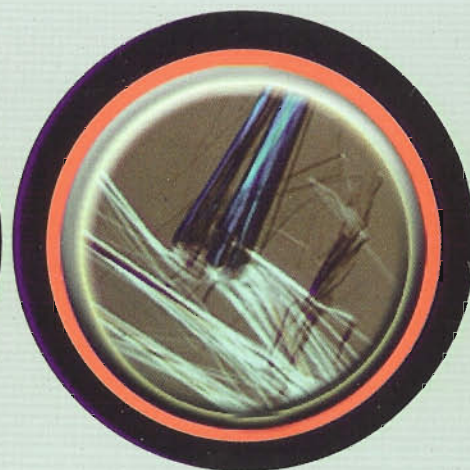
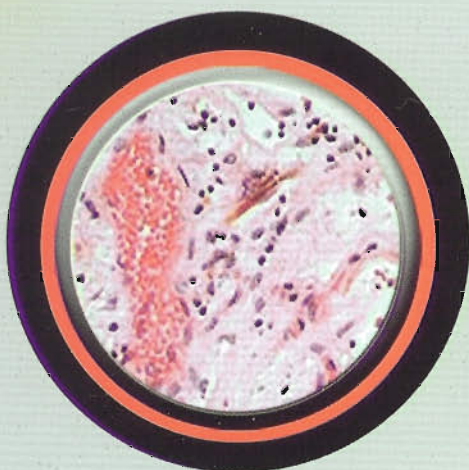


# AL HOTY STANGER



## MATERIALS ANALYSIS

CHEMICAL  
OIL & FUEL  
ENVIRONMENTAL  
MICROBIOLOGICAL  
ASBESTOS TESTING



## MATERIALS LABORATORY SERVICES

### Lubricating / Insulating Oils and Fuels Laboratory



The laboratory was set-up in the early 80's and offers analysis of fuels (diesel, petrol, kerosene, Jet A-1, JP-5, fuel gases and others) in accordance with ASTM, IP and other standards.



We test new and used lubricating oils (engine, turbine, compressor, hydraulic gear etc...) following ASTM and other methods and provide users with an interpretive report.



We have the facility for sampling and testing used transformer oil. It is analysed to ASTM D-3487 specification and we can test for dissolved gases and Furans.

### Analytical Chemistry Laboratory

This laboratory is equipped for a wide range of material tests to ASTM, AASHTO, SASO, DIN, BS, BP, USP and other appropriate standards. Materials that we routinely analyse in this laboratory are cement, aggregates, ceramics, admixtures, water, wastewater, soil, various ores, fertilizers, steels and other metals (zinc, aluminum, tin etc.), water-treatment chemicals, industrial chemicals, food, dairy products, animal feed, coolants, paints, plastics, soaps and detergents, industrial products and raw materials.

We perform various organic and inorganic analyses of materials, identify unknown components and carry out forensic assessment on damaged cargoes.

We use instruments such as the ICP-OES, AAS, GC, GC-MS, FTIR, TOC analyzer, ion chromatograph, UV-VIS and spectrophotometer amongst many others.



### Microbiological Laboratory

This purpose-built laboratory is designed for food and other "clean" testing. It has an ultra-clean room, equipped with a laminar flow cabinet. The various materials tested include frozen, chilled and fresh food, drinking water, ice, beverages, cosmetics, animal feed, swimming pool water, wastewater and environmental samples.



We carry out air monitoring in the work place, swabbing of machines/equipment used in food production and take personnel swabs. Tests are to AWWA, Apha, SASO, BSI, CCFRA, BAM (Bacteriological and Analytical Manual of FDA) and we follow W.H.O. guidelines and various other standard test procedures.



### Stack Emission Analysis

We analyse flue gases from boiler chimneys for NO, NO<sub>2</sub>, NOX, SO<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>S and particulate matter (PM10); and we offer the opacity test using Ringerman's Smoke Chart).

### Sound/Noise Level Surveys

To meet the "environmental impact" study needs of clients, we offer the determination of noise levels of gasturbines, pumps, motors, etc (following ISO/ASTM Standards), and the determination of outdoor-Indoor transmission classes and the measurement of outdoor-A-weighted sound levels. We have SLMs of both Types I and II.

### Asbestos Laboratory

Our purpose-built asbestos laboratory is the only one of its kind in the Middle East; it provides identification of asbestos fibre in bulk materials and in air. The department also provides fully trained asbestos survey teams for sampling at small and large industrial facilities as well at domestic sites e.g. villas and compounds. We work to EPA 600/R-931116 and NIOSH - 7400.

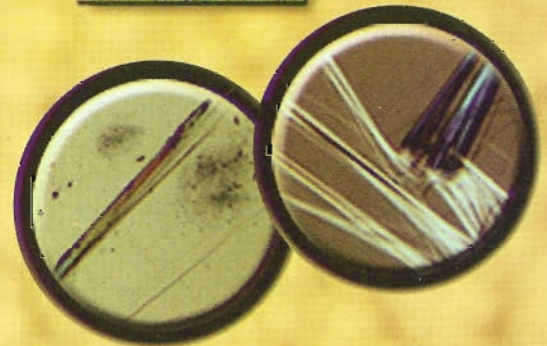


### Air Analysis

We perform breathable air analysis Grade-D for sand-blasting operators etc, analysis of ambient air from work places for noxious gases, dust content etc. and microbiological tests on air for determining the cleanliness of rooms.

### Waste Analysis

Our facilities provide testing such as waste characterization (EPA 1310); PAH; chlorinated hydrocarbons; BETX; VOC's; MTBE; TCLP; as well as others.



The species we can identify are listed below

- |   |  |
|---|--|
| 1. Heterotrophic Plate Count              | 12. Pseudomonas aeruginosa                             |
| 2. Anaerobic Plate Count                  | 13. Salmonella   |
| 3. Aerobic and Anaerobic Spore-formers    | 14. Shigella   |
| 4. Yeast and Mold Count                   | 15. Staphylococcus aureus                              |
| 5. Total Coliforms (MPN and Colony Count) | 16. Bacillus Cereus                                    |
| 6. Fecal Coliforms                        | 17. Clostridium  |
| 7. E. Coli                                | 18. Vibrio parahemolyticus                             |
| 8. E. Coli 0157.H7                        | 19. Listeria monocytogene                              |
| 9. Enterobacteria Ceae                    | 20. Legionella from cooling water system               |
| 10. Enterocci                             | 21. Sulphate reducing bacteria (SRB), (Soil and Water) |
| 11. Fecal Streptococcus                   | 22. Nitrifying bacteria from cooling towers and soils  |

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At present, we have an office in Bahrain sharing premises with our sister company, as addressed above.  
We have no connection with a similarly named laboratory in Mina Salman.