## **Oil Analyzers** Instructions for Component Registration - Oil Analysis

- Complete the Component Registration Form when submitting a sample for the first time or when submitting a change to a component that is already registered with OIL ANALYZERS INC. Provide complete and accurate information to ensure you receive accurate recommendations from OAI. Only steps B D are necessary when sending subsequent samples for components already registered with OAI.
- B Complete the OIL ANALYZERS sample label and affix it to the sample jar. Do not attach it to the black mailing canister.

For Lube Time, enter the number of miles on the oil. For Unit Time, enter the number of miles on the vehicle. Leave the ACCT # field blank; OAI will assign an account number.

- Mailing labels are provided for the convenience of customers with non-postage-paid kits. Choose the mailing label for the laboratory nearest you and affix it to the mailing package. Postage pre-paid kits are pre-labeled for mailing.
- PRetain the Tracking Number Stub for your records.

	B	A) CUSTOMER INFORMATION	1 Carefully complete the Customer Information section.		
UNALYZERS LABORATORY SUITE 700		i would like to receive my reports via: E-mail = Fax = Mail www.tockmysample.com     i would like my report comments in: Emglish (betaut) = topetal. Pract. Pract.	2 Complete the Unit ID information. Indicate the vehicle's year, make a		
OL ANALYZERS LABORATORY 7698 ZIONSVILLE ROAD P.O BOX 68963 INDIANAPOLIS, IN 46268-2177	Analyzers and the addition	Contact Person Contact Person Amod Dealer (F applicable) Tetephone Email Address Fas Number	(e.g. VIN number, Serial number, or John's Truck) This is your opportunity to give your vehicle a unique ID. This is especially helpful for those who test multiple vehicles or manage a fleet of vehicles.		
OL ANALYZERS LABORATORY 3080 CALIFORNIA AVE, SUITE B P.O. BOX 30820	And heriting, call anythe Jac Composition Community and Community and Co	Customer's Address City State/Province Prestal Croter Country Country COMPONENT REGISTRATION FORM Mendatory for first time component sampling or to traiter changes. Analysis are same suit IC on More samples. Account Number (I available)	Complete the Unit Type section to the best of your ability. (e.g. Engines, Mobile Gear/Bearing System, Transmission, etc.)		
SALT LAKE CITY, UT 84104	Tristons en	2 DEANA 2 Init to POSITION (If applicable): DChassis DLaft DRight DRiver DCenter	Provide complete Unit Manufacturer and Unit Model information. (e.g. CAT, Cummins, GM; CI5, 5.9L, Duramax)		
OE, ANALYZERS LABORATORY STAD 75TH STREET EDMONTON, AB TEE 6W2 CANADA	A Sector and A Sector and A Sector and A Sector and A Sector A Sec	BIT TYPE(check sampled component)           ENGINES         HYDRALL/C         BEARINGS           Diseoil         AA         P Patton Pump         BHOPP         Bear         BORV           Diseoil         AA         P Patton Pump         BHOPD         Steeve         BORV           Diseoil         AA         P Retry Pump         BHOPD         Steeve         BORV           Diseoil         AA         P Retry Pump         BHOPD         Steeve         BORV           Diseoil         ARCH         D Bear Pump         BHOPD         Steeve         BORV           Natural Gas         BMNGE         D Rotary Vane         BHONN         D Pate         BORV	Proper identification of equipment will ensure accurate testing for specific metallurgies. NOTE: OAI needs component manufacturer and model information, not vehicle manufacturer information.		
	A or advantage of the second s	Double Fuel A2P     GEAR SYSTEM     GEAR SYSTEM     GEAR SYSTEM     GEAR SYSTEM     GEAR SYSTEM     GEAR SYSTEM     GEAR	5 Choose the best description of the operating environment of the equipment.		
	Interference Interference Marcolo Marc	Pinal Drive BBFDR □ Bevel B08VL □ Double Sphere BGDSP     Planetary BBFLT □ Spiral Bevel B08VL □ Double Sphere BGASL     Steering BBFTG □ Hopoid B5HVP □ Other □     Wheel Hub BGMVE □ Herringbone B5HER     Power Tabe-OF BPFTO □ Worm 55WTML Compressioners	An accurate description of the environment will help determine the possibility of exposure to certain contaminants.		
	A construction of the charge o	Cher     Speed Reducer     BSSPR     Speed Reducer     SBSPR     Setting Sorten     Setting     Sorten     Setting     Sorten     Setting     Sorten     Setting     Sorten     So	<ul> <li>Provide information regarding the lubricant currently installed, including the brand, product name or code and viscosity.</li> <li>(e.g. AMSOIL Synthetic Motor Oil, (ASL), SAE 5W-30)</li> </ul>		
	***	4         Linit Manufacturer         Linit Model           5         Application Water Hending 20 0-0-0-0-000 (mg/std) 0-0-0-0-000 (mg/std) 0-0-0-000 (mg/std) 0-0-0-0-000 (mg/std) 0-0-0-0-000 (mg/std) 0-0-0-000 (mg/std) 0-0-000 (mg/s	Include information in the Special Comments or Problems section that you feel is important, but is not listed in the Component Registration Form.		
	Status Cr Based	Filter         2 Full-Flow-10         2 Ry-pass-11         2 Kidney Loop - 16         2 Hone         2 Other           Filter         Micron Reting         Bump Capacity	B Write the Unit ID (designated in step 2) on the Tracking Number Stub and retain for your records.		
	Tracking: 00000A00000 www.trackmysample.com 877-458-3315	Tpecify additional testing requested Epocial comments or problems?	<ul> <li>Before Shipping:</li> <li>Ensure the OIL ANALYZERS label is affixed to the sample bottle.</li> <li>Remove the Tracking Number Stub and retain for your records.</li> </ul>		

Verify you have included the Component Registration Form

For additional assistance, call OAI at (715) 395-0222.

## **Oil Analysis Report Glossary**

Glycol	Anti-freeze contaminant. Always detrimental to oil quality.									
Water	Contaminant. Coolant leak or condensation.									
Fuel	Contamin	Contaminant. Fuel leak, excessive idling, or incomplete combustion. Measure of resistance to flow. Used to determine oil grade. See below.								
Viscosity	Measure									
Solids	Contamin problems	ant. Reflec or overext	ts oxidation a ended drain i	and inter	nitration. High levels r vals.	nay indica	te combustion			
SAE I Grade	Engine Oil e @ 100 °C	Min cSt	Max cSt		SAE Gear Oil Grade @ 100°C	Min cSt	Max cSt			
	20	5.6	< 9.3		90	13.5	< 24.0			
	30	9.3	< 12.5		140	24.0	< 41.0			
	40	12.5	< 16.3		250	41.0	No. Req.			
50		16.3	< 21.9							
60		21.9	< 26.1							
ISO Viscosity Grade @ 40 °C		Min cSt	Max cSt		ISO Viscosity Grade @ 40°C	Min cSt	Max cSt			
	21	.982	.42		68 (AGMA 2)	61.2	74.8			
	32	.88	3.52		100 (AGMA 3)	90.0	110			
L	54	.145	.06		150 (AGMA 4)	135	165			
	76	.127	.48		220 (AGMA 5)	198	242			
L	10	9.00	11.0		320 (AGMA 6)	288	352			
L	15	13.5	16.5		460 (AGMA 7)	414	506			
L	22	19.8	24.2		680 (AGMA 8)	612	748			
1	22	1 200	252	1		1 000	1 1100			

PHYSICAL PROPERTIES

## OIL DEGREDATION

1500

1350

1650

- **Soot** Contaminant. By-product of combustion or blowby. High levels may indicate combustion problems or overextended drain intervals.
- **Oxidation** Causes increased viscosity and acid formation.

41.4

46 (AGMA 1)

**Nitration** Causes sludge and varnish formation. Up to 100% allowed.

50.6

**TBN** Total Base Number. Reported on engine oil.

SOURCE OF ELEMENTS on (Fe) Wear metal, Iron or steel components or rust. Wear metal, coolant additive, Chrome and allovs, romium (Cr) Wear metal. Additive in gear oils and gasoline. Alloved with copper, tin ad (Pb) or aluminum in plain bearings and bushings. opper (Cu) Wear metal or additive. Alloyed with lead, tin or aluminum in bushings. Leachate from gaskets/sealant or coolers. Wear metal. Alloyed with lead, copper, or aluminum. n (Sn) uminum (Al) Wear metal. May be alone or in alloys. ckel (Ni) Wear metal. Used in steel alloys. Wear metal. Bearings in EMD diesel engines. lver (Aq) anganese (Mn) Wear metal or gasoline additive. Used in steel alloys. licon (Si) Contaminant. Dirt particle, anti-foam additive, or leachate from gaskets/ sealant compounds. Contaminant. Additive in engine coolant or oil. Compare to level in used pron (B) oil. odium (Na) Contaminant. Additive in engine coolant or oil. Compare to level in unused oil. agnesium (Mg) Dispersant/Detergent oil additive. Wear metal in steel alloys. Calcium (Ca) Dispersant/Detergent oil additive. May indicate water contamination. **Barium (Ba)** Diesel fuel additive. Phosphorus (P) Anti-wear oil additive. Zinc (Zn) Anti-wear oil additive. Molybdenum (Mo) Wear metal or oil additive. Compare to level in unused oil. Titanium (Ti) Wear metal in steel alloys. Vanadium (V) Wear metal in steel alloys.

**Cadmium (Cd)** Wear metal in steel alloys. Engine coolant additive.

**TAN** Total Acid Number. Reported on non-engine oils. Increases with use.

OAI test results are informational only and carry no warranty as to specific condition. OAI provides the information without guarantee as to the necessity for any further diagnosis, repairs or other corrective actions. Customer relieves OAI of all liability for additional diagnosis, repairs or any other subsequent expense associated with the use of OAI information.