



Riverbend Landfill Company

13469 SW Highway 18
McMinnville, OR 97128
(503) 472-8788

April 10, 2023

Ms. Denise Miller
Permit Coordinator
Oregon Department of Environmental Quality (DEQ)
DEQ Western Region
165 E. 7th Ave., Ste. 100
Eugene, OR 97401-3049

**RE: 2023 Annual Financial Assurance Update and Recertification
Riverbend Landfill; Solid Waste Disposal Permit No. 345
Yamhill County**

Ms. Miller:

In accordance with Oregon Revised Statutes (ORS) 459.272, Oregon Administrative Rules (OAR) 340-94-100 through 145, and Solid Waste Disposal Site Closure Permit (SWDSCP) No. 345, Section 12.4, we are submitting this Financial Assurance update for Riverbend Landfill Co. (RLC). As part of the submittal requirements for the SWDSCP, a Final Engineered Site Closure and Post-Closure Plan (FESCPP) was submitted in December 2022 and approved on February 6, 2023. That FESCPP update did not include an updated cost estimate, therefore, this update is provided. Where applicable, this update was made consistent with the 2022 FESCPP that was submitted and approved.

Since the last Annual Financial Assurance Update and Recertification in 2022, a 12.3-acre final cover was constructed, so the worst-case closure was adjusted to account for that activity. The updated 2023 Closure and Post-Closure Plan (Plan) is attached to this submittal. Below is the summary of funding coverage:

Worst-Case Closure:

- 2023 Closure Cost Estimate = \$9,596,094
 - Remaining Closure Area = 47.2 acres
 - Cost per Acre = \$203,307
 - Funded Trust Amount = \$11,839,715
 - Excess Funding Coverage = \$9,596,094 - \$11,839,715 = (\$2,243,621)
 - No Surety Performance Bond required for Closure

30-year Post-Closure

- 2023 Post-Closure Cost Estimate = \$24,564,523
 - Total Area = 87.4 acres
 - Cost per Acre = \$281,059
 - Funded Trust Amount = \$2,077,354
 - Additional Funding Coverage Needed = \$24,564,523 - \$2,077,354 = \$22,487,169
 - Surety Performance Bond by Endurance Assurance Corporation = \$22,487,169

In summary, the financial assurance mechanisms in place for RLC are Funded Trust Accounts held at U.S. Bank, NA and a Surety Payment Bond provided by Endurance Assurance Corporation as summarized on in the table below. Copies of these documents are attached; the originals will be sent to DEQ on April 7, 2023.

CLOSURE FINANCIAL ASSURANCE	
US Bank Funded Trust Account, through March 31, 2023 (# [REDACTED])	\$11,839,715
Endurance Surety Performance Bond ([REDACTED])	\$0
Total Closure Financial Assurance Provided by RLC	\$11,839,715
Total Closure Financial Assurance Estimated by RLC/SCS	\$9,596,094
Total Closure Financial Assurance Excess	(\$2,243,621)

POST-CLOSURE FINANCIAL ASSURANCE	
US Bank Funded Trust Account, through March 31, 2023 (# [REDACTED])	\$ 2,077,354
Endurance Surety Performance Bond ([REDACTED])	\$22,487,169
Total Post-Closure Financial Assurance Provided by RLC	\$24,564,523
Total Post-Closure Financial Assurance Estimated by RLC/Vista w/o Discount	\$24,564,523
Total Post-Closure Financial Assurance Excess	\$0

I certify that the financial assurance plan and financial assurance mechanism have been reviewed, updated, and found adequate, and that the updated documents have been placed in the facility operating record. I also certify that the landfill closure date is certain and there are no currently foreseeable factors that will change the estimate of site life. If such changes do occur, the ODEQ will be notified, and a revised financial assurance plan and financial assurance mechanism will be prepared.

If you have any questions, please contact me at 503.348.3781 (email: madams13@wm.com) or Diana Seng at 713.265.1322 (email: dseng@wm.com).

Sincerely,



Melody A. Adams
PNW/BC Area Project Manager

- Enclosures:**
1. Annual Recertification of Financial Assurance
 2. Updated Performance Bond Guaranteeing Payment ([REDACTED]) Rider issued by Endurance Assurance Corporation with the Standby Trust Agreements as Schedule A and B
 3. Funded Trust Agreement issued by U.S. Bank, NA with the Funded Trust Account Summaries ([REDACTED] and [REDACTED])
 4. "2023 Closure and Post-Closure Plan", Updated by Riverbend Landfill Co. (April 2023), Cost Estimate Certified by Vista GeoEnvironmental Inc (April 2023)

Electronic Copy only: James McCourt, DEQ – Western Region
David Lowe, WM
David Rettell, WM

Adam Winston, WM
Nicholas Godfrey, WM
Diane Seng, WM

ENCLOSURE 1



Riverbend Landfill Co.
 13469 SW Highway 18
 McMinnville, OR 97128
 (503) 472-8788

Annual Recertification of Financial Assurance

I am the **Pacific Northwest / British Columbia (PNW/BC) Area Director of Collection Operations** of **Riverbend Landfill Co. of 13469 SW Highway 18, McMinnville, OR 97128** (hereinafter "Permittee") By this letter I certify that Permittee continues to assure payment of all costs associated with closure and post-closure care (together hereinafter "Costs") of the solid waste facility specified in DEQ Permit Number **345**, as required by OAR 340-094-0140 and 0145 (or for non-MSW landfills or other SW Disposal Sites, OAR 340-095-0090 and 0095.) As **PNW/BC Area Director of Collection Operations**, I possess the requisite authority to commit Permittee to this certification and acknowledge that this certification is an ongoing, continuing and binding obligation of Permittee.

Permittee certifies that all Costs have been derived using the best procedures available, that all factors affecting Costs have been reviewed within the past twelve months and that all required changes or modifications to Costs have been made. If any future costs have been discounted to present value, the discount rate applied is less than or equal to the DEQ Reference Rate for the current year (or for non-MSW landfills, a discount rate equal to the current yield on a 5-year U.S. Treasury Note as required by OAR 340-095-0090), and all other discounting requirements contained in OAR 340 have been met.

Permittee has chosen to assure payment of Costs through use of a **Funded Trust Accounts** and **Surety Bond (Riverbend Landfill Co. Closure Trust and Riverbend Landfill Co. Post-Closure Trust)** issued by **U.S. Bank, N.A.** and **Endurance Assurance Corporation (performance bond)**, respectively. Permittee certifies that the **Funded Trust Accounts** and **Surety Bond** are adequate in amount to cover Costs, including any required changes or additions thereto, is in the exact format specified and in all other respects continues to meet the requirements of OAR 340. Permittee certifies further that **U.S. Bank, N.A.** and **Endurance Assurance Corporation (performance bond)**, continue to meet all federal and State of Oregon requirements for issuance of and performance on the **Funded Trust Accounts** and **Surety Bond**.

Permittee certifies that it continues to meet all federal and State of Oregon requirements of whatever nature to assure the payment of Costs.

I attest that the foregoing statement is true, accurate and complete.

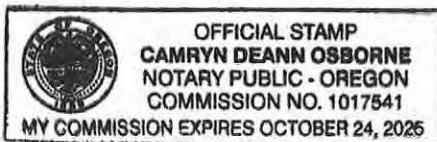
Adam Winston

Date: 4/10/23

STATE OF OREGON)
) ss.
 County of Multnomah)

Before me this 10th day of April, 2023 personally appeared **Adam Winston** who, first being duly sworn, did say that he is the **PNW/BC Area Director of Collection Operations** of **Riverbend Landfill Co.** and executed the foregoing document on behalf of **Riverbend Landfill Co.** by authorization of its governing board.

Before me
 Camryn DeAnn Osborne
 Notary Public for Oregon
 My Commission expires: October 24, 2025



ENCLOSURE 2



Endurance Assurance Corporation
4 Manhattanville Road
Purchase, NY 10577

Memorandum

DT: April 6, 2023

Via UPS Overnight

TO: Denise Miller
DEQ Western Region – Permit Coordinator
165 E 7th Ave., Suite 100
Eugene, OR 97401

FR: Theresa Hintzman
Bond Assistant

RE: **CORRECTED COPY - New Bond - Riverbend Landfill Co. - DEQ Solid Waste Permit Number 345**

Enclosed is the above referenced New bond for Riverbend Landfill Co. This bond will replace and supersede current bond in place with Lexon Insurance Company, bond number 1037710.and

If you have any questions or need further assistance, please contact Diana Seng, Director of Treasury and Financial Assurance at (713)265-1322 or DSeng@wm.com.

Enclosure

Performance Bond

Date bond executed: 4/6/2023

Effective date: 4/1/2023

Principal: Riverbend Landfill Co., 13469 SW Highway 18, McMinnville, OR 97128

State of incorporation: Delaware

Surety: Endurance Assurance Corporation, 4 Manhattanville Road, Purchase, NY 10577

DEQ Solid Waste Permit number, name, address, and current cost estimate(s) for closure, post-closure and/or corrective action for each facility guaranteed by this bond according to the closure or post-closure plan, solid waste permit requirements, and for corrective action according to the remedial action option developed and selected pursuant to OAR 340 Division 40:

Closure:	\$	0.00
Post-Closure:	\$22,487,169.00	
Total penal sum of bond:	\$22,487,169.00	
Surety's bond number:	EACX4028414	

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the State of Oregon Department of Environmental Quality (hereinafter called DEQ), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under Oregon Revised Statutes Chapter 459 to have a solid waste permit in order to own or operate each solid waste land disposal site identified above; and

Whereas said Principal is required to provide financial assurance for all costs of properly closing each site and providing post-closure care in accordance with the closure or post-closure plan, solid waste permit requirements, and for corrective action according to a remedial action option developed and selected pursuant to OAR 340 Division 40; and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of this obligation are such that if the Principal shall faithfully perform closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

And, if the Principal shall faithfully perform post-closure care at each facility for which this bond guarantees post-closure care, in accordance with the post-closure plan and other requirements of the permit, as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

And, if the Principal shall faithfully carry out corrective action according to a remedial action option developed and selected pursuant to OAR 340 Division 40 for each site for which this bond guarantees corrective action according to the remedial action option and all other applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

Or, if the Principal shall obtain and provide alternate financial assurance as specified in OAR 340-94-140 and -145 [OAR 340-95-090 and -095], within 90 days after the date notice of cancellation is received by both the Principal and the DEQ Director from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the DEQ Director that the Principal has been found in violation of the closure requirements of OAR 340 Division 94 [Division 95], for a site for which this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other solid waste permit requirements or place the closure amount guaranteed for the site into the standby trust fund as directed by the DEQ Director.

Upon notification by the DEQ Director that the Principal has been found in violation of the post-closure requirements of OAR 340 Division 94 [Division 95] for a site for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other solid waste permit requirements or place the post-closure amount guaranteed for the site into the standby trust fund as directed by the DEQ Director.

Upon notification by the DEQ Director that the Principal has been found in violation of corrective action as specified in the remedial action option developed and selected pursuant to OAR 340 Divisions 94 [95] and 40 for a site for which this bond guarantees performance of corrective action, the Surety(ies) shall either perform corrective action in accordance with the remedial action option or place the corrective action amount guaranteed for the site into the standby trust fund as directed by the DEQ Director.

Upon notification by an DEQ Director that the Principal has failed to obtain and provide alternate financial assurance as specified in OAR 340 Division 94 [95], during the 90 days following receipt by both the Principal and the DEQ Director of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the DEQ Director.

The surety(ies) hereby waive(s) notification of amendments to closure and post-closure plans, permits, remedial action option reports, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the DEQ Director, provided, however, that cancellation shall not occur during the

120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the DEQ Director as evidenced by the return receipts. If Principal has not provided alternate financial assurance within 90 days of the notice of cancellation, Surety(ies) shall pay the amount of the penal sum into the standby trust account.

The principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the DEQ Director.

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure, post-closure and/or corrective action amount to correspond to the annual adjustment to the cost estimates required by OAR 340-94-140(6)(d) [OAR 340-95-090(6)(d)], provided that the penal sum does not increase by more than 20 percent in any one year.

In Witness Whereof, The Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies)

Principal: Riverbend Landfill Co.



Susan Ritter

Attorney-in-Fact

Corporate Surety(ies)

Endurance Assurance Corporation, 4 Manhattanville Road, Purchase, NY 10577

State of incorporation: Delaware

Liability limit: \$166,021,000.00

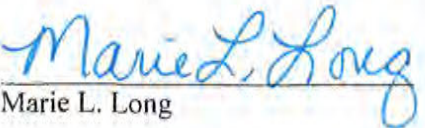


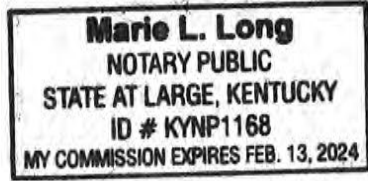
Theresa Hintzman, Attorney-in-Fact

[For every co-surety, provide signature(s) and other information in the same manner as for Surety above.]

Bond premium: \$101,192.00

Before me appeared Susan Ritter and Theresa Hintzman on this 6th day of April, 2023.


Marie L. Long



POWER OF ATTORNEY

KNOWN ALL MEN BY THESE PRESENTS that Waste Management, Inc. and each of its direct and indirect majority owned subsidiaries (the "WM Entities"), have constituted and appointed and do hereby appoint Theresa Hintzman, Kelsy Hoagland, and Susan Ritter of Acrisure, LLC DBA Smith Manus, each its true and lawful Attorney-in-fact to execute under such designation in its name, to affix the corporate seal approved by the WM Entities for such purpose, and to deliver for and on its behalf as surety thereon or otherwise, bonds of any of the following classes, to wit:

1. Surety bonds to the United States of America or any agency thereof, and lease and miscellaneous surety bonds required or permitted under the laws, ordinances or regulations of any State, City, Town, Village, Board or any other body or organization, public or private.

2. Bonds on behalf of WM Entities in connection with bids, proposals or contracts.

The foregoing powers granted by the WM Entities shall be subject to and conditional upon the written direction of a duly appointed officer of the applicable WM Entity (or any designee of any such officer) to execute and deliver any such bonds.

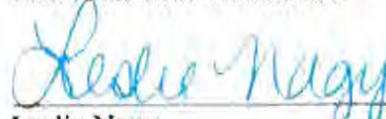
The signatures and attestations of such Attorneys-in fact and the seal of the WM Entity may be affixed to any such bond, policy or to any certificate relating thereto by facsimile and any such bond, policy or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the applicable WM Entity when so affixed.

IN WITNESS WHEREOF, the WM Entities have caused these presents to be signed by the Vice President and Treasurer and its corporate seal to be hereto affixed. This power of attorney is in effect as of April 6, 2023.

Witness:



On behalf of Waste Management, Inc. and each of the other WM Entities



Leslie Nagy
Vice President and Treasurer



KNOW ALL BY THESE PRESENTS, that **Endurance Assurance Corporation**, a Delaware corporation, **Endurance American Insurance Company**, a Delaware corporation, **Lexon Insurance Company**, a Texas corporation, and/or **Bond Safeguard Insurance Company**, a South Dakota corporation, each, a "Company" and collectively, "**Sompo International**," do hereby constitute and appoint: **Brook T. Smith, Raymond M. Hundley, Jason D. Cromwell, James H. Martin, Barbara Duncan, Mark A Guidry, Jill Kemp, Lynnette Long, Amy Smith, Deborah Neichter, Theresa Hintzman, Beth Frymire, Leigh McCarthy, Michael Dix, Susan Ritter, Ryan Britt, Kelsy Hoagland, Jacob Motto, Jennifer Edwards** as true and lawful Attorney(s)-In-Fact to make, execute, seal, and deliver for, and on its behalf as surety or co-surety; bonds and undertakings given for any and all purposes, also to execute and deliver on its behalf as aforesaid renewals, extensions, agreements, waivers, consents or stipulations relating to such bonds or undertakings provided, however, that no single bond or undertaking so made, executed and delivered shall obligate the Company for any portion of the penal sum thereof in excess of the sum of **ONE HUNDRED MILLION Dollars (\$100,000,000.00)**.

Such bonds and undertakings for said purposes, when duly executed by said attorney(s)-in-fact, shall be binding upon the Company as fully and to the same extent as if signed by the President of the Company under its corporate seal attested by its Corporate Secretary.

This appointment is made under and by authority of certain resolutions adopted by the sole shareholder of each Company by unanimous written consent effective the 15th day of June, 2019, a copy of which appears below under the heading entitled "Certificate".

This Power of Attorney is signed and sealed by facsimile under and by authority of the following resolution adopted by the sole shareholder of each Company by unanimous written consent effective the 15th day of June, 2019 and said resolution has not since been revoked, amended or repealed.

RESOLVED, that the signature of an individual named above and the seal of the Company may be affixed to any such power of attorney or any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signature or seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, each Company has caused this instrument to be signed by the following officers, and its corporate seal to be affixed this 15th day of June, 2019.

Endurance Assurance Corporation

Endurance American Insurance Company

Lexon Insurance Company

Bond Safeguard Insurance Company

By: *Richard M Appel*
Richard Appel, SVP & Senior Counsel

By: *Richard M Appel*
Richard Appel, SVP & Senior Counsel

By: *Richard M Appel*
Richard Appel, SVP & Senior Counsel

By: *Richard M Appel*
Richard Appel, SVP & Senior Counsel



ACKNOWLEDGEMENT

On this 15th day of June, 2019, before me, personally came the above signatories known to me, who being duly sworn, did depose and say that he/she is an officer of each of the Companies; and that he executed said instrument on behalf of each Company by authority of his office under the by-laws of each Company.

By: *Amy Taylor*
Amy Taylor, Notary Public - My Commission Expires 5/9/23



CERTIFICATE

I, the undersigned Officer of each Company, DO HEREBY CERTIFY that:

1. That the original power of attorney of which the foregoing is a copy was duly executed on behalf of each Company and has not since been revoked, amended or modified; that the undersigned has compared the foregoing copy thereof with the original power of attorney, and that the same is a true and correct copy of the original power of attorney and of the whole thereof;
2. The following are resolutions which were adopted by the sole shareholder of each Company by unanimous written consent effective June 15, 2019 and said resolutions have not since been revoked, amended or modified:

"RESOLVED, that each of the individuals named below is authorized to make, execute, seal and deliver for and on behalf of the Company any and all bonds, undertakings or obligations in surety or co-surety with others: **RICHARD M. APPEL, BRIAN J. BEGGS, CHRISTOPHER DONELAN, SHARON L. SIMS, CHRISTOPHER L. SPARRO, MARIANNE L. WILBERT**; and be it further

RESOLVED, that each of the individuals named above is authorized to appoint attorneys-in-fact for the purpose of making, executing, sealing and delivering bonds, undertakings or obligations in surety or co-surety for and on behalf of the Company."

3. The undersigned further certifies that the above resolutions are true and correct copies of the resolutions as so recorded and of the whole thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal this 6th day of April, 2023.

By: *Daniel S. Lurie*
Daniel S. Lurie, Secretary

NOTICE: U. S. TREASURY DEPARTMENT'S OFFICE OF FOREIGN ASSETS CONTROL (OFAC)

No coverage is provided by this Notice nor can it be construed to replace any provisions of any surety bond or other surety coverage provided. This Notice provides information concerning possible impact on your surety coverage due to directives issued by OFAC. **Please read this Notice carefully.**

The Office of Foreign Assets Control (OFAC) administers and enforces sanctions policy, based on Presidential declarations of "national emergency". OFAC has identified and listed numerous foreign agents, front organizations, terrorists, terrorist organizations, and narcotics traffickers as "Specially Designated Nationals and Blocked Persons". This list can be located on the United States Treasury's website - <https://www.treasury.gov/resource-center/sanctions/SDN-List>.

In accordance with OFAC regulations, if it is determined that you or any other person or entity claiming the benefits of any coverage has violated U.S. sanctions law or is a Specially Designated National and Blocked Person, as identified by OFAC, any coverage will be considered a blocked or frozen contract and all provisions of any coverage provided are immediately subject to OFAC. When a surety bond or other form of surety coverage is considered to be such a blocked or frozen contract, no payments nor premium refunds may be made without authorization from OFAC. Other limitations on the premiums and payments may also apply.

Any reproductions are void.

Surety Claims Submission: LexonClaimAdministration@sompo-int.com

Telephone: 615-553-9500 Mailing Address: Sompo International; 12890 Lebanon Road; Mount Juliet, TN 37122-2870

Standby Trust Agreement Dated April 12, 2010
Trust Agreement Supplement and Addendum Dated September 23, 2013
Riverbend Landfill Co., Grantor
JPMorgan Chase Bank, N.A., Trustee
Wells Fargo Bank, N.A., Successor Trustee

SCHEDULE A
(Revised 4/6/2023)

Facility Name:	Riverbend Landfill Co.
Facility Address:	13469 SW Highway 18, McMinnville, OR 97128
DEQ Solid Waste Permit Number/s:	345
Current Closure Cost Estimate/s:	\$ 9,596,094.00
Current Post-Closure Cost Estimate/s:	\$ 24,564,523.00
Current Corrective Action Cost Estimate/s:	\$0.00
Total Current Cost Estimate/s:	\$ 34,160,617.00
Post-Closure provided by Payment Bond #1037710:	\$ 22,487,169.00
Total Payment Bond Amount:	\$ 22,487,169.00

Standby Trust Agreement Dated April 12, 2010
Trust Agreement Supplement and Addendum Dated September 23, 2013
Riverbend Landfill Co., Grantor
JPMorgan Chase Bank, N.A., Trustee
Wells Fargo Bank, N.A., Successor Trustee

SCHEDULE B

(Revised 4/6/2023)

Type of Financial Instrument:	Surety Bond Guaranteeing Payment
Executed by:	Lexon Insurance Company 10002 Shelbyville Road, Suite 100 Louisville, Kentucky 40223
Date of Bond Execution:	January 13, 2010
Bond Number:	1037710
Bond Amount:	Closure: \$.00 Post Closure: \$ 22,487,169.00 Penal Sum: \$ 22,487,169.00



2023 Riverbend Landfill Closure Cost Estimates

<u>Site:</u>		Riverbend Landfill			<u>State:</u>	Oregon	<u>Waste:</u>	MSW
<u>Acreage:</u>		47.2 Acres						
<u>a Earthwork</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
1	15,839	Cubic Yards	\$ 5.00	\$ 79,195	2014	2023	27.12%	\$ 100,673
2	79,195	Cubic Yards	\$ 5.00	\$ 395,975	2014	2023	27.12%	\$ 503,363
6	39,598	Cubic Yards	\$ 10.40	\$ 411,819	2014	2023	27.12%	\$ 523,505
7	15,839	Cubic Yards	\$ 8.41	\$ 133,206	2014	2023	27.12%	\$ 169,331
8 Other (Describe Below)								
	237,586	SY	\$ 0.21	\$ 49,893	2016	2023	24.76%	\$ 62,247
	1	LS	\$ 75,000.00	\$ 75,000	2015	2023	25.70%	\$ 94,275
	1	LS	\$ 75,000.00	\$ 75,000	2015	2023	25.70%	\$ 94,275
COA and Surveying								
EARTHWORKS SUBTOTAL -								
\$ 1,547,669								

<u>b Geosynthetics</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
1	251,293	Square Yards	\$ 2.61	\$ 655,875	2014	2023	27.12%	\$ 833,748
5	251,293	Square Yards	\$ 6.70	\$ 1,683,663	2014	2023	27.12%	\$ 2,140,273
7 Other (Describe Below)								
	1	LS	\$ 50,000.00	\$ 50,000	2015	2023	25.70%	\$ 62,850
	1	LS	\$ 100,000.00	\$ 100,000	2015	2023	25.70%	\$ 125,700
Contractor Mobilization								
CQA and Surveying								
GEOSYNTHETICS SUBTOTAL -								
\$ 3,162,570								

<u>c Stormwater Management System</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
8	1	LS	\$ 1,270,000.00	\$ 1,270,000	2017	2023	20.44%	\$ 1,529,588
Drainage and Site Work								
STORMWATER MANAGEMENT SYSTEM SUBTOTAL -								
\$ 1,529,588								

<u>d Temporary and Permanent Erosion Controls</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
7	49.09	Acres	\$ 750.00	\$ 36,816	2014	2023	27.12%	\$ 46,800
	61.36	Acres	\$ 1,166.00	\$ 71,546	2016	2023	24.76%	\$ 89,260
Sediment and Erosion Control								
Vegetation and Seeding								
TEMPORARY AND PERMANENT EROSION CONTROLS SUBTOTAL -								
\$ 136,061								



2023 Riverbend Landfill Closure Cost Estimates

<u>e Landfill Gas Management System</u>		Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
12 Other (Describe Below)									
	Engineering, Construction Drawings, and CQA	1	LS	\$ 150,000.00	\$ 150,000	2014	2023	27.12%	\$ 190,680
	Remaining Well Field	47.20	Acres	\$ 25,000.00	\$ 1,180,000	2014	2023	27.12%	\$ 1,500,016
									\$ 1,690,696

LANDFILL GAS MANAGEMENT SYSTEM SUBTOTAL -

<u>g CQA, Engineering, Surveying and Other Professional Services</u>		Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
3	Construction Drawing Preparation	1	LS	\$ 175,000.00	\$ 175,000	2015	2023	25.70%	\$ 219,975
4	Bid Package	1	LS	\$ 5,000.00	\$ 5,000	2015	2023	25.70%	\$ 6,285
5	Construction Management	1	LS	\$ 285,000.00	\$ 285,000	2015	2023	25.70%	\$ 358,245
6	Certification Report	1	LS	\$ 30,000.00	\$ 30,000	2015	2023	25.70%	\$ 37,710
7	Deed Record Update	1	LS	\$ 2,500.00	\$ 2,500	2015	2023	25.70%	\$ 3,143
									\$ 625,358

PROFESSIONAL SERVICES SUBTOTAL -

<u>h Miscellaneous</u>		Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
1	Demobilization and Demolition	1	LS	\$ 25,000.00	\$ 25,000	2014	2023	27.12%	\$ 31,780
									\$ 31,780

MISCELLANEOUS SUBTOTAL -

									CURRENT TOTAL - \$ 8,723,722
									Contingency 10.00% \$ 872,372
									FINANCIAL ASSURANCE REQUIRED FOR CLOSURE - \$ 9,596,094
									Closure Cost per Acre - \$ 203,307



2023 Riverbend Landfill Post-Closure Care Cost Estimate

Site:		Riverbend Landfill		State:	Oregon	Waste:	MSW
Anticipated PCC Duration:		30 Years	Acreage:	87.40 Acres			
a Cover System Maintenance							
	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. Annual Total
1 Mowing [UPDATED]	90.90	Acres	\$ 300.00	\$ 27,270	2022	2023	5.39% \$ 28,740
4 Revegetation	2.00	Acres	\$ 1,166.00	\$ 2,332	2016	2023	24.76% \$ 2,909
5 Other (Describe Below)							
Cover System Earthwork, Labor, Equipment, Surveying	1	LS	\$ 2,400.00	\$ 2,400	2014	2023	27.12% \$ 3,051
COVER SYSTEM MAINTENANCE SUBTOTAL -							\$ 34,700

b Environmental Monitoring							
	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. Annual Total
1 Surface Water Sampling	2	EA	\$ 3,630.00	\$ 7,260	2013	2023	29.39% \$ 9,394
4 Semiannual Groundwater Sampling	32	EA	\$ 468.15	\$ 14,981	2013	2023	29.39% \$ 19,384
6 Semiannual Groundwater Analysis	32	EA	\$ 266.30	\$ 8,522	2013	2023	29.39% \$ 11,026
7 Water Quality Report Preparation	1	LS	\$ 9,000.00	\$ 9,000	2014	2023	27.12% \$ 11,441
8 Groundwater Well Replacement	0.0333	EA	\$ 7,500.00	\$ 250	2014	2023	27.12% \$ 318
10 Other (Describe Below)							
Groundwater Analytical QA and Statistics	2	EA	\$ 3,080.00	\$ 6,160	2013	2023	29.39% \$ 7,970
Well Redevelopment Accrual, Each Well Every 10 Years	1.2	EA	\$ 1,000.00	\$ 1,200	2013	2023	29.39% \$ 1,553
ENVIRONMENTAL MONITORING SUBTOTAL -							\$ 61,085

c Leachate Monitoring							
	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. Annual Total
1 Leachate Sampling	1	EA	\$ 1,600.00	\$ 1,600	2014	2023	27.12% \$ 2,034
2 Leachate Analysis	1	EA	\$ 8,700.00	\$ 8,700	2014	2023	27.12% \$ 11,059
3 Leachate Reporting	1	EA	\$ 3,250.00	\$ 3,250	2014	2023	27.12% \$ 4,131
4 Leachate Collection System Maintenance	1	LS	\$ 4,000.00	\$ 4,000	2014	2023	27.12% \$ 5,085
8 Leachate Treatment	2,780,820	Gal	\$ 0.06765	\$ 188,122	2018	2023	19.71% \$ 225,201
9 Leachate Evaporation Pond Repair	812	SY	\$ 20.63	\$ 16,760	2017	2023	21.27% \$ 20,325
11 Other (Describe Below)							
Decommissioning	0.0333	LS	\$ 15,500.00	\$ 517	2016	2023	24.76% \$ 645
LEACHATE MONITORING SUBTOTAL -							\$ 268,480



2023 Riverbend Landfill Post-Closure Care Cost Estimate

d	Landfill Gas Monitoring	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
5	Landfill Gas System Maintenance [UPDATED]	1	LS	\$ 30,000.00	\$ 30,000	2022	2023	5.39%	\$ 31,617
6	Landfill Gas System Operation [UPDATED]	1	LS	\$ 45,000.00	\$ 45,000	2022	2023	5.39%	\$ 47,426
7	Convert from Active to Passive	0.0333	LS	\$ 36,745.00	\$ 1,225	2013	2023	29.39%	\$ 1,585
8	Landfill Gas System Decommissioning	0.0333	LS	\$ 18,373.00	\$ 612	2013	2023	29.39%	\$ 792
12	Blower Replacement	0.0667	EA	\$ 19,500.00	\$ 1,300	2014	2023	27.12%	\$ 1,653
15	Flare Maintenance	1	LS	\$ 10,000.00	\$ 10,000	2014	2023	27.12%	\$ 12,712
18	NSPS Monitoring [UPDATED]	1	LS	\$ 107,200.00	\$ 107,200	2022	2023	5.39%	\$ 112,978
19	Title V Emissions Fee [UPDATED]	1	LS	\$ 37,000.00	\$ 37,000	2022	2023	5.39%	\$ 38,994
20	Other (Describe Below)								
	Landfill Methane Rule Costs (Every 5 yrs) [NEW]	0.20	LS	\$ 157,000.00	\$ 31,400	2022	2023	5.39%	\$ 33,092
	DEQ and CAO Fees [NEW]	1	LS	\$ 16,359.00	\$ 16,359	2022	2023	5.39%	\$ 17,241
	Quarterly H2S & CO Monitoring [NEW]	1	LS	\$ 21,300.00	\$ 21,300	2022	2023	5.39%	\$ 22,448
	Gas Migration Monitoring and Reporting	1	LS	\$ 4,798.60	\$ 4,799	2013	2023	29.39%	\$ 6,209
	Blower Maintenance and Repair	1	LS	\$ 4,800.00	\$ 4,800	2014	2023	27.12%	\$ 6,102
	Blower Electricity	1	LS	\$ 12,500.00	\$ 12,500	2016	2023	24.76%	\$ 15,595
	LANDFILL GAS MONITORING SUBTOTAL -								\$ 348,444

e	General Site Maintenance	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
2	Fence and Gate Repairs	20	LF	\$ 25.00	\$ 500	2014	2023	27.12%	\$ 636
3	Road Maintenance	1,500	SF	\$ 0.70	\$ 1,050	2014	2023	27.12%	\$ 1,335
4	Utilities	1	LS	\$ 1,500.00	\$ 1,500	2014	2023	27.12%	\$ 1,907
5	Building Maintenance	1	LS	\$ 1,000.00	\$ 1,000	2014	2023	27.12%	\$ 1,271
6	Stormwater System Maintenance	1	LS	\$ 3,500.00	\$ 3,500	2014	2023	27.12%	\$ 4,449
7	Other (Describe Below)								
	MSE Berm Maintenance	1	LS	\$ 1,560.00	\$ 1,560	2015	2023	25.70%	\$ 1,961
	GENERAL SITE MAINTENANCE SUBTOTAL -								\$ 11,558

f	Professional Services	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
4	Site Inspection	1	EA	\$ 16,000.00	\$ 16,000	2015	2023	25.70%	\$ 20,112
	PROFESSIONAL SERVICES SUBTOTAL -								\$ 20,112

g	CURRENT ANNUAL TOTAL - \$ 744,380								
h	Overhead and Profit							0.00%	\$ -
i	Contingency							10.00%	\$ 74,438
	Taxes							0.00%	\$ -
	TOTAL -								\$ 818,818
j	NOT DISCOUNTING WILL BE APPLIED THIS YEAR							0.000000%	\$ -
	Discounting								\$ -
	Annual Post-Closure Care Costs -								\$ 818,818
	FINANCIAL ASSURANCE REQUIRED FOR POST-CLOSURE CARE -								\$ 24,564,523
	Post-Closure Care Cost per Acre -								\$ 281,059

Standby Trust Agreement Dated April 12, 2010
Trust Agreement Supplement and Addendum Dated September 23, 2013
Riverbend Landfill Co., Grantor
JPMorgan Chase Bank, N.A., Trustee
Wells Fargo Bank, N.A., Successor Trustee

SCHEDULE A

(Revised 4/6/2023)

Facility Name:	Riverbend Landfill Co.
Facility Address:	13469 SW Highway 18, McMinnville, OR 97128
DEQ Solid Waste Permit Number/s:	345
Current Closure Cost Estimate/s:	\$ 9,596,094.00
Current Post-Closure Cost Estimate/s:	\$ 24,564,523.00
Current Corrective Action Cost Estimate/s:	\$0.00
Total Current Cost Estimate/s:	\$ 34,160,617.00
Post-Closure provided by Payment Bond #1037710:	\$ 22,487,169.00
Total Payment Bond Amount:	\$ 22,487,169.00

Standby Trust Agreement Dated April 12, 2010
Trust Agreement Supplement and Addendum Dated September 23, 2013
Riverbend Landfill Co., Grantor
JPMorgan Chase Bank, N.A., Trustee
Wells Fargo Bank, N.A., Successor Trustee

SCHEDULE B

(Revised 4/6/2023)

Type of Financial Instrument:	Surety Bond Guaranteeing Payment
Executed by:	Lexon Insurance Company 10002 Shelbyville Road, Suite 100 Louisville, Kentucky 40223
Date of Bond Execution:	January 13, 2010
Bond Number:	1037710
Bond Amount:	Closure: \$.00 Post Closure: \$ 22,487,169.00 Penal Sum: \$ 22,487,169.00

ENCLOSURE 3



ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020
CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

000017731 02 SP 000638451500897 S

RIVERBEND LANDFILL CO
WM TREASURY DEPARTMENT
800 CAPITOL ST., SUITE 3000
HOUSTON, TX 77002

QUESTIONS?

If you have any questions regarding
your account or this statement, please
contact your Account Manager or Analyst.

Account Manager:
BRIAN JENSEN
EX-TX-DCRE
8 GREENWAY PLAZA, SUITE 1100
HOUSTON TX 77046
Phone 972-581-1623
E-mail brian.jensen@usbank.com

Analyst:
WAYNE A SATTLER
Phone 414-765-6012



ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

MARKET VALUE SUMMARY

	Current Period 03/01/23 to 03/31/23
Beginning Market Value	\$11,639,027.05
Investment Results	
Interest, Dividends and Other Income	36,812.94
Net Change in Investment Value	163,874.67
Total Investment Results	\$200,687.61
Ending Market Value	\$11,839,714.66





ACCOUNT NUMBER: [REDACTED]
 RIVERBEND LANDFILL CO.
 OREGON DEQ
 TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
 March 1, 2023 to March 31, 2023

ASSET DETAIL AS OF 03/31/23

Shares or Face Amount	Security Description	Market Value/ Price	Tax Cost/ Unit Cost	% of Total Yield at Market	Est Ann Inc
Cash Equivalents					
897,914.660	Fidelity Govt Portfolio CI III #657 316175603	897,914.66 1.0000	897,914.66 1.00	7.6 4.48	40,193.57
Total Cash Equivalents		\$897,914.66	\$897,914.66	7.6	\$40,193.57
US Government Issues					
250,000.000	U S Treasury Note 2.750 05/31/2023 9128284S6 Standard & Poors Rating: N/A Moody's Rating: Aaa	249,197.50 99.6790	0.00 0.00	2.1 2.76	6,875.00
150,000.000	U S Treasury Bond 1.375 06/30/2023 912828S35 Standard & Poors Rating: N/A Moody's Rating: Aaa	148,809.00 99.2060	0.00 0.00	1.3 1.39	2,062.50
300,000.000	U S Treasury Note 1.250 07/31/2023 912828S92 Standard & Poors Rating: N/A Moody's Rating: Aaa	296,532.00 98.8440	0.00 0.00	2.5 1.26	3,750.00
300,000.000	U S Treasury Note 1.375 08/31/2023 9128282D1 Standard & Poors Rating: N/A Moody's Rating: Aaa	295,887.00 98.6290	0.00 0.00	2.5 1.39	4,125.00
500,000.000	U S Treasury Note 2.750 08/31/2023 9128284X5 Standard & Poors Rating: N/A Moody's Rating: Aaa	496,035.00 99.2070	0.00 0.00	4.2 2.77	13,750.00
500,000.000	U S Treasury Note 0.375 10/31/2023 91282CDD0 Standard & Poors Rating: N/A Moody's Rating: Aaa	487,775.00 97.5550	484,003.91 96.80	4.1 .38	1,875.00
300,000.000	U S Treasury Note 2.625 12/31/2023 9128285U0 Standard & Poors Rating: N/A Moody's Rating: Aaa	295,500.00 98.5000	0.00 0.00	2.5 2.66	7,875.00



ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

ASSET DETAIL AS OF 03/31/23 (continued)

Shares or Face Amount	Security Description	Market Value/ Price	Tax Cost/ Unit Cost	% of Total Yield at Market	Est Ann Inc
150,000.000	U S Treasury Note 2.250 01/31/2024 912828V80 Moody's Rating: Aaa	146,935.50 97.9570	0.00 0.00	1.2 2.30	3,375.00
100,000.000	U S Treasury Note 2.125 02/29/2024 912828W48 Standard & Poors Rating: N/A Moody's Rating: Aaa	97,703.00 97.7030	0.00 0.00	0.8 2.17	2,125.00
200,000.000	U S Treasury Note 2.000 04/30/2024 912828X70 Standard & Poors Rating: N/A Moody's Rating: Aaa	194,508.00 97.2540	0.00 0.00	1.7 2.06	4,000.00
350,000.000	U S Treasury Note 1.750 06/30/2024 9128286Z8 Standard & Poors Rating: N/A Moody's Rating: Aaa	338,653.00 96.7580	0.00 0.00	2.9 1.81	6,125.00
500,000.000	U S Treasury Note 2.125 07/31/2024 9128282N9 Standard & Poors Rating: N/A Moody's Rating: Aaa	485,315.00 97.0630	492,441.41 98.49	4.1 2.19	10,625.00
300,000.000	U S Treasury Note 1.500 09/30/2024 912828YH7 Standard & Poors Rating: N/A Moody's Rating: Aaa	287,847.00 95.9490	0.00 0.00	2.4 1.56	4,500.00
500,000.000	U S Treasury Note 1.750 12/31/2024 912828YY0 Standard & Poors Rating: N/A Moody's Rating: N/A	479,690.00 95.9380	485,195.31 97.04	4.1 1.82	8,750.00
500,000.000	U S Treasury Note 2.500 01/31/2025 9128283V0 Standard & Poors Rating: N/A Moody's Rating: Aaa	485,510.00 97.1020	494,726.56 98.95	4.1 2.57	12,500.00
350,000.000	U S Treasury Note 0.500 03/31/2025 912828ZF0 Standard & Poors Rating: N/A Moody's Rating: Aaa	326,445.00 93.2700	0.00 0.00	2.8 .54	1,750.00





ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

ASSET DETAIL AS OF 03/31/23 (continued)

Shares or Face Amount	Security Description	Market Value/ Price	Tax Cost/ Unit Cost	% of Total Yield at Market	Est Ann Inc
350,000.000	U S Treasury Note 0.375 04/30/2025 912828ZL7 Standard & Poors Rating: N/A Moody's Rating: Aaa	324,625.00 92.7500	0.00 0.00	2.7 .40	1,312.50
500,000.000	U S Treasury Note 2.750 06/30/2025 912828XZ8 Standard & Poors Rating: N/A Moody's Rating: Aaa	486,600.00 97.3200	497,343.75 99.47	4.1 2.83	13,750.00
500,000.000	U S Treasury Note 3.000 09/30/2025 9128285C0 Standard & Poors Rating: N/A Moody's Rating: Aaa	489,005.00 97.8010	500,957.03 100.19	4.1 3.07	15,000.00
500,000.000	U S Treasury Note 2.875 11/30/2025 9128285N6 Standard & Poors Rating: N/A Moody's Rating: Aaa	487,345.00 97.4690	498,359.38 99.67	4.1 2.95	14,375.00
250,000.000	U S Treasury Note 4.000 12/15/2025 91282CGA3 Standard & Poors Rating: N/A Moody's Rating: Aaa	250,977.50 100.3910	248,886.72 99.55	2.1 3.98	10,000.00
500,000.000	U S Treasury Note 2.625 01/31/2026 9128286A3 Standard & Poors Rating: N/A Moody's Rating: Aaa	483,635.00 96.7270	494,316.41 98.86	4.1 2.71	13,125.00
500,000.000	U S Treasury Note 2.250 03/31/2026 9128286L9 Standard & Poors Rating: N/A Moody's Rating: Aaa	478,185.00 95.6370	486,562.50 97.31	4.0 2.35	11,250.00
500,000.000	U S Treasury Note 2.125 05/31/2026 9128286X3 Standard & Poors Rating: N/A Moody's Rating: Aaa	475,195.00 95.0390	483,984.38 96.80	4.0 2.24	10,625.00
500,000.000	U S Treasury Note 1.625 09/30/2026 912828YG9 Standard & Poors Rating: N/A Moody's Rating: Aaa	465,370.00 93.0740	472,128.91 94.43	3.9 1.75	8,125.00



ACCOUNT NUMBER: [REDACTED]
 RIVERBEND LANDFILL CO.
 OREGON DEQ
 TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
 March 1, 2023 to March 31, 2023

ASSET DETAIL AS OF 03/31/23 (continued)

Shares or Face Amount	Security Description	Market Value/ Price	Tax Cost/ Unit Cost	% of Total Yield at Market	Est Ann Inc
500,000.000	U S Treasury Note 1.750 12/31/2026 912828YX2 Standard & Poors Rating: N/A Moody's Rating: Aaa	465,545.00 93.1090	473,613.28 94.72	3.9 1.88	8,750.00
500,000.000	U S Treasury Note 2.500 03/31/2027 91282CF4 Standard & Poors Rating: N/A Moody's Rating: Aaa	477,540.00 95.5080	489,628.91 97.93	4.0 2.62	12,500.00
300,000.000	U S Treasury Note 2.750 07/31/2027 91282CFB2 Standard & Poors Rating: N/A Moody's Rating: Aaa	288,915.00 96.3050	292,746.09 97.58	2.4 2.86	8,250.00
250,000.000	U S Treasury Note 4.125 09/30/2027 91282CFM8 Standard & Poors Rating: N/A Moody's Rating: Aaa	254,707.50 101.8830	252,041.02 100.82	2.1 4.05	10,312.50
250,000.000	U S Treasury Note 3.875 11/30/2027 91282CFZ9 Standard & Poors Rating: N/A Moody's Rating: Aaa	252,597.50 101.0390	249,111.33 99.64	2.2 3.83	9,687.50
150,000.000	U S Treasury Note 3.500 01/31/2028 91282CGH8 Standard & Poors Rating: N/A Moody's Rating: Aaa	149,215.50 99.4770	145,048.83 96.70	1.3 3.52	5,250.00
Total US Government Issues		\$10,941,800.00	\$7,541,095.73	92.4	\$246,375.00
Cash					
	Principal Cash	- 3,750.00	- 3,750.00		
	Income Cash	3,750.00	3,750.00		
	Total Cash	\$0.00	\$0.00	0.0	
Total Assets		\$11,839,714.66	\$8,439,010.39	100.0	\$286,568.57





ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

ASSET DETAIL MESSAGES

Time of trade execution and trading party (if not disclosed) will be provided upon request.

Publicly traded assets are valued in accordance with market quotations or valuation methodologies from financial industry services believed by us to be reliable. Assets that are not publicly traded may be reflected at values from other external sources. Assets for which a current value is not available may be reflected at a previous value or as not valued, at par value, or at a nominal value. Values shown do not necessarily reflect prices at which assets could be bought or sold. Values are updated based on internal policy and may be updated less frequently than statement generation.

For further information, please contact your Analyst.

Yield at Market and Estimated Annual Income are estimates provided for informational purposes only and should not be relied on for making investment, trading, or tax decisions. The estimates may not represent the actual value earned by your investments and they provide no guarantee of what your investments may earn in the future.



ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

CASH SUMMARY

	Income Cash	Principal Cash	Total Cash
Beginning Cash Balance as of 03/01/2023	\$.00	\$.00	\$.00
Taxable Interest	36,812.94		36,812.94
Transfers	- 33,062.94	33,062.94	
Purchases		- 145,048.83	- 145,048.83
Sales		300,000.00	300,000.00
Net Money Market Activity		- 191,764.11	- 191,764.11
Ending Cash Balance as of 03/31/2023	\$3,750.00	- \$3,750.00	\$0.00





ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

TRANSACTION DETAIL

Date Posted	Description	Income Cash	Principal Cash	Tax Cost
	Beginning Balance 03/01/2023	\$.00	\$.00	\$8,102,197.45
03/01/23	Purchased 150,000 Par Value Of U S Treasury Nt 3.500% 1/31/28 Trade Date 2/28/23 Purchased Through Wells Fargo Securities, LLC 150,000 Par Value At 96.69921875 % 91282CGH8		- 145,048.83	145,048.83
03/01/23	Paid Accrued Interest On Purchase Of U S Treasury Nt 3.500% 1/31/28 Income Debit 420.58- USD 91282CGH8	- 420.58		
03/01/23	Sold 145,469.41 Units Of Fidelity Govt Port Cl III Trade Date 3/1/23 316175603		145,469.41	- 145,469.41
03/01/23	Interest Earned On Fidelity Govt Port Cl III Interest From 2/1/23 To 2/28/23 316175603	1,764.77		
03/02/23	Cash Disbursement Transfer To Principal 1	- 1,344.19		
03/02/23	Cash Receipt Transfer From Income 1		1,344.19	
03/02/23	Purchased 1,764.77 Units Of Fidelity Govt Port Cl III Trade Date 3/2/23 316175603		- 1,764.77	1,764.77
03/31/23	Interest Earned On U S Treasury Nt 2.500% 3/31/23 0.0125 USD/\$1 Pv On 300,000 Par Value Due 3/31/23 9128284D9	3,750.00		
03/31/23	Purchased 3,750 Units Of Fidelity Govt Port Cl III Trade Date 3/31/23 316175603		- 3,750.00	3,750.00
03/31/23	Matured 300,000 Par Value Of U S Treasury Nt 2.500% 3/31/23 Trade Date 3/31/23 300,000 Par Value At 100 % 9128284D9		300,000.00	
03/31/23	Interest Earned On U S Treasury Nt 0.500% 3/31/25 0.0025 USD/\$1 Pv On 350,000 Par Value Due 3/31/23 912828ZF0	875.00		



ACCOUNT NUMBER: [REDACTED]
 RIVERBEND LANDFILL CO.
 OREGON DEQ
 TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
 March 1, 2023 to March 31, 2023

TRANSACTION DETAIL (continued)

Date Posted	Description	Income Cash	Principal Cash	Tax Cost
03/31/23	Interest Earned On U S Treasury Nt 1.500% 9/30/24 0.0075 USD/\$1 Pv On 300,000 Par Value Due 3/31/23 912828YH7	2,250.00		
03/31/23	Interest Earned On U S Treasury Nt 1.625% 9/30/26 0.008125 USD/\$1 Pv On 500,000 Par Value Due 3/31/23 912828YG9	4,062.50		
03/31/23	Interest Earned On U S Treasury Nt 2.250% 3/31/26 0.01125 USD/\$1 Pv On 500,000 Par Value Due 3/31/23 9128286L9	5,625.00		
03/31/23	Interest Earned On U S Treasury Nt 2.500% 3/31/27 0.0125 USD/\$1 Pv On 500,000 Par Value Due 3/31/23 91282CEF4	6,250.00		
03/31/23	Interest Earned On U S Treasury Nt 3.000% 9/30/25 0.015 USD/\$1 Pv On 500,000 Par Value Due 3/31/23 9128285C0	7,500.00		
03/31/23	Interest Earned On U S Treasury Nt 4.125% 9/30/27 0.020625 USD/\$1 Pv On 250,000 Par Value Due 3/31/23 91282CFM8	5,156.25		
03/31/23	Cash Disbursement Transfer To Principal 1	- 31,718.75		
03/31/23	Cash Receipt Transfer From Income 1		31,718.75	
03/31/23	Purchased 331,718.75 Units Of Fidelity Govt Port Cl III Trade Date 3/31/23 316175603		- 331,718.75	331,718.75
Ending Balance 03/31/2023		\$3,750.00	- \$3,750.00	\$8,439,010.39





ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

SALE/MATURITY SUMMARY

Date Posted	Description	Tax Cost	Proceeds	Estimated Gain/Loss
US Government Issues				
	U S Treasury Note 2.500 03/31/2023 9128284D9			
03/31/23	Matured 300,000 Par Value Trade Date 3/31/23 300,000 Par Value At 100 %		300,000.00	300,000.00
Total US Government Issues		\$0.00	\$300,000.00	\$300,000.00
Total Sales		\$0.00	\$300,000.00	\$300,000.00

SALE/MATURITY SUMMARY MESSAGES

For information only. Not intended for tax purposes



ACCOUNT NUMBER: [REDACTED]
 RIVERBEND LANDFILL CO.
 OREGON DEQ
 TRUST AGREEMENT DATED 9-25-2020

CLOSURE FUND

This statement is for the period from
 March 1, 2023 to March 31, 2023

BOND SUMMARY

	Par Value	Market Value	% of Category
MATURITY			
2023	2,300,000.00	2,269,735.50	20.75
2024	2,100,000.00	2,030,651.50	18.56
2025	2,950,000.00	2,850,507.50	26.05
2026	2,500,000.00	2,367,930.00	21.64
2027	1,300,000.00	1,273,760.00	11.64
2028	150,000.00	149,215.50	1.36
Total of Category	\$11,300,000.00	\$10,941,800.00	100.00
MOODY'S RATING			
Aaa	10,800,000.00	10,462,110.00	95.62
N/A	500,000.00	479,690.00	4.38
Total of Category	\$11,300,000.00	\$10,941,800.00	100.00
S&P RATING			
N/A	11,150,000.00	10,794,864.50	98.66
NOT RATED	150,000.00	146,935.50	1.34
Total of Category	\$11,300,000.00	\$10,941,800.00	100.00

BOND SUMMARY MESSAGES

Data contained within this section excluded Mutual Funds, Exchange Traded Funds, and Closed-Ended Funds.



Glossary

Accretion - The accumulation of the value of a discounted bond until maturity.

Adjusted Prior Market Realized Gain/Loss - The difference between the proceeds and the Prior Market Value of the transaction.

Adjusted Prior Market Unrealized Gain/Loss - The difference between the Market Value and the Adjusted Prior Market Value.

Adjusted Prior Market Value - A figure calculated using the beginning Market Value for the fiscal year, adjusted for all asset related transactions during the period, employing an average cost methodology.

Amortization - The decrease in value of a premium bond until maturity.

Asset - Anything owned that has commercial exchange value. Assets may consist of specific property or of claims against others, in contrast to obligations due to others (liabilities).

Bond Rating - A measurement of a bond's quality based upon the issuer's financial condition. Ratings are assigned by independent rating services, such as Moody's, or S&P, and reflect their opinion of the issuer's ability to meet the scheduled interest and principal repayments for the bond.

Cash - Cash activity that includes both income and principal cash categories.

Change in Unrealized Gain/Loss - Also reported as Gain/Loss in Period in the Asset Detail section. This figure shows the market appreciation (depreciation) for the current period.

Cost Basis (Book Value) - The original price of an asset, normally the purchase price or appraised value at the time of acquisition. Book Value method maintains an average cost for each asset.

Cost Basis (Tax Basis) - The original price of an asset, normally the purchase price or appraised value at the time of acquisition. Tax Basis uses client determined methods such as Last-In-First-Out (LIFO), First-In-First-Out (FIFO), Average, Minimum Gain, and Maximum Gain.

Ending Accrual - (Also reported as Accrued Income) Income earned but not yet received, or expenses incurred but not yet paid, as of the end of the reporting period.

Estimated Annual Income - The amount of income a particular asset is anticipated to earn over the next year. The shares multiplied by annual income rate.

Estimated Current Yield - The annual rate of return on an investment expressed as a percentage. For stocks, yield is calculated by taking the annual dividend payments divided by the stock's current share price. For bonds, yield is calculated by the coupon rate divided by the bond's market price.

Ex-Dividend Date - (Also reported as Ex-Date) For stock trades, the person who owns the security on the ex-dividend date will earn the dividend, regardless of who currently owns the stock.

Income Cash - A category of cash comprised of ordinary earnings derived from investments, usually dividends and interest.

Market Value - The price per unit multiplied by the number of units.

Maturity Date - The date on which an obligation or note matures.

Payable Date - The date on which a dividend, mutual fund distribution, or interest on a bond will be made.

Principal Cash - A category of cash comprised of cash, deposits, cash withdrawals and the cash flows generated from purchases or sales of investments.

Realized Gain/Loss Calculation - The Proceeds less the Cost Basis of a transaction.

Settlement Date - The date on which a trade settles and cash or securities are credited or debited to the account.

Trade Date - The date a trade is legally entered into.

Unrealized Gain/Loss - The difference between the Market Value and Cost Basis at the end of the current period.

Yield on/at Market - The annual rate of return on an investment expressed as a percentage. For stocks, yield is calculated by the annual dividend payments divided by the stock's current share price. For bonds, yield is calculated by the coupon rate divided by the bond's market price.



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RIVERBEND LANDFILL CO
WM TREASURY DEPARTMENT
800 CAPITOL ST., SUITE 3000
HOUSTON, TX 77002





ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020
POST CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

000017732 02 SP 000638451500898 S

RIVERBEND LANDFILL CO
WM TREASURY DEPARTMENT
800 CAPITOL ST., SUITE 3000
HOUSTON, TX 77002

QUESTIONS?

If you have any questions regarding
your account or this statement, please
contact your Account Manager or Analyst.

Account Manager:
BRIAN JENSEN
EX-TX-DCRE
8 GREENWAY PLAZA, SUITE 1100
HOUSTON TX 77046
Phone 972-581-1623
E-mail brian.jensen@usbank.com

Analyst:
WAYNE A SATTLER
Phone 414-765-6012



ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

POST CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

MARKET VALUE SUMMARY

	Current Period 03/01/23 to 03/31/23
Beginning Market Value	\$2,037,455.29
Investment Results	
Interest, Dividends and Other Income	5,169.83
Net Change in Investment Value	34,729.00
Total Investment Results	\$39,898.83
Ending Market Value	\$2,077,354.12





ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

POST CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

ASSET DETAIL AS OF 03/31/23

Shares or Face Amount	Security Description	Market Value/ Price	Tax Cost/ Unit Cost	% of Total Yield at Market	Est Ann Inc
Cash Equivalents					
97,057.620	Fidelity Govt Portfolio CI III #657 316175603	97,057.62 1.0000	97,057.62 1.00	4.7 4.48	4,344.61
Total Cash Equivalents		\$97,057.62	\$97,057.62	4.7	\$4,344.61
US Government Issues					
150,000.000	U S Treasury Note 2.750 05/31/2023 9128284S6 Standard & Poors Rating: N/A Moody's Rating: Aaa	149,518.50 99.6790	0.00 0.00	7.2 2.76	4,125.00
200,000.000	U S Treasury Note 2.625 12/31/2023 9128285U0 Standard & Poors Rating: N/A Moody's Rating: Aaa	197,000.00 98.5000	0.00 0.00	9.5 2.66	5,250.00
100,000.000	U S Treasury Note 2.250 01/31/2024 912828V80 Moody's Rating: Aaa	97,957.00 97.9570	0.00 0.00	4.7 2.30	2,250.00
100,000.000	U S Treasury Note 1.750 06/30/2024 9128286Z8 Standard & Poors Rating: N/A Moody's Rating: Aaa	96,758.00 96.7580	0.00 0.00	4.7 1.81	1,750.00
400,000.000	U S Treasury Note 0.375 04/30/2025 912828ZL7 Standard & Poors Rating: N/A Moody's Rating: Aaa	371,000.00 92.7500	196,132.81 49.03	17.8 .40	1,500.00
400,000.000	U S Treasury Note 0.875 09/30/2026 91282CCZ2 Standard & Poors Rating: N/A Moody's Rating: Aaa	362,252.00 90.5630	393,953.13 98.49	17.4 .97	3,500.00
300,000.000	U S Treasury Note 1.250 11/30/2026 91282CDK4 Standard & Poors Rating: N/A Moody's Rating: Aaa	274,431.00 91.4770	301,335.94 100.45	13.2 1.37	3,750.00



ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

POST CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

ASSET DETAIL AS OF 03/31/23 (continued)

Shares or Face Amount	Security Description	Market Value/ Price	Tax Cost/ Unit Cost	% of Total Yield at Market	Est Ann Inc
250,000.000	U S Treasury Note 2.500 03/31/2027 91282CEF4 Standard & Poors Rating: N/A Moody's Rating: Aaa	238,770.00 95.5080	247,724.61 99.09	11.5 2.62	6,250.00
200,000.000	U S Treasury Note 2.750 07/31/2027 91282CFB2 Standard & Poors Rating: N/A Moody's Rating: Aaa	192,610.00 96.3050	195,164.07 97.58	9.3 2.86	5,500.00
Total US Government Issues		\$1,980,296.50	\$1,334,310.56	95.3	\$33,875.00
Total Assets		\$2,077,354.12	\$1,431,368.18	100.0	\$38,219.61

ASSET DETAIL MESSAGES

Time of trade execution and trading party (if not disclosed) will be provided upon request.

Publicly traded assets are valued in accordance with market quotations or valuation methodologies from financial industry services believed by us to be reliable. Assets that are not publicly traded may be reflected at values from other external sources. Assets for which a current value is not available may be reflected at a previous value or as not valued, at par value, or at a nominal value. Values shown do not necessarily reflect prices at which assets could be bought or sold. Values are updated based on internal policy and may be updated less frequently than statement generation.

For further information, please contact your Analyst.

Yield at Market and Estimated Annual Income are estimates provided for informational purposes only and should not be relied on for making investment, trading, or tax decisions. The estimates may not represent the actual value earned by your investments and they provide no guarantee of what your investments may earn in the future.





ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

POST CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

CASH SUMMARY

	Income Cash	Principal Cash	Total Cash
Beginning Cash Balance as of 03/01/2023	\$0.00	\$0.00	\$0.00
Taxable Interest	5,169.83		5,169.83
Transfers	- 5,169.83	5,169.83	
Net Money Market Activity		- 5,169.83	- 5,169.83
Ending Cash Balance as of 03/31/2023	\$0.00	\$0.00	\$0.00



ACCOUNT NUMBER: [REDACTED]
RIVERBEND LANDFILL CO.
OREGON DEQ
TRUST AGREEMENT DATED 9-25-2020

POST CLOSURE FUND

This statement is for the period from
March 1, 2023 to March 31, 2023

TRANSACTION DETAIL

Date Posted	Description	Income Cash	Principal Cash	Tax Cost
	Beginning Balance 03/01/2023	\$0.00	\$0.00	\$1,426,198.35
03/01/23	Interest Earned On Fidelity Govt Port Cl III Interest From 2/1/23 To 2/28/23 316175603	294.83		
03/02/23	Cash Disbursement Transfer To Principal 1	- 294.83		
03/02/23	Cash Receipt Transfer From Income 1		294.83	
03/02/23	Purchased 294.83 Units Of Fidelity Govt Port Cl III Trade Date 3/2/23 316175603		- 294.83	294.83
03/31/23	Interest Earned On U S Treasury Nt 0.875% 9/30/26 0.004375 USD/\$1 Pv On 400,000 Par Value Due 3/31/23 91282CCZ2	1,750.00		
03/31/23	Interest Earned On U S Treasury Nt 2.500% 3/31/27 0.0125 USD/\$1 Pv On 250,000 Par Value Due 3/31/23 91282CEF4	3,125.00		
03/31/23	Cash Disbursement Transfer To Principal 1	- 4,875.00		
03/31/23	Cash Receipt Transfer From Income 1		4,875.00	
03/31/23	Purchased 4,875 Units Of Fidelity Govt Port Cl III Trade Date 3/31/23 316175603		- 4,875.00	4,875.00
	Ending Balance 03/31/2023	\$0.00	\$0.00	\$1,431,368.18





ACCOUNT NUMBER: [REDACTED]
 RIVERBEND LANDFILL CO.
 OREGON DEQ
 TRUST AGREEMENT DATED 9-25-2020

POST CLOSURE FUND

This statement is for the period from
 March 1, 2023 to March 31, 2023

BOND SUMMARY

	Par Value	Market Value	% of Category
MATURITY			
2023	350,000.00	346,518.50	17.50
2024	200,000.00	194,715.00	9.84
2025	400,000.00	371,000.00	18.73
2026	700,000.00	636,683.00	32.15
2027	450,000.00	431,380.00	21.78
Total of Category	\$2,100,000.00	\$1,980,296.50	100.00
MOODY'S RATING			
Aaa	2,100,000.00	1,980,296.50	100.00
Total of Category	\$2,100,000.00	\$1,980,296.50	100.00
S&P RATING			
N/A	2,000,000.00	1,882,339.50	95.05
NOT RATED	100,000.00	97,957.00	4.95
Total of Category	\$2,100,000.00	\$1,980,296.50	100.00

BOND SUMMARY MESSAGES

Data contained within this section excluded Mutual Funds, Exchange Traded Funds, and Closed-Ended Funds.



Glossary

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Trade Date - The date a trade is legally entered into.

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Yield on/at Market - The annual rate of return on an investment expressed as a percentage. For stocks, yield is calculated by the annual dividend payments divided by the stock's current share price. For bonds, yield is calculated by the coupon rate divided by the bond's market price.

The terms defined in this glossary are only for use when reviewing your account statement. Please contact your Relationship Manager with any questions.



U.S. Bank
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RIVERBEND LANDFILL CO
WM TREASURY DEPARTMENT
800 CAPITOL ST., SUITE 3000
HOUSTON, TX 77002



ENCLOSURE 4

CLOSURE AND POST-CLOSURE PLAN

**RIVERBEND LANDFILL
MCMINNVILLE, OREGON
UPDATED APRIL 2023**

PREPARED FOR



**RIVERBEND LANDFILL CO.
13469 SW HIGHWAY 18
MCMINNVILLE, OREGON 97128**

PLAN AND COST ESTIMATE UPDATED BY (2023)

**RIVERBEND LANDFILL CO.
13469 SW HIGHWAY 18
MCMINNVILLE, OREGON 97128**

COST ESTIMATE UPDATE CHECKED BY (2023)

**VISTA GEOENVIRONMENTAL SERVICES
P.O. Box 388
LAKE OSWEGO, OREGON 97034**

UPDATE CERTIFICATION (Sections Listed Below)

The material and data updated in the sections of this plan and contained in this report were prepared under the supervision and direction of the undersigned (WM). To the best of my knowledge, the cost estimates contained herein are complete and accurate.

- Section 1.3.4 – Updated Implicit Price Deflator calculation for 2023 dollars
- Section 2.4 – Updated maximum inventory of waste through January 2023
- Section 2.5 – Updated the per acre Closure Cost value
- Section 3.3 – Updated the Post-Closure cost summary
- Appendix A – Updated Worst-Case Closure Area figure
- Appendix B – Cost Estimate and relevant references

04/05/2023

Melody A. Adams, PNW/BC Area Project Manager
WM

Date

I certify that the update to the cost estimates for inflation were prepared accurately and in accordance with the Oregon Department of Environmental Quality's guidelines for preparation of financial assurance cost estimates.

4/5/2023

Roger North PE, GE / Principal
Vista GeoEnvironmental Services

Date



EXPIRATION DATE: 2/21/24

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ACRONYMS AND ABBREVIATIONS

CE	Cost estimate
CFR	Code of Federal Regulations
cm/sec	Centimeters per second
CPCP	Closure and Post-Closure Plan
CV	Current value
CY	Cubic yard(s)
DEQ	Oregon Department of Environmental Quality
FESCPP	2022 Final Engineered Site Closure and Post-Closure Plan
GCCS	Gas collection and control system
HDR	HDR Engineering, Inc.
IPD	Implicit Price Deflator
LFG	Landfill gas
LFGTE	Landfill Gas to Energy
MSWLF	Municipal solid waste landfill
OAR	Oregon Administrative Rules
ORS	Oregon Revised Statutes
P.E.	Professional Engineer
RB	Required trust fund balance
RLC	Riverbend Landfill Co.
RL	Riverbend Landfill
§	Section
SWDSCP	Solid Waste Disposal Site Closure Permit
SWMS	Stormwater Management System
VISTA	Vista GeoEnvironmental Services
WM	WM (formerly Waste Management)
Y	Year(s)

1 INTRODUCTION

2022 UPDATE

Since the 2022 update of the Closure and Post-Closure Plan a 12.3-acre final cover was installed; this plan reflects that change. The following sections were updated by WM in 2023 then reviewed and certified by Vista GeoEnvironmental Services (VISTA):

- Section 1.3.4 – Updated Implicit Price Deflator calculation for 2023 dollars
- Section 2.4 – Updated maximum inventory of waste through January 2023
- Section 2.5 – Updated the per acre Closure Cost value
- Section 3.3 – Updated the Post-Closure cost summary
- Appendix A – Updated Worst-Case Closure Area figure
- Appendix B – Updated Cost Estimates and relevant references

1.1 BACKGROUND

Riverbend Landfill (RL) is located at 13469 S.W. Highway 18, McMinnville, in Yamhill County, Oregon, and is owned and operated by the Riverbend Landfill Co. (RLC), which is an operating subsidiary of WM¹. RL is a municipal solid waste landfill (MSWLF) that is regulated by the Oregon Department of Environmental Quality (DEQ) under the Code of Federal Regulations (CFR) Chapter 40, Section 258 (Criteria for Municipal Solid Waste Landfills), Oregon Revised Statutes (ORS) 459 (Solid Waste Management), and Oregon Administrative Rules (OAR) 340-094 (Solid Waste: Municipal Solid Waste Landfills). DEQ issued RLC (the permittee) solid waste disposal permit (SWDP) number 345 for RL on December 1, 1999. A Solid Waste Disposal Site Closure Permit (SWDSCP) was issued on 31 August 2022 with an expiration date of 30 June 2032.

This Closure and Post-Closure Plan (CPCP) has been prepared to comply with the requirements for closure and post-closure activities and associated financial assurance criteria as specified in ORS 459.272 and OAR 340-94-100 through 145.

ORS 459.272 (Evidence of financial assurance for land disposal site) requires:

(3) The owner or operator of a land disposal site shall annually review and update the financial assurance for closure, post-closure and corrective action required under this section and cost estimates of the amount of financial assurance necessary.

¹ In 2021 Waste Management rebranded to WM. This change will be reflected throughout this updated document.

Specifically, OAR 340-94-140(6)(e) requires the permittee to update the CPCP annually, as follows:

(e) Annual update. The permittee shall annually review and update the financial assurance during the operating life and post-closure care period, or until the corrective action is completed, as applicable.

(A) The annual review shall include:

(i) An adjustment to the cost estimate(s) for inflation and, if used, in the discount rate as specified in subsection (4)(a) of this rule;

(ii) A review of the closure, post-closure care and corrective action (if required) plans and facility conditions to assess whether any changes have occurred which would increase or decrease the estimated maximum costs of closure, post-closure care or corrective action since the previous review;

(iii) If a trust fund or other pay-in financial mechanism is being used, an accounting of amounts deposited and expenses drawn from the fund, as well as its current balance.

(B) The financial assurance mechanism(s) shall be increased or may be reduced to take into consideration any adjustments in cost estimates identified in the annual review;

(C) The annual update shall consist of a certification from the permittee submitted to the Department and placed in the facility operating record. The certification shall state that the financial assurance plan(s) and financial assurance mechanism(s) have been reviewed, updated and found adequate, and that the updated documents have been placed in the facility operating record. If a discount rate is used to estimate costs, the annual update shall include the certifications in subsection (6)(d) of this rule. The annual update shall be no later than:

(i) The facility's annual review date; or

(ii) For a facility operating under a closure permit, by the date specified in OAR 340-094-0100(3).

And OAR 340-94-140(6)(d) requires:

(d) If a permittee uses a discount rate to estimate costs pursuant to subsection (4)(a) of this rule, the permittee shall prospectively for each year the discount rate is used:

(A) Certify to the Director that the landfill closure date is certain and there are no foreseeable factors that will change the estimate of site life; and

(B) Submit a certification to the Director from a Registered Professional Engineer stating the cost estimates are complete and accurate.

The SWDSCP requires that the annual review be performed by April 8th each year. This report provides the 2023 review and update of the CPCP and associated cost estimates. Copies of the correspondence are included in Appendix B.

1.2 JUSTIFICATION FOR PREPARING SUBTITLE D PLANS

OAR 340-94-110(1) and OAR 340-94-115(1) establish two different categories of CPCPs:

1. **Subtitle D ("worst-case") CPCPs.** These are based on a hypothetical worst-case scenario for closure and post-closure costs. This worst-case scenario is intended to establish a conservative basis for estimating financial assurance funding requirements, and subsequently, a Final Engineered Site Closure Plan, as required by OAR 340-094-0100(2)(a), which shall include all the elements of and replace the "worst-case" closure plan. The "worst-case" closure plan drawing was prepared by Bullseye Design and is provided in Appendix A. The drawing incorporates the approved final grading plan modifications and includes the area of final cover that was repaired in 2020, and 12.3-acres of final cover installed in 2022.
2. **Final engineered CPCPs.** These are linked to a closure permit, which must be obtained at least five years prior to anticipated final closure, or at a date specified in the permittee's closure permit pursuant to OAR 340-094-0100(2)(a). The final engineered plans must reflect the intended closure design and will replace the Subtitle D ("worst-case") plans. A closure permit is currently being drafted for this facility but has not been issued.

A Final Engineered Site Closure and Post-Closure Plan (FESCPP) prepared by Geosyntec Consultants in December 2022 in accordance with Section 7.6 of the SWDSCP No. 345 and approved by ODEQ on February 6, 2023. The final closure of RL is not anticipated to take place in the next five years based on the following:

- RLC received an expansion on May 30, 2013 for the RL which increased the site's permitted airspace by 984,086 cubic yards (cy) and increased the area of the landfill to a total footprint of approximately 87.4 acres of the 700-plus acre property. A final grading plan modification was approved by DEQ in a letter dated June 29, 2017, which increased the landfill's airspace by approximately 490,000 cy. As of July 1, 2021 the site discontinued placing MSW and transitioned to metering in materials and/or disposal of approved solid waste projects to prioritize the structural needs of the site.
- Remaining permitted capacity for the site as of January 1, 2023 is approximately 395,400 cy which includes all available permitted airspace including areas of settlement. The remaining airspace is expected to be filled in a timeframe contingent on available project volumes and as projects arise.

Therefore, since it is anticipated that more than five years of capacity remain, Subtitle D ("worst-case") CPCP is appropriate at this time.

Consistent with the above, the current worst-case closure scenario is shown on the figure provided in **Appendix A**. The remaining developed area that would require closure under a worst-case scenario is approximately 47.2 acres.

1.3 FINANCIAL ASSURANCE REQUIREMENTS

1.3.1 FEDERAL REQUIREMENTS FOR CLOSURE

Federal closure requirements are contained in 40 CFR 258.71:

(a) The owner or operator must have a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of all MSWLF units ever requiring a final cover as required under §258.60 at any time during the active life in accordance with the closure plan. The owner or operator must notify the State Director that the estimate has been placed in the operating record.

(1) The cost estimate must equal the cost of closing the largest area of all MSWLF units ever requiring a final cover at any time during the active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see §258.60(c)(2) of this part).

(2) During the active life of the MSWLF unit, the owner or operator must annually adjust the post-closure cost estimate for inflation.

(3) The owner or operator must increase the closure care cost estimate and the amount of financial assurance provided under paragraph (b) of this section if changes to the closure plan or MSWLF unit conditions increase the maximum cost of closure at any time during the remaining active life.

(4) The owner or operator may reduce the closure cost estimate and the amount of financial assurance provided under paragraph (b) of this section if the cost estimate exceeds the maximum cost of closure care remaining at any time during the remaining active life of the MSWLF unit. The owner or operator must notify the State Director that the justification for the reduction of the closure cost estimate and the amount of financial assurance has been placed in the operating record.

1.3.2 FEDERAL REQUIREMENTS FOR POST-CLOSURE CARE

Federal financial assurance requirements for post-closure care are specified in 40 CFR 258.72, as follows:

(a) The owner or operator must have a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the MSWLF unit in compliance with the post-closure plan developed under §258.61 of this part. The post-closure cost estimate used to

demonstrate financial assurance in paragraph (b) of this section must account for the total costs of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The owner or operator must notify the State Director that the estimate has been placed in the operating record.

(1) The cost estimate for post-closure care must be based on the most expensive costs of post-closure care during the post-closure care period.

(2) During the active life of the MSWLF unit and during the post-closure care period, the owner or operator must annually adjust the post-closure cost estimate for inflation.

(3) The owner or operator must increase the post-closure care cost estimate and the amount of financial assurance provided under paragraph (b) of this section if changes in the post-closure plan or MSWLF unit conditions increase the maximum costs of post-closure care.

(4) The owner or operator may reduce the post-closure cost estimate and the amount of financial assurance provided under paragraph (b) of this section if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period. The owner or operator must notify the State Director that the justification for the reduction of the post-closure cost estimate and the amount of financial assurance has been placed in the operating record.

1.3.3 OREGON SPECIFIC REQUIREMENTS FOR CLOSURE AND POST-CLOSURE CARE

Oregon adopts the federal requirements described above, and has additional Financial Assurance Criteria stipulated in OAR 340-94-140:

(1) Financial Assurance Required. The owner or operator of a municipal solid waste landfill shall maintain a financial assurance plan with detailed written cost estimates of the amount of financial assurance that is necessary and shall provide evidence of financial assurance for the costs of:

(a) Closure of the municipal solid waste landfill;

(b) Post-closure maintenance of the municipal solid waste landfill; and

(c) Any corrective action required by the Department to be taken at the municipal solid waste landfill, pursuant to OAR 340-094-0080(3).

(4) Financial assurance plans. The financial assurance plan is a vehicle for determining the amount of financial assurance necessary and demonstrating that financial assurance is being provided. A financial assurance plan shall include but not be limited to the following, as applicable:

(a) Cost Estimates. A detailed written estimate of the third-party costs in current dollars according to the provisions of 40 CFR, §258.75. A landfill owner or operator meeting the criteria in 40 CFR §258.75 (a) through (c) may estimate the current dollar cost using a discount

rate no greater than the Department's current reference rate. The Department shall determine the reference rate annually during the month of June. It shall be in effect for the fiscal year beginning on the first day of July immediately following the determination date and ending on June 30 of the following calendar year. (The reference rate shall be based on the current yield of composite long-term U.S. Treasury Bonds as published in the Federal Reserve's H.15 (519) Selected Interest Rates for the first full week of the month in which the reference rate is determined, less the annualized Gross Domestic Product implicit price deflator as published in the most recent U.S. Bureau of Economic Analysis Survey of Current Business). The written estimate shall be prepared by a Registered Professional Engineer and shall include costs of:

(A) Closing the municipal solid waste landfill;

(B) Providing post-closure care, including installing, operating and maintaining any environmental control system required on the landfill site;

(C) Performing required corrective action activities; and

(D) Complying with any other requirement the Department may impose as a condition of issuing a closure permit, closing the site, maintaining a closed facility, or implementing corrective action.

(b) The source of the cost estimates;

(c) A detailed description of the form of the financial assurance and a copy of the financial assurance mechanism;

(d) A method and schedule for providing for or accumulating any required amount of funds which may be necessary to meet the financial assurance requirement;

(5) Amount of Financial Assurance Required. The amount of financial assurance required shall be established as follows:

(a) Closure. Detailed cost estimates for closure shall be based on the "worst-case" closure plan or the Final Engineered Site Closure Plan, as applicable. Cost estimates for the Final Engineered Site Closure Plan shall take into consideration at least the following:

(A) Amount and type of solid waste deposited in the site;

(B) Amount and type of buffer from adjacent land and from drinking water sources;

(C) Amount, type, availability and cost of required cover;

(D) Seeding, grading, erosion control and surface water diversion required;

(E) Planned future use of the disposal site property;

(F) The portion of the site property closed before final closure of the entire site; and

(G) Any other conditions imposed on the permit relating to closure of the site.

(b) Post-closure care. Detailed cost estimates for post-closure care shall be based on the "Subtitle D" post-closure plan or the Final Engineered Post-closure Plan, as applicable. Cost estimates for the Final Engineered Post-closure Plan shall also take into consideration at least the following:

(A) Type, duration of use, initial cost and maintenance cost of any active system necessary for controlling or stopping discharges; and

(B) Any other conditions imposed on the permit relating to post-closure care of the site.

(c) Corrective action. Estimated total costs of required corrective action activities for the entire corrective action period, as described in a corrective action report pursuant to requirements of OAR 340-094-0080(3) and 40 CFR, §258.73;

(d) If a permittee is responsible for providing financial assurance for closure, post-closure care and/or corrective action activities at more than one municipal solid waste landfill, the amount of financial assurance required is equal to the sum of all cost estimates for each activity at each facility.

1.3.4 2022 UPDATE

As noted above, DEQ allows cost estimates to be computed based on the prior year costs adjusted using a quotient derived from Implicit Price Deflator (IPD) values. IPD values are published by the Department of Commerce, Bureau of Economic Analysis on a quarterly basis. The IPD values relevant to this report are presented in **Attachment 1 of Appendix B**, and are as follows:

- For cost estimates obtained for 2013:
 - IPD for January 2013 (i.e., 1st quarter 2013), the date of the prior cost estimate = 101.141.
 - IPD for March 2023 (i.e., 1st quarter 2023), the date of this cost estimate = 130.865.
 - The resulting quotient = $130.865/101.141 = 1.2969$.
- For cost estimates obtained for 2014:
 - IPD for January 2014 (i.e., 1st quarter 2014), the date of the prior cost estimate = 102.942.
 - IPD for March 2023 (i.e., 1st quarter 2023), the date of this cost estimate = 130.865.
 - The resulting quotient = $130.865/102.942 = 1.2712$.
- For cost estimates obtained for 2015:
 - IPD for January 2015 (i.e., 1st quarter 2015), the date of the prior cost estimate = 104.113.
 - IPD for March 2023 (i.e., 1st quarter 2023), the date of this cost estimate = 130.865.
 - The resulting quotient = $130.865 / 104.113 = 1.2570$.
- For cost estimates obtained for 2016:
 - IPD for January 2016 (i.e., 1st quarter 2016), the date of the prior cost estimate = 104.895.
 - IPD for March 2023 (i.e., 1st quarter 2023), the date of this cost estimate = 130.865.
 - The resulting quotient = $130.865/104.895 = 1.2476$.

- For cost estimates obtained for July 2017:
 - IPD for July 2017 (i.e., 3rd quarter 2017), the date of the prior cost estimate = 107.910.
 - IPD for March 2023 (i.e., 1st quarter 2023), the date of this cost estimate = 130.865.
 - The resulting quotient = $130.865/107.910 = 1.2127$.
- For cost estimates obtained for October 2017:
 - IPD for October 2017 (i.e., 4th quarter 2017), the date of the prior cost estimate = 108.653.
 - IPD for March 2023 (i.e., 1st quarter 2023), the date of this cost estimate = 130.865.
 - The resulting quotient = $130.865/108.653 = 1.2044$.
- For cost estimates obtained for 2018:
 - IPD for March 2018 (i.e., 1st quarter 2018), the date of the prior cost estimate = 109.320.
 - IPD for March 2023 (i.e., 1st quarter 2023), the date of this cost estimate = 130.865.
 - The resulting quotient = $130.865/109.320 = 1.1971$.
- For cost estimates obtained for 2022:
 - IPD for March 2022 (i.e., 1st quarter 2022), the date of the prior cost estimate = 124.174.
 - IPD for March 2023 (i.e., 1st quarter 2023), the date of this cost estimate = 130.865.
 - The resulting quotient = $130.865 / 124.174 = 1.0539$.

Since 2012, RLC has hauled leachate off-site for treatment and disposal. It is assumed that this will continue under closure and post-closure conditions. The volume of leachate that will be generated will decrease over time following closure and the installation of a geomembrane-based cover system over the entire landfill. To develop appropriate post-closure costs for leachate management and treatment, RLC used recent average annual leachate quantities provided by the site management and reduced the annual quantity at closure over time at a rate that was based on the previous 2013 post-closure estimate.

1.4 PLAN ORGANIZATION

RL recently reached the point in its operational life requiring the final engineered CPCPs to be prepared, after coming within five years of anticipated remaining capacity; however, expansions have increased the remaining of the capacity of the landfill beyond five years (**Section 1.2**). Furthermore, the site is not subject to any form of corrective action. Therefore, the remainder of this plan presents those elements associated with the required Subtitle D ("worst-case") plans.

Section 2 presents closure requirements, the Subtitle D Closure Plan, and the estimated "worst-case" closure costs.

Section 3 presents post-closure requirements, the Subtitle D Post-Closure Plan, and the estimate of the "worst-case" post-closure costs.

Section 4 presents details of allowable financial assurance mechanisms to fund the worst-case closure and post-closure costs, and the corresponding mechanisms selected by RLC.

2 CLOSURE PLAN

2.1 CLOSURE REQUIREMENTS

2.1.1 FEDERAL REQUIREMENTS

Federal closure requirements are contained in 40 CFR 258.60(a)-(b):

(a) Owners or operators of all MSWLF units must install a final cover system that is designed to minimize infiltration and erosion. The final cover system must be designed and constructed to:

(1) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less, and

(2) Minimize infiltration through the closed MSWLF by the use of an infiltration layer that contains a minimum 18-inches of earthen material, and

(3) Minimize erosion of the final cover by the use of an erosion layer that contains a minimum 6-inches of earthen material that is capable of sustaining native plant growth.

(b) The Director of an approved State may approve an alternative final cover design.

2.1.2 OREGON-SPECIFIC REQUIREMENTS

Oregon adopts the above federal requirements, and has additional closure requirements stipulated in OAR 340-94-0110(2):

(2) Requirements for closure plans. A closure plan shall specify the procedures necessary to completely close the municipal solid waste landfill at the end of its intended operating life.

(a) Requirements for the "worst-case" closure plan shall include all elements specified in 40 CFR §258.60, and consist of at least the following:

(A) A description of the steps necessary to close all municipal solid waste landfill units at any point during their active life;

(B) A description of the final cover system that is designed to minimize infiltration and erosion;

(C) An estimate of the largest area of the municipal solid waste landfill unit ever requiring a final cover;

(D) An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and

(E) A schedule for completing all activities necessary to satisfy the closure criteria in 40 CFR §258.60.

And in OAR 340-94-0120(2):

(2) Unless otherwise approved or required in writing by the Department, no person shall permanently close or abandon a municipal solid waste landfill, except in the following manner:

(a) All areas containing solid waste not already closed in a manner approved by the Department shall be covered with at least three feet of compacted soil of a type approved by the Department graded to a minimum two percent and maximum 30 percent slope unless the Department authorizes a lesser depth or an alternative final cover design. In applying this standard, the Department will consider the potential for adverse impact from the disposal site on public health, safety or the environment, and the ability for the permittee to generate the funds necessary to comply with this standard before the disposal site closes. A permittee may request that the Department approve a lesser depth of cover material or an alternative final cover design based on the type of waste, climate, geological setting, degree of environmental impact;

(b) Final cover material shall be applied to each portion of a municipal solid waste landfill within 60 days after said portion reaches approved maximum fill elevation, except in the event of inclement weather, in which case final cover shall be applied as soon as practicable;

(c) The finished surface of the closed areas shall consist of soils of a type or types consistent with the planned future use and approved by the Department. Unless otherwise approved by the Department, a vegetative cover of native grasses shall be promptly established over the finished surface of the closed site;

(d) All surface water must be diverted around the area of the disposal site used for waste disposal or in some other way prevented from contacting the waste material;

(e) All systems required by the Department to control or contain discharges to the environment must be completed and operational.

2.2 CLOSURE COMPONENTS

The anticipated closure design for the remainder of the landfill is based on the most recently approved and constructed closure areas. Under the "worst-case" scenario the same components and concepts would be used.

Key components of the closure design are described in the subsections below and the worst-case closure area is shown in **Appendix A**. The design satisfies the federal and state requirements presented in **Section 2.1** above; in doing so the closure design is intended to minimize the need for ongoing

maintenance, minimize potential landfill gas (LFG) and leachate generation, verify that environmental protection systems continue to function as intended, and to prepare the site for long-term care during the post-closure period.

2.2.1 FINAL GRADING

In conformance with the final cover design, prior to constructing the final cover the landfill surface will be graded to:

- A maximum slope of 3 horizontally (H) to 1 vertically (V) or flatter; and
- A minimum slope of 2 percent.

The existing access road, which has been constructed above the previously closed area, will be continued into the required closure areas to provide post-closure access.

2.2.2 FINAL COVER COMPONENTS

The final cover consists of the following major components, in order from bottom to top:

- **Foundation Soil Layer:** a 12-inch thick foundation soil layer placed on top of the 6-inch thick layer of daily cover, for a total of 18 inches of foundation soil (the 18-inch thick intermediate soil cover layer placed by RLC during landfill operations has satisfied the requirements for this layer in closed areas and may be satisfactory for future closure areas);
- **Geomembrane Barrier:** a 60-mil thick polyethylene geomembrane with ridges on one side and studs on the other; manufactured by Agru America;
- **Geosynthetic Drainage Layer:** a geotextile placed over the studded surface of the geomembrane creates a drainage channel between the geomembrane and the geotextile;
- **Drainage Layer Piping:** collection pipes placed in or on the drainage layer to reduce seepage forces in the final cover soils and maintain cover system stability;
- **Vegetative Soil Layer:** an 18-inch thick soil layer, the top 6 inches of which is capable of supporting vegetation; and
- **Vegetation:** vegetation planted on the cover.

2.2.3 LANDFILL GAS (LFG) SYSTEM COMPONENTS

The LFG collection and control system (GCCS) components will consist of the following:

- Vertical LFG collection wells;
- Well-head assemblies to allow for the conditions at each LFG collection well to be monitored (well pressure, and LFG quality and quantity) and the LFG flow rate to be controlled;

- LFG laterals connecting the LFG collection wells and well head assemblies to the main LFG headers;
- LFG headers connecting the laterals to the LFG to Energy (LFGTE) facility and flare station;
- LFGTE and LFG flare station; and
- Condensate collection and control system.

Most components of the GCCS have been progressively designed and constructed during the operation of the landfill. The components required for a "worst-case" closure include:

- LFG collection wells;
- Well-head assemblies; and
- LFG laterals.

2.2.4 LEACHATE MANAGEMENT SYSTEM COMPONENTS

The leachate management system will remain in operation during closure of the RL. No major modifications to the leachate management system are anticipated.

2.2.5 PERMANENT STORMWATER MANAGEMENT SYSTEM COMPONENTS

The stormwater management system (SWMS) components required for additional areas of final cover include the following:

- Ditches located on, or around the perimeter of, the final cover;
- Culverts, headwalls, splash walls, water quality units, and drop inlets, where necessary;
- Lined conveyance downdrains constructed on the final cover surface; and
- Vegetation.

The FESCPP includes information for the permanent SWMS. Prior to closure construction, recommendations presented in the FESCPP will be revisited for the permanent SWMS, including the basis of design and the verification of existing conditions. The design will be revised as needed at the time of closure to comply with existing conditions and future goals for the site.

2.3 LARGEST AREA REQUIRING CLOSURE

As presented in **Section 1.2**, the largest area requiring final cover (i.e., "worst-case" closure scenario) is the current condition, which would require approximately 47.2 acres of closure.

2.4 MAXIMUM INVENTORY OF WASTE

Disposal records indicate that approximately 12,603,820 cy of waste² have been disposed at RL as of January 1, 2023. The estimated remaining available permitted airspace capacity, including all areas of settlement, as of January 1, 2023, is approximately 395,400 cy (see also **Section 1.2**); however, the available, permitted airspace noted increases over time as ongoing settlement of the landfill occurs.

2.5 CLOSURE COST ESTIMATE

Closure components discussed above are itemized in the "worst-case" closure cost estimate presented in **Appendix B**. Individual items are summarized in the following categories:

- Earthwork;
- Geosynthetics;
- Stormwater Management System;
- Temporary and Permanent Erosion Controls;
- LFG Management System;
- Water Monitoring System;
- Construction Quality Assurance, Engineering, Surveying and Other Professional Services; and
- Miscellaneous.

The following "worst-case" assumptions were made, or information used, in development of the closure cost estimate:

- The largest area requiring closure is the 47.2 acres of developed landfill area that have not been closed;
- Unit costs, adjusted for inflation, from previous closure work performed at the site;
- Available third-party pricing; and
- Professional engineering judgment of current costs.

The current worst-case closure cost estimate of \$9,596,094 is detailed in **Appendix B**. This equates to a cost of approximately \$203,307 per acre.

² Permitted volume is determined by comparing the baseliner to the top of waste (which is 3 feet below top of final cover layer). This volume does not take into account compaction or settlement of waste over time. As material is compacted through operations or settlement, the effective available volume increases allowing for additional material placement within the permitted airspace.

2.6 SCHEDULE OF CLOSURE ACTIVITIES

Pursuant to OAR 340-94-110(2)(a)(A), this section presents a general schedule of activities necessary to close the landfill at any point during its active life.

Preparation of Engineered Closure Plan. A "worst-case" closure would require the preparation of a final engineered closure plan based on the actual conditions at the time of closure. The final engineered closure plan would include design modifications, construction plans and specifications, and would be submitted to DEQ for review and approval. It is estimated that the design, review and approval process would take five months.

Preparatory Grading. Under a "worst-case" scenario, the configuration of waste may not be compatible with closure design requirements. For example, waste slopes may not be graded flat enough or steep enough to meet closure design requirements relative to surface water drainage, cover stability, waste stability, and anticipated settlements. Therefore, time may be required for placing or regrading waste or soil to an acceptable closure configuration. It is assumed this preparatory grading would take approximately two months.

Contractor Selection. Following DEQ approval of the final engineered closure plan, contract documents, including detailed plans and specifications, would be issued for bid to select a contractor to perform the closure construction. This process of contractor selection and contract execution is expected to take two months.

Closure Construction. Construction will begin following contractor selection and contract execution. However, construction will be weather-dependent because most construction activities can effectively only be performed between June and October. Therefore, depending on the timing of the preceding activities, there could be a discontinuity before construction can start. Construction itself is expected to take six months (or 180 calendar days).

Preparation of Construction Report. After construction, a third-party professional engineer registered in the state of Oregon will prepare a report documenting that closure construction complied with the approved final engineered closure plan. It is estimated that approximately six weeks will be required to prepare this report prior to submittal to DEQ for review and approval of the closure.

DEQ Inspection. Pursuant to OAR 340-94-120(4)(b), and within 30 days of receipt of the closure report requesting approval of the closure, DEQ shall inspect the facility to verify that closure has been completed consistent with the approved final engineered closure design and the provisions of OAR 340-93 and -94. If DEQ determines that closure has been properly completed, it will approve the closure in writing; closure will not be considered complete until such approval has been made. The date of the approval notice will also represent the date of commencement of the post-closure period.

3 POST-CLOSURE PLAN

3.1 POST-CLOSURE PLAN REQUIREMENTS

3.1.1 FEDERAL REQUIREMENTS

Federal post-closure plan requirements are specified in 40 CFR §258.61(a)-(c) and are provided below:

(a) Following closure of each MSWLF unit, the owner or operator must conduct post-closure care. Post-closure care must be conducted for 30 years, except as provided under paragraph (b) of this section, and consist of at least the following:

(1) Maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

(2) Maintaining and operating the leachate collection system in accordance with the requirements in §258.40, if applicable. The Director of an approved State may allow the owner or operator to stop managing leachate if the owner or operator demonstrates that leachate no longer poses a threat to human health and the environment;

(3) Monitoring the ground water in accordance with the requirements of subpart E of this part and maintaining the ground-water monitoring system, if applicable; and

(4) Maintaining and operating the gas monitoring system in accordance with the requirements of §258.23.

(c) The owner or operator of all MSWLF units must prepare a written post-closure plan that includes, at a minimum, the following information:

(1) A description of the monitoring and maintenance activities required in §258.61(a) for each MSWLF unit, and the frequency at which these activities will be performed;

(2) Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and

(3) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this part 258.

3.1.2 OREGON-SPECIFIC REQUIREMENTS

Oregon adopts the federal requirements described above, and has additional post-closure requirements stipulated in OAR 340-94-115(3):

(3) Requirements for post-closure plans. Post-closure plans shall identify the post-closure activities which will be carried on to properly monitor and maintain the closed municipal solid waste landfill site:

(a) Requirements for the "Subtitle D" post-closure plan shall include all elements specified in 40 CFR §258.61, and consist of at least the following:

(A) Maintaining the integrity and effectiveness of any final cover;

(B) Maintaining and operating the leachate collection system;

(C) Monitoring the groundwater;

(D) Maintaining and operating the gas monitoring system;

(E) Monitoring and providing security for the landfill site; and

(F) Description of the planned uses of the property during the post-closure care period.

And in OAR 340-94-130(b):

(1) Post-closure requirements:

(a) Upon completion or closure of a landfill, a detailed description of the site including a plat shall be filed with the appropriate county land recording authority by the permittee. The description should include the general types and location of wastes deposited, depth of waste and other information of probable interest to future land owners;

(b) During the post-closure care period, the permittee must, at a minimum:

(A) Maintain the approved final contours and drainage system of the site;

(B) Consistent with final use, ensure that a healthy vegetative cover is established and maintained over the site;

(C) Operate and maintain each leachate and gas collection, removal and treatment system present at the site;

(D) Operate and maintain each groundwater and surface water monitoring system present at the site;

(E) Comply with all conditions of the closure permit issued by the Department.

(2) Post-closure care period. Post-closure care must continue for 30 years after the date of

completion of closure of the land disposal site, unless otherwise approved or required by the Department according to OAR 340-094-100(4) and (5).

3.2 POST-CLOSURE ACTIVITIES

The following subsections describe the assumed activities that will be performed in the post-closure period to ensure the environmental protection systems continue to function as intended throughout the post-closure period.

3.2.1 OPERATIONS, MAINTENANCE AND ADMINISTRATIVE REQUIREMENTS

The following general operations, maintenance, and administrative requirements are anticipated:

- Final cover maintenance, including; labor, equipment, and supplies for minor regrading, reseeded and fertilizing;
- Final cover surveying to check settlement and grades;
- Mechanically Stabilized Earth (MSE) berm stability monitoring;
- MSE berm inspections;
- MSE berm maintenance (vegetated face seeding, pavement crack sealing, surface water improvements cleaning, etc.);
- General facility and final cover mowing;
- Maintenance of surface water management features;
- Building security, repairs, and demolition;
- Fence and road maintenance;
- Utilities (excluding LFG and leachate equipment);
- Third-party inspections, reports and management;
- Internal administration;
- Insurance; and
- Permitting costs.

3.2.2 GROUNDWATER AND STORMWATER MONITORING

The following activities associated with groundwater and stormwater monitoring are anticipated:

- Semi-annual groundwater sampling, sample analyses, quality assurance review, statistical evaluation, and reporting;

- Two stormwater sampling events per year at three sampling locations (with sample analyses for Escherichia coli (E. coli) and total suspended solids, quality assurance review, and reporting) and monthly stormwater inspections and documentation if required by the permit in post-closure;
- Monthly stormwater observations;
- Contingency for the redevelopment of groundwater monitoring wells; and
- Contingency for groundwater monitoring well decommissioning and replacement as needed.

3.2.3 LEACHATE COLLECTION, TREATMENT, AND DISPOSAL

The leachate collection and removal systems are expected to remain active for the entire 30-year post-closure period. However, leachate production is expected to decrease dramatically during that period, particularly in those areas of the landfill constructed with composite liner systems (e.g., Modules 4, 5, 6, 7, 8, and 9). The following general activities associated with the collection, treatment and disposal of leachate, and the maintenance and repair of the systems are anticipated:

- Leachate sampling, sample analyses, quality assurance review, and reporting; and
- Leachate hauling for off-site treatment and disposal at approved facilities.

3.2.4 GAS COLLECTION AND CONTROL SYSTEM

RLC has constructed a LFGTE facility at RL. For the purposes of this plan, it has been assumed that the revenue from operating the facility would compensate for associated operational and decommissioning costs of the facility. Therefore, this facility has not been included in this plan.

The following GCCS operations, maintenance, monitoring, and decommissioning items are included in the post-closure cost estimate:

- Surface emissions monitoring and reporting;
- LFG migration monitoring and reporting;
- LFG probe repair and contingency for replacement;
- GCCS operation, inspection, maintenance and repairs;
- Blower maintenance and repairs;
- Blower replacement contingency;
- Electrical power;
- Flare maintenance and repair including annual source testing and reporting;
- One-time conversion from active to passive operation;
- One-time system decommissioning;

- Annual New Source Performance Standards (NSPS) monitoring; and
- Title V Air Operating Permit compliance, reporting, and fees.

3.3 POST-CLOSURE COST ESTIMATE

The post-closure activities discussed above are itemized in the "worst-case" post-closure cost estimate presented in **Appendix B**. Annual costs are estimated to be approximately \$816,956, and the estimated 30-year post-closure cost is \$24,564,523. This equates to a cost of approximately \$281,059 per acre.

3.4 USE OF THE LAND DURING THE POST-CLOSURE CARE PERIOD

Post-closure use of the property has not yet been determined. In any case, post-closure land uses will not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems except as needed to comply with post-closure care requirements.

3.5 CONTACT INFORMATION

The name, address and telephone number of the person or office to contact during the post-closure care period is:

David K. Lowe
Riverbend Landfill Co.
13469 SW Highway 18
McMinnville, Oregon 97128
Tel: (503) 472-8788

This information will be kept current using the annual CPCP review and update process.

4 FINANCIAL ASSURANCE MECHANISM

4.1 ALLOWABLE FINANCIAL ASSURANCE MECHANISMS

Federal and state regulations allow permittees to use one or more financial assurance mechanisms to demonstrate that adequate funding is available to complete closure and post-closure care. The selection of financial assurance mechanism is based upon the status of the permittee as a private company or a government agency, the value of the entity, and cost. Specific requirements are provided for each type of financial assurance mechanism.

Financial assurance mechanisms allowed by 40 CFR §258.74 include the following:

- Trust Fund;
- Surety Bond Guaranteeing Payment or Performance;
- Letter of Credit;
- Insurance;
- Corporate Financial Test;
- Local Government Financial Test;
- Corporate Guarantee;
- Local Government Guarantee; and
- State Assumption of Responsibility.

4.2 SELECTED FINANCIAL ASSURANCE MECHANISMS

RL uses both trust funds and surety payment bonds to satisfy the financial assurance obligations for closure and post-closure care.

4.2.1 FEDERAL REQUIREMENTS:

Federal requirements applicable to **trust funds** used as financial assurance mechanisms are specified in 40 CFR §258.74(a) and are presented below:

(a) Trust Fund.

(1) An owner or operator may satisfy the requirements of this section by establishing a trust fund which conforms to the requirements of this paragraph. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. A copy of the trust agreement must be placed in the facility's operating record.

(2) Payments into the trust fund must be made annually by the owner or operator over the term of the initial permit or over the remaining life of the MSWLF unit, whichever is shorter, in the case of a trust fund for closure or post-closure care, or over one-half of the estimated length of the corrective action program in the case of corrective action for known releases. This period is referred to as the pay-in period.

(3) For a trust fund used to demonstrate financial assurance for closure and post-closure care, the first payment into the fund must be at least equal to the current cost estimate for closure or post-closure care, except as provided in paragraph (k) of this section, divided by the number of years in the pay-in period as defined in paragraph (a)(2) of this section. The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = [CE - CV]/Y$$

where CE is the current cost estimate for closure or post-closure care (updated for inflation or other changes), CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund must be at least equal to one-half of the current cost estimate for corrective action, except as provided in paragraph (k) of this section, divided by the number of years in the corrective action pay-in period as defined in paragraph (a)(2) of this section. The amount of subsequent payments must be determined by the following formula:

$$\text{Next Payment} = [RB - CV]/Y$$

where RB is the most recent estimate of the required trust fund balance for corrective action (i.e., the total costs that will be incurred during the second half of the corrective action period), CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(5) The initial payment into the trust fund must be made before the initial receipt of waste or before the effective date of the requirements of this section (April 9, 1997, or October 9, 1997 for MSWLF units meeting the conditions of §258.1(f)(1)), whichever is later, in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of §258.58.

(6) If the owner or operator establishes a trust fund after having used one or more alternate mechanisms specified in this section, the initial payment into the trust fund must be at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to the specifications of this paragraph and paragraph (a) of this section, as applicable.

(7) The owner or operator, or other person authorized to conduct closure, post-closure care,

or corrective action activities may request reimbursement from the trustee for these expenditures. Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, post-closure care, or corrective action, and if justification and documentation of the cost is placed in the operating record. The owner or operator must notify the State Director that the documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received.

(8) The trust fund may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance as specified in this section or if he is no longer required to demonstrate financial responsibility in accordance with the requirements of §258.71(b), §258.72(b), or §258.73(b).

Federal requirements applicable to **surety bonds** used as financial assurance mechanisms are specified in 40 CFR §258.74(b) as follows:

(b) Surety Bond Guaranteeing Payment or Performance.

(1) An owner or operator may demonstrate financial assurance for closure or post-closure care by obtaining a payment or performance surety bond which conforms to the requirements of this paragraph. An owner or operator may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this paragraph. The bond must be effective before the initial receipt of waste or before the effective date of the requirements of this section (April 9, 1997, or October 9, 1997 for MSWLF units meeting the conditions of §258.1(f)(1)), whichever is later, in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of §258.58. The owner or operator must notify the State Director that a copy of the bond has been placed in the operating record. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The penal sum of the bond must be in an amount at least equal to the current closure, post-closure care or corrective action cost estimate, whichever is applicable, except as provided in §258.74(k).

(3) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(4) The owner or operator must establish a standby trust fund. The standby trust fund must meet the requirements of §258.74(a) except the requirements for initial payment and subsequent annual payments specified in §258.74(a)(2), (3), (4) and (5).

(5) Payments made under the terms of the bond will be deposited by the surety directly into

the standby trust fund. Payments from the trust fund must be approved by the trustee.

(6) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner and operator and to the State Director 120 days in advance of cancellation. If the surety cancels the bond, the owner or operator must obtain alternate financial assurance as specified in this section.

(7) The owner or operator may cancel the bond only if alternate financial assurance is substituted as specified in this section or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with §258.71(b), §258.72(b) or §258.73(b).

4.2.2 OREGON SPECIFIC REQUIREMENTS

Oregon adopts the federal requirements, and specifies additional requirements, as found in OAR 340-94-140(6) and presented below:

(6) How financial assurance is to be provided and updated:

(a) The permittee shall submit to the Department a copy of the first financial assurance mechanism prepared in association with a "worst-case" closure plan, a Final Engineered Site Closure Plan, a "Subtitle D" post-closure plan, a Final Engineered Post-Closure Plan, and a corrective action report;

(b) The permittee shall also place a copy of the applicable financial assurance plan(s) in the facility operating record on the schedule specified in section (3) of this rule;

(c) The permittee shall certify to the Director at the time a financial assurance mechanism is submitted to the Department and when a financial assurance plan is placed in the facility operating record that the financial assurance mechanism meets all state and federal requirements. This date becomes the "annual review date" of the provision of financial assurance, unless a corporate guarantee is used, in which case the annual review date is 90 days after the end of the corporation's fiscal year;

(d) If a permittee uses a discount rate to estimate costs pursuant to subsection (4)(a) of this rule, the permittee shall prospectively for each year the discount rate is used:

(A) Certify to the Director that the landfill closure date is certain and there are no foreseeable factors that will change the estimate of site life; and

(B) Submit a certification to the Director from a Registered Professional Engineer stating the cost estimates are complete and accurate.

And, in OAR 340-94-145 (1) through (6)(c) relative to trust funds and surety payment bonds:

(1) The financial assurance mechanism shall restrict the use of the financial assurance so that the financial resources may be used only to guarantee that closure, post-closure or corrective action activities will be performed, or that the financial resources can be used only to finance closure, post-closure or corrective action activities.

(2) The financial assurance mechanism shall provide that the Department or a party approved by the Department is the beneficiary of the financial assurance.

(3) A permittee may use one financial assurance mechanism for closure, post-closure and corrective action activities, but the amount of funds assured for each activity must be specified.

(4) A permittee may demonstrate financial assurance for closure, post-closure and corrective action by establishing more than one mechanism per facility, except that mechanisms guaranteeing performance rather than payment may not be combined with other instruments.

(5) The financial assurance mechanism shall be worded as specified by the Department, unless a permittee uses an alternative financial assurance mechanism pursuant to subsection (6)(i) of this rule. The Department retains the authority to approve the wording of an alternative financial assurance mechanism.

(6) Allowable Financial Assurance Mechanisms. A permittee shall provide only the following forms of financial assurance for closure and post-closure activities:

(a) A trust fund established with an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency and meeting criteria in 40 CFR §258.74(a). The purpose of the trust fund is to receive and manage any funds that may be paid by the permittee and to disburse those funds only for closure, post-closure maintenance or corrective action activities which are authorized by the Department. The permittee shall notify the Department, in writing, before any expenditure of trust fund moneys is made, describing and justifying the activities for which the expenditure is to be made. If the Department does not respond to the trustee within 30 days after receiving such notification, the expenditure is deemed authorized and the trustee may make the requested reimbursements;

(b) A surety bond guaranteeing payment into a standby closure or post-closure trust fund issued by a surety company listed as acceptable in Circular 570 of the U.S. Department of the Treasury. The standby closure or post-closure trust fund must be established by the permittee. The purpose of the standby trust fund is to receive any funds that may be paid by the permittee or surety company. The penal sum of the bond must be in an amount at least equal to the current closure or post-closure care cost estimate, as applicable. The bond must guarantee that the permittee will either fund the standby trust fund in an amount equal to the penal sum

of the bond before the site stops receiving waste or within 15 days after an order to begin closure is issued by the Department or by a court of competent jurisdiction; or that the permittee will provide alternate financial assurance acceptable to the Department within 90 days after receipt of a notice of cancellation of the bond from the surety. The surety shall become liable on the bond obligation if the permittee fails to perform as guaranteed by the bond. The surety may not cancel the bond until at least 120 days after the notice of cancellation has been received by both the permittee and the Department. If the permittee has not provided alternate financial assurance acceptable to the Department within 90 days of the cancellation notice, the surety must pay the amount of the bond into the standby trust account.

4.3 DOCUMENTATION OF FINANCIAL ASSURANCE

The current financial assurance status, current trust account statements showing balances and transactions over the previous year, and bonds are provided separately to this document.

5 REFERENCES

Geosyntec Consultants. (14 November 2016). *Final Grading Plan Modification Permit Application Report, Riverbend Landfill, McMinnville, Oregon.*

Geosyntec Consultants. (28 December 2022). *Final Engineered Site Closure and Post-Closure Plan, Riverbend Landfill, McMinnville, Oregon.*

HDR. (March 2015). *2015 Revision to Closure and Post-Closure Plans, Riverbend Landfill, McMinnville, Oregon.*

HDR. (March 2016). *2016 Revision to Closure and Post-Closure Plans, Riverbend Landfill, McMinnville, Oregon.*

HDR. (March 2017). *2017 Revision to Closure and Post-Closure Plans, Riverbend Landfill, McMinnville, Oregon.*

HDR. (August 2017). *2017 Revision to Closure and Post-Closure Plans, Riverbend Landfill, McMinnville, Oregon.*

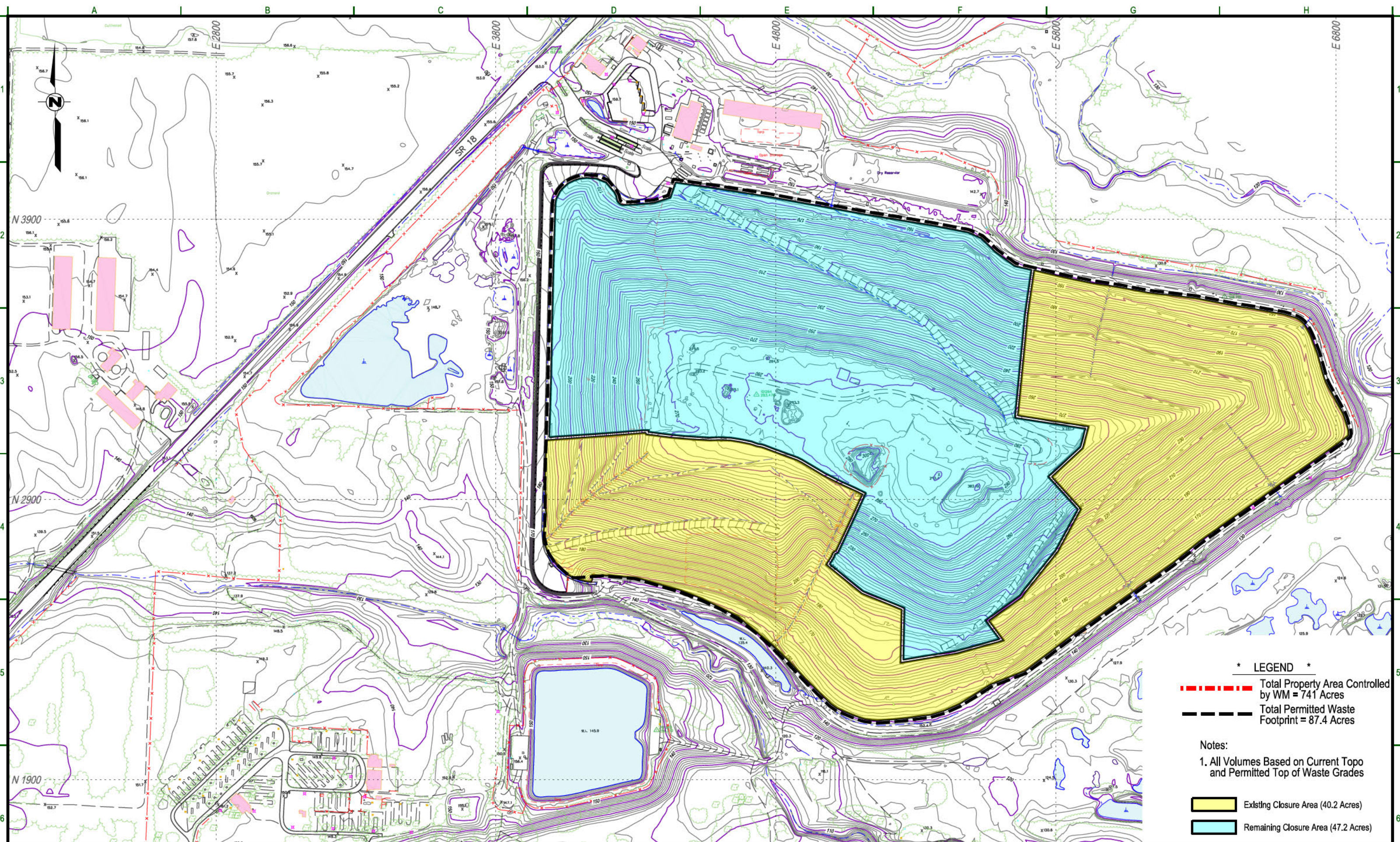
HDR. (April 2018). *2018 Revision to Closure and Post-Closure Plans, Riverbend Landfill, McMinnville, Oregon.*

Vista Consultants. (2012). *2012 Closure and Post-Closure Plans, Riverbend Landfill, McMinnville, Oregon.*

Vista Consultants. (2013). *2013 Closure and Post-Closure Plans, Riverbend Landfill, McMinnville, Oregon.*

APPENDIX A

WORST-CASE CLOSURE DRAWING



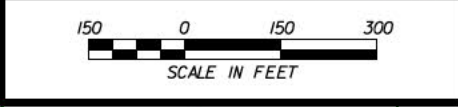
*** LEGEND ***

- - - - - Total Property Area Controlled by WM = 741 Acres
- - - - - Total Permitted Waste Footprint = 87.4 Acres

Notes:

- All Volumes Based on Current Topo and Permitted Top of Waste Grades

- Existing Closure Area (40.2 Acres)
- Remaining Closure Area (47.2 Acres)



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Revisions				
No.	Description	Date	By	
1	Update Topo and Volume	7/2/21		

Approved By: Dave Rettell
 Checked By: Melody Adams
 Drawn By: Bullseye Design Services, Inc.

Project Location:
**Riverbend Landfill
 McMinnville, Oregon**

2023 Worst Case Closure Areas

Facility ID: **OR 0014**
 Scale: 1" = 300'
 Date: March 2023
 Drawing No. **1**

APPENDIX B

CLOSURE AND POST-CLOSURE COST ESTIMATES

Attachment 1
Closure and Post-Closure Cost Estimate



2023 Riverbend Landfill Closure Cost Estimates

Site:		Riverbend Landfill					State:	Oregon	Waste:	MSW
Acreage:		47.2 Acres								
a	<u>Earthwork</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total	
1	Bedding Soil (Foundation Soil)	15,839	Cubic Yards	\$ 5.00	\$ 79,195	2014	2023	27.12%	\$ 100,673	
2	General Backfill	79,195	Cubic Yards	\$ 5.00	\$ 395,975	2014	2023	27.12%	\$ 503,363	
6	Top Soil	39,598	Cubic Yards	\$ 10.40	\$ 411,819	2014	2023	27.12%	\$ 523,505	
7	Waste Grading	15,839	Cubic Yards	\$ 8.41	\$ 133,206	2014	2023	27.12%	\$ 169,331	
8	Other (Describe Below)									
	Subgrade Preparation	237,586	SY	\$ 0.21	\$ 49,893	2016	2023	24.76%	\$ 62,247	
	Mobilization Earthwork Contractor	1	LS	\$ 75,000.00	\$ 75,000	2015	2023	25.70%	\$ 94,275	
	CQA and Surveying	1	LS	\$ 75,000.00	\$ 75,000	2015	2023	25.70%	\$ 94,275	
EARTHWORKS SUBTOTAL -									\$ 1,547,669	

b	<u>Geosynthetics</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
1	Geotextile	251,293	Square Yards	\$ 2.61	\$ 655,875	2014	2023	27.12%	\$ 833,748
5	Geomembrane	251,293	Square Yards	\$ 6.70	\$ 1,683,663	2014	2023	27.12%	\$ 2,140,273
7	Other (Describe Below)								
	Contractor Mobilization	1	LS	\$ 50,000.00	\$ 50,000	2015	2023	25.70%	\$ 62,850
	CQA and Surveying	1	LS	\$ 100,000.00	\$ 100,000	2015	2023	25.70%	\$ 125,700
GEOSYNTHETICS SUBTOTAL -									\$ 3,162,570

c	<u>Stormwater Management System</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
8	Other (Describe Below)								
	Drainage and Site Work	1	LS	\$ 1,270,000.00	1,270,000	2017	2023	20.44%	\$ 1,529,588
STORMWATER MANAGEMENT SYSTEM SUBTOTAL -									\$ 1,529,588

d	<u>Temporary and Permanent Erosion Controls</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
7	Other (Describe Below)								
	Sediment and Erosion Control	49.09	Acres	\$ 750.00	\$ 36,816	2014	2023	27.12%	\$ 46,800
	Vegetation and Seeding	61.36	Acres	\$ 1,166.00	\$ 71,546	2016	2023	24.76%	\$ 89,260
TEMPORARY AND PERMANENT EROSION CONTROLS SUBTOTAL -									\$ 136,061



2023 Riverbend Landfill Closure Cost Estimates

e	<u>Landfill Gas Management System</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
12	Other (Describe Below)								
	Engineering, Construction Drawings, and CQA	1	LS	\$ 150,000.00	\$ 150,000	2014	2023	27.12%	\$ 190,680
	Remaining Well Field	47.20	Acres	\$ 25,000.00	\$ 1,180,000	2014	2023	27.12%	\$ 1,500,016
LANDFILL GAS MANAGEMENT SYSTEM SUBTOTAL -									\$ 1,690,696
g	<u>CQA, Engineering, Surveying and Other Professional Services</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
3	Construction Drawing Preparation	1	LS	\$ 175,000.00	\$ 175,000	2015	2023	25.70%	\$ 219,975
4	Bid Package	1	LS	\$ 5,000.00	\$ 5,000	2015	2023	25.70%	\$ 6,285
5	Construction Management	1	LS	\$ 285,000.00	\$ 285,000	2015	2023	25.70%	\$ 358,245
6	Certification Report	1	LS	\$ 30,000.00	\$ 30,000	2015	2023	25.70%	\$ 37,710
7	Deed Record Update	1	LS	\$ 2,500.00	\$ 2,500	2015	2023	25.70%	\$ 3,143
PROFESSIONAL SERVICES SUBTOTAL -									\$ 625,358
h	<u>Miscellaneous</u>	Quantity	Unit	Unit Cost (\$)	Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Total
1	Demobilization and Demolition	1	LS	\$ 25,000.00	25,000	2014	2023	27.12%	\$ 31,780
MISCELLANEOUS SUBTOTAL -									\$ 31,780
CURRENT TOTAL -									\$ 8,723,722
j								Contingency 10.00%	\$ 872,372
FINANCIAL ASSURANCE REQUIRED FOR CLOSURE -									\$ 9,596,094
Closure Cost per Acre -									\$ 203,307



2023 Riverbend Landfill Post-Closure Care Cost Estimate

<u>Site:</u>		Riverbend Landfill				<u>State:</u>	Oregon	<u>Waste:</u>	MSW
<u>Anticipated PCC Duration:</u>		30 Years		<u>Acreeage:</u>		87.40 Acres			
a	<u>Cover System Maintenance</u>	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
1	Mowing [UPDATED]	90.90	Acres	\$ 300.00	\$ 27,270	2022	2023	5.39%	\$ 28,740
4	Revegetation	2.00	Acres	\$ 1,166.00	\$ 2,332	2016	2023	24.76%	\$ 2,909
5	Other (Describe Below)								
	Cover System Earthwork, Labor, Equipment, Surveying	1	LS	\$ 2,400.00	\$ 2,400	2014	2023	27.12%	\$ 3,051
COVER SYSTEM MAINTENANCE SUBTOTAL -									\$ 34,700
b	<u>Environmental Monitoring</u>	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
1	Surface Water Sampling	2	EA	\$ 3,630.00	\$ 7,260	2013	2023	29.39%	\$ 9,394
4	Semiannual Groundwater Sampling	32	EA	\$ 468.15	\$ 14,981	2013	2023	29.39%	\$ 19,384
6	Semiannual Groundwater Analysis	32	EA	\$ 266.30	\$ 8,522	2013	2023	29.39%	\$ 11,026
7	Water Quality Report Preparation	1	LS	\$ 9,000.00	\$ 9,000	2014	2023	27.12%	\$ 11,441
8	Groundwater Well Replacement	0.0333	EA	\$ 7,500.00	\$ 250	2014	2023	27.12%	\$ 318
10	Other (Describe Below)								
	Groundwater Analytical QA and Statistics	2	EA	\$ 3,080.00	\$ 6,160	2013	2023	29.39%	\$ 7,970
	Well Redevelopment Accrual, Each Well Every 10 Years	1.2	EA	\$ 1,000.00	\$ 1,200	2013	2023	29.39%	\$ 1,553
ENVIRONMENTAL MONITORING SUBTOTAL -									\$ 61,085
c	<u>Leachate Monitoring</u>	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
1	Leachate Sampling	1	EA	\$ 1,600.00	\$ 1,600	2014	2023	27.12%	\$ 2,034
2	Leachate Analysis	1	EA	\$ 8,700.00	\$ 8,700	2014	2023	27.12%	\$ 11,059
3	Leachate Reporting	1	EA	\$ 3,250.00	\$ 3,250	2014	2023	27.12%	\$ 4,131
4	Leachate Collection System Maintenance	1	LS	\$ 4,000.00	\$ 4,000	2014	2023	27.12%	\$ 5,085
8	Leachate Treatment	2,780,820	Gal	\$ 0.06765	\$ 188,122	2018	2023	19.71%	\$ 225,201
9	Leachate Evaporation Pond Repair	812	SY	\$ 20.63	\$ 16,760	2017	2023	21.27%	\$ 20,325
11	Other (Describe Below)								
	Decommissioning	0.0333	LS	\$ 15,500.00	\$ 517	2016	2023	24.76%	\$ 645
LEACHATE MONITORING SUBTOTAL -									\$ 268,480



2023 Riverbend Landfill Post-Closure Care Cost Estimate

d	<u>Landfill Gas Monitoring</u>	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
5	Landfill Gas System Maintenance [UPDATED]	1	LS	\$ 30,000.00	\$ 30,000	2022	2023	5.39%	\$ 31,617
6	Landfill Gas System Operation [UPDATED]	1	LS	\$ 45,000.00	\$ 45,000	2022	2023	5.39%	\$ 47,426
7	Convert from Active to Passive	0.0333	LS	\$ 36,745.00	\$ 1,225	2013	2023	29.39%	\$ 1,585
8	Landfill Gas System Decommissioning	0.0333	LS	\$ 18,373.00	\$ 612	2013	2023	29.39%	\$ 792
12	Blower Replacement	0.0667	EA	\$ 19,500.00	\$ 1,300	2014	2023	27.12%	\$ 1,653
15	Flare Maintenance	1	LS	\$ 10,000.00	\$ 10,000	2014	2023	27.12%	\$ 12,712
18	NSPS Monitoring [UPDATED]	1	LS	\$ 107,200.00	\$ 107,200	2022	2023	5.39%	\$ 112,978
19	Title V Emissions Fee [UPDATED]	1	LS	\$ 37,000.00	\$ 37,000	2022	2023	5.39%	\$ 38,994
20	Other (Describe Below)								
	Landfill Methane Rule Costs (Every 5 yrs) [NEW]	0.20	LS	\$ 157,000.00	\$ 31,400	2022	2023	5.39%	\$ 33,092
	DEQ and CAO Fees [NEW]	1	LS	\$ 16,359.00	\$ 16,359	2022	2023	5.39%	\$ 17,241
	Quarterly H2S & CO Monitoring [NEW]	1	LS	\$ 21,300.00	\$ 21,300	2022	2023	5.39%	\$ 22,448
	Gas Migration Monitoring and Reporting	1	LS	\$ 4,798.60	\$ 4,799	2013	2023	29.39%	\$ 6,209
	Blower Maintenance and Repair	1	LS	\$ 4,800.00	\$ 4,800	2014	2023	27.12%	\$ 6,102
	Blower Electricity	1	LS	\$ 12,500.00	\$ 12,500	2016	2023	24.76%	\$ 15,595
LANDFILL GAS MONITORING SUBTOTAL -									\$ 348,444

e	<u>General Site Maintenance</u>	Annual Quantity	Unit	Annual Unit Cost (\$)	Annual Original Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
2	Fence and Gate Repairs	20	LF	\$ 25.00	\$ 500	2014	2023	27.12%	\$ 636
3	Road Maintenance	1,500	SF	\$ 0.70	\$ 1,050	2014	2023	27.12%	\$ 1,335
4	Utilities	1	LS	\$ 1,500.00	\$ 1,500	2014	2023	27.12%	\$ 1,907
5	Building Maintenance	1	LS	\$ 1,000.00	\$ 1,000	2014	2023	27.12%	\$ 1,271
6	Stormwater System Maintenance	1	LS	\$ 3,500.00	\$ 3,500	2014	2023	27.12%	\$ 4,449
7	Other (Describe Below)								
	MSE Berm Maintenance	1	LS	\$ 1,560.00	\$ 1,560	2015	2023	25.70%	\$ 1,961
GENERAL SITE MAINTENANCE SUBTOTAL -									\$ 11,558

f	<u>Professional Services</u>	Annual Quantity	Unit	Annual Unit Cost (\$)	Original Annual Total	Year of Orig. Cost	Current Year	Inflation Adj. (%)	Adjusted Annual Total
4	Site Inspection	1	EA	\$ 16,000.00	\$ 16,000	2015	2023	25.70%	\$ 20,112
PROFESSIONAL SERVICES SUBTOTAL -									\$ 20,112

CURRENT ANNUAL TOTAL -								\$ 744,380	
g	Overhead and Profit							0.00%	\$ -
h	Contingency							10.00%	\$ 74,438
i	Taxes							0.00%	\$ -
TOTAL -								\$ 818,818	
j	NOT DISCOUNTING WILL BE APPLIED THIS YEAR							Discounting 0.000000%	\$ -
Annual Post-Closure Care Costs -								\$ 818,818	
FINANCIAL ASSURANCE REQUIRED FOR POST-CLOSURE CARE -								\$ 24,564,523	
Post-Closure Care Cost per Acre -								\$ 281,059	

Attachment 2
Cost Estimate Development Backup

NOTE: This backup documentation has been updated by Riverbend Landfill Co. The changes made herein reflect the 2023 costs and calculations utilizing the original prepared by HDR in 2014 for this backup package.

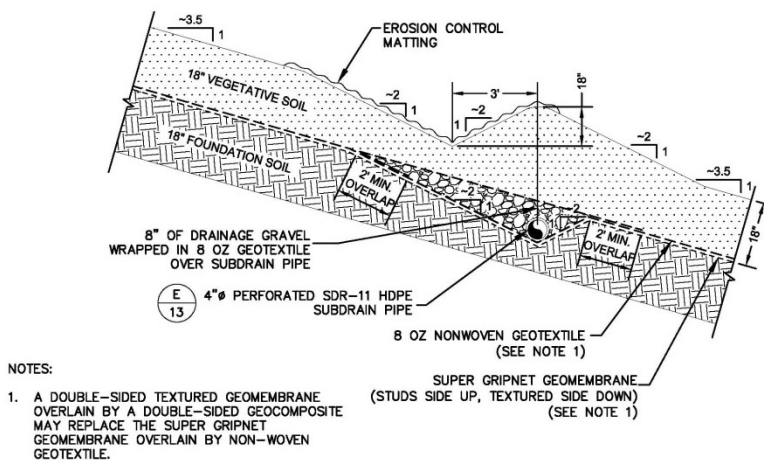
Inflation Methodology

Unless otherwise noted, the inflation adjustments for items based on prior cost estimates were made according to the instructions in the Oregon Department of Environmental Quality (DEQ) Memorandum, “Financial Assurance Update for 2023: How to adjust cost estimates for inflation,” dated February 6, 2023¹ (included in Attachment 1). The inflation factor, as a percentage increase, was calculated to March 2023 (1st Quarter 2023) values by using Implicit Price Deflator (IPD) values, as shown in the following equation:

$$\left(\frac{IPD \text{ for date of current estimate (1st quarter 2023)}}{IPD \text{ for date of prior estimate}} - 1 \right) * 100 = \text{Inflation Adjustment}$$

Final Cover Components

The final cover components are based on the description in Section 2.2.2 of the Closure and Post-Closure Plan (March 2023) and the figure below.



1. Closure Cost Estimate

The closure cost estimate includes costs associated with closing the Riverbend Landfill under the “worst-case” scenario. This “worst-case” is occurring right now, as presented in Appendix A, with 47.2 planar acres required to be closed. To account for the increased surface area on slopes, any cost quantities based on surface area use 49.09 acres (104 percent of the planar area).

¹ The date is based on what was provided on the website at; actual document does not contain a date: <https://www.oregon.gov/deq/mm/swpermits/Pages/Financial-Assurance.aspx> ; the document was not dated.



a. Earthwork

The Earthwork section includes activities associated with procurement, delivery, excavation, moving, stockpiling, placing, and compaction of soils for the closure.

1. Bedding Soil (Foundation Soil)

Bedding Soil covers the anticipated needs for the 18-inch foundation soil layer. This covers any soil needed for repairing or grading during closure in order to bring the surface of the landfill into conformance with the final cover design. It is assumed that a minimum of 6 inches of foundation soil is already maintained over the waste across any areas of the landfill that have not been closed. It is also assumed that 80 percent of these areas will already have an 18-inch layer of intermediate soil cover that meets the requirements of the foundation layer. Therefore, the volume of bedding soil required is assumed to be approximately the amount of soil needed to add 1 foot of soil to 20 percent of the area to be closed.

$$104\% * 20\% * (47.2 \text{ acres}) * \frac{43,560 \text{ SF}}{\text{acre}} * 1 \text{ foot} * \frac{1 \text{ CY}}{27 \text{ CF}} = 15,839 \text{ CY}$$

The 2014 unit cost is per cubic yard and based on engineering judgment. It has been adjusted for inflation using the IPD values to current dollars.

2. General Backfill

General Backfill covers the lower 12 inches of the vegetative soil layer, which is a layer of the final cover that is 1.5 feet thick.

$$104\% * 47.2 \text{ acres} * \frac{43,560 \text{ SF}}{\text{acre}} * 1 \text{ feet} * \frac{1 \text{ CY}}{27 \text{ CF}} = 79,195 \text{ CY}$$

The 2014 unit cost is per cubic yard and based on engineering judgment. It has been adjusted for inflation using the IPD values to current dollars.

3. Drainage Sand – Not Used

4. Gravel – Not Used

5. Clay – Not Used

6. Top Soil

Top Soil covers the upper 6 inches of the vegetative soil layer, which is a layer of the final cover that is 1.5 feet thick, with the top 6 inches capable of supporting vegetation.

$$104\% * 47.2 \text{ acres} * \frac{43,560 \text{ SF}}{\text{acre}} * 0.5 \text{ feet} * \frac{1 \text{ CY}}{27 \text{ CF}} = 39,598 \text{ CY}$$

The 2014 unit cost is per cubic yard and based on engineering judgment. It has been adjusted for inflation using the IPD values to current dollars.



7. Waste Grading

Similar to the Bedding Soil (line item a1 above), Waste Grading assumes that wastes may need to be regraded in order to create stable final slopes and bring the surface of the landfill into conformance with the final cover design. Assumes that 6" daily cover is placed over waste as part of standard operating procedures. The volume is assumed to be approximately 1 foot of waste across 20 percent of the area to be closed.

$$104\% * 20\% * (47.2 \text{ acres}) * \frac{43,560 \text{ SF}}{\text{acre}} * 1 \text{ foot} * \frac{1 \text{ CY}}{27 \text{ CF}} = 15,839 \text{ CY}$$

The 2014 Waste Grading unit cost is per cubic yard and is based upon an average of three quotes for waste excavation provided by contractors in February 2014 for a landfill cell construction project at another Waste Management site in Oregon (Cell 6A at Hillsboro Landfill).

$$\frac{\$8.23 + \$8.00 + \$9.00}{3} = \$8.41$$

The 2014 unit cost has been adjusted for inflation using the IPD values to current dollars.

8. Other

Subgrade Preparation

This includes the cost for preparing the foundation soil for installation of the geosynthetics.

$$104\% * 47.2 \text{ acres} * \frac{4,840 \text{ SY}}{\text{acre}} = 237,586 \text{ SY}$$

A unit cost of \$0.21 per square yard was acquired from section 31 22 16.10-3300 of the Year 2016 RS Means (Fine Grading, Slopes, Gentle, Finish Grading) for Portland, Oregon and has been adjusted for inflation using the IPD values to current dollars.

Mobilization Earthwork Contractor

The 2015 Mobilization cost for the earthwork contractor is based on engineering judgment and has been adjusted for inflation using the IPD values to current dollars.

Construction Quality Assurance and Surveying

The 2015 cost for construction quality assurance (CQA) activities, including surveying, for the earthwork portion of closure construction is based on engineering judgment and has been adjusted for inflation using the IPD values to current dollars.



b. Geosynthetics

The Geosynthetics section includes activities associated with procurement, delivery, deployment, and connection of geosynthetic materials for the closure.

1. Geotextile

The final cover system includes a geotextile placed over the studded surface of a geomembrane in order to create a drainage channel. An additional 10 percent was added in order to compensate for the increased area on slopes and for wastage.

$$110\% * 47.2 \text{ acres} * \frac{4,840 \text{ SY}}{\text{acre}} = 251,293 \text{ SY}$$

The \$2.61 cost per square yard is based on a verbal cost estimate provided in 2014 by Agru America, and includes the cost to procure, ship, and install the 8 ounce/square yard geotextile. The 2014 unit cost has been adjusted for inflation using the IPD values to current dollars.

2. Composite Drainage Net – Not Used

3. Geonet – Not Used

4. Geosynthetic Clay Liner – Not Used

5. Geomembrane

The final cover system includes a 60-mil polyethylene geomembrane, assumed to be the 60 mil Super Gripnet[®] liner manufactured by Agru America, which has spikes on one side and studs on the other side. An additional 10 percent was added in order to compensate for the increased area on slopes and for wastage. Like the geotextile (line item b1), 251,293 square yards are estimated.

The \$6.70 cost per square yard includes a cost based on a verbal cost estimate provided by Agru America, which includes the cost to procure, ship, and install the geomembrane, plus an additional cost per square yard that covers miscellaneous items such as boots, flaps, and connections. The 2014 unit cost has been adjusted for inflation using the IPD values to current dollars.

6. Geogrid – Not Used

7. Other

Contractor Mobilization

The 2015 Mobilization cost for the geosynthetics contractor is based on engineering judgment and has been adjusted for inflation using the IPD values to current dollars.



CQA and Surveying

The 2015 cost for CQA activities, including surveying, for the geosynthetics portion of closure construction is based on engineering judgment and has been adjusted for inflation using the IPD values to current dollars.

c. Stormwater Management System

The Stormwater Management System section includes activities associated with the procurement, delivery, and installation of structures and piping necessary to promote stormwater flow as part of closure construction.

- 1. Piping – Not Used**
- 2. Culverts – Not Used**
- 3. Toe Drain – Not Used**
- 4. Inlet Structures – Not Used**
- 5. Outfall Structures – Not Used**
- 6. Ditches – Not Used**
- 7. Berms – Not Used**
- 8. Other**

Drainage and Site Work

The costs for site work related to drainage for the final closure system and its construction are combined under one line item. This cost will include drainage ditches, culverts or pipes, down chutes, and energy dissipaters/splash walls, and water quality units.

The 2014 unit cost is lump sum, adds additional items to the system based on the Final Engineered Site Closure and Post-Closure Plan (Geosyntec, 2022), and is based on engineering judgment. It has been adjusted for inflation using the IPD values to current dollars.

d. Temporary and Permanent Erosion Controls

The Temporary and Permanent Erosion Controls section includes costs associated with procurement, delivery, installation, and maintenance during construction of temporary and permanent erosion controls necessary to mitigate sediment migration.

- 1. Erosion Control Mat – Not Used**
- 2. Silt Fencing – Not Used**
- 3. Inlet Protection – Not Used**



- 4. Hydroseeding – Not Used**
- 5. Sodding – Not Used**
- 6. Grout Filled Fabric Revetment – Not Used**
- 7. Other**

Sediment and Erosion Control

The 2014 cost for temporary sediment and erosion control activities required during the earthwork portion of closure construction is per acre and based on engineering judgment. It has been adjusted for inflation using the IPD values to current dollars.

Vegetation and Seeding

The Closure Plan assumes that vegetation will be planted or seeded across 49.09 acres (104 percent of the area to be closed), in order to account for the increased area on slopes. Conservatively, an additional area equal to 25 percent of the area to be closed is assumed to need a second round of seeding during the closure activities. Therefore, the total quantity estimated is 59 acres to current dollars.

The unit cost of \$1,166 per acre was acquired from section 32 92 19.13-0020 of the Year 2016 RS Means (mechanical seeding) for Portland, Oregon, and has been adjusted for inflation using the IPD values to current dollars.

e. Landfill Gas Management System

The Landfill Gas Management System section includes costs associated with closure construction for procurement, delivery, and installation of piping and structures necessary to control landfill gas and properly collect condensate.

The landfill gas collection and control system (GCCS) has primarily been constructed along with landfill expansion/development and waste placement, except for the landfill gas collection wells, the well-head assemblies, and the landfill gas laterals.

- 1. Lateral Piping – Not Used**
- 2. Header Piping – Not Used**
- 3. Air Line – Not Used**
- 4. Vertical Gas Wells – Not Used**
- 5. Condensate Knockout – Not Used**
- 6. Passive Gas Vents – Not Used**
- 7. Condensate Pump Station – Not Used**
- 8. LFG Migration Probe – Not Used**



9. Blower – Not Used

10. Air Compressor – Not Used

11. Flare – Not Used

12. Other

Engineering, Construction Drawings, and CQA

This line item covers costs associated with the engineering required for the remaining components of GCCS, the construction drawings, and the performance of construction quality assurance related to constructing the GCCS. The 2014 unit cost is lump sum and based on the engineering judgment. It has been adjusted for inflation using the IPD values to current dollars.

Remaining Well Field

This cost covers those components of the GCCS that have not been constructed during the operation of the landfill. The 2014 unit cost is per acre and based on industry knowledge. It has been adjusted for inflation using the IPD values to current dollars.

f. Water Monitoring System

The Water Monitoring System section includes construction of any groundwater wells and surface water monitoring points that will need to be constructed as part of closure. The entire Water Monitoring System at Riverbend is assumed to be in place and operational before the closure activities commence.

1. Groundwater Well – Not Used

2. Other – Not Used

g. CQA, Engineering, Surveying, and Other Professional Services

The CQA, Engineering, Surveying, and Other Professional Services section includes work related to ensuring construction meets quality standards, design intent, and legal requirements.

1. Construction Quality Assurance – Not Used

2. Surveying – Not Used

3. Construction Drawing Preparation

This line item includes the costs associated with bringing closure plans to construction level with consideration for changed conditions. The 2015 unit cost is lump sum and based on engineering judgment and the construction costs for Earthwork, Geosynthetics, Stormwater Management, and Temporary and



Permanent Erosion Controls, and has been adjusted for inflation using the IPD values to current dollars.

4. Bid Package

This line item includes the costs associated with preparing bid documents, including Divisions 0 and 1 of the Construction Specifications. The 2015 unit cost is lump sum and based on the cost estimate presented in the *Final Engineered Site Closure and Post-Closure Plan* (Geosyntec 2014) in December 2014 and has been adjusted for inflation using the IPD values to current dollars.

5. Construction Management

This line item includes costs associated with construction management services as may be deemed necessary. The 2015 unit cost is lump sum and based on engineering judgment and has been adjusted for inflation using the IPD values to current dollars.

6. Certification Report

This line item includes costs associated with preparing a CQA report at the conclusion of closure construction. The 2015 unit cost is lump sum and based on the cost estimate presented in the *Final Engineered Site Closure and Post-Closure Plan* (Geosyntec 2014) in December 2014 and has been adjusted for inflation using the IPD values to current dollars.

7. Deed Record Update

This line item includes services associated with making revisions to the property's deed to indicate that a closed landfill is on the site, as well as notes on any property use restrictions as required by law. The 2015 cost is based on engineering judgment and has been adjusted for inflation using the IPD values to current dollars.

8. Other – Not Used

h. Miscellaneous

The Miscellaneous section includes any additional costs not included in other sections, including site-specific issues that cannot be adequately addressed in the other sections.

1. Demobilization and Demolition

This line item covers the cost of Exit Closure Demobilization, which is assumed to include the cost of removing equipment, etc., from site after closure. This is not associated with contractor costs for performing the closure activities described in other line items above. The 2014 one-time cost of \$25,000 is based on engineering judgment. It has been adjusted for inflation using the IPD values to current dollars.

2. Other – Not Used

i. Overhead and Profit

The Overhead and Profit section was not used because unit costs in other sections include overhead and profit.

j. Contingency

An additional 10 percent is added to the costs to account for unforeseen contingencies.

k. Taxes

The Taxes section was not used because unit costs in other sections include taxes where applicable.

l. Discounting

No discounting was used for the closure cost estimate because it is assumed that closure funds should be available for immediate use.

2. Post-Closure Care Cost Estimate

The post-closure care cost estimate includes costs associated with maintaining Riverbend Landfill for 30 years. The final build-out of the landfill is expected to be 87.4 planar acres. To account for the increased surface area on slopes, any cost quantities based on surface area use 90.9 acres (104 percent of the planar area).

a. Cover System Maintenance

The Cover System Maintenance section includes costs associated with erosion repairs, settlement issues, and general maintenance.

1. Mowing

Mowing quantities were based on assumptions that the entire grassed portion of the landfill will need to be mowed once per year. The area is assumed to be 104 percent of the area to be closed (90.9 acres), in order to account for the increased area on slopes.

Unit costs are based on costs seen by WM Environmental Legacy Management Group (ELMG); this is the team who manages landfills that are in post closure. As a result of the updated Landfill Methane Reporting requirements in Oregon and stricter Surface Emissions Monitoring under NSPS rules, mowing will be required an average of 3 times per year at a 2022 unit cost of \$100/acre. This rate has been adjusted for inflation using the IPD values to current dollars.

The cost estimate assumes mowing activities will be necessary for 30 years of post-closure care.



2. Erosion Repair – Not Used

3. Replace Geosynthetics or Clay – Not Used

4. Revegetation

This item includes costs associated with maintaining or replacing dead or eroded vegetation during the post-closure care period. It is assumed that approximately 2 acres of the final cover will need seeding, planting, or fertilizing each year to maintain or re-establish vegetation.

The unit cost of \$1,166 per acre was acquired from section 32 92 19.13-0020 of the Year 2016 RS Means (mechanical seeding) for Portland, Oregon, and has been adjusted for inflation using the IPD values to current dollars.

The cost estimate assumes revegetation activities will be necessary for 30 years of post-closure care.

5. Other

Cover System Earthwork, Labor, Equipment, Surveying

This line item covers additional site work related to maintaining the final cover, such as earthwork and surveying, and related labor and equipment costs. The 2014 unit cost is lump sum and based on engineering judgment, and has been adjusted for inflation using the IPD values.

b. Environmental Monitoring

The Environmental Monitoring section includes costs associated with sampling, analyzing and reporting water quality impacts from the landfill. Included in this section are costs associated with replacing wells and eventual abandonment.

1. Surface Water Sampling

The Surface Water Sampling unit cost includes costs associated with collecting samples from surface water monitoring points and with the subsequent analysis.

Unit cost is based on the Surface Water Sampling and Analysis cost estimate from January 2013, and adjusted for inflation using the IPD values. The cost was recommended by SCS Engineers for the 2013 cost estimate by Vista. The cost estimate assumes sampling and analysis activities will be necessary for 30 years of post-closure care.

2. Surface Water Analysis – Included in Surface Water Sampling Costs

3. Quarterly Groundwater Sampling – Not Used



4. Semiannual Groundwater Sampling

This item includes costs associated with sampling groundwater monitoring wells on a semiannual basis. Under its Semiannual Compliance Monitoring Program, Riverbend Landfill is required to perform semiannual sampling of 10 compliance wells (20 sampling events total per year). Under its Semiannual and Annual Detection Monitoring Program, Riverbend Landfill is required to perform semiannual sampling for 3 of its detection wells, annual sampling for the other 3 detection wells, and annual sampling for 3 detection piezometers (12 sampling events total per year).

Unit cost is based on the groundwater sampling cost estimate from January 2013, and adjusted for inflation using the IPD values. The cost estimate assumes sampling activities covering 32 sampling events per year will be necessary for 30 years of post-closure care.

5. Quarterly Groundwater Analysis– Not Used

6. Semiannual Groundwater Analysis

This item includes costs associated with analyzing groundwater monitoring well samples on a semiannual basis.

Unit cost is based on the groundwater analysis cost estimate from January 2013, and adjusted for inflation using the IPD values. The cost estimate assumes analysis activities will be necessary for 30 years of post-closure care.

7. Water Quality Report Preparation

This item includes costs associated with preparing and reporting on water quality.

Unit cost is based on the cost for preparing the water quality portion of the Annual Environmental Monitoring Report (AEMR), as estimated for Hillsboro Landfill by SCS Engineers in 2014, and adjusted for inflation using the IPD values. The cost estimate assumes report preparation will be necessary for 30 years of post-closure care.

8. Groundwater Well Replacement

This item includes costs associated with decommissioning damaged groundwater wells and replacing them with new wells as necessary during the post-closure care period. Costs are prorated in consideration of the 30 years of post-closure maintenance assumed, the number of wells in the system, and the replacement frequency assumed for each well. The cost estimate assumes that there will be 1 well replacement over the post-closure maintenance period and assigns 3.33 percent of the replacement cost of a well to each year.



The 2014 unit cost is per well and based on engineering judgment, and has been adjusted for inflation using the IPD values.

9. Groundwater Well Abandonment – Not Used

10. Other

Groundwater Analytical QA and Statistics

This item covers the quality assurance (QA) review and statistical analysis of the results from the 32 groundwater sampling events per year.

Unit cost is based on the Groundwater Analytical QA and Statistics cost estimate from January 2013, and adjusted for inflation using the IPD values. The cost estimate assumes this work will be necessary for 30 years of post-closure care.

Well Redevelopment Accrual, Each Well Every 10 Years

This item includes costs associated with redeveloping groundwater wells as is necessary during the post-closure care period. Costs are prorated in consideration of the 30 years of post-closure maintenance assumed, the number of wells in the system and the redevelopment frequency assumed for each well. The cost estimate assumes that each well will be redeveloped every 10 years over the post-closure period resulting in 32 well redevelopments over the post-closure maintenance period and assigns 120 percent of the redevelopment cost of a well to each year.

Unit cost is based on the well redevelopment cost estimate from January 2013 and adjusted for inflation using the IPD values to current dollars.

c. Leachate Monitoring

The Leachate Monitoring section includes costs associated with operating and maintaining the leachate collection system, routine leachate monitoring, and eventual system decommissioning.

1. Leachate Sampling

The Leachate Sampling unit cost includes costs associated with sampling leachate. Unit cost is based on the cost for leachate sampling estimated for Hillsboro Landfill by SCS Engineers in 2014, and adjusted for inflation using the IPD values. The cost estimate assumes sampling activities will be necessary for 30 years of post-closure care.

2. Leachate Analysis

This item includes all costs associated with analyzing the sampled leachate. Unit cost is based on the cost for leachate analysis estimated for Hillsboro Landfill by SCS



Engineers in 2014, and adjusted for inflation using the IPD values. The cost estimate assumes analysis activities will be necessary for 30 years of post-closure care.

3. Leachate Reporting

This item includes all costs associated with reporting the results of the leachate analysis to the appropriate regulatory agency in an annual leachate management report. Unit cost is based on the cost for leachate reporting estimated for Hillsboro Landfill by SCS Engineers in 2014, and adjusted for inflation using the IPD values. The cost estimate assumes reporting activities will be necessary for 30 years of post-closure care.

4. Leachate Collection System Maintenance

This item includes all labor and parts necessary to conduct routine maintenance on the leachate collection system. Unit cost is based on the cost for leachate collection system maintenance estimated for Hillsboro Landfill by SCS Engineers in 2014, and adjusted for inflation using the IPD values. This cost includes both routine maintenance and non-routine maintenance. The cost estimate assumes routine maintenance activities will be necessary for 30 years of post-closure care. Non-routine maintenance costs include the cost of replacing two pumps every 5 years are pro-rated over the 30 year post-closure care period.

5. Leachate Collection System Operation – Not Used

6. Leachate Collection System Decommissioning – Not Used

7. Pump Replacement – Not Used

8. Leachate Treatment

Leachate is currently hauled off-site for treatment and disposal at a publicly owned treatment works and another WM landfill. The 2014 average cost was estimated to be \$85 per 1,000 gallons. The total cost of leachate disposal for the 30 year period is pro-rated in consideration of the 30 years of post-closure maintenance, and adjusted for inflation using the IPD values. The cost estimate for each year is equivalent to the cost of disposing of approximately 2,865,188 gallons of leachate, which was determined by dividing the expected leachate generation over the 30 years of post-closure by the 30-year post-closure period. For the first year of post-closure, it was assumed that 14.5 million gallons would be generated and then the volume would decrease by approximately 42 percent the year following closure and approximately 12 percent each year thereafter.

9. Leachate Evaporation Pond Repair

Cost assumes a full liner replacement of the leachate evaporation pond is required in year 15 of post-closure. Both the primary and secondary liners would be replaced



across the approximately 24,372 square yard leachate evaporation pond area. The planar pond floor area was calculated as approximately 14,721 square yards and was adjusted to 14,722 square yards to account for the 1 percent slope of the pond floor. The planar sloped area was calculated to be approximately 7,448 square yards and was adjusted to 8,327 square yards to account for the 2:1 side slope. An additional 1,323 square yards was determined by multiplying the approximate perimeter length (1,701 feet) by 7 feet to account for the crest and anchor trench material. The 2017 cost estimate of \$20.636/square yard was estimated by adding the 2014 geomembrane and geotextile costs (\$6.70+\$2.61) and multiplying by 2 to account for the primary and secondary liners, then multiplying by the 2014 to 2017 inflation rate and adding a mobilization cost on a square yard basis \$25,000/24,372 square yards.

The cost of the leachate evaporation pond repair is pro-rated over the 30-year post-closure care period and is adjusted for inflation using the IPD values to current dollars.

10. Leachate Evaporation Pond Decommissioning – Not Used

11. Other

Decommissioning

This item covers the cost of decommissioning the leachate collection and storage system at the end of the post-closure maintenance period.

The 2016 unit cost is lump sum and is based on engineering judgment. This cost is pro-rated over the 30-year post-closure care period and is adjusted for inflation using the IPD values to current dollars.

d. Landfill Gas Monitoring

The Landfill Gas Monitoring section includes costs associated with routine landfill gas control system sampling, operation, maintenance, and eventual decommissioning.

- 1. Landfill Gas Well Sampling – Not Used**
- 2. Landfill Gas Well Analysis – Not Used**
- 3. Perimeter Landfill Gas Probe Sampling – Not Used**
- 4. Perimeter Landfill Gas Probe Analysis – Not Used**
- 5. Landfill Gas System Maintenance**

This item includes labor and parts necessary to conduct routine maintenance on the landfill GCCS. Unit cost is based on the cost for landfill gas system maintenance estimated for Hillsboro Landfill by SCS Engineers in 2014, and adjusted for inflation using the IPD values. This cost includes both routine maintenance and non-routine



maintenance. The non-routine maintenance assumption was increased to \$26,000 per year to cover the added cost of repairs related to the NSPS monitoring. This additional amount is based on the need to utilize rental equipment and additional days for repairs above other non-routine maintenance. The cost estimate assumes routine and non-routine maintenance activities will be necessary for 30 years of post-closure care.

6. Landfill Gas System Operation

This item includes costs associated with operating the landfill GCCS including the required source testing on the flare. As of 2022 source testing frequency was increased from once every 5 years to annual as per the Landfill Methane Rule under OAR 340-239.

Unit cost is based on actual costs for operation and source test quotes for 2022, these costs have been adjusted for inflation using the IPD values to current dollars.. The cost estimate assumes the GCCS will be operational for 30 years of post-closure care.

7. Convert from Active to Passive

This item includes costs associated with converting an active gas extraction system to a passive system. This is a one-time cost pro-rated over the 30 year post-closure care period.

Unit cost is based on the One Time Conversion from Active to Passive Operation cost estimate from January 2013, and adjusted for inflation using the IPD values.

8. Landfill Gas System Decommissioning

This item includes costs associated with decommissioning the landfill gas system as a part of exiting post-closure care. This is a one-time cost pro-rated over the 30 year post-closure care period.

Unit cost is based on the One-time System Decommissioning cost estimate from January 2013 and adjusted for inflation using the IPD values to current dollars.

9. Landfill Gas Probe Replacement – Not Used

10. Vertical Gas Well Replacement – Not Used

11. Vertical Gas Well Abandonment – Not Used

12. Blower Replacement

This item includes the costs associated with replacing blowers for the landfill gas collection system. Replacement costs for 2 blowers are pro-rated over the 30 year post-closure care period.



Unit cost is based on the cost for blower replacement estimated for Hillsboro Landfill by SCS Engineers in 2014 and adjusted for inflation using the IPD values to current dollars.

13. Condensate Treatment – Not Used

14. Condensate Pump Replacement – Not Used

15. Flare Maintenance

This item includes labor and parts necessary to conduct routine maintenance on the flare and associated systems.

Unit cost is based on the cost for routine flare maintenance estimated for Hillsboro Landfill by SCS Engineers in 2014, and adjusted for inflation using the IPD values. The cost estimate assumes that flare maintenance activities will be necessary for 30 years of post-closure care.

16. Lateral Replacement – Not Used

17. Header Replacement – Not Used

18. NSPS Monitoring

This item includes costs necessary to conduct monitoring in compliance with NSPS grid spacing requirements (e.g., surface emission monitoring) and preparing an annual NSPS report.

Unit cost is based on engineering judgment and was increased in 2021 to account for updates to the NSPS including additional requirements for penetration monitoring, additional surface emission monitoring and the associated additional reporting. Additional cost increase in 2022 to reflect the Landfill Methane rule change in Oregon under OAR 340-239 which reduced grid spacing (thereby increasing the number of passes to monitor), added more detailed monitoring (instantaneous and consolidated), and tightening up repair timing. This rule change resulted in an increase of \$93,277 per year for NSPS monitoring and reporting over previous years. No inflation adjustment was applied to this year's cost because it is based on actual 2022 dollars. The cost estimate assumes that NSPS monitoring will be necessary for 30 years of post-closure care.

19. Title V Emissions Fee

This item includes fees that must be paid in accordance with Title V requirements.

Unit cost is based on actual site costs for this permit. No inflation adjustment was applied to this year's cost because it is based on actual 2022 dollars. The cost estimate assumes that Title V emissions fees will need to be paid each year through the 30 years of post-closure care.

20. Other

Landfill Methane Rule Costs – Every 5 years

This item covers the permit preparation fees related to the Oregon Landfill Methane Rules (OAR 340-239) beginning in 2022. This is a cost that will occur every five years and is normalized over the 30 year post-closure care period.

Unit cost is based on estimated costs to update the permit every five years as system updates or changes are made. These costs have been adjusted for inflation using the IPD values to current dollars.

DEQ and Clean Air Oregon Fees

This item covers permit fees associated with DEQ GHG fees and Clean Air Oregon base fees for emissions. This cost was added to address the new LMR rule.

Unit cost is based on actual costs for 2022. These costs have been adjusted for inflation using the IPD values to current dollars.

Quarterly H₂S and CO Sampling & Reporting

This item covers sampling and monitoring for H₂S and CO per the site permit. This activity is expected to remain in place during post-closure.

Unit cost is based on actual costs for 2022. The current costs are for a certain number of wells to be sampled. The assumption was to reduce the number of wells to monitor over time. It was assumed that for Year 1-5 the current number of wells are monitored then reduced by 25% for the subsequent 5 years and then by 50% for all remaining 5-year periods of post-closure. These costs have been adjusted for inflation using the IPD values to current dollars.

Gas Migration Monitoring and Reporting

This item covers the activities associated with landfill gas migration monitoring and reporting.

Unit cost is based on the cost estimate from January 2013, and adjusted for inflation using the IPD values. The cost estimate assumes this monitoring and reporting will be necessary for 30 years of post-closure care.

Blower Maintenance and Repair

This item includes labor and parts necessary to conduct routine maintenance and repair on the blowers and associated systems.



Unit cost is based on the cost for blower maintenance and repair estimated for Hillsboro Landfill by SCS Engineers in 2014, and adjusted for inflation using the IPD values. The cost estimate assumes that blower maintenance activities will be necessary for 30 years of post-closure care.

Blower Electricity

This has traditionally been a separate line item from other utility costs, covering the electricity used for the blowers and associated systems.

Unit cost is based on engineering judgment of an average annual cost, which is expected to be higher during the early years after closure, and then decrease over time as gas flow decreases. The cost estimate assumes that the blowers will be operational for 30 years of post-closure care.

e. General Site Maintenance

The General Site Maintenance section includes costs associated with maintaining the site which aren't covered elsewhere in the cost estimate.

1. Security – Not Used

2. Fence and Gate Repairs

This includes all costs associated with annual repairs to the fence and/or gate. It is assumed that approximately 20 linear feet (1%) of the 2000 linear feet of fence will need to be replaced each year. The 2014 unit cost is per linear foot and based on engineering judgment and has been adjusted for inflation using the IPD values to current dollars.

3. Road Maintenance

It is assumed that 1,500 square feet of road will need to be repaired annually. Minimal road repair is anticipated due to limited on-site traffic and use. The 2014 unit cost is per square foot and based on engineering judgment and has been adjusted for inflation using the IPD values to current dollars.

4. Utilities

This includes utility costs associated with maintaining the site during post-closure care. This does not include utilities required to operate the landfill GCCS and leachate equipment.

The 2014 unit cost is lump sum and based on engineering judgment and has been adjusted for inflation using IPD values to current dollars.



5. Building Maintenance

This includes costs associated with maintaining any on-site buildings in usable condition, if necessary, during the post-closure care period. The costs of maintaining on-site buildings are included and pro-rated over the 30 year post-closure care period.

The 2014 unit cost is lump sum and based on engineering judgment and has been adjusted for inflation using IPD values to current dollars.

6. Stormwater System Maintenance

This includes costs associated with maintaining the stormwater system.

The 2014 unit cost is lump sum and based on engineering judgment, and has been adjusted for inflation using IPD values. The cost estimate assumes that the stormwater system will be maintained for 30 years of post-closure care.

7. Other

Mechanically Stabilized Earth (MSE) Berm Maintenance

This includes costs associated with maintaining the MSE Berm during the post-closure care period (vegetation, pavement, and stormwater).

Unit cost is lump sum and based on the cost estimate presented in the Final Engineered Site Closure and Post-Closure Plan (Geosyntec 2014) in December 2014 and has been adjusted for inflation using IPD values to current dollars.

f. Professional Services

The Professional Services section includes work related to ensuring the site maintains regulatory compliance and periodic review by a Professional Engineer.

1. Surveying – Not Used

2. Permit Renewals – Not Used

3. Post-Closure Care Cessation Report – Not Used

4. Site Inspection

This includes costs associated with having a third party periodically inspect the site, including stability monitoring and inspection of the MSE Berm.

Unit cost is lump sum and based on the cost estimate presented in the Final Engineered Site Closure and Post-Closure Plan (Geosyntec 2014) in December 2014 and has been adjusted for inflation using IPD values. The cost estimate assumes that these costs will be necessary for 30 years of post-closure care.



5. Other – Not Used

g. Overhead and Profit

The Overhead and Profit section was not used because unit costs in other sections include overhead and profit.

h. Contingency

An additional 10 percent is added to the costs to account for unforeseen contingencies.

i. Taxes

The Taxes section was not used because unit costs in other sections include taxes where applicable.

j. Discounting

Costs have not been discounted this year. Based on the DEQ Worksheet for MSW Facilities using the MSW Reference Rate provided by the DEQ and the approved MSW Reference Rate of -5.02% discounting the total was not beneficial.

Attachment 3
Estimated Leachate Disposal Quantities



Riverbend Landfill Co.
13469 SW Hwy 18
McMinnville, OR 97128

Site: Riverbend Landfill
Project: 2023 Post-Closure Cost Estimate

TABLE 1 ESTIMATED PRESENT WORTH LEACHATE DISPOSAL QUANTITIES ¹⁾		
Year	Years from 2023 (n)	Estimated Leachate Generation (gal/yr)
2024	1	14,500,000
2025	2	8,410,000
2026	3	7,449,578
2027	4	6,598,836
2028	5	5,845,249
2029	6	5,177,722
2030	7	4,586,426
2031	8	4,062,656
2032	9	3,598,701
2033	10	3,187,729
2034	11	2,823,690
2035	12	2,501,225
2036	13	2,215,585
2037	14	1,962,565
2038	15	1,738,440
2039	16	1,539,910
2040	17	1,364,053
2041	18	1,208,278
2042	19	1,070,293
2043	20	948,065
2044	21	839,796
2045	22	743,891
2046	23	658,939
2047	24	583,688
2048	25	517,031
2049	26	457,986
2050	27	405,684
2051	28	359,355
2052	29	318,317
2053	30	281,965
TOTALS		85,955,653
Annual Average		2,865,188

¹⁾ Original calculations by Vista in 2013 were used in subsequent years to bring them forward to present.

Attachment 4
Oregon DEQ Guidance and Reference Documents



Oregon

Kate Brown, Governor

Department of Environmental Quality
Western Region Eugene Office
165 East 7th Avenue, Suite 100
Eugene, OR 97401
(541) 686-7838
FAX (541) 686-7551
TTY 711

March 21, 2023

Jim Denson
Melody Adams
Riverbend Landfill Company
7227 NE 55th Ave.
Portland, OR 97218

RE: Riverbend Landfill, Solid Waste Permit No. 345, Yamhill
Financial Assurance Recertification

This letter is a reminder that your annual recertification of financial assurance for the Riverbend Landfill must be completed and a copy of your notarized annual recertification document provided to the Department of Environmental Quality **by no later than April 8, 2021**. Please keep in mind that if you are unable to meet this deadline due to unexpected circumstances that you can request an extension in writing. Failure to submit your annual recertification of financial assurance document to DEQ by this deadline, or by an approved extension deadline, will result in enforcement action being taken by DEQ.

Your annual update should include a review of your closure and/or post closure care cost estimates, and any changes in those cost estimates should be reflected in your updated financial assurance instrument. The cost estimates review and adjustments (other than a straight inflationary adjustment to tasks or unit costs) must be endorsed and stamped by a registered professional engineer.

If you choose to discount your closure and/or post-closure cost estimates, you are required to use a rate that is no greater than the current DEQ Reference Rate of -5.02 percent. This rate is effective through June 30, 2024.

Financial assurance-related worksheets, guidance and document formats are available to assist you with your annual update. These materials can be found on DEQ's website under **Financial Assurance Documentation**, at <https://www.oregon.gov/deq/mm/swpermits/Pages/Financial-Assurance.aspx>.

For your facility, under **Worksheets and Guidance**, please use the following:

- [Compliance Checklists – for all Financial Assurance Mechanisms](#)
- [Rates for calculating Financial Assurance updates](#)
- [Corporate Financial Test Worksheet \(if Corporate Financial Test Mechanism used\)](#)
- [Discounting Worksheet – for MSW facilities](#)
- [Straight Inflation Adjustment to Cost Estimates Guidance for MSW and Non-MSW facilities Memo](#)

For your facility, under **Document Formats**, please use the following;

Jim Denson
Melody Adams
Riverbend Landfill Company
March 21, 2023
Page 2

- Annual Recertification
- Appropriate Document Format based on Mechanism you are using
- Standby Trust Amendment Format (if required by your Mechanism)
- Notary Block Format

Please send your complete financial assurance annual update, including your notarized annual recertification, a copy of your updated closure and/or post-closure care cost estimates and supporting documentation to:

Denise Miller
Permit Coordinator
DEQ Western Region
165 E 7th Ave., Suite 100
Eugene, OR 97401

Should you have any questions about your financial assurance submittal, when preparing the updated cost estimates or your other updated documents, please feel free to contact Jim McCourt our assigned engineer for Riverbend Landfill, by phone at 541-687-7438 or james.mccourt@deq.oregon.gov.

Sincerely,

Denise Miller

Denise Miller
Solid Waste Permit Coordinator
DEQ Western Region
541-687-7465
denise.miller@deq.oregon.gov

Rates for Calculating Financial Assurance Updates



Land Quality Program: Materials Management
400 E. Scenic Drive
Suite 307
The Dalles, OR 97058
Phone: 541-639-7145
Contact: [Jamie Jones](mailto:Jamie.Jones@deq.state.or.us)
www.oregon.gov/DEQ

DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

Municipal Solid Waste Disposal Site Reference Rate

This information is intended to assist in calculating costs associated with closure and post-closure activities for those solid waste disposal sites that are required to submit annual financial assurance updates.

This rate combines inflation and discount rates (specified by rule) into a single inflation-adjusted rate for discounting.

For July 1, 2022 through June 30, 2023 the MSW Reference Rate is -5.02%

Non-Municipal Solid Waste Disposal Site Inflation and Discount Rates

Inflation Rate: DEQ provides inflation-rate guidance each February based on a three-year moving average. The rate for calendar year 2023 is [4.67%](#). However, if the discount rate (determined below) is less than the guidance inflation rate, use the discount rate as the inflation rate, as well.

Discount Rate: Non-Municipal discount rate must be taken from Federal Reserve H.15 report issued on Monday of the week when calculations are done. The correct five-year bond rate to use is found in the "Nominal" section. Use the column that shows the average rate for the previous week. Please print and submit a copy of that page of the report with your Annual Financial Assurance Recertification as the figures may change weekly.

Current H.15 report: <http://www.federalreserve.gov/releases/h15/current>

Note: If inflation rate is greater than discount rate contact your local permit writer or permit coordinator for additional information.

Links to Applicable Oregon Administrative Rules

For Municipal Solid Waste Landfill Sites - OAR 340-094-0140(4)(a) Cost Estimates:
<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=71246>

For Non-Municipal Solid Waste Sites - OAR 340-095-0090(4)(a) Cost Estimates:
<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=71300>

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

Example

A closure-cost estimate completed in September of 2017 was \$3,000,000. The scope of work, design, and facility conditions have NOT changed since the original cost estimate.

The inflation-adjusted cost for Oct 2023 (Q-IV) is calculated as follows:

Implicit price deflator value for 2023 Q-IV = 135.419
 Implicit price deflator value for 2017 Q-III = 107.910

Inflation-adjusted cost estimate in current dollars =

$$\$3,000,000 \times \frac{135.419}{107.910} = \$3,764,764$$

How to submit the update

Submit the updated cost estimates to the DEQ office identified in your solid waste disposal site permit. Please include a copy of this memo and a copy of the original cost estimates with the submittal.

Type	Year	Quarter	Value	Q to Q Rate Annualized
	2013	I	101.141	
	2013	II	101.428	1.14%
	2013	III	101.906	1.90%
	2013	IV	102.515	2.41%
	2014	I	102.942	1.68%
	2014	II	103.525	2.28%
	2014	III	103.977	1.76%
	2014	IV	104.150	0.67%
	2015	I	104.113	-0.14%
	2015	II	104.677	2.18%
	2015	III	104.989	1.20%
	2015	IV	104.979	-0.04%
	2016	I	104.895	-0.32%
	2016	II	105.636	2.86%
	2016	III	105.929	1.11%
	2016	IV	106.487	2.12%
	2017	I	107.038	2.09%
	2017	II	107.371	1.25%
	2017	III	107.910	2.02%
	2017	IV	108.653	2.78%
	2018	I	109.32	2.48%
	2018	II	110.258	3.48%
	2018	III	110.629	1.35%
	2018	IV	111.132	1.83%
	2019	I	111.562	1.56%
	2019	II	112.184	2.25%
	2019	III	112.550	1.31%
	2019	IV	112.963	1.48%
	2020	I	113.418	1.62%
	2020	II	112.993	-1.49%
	2020	III	113.971	3.51%
	2020	IV	114.692	2.55%
	2021	I	116.120	5.07%
	2021	II	117.922	6.35%
	2021	III	119.712	6.21%
	2021	IV	121.708	6.84%
	2022	I	124.174	8.35%
	2022	II	126.907	9.10%
	2022	III	128.269	4.36%
	2022	IV	129.381	3.51%
Projection	2023	I	130.865	4.67%
	2023	II	132.365	4.67%
	2023	III	133.883	4.67%
	2023	IV	135.419	4.67%
	2024	I	136.971	4.67%



2023-24 DEQ Guidance Inflation Rate

Alternative formats

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