STATE OF ALASKA

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CONTAMINATED SITES PROGRAM

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File No. 740.38.011

November 21, 2005

Mr. Scott Berglund
Federal Aviation Administration
222 West 7th Avenue, Building #14
Anchorage, Alaska 99513-7587

Re: **Site Closure Approved**: FAA Fort Yukon H Marker Facility, reckey: 1992310928504;
Site Closure Approved: FAA Fort Yukon RCAG, reckey: 1992300928402;
Site Closure Approved: FAA Fort Yukon VORTAC, reckey: 1991310120101; and
Site Closures Approved, No Further Remedial Actions Planned, and Requests for Additional Action: FAA Fort Yukon Quarters Facility, reckey: 1992310128401

Dear Mr. Berglund:

Over the past several years, the Federal Aviation Administration (FAA) has submitted requests for the closure of various contamination source areas and former tank sites at the FAA Fort Yukon facility. The Alaska Department of Environmental Conservation (department) has completed a review of the site file in order to respond to these past requests and to make determinations regarding additional environmental cleanup actions which need to occur at the facility. During this review, past reports and assessments were evaluated. According to our files, we have not previously responded to these requests for closure. We regret the lack of a timely response on these issues. The department's determinations regarding those requests are documented in this letter as well as those regarding other potential or actual source areas that have been investigated or cleaned up by FAA.

1. **H-Marker: (Site Closure Approved)** – This area consisted of H-Marker towers and the remnants of a burned building. Characterization was performed in 1996 and documented in the *Site Cleanup and Investigation Report*, dated February 1996. No visibly stained soil or stressed vegetation was noted. Three (3) soil samples were collected and analyzed for semi-volatile organics, volatile organics, and metals with all analytes below the default cleanup levels of 18 Alaska Administrative Code (AAC) 75.341, Table B1. The area was cleared and regraded. As no concentrations of potential contaminants of concern were found exceeding the default cleanup levels, the department determines that no further investigation is needed at the H-Marker location. This area is listed as a separate site on the department's Contaminated Sites' database and the status will be changed to 'closed'.

2. **Remote Central Air/Ground Communications (RCAG): (Site Closure Approved)** – At the RCAG, as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995, a 500-gallon diesel underground storage tank (UST) was removed in 1995. One-half (1/2) cubic yard of soil was removed and four (4) confirmation soil samples were collected. Analytical results showed that the concentrations of petroleum hydrocarbons in the samples were below the department's default cleanup levels. The department determines that no further action is required at the RCAG former tank area.

   In 1996, as documented in the *Site Cleanup and Investigation Report*, dated 1996, a 200 cubic yard bioremediation cell was created which included the soils from the 1995 fuel storage tank decommissioning activities and the 1996 cleanups. The soils were landspread on a liner to a depth of 15-inches and the area was fenced. Samples were collected in October 1998 and analytical results showed that the concentrations of petroleum hydrocarbons were below the department's default cleanup levels. The cell was dismantled in July 1999. The department determines that no further action is required for these soils. There are no remaining concerns at the RCAG. This area is listed as a separate site on the Contaminated Sites' database and the status will be changed to 'closed'.

3. **Very High Frequency Omnidirectional-Range Tactical Air Navigation Communication (VORTAC): (Site Closure Approved)** – Two (2) underground storage tanks were removed at the VORTAC area in 1995, as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995. Tank 9-A-1 was an inactive 500 gallon diesel tank that was removed along with one-third (1/3) cubic yard of petroleum-contaminated soil. Six (6) confirmation samples were collected and analytical results showed that the petroleum hydrocarbon concentrations were below the department's default cleanup levels. Tank 9-A-2 was an inactive 1100 gallon gasoline tank that was abandoned in place and five (5) cubic yards of petroleum-contaminated soil were removed. Two (2) confirmation samples were collected and analytical results showed that the petroleum hydrocarbon concentrations were below the department's default cleanup levels. The department determines that no further action is required at the VORTAC former tank areas. This area is listed as a separate site on the Contaminated Sites' database and the status will be changed to 'closed'.

4. **Quarters Facility** – There are many potential source areas in the Quarters Facility which have been divided up based upon location respective to different buildings.

   A. Building 300: Tanks 9-C-1, 9-C-2, 9-C-4: (Site Closure Approved) – Three (3) underground storage tanks were removed in 1995 as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995. Tank 9-C-1 was an inactive 500 gallon gasoline tank that was removed along with 12 cubic yards of petroleum-contaminated soil. Six (6) confirmation samples were collected and analytical results showed that the petroleum hydrocarbon concentrations were below

the department's default cleanup levels. Tank 9-C-2 was also an inactive 500 gallon gasoline tank that was removed along with five (5) cubic yards of petroleum-contaminated soil. Five (5) confirmation samples were collected and analytical results showed that the petroleum hydrocarbon concentrations were below the department's default cleanup levels. Tank 9-C-4 was an inactive 1000 gallon diesel tank that was removed along with 35 cubic yards of petroleum-contaminated soil. Six (6) confirmation samples were collected and analytical results showed that the petroleum hydrocarbon concentrations were below the department's default cleanup levels. In the *Site Cleanup and Investigation Report*, dated 1996, the removal of one (1) cubic yard of petroleum-contaminated soil is documented to have occurred on the north and west sides of the building. Four (4) confirmation samples were collected and analytical results showed that the petroleum hydrocarbon concentrations were below the department's default cleanup levels. In these areas, as the cleanup levels have been met, the department has determined that no further action is required at the Building 300 former tank areas. An entry will be made on the Contaminated Sites' database that these source areas are considered 'closed'.

Sump: (No Further Remedial Action Planned) – Inside Building 300 was a concrete sump with a dirt floor, essentially a dry well, which was used to dispose of various products. A sample collected in 1992 and documented in the *Environmental Compliance and Investigation Report*, dated 1992, showed elevated levels of total petroleum hydrocarbons. In the *Site Cleanup and Investigation Report*, dated 1996, field activities are described concerning the sump including the removal of an unspecified volume of soil (less than one drum) and the filling of the sump with concrete. Samples for volatile organic compounds and semi-volatile organic compounds were collected prior to filling with concrete, and no elevated level of any analyte was detected. It is unknown if there are elevated concentrations of petroleum hydrocarbons or metals in the soil below the sump; however the sump has been filled with concrete and the area around it is a concrete pad covered with a building which will prevent the infiltration of water from the surface and the migration of contamination. As the contamination is not currently accessible to any potential receptors, the department determines that no further remedial action is planned for the Building 300 Sump. If, in the future, the concrete floor is removed and the soil below and around the sump is accessible, the area should be characterized and any contamination managed in accordance with department regulations and guidance, as required by 18 Alaska Administrative Code (AAC) 75.325(i). This information should be incorporated into the FAA land records for the facility. Upon receipt of confirmation that this has been done, an entry will be made on the Contaminated Sites database to change the site status to "no further remedial action planned."

B. Building 601: Tank 9-C-5 – One (1) underground storage tank was removed in 1995 as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995. Tank 9-C-5 was a 1000 gallon diesel tank that was removed along with 25

cubic yards of petroleum-contaminated soil. Six (6) confirmation samples were collected and analytical results showed that the petroleum hydrocarbon concentrations were below the department's default cleanup levels. In the *Site Cleanup and Investigation Report*, dated 1996, the removal of one-half (1/2) cubic yard of petroleum-contaminated soil is documented to have occurred on the east side of the shed. Field screening results showed that the all of the petroleum hydrocarbons in that area were removed. In these areas, as the cleanup levels have been met, the department determines that no further action is required at the Building 601 former tank area. An entry will be made on the Contaminated Sites' database that these source areas are considered 'closed'.

Sump: (No Further Remedial Action Planned) – Inside Building 601 was a concrete sump with a concrete floor. The sump was plumbed to discharge to the subsurface outside the foundation of the building. A sample collected in 1992 and documented in the *Environmental Compliance and Investigation Report*, dated 1992, showed elevated levels of total petroleum hydrocarbons, benzene, toluene, xylenes, and polycyclic aromatic hydrocarbons. In the *Site Cleanup and Investigation Report*, dated 1996, field activities are described concerning the sump including the removal of an unspecified volume of soil and the filling of the sump with concrete. Samples for volatile organic compounds and semi-volatile organic compounds were collected prior to filling with concrete and no elevated level of any analyte was detected. It is unknown if there are elevated concentrations of petroleum hydrocarbons or metals in the soil below the sump, however the sump has been filled with concrete and the area around it is a concrete pad covered with a building which will prevent the infiltration of water from the surface and the migration of contamination. Samples were collected at the outfall and no elevated levels were detected. As the contamination is not currently accessible to any potential receptors, the department determines that no further remedial action is planned for the Building 601 Sump. If, in the future, the concrete floor is removed and the soil below and around the sump is accessible, the area should be characterized and any contamination managed in accordance with department regulations and guidance, as required by 18 AAC 75.325(i). This building is owned and operated by the City of Fort Yukon, so coordination with the government should occur to ensure that this requirement is met. This information should be incorporated into the City of Fort Yukon and/or Department of Natural Resources State land records. Upon receipt of confirmation that this has been done, an entry will be made on the Contaminated Sites database to change the site status to "no further remedial action planned."

C. Building 100: (Request for Additional Action) – One (1) underground storage tank was removed at this residence in 1995 as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995. Tank 9-C-7 was a 500 gallon heating oil tank that was removed along with 20 cubic yards of petroleum-contaminated soil. Five (5) confirmation samples were collected and analytical results showed that diesel-range organics concentrations up to 10,000 milligrams per kilogram

(mg/kg) remained in soil at the site. During the 1996 Remedial Investigation, three (3) borings were advanced, one (1) of which was completed as a monitoring well. Diesel-range organics was found at a concentration of 4000 mg/kg in soil and 3 milligrams per liter (mg/l) in the groundwater. Benzene was found at a concentration of 44 ug/l in the groundwater. At that time, it was estimated that 20-40 cubic yards of petroleum contaminated soil remained in place. An air sparging/vapor extraction system was installed in 1996 as described in the *Remedial System Installation and Monitoring Report*, dated 1996. The system operated for several years and multiple Operation and Monitoring Reports were drafted with sample results and system operation evaluations. The system was turned off in April 2001, however monitoring continued throughout 2001. In November 2001, diesel-range organics concentrations in the groundwater continued to exceed the cleanup levels with a sampling result of 140 mg/l, whereas the benzene concentrations were below the cleanup level. Soil samples collected in August 2001 contained diesel-range organics concentrations of 11,000 mg/kg present at 12 feet below ground surface. Modeling predicted that the diesel-range organics concentration in groundwater would not be below the cleanup level for another 60 years, as documented in the *Annual Report: Operation, Maintenance, and Monitoring of In Situ Bioremediation Systems Year 2001*, dated 2002. Additional actions are needed at this area due to the high concentrations of diesel-range organics in the soil and groundwater. The department is concerned with the possibility that the vapor intrusion pathway is potentially complete as this building is currently used as a residence. The department requests that FAA conduct modeling or soil gas or air monitoring to determine if vapor intrusion is a concern at this building. This work should occur as soon as possible and the timing of addressing the remaining soil and groundwater contamination can be discussed depending on the results of the vapor intrusion exposure pathway evaluation.

D. Building 101: (No Further Remedial Action Planned) – One (1) underground storage tank was removed at this residence in 1995 as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995. Tank 9-C-6 was an active 500 gallon diesel tank that was removed and 15 cubic yards of petroleum-contaminated soil were removed. Six (6) confirmation samples were collected and analytical results showed that diesel-range organics concentrations up to 560 mg/kg remained. The department determines that with the low concentrations remaining that there is likely only a very small volume of contaminated soil in place. The department determines that no further remedial action is planned for the Building 101 former tank area. If, in the future, the building is removed and the soil at the former tank area is accessible, the area should be characterized and any contamination managed in accordance with department regulations and guidance, as required by 18 AAC 75.325(i). This building is owned and operated by the City of Fort Yukon. This information should be incorporated into the City of Fort Yukon and/or Department of Natural Resources State land records. Upon receipt of confirmation that this has been done, an entry will be made on the Contaminated

Sites database to change the site status to "no further remedial action planned."

E. Building 103: (Request for Additional Action) – One (1) underground storage tank was removed at this residence in 1995 as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995. Tank 9-C-8 was an active 500 gallon diesel tank that was removed and 15 cubic yards of petroleum-contaminated soil were removed. Six (6) confirmation samples were collected and analytical results showed that diesel-range organics concentrations up to 3,000 mg/kg remained in place due to its proximity to the building. A soil boring advanced during the 1996 Remedial Investigation showed contamination present by field screening at seven (7) feet below ground surface, but an analytical result of non-detect for diesel-range organics at nine (9) feet below ground surface. A no further remedial action planned letter was issued by the department for this tank on November 27, 1995.

However, the department is concerned with the possibility that the vapor intrusion pathway is potentially complete as this building is currently used as a residence. The department requests that FAA conduct modeling or soil gas or air monitoring to determine if vapor intrusion is a concern at this building. This should occur as soon as possible in conjunction with the efforts for Buildings 100 and 102. The need for additional action in regards to the contamination remaining in the soil will be dependent on the results of this vapor intrusion exposure pathway evaluation.

F. Incinerator: (Request for Additional Action) – An incinerator was located near Building 103 and was fueled by a 500-gallon diesel underground storage tank. The tank, 9-C-3, was removed in 1995 along with one and one-half (1-1/2) cubic yards of petroleum-contaminated soil as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995. Four (4) confirmation samples were collected and analytical results showed that the petroleum hydrocarbon concentrations were below the department's default cleanup levels. In the *Site Cleanup and Investigation Report*, dated 1996, the removal of the incinerator and ash from within is documented to have occurred. Three (3) samples were collected and analytical results showed concentrations of arsenic and lead above the department's default cleanup levels. Dioxin was also present. The department requests that FAA conduct additional characterization in the soils around the incinerator in order to determine if metals and dioxins are present at unacceptable levels due to migrating ash.

G. Sewage Lagoon: (No Contamination Found) – There were no documented releases of contaminants to the sewage lagoon. However, anecdotal information provided by local residents required that investigation activities be conducted. Three (3) characterization samples were collected for metals, volatile organic compounds, and semi-volatile organic compounds and documented in the *Site Cleanup and Investigation Report*, dated 1996. No elevated concentrations of any potential contaminant of concern were noted, thus the department determines that no

additional investigation is needed at this time. The sewage lagoon was not listed as a source area on the Contaminated Sites' database; however a notation will be made on the database that an investigation was conducted and no contamination was found.

H. Building 102 (Yukon Flats Health Clinic): (Request for Additional Action) – Two (2) underground storage tanks were removed at this residence in 1995 as documented in the *Fuel Storage Tank Decommissioning Assessments*, dated 1995. Tank 9-C-10 was a 1000 gallon heating oil tank that was removed along with 30 cubic yards of petroleum-contaminated soil. Six (6) confirmation samples were collected and analytical results showed that diesel-range organics concentrations met the department's default cleanup levels. Tank 9-C-9 was a 500 gallon heating oil tank that was removed along with 15 cubic yards of petroleum-contaminated soil. Six (6) confirmation samples were collected and analytical results showed that diesel-range organics concentrations up to 22,000 mg/kg remained in place at nine (9) feet below ground surface. Three (3) soil borings were advanced during the 1996 Remedial Investigation and showed contamination present by field screening at seven (7) feet below ground surface, but an analytical result of 130 mg/kg for diesel-range organics at eight and one-half (8-1/2) feet below ground surface. One of these borings was converted to a monitoring well and the analytical results of the groundwater monitoring showed non-detect. A vapor extraction system was installed in 1996 as described in the *Remedial System Installation and Monitoring Report,* dated 1996. The monitoring well was not sampled during the operation of the system as no contamination was found prior to system installation, but samples were collected twice in 2001. Diesel-range organics were the only petroleum constituent detected with a concentration of 1.1 mg/l in September 2001, as documented in the *Annual Report: Operation, Maintenance, and Monitoring of In Situ Bioremediation Systems Year 2001*, dated 2002. The system was shut down in April 2001. Soil samples were also collected in 2001 with a highest concentration of diesel-range organics detected of 1500 mg/kg at nine (9) feet below ground surface. Soil contamination remains in place evidenced by analytical samples and there is the potential for groundwater contamination to exceed the cleanup levels. The department requests that FAA address the remaining petroleum hydrocarbons at this former tank location.

The department is concerned with the possibility that the vapor intrusion pathway is potentially complete as this building is currently used as a residence. The department requests that FAA conduct modeling or soil gas or air monitoring to determine if vapor intrusion is a concern at this building. This should occur as soon as possible and in conjunction with the efforts for Buildings 100 and 103.

The department has determined that site cleanup performed at specified areas above is complete. For those site where a no further remedial action planned designation has been or will be granted, pending receipt of documentation that residual contamination is included in the

appropriate land records, future management of any contaminated soil should be in accordance with 18 AAC 75.325(i). Please note that if in the future additional contamination in these areas is found to be present that may pose an unacceptable risk to human health, safety, welfare or the environment, it must be reported to the department and additional cleanup may be required.

Evaluation of the indoor air vapor intrusion exposure pathway at the sites noted above should occur as soon as possible to evaluate the potential risk to building occupants and determine the relative priority for future assessment or cleanup work. Therefore, the department requests submittal of a workplan to address this issue by February 1, 2006.

Our project manager recently provided to your staff a copy of the attached spreadsheet outlining areas that we believe require additional investigation or cleanup. We look forward to working with you to resolve these remaining issues at the FAA Fort Yukon site.

If you have any questions about this site, please do not hesitate to contact me at 269-7545 or Anne Marie Palmieri, of my staff, at 766-3184.

Sincerely,

John Halverson
Environmental Program Manager

cc: Anne Marie Palmieri, DEC-Haines
Vera James, City of Fort Yukon