

MILTECH ENERGY SERVICES, INC. – ANALYTICAL SERVICES DIVISION

MILTECH ANALYTICAL SERVICES IS CENTRALLY LOCATED...

Follow Route 70 to New Stanton.

From the east bound lane:

Take Exit 57 (New Stanton Exit).
Turn right onto Center Avenue.
Turn right onto Pennsylvania Avenue.
Follow Pennsylvania Avenue 1/4 mile to the stop sign.
Turn left onto SR3089.
Follow SR3089 3/4 mile to SR3014.
Follow SR3014 1/4 mile to Hunker Lumber Road.
Follow Hunker Lumber Road 1/4 mile to the Miltech Analytical Division.

From the west bound lane:

Take Exit 57A (Hunker Exit).
Follow SR3089 1 mile to SR3014.
Turn right onto SR3014.
Follow SR3014 1/4 mile to Hunker Lumber Road.
Follow Hunker Lumber Road 1/4 mile to the Miltech Analytical Division.



Mailing Address: 11A Hunker Lumber Rd,
Hunker, PA 15639
Telephone: 724-925-1460
Fax: 724-925-1461
Contact: William H. (Bill) Smith
e-mail: lab@miltechenergy.com

Water Testing Services Offered:

- Standard Water Sampling and Analyses
- Low Flow Well Purging and Sampling



ANALYTICAL DIVISION

WATER SAMPLING AND ANALYSIS

The Miltech Energy Services Analytical Division provides a complete line of field sampling and laboratory analyses to meet most water monitoring needs. Groundwater and Surface water samples are collected from wells, streams, ponds, springs or seeps. Samples are collected and preserved according to the analytical parameters that are to be run. Field data, such as temperature, depth, flow, field pH and field conductivity are recorded at collection. Our laboratory utilizes state of the art equipment to provide accurate analysis and fast turnaround times on such parameters as pH, Acidity, Alkalinity, Sulfate Conductivity, Iron, Manganese, Aluminum and Solids. A vast array of other organic or inorganic parameters may also be studied. Recognized industry standards such as ASTM, Standard Methods and EPA SW-846 are used for sample collection and analysis of water monitoring samples.



ANALYTICAL DIVISION

LOW FLOW WATER SAMPLING

During the 1990's procedures and equipment for low-flow water sampling were being developed and this method of well sampling was gaining wide acceptance by regulatory agencies. As a result, in 2002, ASTM released their Designation D6771-02 Standard Practice for Low-Flow Purging and Sampling for Wells and Devices used for Ground-Water Quality Investigations.

Using this new ASTM practice as a base, Miltech Energy Services, Inc. has developed its own equipment and procedures for low-flow purging and sampling of groundwater wells associated with solid waste and ash disposal sites. Miltech has been implementing this low-flow approach at CFB coal refuse recovery and ash disposal sites since 2003.

An adjustable volume centrifugal pump is normally used for both purging and sampling. In cases where well in-flow is very low (less than about 0.1 L/min) diaphragm pumping is used.

The 8 steps taken in the Miltech low-flow water sampling procedure are:

- Step 1 Measure the standing water level in the well
- Step 2 Lower the pump into the well to a position at approximately the mid-point of the length of the well screen.
- Step 3 Power the pump using a 12 volt battery
- Step 4 Purge the well by extracting two well volumes
- Step 5 After purging adjust pump discharge to exactly match well inflow. This is done by throttling the pump discharge to hold well level constant as indicated on the emscope probe that has been inserted into the well.
- Step 6 Pump well for a fixed period of time while holding well level fixed. Measure volume, sample and field analyze for temperature, pH and conductivity.
- Step 7 Repeat Step 6 until ASTM stabilization parameters (pH \pm 0.2 pH units and conductance \pm 3% of reading) are met over each of three consecutive readings.
- Step 8 After stabilization collect three one-liter samples for analyses as follows: One sample is treated with nitric acid to fix metals in solution. A second sample is filtered in the field and treated with nitric acid to maintain dissolved metals in solution and the third one-liter sample remains as extracted from the well. The three samples are laboratory analyzed as follows:
 - Sample 1 – Metals
 - Sample 2 – Dissolved Metals
 - Sample 3 – pH, Acidity and Non-Metals

TESTING STANDARDS USED BY MILTECH

Standard Practice for Low-Flow Purging and Sampling for Wells and Devices for Ground Water Quality Investigations
Water Sampling and Analyses

ASTM	D6771-02
EPA	SW-846
ASTM Books	11-01 thru 11-05
Standard Methods	