# Attachment B Revised Leachate Generation Calculations

SCS ENGINEERS		Sheet No. 1 of 10 Calc. No.		
Job No. 25222268.00	Job: Landfill Site No. 3	By: RPR	Date: 07/18/24	
Client: Dane County	Subject: Leachate Generation	Chk'd: BLP	Date: 7/26/24	

#### **Preliminary Leachate Generation Estimates**

Purpose: To estimate the volume of leachate that will be collected and transferred to MMSD for treatment during operation and after closure at Landfill Site No. 3.

Approach: Estimate the amount of open, intermediate cover, and closed areas at stages of landfill development.

Use the leachate generation rates established in NR 512.12(3) to estimate the leachate volume

NR 512.12(3) establishes the following leachate generation rates:

- 6 inches/year for all unclosed areas that have a composite liner
- 1 inch/year for all closed areas that have a composite cover
- 3 inches/year for all closed areas that do not have a composite cover (i.e. intermediate cover)

Leachate Generation Rate

= (Area, acres) x (NR 512 Generation Rate, in/yr) x (43,560 sf/acre) / (12 in/ft) x (7.48 gal/cf) / (365 day/yr) See attached figures showing covers status by liner phase.

See Sheet 2 for leachate generation by phase

#### Assumptions:

Open areas assume no intermediate cover in place.

Closure stages after construction of the final liner phase were not analyzed since that represents the worst-case scenario for leachate generation. Landfill construction activities following that stage will consist of placement of intermediate and final cover, which will continue to reduce leachate generation.

Results: The maximum leachate generation rate is 16,280 gallons per day, which occurs during operation of Phase 7. During post-closure conditions, the estimated leachate generation rate is 5,699 gallons per day.

## SCS ENGINEERS

 Sheet No.
 2 of 10

 Calc. No.
 Rev. No.

 By: RPR
 Date: 07/18/24

 Chk'd: BLP
 Date: 7/26/24

Job No. 25222268.00 Job: Landfill Site No. 3

Client: Dane County Subject: Leachate Generation

### Calculations:

Landfill Cover Status	Phases Included	Annual Precipitation (inches)	Area in Cover Status (acres)	Leachate Generation Rate (gpd)
Phase 1 Open				
Open	Phase 1	6.0	13.4	5,983
Total				5,983
Phase 2 Open		•	1	7
Open	Phase 2	6.0	10. <i>7</i>	4,766
Open	Phase 1	6.0	4.5	1,989
Intermediate Cover	Phases 1	3.0	8.9	1,997
Total				8,752
Phase 3 Open		•	1	7
Open	Phase 3	6.0	11.0	4,891
Open	Phases 1 and 2	6.0	5.1	2,266
Intermediate Cover	Phases 1 and 2	3.0	19.0	4,241
Total				11,399
Phase 4 Open			ī	ı
Open	Phase 4	6.0	11.0	4,895
Open	Phases 2 and 3	6.0	5.1	2,266
Intermediate Cover	Phases 1-2	3.0	5.8	1,283
Intermediate Cover	Phases 1-3	3.0	14.0	3,128
Final Cover	Phases 1-3	1.0	10.2	759
Total				12,331
Phase 5 Open				
Open	Phase 5	6.0	9.7	4,321
Open	Phases 3 and 4	6.0	5.0	2,233
Intermediate Cover	Phases 1-3	3.0	13.5	3,006
Intermediate Cover	Phases 1-4	3.0	12.2	2,723
Final Cover	Phases 1-4	1.0	15.4	1,142
Total				13,425
Phase 6 Open				
Open	Phase 6	6.0	10.4	4,664
Open	Phases 1,2, and 5	6.0	5.1	2,280
Intermediate Cover	Phases 1-5	3.0	16.3	3,629
Intermediate Cover	Phases 2-4	3.0	15.2	3,387
Final Cover	Phases 1-5	1.0	19.2	1,425
Total				15,386
Phase 7 Open				
Open	Phase 7	6.0	10.4	4,662
Open	Phases 1, 2, 5, and 6	6.0	5.1	2,282
Intermediate Cover	Phases 2-6	3.0	20.9	4,666
Intermediate Cover	Phases 2, 3, 4, and 6	3.0	11.3	2,524
Final Cover	Phases 1-5	1.0	28.9	2,146
Total				16,280
Site Closed				
Final Cover	Phases 1-6	1.0	76.6	5,699
Total				5,699















