FLINT HILLS RESOURCES®

North Pole Refinery
Flint Hills Resources Alaska, LLC.
1100 H & H Lane
North Pole, Alaska 99705
907.488.2741

CO-092-10 Certified Return Receipt # 7009 1410 0002 2822 1799

July 21, 2010

Mr. Brian Jackson
Alaska Department of Environmental Conservation
Spill Prevention and Response
610 University Avenue
Fairbanks, AK 99709-3643

Re: North Pole Refinery (NPR) Lab Sump Piping Failure Investigation Report

Dear Mr. Jackson:

By this letter and attachments, Flint Hills Resources Alaska, LLC (FHRA) is providing the interim report requested in your correspondence dated May 20, 2010, on the Lab Sump piping failure. The lab sump and related piping systems were inspected during the North Pole Refinery's May turnaround activity. This inspection consisted of hydrostatic testing of the system and a flexiprobe camera inspection. As a result of this inspection it was discovered that the piping systems associated with the lab sump had experienced a failure. There were no failures identified as part of the lab sump inspection. As the attached report indicates, the root cause of the piping failure was determined to be the gasket type used in the original piping design and installation. The engineering drawings state the use of neoprene gaskets in the piping connections which is not the correct application for hydrocarbon service. The drain systems were designed and installed in approximately 1985 prior to FHRA's ownership of the facility. See the attached original as built engineering drawings for more detailed information.

As requested in your letter, a "Root Cause Failure Analysis" (RCFA) and leak rate estimations were conducted by a 3rd Party Engineer, Industrial Engineering, LLC. The attached RCFA includes the most likely mechanism of failure, a list of chemicals of concern (COC), a conservative potential leak rate, based on the volume loss during the hydrostatic test for the lab sump drain piping and the description of the test conducted on the lab sump piping. The RCFA concludes that a total volume of the potential materials released to the environment cannot be accurately calculated. After review of the inspection files FHRA could not identify the occurrences of any previous inspections that had been performed on this system other than FHRA performing the inspection of the system the week of May 3, 2010 which is when the failure was identified.

As the areas of the drains that failed the testing are all located directly beneath the footprint of the lab, it is not feasible to sample soil in the immediate vicinity of the suspected areas. Therefore, FHR is proposing the installation temporary borings to sample groundwater in the immediate vicinity and down gradient of the lab building for the purpose of determining if a potential leak that may have resulted from the piping failure impacted groundwater. The temporary borings would be completed with a geoprobe or similar methods with the objective of providing a snap shot of groundwater quality for chemicals contained in the drains. A list of the chemicals to be tested in the groundwater will be developed based on the list of COCs provided with this report. FHR will provide in a separate report the proposed locations of the groundwater sampling points and the chemicals to be monitored in the groundwater for ADEC approval. Once has the final analysis report has been received FHR will forward the data to ADEC for review with a proposed resolution plan if necessary.

As a short term solution, the lab sump system piping was removed from service and a temporary piping system was installed. FHRA's thought at this time is that a longer term solution will be engineered at a later date.

Should you have any questions, please contact Daren Knowles at 907-490-6229.

Sincerely,

Daren Knowles
Environmental Health and Safety Manager
Flint Hills Resources Alaska, LLC

cc: Tom DeRuyter, SOSC/Fairbanks
Ann Farris, CS/Fairbanks

Enclosures: Chemicals in Lab Sump
Figure 118-2: Floor Plan
Figure M-1: Laboratory Expansion – Schedule, Specifications, Schematic
Figure M-2: Laboratory Expansion – Plumbing Plan
Figure 118-3: Lab Plumbing Layout
Figure D-10-M1001: 1985 Laboratory Expansion Plumbing Plan & Details
Figure 118-4: Plumbing Isometric Layout
Figure D-10-M1000: 1985 Laboratory Expansion Underground Piping Plan

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