

Environmental Standard Operating Procedure			
Originating Office: MCAS Miramar Environmental Management Department	Revision: Original	Prepared By: Environmental Management Department	Approved By: William Moog
File Name: AFA-ESOP	Effective Date: 22 June 07	Document Owner: EMD	

Title: Aviation Fuel Analysis

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide environmental guidelines for the procedures used in performing sampling and analysis of aviation fuel.

2.0 APPLICATION

This guidance applies to those individuals who perform sampling, analysis, fuel transfer, and waste disposal activities associated with the practice of aviation fuels analysis (AFA) onboard Marine Corps Air Station (MCAS) Miramar.

3.0 REFERENCES

- 29 CFR 1910 (Code of Federal Regulations)
- 40 CFR 262
- MCO P5090.2A (USMC Environmental Compliance and Protection Manual)

4.0 APPLICATION

4.1 Discussion:

Aircraft fuels must meet certain minimum performance standards to be used in aircraft at the Marine Corps Air Station (MCAS) Miramar. Routine sampling and analysis of aviation fuels from the aircraft refueling trucks ensures that these performance criteria are met. These procedures are intended to minimize the potential environmental impacts that can occur during sampling, analysis, fuel transfer, and waste disposal activities, including leaks and spills.

Once per week a single fuel sample is collected from each of the six fuel delivery trucks. Sampling protocols require the fuel to be circulated in the fuel delivery truck tank for three to four minutes, approximately equivalent to 1,000 gallons, before collecting a sample. Each sample will be collected in a clear 800 milliliter (ml) glass jar and transported to the fuels analysis laboratory where the samples will be analyzed for sediment and water content. Aviation fuel is typically composed of JP-8, with a small percentage of JP-5 in the mixture. JP-8 has a higher flash point than JP-5 and is a designated hazardous material.

To analyze the fuel, the sample will be drained into the sample port on the fuel analyzer until no free flowing

liquids remain in the sample jar. After the sample is analyzed, the fuel will flow into a 5-gallon chemically compatible waste container. When the waste container is 80% to 90% full it will be transferred to petroleum, oils, and lubricants (POL) container in a hazardous waste (HW) Satellite Accumulation Area. The sample jar will be washed with Alconox or Liquinox, triple-rinsed with distilled water, and air-dried prior to re-use.

4.2 Operational Controls:

The following procedures apply:

1. MSDSs (Material Data Safety Sheets) for aviation fuels (JP-5, JP-8, etc.) and lab chemicals must be available and current.
2. Conduct new hire orientation and initial training.
3. Maintain required current training and certifications for all staffs.
4. All shop personnel must wear appropriate Protective Personal Equipment (PPE) including eye protection, face shields, chemical-resistant clothing, gloves, and steel-toed boots. Ensure that hearing protection (e.g., ear plugs) are available and worn when collecting samples outside of the fuel analysis lab.
5. Keep a fully stocked Spill Kit nearby in a designated location known to all shop personnel.
6. Keep fire extinguishers nearby in a designated location known to all shop personnel
7. Test the fire alarm located inside the fuels analysis lab on a regular basis.
8. Ensure that all appropriate signage is placed in the fuel analysis lab including: Emergency Phone Numbers, Fire Bill, "Empty the Waste Sample Container" every day, Emergency Eye Wash location, Fire Alarm, and First Aid Kit.
9. Ensure that the fume hood is on when analyzing fuel.
10. Drain the sample completely into the sample port on the fuel analyzer.
11. Wash sample jar with Alconox or Liquinox, triple rinse with distilled water, and air dry prior to re-use.
12. Properly label all containers completely and legibly with the following information: label with the words "Hazardous Waste" on outside of container, accumulation start date, and Environmental Protection Agency (EPA) HW number (e.g. D003).
13. Ensure appropriate 5-gallon chemically compatible waste container is used to collect fuel after analysis is complete. Use only transfer containers equipped with lids. Check containers for deterioration and structural integrity.
14. Keep containers closed except when HW is being added or removed.
15. Do not overfill containers. Ensure 5-gallon waste container is only filled to the 80%-90% level.

16. Ensure that the waste sample collection container is placed in a secondary containment vessel.
17. Transfer full 5-gallon container to a POL container for transfer to the HW Satellite Accumulation Area.
18. Contact the Environmental Compliance Coordinator (ECC) when HW containers are full for transfer to the HW Satellite Accumulation Area.
19. Maintain a HW Log, which includes container type, accumulation start date, accumulation end date, date container taken to HW Satellite Accumulation Area, HW Manifest number.
20. Clean up all spills immediately upon identification and report to the proper authority.
21. Place used rags in approved containers for recycling. Contact ECC when used rag containers are full and obtain an empty container.
22. Ensure that spills are recorded in a Spill Log Book detailing the spill date, time, product spilled, quantity, location, cleanup actions taken and the name of the person reporting the spill.
23. Ensure that containers that previously held HW are properly marked with word EMPTY and the date it was emptied.
24. Ensure that warning signs are clearly visible and legible from a distance of 25 feet in any direction.
24. If there are any specific situations or other concerns not addressed by this procedure, contact at the EMD at (858) 577-1108.

4.3 Documentation and Record Keeping:

The following records must be maintained for hazardous materials and equipment:

1. MSDS for the fuels analyzed and all lab chemicals.
2. Personnel Training and Certification records.
3. Samples collected and analytical results (API gravity, water, sediment, flashpoint, and Fuel System Icing Inhibitor (FSII) content).
4. HW Log Book
5. Spill Log Book.
6. Site Inspection Records

4.4 Training:

All affected personnel must be trained in this SOP and the following:

1. Hazard Communication (HazCom) Training.
2. 40-hour Hazardous Waste Operations and Emergency Response (HazWOPER) Training
3. 8-hour HazWOPER Refresher Training
4. General Environmental Awareness Training.
5. Initial on-the-job (OJT) training.

4.5 Emergency Preparedness and Response Procedures:

Refer to Marine Corps Order (MCO) P5090.2A, Subject: Oil/Hazardous Substance Spills (OHSS) and Spill Prevention Containment & Countermeasures (SPCC) for MCAS Miramar.

4.6 Inspection and Corrective Action:

The ECC shall designate personnel to perform inspections. The ECC shall ensure deficiencies noted during the inspections are corrected immediately. Actions taken to correct each deficiency shall be recorded on the inspection sheet.

Aviation Fuel Analysis – Inspection Checklist	
Date:	Time:
Installation:	Work Center:
Inspector’s Name:	Signature:

Inspection Items	Yes	No	Comments
1. Are MSDSs for aviation fuels and lab chemicals available and current? <i>(29 CFR 1910)</i>			
2. Are training and certification records maintained and available for up to three years? <i>[MCO P5090.2A 9104 (k)(5)]</i>			
3. Is a fully stocked Spill Kits kept nearby in a location known to all personnel? <i>(29 CFR 1910, 40 CFR)</i>			
4. Are fire extinguishers kept nearby (in a known			

location) and regularly inspected? (29 CFR 1910)			
5. Is proper PPE worn when collecting and analyzing fuels and while working in the lab? (29 CFR 1910)			
6. Are the fire alarms in the Fuels Analysis Lab tested on a regular basis? (29 CFR 1910)			
7. Are all appropriate signs present indicating what hazards are present in the lab? (29 CFR 1910)			
8. Are warning signs clearly visible and legible from 25 feet in any direction? (29 CFR 1910)			
9. Is the fume hood working properly to ventilate the lab (for worker safety)? (29 CFR 1910)			
10. Are only compatible HW containers used? With Lids? Structural integrity checked? (40 CFR 262)			
11. Are all containers properly labeled with words "Hazardous Waste", accumulation start date, and EPA HW number? [40 CFR 262.34 (a)(3), (c)(1)(ii)]			
12. Is there secondary containment around the waste sample container (to catch spills and leaking waste containers)? (29 CFR 1910, 40 CFR)			
13. Are containers closed at all times except when HW is added or removed? (29 CFR 1910, 40 CFR)			
14. Are containers only filled to the 80-90% level? (29 CFR 1910)			
15. Is the HWC contacted when containers are full for transfer? (MCO P5090.2A)			
16. Is a HW Log maintained with container type, accumulation start and end dates, date container taken to HW Satellite Accumulation Area, and HW Manifest number? (40 CFR Part 262)			
17. Are spills properly cleaned when identified? (29 CFR 1910, 40 CFR)			
17. Are spills recorded in a spill log book with the spill date, time, product spilled, quantity, location, cleanup			

action, and person reporting spill? (29 CFR 1910, 40 CFR)			
18. Are containers that previously held HW marked EMPTY? (29 CFR 1910, 40 CFR)			
19. Are inspection records maintained and available for inspection? (MCO P5090.2A 9104.1(k)(5)- inspection only)			

ADDITIONAL COMMENTS:

CORRECTIVE ACTION TAKEN:

Environmental Compliance Coordinator

Name: _____

Signature: _____

Date: _____

