

**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

PART IV – SITE OPERATING PLAN

**APPENDIX IVC
REGULATED ASBESTOS-CONTAINING MATERIAL PLAN**

Prepared for

Waste Management of Texas, Inc.

April 2012

Revised August 2012



Prepared by

BIGGS & MATHEWS ENVIRONMENTAL

1700 Robert Road, Suite 100 ♦ Mansfield, Texas 76063 ♦ 817-563-1144

TEXAS BOARD OF PROFESSIONAL ENGINEERS
FIRM REGISTRATION No. F-256

TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS
FIRM REGISTRATION No. 50222

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4 RECORDKEEPING

Recordkeeping for RACM disposal is in the form of manifests, Waste Shipment Records (WSR), and a disposal location log (which includes location, depth or elevation, and volume). The gate attendant normally processes the manifests, WSR, and receipt log. The landfill manager or his designee maintains the disposal location logbook indicating RACM disposal locations. Each month a Monthly Waste Receipt Summary for Class 1 non-hazardous industrial waste is submitted using the STEERS reporting system provided by TCEQ. In the future, if TCEQ designates another reporting process the facility will follow the revised procedures.

A. Manifests

- (1) All shipments of RACM must be accompanied by a Uniform Hazardous Waste Manifest, or similar form, which includes:
 - a. Name, address, and telephone number of the generator.
 - b. Name, address, and telephone number of any transporter.
 - c. Description and quantity of RACM (including Class 3 Designation).
 - d. Date of receipt and signature of disposal facility representative.
 - e. In the "Supplemental Information" section, include the name, address, and telephone number of the asbestos remover (or abatement company). Also include a 24-hour emergency response team and telephone number.
- (2) A copy of the signed manifest is to be sent by the disposal facility to the waste generator within 30 days of disposal.
- (3) A copy of each manifest must be retained on site for at least 2-3 years in accordance with 30 TAC §330.173(g); this time period will be automatically extended if any enforcement action involving the owner, operator, or landfill facility is initiated or pending by the executive director.

B. Waste Shipment Records

Waste Shipment Records for each RACM load will be maintained with the minimum following information:

- (1) Name of the generator
- (2) Manifest number and WMTX Special Waste Profile number
- (3) Date of receipt
- (4) Volume of asbestos waste
- (5) Transporter name

C. Disposal Location Log or Site Map

A RACM disposal log for the landfill must be maintained. The following information should be recorded for each load of RACM accepted:

- (1) The horizontal location of disposal (using the existing site grid system)
- (2) The depth or elevation of disposal
- (3) The volume of waste
- (4) The date of disposal

D. Monthly Waste Receipt Summary

A Monthly Waste Receipt Summary will be prepared and submitted using the STEERS reporting system provided by TCEQ. In the future, if TCEQ designates another reporting process the facility will follow the revised procedures. The report will be submitted no later than the 25th day of the month following the receipt of any Class 1 non-hazardous industrial RACM received during the preceding calendar month.

E. Deed Recordation

Upon closure of the landfill, a specific notation that the landfill accepted RACM will be placed in the deed records of the property, which will include a site diagram or other information identifying the disposal locations of RACM. In addition, a notice of deed recordation and copies of the site diagram or other information identifying the RACM disposal locations will be submitted to the TCEQ.

**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

PART IV – SITE OPERATING PLAN

**APPENDIX IVD
BIOREMEDIATION TREATMENT PLAN**

Prepared for

Waste Management of Texas, Inc.

April 2012

Revised August 2012



Prepared by

BIGGS & MATHEWS ENVIRONMENTAL

1700 Robert Road, Suite 100 ♦ Mansfield, Texas 76063 ♦ 817-563-1144

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FIRM REGISTRATION No. 50222

1 CONTENTS

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APPENDIX IVD-A
Bioremediation Approval



1 INTRODUCTION

The purpose of this Bioremediation Treatment Plan is to provide discussion on treatment procedures, testing requirements, and material disposal for the existing constructed bioremediation treatment pad. The bioremediation treatment pad was permitted in November 1999 with updates in April 2005 to provide a local grid system for the treatment pad; these permit modification approvals are included in Appendix IVD-B. Refer to Appendix IVB-A for an example of a Generator's Waste Profile Sheet that will be included in the documentation for incoming petroleum contaminated material. Refer to Part III, Attachment J for the detailed cost estimate for closure of the bioremediation treatment pad.

2 WASTE ACCEPTANCE AND ANALYSIS

Petroleum contaminated material will be processed at the bioremediation treatment pad. The petroleum contaminated material will not contain polychlorinated biphenyl wastes that are subject to the disposal requirements in 40 CFR Part 761. The material will be treated until the following reuse levels are met:

1. The constituents of concern for the treated petroleum contaminated material will not exceed the concentrations listed in Table 1 – Constituents of Concern and Their Maximum Leachable Concentrations, located in 30 TAC §335.521(a)(1).
2. The treated petroleum contaminated soil will not contain total petroleum hydrocarbons in concentrations greater than 1,500 milligrams per kilogram.

Once the petroleum contaminated materials meet the reuse levels above, the materials will be removed from the treatment pad and utilized as alternate daily cover or disposed of at the landfill working face.

3 TREATMENT PAD DESIGN

The bioremediation treatment pad for petroleum contaminated materials is located within the future waste fill area (Phase 3, Cell 18), as shown in Part III, Attachment B, Appendix B1. The treatment pad is constructed with a minimum 18-inch-thick compacted clay liner and is underlain by clayey soils within the weathered (Stratum I) and unweathered (Stratum II) Taylor. The underlying clayey soils serve as low hydraulic conductivity foundation since classification and hydraulic conductivity test results included in Part III, Attachment E indicate that the clayey soils should be satisfactory for use as compacted soil liner and infiltration layer material. The treatment pad is approximately 2.5 acres.

The treatment pad is designed so that surface water runoff is collected and stored in the containment pond. The treatment pad is surrounded by a 3-foot-high compacted clay containment berm to minimize the amount of surface water that comes into contact with petroleum contaminated materials; the containment berm is designed with 3H:1V exterior and interior slopes. The design calculations for the containment pond and containment berm for a 25-year, 24-hour storm event are provided in Appendix IVD-B.

Tarps may be placed over the contaminated material to minimize the volume of contaminated water. Surface water that comes into contact with waste will be treated as contaminated water and disposed of in accordance with Part III, Attachment D6, Section 3.

4 TREATMENT PAD OPERATIONS

On days when wastes are accepted for treatment at the bioremediation treatment pad, the bioremediation pad unloading and disposal area will be confined to the bioremediation area and to a minimum size consistent with the rate of incoming waste while allowing for the safe and efficient operation of the bioremediation treatment pad.

Properly documented waste will be staged at the site for processing in designated areas of the treatment pad. Each shipment will be tracked by both documentation and physical grid markers on the pad.

Refer to Appendix IVB-A for an example of a Generator's Waste Profile Sheet (GWPS) that will be included in the documentation. As the result of potential future internal WMTX revisions, the format and/or information contained in the GWPS may change.

The grid system is an alphanumeric system with letter northings and numeric eastings. If staged soils are to be stockpiled before treatment, stockpiles will be managed to prevent wind dispersal of contaminants. Treatment (including physical preparation of the pile) will begin on all incoming waste as soon as enough material is present to make the process economically viable. This will typically occur (i.e., the beginning of treatment) within 90 days. Stockpiled material will only be stored on the constructed treatment pad.

Analytical parameters and target remediation goals will be used to select an available bioremediation technique. If bulking of the material is required to enhance bioremediation, it will be accomplished prior to waste treatment. Bulking will be accomplished with locally available and appropriate bulking agents. Treatment plots will be monitored periodically (typically at intervals less than 60 days) to determine the addition of nutrients if required.

The treatment pad will be inspected on a weekly basis and within 24 hours of a rainfall event of 0.5 inches or more. Erosion gullies, washed-out areas, or depressions will be repaired within five days of detection if they are deep enough (greater than 4 inches). Repair of the treatment pad includes restoring the pad with soil, grading, and compacting as required.

A log documenting waste characterization and stockpile location within the treatment pad will be maintained at the site. All documents will be kept in the site operating record.

5 TREATMENT PAD CLOSURE PLAN

The following steps will be taken for the closure of the bioremediation treatment pad prior to the construction of Cell 18:

- All petroleum contaminated materials will be treated to the acceptable levels of reuse listed in Section 2 before the materials are removed and utilized as alternate daily cover or disposed of at the landfill working face.
- The existing working area including the treatment pad, soils in the containment pond, and affected berm materials will be sampled at a density of four composite samples per acre (or two composite samples per half-acre) of working area.
- These samples will be tested for the following constituents: 1) total petroleum hydrocarbons (TPH), 2) benzene, 3) toluene, 4) ethylbenzene, 5) xylene, and 6) lead.
- If all samples are below the acceptable levels of reuse listed in Section 2, the working area will be excavated and soil materials will be utilized as alternate daily cover or disposed of at the landfill working face.
- Areas with samples above the acceptable levels will be treated until its samples are below the acceptable levels.
- A closure certification will be prepared by a registered professional engineer and submitted to the TCEQ for approval.

The detailed cost estimate for closure of the bioremediation treatment pad is included in Part III, Attachment J – Cost Estimates for Closure and Postclosure Care. Attachment J includes a narrative discussion, evaluations, calculations, and drawings that provide the information required by §330.63(j).

SKYLINE LANDFILL
APPENDIX IVD-A
BIOREMEDIATION APPROVAL

**SKYLINE LANDFILL
DALLAS AND ELLIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW 42C**

**PART IV – SITE OPERATING PLAN
APPENDIX IVE**

BIOREMEDIATION TREATMENT PLAN

Prepared for

Waste Management of Texas

November 1999
April 2005

Revised April 2006

Prepared by

BIGGS & MATHEWS ENVIRONMENTAL
1700 Robert Road • Mansfield, Texas 76063 • 817-563-1144



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 14, 2005

Mr. Walter Hunt
Engineering Manager
Waste Management of Texas, Inc.
1201 North Central
Ferris, TX 75125

COPY

Re: Municipal Solid Waste - Dallas/Ellis Counties
Skyline Landfill - MSW Permit No. 42C
Permit Modification - Revision to Bioremediation Treatment Pad
WWC No. 10915864
RN 100542232 / CN 600127856

Dear Mr. Hunt:

We have reviewed your application for a municipal solid waste permit modification dated March 2, 2005 and received on March 3, 2005, requesting an update to the bioremediation treatment plan at Skyline Landfill, to provide a local grid system for the treatment pad. The information presented is technically sufficient for municipal solid waste permit modification.

Enclosed is a copy of the above referenced modification which is now part of your permit and should be attached thereto as part of Attachments A, B, and B-1. The documentation prepared and submitted to support the modification request shall be considered as requirements of the permit. The facility is responsible for compliance with any applicable air requirements.

If you have any questions concerning this matter, please contact Ms. Rebecca Beard at (512) 239-3419. When addressing written correspondence, please use Mail Code 124 (MC-124).

Sincerely,

Richard C. Carmichael, Ph.D., P.E., CIH
Manager, Municipal Solid Waste Permits Section
Waste Permits Division

RC/RB/fp

cc: Mr. Gregg Adams, P.E., Senior Engineer, Biggs & Mathews Environmental

Enclosure

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



COPY

MODIFICATION TO
MUNICIPAL SOLID WASTE PERMIT No. 42C
WASTE MANAGEMENT OF TEXAS, INC. / SKYLINE LANDFILL

Municipal Solid Waste Permit No. 42C is hereby modified as follows:

Description of Change:

To update the bioremediation treatment plan to provide a local grid system for the treatment pad.

The details of this permit modification are contained in the application dated March 2, 2005 and received on March 3, 2005.

Parts of Permit Modified:

- Bioremediation Treatment Pad Cover Page;
- Bioremediation Treatment Pad Table of Contents;
- Treatment Pad Details;
 - treatment Pad Operations;
- Drawing 2 - Bioremediation Pad Enlarged Plan, of Appendix A.

This modification is a part of Permit No. 42C and should be attached thereto.

APPROVED, ISSUED, AND EFFECTIVE in accordance with Title 30 Texas Administrative Code (30 TAC) Section §305.70(j)(3).

ISSUED DATE:

APR 14 2005

A handwritten signature in black ink, appearing to be "D. H. White", written over a horizontal line.

For the Commission

Robert J. Huston, Chairman
B. "Ralph" Marquez, Commissioner
Dan M. Baker, Commissioner
A. Saitas, Executive Director



TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

November 24, 1999

Mr. John T. James
Waste Management of Texas, Inc.
P.O. Box 400
Ferris, Texas 75125

COPY

Re: Municipal Solid Waste - Dallas and Ellis Counties
Waste Management Skyline Landfill - MSW Permit No. 42-C
Application for Bioremediation Treatment Pad Facility
MSW Permit Modification Tracking No. M391

Dear Mr. James:

Enclosed is a copy of the above-referenced permit modification for a municipal solid waste facility issued pursuant to Chapter 361, Texas Health & Safety Code. The documentation, including the application, prepared and submitted to support the modification request shall be considered a part of this permit and shall be considered as operational requirements of this permit. Please be reminded that quarterly status reports are required for the alternative daily cover materials pursuant to Title 30 Texas Administrative Code section 330.133(c)(2). Please contact Mr. George P. Hartmann, P.E. at (512) 239-3419 if you have any questions concerning this matter.

Sincerely,

A handwritten signature in cursive script that reads "Dorca Zaragoza-Stone".

Dorca Zaragoza-Stone, Manager
MSW Permits Section
Waste Permits Division

DZS/gh

cc: Mr. Walter Hunt, P.E., EMCON - Fort Worth

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



COPY

MODIFICATION TO

MUNICIPAL SOLID WASTE PERMIT N° MSW 42-C

Waste Management of Texas Skyline Landfill

Municipal Solid Waste Permit No. MSW 42-C is hereby modified as follows:

Description of Changes: Bioremediation Treatment Pad, prepared November 18, 1999.

Permit Sections Revised: Site Development Plan - Incorporate Bioremediation Treatment Pad Operating Plan.

This modification is a part of Permit No. MSW 42-C and should be attached thereto.

APPROVED, ISSUED, AND EFFECTIVE in accordance with 30 Texas Administrative Code Section 305.70(i).

ISSUED DATE:

NOV 24 1999

A handwritten signature in black ink, appearing to read "John A. ...", written over a horizontal line.

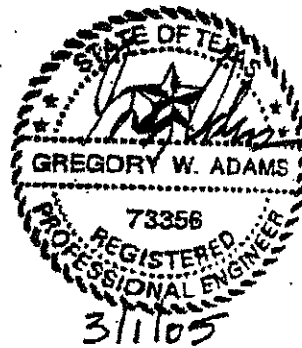
For the Commission

**SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT NO. MSW 42C**

BIOREMEDIATION TREATMENT PAD

Prepared for
Waste Management of Texas, Inc.

Revised March 2005

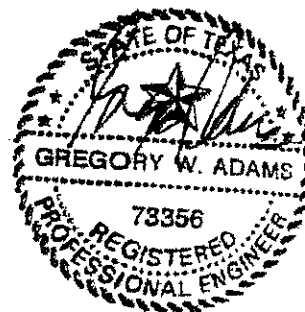


Prepared by

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3/1/05

SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT NO. 42C

PERMIT MODIFICATION
BIOREMEDIATION TREATMENT PAD

APPLICANT'S CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

We herewith authorize you to review and comment on such reports, planning material, and data on this proposed project as Biggs & Mathews Environmental, Inc., may submit to you.



Paula Carboni
Market Area Environmental Manager
North Texas Market Area

3/1/05

Date

INTRODUCTION

The purpose of this Class 1 Permit Modification is to authorize a Bioremediation Treatment Pad that will be used to treat petroleum contaminated material, per 30 §TAC 330.4(j). The contaminated material will be treated to achieve target remediation levels and then may be re-used as Alternate Daily Cover (ADC) or appropriately disposed at the facility. The following information is included in this modification.

- Types of waste accepted
- Treatment Pad Design (drawings are included in Appendix A)
- Waste characterization and treatment pad operating operations

Skyline Landfill is a Type 1 Municipal Solid Waste Disposal facility with a permit boundary of 667 acres. The site is located in Dallas and Ellis Counties on the north side of Ferris, Texas. The site has been in operation since 1976 with the most recent permit amendment (MSW-42C) approved by the Texas Natural Resource Conservation Commission (TNRCC) in April of 1995.

The treatment pad will be located within the landfill permit boundary and over an area that will be developed for refuse containment in the future. The location of the proposed treatment pad is shown on Figure 1 (Appendix A).

TYPES OF WASTE ACCEPTED

The following types of wastes will be accepted for treatment at the Skyline Landfill treatment pad.

- TNRCC Industrial Class I petroleum substance waste
- TNRCC non-hazardous municipal and commercial petroleum substance waste
- TNRCC non-hazardous Emergency Response petroleum substance waste
- RCCT non-hazardous petroleum substance waste

The following waste will NOT be accepted:

- Hazardous waste.
- Waste with free liquids unless they are to be solidified to pass the Paint Filter Test (EPA Method 9095) prior to treatment and prior to acceptance on the treatment pad.

TREATMENT PAD DETAILS

The treatment pad design is shown on the permit drawings presented in Appendix A. The treatment pad is to be constructed in an area of the site that is underlain by highly plastic clay soils and claystone. These clay and claystone materials are part of the Taylor Group and are characterized as highly plastic clay soil materials with liquid limits greater than 50. The treatment area is approximately 2.5 acres. The treatment pad will consist of a minimum 18-inch-thick constructed clay soil pad. This clay soil pad will be constructed over the existing clay/claystone materials, and in an area that will be excavated in the future as part of cell construction. The excavation grades for the future cell are on the order of 20 to 30 feet below the pad area, thus the pad will be removed at some point in the future as further described in the Treatment Pad Closure Section of this plan. This clay soil pad will be constructed over the existing clay/claystone materials at the site in the following manner:

- The area around and below the treatment pad will be rough graded and any vegetation and topsoil removed.
- Existing on-site, highly plastic clay soil materials will then be placed to shape the pad area to grades approximately 18 inches below design elevations.
- The clay pad will then be constructed by placing on-site clay soils in six-inch lifts and compacting the soils as they are placed.
- Finally, a three-foot high berm will be constructed around the perimeter of the facility to contain any rainfall.

The pad layout, including the stormwater containment berm, is shown on Figures 2 and 3. The design calculations for the berm around the pad area are included in Appendix B.

As shown, the containment berm is designed to contain the 24-hour, 25-year storm event. The water collected will be utilized in the treatment process or discharged after testing to the City of Ferris POTW. To minimize the amount of contaminated water (stormwater that contacts the waste material) cross berms may be constructed to separate active and inactive treatment pad areas. The berms will extend

into the pond separating the two types of collected water. As an alternate or additional method to control contaminated water, the piles maybe covered with an impervious material (such as 60 mil synthetic, tarpaulins, ect.). Water that falls on these "covered" piles will be uncontaminated. Uncontaminated stormwater (stormwater that contacts intermediate cover or a "clean" portion of the treatment pad) will be pumped to the landfill's perimeter drainage system. Contaminated water will be handled in accordance with the site's approved Leachate and Contaminated Water Plan.

WASTE CHARACTERIZATION AND TREATMENT PAD OPERATIONS

Waste Characterization

Waste characterization for acceptance and bioremediation feasibility will be completed and assessed prior (off-site) to accepting waste material (for waste materials that are not known through generator process knowledge to be non-hazardous or have had the contaminants previously defined). The characterization will include, but will not be limited to, the following:

- A hazardous waste determination as per 40 Code of Federal Regulations (CFR) Part 261
- Completion of the Waste Management Special Waste Acceptance Profile – See Appendix C
- Completion of appropriate analytical work
- Any other additional information that may be pertinent (e.g., MSDS, process knowledge)

Characterization of soils that are known through generator process knowledge to be non-hazardous, have had the contaminants defined by soil borings or other appropriate measures, or have been profiled on a Waste Management Special Waste Profile form, will be accepted onto the treatment pad for further characterization on site. Once the soil has been stockpiled additional onsite characterization maybe performed. This additional testing may include additional analytical analysis to determine the most effective process for treatment.

TREATMENT PAD OPERATIONS

Properly documented waste will be staged at the site for processing in designated areas of the treatment pad. Each shipment will be tracked by both documentation and physical grid markers on the pad (see Drawing 2 for current grid system). The grid system is an alphanumeric system with letter northings and numeric eastings. If staged soils are to be stockpiled before treatment, stockpiles will be managed to prevent wind dispersal of contaminants. Treatment (including physical preparation of the pile) will begin on all incoming waste as soon as enough material is present to make the process economically viable. This will typically occur (i.e., the beginning of treatment) within 90 days. Stockpiled material will only be stored on the constructed treatment pad.

Analytical parameters and target remediation goals will be used to select an available bioremediation technique. If bulking of the material is required to enhance bioremediation, it will be accomplished prior to waste treatment. Bulking will generally be accomplished with the addition of hay or other locally available and appropriate bulking agents.

Treatment plots will be monitored periodically (typically at intervals less than 60 days). Monitoring results will determine the addition of nutrients. The facility operator shall inspect the facility weekly and after storms to detect evidence of deterioration, malfunction and improper operation of stormwater run-on/run-off. A log documenting waste characterization and stockpile location within the treatment pad will be maintained at the site (typical tracking form included in Appendix C). All documents will be kept on file at the facility, readily accessible for reference and inspection per 30 TAC §330.113.

Once materials are treated then removed, the facility operator will inspect the area of the pad that was utilized for any damage or soft spots in the constructed clay pad. If damage or soft areas are identified these areas will be reworked with the import of additional on-site clay soils prior to the acceptance of additional materials for treatment in this area of the pad.

FINAL CHARACTERIZATION OF WASTE

Once target remediation levels are obtained, the treatment plots will be tested for final characterization prior to reuse as ADC. Final characterization will include the determination that the soils have been treated to meet Class 2 or Class 3 waste criteria. Any "hot spots" will be retreated to meet regulatory standards. Characterization for final disposal will consist of obtaining one four-point composite grab sample for every 50 cubic yards. Provided all the samples meet regulatory requirements, the treated material will be approved for reuse as daily cover.

After the waste has been successfully treated to target levels, and is to be properly disposed, a letter of bioremediation acknowledgment will be sent to the generator (if required).

Treatment Pad Closure

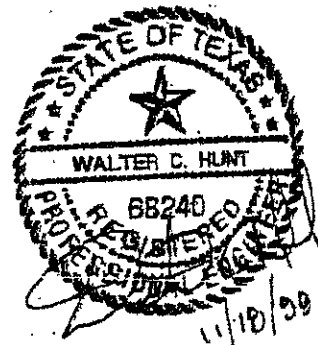
The facility will be located in the central portion of the Skyline Landfill and is scheduled to become part of the active landfill before final closure of the landfill. This will necessitate closure of the facility at some time in the future as determined by either facility usefulness or the potential need to develop the section of land occupied by the facility. The facility closure will be conducted in the following manner:

1. **Removal of all Treatment Plots.** If possible, all treatment plots existing at the time of closure will be treated to acceptable levels of reuse. Final characterization will be conducted on all plots in accordance with this registration. The soils will be removed from the facility and utilized as cover material in the adjacent landfill. Alternatively, treatment plots will be transported for treatment by another facility registered and approved by the TNRCC.
2. **Testing of Working Area.** The existing working area inside facility (including the clay pad, the soils in the containment pond, and affected berm materials) will be sampled at a density of four composite samples for each acre of treatment area. These samples will be tested for total petroleum hydrocarbons (TPH), for benzene, toluene, ethylbenzene and xylene (BTR+EX) and lead. If all samples are below reuse criteria, the soils will be excavated and used for cover material in accordance with reuse guidelines. If areas exhibit containment levels higher than reuse levels, these areas will be bioremediated until reuse levels are attained.
3. **Closure.** Soils utilized for facility construction will be left in place, or excavated and stockpiled for use as landfill cover. Once closure is complete, the facility owner will submit to the TNRCC Executive director a report by an independent qualified hydrogeologist, geologist, or independent registered professional engineer that the facility has been closed in accordance with the specifications of this closure plan.

A closure cost estimate is included in Appendix D. Once this modification is approved and prior to operation of the treatment pad, the financial assurance for the site will be updated if necessary to include the closure costs.

APPENDIX A
PERMIT DRAWINGS

APPENDIX B
CONTAINMENT BERM DESIGN



CONTAINMENT BERM DESIGN

REQUIRED:

Determine the height of the containment berm required for run-off control for the bioremediation pad.

PROCEDURE:

1. Determine the 25-year, 24-hour rainfall.
2. Calculate the volume of water captured behind the containment berm for the 25-year, 24-hour rainfall event.
3. Calculate the height of the containment berm required to hold the volume of water calculated in step 2.

REFERENCES:

1. Dodson & Associates, Inc., "ProHEC-1 Program Documentation", 1992.

SOLUTION:

1. Based on Reference 1, the 25-year, 24-hour rainfall depth for Dallas/Ellis County may be determined.

$$R = 7.7 \text{ in}$$

2. Determine the volume of storage required.

$$V_R = CAR$$

Where:

C = Runoff coefficient

A = Drainage area

R = 25-year, 24-hour rainfall depth

$$\begin{aligned} &= 0.5 \\ &= 2.42 \text{ ac} \\ &= 7.7 \text{ in} \end{aligned}$$

$$V_R = 33,821 \text{ cf}$$

3. Volume of storage provided by detention pond

$$V_p = A_{\text{ave}} \times D_p$$

where:

 A_{ave} = Average Area of Pond, sf D_p = Depth of Pond, ft = 4.2 ft

$$\text{Surface Area of Top of Pond } (A_{\text{tp}}) = 10,797 \text{ sf}$$

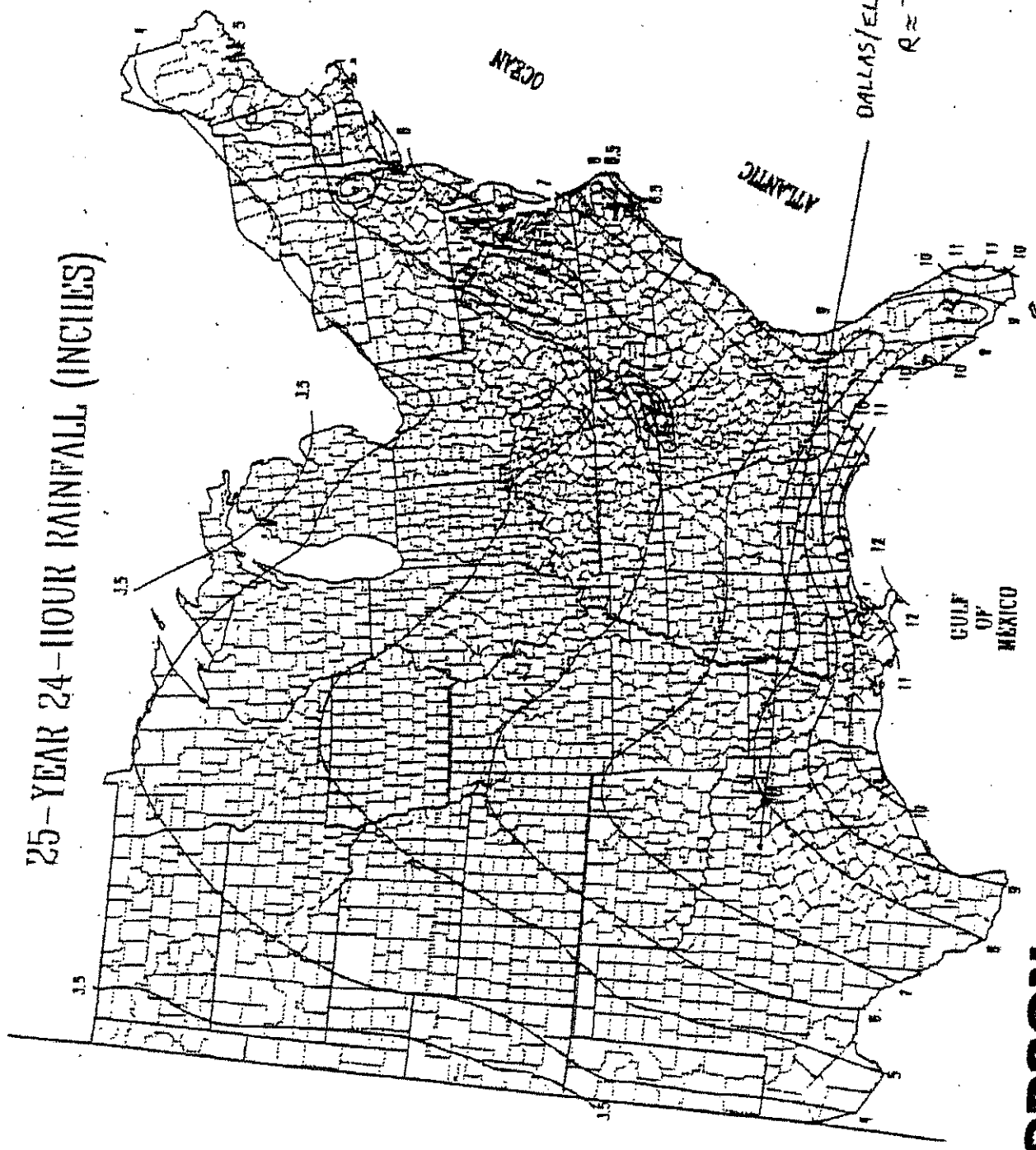
$$\text{Surface Area of Bottom of Pond } (A_{\text{bp}}) = 5,864 \text{ sf}$$

$$A_{\text{ave}} = (A_{\text{tp}} + A_{\text{bp}}) / 2 = 8,331 \text{ sf}$$

$$V_p = 34,988 \text{ cf}$$

$$V_p > V_R \quad \text{Design Acceptable}$$

25-YEAR 24-HOUR RAINFALL (INCHES)



**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

PART IV – SITE OPERATING PLAN

**APPENDIX IVE
LIQUID STABILIZATION PLAN**

Prepared for

Waste Management of Texas, Inc.

April 2012

Revised August 2012



Prepared by

BIGGS & MATHEWS ENVIRONMENTAL

1700 Robert Road, Suite 100 ♦ Mansfield, Texas 76063 ♦ 817-563-1144

TEXAS BOARD OF PROFESSIONAL ENGINEERS
FIRM REGISTRATION No. F-256

TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS
FIRM REGISTRATION No. 50222

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APPENDIX IVE-A Liquid Stabilization Approval



2 OPERATIONAL METHODS

The facility may operate a portable metal solidification basin(s) placed within an existing lined cell facility. The facility may receive material requiring solidification. Trucks will discharge directly into a portable basin. Materials suitable for mixing will be materials acceptable for disposal including lime, fly ash, cement kiln dust, Portland cement, sawdust, dirt, or auto fluff. Any combination of these materials may be used for liquid stabilization.

The materials suitable for mixing will be located above existing lined areas in stockpiles adjacent to the portable metal solidification basin and will be relocated as the portable metal solidification basin moves. The size of the stockpiles may vary depending on the amount of mixing materials received at any given time. The mixing materials will be managed in a manner that will prevent runoff of contaminated water, discharge of waste, or the creation of nuisance conditions. Since these mixing materials will be continuously reused for liquid stabilization, there is no time limit on the storage of these materials.

Mixing will be accomplished with a backhoe or other appropriate machinery. Each batch of stabilized material will be tested for free liquids in accordance with Method 9095 (Paint Filter Liquids Test), as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Publication Number SW-846), as amended. Upon verification of the stabilized material passing the paint filter test, the mixture will be removed from the basin and deposited in the active face for landfilling on the day it is received and will not be stored within a portable metal solidification basin placed within an existing lined cell.

The processing/stabilization of the liquid wastes received will be conducted in a manner so as to minimize the potential for odor-related nuisances and contamination of stormwater runoff.

**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

PART IV – SITE OPERATING PLAN

**APPENDIX IVF
ALTERNATIVE DAILY COVER OPERATING PLAN**

Prepared for

Waste Management of Texas, Inc.

April 2012

Revised August 2012



Prepared by

BIGGS & MATHEWS ENVIRONMENTAL

1700 Robert Road, Suite 100 ♦ Mansfield, Texas 76063 ♦ 817-563-1144

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APPENDIX IVF-A
Alternate Daily Cover Approval



1 INTRODUCTION

This Alternative Daily Cover Operating Plan (ADCOP) has been prepared for the Skyline Landfill consistent with §330.165(d)(4)-(5). The purpose of this ADCOP is to address the following issues:

1. Description and thickness of each ADC material
2. Chemical composition of the material and the MSDS(s) for the ADC (if applicable)
3. Operation methods to be utilized at the site when using the ADC
4. Effect of the ADC on vectors, fires, odors, and windblown litter

As specified in Part IV, SOP, Section 8.18.4 – Alternative Material Daily Cover, ADC may be used to cover exposed waste except when the landfill is to be closed for a period of greater than 24 hours (unless otherwise approved by TCEQ). ~~Petroleum contaminated soils may be used to cover waste for periods of time greater than 24 hours since they provide coverage equivalent to clean soil.~~ Refer to Appendix IVF-A for TCEQ approval of alternate daily cover at the Skyline Landfill.

SKYLINE LANDFILL

APPENDIX IVF-A

ALTERNATE DAILY COVER APPROVAL

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*



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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 21, 2006

Ms. Paula Carboni
Market Area Compliance Manager
Waste Management of Texas, Inc.
P.O. Box 400
Ferris, TX 75125

Re: Municipal Solid Waste – Dallas and Ellis Counties
Skyline Recycling and Disposal Facility - MSW Permit No. 42C
Permit Modification: Site Operating Plan Approval
WWC Nos. 11017907, 11183682, 11267403, 11337231, 11324625, and 11359429
RN100542232 / CN600127856

Dear Ms. Carboni:

We have completed the technical review of the modification request dated June 24, 2005 and received by the Municipal Solid Waste (MSW) Permits Section on June 27, 2005, and revisions dated November 23, 2005, February 15, 2006, April 12, 2006, and May 25, 2006, and received on November 23, 2005, February 17, 2006, April 17, 2006, and May 25, 2006, respectively, regarding the above referenced MSW facility. The modification provides updates to the existing site operating plan to comply with Title 30 Texas Administrative Code Chapter 330 Subchapter F, Operational Standards for Solid Waste Land Disposal Sites, as effective prior to March 27, 2006. The information presented is technically sufficient for a permit modification and we have prepared a draft modification.

Enclosed is a copy of the above referenced modification which is now part of your permit and should be attached thereto. The documentation prepared and submitted to support the modification request shall be considered as requirements of the permit.

If you have questions concerning this matter, please contact Ms. Alayna M. Goetsch at (512) 239-2383. When addressing written correspondence, please use Mail Code 124 (MC 124).

Sincerely,

A handwritten signature in cursive script that reads "Richard C. Carmichael".

Richard C. Carmichael, Ph.D., P.E.
Manager, Municipal Solid Waste Permits Section
Waste Permits Division

RCC/AMG/fp

cc: Mr. Kenneth J. Welch, P.E., Senior Engineer, Biggs and Mathews Environmental, Mansfield

Enclosure

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



MODIFICATION TO
MUNICIPAL SOLID WASTE PERMIT No. 42C
Skyline Recycling and Disposal Facility

Municipal Solid Waste Permit No. 42C is hereby modified as follows:

Description of Change:

This modification revises the Site Operating Plan to comply with Title 30 Texas Administrative Code Chapter 330 Subchapter F, Operational Standards for Solid Waste Land Disposal Sites, effective December 2, 2004.

The details of this permit modification are contained in the application dated June 24, 2005, and received on June 27, 2005, and the revisions dated November 23, 2005, February 15, 2006, April 12, 2006 and May 25, 2006, and received on November 23, 2005, February 17, 2006, April 17, 2006, and May 25, 2006, respectively.

Part of Permit Modified:

Part IV – Site Operating Plan

This modification is a part of Permit No. 42C and should be attached thereto.

APPROVED, ISSUED, AND EFFECTIVE in accordance with Title 30 Texas Administrative Code Section 305.70(1).

ISSUED DATE:

JUL 18 2006


For the Commission

**SKYLINE LANDFILL
DALLAS AND ELLIS COUNTY, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42C**

PERMIT AMENDMENT APPLICATION

**PART IV - SITE OPERATING PLAN
APPENDIX IVB
ALTERNATE DAILY COVER OPERATING PLAN**

Prepared for
Waste Management

April 2006



Prepared by
BIGGS & MATHEWS ENVIRONMENTAL
1700 Robert Road • Mansfield, Texas 76063 • 817-563-1144

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4	ADC VERIFICATION AND INSPECTION PROCEDURES	IVB-5



1 INTRODUCTION

This Alternate Daily Cover Operating Plan (ADCOP) has been prepared for the Skyline Landfill consistent with §330.133(c). The purpose of this ADCOP is to address the following issues:

- Description and thickness of each ADC material
- Chemical composition of the material and the MSDS(s) for the ADC (if applicable)
- Operation methods to be utilized at the site when using the ADC
- Effect of the ADC on vectors, fires, odors, and windblown litter

As specified in Part IV, SOP, Section 8.18.4-Daily Cover, ADC may be used to cover exposed waste except when the landfill is to be closed for a period of greater than 24 hours.

2 MATERIAL CHARACTERISTICS

2.1 Description of ADC Materials

The following types of ADC materials may be used at the Skyline Landfill. The ADC tarp materials identified have been approved by TCEQ.

- Contaminated Soils - Contaminated soil materials may be petroleum product contaminated soils having a total petroleum hydrocarbon (TPH) concentration of 1500 ppm or less, or are otherwise authorized by the TCEQ for disposal and use as cover material, may be applied as ADC. Contaminated soil materials may also consist of other contaminated soil type materials, which conforms with the TCEQ criteria approved for disposal at Type I municipal solid waste disposal facilities. The contaminated soil material to be used as daily cover will only be used after the special waste handling procedures identified in Appendix IVD - Special Waste Acceptance Plan, have been conducted. The contaminated soil will be placed to a minimum thickness of 6 inches. Clean daily cover soil may be combined with the contaminated soil if necessary.

2.2 Chemical Characteristics

The ADC materials proposed for use at the new Skyline Landfill are not reactive, ignitable, or corrosive. The contaminated soil materials will not exceed the maximum contaminant levels for petroleum contaminated soils or other contaminated soil type materials. Contaminated soils to be accepted and used for alternate daily cover will be accepted and used for alternate daily cover after the special waste handling procedures identified in Appendix IVD Special Waste Acceptance Plan, have been conducted.

3 OPERATIONAL METHODS

This section discusses the operational procedures that will be used to employ the proposed ADC materials. For each type of ADC, landfill personnel will verify that the waste fill area has been covered with the minimum required thickness at the completion of each working day.

- Contaminated soil material may be stockpiled near the working face and spread over waste with a dozer or similar equipment to a minimum thickness of 6 inches. Clean soil may be added as necessary to obtain the appropriate thickness.
- The contaminated soil materials will be placed in one lift, with a minimum thickness of six inches, and placed consistent with procedures for placement of daily cover in accordance with Section 8.18.2 Daily Cover.

4 ADC VERIFICATION AND INSPECTION PROCEDURES

At the end of each working day, landfill personnel will inspect the working face to verify that the minimum thickness of an approved ADC has been placed over the exposed wastes in accordance with this ADCOP. Landfill personnel will routinely assess the effectiveness of each ADC in controlling vectors, fires, odors, and windblown waste. The quarterly report will describe the effectiveness of the alternative materials, any problems that may have occurred, and corrective actions required. Quarterly reporting will not be required after four consecutive quarters of use with no problems.

The Skyline Landfill has used contaminated soils as ADC material. The Skyline Landfill has previously submitted to the TCEQ a status report on a quarterly basis in accordance with §330.133(c)(2).