

Plant Size: 14,000 sq ft

Equipment: Calibration chambers, environmental chambers, Monroe OC8820 (In-house Computers), and analog electronics production facility.

Experience: Customers both US and Canadian, range from coal mining (methane) applications in Gillette, Wyoming to carbon monoxide detection in various institutions in major centers in Canada. They are interested in doing business with the USAF.

Keywords: 4 = Chemistry; 7 = Electronics; 9 = Environment; 16 = Security & Safety; 17 = Software Services; 20 = Miscellaneous; Hazardous Gas Detectors = 9, 16; Toxic Gas Detectors = 9, 16; Electronic Gas Detectors = 7, 9; Sensors = 9; Electrochemical Devices = 4, 7, 9; Catalytic Sensors = 4, 9; Solid State Devices = 7, 9; Hydrogen Sulfide Sensors = 7, 9, 16; Pollution Monitoring Equipment = 9; Combustible Gas Monitoring Equipment = 9, 16; Data Acquisition Capability = 7, 9, 17, 20; Repair & Overhaul = 7; Thermal Conductivity Devices = 7, 9; Calibration Capability = 9.

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ATHABASCA RESEARCH CORPORATION Ltd

Code: ATH

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History: Athabasca Research Corp Ltd is a Canadian owned high technology company with one subsidiary in Canada - Tanknology Canada Ltd. The company was incorporated in early 1976 primarily to provide specialized services in the design of instruments and systems for air quality monitoring, meteorological measurements, and data acquisition and control systems for the petroleum industry and government agencies.

Capability: Athabasca Research is actively engaged in the provision of multi-disciplined scientific and engineering systems and services. Their background experience includes the manufacture of geophones and recording seismographs for oil exploration purposes. A significant portion of their present activities are environment oriented; including research, data collection and interpretation, and the development and manufacture of associated instrumentation. They are active in the area of environmental monitoring program management and take responsibility for all aspects including hardware specification, procurement, operation and maintenance, and data reduction. They provide turnkey operation of complete environmental and meteorological monitoring systems.

Athabasca's products include:

- Weather radar data processing systems
- Ambient air quality monitoring and meteorological systems
- Ultraviolet spectrometers
- Meteorological instruments
- Pibal Tracking Systems
- Automated suspended sediment samplers

- Geophones and seismographs
- Leak detection system for underground petroleum products storage tanks
- Laser related devices

Their weather radar system correlates radar reflections from storms with antenna azimuth and elevation positions and reflections intensities to derive a comprehensive picture of the storm and its characteristics. The system includes a conventional S or C band radar, the interfacing electronics hardware package, and a PDP 11/34 computer. It features a strong interactive graphics capability.

Their ambient air quality monitoring systems generally include monitoring trailers equipped with instrument towers, data acquisition and computing terminals along with gas analysers, meteorological sensors, and peripheral devices. These systems are currently designed to detect SO₂, NO₂, NO, NO_x, O₃, H₂S, CO and CO₂ to less than 10ppb levels. The basis for detection is chemiluminescence, fluorescence, UV and IR absorption. Athabasca's meteorological instruments include a Windflo anemometer, Comprop anemometer (composite pitch propeller) for turbulence measurements, atmospheric flux monitor, and differential air temperature system. The automated suspended sediment sampler is designed to take water samples for later analysis. The device can either sample continuously (at preselected intervals) or in a "rain gauge" mode. In the latter mode, it remains dormant, consuming almost no power until it is activated by a tipping bucket type of rain gauge.

Their Pibal tracking system is used for the determination of wind speed and direction and/or temperature, at incrementally increasing altitudes. It basically consists of two theodolites on a 1000 ft base line tracking a balloon, each instrument being equipped with shaft encoders that measure azimuth and elevation angles. These data are conveyed to a data acquisition system (Athabasca designed) which is programmed to calculate and print out the altitude, wind speed and direction, downwind position, and temperature.

The Athabasca leak detection system utilizes the principle of vacuum induction of air bubbles to detect wall perforations in underground/enclosed storage tanks for petroleum products. The system consists of a monitoring van equipped with appropriate instrumentation and vacuum equipment and hydrophone probe that identifies the distinctive bubble signature induced by the reduced pressure, and simultaneously detects the presence of water. The test method is fast, economically acceptable and is initially evaluated by industry as being superior to other methods currently in use. The system detects pinhole size leaks as well as larger ones, and is not subject to most of the drawbacks of the other leak test procedures.

They have conceived, designed and are currently negotiating a contract with the Canadian Department of National Defense to develop a Tactical Target Scoring System. The system can accurately measure the impact position of air delivered ordnance, e.g., bombs, rockets, missiles, etc., on tactical test ranges. It utilizes a unique sensing and data acquisition system that can interpret and transmit objective impact information to the range control facility. The system is independent of visibility restrictions, lighting conditions and can detect the munition's impact with or without an accompanying blast or marking charge. It is self-contained, requiring no external power sources, can be remotely activated or deactivated, and conveys information by either conventional RF link or via a data collection platform.

Finally, they have demonstrated expertise in laser technology. Their Lasalign (or Lasaline) product expands a laser beam in one direction by an optical method to form a line that can be used as a reference line. They have also developed and manufactured a laser extinction-type particulate monitor. This device detects particulate matter in air and can give an accu-