



August 28, 1991

Gary Leroy
Wisconsin Department of Natural Resources
Box 309
Spooner, WI 54801

RE: Construction Documentation for Closure of Washburn Area Landfill
DNR Facility No. 02129 - WEC Project No. 8002

Dear Mr. Leroy:

The purpose of this letter report is to document closure of the above landfill project, on behalf of the City of Washburn, Town of Washburn and Town of Bayview, Wisconsin. To the best of my knowledge, the closure project was completed in substantial compliance with the closure plan approved for the Project by the Department on March 15, 1990.

The closure project was constructed by Roffers Construction, Ashland, Wisconsin, during May through August, 1990. The work completed on the project consisted of clearing and grubbing, final site grading of the closed portions of the landfill, constructing a 2' thick clay cap, placing 6" of topsoil on the completed clay cap and liming, fertilizing, seeding and mulching. Temporary silt fence was placed at key locations around the landfill to control run-off erosion during construction. Erosion bales were placed in drainage swales to control erosion after seeding was completed.

Project control provided by the Owner and Wilhelm Engineering consisted of daily observation by the Owner's representative, Mr. Edwin M. Hanson and weekly site visits by the project engineer. Mr. Hanson kept a daily diary log, photographed each step of the project and reported on a daily basis to the project engineer. The entire project was staked for construction by a survey crew from Wilhelm Engineering. Density testing was completed on an approximately 100' grid pattern for each completed 12" lift of the clay cap, using sand cone methods. The final thickness of the clay cap was documented by Mr. Hanson by probing it with a small diameter hand auger. In all locations checked, the minimum 24" lift was placed.

Initial construction work consisted of clearing and grubbing an area to the east of the completed landfill trenches. In this area, a pit was dug so that all stumps and other clearing debris, including boulders, could be buried.

Wilhelm Engineering's survey crew staked the limits of site grading, drainage swales and the proposed elevations to prepare the site for placing the clay cap. The contractor then graded and shaped the entire site to the basic contour plan. Upon completion of this site grading work, the site was shaped to elevations 2' below the desired final clay cap. Drainage swales were prepared to receive a clay liner.

Letter to: Gary Leroy, RE: Construction Documentation, Washburn
August 28, 1991
Page 2 of 3

The site was then staked to plan elevations for placing the clay cap. Roffers Construction then hauled clay from a borrow site northeast of the Town of Washburn Town Hall. A total of 24,865 c.y. of clay was placed upon the site. Density testing was completed on an approximately 100' grid pattern. Areas which did not meet 90% of maximum density as determined by modified laboratory proctor curves were recompacted until a satisfactory test was obtained.

Roffers Construction used an approximately 40 ton rubber tired dozer, a sheep's foot and a disc for working and compacting the clay. Upon completion of compaction, the site was carefully graded to the final elevations set and verified by the Wilhelm Engineering survey crew. Enclosed, you will find a drawing which documents the actual final site contours, as determined from an as-built survey, after final grading was completed. These contours demonstrate that the site was constructed in substantial compliance with the original closure grading plan approved by your office on March 15, 1990.

As a part of the initial work on this project, the Contractor did perform exploratory excavation to confirm the lateral extent of the waste boundaries on this site. The west edge of the landfill site had a mound of old waste debris that had not been incorporated into any landfill trenches. The Contractor was issued a change order to remove that material and bury it properly within the site. The clay cap was extended far enough west to make sure that all of that material was covered over with clay and the west drainage swale carries run-off water around that area.

Upon completion of the clay cap, the Contractor placed an average of 6" of topsoil over the completed clay cap. Bases upon recommendations from the USDA SCS, for this specific site, the actual topsoil mixture consisted of 3" of topsoil obtained from the borrow site and 3" of the sand and silty sand available from the east portion of the old landfill site, in which waste was never placed. These materials were mixed together by disking to create a successful topsoil. Liming, fertilizing, seeding and mulching were then completed on the project in accordance with standard Wis DOT specifications for this type of work.

Upon completion of the project, the Owner erected signs stating that the landfill site is closed. The entrance to the site has been permanently closed with a gate. Another entrance to the site, previously used only by the Owner for their own operational purposes, was closed by placing a large mound consisting of approximately 500 cubic yards of clay from the borrow site. This clay stockpile blocks this entrance to the site. It is also a source of clay material in the event that the Owner needs small amounts of clay to repair the landfill cap in the future.

Washburn is continuing with an on-going groundwater monitoring plan in accordance with the present requirements of the Department. The seeding has grown well and the site is now an open meadow, as proposed as a

Letter to: Gary Leroy, RE: Construction Documentation, Washburn
August 28, 1991
Page 3 of 3

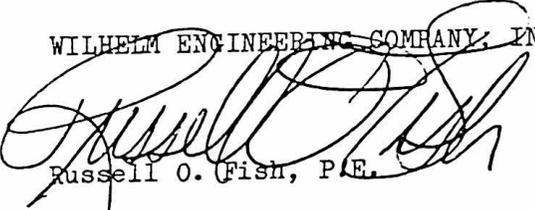
part of the closure plan. The Owner intends to maintain the site by performing semi-annual inspections, repairing eroded areas, mowing the site at least twice between July and September to control growth of woody brush and trees and application of an approved herbicide when necessary.

Based upon my discussions with your staff, it is our understanding that the department is well satisfied with the closure project. We trust that this report is adequate information to document this Project. We have complete detailed surveying notes, density test results, construction diaries, photographs and construction contract records for the Project on file in our office. The City of Washburn is applying for grant funds to pay for part of this Project. Should your office need any additional documentation, we will be most pleased to cooperate with the City and the Department to facilitate completion of the Grant process.

On behalf on the City of Washburn, Town of Washburn and Town of Bayview, we want to thank the Department for its cooperation with this Project from start to finish.

Respectfully submitted,

~~WILHELM ENGINEERING COMPANY, INC.~~


Russell O. Fish, P.E.

CC: City of Washburn
Town of Washburn
Town of Bayview

ROF/cad:8002:L0828911