

Performance-based Work Statement

ACCESS-II Rapid Response Jet Fuel Sample Analysis

1. Introduction

The National Aeronautics and Space Administration (NASA) Fixed Wing Project has been tasked with flight research into the potential use of environmentally cleaner alternative fuels for use by commercial transport aircraft. The final flight experiment in this program will be the second Alternative Fuels Effects on Contrails and Cruise Emissions Flight Experiment (ACCESS-II). In support of ACCESS-II, the NASA Armstrong Flight Research Center (AFRC) has a requirement for laboratory testing of a number of samples of jet fuels on a rapid response basis to specified ASTM International test methods. NASA personnel will deliver these fuel samples directly to the laboratory in a UN approved sample container and, in response, require analysis reports to be delivered electronically within 36 hours of receipt by the laboratory.

2. SCOPE

Two separate sets of fuel sample analyses are defined. Complete fuel sample analyses (identified as Analysis—Option A, below) of up to ten samples are required. In addition, abbreviated fuel analyses (identified as Analysis—Option B, below) of up to seven samples are required. NASA personnel will specify whether a particular sample should be tested to Option A or Option B at the time of delivery to the laboratory.

3. REQUIREMENTS

The vendor shall designate a single laboratory location to which NASA personnel will deliver fuel samples for analysis. The designated laboratory location shall be no more than 100 road miles and no more than 2 hours driving time from NASA AFRC's Science Aircraft Integration Facility (SAIF), Palmdale, California under normal driving conditions. Either Google Maps™ or MapQuest™ shall be used to demonstrate that the designated location meets these requirements. The vendor shall accept NASA fuel sample deliveries at the designated location any time between 8:00 AM and 5:00 PM, Monday through Friday, excepting only U.S. National Holidays.

The vendor shall perform either a complete analysis or an abbreviated analysis on each sample received as specified by NASA at the time of delivery. If a complete analysis is specified, all sample properties listed on the Analysis—Option A Table shall be tested using the corresponding specified ASTM International test method. If an abbreviated analysis is

specified, all sample properties listed on the Analysis—Option B Table shall be tested using the corresponding specified ASTM International test method.

Analysis Reports for each sample shall be emailed to all NASA personnel listed in the Analysis Report Recipients Table, below, within 36 hours of receipt of the sample by the laboratory.

Analysis—Option A

SAMPLE PROPERTY	TEST METHOD
ACIDITY	ASTMD3242
AROMATICS (FIA)	ASTMD1319
SULFUR MERCAPTAN	ASTMD3227
SULFUR CONTENT (XRAY)	ASTMD4294
SULFUR CONTENT (COMBUSTION)	ASTMD5453
DISTILLATION (ATM)	ASTMD86
FLASH POINT	ASTMD56
DENSITY @ 15°C	ASTMD4052
FREEZING POINT	ASTMD2386
VISCOSITY @ -20°C	ASTMD445
NET HEAT OF COMBUSTION (CALC)	ASTMD3338
SMOKE POINT	ASTMD1322
NAPHTHALENES	ASTMD1840
COPPER STRIP CORROSION	ASTMD130
THERMAL STABILITY (JFTOT)	ASTMD3241
EXISTANT GUM	ASTMD381
MICROSPAROMETER (MSEP)	ASTMD3948
ELECTRICAL CONDUCTIVITY	ASTMD2624
LUBRICITY	ASTMD5001

Analysis—Option B

SAMPLE PROPERTY	TEST METHOD
AROMATICS (FIA)	ASTMD1319
SULFUR CONTENT (XRAY)	ASTMD4294
SULFUR CONTENT (COMBUSTION)	ASTMD5453
DISTILLATION (ATM)	ASTMD86
DENSITY @ 15°C	ASTMD4052
VISCOSITY @ -20°C	ASTMD445
NET HEAT OF COMBUSTION (CALC)	ASTMD3338
NAPHTHALENES	ASTMD1840

Analysis Report Recipients

RECIPIENT	EMAIL ADDRESS
Angela Surgenor	
Jennifer Klettinger	
Bruce Anderson	
Gary Martin	