |
| POTASSIUM | 0 | 8 | 8 | 4 | 10 | 5 | 7 | 8 | |
| BORON | 4 | 2 | 7 | 1 | 0 | 2 | 2 | 48 | |
| SILICON | 13 | 6 | 17 | 2 | 2 | 2 | 3 | 5 | |
| SODIUM | 11 | 9 | 8 | 9 | 19 | 17 | 8 | 6 | |
| CALCIUM | 1249 | 1208 | 1319 | 1336 | 1331 | 1332 | 1265 | 1657 | |
| MAGNESIUM | 1129 | 1037 | 1150 | 1180 | 1162 | 1145 | 1126 | 588 | |
| PHOSPHORUS | 1122 | 1114 | 1192 | 1162 | 1128 | 1165 | 1170 | 1030 | |
| ZINC | 1331 | 1348 | 1585 | 1438 | 1529 | 1413 | 1391 | 1219 | |
| BARIUM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |

Values Should Be*

| | | | | | | | | |
|------------|-----------------------|-------|-----------|-------|-------|-------|-------|-------|
| PROPERTIES | SUS Viscosity @ 210°F | 74.1 | 69-81 | 68.9 | 73.7 | 68.4 | 71.4 | 69.0 |
| | cSt Viscosity @ 100°C | 14.03 | 12.7-16.0 | 12.66 | 13.93 | 12.52 | 13.31 | 12.68 |
| | Flashpoint in °F | 410 | >390 | 415 | 420 | 420 | 455 | 435 |
| | Fuel % | <0.5 | <2.0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Antifreeze % | 0.0 | 0.0 | 0.0 | 0.0 | ? | ? | 0.0 |
| | Water % | 0.0 | <0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Insolubles % | 0.3 | <0.6 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 |
| | TBN | | | | | | | |
| | TAN | | | | | | | |
| | ISO Code | | | | | | | |

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

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