Keremeos Landfill

2025 Annual Report

Operational Certificate: 15278

Prepared by:

Regional District of Okanagan-Similkameen

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EcoScape Environmental Consultants Lt

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1. EXECUTIVE SUMMARY

The Keremeos Landfill is located within the RDOS, approximately two kilometers north of the Village of Keremeos, British Columbia. The site is located on the north bank of the Similkameen River at the junction of Similkameen River Valley and the smaller Keremeos Creek valley. The estimated closed landfilled area is 8 hectares.

The Keremeos Landfill is a natural attenuation landfill. The Keremeos Landfill property does not have a leachate collection system nor a landfill gas collection system.

The Keremeos Landfill was previously approved to operate as a landfill for the disposal of municipal solid waste and other waste authorized by the Regional Waste Manager at a maximum rate of 6,000 tonnes per year. The Keremeos Landfill received waste from Keremeos, Olalla, Hedley, Cawston, and the adjacent areas until June 2007. The Keremeos Facility now serves as a transfer station and discontinued burial on site. All waste is shipped to the Campbell Mountain Landfill (Operational Certificate 15274).

A modified shipping container for used motor oil and antifreeze was obtained in 2020 through the BC Used Oil Management Association (BCUOMA). Used oil and antifreeze began to be collected in 2020.

The RDOS is working with the Province to receive approval on the necessary Closure Plan to complete the final closure layer on top of the area previously used for landfilling activity at the Keremeos Transfer Station. Final cover and works are intended to be installed once approvals from the Province are received. In 2019, clause 2.2.3 of the Operational Certificate was amended by the Province to allow the final closure works to be completed June 30, 2022.

The Keremeos Transfer Station (KTS) currently operates under Operational Certificate (OC) No. 15278 (January 8, 2015) issued to RDOS by the British Columbia Ministry of Environment and Climate Change Strategy (BC Moe). This report was prepared in accordance with the annual landfill reporting requirements outlined in Section 3.0 of the OC. Table 1 provides the concordance between sections in the OC related to monitoring and reporting and their locations in this current document.

EcoScape Environmental Consultants Ltd. (EECL) was retained by the Regional District of Okanagan-Similkameen (RDOS) to prepare the environmental monitoring section of the 2025 Environmental Monitoring Report for the Keremeos Transfer Station (KTS); their report is provided in the attached Appendix I.

Table 1: Operational Certificate 15278 Concordance Table

Approved Schedule Condition	Corresponding Report Information Section
Section 3 Monitoring and Reporting Requirements	
3.1 Municipal Solid Waste Measurement	
3.1.1 Provide and maintain a weigh scale and record the weight of refuse discharged to the landfill over a 24-hour period.	No waste landfilled at this site
3.2.1 Record the weight of recyclable and reusable materials not being discharged and that are being separated, stored or processed at the landfill over a 24-hour period.	Table 2
3.2 Groundwater Monitoring Program	
3.2 The Regional District must implement and maintain a groundwater and surface water monitoring program prepared by a qualified professional.	2025 Environmental Monitoring Report
3.3 Vegetation Monitoring	2025 Environmental Monitoring Report
3.4 Sampling and Analyses	
3.4.1 Sampling is to be carried out in accordance with the procedures described in the 'British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment and Biological Samples, 2003 Edition'	2025 Environmental Monitoring Report
3.4.2 Analyses are to be carried out in accordance with procedures described in the 'British Columbia Laboratory Manual (2009 Permittee Edition)'	Analyses completed by CARO Analytical in Kelowna, BC a CALA Accredited Laboratory
3.5 Quality Assurance	
3.5 Quality Assurance	2025 Environmental Monitoring Report
3.6 Changes to the Sampling and Monitoring Program	
3.6 Changes to the Sampling and Monitoring Program	2025 Environmental Monitoring Report
3.7 Annual Report	
3.7 (a) Executive Summary	1 Executive Summary
3.7 (b) The type and tonnage of waste received, recycled, stored on site and discharged / landfilled for the year	2.3 Transfer Station Activities 2.4 Waste Disposal Table 2

3.7 (c) Any proposed changes to the Design, Operations and Closure Plan and the environmental monitoring program	2.5 2026 Operation Plan 2.6 Landfill Closure 2024 Environmental Monitoring Report
3.7 (d) Review of the preceding year of an operations update which summarizes landfill development work and airspace filled, work completed in the subject reporting year and work planned for the subsequent year. A summary of any new information or changes to the facilities and plans, assessments, surveys, programs and reports.	2.3 Transfer Station Activities 2.5 2026 Operation Plan 2.6 Landfill Closure 3 Conclusions and Recommendations
3.7 (e) Occurrences or observations of wildlife (medium and large carnivores) at the facility;	None
3.7 (f) A statement regarding the facility's progress in reducing the regional solid waste stream being landfilled and the objectives of the Regional Solid Waste Management Plan	2.3 Transfer Station Activities Table 2
3.7 (g) An outline of the current Environmental Monitoring Program and a compendium of all environmental monitoring data in accordance with the Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills and Landfill Criteria for Municipal Solid Waste. Must document any effect of the discharge on the quality of the receiving environment using appropriate statistical and graphical analysis. Trend analyses, as well as an evaluation of the impacts of the discharges on the receiving environment	2025 Environmental Monitoring Report
3.7 (h) A list of training programs completed for landfill operators during the previous year.	None in 2025

2. TRANSFER STATION OPERATION AND MANAGEMENT

The following section details the operation and management of the Site.

2.1 KTS OPERATIONS

The KTS is currently operated by the RDOS. The transfer station currently serves Keremeos, Olalla, Hedley, Cawston, and adjacent areas. Collected waste is disposed of at the Campbell Mountain Landfill in Penticton, BC or mixed Demolition, Land Clearing, and Construction Waste (DLC) is redirected to the Okanagan Falls Sanitary Facility. Commercial loads of waste or mixed DLC material are not received at the Transfer Station and are directed to Campbell Mountain Landfill or Okanagan Falls Landfill as applicable.

The KTS will now operate from 8:30 am to 4:15 pm on Sundays' year around and 8:30 till 4:15 pm on Wednesdays from March 1st to end of November. If a Statutory holiday falls on an opening day, the Site stays open or moves the opening to another day on the same week. The site is maintained (push-up piles, clear snow and load out recyclables) after hours of operation under Contract. Transfer Station bins are serviced under Contract (transport to Campbell Mountain dispose of materials and return to Keremeos).

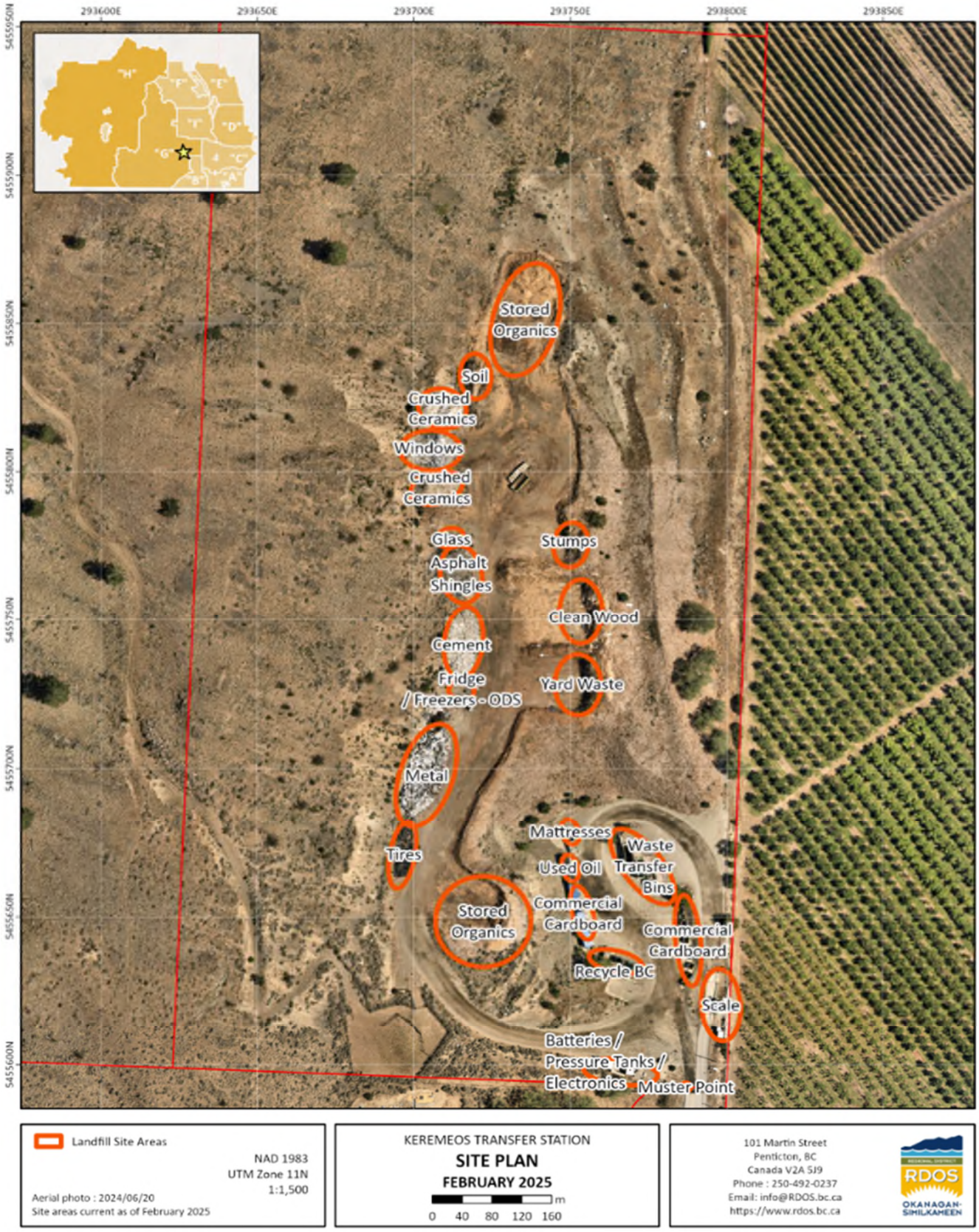

Figure 1 : 2025 Site Plan of Keremeos Landfill

2.2 KTS FACILITIES

The KTS entrance is located at the southeast corner and is accessed from El Rancho Road via Keremeos Bypass Road. The gate at the entrance is locked when the KTS is closed to prevent unauthorized vehicle entrance and waste disposal. The RDOS installed a scale at the entrance of the Keremeos Site in 2013. During hours of operation the site is staffed by a scale attendant and a spotter in an RDOS vehicle.

In addition to the attendant station and Scale, the following facilities are maintained at the KTS:

- Small Vehicle Transfer station 3 bay 40 yard containers
- Small roll off for mattresses
- Asphalt shingles stockpile
- Scrap metal pile
- Battery and Pressurized tank storage
- Electronics, Small Appliances and Lighting Equipment
- Used tire storage
- Wood and yard waste pile
- Mattress transfer bin
- Glass storage
- Concrete/Rubble Stockpile
- Lock Block Bunker for overflow
- Used oil converted container (commenced in 2020 and supplied by BCUOMA)

2.3 TRANSFER STATION ACTIVITIES

In keeping with the Regional Solid Waste Management Plan, recyclable/compostable materials, collected at the KTS, are segregated prior to being transported off-site for recycling or composting. The following materials were collected and recycled from the KTS, during the reporting period:

- RecycleBC Residential Recycling
- Commercial Cardboard and Glass
- Soil
- Concrete and Asphalt Roofing
- Batteries and Electronic Waste
- Metal
- Tires and Pressurized Tanks
- White Wood, Yard Waste, Agricultural Organics and tree stumps
- Mattresses
- Used Oil and Antifreeze (commenced in 2020)

In 2024, Keremeos Landfill Transfer Station received 2188 tonnes of materials, 734 tonnes was hauled to Campbell Mountain Landfill for disposal and 1454 tonnes was diverted. An increase of approximately 7% of materials received in 2025 compared to 2024. In 2024, 2045 tonnes of materials was received at the Transfer Station, with 1340 tonnes diverted and 705 tonnes hauled to Campbell Mountain.

Table 2: Tonnage of Waste and Diverted Materials Summary

Tonnes - Disposed at Campbell Mountain Landfill	2018	2019	2020	2021	2022	2023	2024	2025
Agricultural Plastics (For Disposal Campbell Mnt)	33.61	45.58	42.87	34.66	17.88	51.50	30.41	37.84
Gypsum	26.995	20.74	17.11	19.62	10.34	11.24	18.05	7.36
Illegal Dumping	0.42	0.19	2.14	1.55	1.0	0	0	1.27
Invasive / Infested Vegetation	0.815	0.11	0.32	0.48	0.78	3.44	0.05	0.67
Refuse (for disposal to CML)	434.1	441.3	499.0	499.2	930.51	593.99	648.03	693.08
Preserved Wood	9.21	12.47	8.6	11.74	7.5	6.79	8.13	9.38
Tar and Gravel Roofing		6.9	0.58	0	0	0	0.31	4.08
TOTAL – Disposed to Campbell Mountain Landfill	**505.11**	**527.31**	**570.66**	**567.24**	**968.01**	**665.13**	**704.98**	**733.57**
Tonnes - Diverted Onsite	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Asphalt Roofing	78.57	145.05	198.48	123.19	73.38	58.74	103.26	50.13
Batteries	2.83	1.86	0.89	2.87	2.7	0	2.09	0.40
Bulky Waste	0	0	0	0.14	0	1.53	8.42	3.89
CURBSIDE BULKY WASTE		19.51	0	0	0	0	0	0
Mattress / Box spring Diversion		231.15	270.85	366.7		284.82	344.82	275.09
Metal	144.14	121.2	161.1	188.71	166.67	202.10	169.26	183.44
Wood Salvage		0.27	0.47	0	0	0	0	0
Tree Stumps (m3 converted)	0	0	0	3.51	2.26	3.52	0.83	2.62
White Wood (m3 converted)	254.09	367.4	151.6	394.74	184.23	229.85	256.87	187.57
Organics (m3 converted) Yard Waste	462.59	483.3	249.1	320.67	285.31	352.56	329.58	310.49
Yard Waste Small Dimension	1.215	16.33	35.62	36.19	29.06	31.84	18.90	21.62
Processed Organics - White Wood	0	0	0	0	0	0	0	0
Small Pressurized Tanks (units converted) 1 and 5 lb	0.0684	0.0504	0.1557	.40	0	0	0	0
Large Pressurized Tanks (units converted) 10 lbs and up	1.3736	6.4464	1.6728	3.58	6.59	3.96	0	15.92
Tires	6.215	20.59045	10.84	16.28	227.05	213.21	162.77	282.22
Rims with Tires(units converted)	1.529	2.04	2.52	4.25	7.86	3.03	5.69	4.84
Tires Oversized	0.09	0.12	1.21	0	.02	0.34	0	0.69
Cardboard/Recycling	5.79	13.81	47.89	11.78	20.02	17.38	17.25	18.15
Clean Fill / Sod	6.985	6.37	35.51	35.81	22.59	8.12	13.37	26.16
Concrete/Asphalt/Ceramic/Rock	37.05	34.74	38.1	58.05	46.16	36.67	41.52	51.21
Concrete Non-Recyclable		1.85			-		0	0
Glass	2.88	1.39	2.48	.59	0.22	1.05	0.04	0.34
Used Motor Oil			1.76	4.06	0.9		5.51	6.95
Antifreeze (Glycol)	0	0	0	0	0.2		0.4	0.4

Tonnes - Diverted Onsite (cont.)	2018	2019	2020	2021	2022	2023	2024	2025
Blue Bag Recyclables	53.955	69.26	0	0	0	70.48	-	-
MMBC Fibre	0	0.12	5.37	1.534	2.65	3.567	2.62	1.52
MMBC Containers	0	2.72	1.57	2.892	2.75	2.191	1.718	1.976
MMBC Film Plastic	1.62	0.7	0.38	.960	0.374		-	-
MMBC Polystyrene Coloured	0.04	0.05	0.03	.065	.028	.026	0.028	.007
MMBC Polystyrene White	0.804	0.94	0.62	.752	0.659	.671	0.699	0.911
MMBC Glass	0	0.64	3.69	3.652	3.26	3.153	2.682	5.770
RecycleBC Other Flexible Plastic		0.77	0.51	.858	1.22	1.649	1.532	1.912
TOTAL - Diverted Onsite	**1061.8**	**1548.7**	**1222.4**	**1582.23**	**1082.38**	**1306.38**	**1339.74**	**1454.23**
TOTALS RECEIVED	**1566.9**	**2076.0**	**1793.1**	**2149.47**	**2050.39**	**2489.63**	**2044.72**	**2187.80**

Supplemental Information	2018	2019	2020	2021	2022	2023	2024	2025
Agricultural Organics (tonnes incl. Organics)	5.31	29.21	18.43	4.35	23.8	27.44	36.26	29.12
Electronic Waste (tonnes incl. Campbell Mountain)	15.58	16.03	13.04	11.45	-	-	-	-
Mattress / Box spring Diversion (units)	0	368	429	366	496	284	429	424
Refrigeration Units (units)	248	322	389	358	214	196	224	204
Loads Received at Scale (number)	12,835	13,343	14,604	16,124	15,159	16,369	15,953	14,726

Conversion estimates to tonnage used

AVERAGE White Wood	0.23	tonnes/m3
AVERAGE Organics	0.35	tonnes/m3
AVERAGE Tree Stumps	0.3	tonnes/m3
Small Pressurized Tanks	0.00045	tonnes/unit
Large Pressurized Tanks	0.0136	tonnes/unit
Tires (no longer used)	0.011	tonnes/unit
Rims on Tires	0.014	tonnes/unit
Used Motor Oil	0.00088	tonnes/L
Glycol	0.001	tonnes/L

Notes:
The tonnage data from recycled Asphalt Roofing, Batteries, Household Hazardous Waste, Metal, Tree Stumps, White Wood, Organics, Propane Tanks, Tires, Rims on Tires, RecycleBC and Stewardship materials supplied by contractors.

Table 3: Vehicle Recorded Per Month in 2024

Loads	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly Total
2022	426	677	1721	1489	1710	1693	1689	1521	1553	1792	621	267	15,159
2023	754	788	1155	1805	1700	1604	1082	1779	1651	1721	1396	626	16,061
2024	489	736	1272	1439	1514	1629	1478	1212	1281	1426	999	790	14,265
2025	576	461	1486	1489	1477	1728	1473	1496	1296	1374	1289	581	14,726

2.4 WASTE DISPOSAL

Since 2007, the KTS has operated as a transfer station and no longer landfills waste.

2.5 2025 OPERATION PLAN

The KTS will continue to operate as a transfer station in 2026.

The hours of operations will change to:

March 1 – November 30

- Sundays and Wednesdays: 8:30am-4:15pm

December 1 – February 28

- Sundays: 8:30am-4:15pm

2.6 LANDFILL CLOSURE

In late 2017, the Regional District of Okanagan Similkameen (RDOS) submitted a Landfill Closure Plan to the Ministry of Environment for the Keremeos Landfill. The closure plan proposed the use of granular material as alternate cover.

The Province requested that an additional monitoring well be installed near the boundary of the landfill to show that leachate potentially generated by the landfill is not having an adverse impact on the surrounding environment, before approval of the alternate cover would be considered. In March 2020, two new monitoring wells were installed under the supervision of a hydrogeological Engineer who determined the optimal locations for the wells where they would have the highest chance of encountering leachate. Additional monitoring well was installed at the downgradient of the landfill in 2024 to better understand the ground water flow direction and monitor environmental conditions.

The monitoring wells were sampled 3 times in 2025. The results are attached to the Environmental Monitoring Report by Ecoscape Environmental Consultants Ltd. In March 2022, the RDOS submitted the results from the two new monitoring wells to the Ministry of Environment.

The RDOS is planning to re-visit the closure plan and implement appropriate actions to improve surface water diversion, minimize infiltration, and onsite drainage. The RDOS plans to communicate these plans to Ministry when a detailed plan is developed.

2.7 OPERATION AND MAINTENANCE EXPENDITURES

The operational and maintenance expenditures included KTS operator costs, labor costs and other expenses. The construction of works identified in the draft Closure Plan were budgeted to be spent in 2020 but this work has been delayed to allow for the RDOS and Province to determine the closure works required. The allocated Gas Tax Funding has been carried forward to offset the required closure costs as required. A summary of the 2025 financial statement for the KTS is presented below.

Table 4: Financial Summary for 2025 for KTS

GL Account	2025 Actual	2025 Budget
Revenues		
1-3400-1000 - TAX REQUISITION	(318,268)	(318,268)
1-3400-1800 - GRANT IN LIEU OF TAXES	(1,572)	-
1-3400-4600 - FEES - REFUSE DISPOSAL	(130,672)	(90,000)
1-3400-4630 - SCRAP METAL RECYCLING	(41,349)	(70,000)
1-3400-4640 - MMBC REVENUE	-	-
1-3400-6000 - TRANSFER FROM RESERVE	-	(10,000)
1-3400-9000- Miscellaneous Revenue	(1,716)	(1,200)
TOTAL REVENUES	**(493,577)**	**(489,468)**
Expenses	**2025 Actual**	**2025 Budget**
2-3400-1000 - SALARIES & WAGES	121,424	124,839
2-3400-1400 - ADMINISTRATION CHARGES	22,387	22,387
2-3400-2500 - OPERATIONS	63,453	17,000
2-3400-2591 - TIPPING FEES	81,782	76,910
2-3400-3000 - CONSULTANTS	1,015	1,719
2-3400-3521 - CONTRACT SERVICES - OPERATIONS	49,791	45,000
2-3400-3522 - CONTRACT SERVICES - RECYCLING	40,804	32,500
2-3400-3524 – TRANSFER STATION CONTRACTOR	88,743	72,450
2-3400-3525 - CONTRACT SERVICES - WOOD WASTE CHIPPING	16,422	55,000
2-3400-4000-EDUCATION & TRAINING	966	1,000
2-3400-4100 – MEMBERSHIP & DUES	189	250
2-3400-5000 - ENVIRONMENTAL CONTROL	3,420	3,623
2-3400-5100 - ENVIRONMENTAL MONITORING	17,422	20,000
2-3400-5400 DEPRECIATION	-	-
2-3400-6000 - INSURANCE - PROPERTY	782	621
2-3400-6050 - INSURANCE - LIABILITY	1,406	1,553

2-3400-6150 - INSURANCE - ENVIRONMENTAL	4,191	2,795
2-3400-6200-LEGAL FEES	-	-
2-3400-8010-ADVERTISING - PUBLIC EDUCATION	642	621
2-3400-8200 - TRAVEL/LEASING	3,477	2,200
2-3400-8500 - UTILITIES	6,014	6,000
2-3400-9200 - TRANSFER TO RESERVE CAPITAL	-	-
2-3400-9202-TRANSFER TO VEHICLE REPLACEMENT RESERVE	-	3,000-
2-3400-9205 - TRANSFER TO RESERVES RE INTEREST	-	-
2-3400-9290-TRANSFER TO OPERATING RESERVE	-	-
TOTAL EXPENSES	**524,359**	**486,468**

2.8 LEACHATE AND LANDFILL GAS MANAGEMENT

The KTS has operated as a natural control landfill. Leachate generated from precipitation infiltrating into the landfilled waste is attenuated within the overburden soil beneath and adjacent to the landfill footprint. Therefore, a leachate collection system has not been installed at the KTS. More information on testing is provided in the attached 2025 Environmental Monitoring Report by EcoScape Environmental Consultants Ltd.

No landfill gas management system has been designed for or installed at the KTS. An assessment of the landfill gas production rate was completed by GHD in 2017 within the Keremeos Landfill Closure Plan. Peak landfill gas generation was calculated to have occurred in 2008 at 216 tonne per year.

The landfill is assumed to have in place a total of 154,217 tonnes of municipal solid waste when it ceased landfilling of waste in 2007. It is under the 1000 tonnes per year generation of landfill gas. Under the Landfill Gas Management Regulation, the Keremeos Landfill is not a regulated landfill site and is not required to install a landfill gas collection system.

The GHD Keremeos Landfill Closure Plan 2017 assessment estimates 129 tonnes of landfill gas generated for 2020. As municipal solid waste is no longer buried on the site, the landfill gas generated each year will continue to decline.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 OPERATION CONCLUSIONS

C1 The Transfer Station accepted 2188 tonnes of material in 2025. Materials received increased by 7% compared to 2024.

3.2 OPERATION RECOMMENDATIONS

R1 Implement the works required for completing the Closure Plan. Pending approval by the Province.

3.3 ENVIRONMENTAL CONCLUSIONS AND RECOMMENDATIONS

The attached 2025 Environmental Monitoring Report by EcoScape Environmental Consultants Ltd. contains additional Environmental Conclusions and Recommendations within their report.

4. REFERENCES

GHD Limited, August 9, 2017. "Keremeos Landfill Closure Plan".

Sperling Hansen Associates. (2000). "Keremeos Landfill Hydrogeological Assessment and Operations and Closure Plan".

Sperling Hansen Associates. (2006). "Keremeos Landfill closure Plan - Final Report".

Appendix I – 2024 Environmental Monitoring Report