

R02606



August 12, 1994
Proposal P94-080.09

Mr. Roger Bastien
National Airmotive Corporation
7200 Lockheed Street
Oakland, California 94621-4504

Re: Workplan for assessment of soil and groundwater quality, gray water discharge area

Dear Mr. Bastien:

EMCON Associates (EMCON) is pleased to present this workplan for assessing soil and groundwater quality to National Airmotive Corporation (NAC). The workplan specifically addresses an area where "gray water" was discharged during jet engine testing at the NAC facility at 7200 Lockheed Street, Oakland, California. The workplan is based on information obtained from NAC, and on analytical results from sampling conducted by the Alameda County Hazardous Materials Unit (ACHMU).

BACKGROUND

NAC used the area shown in Figure 1 for jet engine testing from approximately the late 1960s. During that time, gray water from engine cleaning activities was discharged to an oil/water separator and then into an unlined storm culvert along the west side of the site. This practice was discontinued in 1992. On May 12, 1994, the ACHMU collected surface soil samples from the area west of the testing facility. Figure 1 shows the locations where samples S-1 through S-9 were collected. After collecting the samples, ACHMU decided to analyze only six of the nine samples. Samples S-2, S-3, S-7, S-8, and S-9 were analyzed for total oil and grease (TOG) and sample S-4 was analyzed for metals (cadmium, chromium, copper, lead, nickel, and zinc). The samples were collected at depths between 0 and 0.5 foot.

The TOG analyses reported by the ACHMU are plotted in Figure 1. The TOG concentrations ranged between 0.1 and 15.1 percent. However, the TOG analysis is not specific for petroleum hydrocarbons and can include decaying organic matter and animal fats. EMCON recommends collecting additional soil and groundwater samples from this area and analyzing them for total recoverable petroleum hydrocarbons (TRPH) by U.S. Environmental Protection Agency (EPA) method 418.1. The TRPH analysis will detect motor oils, diesel, gasoline, and other petroleum hydrocarbons, including jet fuel, but will screen out the decaying organic matter and animal fats. The additional soil and

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groundwater sampling is necessary to conclusively determine whether there is petroleum-hydrocarbon contamination in the area west of the test facility.

The metals analyses on sample S-4 were all below the total threshold limit concentrations (TTLCs). Lead (at 94 parts per million) was the only metal in sample S-4 that was above ten times the soluble threshold limit concentration. Based on these metals results, EMCON does not propose any additional sampling for metals analyses at this time.

SCOPE OF WORK

EMCON proposes to collect soil and groundwater samples at the five locations on the site (Figure 1), which were previously sampled by ACHMU and found to contain TOG. The samples will be collected with hollow-stem auger drilling equipment, without installing permanent groundwater monitoring wells. The following tasks describe the procedures that will be used to assess the condition of soil and groundwater in the vicinity of the gray water discharge.

The borings will be located outside of the fenced area leased by NAC. EMCON understands that NAC will obtain access permission for drilling at this location.

Task 1. Prefield Activities

EMCON will schedule a driller, obtain the necessary sampling materials, and obtain any necessary permits, including a drilling permit from the Alameda Flood Control District (AFCD). The AFCD requires that it be notified at least 5 days before the field investigation is conducted. EMCON will prepare a brief health and safety plan, which will be followed during the drilling and sampling activities (Task 2). EMCON will contract a utility locating service to clear the locations of underground utilities.

Task 2. Collect Soil and Groundwater Samples

EMCON will drill five borings at the approximate locations shown in Figure 1, using 6-inch-diameter hollow-stem augers. The soils will be logged by an EMCON geologist under the direct supervision of a California-registered geologist according to the Unified Soil Classification System. Soil samples will be scanned in the field with a photo-ionization detector (PID) to assess the relative concentration of volatile hydrocarbons present in each sample. Two soil samples will be collected for analyses from each boring. One surface sample (at about 0 to 0.5 foot) will be collected to verify the results obtained by ACHMU. The second sample will be collected between 2.0 feet below ground surface and groundwater which is anticipated to be at about 5 feet. The second

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sample will be selected from an interval where the maximum contamination is likely, and will be based on PID readings and visual observations.

After the soil samples are collected, the boring will be advanced into the groundwater so that water samples can be collected. Grab groundwater samples will be collected from each boring with a Teflon® bailer. The bailer will be checked for floating product. If floating product greater than 1/8 inch thick is observed, the sample will not be submitted to the laboratory for analysis and the measured thickness of floating product will be recorded on the boring logs.

All sampling equipment will be steam-cleaned between each use to prevent cross-contamination. The borings will be backfilled with bentonite-cement grout. The drill cuttings will be stored in drums on site. NAC will be responsible for disposing of the drilling cuttings and steam-cleaning water. EMCON will assist NAC in determining appropriate disposal options based on the results of the soil and groundwater analyses. The cost estimate does not include charges for disposal of the drill cuttings and purge water because we cannot determine the appropriate disposal option at this time.

Task 3. Analyze Samples

Ten soil samples and a maximum of five groundwater samples (those not containing floating product) will be submitted to Columbia Analytical Services (CAS), a state-certified laboratory. The samples will be analyzed for TRPH by EPA method 418.1.

Task 4. Meeting

After receiving the laboratory analyses, EMCON will meet with NAC to discuss the results and interpret the data. The discussion will focus on options for further work, if any is required.

Task 5. Prepare Report

EMCON will prepare a report detailing the findings of the investigation. The report will include

- Figures showing the soil and groundwater sampling locations
- Boring logs
- Certified analytical reports

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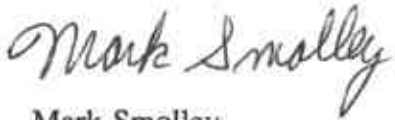
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- Interpretation of data
- Conclusions
- Recommendations for further work, if necessary

If you have questions, please call.

Sincerely,

EMCON Associates

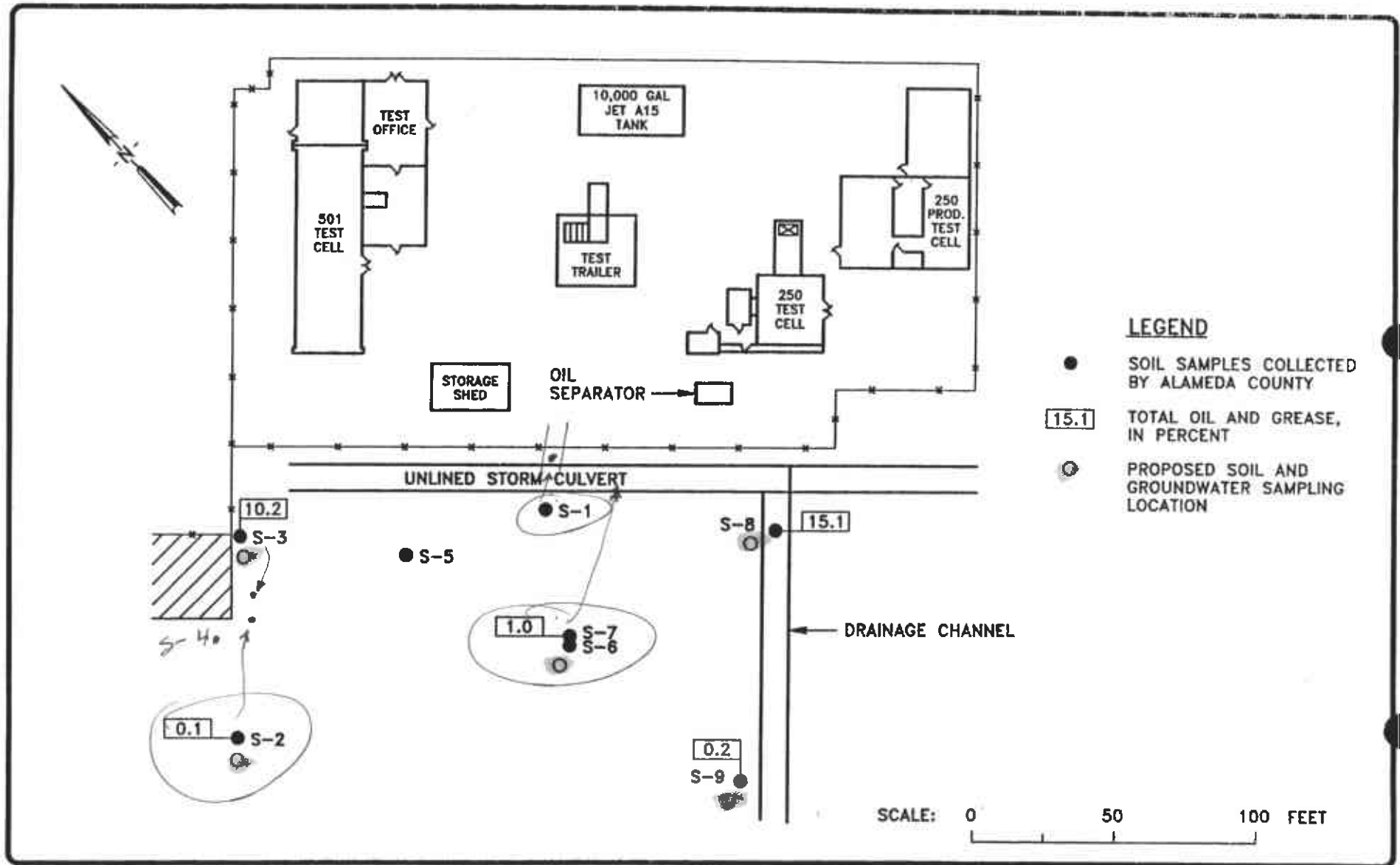


Mark Smolley
Project Manager



Douglas A. Liddie
Vice President

Attachments: Figure 1 - Proposed Sampling Locations



NATIONAL AIRMOTIVE CORPORATION
 7200 LOCKHEED STREET
 SOIL AND GROUNDWATER CHARACTERIZATION
 OAKLAND, CALIFORNIA

"GREY WATER AREA" SAMPLING LOCATIONS

FIGURE
1
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