UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

February 18, 2000

REPLY TO THE ATTENTION OF:
SR-6J

Mr. Paul L. Kozol
South Central Region
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711-5397

Re: Stoughton City Landfill--Operation and Maintenance Plan

Dear Mr. Kozol:

I am formally sending you my comments on the June 1999 Operation and Maintenance Plan prepared by Roy F. Weston, Inc. The enclosed comments are the same comments that I sent you by E-mail on January 28, 2000.

As I stated in my message, I have not asked Weston to correct the document in line with your comments in your January 18, 2000 letter. I believe that there are too many other things wrong with the document to just correct a few items. I believe the combination of the attached comments and the June 1999 Plan should be able to serve as the operation and maintenance plan.

I also stated in my message that I believe that it is not necessary to do the gas flow and gas composition measurements at the vents. In my commments on the O & M Plan I explain this. I do not believe that much useful data will be obtained from the measurements if they are done, mainly because the gas flow from the vents would not be expected to be relatively constant.

If you have any questions, please call me (312-886-4746).

Sincerely yours,

Bernard J. Schorle

Bernard J. Schorle
Remedial Project Manager

Enclosure

cc: William Karlovitz--Roy F. Weston, Inc.

Operation and Maintenance Plan
Stoughton City Landfill
June 1999 Roy F. Weston Document
Comments and Modifications

Not all errors and omissions in this June 1999 version of the Operation and Maintenance Plan submitted by Roy F. Weston, Inc. may be corrected here. The operation and maintenance plan for the site will be based on the Weston Plan and these comments and modifications.

Section 1.1. The Quality Assurance Project Plan (QAPP) mentioned here apparently is the March 1998 document, which was used for the groundwater monitoring reported on in the June 24, 1999 memorandum. This March 1998 QAPP includes as Appendix A a Field Sampling Plan (FSP). It includes some pages marked "Revision 1" that are dated April 7, 1998; these were submitted with a letter dated April 28, 1998.

First paragraph, last sentence. This says, ". . .will provide the United States Environmental Protection Agency (U.S. EPA) with sufficient documentation verifying the remedial action is functioning as designed and constructed, and will be an indicator as to the effectiveness of the remedial action." Obviously, the data generated in performing the tasks specified in the Operation and Maintenance (O&M) Plan will be used to show how the remedial action is performing, whether or not the data shows that the performance is as planned and whether or not the remedial action performed is effective.

This plan will not be further finalized.

Any materials needed for restoration of the site to the status it should have as the result of the construction performed in accordance with the design and any approved changes will be as specified in the specifications actually used for construction or will be as mutually agreed upon by the Wisconsin Department of Natural Resources and U.S. EPA.

Figure 1-1. Apparently the site does not occupy the entire area indicated as the site location. Based on the stated size of the site (27 acres) and some figures in other documents, the site probably extends from the north boundary of this area down to approximately the dotted line that extends across it (which is probably the overhead electrical lines), and occupies the full width of the area.

It is unfortunate that the Yahara River does not show on the map near the site.

Section 1.2. The first paragraph finishes with, "Existing site conditions are depicted on the plans." No "plans" apparently are included in this report. What the author means by "plans" is unknown. When "existing" is, whether at the time of the initial use of the site as a dump or a landfill (this is what the paragraph is talking about), at the time of the remedial investigation, or at the completion of the construction of the remedial

action, is not known.

In the February 1999 *Remedial Action Report, Stoughton City Landfill, Stoughton, Wisconsin*, prepared by Roy F. Weston, Inc. (RA Report) there is a Figure 1 entitled "Existing Site Conditions". Based on some dates on the figure and information from Figure 2, it appears that "existing" means the time prior to the construction of the remedial action; this would be the time of the remedial design and would represent conditions at the time of bidding on the construction work for the remedial action. Unfortunately, this figure is rather hard to read because of the printing method used.

The RA Report also contains Figure 2 entitled "Final Topo, Stoughton Landfill, Stoughton, Wisconsin". This figure does not show all of the wells. (It is to be noted that the September 1998 *Groundwater Sampling Memorandum, Stoughton City Landfill, Stoughton, Wisconsin*, prepared by Roy F. Weston, Inc. shows the areal extent of contamination for two substances on diagrams that do not contain the final contours. These should not be used for this.) Of course, for the purposes of operation and maintenance, the site conditions at the completion of construction are most important.

Sections 1.2 and 1.3. The background and history is incomplete. What happened to bring about the implementation of the remedial action has not been included. The Explanation of Significant Differences is not mentioned. What was done about the groundwater extraction and treatment system is not covered. The following serves as a brief update for what has happened at the site:

> One of the two PRPs who had conducted the RI filed for bankruptcy before the remediation specified in the ROD could be implemented. The other PRP settled with the government for the payment to the Fund of part of the costs of the remediation. The remedial work was then carried out using Fund money. Following further evaluation of the groundwater, it was decided that the extraction and treatment of contaminated groundwater listed in the ROD as a possible part of the remedy would not be implemented at the present time. The remedy in the ROD also included the excavation of wastes in contact with groundwater in the southeastern and northeastern sections of the site and relocation of these wastes onto the landfill where they would be covered by the cap. After further evaluation of the site, it was decided that only part of these wastes would be excavated and relocated, and this was documented in an Explanation of Significant Differences dated February 29, 1996. The restriction on the location of water supply wells near the site is being taken care of by the well location requirements of NR 812 of the Wisconsin Administrative Code. Following the preparation of a design, the remedy was constructed. During con-

struction, some additional wastes were found outside the expected landfill limits, and these wastes were excavated and placed on the landfill where they would be under the cap. The completion of all construction activities at the site was documented in a Preliminary Close Out Report dated December 15, 1998.

Section 1.3. It is my understanding that land use restrictions were not used to require that no water supply wells would be located within 1200 feet of the landfill, that this is being taken care of by Wisconsin code requirements. I assume that land use restrictions were imposed on the property to protect the cap and other elements of the remedy. If this has not been taken care of, it needs to be.

The excavation and relocation of wastes called for in the ROD was modified.

If the cap is as it should be, the clay barrier has a maximum permeability of 1×10^{-7} centimeters per second (cm/s), not a minimum of this.

Section 1.4. I disagree that the O&M Plan is to be used to "ensure the safe and effective implementation of the remedial action". The O&M Plan is to be used to guide the maintenance and monitoring of the remedy that has been implemented. In view of the decision not to implement groundwater extraction and treatment, remedial action is at least effectively finished and the site is in the operation and maintenance phase. This comment carries over to other sections, especially the statement in section 1.5, ". . .responsible for implementing, operating, and overseeing the completion of the remedial action."

Unfortunately, that remedial action is effectively completed is not really clear. There is a possibility that a decision will be made in the future that groundwater extraction and treatment will be needed. The remediation goals (clean-up standards) for at least dichlorodifluoromethane (DCDFM) and tetrahydrofuran (THF), which are the state's preventive action levels (PALs), are still being exceeded in some wells. However, because the work known to remain at this time is maintenance and monitoring, the site should be considered to be in the O&M phase.

Section 1.5. My telephone number is 312-886-4746. The name of the USEPA RPM was changed, but the telephone number was not. I am with the U.S. Environmental Protection Agency. I am a remedial project manager.

In the paragraph after the listing of personnel, it is unknown who "operator" is. The people involved need to keep current on who the contacts are; the contacts should let the others know when there is a change.

Section 1.6. It is sufficient to say here:

Inspection and maintenance activities shall be conducted in accordance with a site-specific health and safety plan (HASP) to be prepared by the O&M contractor

and reviewed by a representative of the state. The HASP shall be prepared in accordance with all state and federal regulations and shall conform to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. §1910.120.

Section 2.1. Obviously, the clay barrier was not designed to "limit infiltration to less than 1 x 10^{-7} cm/sec". "The clay barrier component was constructed to achieve a compacted permeability of 1 x 10^{-7} cm/s or less. This was accomplished by using suitable material and standard construction compaction methods."

Instead of "frost damage" it should be "freeze-thaw cycles".

Section 2.1.1. Regarding the repair of erosion damage in the paragraph below the bullets, if the clay layer has been damaged, it will have to be repaired with clay. This is addressed in the next paragraph. It is not necessary to separate inspection and repair for insufficient vegetation and for erosion.

If it appears that there is ponding on the clay layer, under the upper soil layers, such ponding needs to be addressed by restoring the proper slopes to the clay layer.

I believe the mowing requirement is excessive. I believe the mowing requirement should be, "as needed, but a minimum of once per year". I don't believe the maximum vegetation height of 12 inches is needed. And any vegetation of a woody nature, that might have somewhat deep roots, should be removed from the cap.

Section 2.2. In the first sentence remove "over the operating life of the landfill remedial action".

I assume that the channels are as described. I have not seen the site.

Sections 2.1 and 2.2. In the subsections of section 2.2, most of the requirements are for the first year of maintenance. The descriptions of the maintenance covered in sections 2.1 and 2.2 can be combined. Essentially, maintenance consists of inspection for erosion and vegetation damage, and repair of significant damage (damage that significantly reduces the protection provided by the cap), and inspection for areas where drainage from the surface is restricted and leads to temporary or permanent ponding, and repair of such interferences with drainage; if there is insufficient drainage along the surface of the clay, this surface will be repaired. Significant damage is also defined as an erosion gully greater than 6 inches deep or multiple gullies in an area greater than 3 inches deep; also, vegetation is significantly damaged if there is a bare spot larger than 3 square feet or multiple bare spots larger than 1 square foot each in an area. Silt fence and hay bales may be removed when it appears they are no longer needed. Sediments will be removed when they interfere with proper drainage; removed sediments can be used for repairs or spread over the landfill cover. Vegetation in these areas will be established after these removals. Significant movement

of soil into the wetlands is to be prevented. The area (the landfill cap and adjoining areas) will be mowed at least once per year; additional mowings will only be necessary if vegetation that may establish roots down to the clay layer become a problem. Any damage caused by mowing, such as damage to the landfill gas vents, is to be reported and repaired promptly. All repairs will be made with materials equivalent with those used during construction. If prevention of erosion gullies or control of excessive soil removal from the surface is needed, straw bales, silt fence, or riprap will be used as needed. When the landfill cap is being inspected, all monitoring wells and gas vents are also to be inspected. Any repairs to these that are needed will be taken care of.

Section 2.3. The primary components of landfill gas are methane and carbon dioxide, produced from the anaerobic decomposition of organic materials. If landfill gas mixes with air to provide a concentration of methane within the explosive range, an explosion could occur. This might happen in a building or even in the vent pipes. For an explosion to occur, it is necessary to initiate it with some energy, such as a spark.

Section 2.3.1. Besides inspecting vent risers for damage, and repairing when necessary, vent screens also need to be checked to make sure they are not blocking the flow path, either through an accumulation of dirt or debris or through the formation of ice.

Section 2.3.2. There is a requirement here to "(m)onitor the concentration of the landfill gases as a percentage of the lower explosive limit (LEL) for the landfill gases at the site boundary". This needs clarification. What is called for here is the measurement of the amount of combustible gas, using a combustible gas indicator (CGI) (or a combination CGI and oxygen meter), and the measurement of the amount of organic vapors, using a photoionization detector (PID), in the three gas monitoring probes (GMPs), wells along the south end of the landfill. The procedure to be used is that given in the landfill gas monitoring memorandum for September 1999; unfortunately, these measurements were not adequately covered in the March 1998 Quality Assurance Project Plan as revised with the submittals of April 28, 1998. The CGI results are to be reported as a percentage of the lower explosive limit (LEL) and the organic vapors are to be reported as parts per million (ppm). In the report of the results, the instruments used (including, at least, the manufacturer and the model number) and all significant settings are to be included.

Section 2.3.2. Reportedly, the other landfill gas monitoring, consisting of measurements of flow from the vents and analyses of gas samples taken from some of the gas vents, is being done in order to check that the emissions of hazardous materials do not exceed the levels given in Wisconsin Administrative Code (WAC) Chapter NR 445. WAC NR 506.08 (6) only requires the installation of an active landfill gas extraction system, or the demonstration

that one is not needed, for landfills that have a design capacity greater than 500,000 yd^3. According to section 1.2.3.1 of the June 20, 1991 Final Feasibility Study Report, the estimated volume of wastes that are in place in this landfill is 218,000 yd^3. Therefore, it is not required that there be a demonstration that the requirements of WAC NR 445 are being met. It should be noted that there is an added degree of assurance that the emissions will be low here, compared to what the requirements of WAC NR 445 are contemplating for an operating landfill, because this is an old landfill where no wastes have been placed for many years; as wastes decompose, the gas generation rate decreases. Therefore, it is recommended that those parts of section 2.3.2 dealing with flow measurements of gas leaving the vents and the measurements of the compositions of the gas in the vents be deleted from the operation and maintenance requirements at this time. The need for these measurements should only be considered if significant levels of combustible gas are found in the gas monitoring probes; significant here are readings in the probes approaching 25% of the LEL.

If it is decided to go forward with the measurements of gas flow and gas composition at the vents, a means of measuring gas flow will have to be developed and selected. The gas flows are expected to be low. The measurement method needs to interfere minimally with the gas flow so that there will be a minimal change in the flow rate due to the measurement. Whether the velocity at one point in the pipe cross-section or whether velocities at a number of points are obtained will affect the calculated emission rate results. Since it is expected that there will be no calculated exceedances of the emission rate limits, it is recommended that methods be used initially that lead to maximum calculated emission rates.

It must be recognized that the flow rate from the vents is dependent on more than just the rate of gas generation from the decomposition of the wastes. The flow rate will depend on whether the atmospheric pressure is increasing or decreasing and the rate of this change. It will also depend on the rate of change in the temperature of the ground, wastes, and cover; the rates of any changes in these temperatures should be very low. Therefore, the barometric pressure, atmospheric temperature, wind direction and speed, and descriptions of the weather (sunny or cloudy, precipitation, etc.) and the site (snow on surface, very wet, etc.) need to be recorded during the time at the site. Wind speed may also affect velocities.

It is recommended that samples for measurements of gas compositions be taken only from vents with significant gas flows (say gas flows that are greater than, at least, 10% of the maximum gas flow). The fact that some vents may never have samples taken from them with this criteria is not important.

Generally, the procedures described in this June 1999 O&M Plan and in the March 1998 QAPP are to be adapted for the measurements of these flow rates and compositions. A Standard Operating Procedure should be developed so that there is consistency in the work.

Section 2.4.2. The access road was relocated outside the fence. Reportedly, the city has responsibility for maintaining this road. Any problems with the road are to be reported to the city.

Note. As far as I am concerned, there could be more than one O&M contractor. One contractor could be used for the inspections and repairs of the site, including any repairs of the monitoring wells. Another contractor could be used for all monitoring, gas and water.

Section 2.5 (this also includes the subsections here). The baseline for site groundwater quality has been established prior to the installation of the landfill cover. It will not be necessary to establish another baseline immediately after the construction of the cap.

It is difficult to determine what the frequency of sampling and analysis is to be according to existing documents. The March 1998 QAPP, with revisions, is not much help, even though it says it is stating what the frequencies are. But there the frequencies for routine groundwater monitoring and gas sampling and analysis are stated to be once, semi-annually, and annually. There are other inconsistencies in the QAPP also, such as stating that the routine monitoring will be done at 28 wells, and then listing 31 wells.

A "baseline" groundwater monitoring event was done before the cap was installed, and is to be done every five years afterward. This event, when done in the future, will be done sufficiently in advance of the due date for the five-year review that the data from the event will be available for use in the five-year review. The five-year review is due five years after the beginning of the remedial action, and at least every five years thereafter. The next baseline groundwater sampling event, therefore, will need to be scheduled prior to the due date for the first five-year review.

The routine groundwater monitoring will be done semi-annually until the first five-year review, and annually thereafter, unless the data indicate that more frequent monitoring is necessary. The initial semi-annual monitoring called for here can be made annual if that has already been agreed upon. When the concentrations of all substances being analyzed for drop below their PALs for two consecutive years, then this monitoring can be dropped.

If groundwater contaminant levels increase or if the plume dimensions and locations change, the contractor will bring this to the attention of the lead agency for the O&M activities and make any recommendations for changes that may be needed. The lead agency will evaluate the need for additional monitoring locations or more frequent monitoring to better define the scope and magnitude of the increases or changes.

The 40 monitoring wells sampled in April 1998 will be used for the baseline groundwater monitoring events. The same parameters will be used in this event as were used in the 1998 one. The procedures to be used will be those in the QAPP and accom-

panying FSP, as modified or supplemented in the September 1998 Groundwater Sampling Memorandum, which reported on the April 1998 sampling event.

The 31 monitoring wells sampled in April 1999 will be used for the routine groundwater monitoring event. Generally, these are the wells listed in the March 1998 FSP. However, proper well designations are to be used. Also, the three background wells are, obviously, to be checked for the same field parameters, and the results for these are to be reported. The samples are to be analyzed for tetrahydrofuran and dichlorodifluoromethane, as stated in the QAPP. In the April 1999 event, trichlorofluoromethane was also analyzed for, and the results reported, because the laboratory would do this analysis for no extra charge. As long as this is the case, TCFM is to also be analyzed for. The procedures to be used will be those in the QAPP and accompanying FSP, as modified or supplemented in the June 1999 Groundwater Sampling Memorandum, which reported on the April 1999 sampling event.

At the five-year reviews, adjustments in the parameters being analyzed for, the monitoring wells being sampled, and the frequency of sampling called for will be evaluated to determine if changes should be made. Changes at other times, particularly changes that increase the monitoring program, may also be made after a thorough evaluation. Also in the five-year reviews, what is happening with the plumes will be evaluated to determine if any additional remedial action or monitoring might be needed.

Section 3. Generally, I don't have any comments on this section. The report form is a litter tight on space, especially the space for notes.

Section 3.4. The periodic inspection reports are to be submitted to the lead agency for the O&M phase of the project, with a copy to the support agency.

Section 4. In the third bullet, remove the requirement for a baseline groundwater monitoring event immediately after cap placement.

Remove the fifth bullet if the landfill gas flow measurements and sampling are being dropped, as recommended.

In the sixth bullet, change so that the reports go to the lead agency, with a copy of the report to the support agency.

Bernard J. Schorle
January 28, 2000

FILE

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
Ruthe E. Badger, Regional Director

South Central Region Headquarters
3911 Fish Hatchery Road
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January 18, 2000

Mr. Bernard Schorle
U.S. EPA, Region V
77 West Jackson Boulevard
Chicago, IL 60604

SUBJECT: Comments on the Stoughton Operation and Maintenance Plan

Dear Mr. Schorle:

I am in the process of setting up the contracting for the Long Term Maintenance and Monitoring of the Stoughton landfill cap. If there is no objection I will use the June 1999 Operation and Maintenance Plan developed by Weston, as the Scope of Work for the near future bidding of the work. As a first step I have reviewed the document and I am requesting that the following changes be incorporated.

SECTION 1, 1.1 OBJECTIVE AND SCOPE

In the last sentence of the 1st paragraph insert "and the Wisconsin Department of Natural Resources (WDNR), after "...(U.S. EPA)"

SECTION 1, 1.5 ROLES AND RESPONSIBILITIES

Insert the following as the second and final paragraph in this Section:

The WDNR project manager will coordinate the contracting for the O&M work following this O&M plan, in accordance with the CERCLA National Contingency Plan. The WDNR will be considered U.S. EPA's designated representative.

SECTION 1, 1.6 HEALTH AND SAFETY

Insert the following as the second and final paragraph:

"The selected O&M contractor will submit the HASP to the WDNR prior to conducting any activities at the landfill site.

SECTION 2, 2.4.2 Access Road O&M Inspection Requirements

Appears to be old information. The access road was moved and does not cross the cap. The City of Stoughton is responsible for maintenance of this road. Any deficiencies found through an inspection should be reported to the City of Stoughton. See letter, Rutter to Mattke, dated February 22, 1999.

SECTION 2, 2.5 GROUNDWATER MONITORING

First bullet – Eliminate the reference to a baseline groundwater sampling event, here, and anywhere else where it is referenced. My understanding is the baseline sampling requirement was satisfied with the mid–April 1998 sampling event as reported in the September 1998 GROUNDWATER SAMPLING MENORANDUM

SECTION 4, O&M INSPECTION SCHEDULE

Replace the 1st bullet with the following " The landfill cover system shall be inspected three times per year, for each year of the O&M contract.

Third bullet – see comments for Section 2, 2.5 GROUNDWATER MONITORING, above.

ADDITIONAL COMMENTS

Whenever the words "maintenance", "maintenance activities", "repair", "corrective actions" or "reconstruction" is used please preface with the word "proposed". Procedurally the WDNR will contract for any maintenance/repair work on a time and materials basis.

At the end of the document please put in a REFERENCES section that references, by date on the document, the final QAPP, construction documents, and any other document referenced in this O&M plan.

I anticipate incorporating this Operation and Maintenance Plan as a Scope of Work on February 1, 2000.

If you have questions you can call me at the number below.

Sincerely,

Paul L Kozol

Paul L. Kozol, P.E.
Remediation and Redevelopment Engineer
South Central Region
(608) 275-3301

C: William Karlovitz, P.E., - Weston

Roy F. Weston, Inc.
Suite 400
3 Hawthorn Parkway
Vernon Hills, Illinois 60061-1450
847-918-4000 • Fax 847-918-4055

1 July 1999

Mr. Bernard Schorle
U.S. Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, IL 60604

U.S. EPA Contract No.: 68-W7-0026

Work Assignment No.: 001-RARA-05T2

Document Control No.: RFW001-2F-ACSV

Subject: Operation and Maintenance Plan
Stoughton City Landfill

Dear Mr. Schorle:

Roy F. Weston, Inc. (WESTON®) is pleased to submit two copies of the Operation and Maintenance Plan for the Stoughton City Landfill.

Please contact me at (847) 918-4042 if you have any additional comments and/or questions.

Very truly yours,

ROY F. WESTON, INC.

William F. Karlovitz, P.E.
Site Manager

WFK:me
Enclosure

Cc: P. Kozol, WDNR
P. Vogtman, U.S. EPA (Letter only)

OPERATION AND MAINTENANCE PLAN
STOUGHTON CITY LANDFILL
STOUGHTON, WISCONSIN

June 1999

Prepared For:

U.S. Environmental Protection Agency
Superfund Division
Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

This document was prepared by WESTON in accordance with the terms of the U.S. EPA Region V Contract No. 68-W8-0089.

Work Assignment No. 001-RARA-05T2 Document Control No. RFW001-2F-ACSV

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SECTION 1
INTRODUCTION

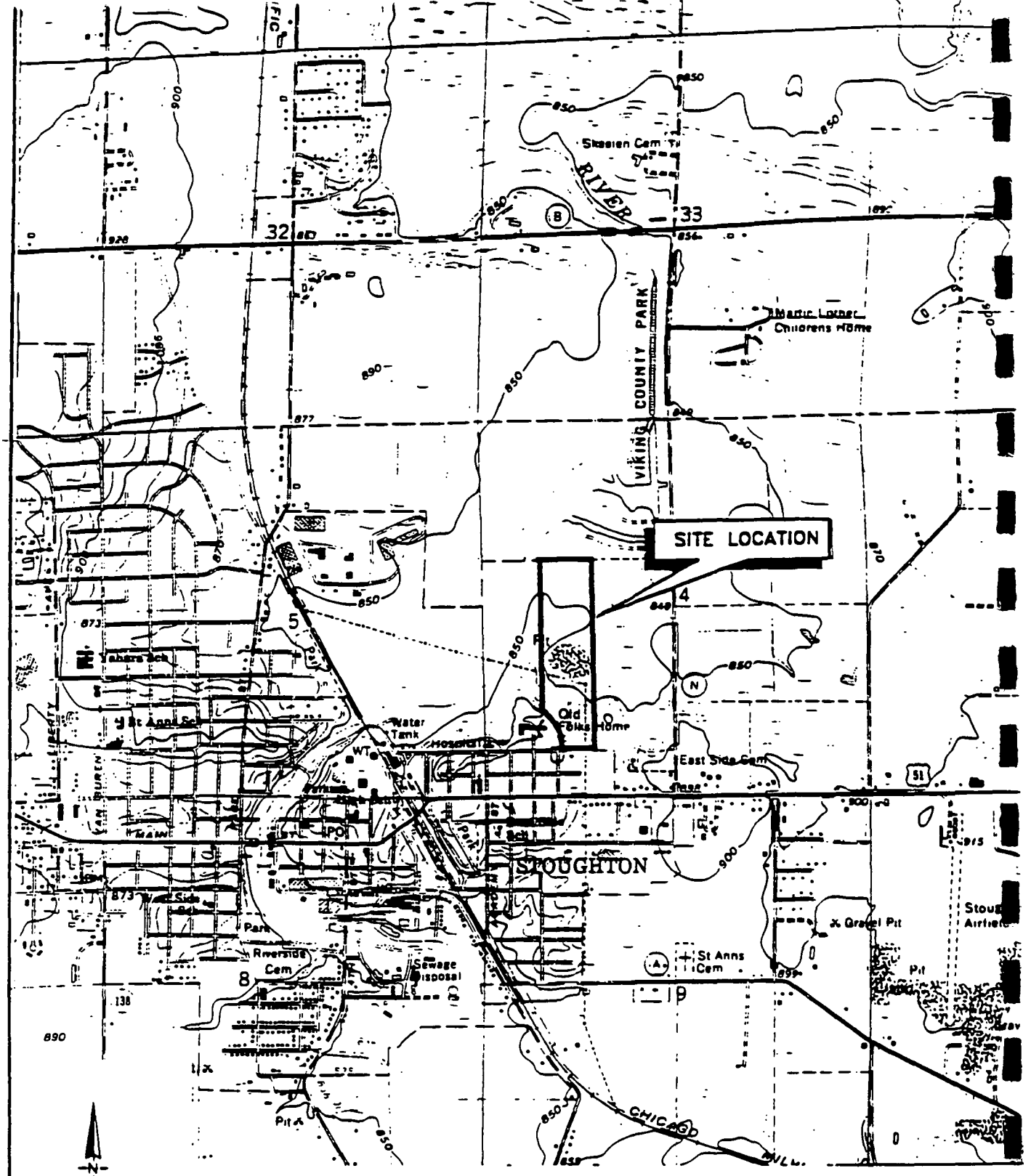
1.1 OBJECTIVE AND SCOPE

The objective of this Operation and Maintenance (O&M) Plan is to describe the inspection and maintenance activities required to maintain the effectiveness of the landfill final cover and its associated management systems for the duration of the Superfund post-closure operation period. The O&M Plan is intended to be used in conjunction with the Quality Assurance Project Plan (QAPP), which describes the sampling and monitoring activities related to this remedial action. The records compiled through implementation of this O&M Plan and the QAPP will provide the United States Environmental Protection Agency (U.S. EPA) with sufficient documentation verifying the remedial action is functioning as designed and constructed, and will be an indicator as to the effectiveness of the remedial action.

This O&M Plan has been prepared in accordance with the Record of Decision (ROD) and the remedial action design. The remedial action construction specifications provide material types for use in conducting maintenance and restoration activities and are incorporated into this document by reference. Following completion of construction and preparation of record documents, this plan will be finalized to reflect the actual materials and suppliers used, to include inspection/maintenance requirements.

1.2 SITE LOCATION/BACKGROUND INFORMATION

The Stoughton City Landfill (SCL) site is located in the northeast portion of the City of Stoughton, approximately 13 miles southeast of Madison, in Dane County, Wisconsin (Figure 1-1). The



SOURCE: U.S.G.S. 7.5 Min. TOPOGRAPHIC MAP
STOUGHTON QUADRANGLE

FIGURE 1-1

ALTERNATIVE REMEDIAL CONTRACTING STRATEGY U.S. EPA CONTRACT No. 68-W8-0089 WORK ASSIGNMENT No. 054-5NT2 DOCUMENT CONTROL No. RFW001-2F-ACSV	SITE LOCATION MAP STOUGHTON LANDFILL SITE Stoughton, Wisconsin

property containing the site encompasses approximately 27 acres and occupies portions of the west half of the southwest quarter and the southwest quarter of the northwest quarter of Section 4, Township 5 North, Range 11 East. A wetlands area located along the southeast portion of the present property boundary was the initial area of waste disposal. Wetlands are also located in the north portion of the site and west of the site along the Yahara River. The Yahara River is located west of the site and is within approximately 400 feet of the site at its closest distance. Existing site conditions are depicted on the plans.

The landfill operated from 1952 until it was officially closed in 1982. Between 1952 and 1969, the site was operated as an uncontrolled dump site. During this time, refuse was usually burned or covered by dirt. The site began operating as a state-licensed landfill in 1969. In 1977, the Wisconsin Department of Natural Resources (WDNR) required the site to be closed according to state regulations. Closure activities included construction of a trash transfer station, placement of cover material borrowed from agricultural areas, application of topsoil, and seeding. Closure work was performed from 1978 to 1982 according to WDNR regulations. Only brick, rubble, and similar construction materials were accepted at the site during this period.

Common municipal waste and solid and liquid industrial wastes were disposed of at the site during its years of operation. Industrial sludge containing acetone, tetrahydrofuran, toluene, xylene, and other organic substances were disposed of at the site from 1954 until 1962. During this period, the liquid wastes were commonly poured over garbage and burned. It was also reported that some liquid wastes were poured down boreholes, which had been drilled as a part of field testing of drilling equipment, in the west-central portion of the landfill.

The site was placed on the National Priorities List (NPL) in June 1986. In March 1988, the two Potentially Responsible Parties (PRPs), Uniroyal Plastics, Inc., and the City of Stoughton, entered

into an Administrative Order of Consent (AOC) with the U.S. EPA and the WDNR. This AOC required the completion of a remedial investigation and feasibility study (RI/FS). A ROD was signed for the site in September 1991. The ROD presents the site background and the selected remedial action for the site.

1.3 SUMMARY OF THE REMEDIAL ACTION

The landfill remedial action identified in the ROD includes fencing, land use restrictions, construction of an access road, excavation and relocation of waste in contact with groundwater, waste consolidation under final cover system, and placement of a new multilayer soil cover system with a passive landfill gas vent system over the relocated wastes and the landfill.

Permanent fencing and gates were installed around the perimeter of the site to restrict access and to eliminate the potential for exposure to contaminants in the landfill. Chain-link fencing with a locking gate at the landfill entrance was installed. The need to restrict site access during remedial construction activities was evaluated, and a temporary fence was included as part of the remedial action plan for the site.

Land use restrictions were used to prevent the installation of public or private water supply wells within 1,200 feet of the property boundary and to prohibit residential development of the site.

A permanent site access road was built to provide access to the site during waste consolidation and capping activities. The access road was constructed along the southern border of the site in a location selected to minimize disruption of the residential area located south of the site and to minimize impact to the wetlands east of the site.

Waste consolidation consisted of excavating wastes in contact with the groundwater along the landfill's northeastern and southeastern boundaries, as well as consolidating the wastes on top of the landfill along the site's western boundary. This minimized the direct contact of wastes with the groundwater and will result in a reduced impact to the wetlands adjacent to the site's eastern border. Prior to excavation, a dewatering pad was constructed to dewater the saturated waste. This pad consisted of a temporary clay-lined basin on top of the landfill, into which the excavated wastes were placed. The wastes were allowed to drain to a lower portion of the basin, and the water was collected. The dewatered wastes were then placed and compacted on the top of the landfill during the regrading phase. Areas impacted by waste consolidation activities were backfilled with hydric soil and reseeded with vegetation consistent with existing wetlands species.

A landfill multilayer soil cover system was placed over the existing landfill cover and the relocated waste. The areas from which waste was relocated was not capped, but backfilled with grading layer material. The final cover system meets the requirements of the Wisconsin Administrative Code (WAC) NR 504.07 regulations on cover systems for solid waste disposal facilities. The cap consists of a 2-foot grading layer, a 2-foot clay barrier layer, a 2-foot vegetative support layer, and a reinstalled 0.5-foot topsoil layer. The grading layer was constructed from the existing cap and off-site imported borrow material. The clay barrier layer has a minimum permeability of 1×10^{-7} centimeters per second (cm/sec). A passive landfill gas vent system was installed to vent gas from beneath the cap.

1.4 ELEMENTS OF THE O&M PLAN

This O&M Plan has been prepared as a tool for use by the O&M contractor to ensure the safe and effective implementation of the remedial action. The plan generally consists of the following elements:

- Description of main remedial components to include the final cover system, the stormwater management systems, and the passive landfill gas venting systems.
- Description of remedial action objectives and restoration specifications.
- Frequency of inspection and monitoring tasks.
- Identification of potential problems and corrective actions to be implemented by the O&M contractor.
- Description of safety precautions and recommendations.
- Description of record-keeping and documentation requirements.

1.5 ROLES AND RESPONSIBILITIES

Successful implementation of this O&M Plan will depend on a clear understanding of the roles and responsibilities of each member of the O&M team. The team is made of members responsible for implementing, operating, and overseeing the completion of the remedial action. The following list identifies the key personnel from each organization responsible for implementation of this remedial action:

- U.S. EPA Remedial Project Manager
  Name: Mr. Bernard Schorle
  Title: _____
  Org: _____
  Phone: (312) 886-8961
  Address: 77 West Jackson Boulevard
  Chicago, Illinois 60604

- WDNR Project Manager
  Name: Mr. Paul Kozol
  Title: _____
  Org: _____
  Phone: (608) 275-3301
  Address: 3911 Fish Hatchery Road
  Fitchburg, WI 53711

- O&M Contractor
  Name: _____
  Title: _____
  Org: _____
  Phone: _____
  Address: _____

Key personnel may change from time to time during the operation of this system. It is imperative that the operator maintain an updated contact list in the event an emergency or other situation occurs that requires prompt action by one or more of the respective parties. The contact list should be reviewed and updated a minimum of once each quarter.

1.6 HEALTH AND SAFETY

Inspection and maintenance activities shall be conducted in accordance with a site-specific health and safety plan (HASP) to be prepared by the O&M contractor. The HASP shall be prepared in

accordance with all state and federal regulations, including Occupational Health and Safety Administration (OSHA) construction safety standards and 29 Code of Federal Regulations (CFR) 1910 and 1926. The HASP shall include a task-by-task risk analysis using the available site data and incorporating each potential task to be conducted during site inspection and maintenance activities.

SECTION 2

OPERATION AND MAINTENANCE ACTIVITIES

2.1 LANDFILL FINAL COVER O&M

The final cover for the landfill is a multi-layer soil system consisting of a 2-foot grading layer, a 2-foot clay barrier layer, a 2-foot vegetative support layer, and a 0.5-foot topsoil layer. The cover system has been designed in accordance with WAC NR 504 standards. The objective of this inspection activity is to maintain the quality of the cover system to ensure the performance objectives dictated in WAC NR 504 are being met. The specific soil types and installation/restoration requirements are detailed in the construction specifications. Repair or reconstruction work will be completed in accordance with the construction specifications.

The final cover is intended to reduce the volume of liquids that enter the landfill from precipitation that falls within the landfill limits. The grading plan was prepared to maximize the ability of the surface to shed water to the perimeter stormwater management system, as well as to minimize the potential for erosion damage. During the inspection process, the contractor shall document the quality of the cover system and areas where the performance objectives are not being maintained.

The clay barrier layer component of the final cover is the primary barrier to water movement and is designed to limit infiltration to less than 1×10^{-7} cm/sec. This is accomplished through the use of suitable soil and by compacting to a degree necessary to meet this infiltration requirement. Material and compaction requirements are listed in the construction specifications. The cover soil layer is intended to provide protection to the clay barrier layer from desiccation (drying out of the clay), root penetration damage, burrowing animals, and frost damage. Each of the above items can reduce the clay's ability to limit infiltration of water through the cover system. The topsoil layer is provided

as a highly organic layer that can support vigorous plant growth, which in turn will minimize erosion damage from precipitation events, and maximize evaporation and transpiration.

2.1.1 Landfill Final Cover O&M Inspection Requirements

During the inspection process, the contractor will evaluate the quality of the vegetative cover across the landfill surface. A satisfactory area of vegetation shall be defined as an area of 10,000 square feet that has:

- No bare spots larger than 3 square feet.
- Not more than 10 percent of area with bare spots larger than 1 square foot.

Areas that show signs of erosion or sparse vegetation will be repaired. The surface will be graded and/or filled to match the surrounding grade with topsoil material, as specified in the construction specifications. The area will be reseeded and mulched in accordance with the specifications. The contractor will sufficiently water the area as needed to restore vegetation to an acceptable level.

The contractor will inspect the cover system for areas of significant erosion. Significant erosion is defined as an erosion gully 6 inches deep or loss of vegetation and multiple gullies 3 inches deep. Each layer of the final cover will be repaired in accordance with the initial construction specifications. If significant erosion is discovered and damage or cracking of the clay barrier layer is suspected, the contractor will overexcavate, place, and recompact clay materials to restore the damaged section. The cover soil and the topsoil shall be replaced immediately following completion of the clay barrier layer to minimize damage from desiccation.

The contractor will inspect the final cover for signs of settlement or subsidence. Areas showing signs of potential ponding or continued settlement will be backfilled with protective cover soil and topsoil and will be seeded/mulched in accordance with the construction specifications. The contractor will mow the final cover vegetated areas twice per year. Mowing activities shall be conducted to maintain a maximum vegetation height of 12 inches. Mowing of the final cover will also inhibit the growth of deep-rooted vegetation that could impact the efficiency and integrity of the clay barrier layer.

Damaged areas of the final cover will be documented to include method and scope of the repairs conducted. The locations and suppliers of materials will be included in the documentation.

2.2 STORMWATER MANAGEMENT SYSTEM O&M

The stormwater management system is intended to provide control of runoff generated from precipitation events over the operating life of the landfill remedial action. The system consists of two main drainage channels directing runoff into the wetlands on the north and east sides of the landfill.

One channel is located along the northwest edge of the final cover system. This channel collects stormwater from the western side of the landfill and directs it into the wetlands. A minimal volume of flow enters this channel because a limited surface area is included in its watershed. The channel begins on the north side of the permanent access road and drains north.

The second channel begins on the south side of the permanent access road along the west side of the site; this channel drains south, then east along the south boundary of the site. This channel directs runoff from the south and west sides of the site into the wetlands. A larger volume of flow is

managed by this channel because of the larger size of the watershed and the additional flow added by the two storm drains servicing the Venevoll, Inc. property to the south.

2.2.1 Erosion Control Protection Plan

During the first year after construction and prior to full establishment of vegetation, erosion potential for both the landfill cover and drainage channel will be the greatest. The plan for erosion protection includes cover erosion control and repairs, which were previously discussed, and channel control and repair. Immediately following construction of the channels, the remedial contractor will be responsible for constructing straw bale erosion barriers at locations shown on the plans. These barriers will be positioned along the drainage path to slow the flow of runoff and to limit scouring forces. The length of the channel will be lined with mulch or straw matting to aid in slowing runoff velocities.

Temporary sedimentation areas will be constructed at the outlets of each drainage channel as the channel enters the wetland area. These areas will include multiple rows of straw bale barriers and silt fence constructed in a semicircle shape. This shape will allow any residual suspended solids to fall out of suspension prior to discharging into the wetland.

The balance of the landfill surface, which does not drain into either channel, will drain by sheet flow off the landfill surface into the wetland. The specifications require the surface to be mulched following final seeding. In addition, silt fencing will be installed along the bottom of the final cover slope along the complete limits of that portion of the landfill that drains directly into the landfill. The silt fence will allow suspended materials to settle out in front of the fencing prior to entering the wetlands.

2.2.2 Stormwater Control O&M Inspection Requirements

The contractor shall periodically inspect each component of the stormwater control system during the inspection period. The contractor shall visually inspect the drainage channels for excessive erosion damage or lack of suitable vegetation. Erosion gullies will be backfilled, seeded, and mulched. Additional straw bale barriers may be required to protect the repaired area until vegetation is reestablished. The presence of cattails or other pond-type vegetation will be a sign that appropriate drainage through that length of channel is not occurring. Regrading and backfilling may be required to correct the slope or erosion along the channel lengths. Materials used for backfilling and restoration will be in accordance with the construction specifications for that element of work. The O&M contractor will evaluate areas of continual erosion damage and will determine the need for permanent riprap structures in these areas. The contractor will also inspect the culvert for damage or erosion at the end sections. Riprap will be replaced as necessary, and any debris will be removed to maintain a free-flowing condition.

Straw bale barriers along each channel length will be inspected during the first year following completion of construction for serviceability and efficiency. Straw bale barriers will be maintained for a minimum of one year or until a full vegetative layer is established. Any bales that are no longer intact or secured to the subgrade will be replaced. The contractor will document the volume of sediment buildup in front of each bale and will remove sediment when the volume exceeds one third of the bale's height. The contractor will observe the water flow direction and will verify the flow is not passing around the ends of the straw bale structure. If runoff is passing around barrier, straw bales will be replaced or repositioned, or additional bales will be added to contain runoff and force the flow to pass through the bales.

Silt fence structures will be inspected during the first year following completion of construction for serviceability and efficiency. Silt fence structures will be maintained for a minimum of one year or until a full vegetative layer is established. The contractor will inspect the silt fence post and will reinstall posts that are no longer secure or vertical. The fence fabric will be inspected for rips or sagging. Damaged fabric will be repaired or replaced with new fabric in accordance with the specifications. The fence fabric will be securely positioned in an anchor trench that runs the complete length of the fence structure. The contractor will document the depth of the sediment and will remove the sediment when the depth exceeds one third of the total fence height.

2.3 LANDFILL GAS VENTING SYSTEM

The landfill gas venting system is designed to release gases from under the final cover system that have been generated from natural biological activity and the decomposition of waste materials. Landfill gas has the potential to degrade the clay barrier layer by drying out the surface of the clay from below the cover system. Through this desiccation, the effectiveness of the clay layer would be reduced. A primary component of landfill gas is methane. In a venting system that is not functioning properly, gas pressure within the landfill could increase to such a point that methane gas, an explosive gas, could migrate underground to structures outside the landfill limits, causing an explosion hazard.

2.3.1 Landfill Gas Venting System O&M Inspection Requirements

The contractor shall inspect the gas venting system for its overall condition and operational effectiveness. Each vent pipe shall be individually inspected. Vent screens that limit entry of foreign objects should be installed securely. The contractor shall inspect the riser for damage. If the riser is damaged and needs to be removed, the contractor shall excavate and repair the riser with like

materials and workmanship, and shall then repair the final cover in accordance with Subsection 2.1 of the O&M Plan.

2.3.2 Landfill Gas Monitoring

The landfill gas venting system will be monitored in accordance with the QAPP. The monitoring program has the following objectives:

- Monitor the concentration of the landfill gases as a percentage of the lower explosive limit (LEL) for the landfill gases at the site boundary.
- Verify the air emissions from the passive gas vents do not exceed the appropriate regulatory levels detailed in the QAPP and WAC NR 445.

Landfill gas flow monitoring of each of the 21 vents will be conducted annually using an anemometer. The anemometer will be connected to a threaded fitting on the PVC riser pipe. Flow from the vent will be sealed using a flexible Fernco-type cap with a banding seal. The flow will be recorded in the field log book.

Gas samples will be collected on an annual basis from five randomly selected gas vents. These samples will be analyzed by an approved laboratory in accordance with the QAPP. In addition, each vent will be monitored three times each year using a photoionization detector (PID) and a combustible gas indicator (CGI). The O&M contractor will document the results of this monitoring on the periodic inspection report. During each annual gas sampling activity, five new gas vents will be selected for sampling until all vents have been sampled at least once. This sampling sequence will be repeated throughout the post-construction operational period. Based on the sampling results, the monitoring requirements will be reevaluated. If periodic gas sampling results indicate a

significant increase in hazardous air contaminants, the O&M contractor will evaluate increasing the frequency of sampling to a quarterly basis, to better define the scope and magnitude of the increase. If contaminant levels exceed the WAC NR 445 action levels for four consecutive quarterly sampling events, the need for an active gas extraction and flare system will be evaluated.

2.4 GENERAL SITE MAINTENANCE

2.4.1 Security Fence O&M Inspection Requirements

Chain-link fencing is provided around the perimeter of the landfill to limit potential public contact with waste materials under the final cover and to limit exposure to landfill gas being vented from the gas venting system. In addition, the fencing provides protection for the gas vent risers and the cover system as a whole. Excessive vehicle or recreational use without the appropriate maintenance can contribute to erosion or limited vegetation.

The contractor shall inspect the fence for serviceability and for signs of tampering. The chain-link fence fabric shall be securely attached to each post and end rail. The posts shall be solidly installed in concrete pads with the necessary support posts and top rails detailed in the specifications. Each section of fencing shall have three strands of barbed wire angled correctly to limit entrance to the site. Barbed wire shall be completely secured and taught. Barbs shall be present and spaced appropriately. Any damaged or missing material shall be replaced with new material meeting the requirements of the specification. Any signage located along the fence limit or attached to the fence fabric will be inspected. Any damaged or unreadable signs will be replaced. The O&M contractor will review the information on each sign, to include contact name and phone number. Outdated information will be removed, or the sign will be replaced.

2.4.2 Access Road O&M Inspection Requirements

A gravel access road exists across the site from the main entrance at the end of Amundson Parkway, across the cover surface to the western side of the site. The road provides access to the monitoring wells located on the west side of the site to support monitoring activities. The road also provides a means to control tracking of mud and debris from the landfill out onto Amundson Parkway.

The contractor shall inspect and maintain the access road to allow all-weather access to the site to conduct inspection and maintenance operations. The road shall be graded to drain, while allowing runoff from the upper areas of the cover system to pass over without ponding along the roadway edges. If excessive ponding or rutting of the road occurs, additional gravel may be required to bring the area up to grade. Geotextile fabric shall be replaced if subgrade soil is observed pumping up through the gravel surface course. Gravel materials shall be placed and compacted as necessary to provide a stable and wear-resistant surface. All materials shall be in accordance with the construction specifications.

2.5 GROUNDWATER MONITORING

The O&M contractor will conduct post-construction groundwater monitoring to assess the effectiveness of the landfill final cover and to evaluate the location, size, and movement of the impacted groundwater plume at the site. The groundwater monitoring program has the following objectives:

- Establish a baseline for site groundwater quality immediately after the placement of the landfill cap.

- Monitor the movement of the tetrahydrofuran (THF) and dichlorodifluoromethane (DCDFM) plumes semiannually for the first five years after construction and then annually thereafter to evaluate natural attenuation and the effect of the landfill cap on the THF and DCDFM plumes.

- Reevaluate the site groundwater quality five years after placement of the landfill cap and compare it against the initial baseline. Repeat this reevaluation every five years until the THF and DCDFM concentrations fall below the Preventive Action Limits (PALs).

The groundwater monitoring program is described in detail in the QAPP. The entire monitoring program will be reassessed every two years. Specific adjustments to the program that may be necessary include:

- Analyte list—do analytes need to be added or deleted?

- Sampling frequency—is semiannual sampling adequate or excessive?

- Monitoring well network—is the monitoring well network adequate? Does any well need to be replaced? Should additional wells be installed? Can some of the monitoring wells be deleted from the sampling program?

- Sampling Program—do the analytical data indicate the THF and DCDFM concentrations are decreasing? Should the monitoring program continue?

Each monitoring well will be inspected on a semiannual basis concurrent with sampling activities. The contractor will repair or replace wells that are damaged or are no longer suitable for long-term sampling in accordance with the QAPP. If groundwater contaminant levels increase or if the plume dimensions and location change, the contractor will evaluate the need for additional monitoring locations to better define the scope and magnitude of the increase or change.

2.5.1 Baseline Groundwater Monitoring

The baseline groundwater monitoring will be conducted immediately after the placement of the landfill cap. A network of 41 groundwater monitoring wells exist at the site. All the monitoring wells will be used for the baseline groundwater monitoring. For the baseline monitoring, the groundwater samples will be analyzed for routine analytical services (RAS) Target Compound List (TCL) volatiles, Target Analyte List (TAL) metals, THF, DCDFM, and trichlorofluoromethane (TCFM). TCFM is included in the analyses because it was detected during the RI sampling effort. TCL semivolatiles, TCL pesticides/polychlorinated biphenyls (PCBs), and cyanide are not included in the list of analytical parameters because these parameters were not detected in the groundwater during previous investigations. The baseline groundwater monitoring will be repeated every five years until the THF and DCDFM concentrations fall below the PALs.

2.5.2 Routine Groundwater Monitoring

The routine groundwater monitoring will be conducted semiannually for the first five years after construction and then annually for the balance of the post-closure monitoring period. The objective of the routine groundwater monitoring is to monitor the movement of the THF and DCDFM plumes. Therefore, only THF and DCDFM analyses will be performed. The monitoring wells located on the western edge of the landfill (28 monitoring wells) and three background monitoring wells will be used for the routine groundwater monitoring. The list of monitoring wells is included in the O&M QAPP.

SECTION 3

DOCUMENTATION

This section describes the record-keeping that will be used to document the O&M activities performed during the post-construction period. This documentation will be the ongoing record of effectiveness of the work completed. All documentation completed as part of this project will be presented as part of a post-closure certification report to be prepared at the completion of the O&M period. The following subsections describe the specific records that will be maintained.

3.1 PERIODIC INSPECTION REPORT

The O&M contractor will prepare a report that will serve as a chronological record of periodic maintenance and inspection activities. At a minimum, the report will contain:

- Date, project name, location, and other identification (as necessary).
- Weather conditions.
- Construction activities and incidents that occurred during working and nonworking hours.
- Inspections and observations conducted by the contractor.
- Description and quantity of materials received, including vendor certification documents (if applicable).
- Calibrations of testing equipment. Required only if restoration work requires quality assurance testing in accordance with the specifications.
- Description of restoration work completed and/or deficiencies identified with corrective actions taken.

In addition to the written narrative of construction, repair, and inspection activities, observation and testing data sheets will be provided as an appendix to the inspection report. The data sheets may be in the form of laboratory testing data, figures, maps, or any other documents required to support inspection results reported on the inspection report. At a minimum, the data sheets will contain the following information:

- Unique sheet number for cross referencing and document control.
- Date, project name, location, and time of event.
- Weather conditions.
- Plan map, to scale, showing the location of each test or observation with the corresponding test identification number.
- Type of inspection activity and procedure used (reference specification section and ASTM method).
- Summary of test results, with laboratory raw data package, and comparison with specification requirements.
- Identification of inspection/observation personnel to include name, title, company, and authority to conduct inspection.
- Signature of O&M contractor accepting data sheets.

Figure 3-1 shows the Periodic Inspection Report Form to be used by the O&M contractor in documenting inspection and maintenance activities.

Figure 3-1
Operation and Maintenance Periodic Inspection Report
Stoughton City Landfill
Stoughton, Wisconsin

Inspector _____

Company _____

Project _____

Location _____

Date/Time _____

Project No. _____

Weather	Clear	P. Cloudy	Cloudy	Fog
Temperature	High	____F°	---	---
Wind	Calm	Medium	High	---
Precipitation	Rain	Light	Moderate	Heavy
	Snow	Light	Moderate	Heavy

Type of Inspection Routine ☐ Special ☐

Persons/Equipment Present: _____

_____

General Description of Site Conditions: _____

_____

_____

Specific Inspection Items	Potential Problem Areas	Status*	Notes
Perimeter Security Fencing	Missing barbed wire, torn fabric.		
Entrance Gate and Locking Mechanism	Lock broken/missing, mechanism inoperative.		
Monitoring Wells and Wellhead Covers	Signs of tampering, casing damaged, lock missing.		
Final Cover Vegetation	Bare spots, stressed vegetation, deep rooted vegetation.		
Final Cover Slope (explain below)	Gullies, lack of vegetation, subsidence, ponding.		
Evidence of Burrowing Animals	Damage to final cover, evidence of waste.		
Stormwater Drainage Channels	Gullies, erosion, debris, culvert blocked.		
Landfill Gas Venting System	Damaged vent risers, stressed vegetation.		
Access Road	Ponding, rutting, erosion.		

* (1) Acceptable - No Maintenance Required. (2) Not Acceptable - Identify Required Maintenance.

Summary of Deficiencies and/or Corrective Actions: _____

_____

_____

Signature of Inspector _____

Date _____

3.2 PROJECT PHOTOGRAPHS

The O&M contractor will take photographs of all work placed to augment periodic inspection reports and to assist in documenting work deficiencies before and after corrective actions are taken. All photographs taken by the O&M contractor must be recorded on a photograph documentation log that will include, at a minimum, the following information:

- A unique identifying number for cross referencing and document control.
- Date, time, location, and current weather conditions at the time the photograph was taken.
- Purpose of intent of the photograph.
- Signature of the photographer.

3.3 RECORD DRAWINGS

The O&M contractor will maintain a complete set of design drawings, including formal modifications and field changes. The inspector will record any deviations from the plans and specifications and will document the reason for the deviation. The drawings should document any changes made to the completed work, to include actual lines and grades, survey data showing locations of restored work, locations of testing, and elevations of each particular component repaired. At the completion of the O&M period, the information will be used to update the record drawings for use in the post-closure certification report.

3.4 STORAGE AND DISPOSITION OF RECORDS

During post-closure activities, the O&M contractor will be responsible for maintaining a complete set of plans, specifications, design drawings, analytical data, and inspection reports. These documents will be used to record all changes or modifications to the project as of completion of construction. The O&M contractor shall transfer all changes to the record documents following each maintenance activity at the site.

The O&M contractor will submit the periodic inspection report, including all analytical data and evaluations, to the U.S. EPA or its designated representative. The O&M contractor will maintain a complete set of all laboratory quality assurance documentation produced as a function of each sampling event. The documents will be maintained at the O&M contractor's home office, in accordance with approved document control methods.

SECTION 4

O&M INSPECTION SCHEDULE

The SCL site shall be maintained in a safe and operational condition at all times during the operational life of the remedial action. Damage to any portion of the control system shall be immediately repaired to maintain protection of the wetlands and to allow for proper functioning of the system. At a minimum, the landfill final cover system shall be inspected in accordance with the following schedule:

- The landfill cover system shall be inspected at least once per month until a full vegetative cover is established (minimum one year) and three times each year thereafter for the complete O&M period.
- Inspection of the landfill gas vent system, the fence, and the stormwater management system shall occur three times each year for the complete O&M period.
- Immediately after placement of the landfill cap, perform baseline groundwater monitoring. Repeat this groundwater monitoring every five years until the THF and DCDFM concentrations fall below the cleanup levels.
- Perform routine groundwater monitoring semiannually.
- Perform landfill gas flow measurements and landfill gas sampling annually.
- Submit periodic inspection reports to the U.S. EPA or its designated representative within one month of the inspection event and/or the receipt of the analytical data after each sampling event.

The contractor shall document all inspection and maintenance activities, including an evaluation of additional measures required to effectively control reoccurring issues with respect to the landfill final

cover system, the stormwater management system, the passive gas venting system, and other support structures.

Stoughton Landfill O&M Addendum Information

SECTION 1, 1.1 OBJECTIVE AND SCOPE

In the last sentence of the 1st paragraph insert "and the Wisconsin Department of Natural Resources (WDNR), after "...(U.S. EPA)"

SECTION 1, 1.5 ROLES AND RESPONSIBILITIES

Insert the following as the second and final paragraph in this Section:

The WDNR project manager will coordinate the contracting for the O&M work following this O&M plan, in accordance with the CERCLA National Contingency Plan. The WDNR will be considered U.S. EPA's designated representative.

SECTION 1, 1.6 HEALTH AND SAFETY

Insert the following as the second and final paragraph:

"The selected O&M contractor will submit the HASP to the WDNR prior to conducting any activities at the landfill site.

SECTION 2, 2.4.2 Access Road O&M Inspection Requirements

Appears to be old information. The access road was moved and does not cross the cap. The City of Stoughton is responsible for maintenance of this road. Any deficiencies found through an inspection should be reported to the City of Stoughton. See letter Rutter to Mattke, dated February 22, 1999.

SECTION 2, 2.5 GROUNDWATER MONITORING

First bullet – Eliminate the reference to a baseline groundwater sampling event, here, and anywhere else where it is referenced. My understanding is the baseline sampling requirement was satisfied with the mid–April 1998 sampling event as reported in the September 1998 GROUNDWATER SAMPLING MENORANDUM

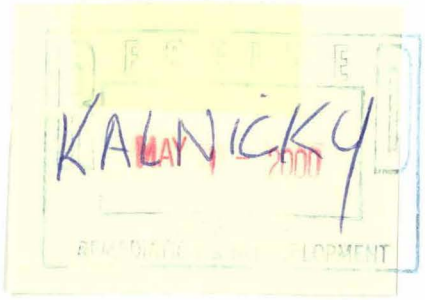
SECTION 4, O&M INSPECTION SCHEDULE

Replace the 1st bullet with the following " The landfill cover system shall be inspected three times per year, for each year of the O&M contract.

Third bullet – see comments for Section 2, 2.5 GROUNDWATER MONITORING, above.

ADDITIONAL COMMENTS

Whenever the words "maintenance", "maintenance activities", "repair", "corrective actions" or "reconstruction" is used please preface with the word "proposed". Procedurally the WDNR will contract for any maintenance/repair work on a time and materials basis.



Addendum #1

O&M for the Stoughton City Landfill

State of Wisconsin
Wis. Statutes s.16.75
DOA-3070 N(Rev.97)

BIDS MUST BE SEALED AND ADDRESSED TO:
AGENCY: Department of Natural Resources
ADDRESS: Attn: David Behn - FN/1
101 South Webster Street, Room 161
P.O. Box 7921
Madison, WI 53707-7921

THIS IS NOT AN ORDER

REQUEST FOR BID

BIDDER (Name and Address)

☐ Remove from bidder list for this commodity/service. (Return this page only.)

Bid envelope must be sealed and plainly marked in lower corner with due date and Request for Bid # J-036-02. Late bids will be rejected. Bids MUST be date and time stamped by the soliciting purchasing office on or before the date and time that the bid is due. Bids dated and time stamped in another office will be rejected. Receipt of a bid by the mail system does not constitute receipt of a bid by the purchasing office. Any bid which is inadvertently opened as a result of not being properly and clearly marked is subject to rejection. Bids must be submitted separately, i.e., not included with sample packages or other bids. Bid openings are public unless otherwise specified. Records will be available for public inspection after issuance of the notice of intent to award or the award of the contract. Bidder should contact person named below for an appointment to view the bid record. Bids shall be firm for acceptance for sixty (60) days from date of bid opening, unless otherwise noted. The attached terms and conditions apply to any subsequent award.

Bids MUST be in this office no later than

~~April 13, 2000~~ April 27, 2000 11:00 a.m.

Name (Contact for further information)

David Behn

Phone: (608) 267-9534

Date: March 13, 2000

Quote Price and Delivery FOB

Destination - Job site

☐ Fax bids are accepted ☒ Fax bids are not accepted

Item No.	Quantity and Unit	Description	Price Per Unit	Total
		Services for the operation and maintenance of the Stoughton City Landfill in accordance with the Operation and Maintenance Plan, and the terms and conditions of bid. Bidder is to complete the Bid Price Sheet, sign and return along with this request for bid form and their qualifications. There will be a mandatory pre-bid meeting at the landfill on April 4, 2000 at 10:00 a.m.		

Payment Terms | Delivery Time

☐ We claim minority bidder preference [Wis. Stats. s. 16.75(3m)]. Under Wisconsin Statutes, a 5% preference may be granted to CERTIFIED Minority Business Enterprises. Bidder must be certified by the Wisconsin Department of Commerce. If you have questions concerning the certification process, contact the Wisconsin Department of Commerce, 5th Floor, 201 W. Washington Ave., Madison, Wisconsin 53702, (608) 267-9550. Does Not Apply to Printing Bids

☐ We are a work center qualified under Wis. Stats. s. 16.752. Questions concerning the qualification process should be addressed to the Work Center Program, State Bureau of Procurement, 6th Floor, 101 E. Wilson St., Madison, Wisconsin 53702, (608) 266-2605.

Wis. Stats. s. 16.754 directs the state to purchase materials which are manufactured to the greatest extent in the United States when all other factors are substantially equal. Materials covered in our bid were manufactured in whole or in substantial part within the United States, or the majority of the component parts thereof were manufactured in whole or in substantial part in the United States.
☐ Yes ☐ No ☐ Unknown

In signing this bid we also certify that we have not, either directly or indirectly, entered into any agreement or participated in any collusion or otherwise taken any action in restraint of free competition; that no attempt has been made to induce any other person or firm to submit or not to submit a bid; that this bid has been independently arrived at without collusion with any other bidder, competitor or potential competitor; that this bid has not been knowingly disclosed prior to the opening of bids to any other bidder or competitor; that the above statement is accurate under penalty of perjury.

We will comply with all terms, conditions and specifications required by the state in this Request for Bid and all terms of our bid.

Name of Authorized Company Representative (Type or Print)	Title	Phone ( )	
		Fax ( )	
Signature of Above	**Date**	**Federal Employer Identification No.**	**Social Security No. if Sole Proprietor (Voluntary)**

This form can be made available in accessible formats upon request to qualified individuals with disabilities.

Bid Price Sheet

Bid Item	Description	Unit	Estimated Quantity	Unit Cost	Cost
General Requirements					
1	Tri-annual Inspection of Facility Components, Including the PID and CGI Monitoring of All Gas Vents	Each	6	$	$
2	Tri-annual Preparation and Submission of a Facility Components Inspection Report, Including PID and CGI Monitoring Results and Recommendations for Maintenance of Facility Components	Each	6	$	$
3	Semi-annual Groundwater Monitoring Well Sampling and Analysis	Each	4	$	$
4	Semi-annual Preparation and Submission of a Groundwater Monitoring Report	Each	4	$	$
5	Semi-annual Mowing of the Landfill Cap Vegetation	Each	4	$	$
6	Annual Landfill Gas Monitoring of Gas Wells and Gas Sampling and Analysis From 5 Gas Vents	Each	2		$
7	Annual Report Preparation and Submission of the Results of Gas Analysis from 5 Gas Vents	Each	2		$
Total Cost					$

Bidder Name: _____

Signature: _____

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

April 12, 2000

FAX TRANSMISSION

From: Paul L. Kozol, P.E.
DNR South Central Regional Office
3911 Fish Hatchery Road
Fitchburg, WI 53711
Phone: (608) 275-3301
Fax: (608) 275-3338
kozolp@dnr.state.wi.us

To: STOUGHTON O&M BIDDERS

Subject: STOUGHTON O&M ADDENDUM #2
INCLUDED IN THIS FAX IS A NEW BID PRICE SHEET WHICH REFLECTS THE NEED FOR A SITE SPECIFIC QAPP, USE THIS BID PRICE SHEET WHEN SUBMITTING YOUR BID

EMAIL BACK TO ME, OR FAX BACK TO ME, COMFIRMATION THAT YOU HAVE RECEIVED THIS ADDENDUM

____3___PAGES INCLUDING THIS COVER

Addendum #2
O&M for the Stoughton City Landfill

This Addendum contains information on the changes to the QAPP for this O&M activity
AND
Answers SOME questions from the Prebid Meeting and Site Visit

The Bid Price Sheet now has a line item for the development of a site specific QAPP

The following information is provided for development of the QAPP and for your pricing needs

- Use an NR 149 approved lab
- CLP protocol is not required or needed
  Thus no CLP labels are required and the
  Chain-of-Custody does not have to be on EPA forms
- Use an appropriate test method, SW 846 - SW 8260B
  The THF has a PAL requirement of 10 ug/l
  The Limit of Quantification must be 10 ug/l or lower
- Use the existing QAPP developed by the previous contractor, and
  Handed out at the Prebid meeting, for the number of wells to be sampled
  And the number of Duplicate Samples and Field Blanks, continue using the
  air sampling information in this QAPP for your bid prep work
- Use the DNR's Groundwater Sampling Field Manual
  PUBL – DG-038 96 for PURGING AND SAMPLING PROCEDURES
  Section 2.4 A. Section 2.4 A. MUST be used. While dedicated equipment is
  recommended it is not required.

this document titled **Groundwater Sampling Field Manual, Stock # 1729,** and the accompanying document titled **Groundwater Sampling Desk Reference, Stock # 1728,** may be purchased from Wisconsin Department of Administration, Document Sales Unit. Call Document Sales at (608) 266-3358 or TTY (608) 264-8499 for pricing information (business hours 7:45 am to 4:30 pm).

Credit card orders using either VISA or MASTERCARD may be placed by calling the following numbers:

Long Distance:	1-800-362-7253
Local:	(608) 264-9419

Orders for the documents may be prepaid either with cash, money order, or check made payable to the Department of Administration and mailed to the following address:

Wisconsin Department of Administration
Document Sales Unit
202 South Thornton Avenue
P.O. Box 7840
Madison, WI 53707-7840

The QAPP does not have to be submitted with the bid, BUT the QAPP must be approved by the DNR before the winning bidder who we contract with begins the site work.

Bid Price Sheet

Bid Item	Description	Unit	Estimated Quantity	Unit Cost	Cost
General Requirements					
1	Tri-annual Inspection of Facility Components, Including the PID and CGI Monitoring of All Gas Vents	Each	6	$	$
2	Tri-annual Preparation and Submission of a Facility Components Inspection Report, Including PID and CGI Monitoring Results and Recommendations for Maintenance of Facility Components	Each	6	$	$
3	Semi-annual Groundwater Monitoring Well Sampling and Analysis	Each	4	$	$
4	Semi-annual Preparation and Submission of a Groundwater Monitoring Report	Each	4	$	$
5	Semi-annual Mowing of the Landfill Cap Vegetation	Each	4	$	$
6	Annual Landfill Gas Monitoring of Gas Wells and Gas Sampling and Analysis From 5 Gas Vents	Each	2		$
7	Annual Report Preparation and Submission of the Results of Gas Analysis from 5 Gas Vents	Each	2		$
8	Submission and Approval of QAPP	Each	1		$
Total Cost					$

Bidder Name: _____

Signature: _____

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

April 14, 2000

FAX TRANSMISSION

From: Paul L. Kozol, P.E.
DNR South Central Regional Office
3911 Fish Hatchery Road
Fitchburg, WI 53711
Phone: (608) 275-3301
Fax: (608) 275-3338
kozolp@dnr.state.wi.us

To: STOUGHTON O&M BIDDERS

Subject: STOUGHTON O&M ADDENDUM #3

INCLUDED IN THIS FAX ARE ANSWERS TO QUESTIONS AND CLARIFICATIONS

EMAIL BACK TO ME, OR FAX BACK TO ME, COMFIRMATION THAT YOU HAVE RECEIVED THIS ADDENDUM

2 PAGES INCLUDING THIS COVER

Addendum #3
O & M for the Stoughton City Landfill

Clarifications and Answers to Questions

Q. Past Purge Water Volume and Disposal

A. Addendum #2 requires the use of a low flow sampling technique that will greatly minimize the amount of purge water. The final volume per sampling event is now a true variable. Have sufficient dedicated portable container(s) available for each groundwater sampling event. Full container(s) will remain at the landfill and not be removed by the selected contractor. The container(s) shall be marked with a number and the purge water contents identified by monitoring well for each container (i.e. container #1 contains the water from MW-5s and MW7b). The DNR will be responsible for the removal and disposal of the purge water.

Q. Well Elevations, Screen Depths

A. Well elevations and other elevation information will be given to the selected bidder. Use the screen information from the Weston QAPP as a general guide for all wells.

Q. Incumbent Lab

A. The lab you use Must be an NR 149 certified lab. The lab previously used by Weston was Chemtech, of Englewood New Jersey

NOTE: For QAPP development cost purposes your selected lab Must submit their own analytical SOP's, they cannot simply reference methods out of the SW-846.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

April 20, 2000

FAX TRANSMISSION

From: Paul L. Kozol, P.E.
DNR South Central Regional Office
3911 Fish Hatchery Road
Fitchburg, WI 53711
Phone: (608) 275-3301
Fax: (608) 275-3338
kozolp@dnr.state.wi.us

To: STOUGHTON O&M BIDDERS

Subject: STOUGHTON O&M ADDENDUM #4

INCLUDED IN THIS FAX ARE FINAL CLARIFICATIONS

EMAIL BACK TO ME, OR FAX BACK TO ME, COMFIRMATION THAT YOU HAVE RECEIVED THIS ADDENDUM

____2___PAGES INCLUDING THIS COVER

Addendum #4
O & M for the Stoughton City Landfill

Final Clarifications

The selected lab shall prepare an entire data package complete with QC information. The selected lab will retain, but have available for distribution, the data package for a minimum of five years, in the event that either regulatory agency would want to have the data validated.

No further questions will be answered after 11:00 A.M. April 20, 2000.