Manitoba Hydro

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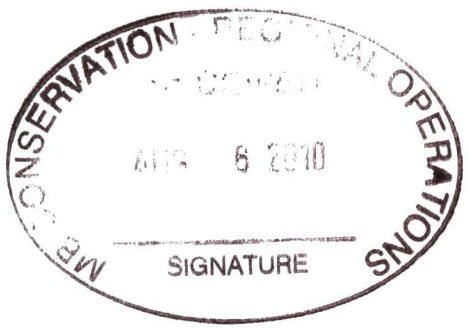
2010 08 03



Mr. Randy Webber
Regional Supervisor
Winnipeg District
Manitoba Conservation
123 Main Street, Suite 160
Winnipeg MB R3C 1A5

Dear Mr. Webber:

MANITOBA HYDRO SUTHERLAND AVENUE FACILITY: PARKING LOT INVESTIGATION

Manitoba Hydro is respectfully submitting a plan to investigate a small sink hole in the Sutherland Avenue Facility north parking lot. The objective is to delineate the extent of contamination, determine the cause of the sink hole, and to recommend parking lot repair procedures and remedial measures.

The sink hole was identified on July 6, 2010 by Manitoba Hydro personnel. The cavity was temporarily filled and covered with a steel plate for safety purposes.

Drilling is scheduled to occur from August 17 to approximately August 19, 2010. We invite you and your colleagues to view the investigation.

Please contact me at 360-3314 if you would like to discuss this study further.

Yours truly,

Robert Gill

Robert (Bob) Gill
Senior Environmental Specialist
Industrial Assessment & Approval Section
Environmental Licensing & Protection

BG/dw/2010 0803

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August 3, 2010

Mr. Bob Gill, M.N.R.M.
Senior Environmental Specialist
Manitoba Hydro
360 Portage Avenue
Winnipeg, Manitoba
R3C 0G8

Dear Mr. Gill:

Regarding: Parking Lot Sink Hole Investigation
Former Sutherland Avenue Manufactured Gas Plant Site, Winnipeg, Manitoba

Further to our recent discussion, AECOM Canada Ltd. (AECOM) is pleased to provide the following work plan for the investigation of the area of the Sutherland site proximate to the recently formed sink hole near the Annabella Street entrance to the north parking lot. Based on the information gathered during the July 7, 2010 site reconnaissance, liquid coal tar product is present in the approximate 100 mm diameter sink hole within 75 mm of the existing site grade. According to historical aerial photographs of the site, three (3) small buildings were formerly located near the eastern boundary of the property, in the vicinity of the sink hole. The exact uses of the buildings are unknown, but some historical site plans indicate that they were part of a loadout area for a series of rail lines that delivered materials to the site via a main line on Annabella Street.

The sink hole is located within 6 m of existing monitoring/vapour wells MW-50A and MW-50B and within 13 m of the reported location of former test pit TP-03, excavated to a depth of 0.9 m below grade by CH2M Hill Engineering Ltd. (CH2M Hill) during their October 1993 investigation of the site. It is located adjacent to a patch in the asphalt pavement, which may or may not be related to the excavation of test pit TP-03. The location of monitoring wells MW-50A/B and the reported location of test pit TP-03 are shown in Figure 01, attached. The soil stratigraphy observed by CH2M Hill in test pit TP-03 at the time of their investigation consisted of 0.1 m of asphalt, followed by 0.2 m of granular fill materials (sand and gravel) and 0.6 m of mixed fill materials. According to the soil log, the mixed fill contained black coke and some black tar-like liquid and possessed a strong naphthalene odour. The soil stratigraphy for the location of test hole/monitoring well MW-50A/B was noted by AECOM to be consistent with this description: 0.1 m asphalt, 0.2 m of granular fill materials and clay fill to a depth of 1.2 m. Native soil (topsoil, clay, silt, sand, etc.) was located directly below the fill materials. In contrast with test pit TP-03, coal tar contamination was observed in test hole MW-50A/B between 2.4 m and 10 m below grade.

Given the variability in contaminant distribution at the site, even within very small distances (such as that between test pit TP-03 and test hole MW-50A/B), investigation of the potential cause of the sink hole and the (localized) source of the coal tar is best approached through the completion of a series of closely spaced test holes (~ 2 m apart) around the hole, with additional test holes completed within the footprint of the former loadout area. It is possible that voids are present in the soil beneath the former rail buildings (as a result of the removal of the foundations, etc.), thus serving as a collection point for free product. Initially, we propose to complete seven (7) test holes, using 200 mm hollow stem augers and split spoon samplers to provide some level of assurance that the soil will be minimally disturbed/compressed during drilling. This will aid us in identifying any permeable (sand and/or silt) layers within the native clay beneath the site that may serve as preferred pathways for contaminant migration. The split spoons will be decontaminated with water and alconox after each sample is retrieved, and the augers will be pressure washed between test holes to prevent cross-contamination or the soil. All water used during the drilling investigation will be barrelled pending pick up and disposal by A-1 Environmental Services. Soil cuttings will be placed in mega-sacks and properly disposed of, in accordance with Provincial regulations, once soil analytical data has been received from ALS Laboratories in Winnipeg, Manitoba.

We have allowed for the installation of up to three (3) monitoring wells during the investigation, for those test holes in which it may be possible to collect free product for further characterization. Characterization of the product will aid us in determining if its chemical composition possibly contributes to the degradation of asphalt so that we can best determine how to prepare the parking lot for repair now and in the future, if necessary. Test holes not completed as monitoring wells will be backfilled and sealed with bentonite to inhibit contaminant migration.

Suggested test hole locations are shown on the attached Figure 02. While a drill rig is on-site, it is also suggested to install shallow (1.5 m deep) vapour probes at locations MW-50 and MW-51 to better assess potential migration of soil vapours into the site building. The existing vapour wells in those locations currently contain groundwater, which may inhibit our ability to obtain "true" soil vapour concentrations from these locations.

Reporting of the proposed investigation will include drafting of test hole logs and site plans, as well as recommendations for repairing the parking lot, including any necessary remedial measures.

If you have any questions regarding this work plan, please contact the undersigned at 250.475.6355 or via email at andrea.hachkowski@aecom.com.

Sincerely,
AECOM Canada Ltd.

Andrea Hachkowski, P.Eng.
Environmental Engineer
Manitoba District, Canada West Region

AH:dh
Encl.
cc:

PLAN

0 20 40 m SCALE 1:2000

LEGEND

- VAPOUR PROBE LOCATION
- TEST PIT LOCATION (CH2M HILL, 1993)
- LOCATION OF GROUNDWATER WELL / NEST

*1955 LAYOUT OF FORMER MANUFACTURED GAS PLANT OBTAINED FROM MANITOBA HYDRO

AECOM

Manitoba Hydro
2010/2011 Sutherland Site Work
Sink Hole Investigation

Site Plan

Figure 01

ISS/REV: 0A
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