



Minnesota Pollution Control Agency

May 31, 2006

Mr. Jack Curtis
Curtis Oil Company
4997 Miller Trunk Highway
Duluth, MN 55811

RE: Request For Additional Work
Site: Junction Food-n-Fuel, 5493 Miller Trunk Hwy, Hermantown, MN 55811
Site ID#: LEAK00003534

Dear Mr. Curtis:

The Minnesota Pollution Control Agency (MPCA) staff has reviewed the report titled, "Annual Monitoring Report", dated December 6, 2005. Based upon the information provided in the report, it has been determined that additional work is required at the above-referenced property.

Continue ground water monitoring and visual observation for petroleum sheens on surface water on a quarterly schedule and annual sampling of selected nearby water supply wells, including attempts to collect samples from PW4621, however, annual sampling of PW2 may be discontinued. Provided no petroleum contamination is detected, annual sampling of PWs 5492, 5497, 5506A and 5506B may be discontinued after 4 events have been completed but at least 2 sampling events must be completed at PW4621. Ground water samples must be analyzed for BTEX, MTBE and GRO. Samples collected from water wells must be analyzed for VOCs and GRO.

The LIF boring investigation identified one major shallower NAPL zone and one deeper NAPL zone while not providing complete delineation of NAPL extent. However, the LIF boring and other investigation and sampling data strongly suggest that significant contamination extends underneath the on-site building. Therefore, as previously requested, please collect a sub-slab soil gas sample from underneath the south half of the on-site building. Also as previously requested, collect indoor (and appropriate outdoor) air samples if indicated from the sub-slab sampling results. We also reiterate that you instruct your consultant to carefully review and follow MPCA Guidance Document 4.01a *Vapor Intrusion Assessment Performed During Site Investigations*. MPCA staff note that vapor intrusion assessment methods and procedures must be carefully documented.

$5/31 + 180 (6 \text{ months}) = 12.31.06$

Please submit an Annual Monitoring Report Guidance Document 4-08 documenting ground water monitoring, surface water observations, water well sampling, and vapor intrusion assessment results within 180 days of this letter. Inclusion of a cumulative and updated table documenting visual observations of surface water clearly corresponding to locations identifiable on the site map is suggested. In addition, the AMR should be amended to include any appropriate and applicable text, tables, figures and appendices from the Investigation Report Form Guidance Document 4-06 to document additional investigation activities.

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Although MPCA staff feel that all risks at the site should be investigated prior to making a comprehensive site management decision including corrective action, we agree that corrective action to specifically address surface water impacts is warranted, especially due to the observation of petroleum sheens on surface water despite continued fluctuations in dissolved concentrations above and below surface water standards at MW8. However, it is important to note that risks to nearby water wells and vapor intrusion risks have not been adequately evaluated yet and may require focused corrective action. Regarding remediation to address impacts to surface water, MPCA staff suggests that excavation of NAPL soils be considered. If the MPCA can be convinced that NAPL soils - which are the ultimate present source of contamination - are adequately identified and targeted for removal, and subsequent excavation shows successful removal of the majority of the NAPL soils, the MPCA has been willing to consider excavation as adequate risk reduction and may approve file closure once contaminated soil treatment and disposal has also been adequately documented.

The MPCA is now requiring detailed Pilot Test Work Plan and Pilot Test Results reports be submitted prior to MPCA approval to conduct the pilot testing and preparation of a detailed CAD report, respectively. Regarding the proposed air sparging and soil vapor extraction systems, submit a Pilot Test Work Plan report within 60 days of the date of this letter, however, do not proceed with pilot test implementation until approved by the MPCA.

Pilot testing must be done using a configuration (e.g., injection and extraction well design, flow rates, etc.) consistent with the conceptual design for the full-scale system and MPCA staff note that reducing dissolved contamination across the site to Minnesota Department of Health Risk Limits for drinking water may not only be an impractical site remediation goal, it may be unnecessary if demonstrated mass reduction and ultimate but timely achievement of surface water standards at compliance points is the goal. We reiterate our concern about the sparging radius of influence extending under the building (within presumed footings and foundation walls) where pressurization could occur causing serious vapor intrusion to the building and any final design will have to actively address this concern.

Among other background information, the following elements must be clearly and adequately discussed or documented in a Pilot Test Work Plan report in order for MPCA staff to provide necessary approval to proceed.

- Identification and three dimensional layout of the subsurface target zone (e.g., petroleum mass) including various phases of the contamination (e.g., absorbed NAPL, adsorbed to soil, dissolved in water, dissolved in air), geology and migration pathways. Also include a description of the processes by which the proposed technology will eliminate or remove contamination.
- Identification of the main mechanical elements of the pilot test including injection, extraction and or monitoring well design, wellhead modifications, and location; major equipment such as compressors and vacuum pumps; monitoring and measurement equipment, location and accuracy; sample collection locations and methods; analytical methods; etc.
- Identification of what specific data will be collected, how that data is relevant, how and when that data will be collected and how it will be documented and evaluated. This evaluation must consider clear and measurable site remediation goals (e.g., mass removal, compliance monitoring points)

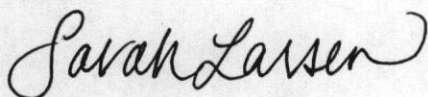
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and what measurable criteria will be used to demonstrate feasibility with feasibility defined as ability to reach measurable site remediation goals within an estimated specific time frame. This element must also discuss what specific criteria will be used to determine duration of the pilot test. Finally, this element must also clearly document how specific data will be used for full-scale design criteria.

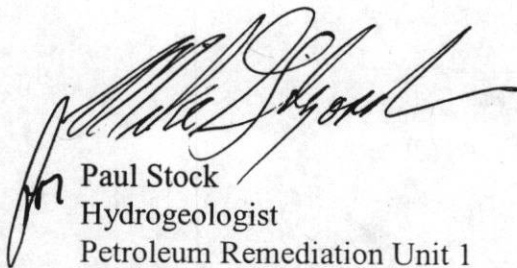
- Identification of the personnel who designed the pilot test, implemented the pilot test, and will evaluate the pilot test data and their detailed qualifications including training and experience directly related to the technology being pilot tested. The quality of the report will also be considered.
- Health and Safety issues.
- Schedule for completion of major pilot test milestones including submission of a Pilot Test Results Report.

Failure to meet deadlines provided in this letter in a timely manner may result in reductions in Petrofund reimbursement or lead to MPCA enforcement actions. If you have any questions regarding this letter, please contact Sarah Larsen at (651) 296-7824 or Paul Stock, staff hydrogeologist, at (218) 846-0473. If you are calling long distance, you may reach the MPCA by calling 1-800-657-3864.

Sincerely,



Sarah Larsen
Project Manager
Petroleum Remediation Unit 2
Petroleum & Closed Landfill Section
Remediation Division



Paul Stock
Hydrogeologist
Petroleum Remediation Unit 1
Petroleum & Closed Landfill Section
Remediation Division

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cc: Tim Jefferson, Twin Ports Testing