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PURCHASING MEMORANDUM
GENERAL INFORMATION BULLETIN

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GROUPS: 05500 - FUEL OIL, HEATING
05600 - GASOLINE
05602 - DIESEL ENGINE FUEL

PLEASE ADDRESS INQUIRIES TO:
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SUBJECT: FUEL TESTING REQUIREMENTS

TO ALL STATE AGENCIES AND OTHERS AUTHORIZED TO USE STATE CONTRACTS:

THIS IS INTENDED FOR APPROPRIATE POWER PLANT PERSONNEL AND FUEL RECEIVING PERSONNEL. PLEASE RETAIN A COPY IN YOUR PROCUREMENT OFFICE.

The importance of certain specification and contract requirements cannot be overstated. Contract documents covering the above referenced commodity groups provide the detailed information to which contractors must adhere and users should check to ensure compliance. This is especially applicable to facilities involved in the purchase of fuel oil. Furthermore, the No. 6 fuel oil grade has a higher degree of difficulty in meeting the sulfur limitations. Therefore, it is essential that testing (especially for viscosity) be performed on deliveries of No. 6 fuel oil on a regular basis.

FREQUENCY AND TIMING OF TESTING

Tests should be conducted based on gallons delivered, frequency of delivery, and the number of deviations found. It is recommended that this be done frequently during high use periods, and perhaps as often as once monthly, to ensure proper conformance of all deliveries to the contract specifications, unless test results or boiler performance indicate more frequent tests are required.

FUEL OIL, HEATING, GASOLINE AND DIESEL ENGINE FUEL

SAMPLING GUIDELINES

Agencies receiving low sulfur, low pour 0.30% maximum sulfur fuel oil are cautioned against excessive preheating to eliminate vaporization and possible burner problems.

State agencies should sample the load and forward such samples for analysis to a certified testing laboratory such as.

Intertek USA
www.intertek.com
1-888-400-0084

FOI Laboratories
www.foilabs.com/services
1-360-546-3835

ALS Environmental - New York
www.alsglobal.com/
1-845-894-8544

ALL SAMPLES COLLECTED FOR TESTING SHOULD BE TAKEN FROM DELIVERY TRUCK AT TIME OF DELIVERY.

A sample taken from the storage tank may not be suitable and generally may not be representative of the product being delivered. In all cases, the method of sampling should be recorded along with all other data necessary to identify the delivery.

The sample sent to the lab should be representative of the entire load. If samples are taken from near the top, at the mid-point and near the bottom, is not available, an incremental sample may be collected as the transport is unloading.

Fuel oil delivered shall be subject to sampling and testing at the discretion of the purchasing agency and/or the NYSPRO.

The samples shall be collected in accordance with ASTM D4057-06 (2012), or latest revision thereof. This standard is available from American Society for Testing and Materials. "The usual method of sampling is to take three specimens from the delivery vehicle; one near the top of the material, the second from the middle portion and the third from near the bottom. These three specimens are then combined to make one composite representative sample of the material. The normal sampling device is a normally closed bomb shaped device (called a Bacon Bomb sample) that may be lowered into position and then opened by the operator to fill with sample. This process is repeated until all three specimens are retrieved and combined to form a single composite sample".

Agencies are strongly encouraged to obtain and maintain samples of all fuel oil deliveries for a period of time necessary to insure that the fuel oil is in compliance with specifications.

Prior to the initial delivery the contractor should verify water and sediment levels in storage tanks. These levels shall be reported in writing for any tanks which require attention.

Contractor assumes complete responsibility for any product water and sediment problems that occur after initial delivery.

Product samples taken at the agency's tank may be considered representative of a disputed fuel oil delivery, when the contractor has delivered one or more consecutive loads of fuel oil to the tank's content which is being disputed.

Additionally, when the purchasing agency's documentation indicates that previously delivered fuel oil is less than five percent of the tank's fuel oil volume relative to any disputed delivery, and the previously delivered fuel oil performed and/or tested satisfactorily, then a sample taken from the agency's tank may be considered representative of the fuel oil delivered.

The operator of the transporting vehicle should be aware of the fact that the load is being sampled.

FUEL OIL, HEATING, GASOLINE AND DIESEL ENGINE FUEL

Proper identification of the sample taken should be provided with the sample when sent to the laboratory for analysis, including date of sampling and name of contractor.

The following table shows tests appropriate for each heating fuel type. Request appropriate test from the laboratory with copies of the test report to the sampling agency and to NYSPRO. Upon being notified of inferior deliveries, by copy of the test report, will take appropriate action.

SAMPLE TEST REPORT

Test/Method	Kerosene	#1	#2	#4	#6
Gravity, °API by ASTM D1298-12B, D287-12B, or D4052-11	X	X	X	X	X
Flash Point, °F by ASTM D93-12 as appropriate	X	X	X	X	X
Pour Point, °F by ASTM D97-12		X	X	X	
Water & Sediment, % Volume by ASTM D1796, D473-07 (2012)	X	X	X	X	X
Viscosity, Kinematic by D445-12	X	X	X	X	X
Carbon Residue, % (w/w) by ASTM D189-06 (2010) e1		X	X	X	X
Ash. % (w/w) by ASTM D482-12		X	X	X	X
Copper Strip Corrosion by ASTM D130-12	X	X	X		
Sulfur, % (w/w) by ASTM D129-11	X	X	X	X	X
BTU per gallon by ASTM D240-09	X	X	X	X	X
Cloud Point, °F by ASTM D5772-10		X	X		

Agencies should maintain proper preventative maintenance and operational procedures for the storage and handling system to remove accumulations of sludge (water, rust scale, fuel sediment, etc.).

ADDITIONAL TESTING SPECIFICATIONS & REQUIREMENTS

TANK WAGON DELIVERY:

Tank wagons used for delivery of heating oils must be equipped with a meter with ticket printer and provide a printed receipt showing the amount of oil delivered. Delivery ticket shall be locked in the printer from the start of delivery until the delivery is completed and recorded. The meter should show zero gallons when pumping is started. Fuel Oil No. 2 shall be delivered by tanks wagon used exclusively for the transporting of that product.

MOTOR TRANSPORT DELIVERY:

Supplementing Article 49 of Appendix B (pre June 2014) or Article 33 of Appendix B (June 2014), General Specifications for Procurement Contracts, agencies are instructed to carefully monitor all deliveries. Monitoring procedures shall include the use of fuel metering systems when feasible. Such systems shall be used, maintained and recalibrated in accordance with the manufacturer's recommendations and/or annually, whichever is sooner. Contractors or their representatives will be allowed the opportunity to verify the accuracy of agency measuring systems on a regular basis and/or when discrepancies are indicated.

Tolerances of up to 1/3 of 1% of the total volume by delivery may be considered acceptable when delivery ticket varies from agency meter reading. In the event of discrepancies, the agency will adjust delivered volume to agency metered quantity, less the acceptable tolerance and revise resulting invoice accordingly. Agencies will make every reasonable effort to resolve discrepancies directly with the contractor. However, all such discrepancies will be reported in written form to NYSPRO. Agencies should document all volume discrepancies and notify the contractor, in writing, of all adjustments.

Motor transports for the delivery of heating oil's not equipped with meters shall have each compartment accurately gauged as to shell capacity and sealed by the State Bureau of Weights and Measures or the local authority having jurisdiction. Capacity of each compartment should be available for agency verification and payment should not be made for any quantities in excess of this capacity. Compartments shall be filled to the gauge mark with vehicle parked on a level surface. Agency personnel should board the vehicle before unloading to check the level of the fuel in the compartment and again after unloading to ensure that the compartment is empty or check the level of oil remaining. Fuel Oil No. 2 shall be delivered by motor transport used exclusively for the transporting of that product.

GRADES NOS. 4 AND 6 (RESIDUAL FUELS):

All deliveries of heated Fuel Oil Nos. 4 and 6 must be accompanied by a statement or indication made on the delivery ticket and invoice showing A.P.I. Gravity corrected to 60°F, the volume and temperature of the oil at time of loading, the applicable correction factor, and the volume corrected to 60°F.

True volume may then be ascertained by using the abridged tables listed as ASTM Table 6B, Volume Correction Tables and as authorized in accordance with ASTM D1250-08.

To provide more efficient control of the quantity of the heavy fuel oils purchased by New York State, it is recommended that using agencies not equipped with temperature compensating meters procure an approved ASTM temperature measuring device to properly measure temperature at time of delivery in relation to temperature listed by contractor at time of loading.

Any deviation other than a reasonable tolerance should be noted immediately and a corrected delivery ticket should then be requested from the vendor.

To preclude errors in delivery quantities and incorrect billings, it is essential that the basic procedures outlined above be closely followed.

Equipment required for testing temperature may be obtained from laboratory supplies vendors.

Aside from the taking of samples from delivery trucks for testing on a regular basis, it is strongly recommended that using agencies make certain that receiving personnel are available at the time of delivery to observe and monitor the entire delivery.

FUEL OIL, HEATING, GASOLINE AND DIESEL ENGINE FUEL

It has been observed that fuel suppliers may be bypassing certain safeguards designed to prevent spills and overfills, especially following installations of new fueling systems. Many times this is due to the failure of the delivery person to place a properly fitted nozzle equipped for a hard connection to the fill pipe. Some examples of the inappropriate and unsafe methods used have included the following:

- Shoving a "drop tube" down the fill preventing the plate from properly closing;
- Taking a pipe wrench and removing the entire "guillotine" assembly at the fill;
- Attempting to pry or saw off the crossbar in order to place the improper type of nozzle into the fill;
- Filling the tank through the vent.

Each of these scenarios presents a possible spill, damage the systems, and is potentially hazardous. Also, these may result in the voiding of the warranty on the affected portion of the system.

Consequently, it is essential that agency staff is present during the tank fills to make certain fuel deliveries are being properly made.

Should you have any questions concerning these matters, please contact the appropriate personnel as listed above.