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Golder Associates

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ENGINEERING & WORKS
Received
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Attention: Mr. Myron Glatt

RE: CLOSURE REPORT ON UNDERGROUND STORAGE TANK REMOVAL
445 WINNIPEG STREET
REGINA, SASKATCHEWAN

Dear Mr. Glatt:

This letter report provides environmental information related to the removal of four underground storage tanks (USTs) at 445 Winnipeg Street, Regina, Saskatchewan ("the Site", Figure 1). Golder Associates Ltd. (Golder Associates) was retained by Agrifoods International Cooperative Ltd. (Agrifoods) to monitor the removal of the four USTs. Golder Associates retained Petrocare Construction Services Inc. (Petrocare) to carry out the UST removals. The work described in this letter was carried out on behalf of Agrifoods in response to notification by the City of Regina Fire Department in a letter dated April 30, 2002 that the four USTs were to be removed on or before August 15, 2002.

1.0 BACKGROUND

In 2002, on behalf of Agrifoods, Golder Associates reviewed available information regarding unused USTs at 445 Winnipeg Street. The information review indicated that the four USTs were present at the Site. Specifically, the USTs to be removed from the Site consisted of:

- one 23,000-litre (5000-Imperial gallon) diesel UST;
- one 23,000-litre gasoline UST;



- one 14,000-litre (3000-Imperial gallon) diesel UST; and,
- one 14,000-litre heating oil UST.

The heating oil UST was formerly located in the northern portion of the Site near the main building. The remaining three USTs and their associated pump island were formerly located together in the southeastern portion of the Site. The locations of the USTs with respect to existing buildings are illustrated in Figure 2.

Application to Saskatchewan Environment (SE) was made in a letter from Golder Associates Ltd. to SE dated July 17, 2002 entitled "*Remedial Action Plan for the Removal of Four Underground Storage Tanks at 445 Winnipeg Street, Regina Saskatchewan*". Approval to decommission storage facility MA-24, Project # 3789 was subsequently granted by SE on July 18, 2002.

2.0 SITE WORKS

2.1 Excavation, Underground Storage Tank Removal, and Backfilling

Personnel from Golder Associates Ltd. (Golder Associates) were on site throughout the UST removal, soil excavation, and most of the excavation backfilling. Golder Associates conducted the following activities:

- obtained soil samples from the walls and base of the excavation;
- conducted field screening of soil samples for combustible vapours;
- arranged for laboratory testing of soil samples;
- directed the contractor with respect to the extent of the excavation; and,
- documented the activities of the contractor and other personnel on site through the UST removal and soil excavation programs.

The site work involved the removal of gasoline and diesel USTs, the pump island, and heating oil tank and backfilling the excavations. Tank excavations, tank disposal, and backfilling were conducted by Petrocare Construction Services (Petrocare) of Saskatoon, Saskatchewan using a rubber-tired backhoe. The tank excavations commenced on August 13, 2002 and were completed on August 14, 2002.

Prior to removal, each of the three USTs contained approximately 0.1 m of liquid hydrocarbon product. The liquid hydrocarbon product was removed and disposed appropriately from the tanks by CEDA Environmental Services. Once removed, the three USTs located in the southern portion of the Site were inspected and photographed. No serial numbers were visible on the tanks. The tanks appeared to be in good condition and free from any visible holes or perforations. The pump island and all associated piping were also removed.

The final limits of the tank nest excavation were approximately 4-m deep, 14-m wide, and 16-m long. The soil on the excavation side walls and base consisted predominantly of sand fill material. Inspection of the soil on the excavation side walls and base showed grey staining and a strong hydrocarbon odour.

Prior to excavation of the heating oil UST, approximately 1 m of heating oil and 0.2 m of water measured in the tank. The oil/water mixture was removed from the UST and appropriately disposed of by CEDA Environmental Services. Upon excavation and removal the UST was inspected. Perforations were observed at the corners of each end of the UST (Photograph 1 and 2). Additionally, small holes in the bottom of the UST were observed. A concrete pad was noted at the base of the heating oil UST excavation however was not removed.

Soil conditions surrounding the UST consisted of fine sand, with grey-black staining along the west wall of the excavation nearest to the main building.

The tanks were removed from the Site by Petrocare and destroyed. A declaration by Petrocare of the destruction of the USTs is attached.

Following removal of the USTs, and soil sampling each of the excavations, the excavations were backfilled with the any stockpiled soil. The excavated areas remaining were left open pending further assessment of the Site. The excavations were backfilled level with ground surface with clean granular fill materials in December 2002.

2.2 Soil Sampling

Soil samples were obtained during the excavation USTs to assist in determining the magnitude of potential hydrocarbon impacts. Soil samples collected during the removal of the USTs were assessed in the field based on field observations of odours and staining.

One soil sample was collected at the base of each of the excavations subsequent to the removal and stockpiling of overburden soils and the removal of the USTs. The samples were designated 3T (three UST nest excavation) and HO (heating oil UST excavation).

Soil samples were packed tightly into a laboratory-supplied sample jar and stored in cold storage until selected samples were submitted to Enviro-Test Laboratories in Saskatoon, Saskatchewan, for analysis of BTEX, CCME, PHC, Fractions (F₁-F₄) and lead concentrations.

2.3 Soil Sample Results

The principal document for the evaluation of the environmental quality of petroleum hydrocarbon impacted soil and groundwater in Saskatchewan is the *Saskatchewan Environment Resource and*

Management (SERM) Risk Based Corrective Actions for Petroleum Contaminated Sites, November 1995. The results of the soil chemical analyses should be compared with the SERM criteria for a Commercial/Industrial future land use. Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standard for Petroleum Hydrocarbons (PHC) for soils for a commercial property with coarse grained soils is recommended for total petroleum hydrocarbon concentrations in excess of the SE commercial/industrial criteria.

The soil sample designated 3T, collected from the three UST nest excavation contained F₁ concentrations (2,200 mg/kg) in excess of the CCME Canada Wide Standards for PHC in Soils for F₁ (1000 mg/kg). The soil sample from the UST-nest backfill also contained concentrations of benzene (7.6 mg/kg), toluene (45 mg/kg), and xylenes (110 mg/kg) in excess of the SE Risk Based Corrective Actions for Petroleum Contaminated Sites, November 1995 criteria for a commercial/industrial future land use.

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The soil sample designated HO, collected from the heating oil tank excavation contained F₂ concentrations (4,000 mg/kg) in excess of CCME guidelines. A summary of the results of chemical analyses for hydrocarbons performed on the collected soil samples is provided in Table 1.

TPH = 1000 ppm

3.0 SUMMARY

The four USTs and associated piping indicated in the April 30, 2002 letter from the City of Regina Fire Department have been removed from the Site. The USTs were destroyed by Petrocare.

The chemical analyses of the soil samples collected from the base of the three UST nest excavation and from the base of the heating oil UST excavation indicate concentrations in excess of applicable guideline criteria. No potentially impacted soil was removed from the Site. The excavations were backfilled with clean fill.

Additional environmental investigations at the Site are on-going.

4.0 LIMITATIONS AND USE OF REPORT

This closure report was prepared for the exclusive use of Agrifoods International Cooperative Ltd. The report is based on data and information collected during the UST removals and soil excavations at 445 Winnipeg Street on August 13 and 14, 2002. The findings, interpretations, and conclusions concerning the Site are based solely on the Site conditions observed while at the Site. The data presented in this report represent the soil conditions at the sampling locations tested. Soil conditions may vary with location, depth, sampling methodology, analytical techniques, and other factors.

Golder Associates Ltd. makes no warranty, expressed or implied, and assumes no liability with respect to the use of the information contained in this report at the subject Sites, or at any other Site, for other than its intended purpose.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Golder Associates Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

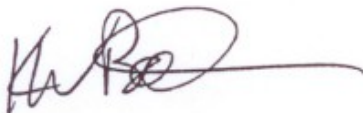
If new information is discovered in the future during Site excavations, building demolition or other activities, or if additional subsurface investigations or testing are conducted by others, Golder Associates Ltd. should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein.

5.0 CLOSURE

We trust this letter report provides the information you require. If you have any further questions, please do not hesitate to contact the undersigned.

Yours truly,

GOLDER ASSOCIATES LTD.



Kevin Beechinor, B.Sc.
Environmental Specialist



Greg Misfeldt, M.Sc., P.Eng.
Senior Geotechnical Engineer

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cc: Kim Wunderlich, Environment Officer, Saskatchewan Environment, Grasslands Region
Ron Mathieson, Fire Department, City of Regina
Gary Nieminen, Municipal Engineering Department, City of Regina

Attachments