



ALBERNI-CLAYOQUOT
REGIONAL DISTRICT

Alberni Valley Landfill

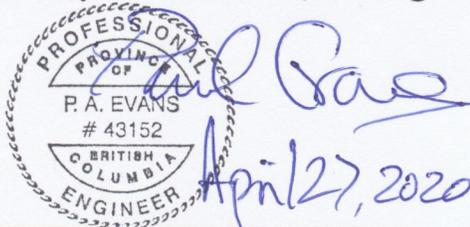
2019 ANNUAL REPORT

Submitted to British Columbia Ministry of Environment

Prepared by the ACRD

Environmental Services Department

Reviewed by: Paul Evans, P. Eng.



April 2020

Report Summary

Reporting Year 2019		Unit
Waste Tonnage Disposed at AVL	15,972	t
Landfill Airspace Consumed	29,515	m ³
Landfill Airspace Remaining	2,488,185	m ³
Anticipated Closure Date at Current Fill Rate/Density	2082	
Waste in Place at Landfill	813,532	t
Leachate Generated & Treated	60,490	m ³
Landfill Gas Management	Monitoring program in place	
Closure Works Undertaken	Graded slopes	
Inspection Works	Review undertaken	
Changes from Approved Plans	None	
Non-Compliances	None	
Progress on Non-Compliances	N/A	
Projects Completed in 2019	Future Projects Proposed	
Onsite Landfill Gas Monitoring Field Monitoring Program Audit SCADA Installation Well Maintenance & Rehab Waste Reduction Education Landfill Review Scale Shack Upgrades New Scale Software Landfill Cover Sourcing Bylaw updates Mattress recycling	Design Operation and Closure Plan Update Leachate Treatment Monitoring Leachate Interception Back-up Wells VIU Gas Monitoring Partnership Flare Installation Landfill Operations Contract Update and Renewal Alberni Valley Collections Contract	
	Target	Actual
1 - Waste Generation Rate	< 400 kg/capita	589 kg/capita
2- Diversion of Waste	>50%	20%
3 - Airspace Consumption Ratio	>660 kg/m ³	540 kg/m ³
4 – Capital Contributions	>\$115,000/year	\$120,000/year
5 – Water Quality	Meet FWAL	2 sites did not meet FWAL
6 – Landfill Gas Generation	<1,000 tonnes CH ₄ /year	Est. 676 tonnes CH ₄ /year

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Background

The Alberni-Clayoquot Regional District (ACRD) operates the Alberni Valley Landfill (AVL) under the British Columbia Waste Management Act Operational Certificate Number MR-00524, issued June 29, 2004. The “waste shed” for municipal solid waste destined for the AVL includes the City of Port Alberni, ACRD Electoral Areas within the Alberni Valley and Bamfield and First Nations communities Tseshaht, Hupacasath, Huu-ay-aht and Uchucklesaht. The AVL is located approximately 5 km west of Port Alberni and has been in operation since the early 1970s.

This report has been prepared to satisfy the annual reporting requirements for the AVL, as required by the Operational Certificate and the 2016 *Landfill Criteria for Municipal Solid Waste* published by BC Ministry of Environment (MoE).

Mission Statement

“To protect human health and the environment and maximize value of service by effectively managing the region’s solid waste in an environmentally, socially and economically responsible manner.”

Waste Quantification

Landfilled

In 2019, the AVL accepted 15,972 tonnes of municipal solid waste (MSW) and other wastes including, construction and demolition (C&D), and asbestos containing materials (ACM). The breakdown of waste types disposed in 2019 is as shown in Table 1. The cumulative quantity of waste disposed of at the AVL as of the end of 2019 is now 813,532 tonnes.

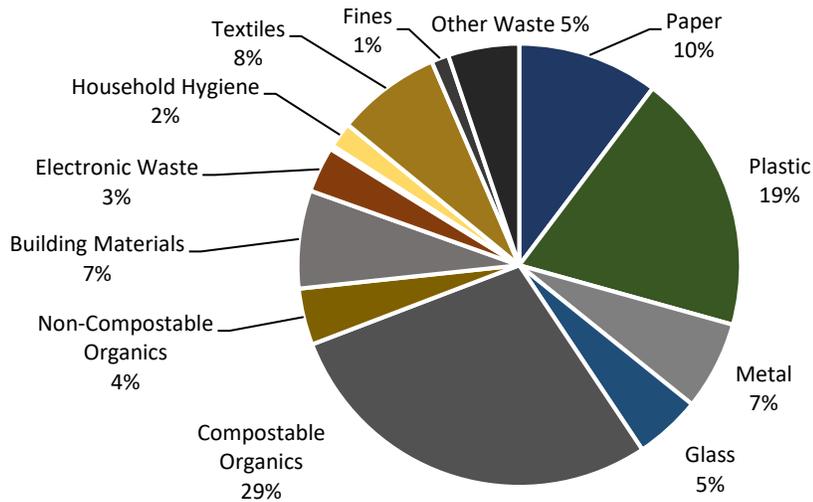
Table 1 – Landfilled Waste 2019

Residential Garbage	7,458.0
Commercial Garbage	5,472.4
Other Garbage	136.0
Construction and Demolition	2,847.5
Asbestos (ACM)	57.8
TOTAL	15,971.8

In 2019 the ACRD retained Dillon Consulting Limited (Dillon) to complete a Waste Composition Study. The focus of this study was to gain an understanding of the quantity of organics, recyclables and Extended Producer Responsibility (EPR) materials in the garbage streams for curbside residential, self-haul and commercial waste. The residential waste was also categorized by its origins allowing the production of composition profiles for each stream of waste by geographic location.

The graph below (Chart 1) illustrates the weighted average material composition for residential curbside municipal solid waste. The largest material category was compostable organics (28.6%) followed by plastic (19%) and paper (10%). Most of the compostable organics stream was food waste (22.5%). The largest subcategory of the plastics category was durable plastic products (non-recyclable plastics) at 7.6%, followed by film packaging (5.7%) and rigid recyclable plastic (4.7%). Paper was largely comprised of cardboard (6.1%) and recyclable paper (2.8%).

Chart 1 - AVL Average MSW Composition 2019

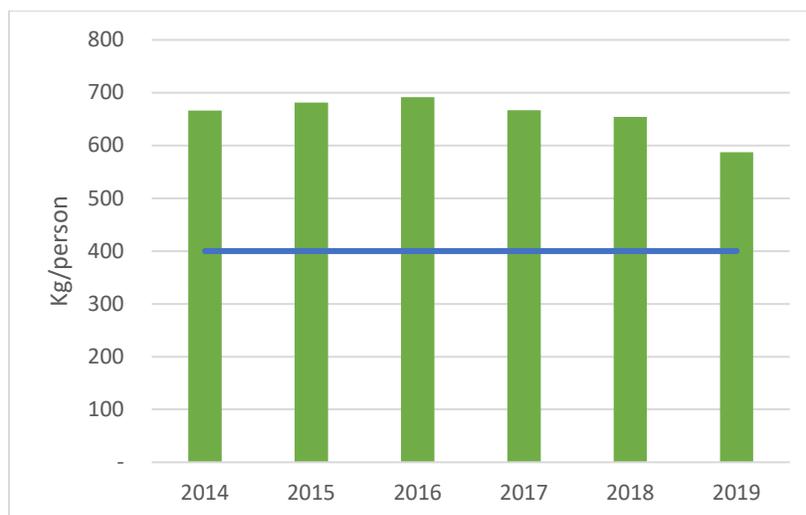


The population served by the landfill is estimated to be 27,084 resulting in a waste production rate of 589 kg/capita per annum. This is a significant reduction from previous years. In 2019, the ACRD embarked on a new waste reduction education campaign and implemented stricter rules on mixed loads and loads that originated from out of the region. The slight drop in residential waste and increase of diversion with a significant drop in commercial waste in the latter half of the year reflects the implementation of the education program and enforcement of the stricter rules.

Target 1 - Reduce landfill disposal to less than 400 kg/capita

Although, the waste generation rate is improved over the 2018 rate of 656 kg/capita it is still well above the target of 400 kg/capita as shown in Chart 2.

Chart 2 - Annual Waste Generation Rates



Diverted

The quantity of materials recorded as diverted from landfilling in 2019 was 4,020 tonnes of which 2,408 was collected at the landfill. The diversion rate is influenced by both the amount of materials collected through recycling programs and the amount of waste going to landfill. This measure of diversion rate is an underestimate since it excludes diversion from private sector sources. The ACRD does not currently have a waste licensing bylaw and so does not receive reports from resource recovery and recycling companies. It is expected that the total quantity of materials diverted is significantly greater than is documented through ACRD and the registered stewardship programs.

Chart 3 - Reported Annual Waste Diversion Rates

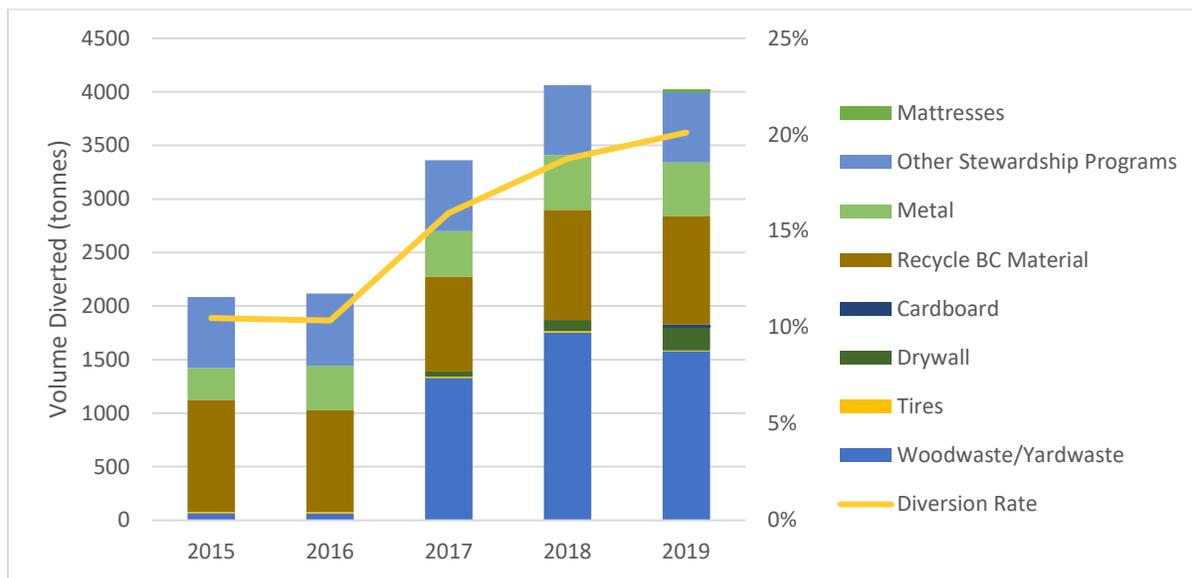


Chart 3 displays diversion rates over the last five years, collected through the following key programs:

- Curbside Recycling Collection in the City of Port Alberni and Beaver Creek
- The 4th Avenue Return-It Depot – privately operated; and
- Three ACRD operated Recycling Depots:
 - 3rd avenue Depot (299 tonnes)
 - McCoy Lake (AVLF) Depot (2,431 tonnes)
 - Bamfield Depot (36 tonnes)

The depots each accept some or all the following provincial stewardship products including paper and packaging materials, batteries, paint, household hazardous waste, electronics, beverage containers, small and large appliances, lights, and outdoor equipment. The landfill also diverts non-stewardship products including tires, metal, clean wood waste, gypsum, yard and garden waste. In 2019, a local business, Recycle Matters, initiated a mattress and box springs recycling program in the Alberni Valley which has allowed the ACRD to begin diverting mattresses.

Target 2 - Increase Diversion of Waste to 50%

These additional diversion efforts and the reduction in waste generated has resulted in an increased diversion rate of 20%, up from the 2018 rate of 19% and that of previous years values of 10-15%. Although this is a significant improvement in recorded diversion rate, it is still well below the target set in the ACRD solid waste management plan of a 50% diversion rate.

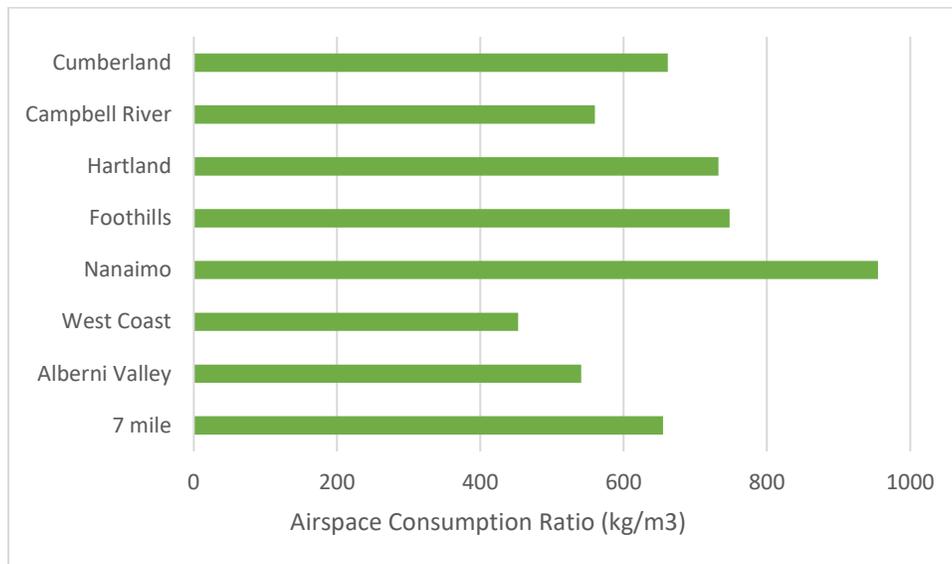
The most effective way to increase diversion would be to have higher utilization of the existing recycling programs and systems in place. The second biggest opportunity is to implement an organics diversion program. These initiatives can be enhanced with education and clear bag programs. The purpose of the program is to divert items from the garbage which belong in the recycling blue box, compostable green bin, yard waste, electronic waste, or hazardous waste streams. Furthermore, the implementation of a waste licensing bylaw would provide a more accurate measurement of diversion rates in the ACRD.

Landfill Capacity

Airspace Utilization

In 2019, the AVL consumed 29,515 m³ of airspace based on the annual topographical surveys completed at year end. With a total tonnage of 15,972, that results in an airspace consumption ratio of 540 kg/m³ which was consistent with the five-year average. The chart below (Chart 4) compares the landfill airspace consumption ratios from comparable landfills in the region.

Chart 4 Airspace Consumption Ratios at Comparable Landfills



540 Kg/m³ is a relatively low ratio in comparison to neighboring landfills which average at 700 kg/m³ and below our target of 660 Kg/m³.

Target 3 – Minimum Airspace Consumption Ratio of 660 kg/m³

The volume of cover material used in 2019 was 10,384 m³, which is a relatively large volume of cover material compared to the amount of waste received and directly impacts the airspace consumption ratio. The ACRD will be working with our operations contractor to reduce the amount of cover material incorporated into the landfill. Reducing cover use will not only will reduce the costs of providing cover material but also increase the amount of usable airspace and ultimately the life of the landfill.

Remaining Life

Based on the airspace consumed in 2019, there is an estimated 2,488,185 m³ remaining airspace at the AVL at the beginning of 2020. Based on the current population growth rate of 1.1%, waste generation of 587 kg/capita, airspace consumption ratio of 540 kg/m³, and an assumed annual settling of 10%, the landfill will reach capacity in 2086. However, if the targets for reducing waste generation to 400 kg/person and minimum airspace consumption ratios are met, the landfill lifespan will extend to approximately 2121.

Operations

Variations from DOCP Plan

The last Design, Operations and Closure Plan (DOCP) was completed in 2012 by McGill and Associates Engineering and is presently being updated in 2020. Variations in the last year from the 2012 plan include:

In 2019, the landfill's groundwater interceptor well system was found to no longer be operating effectively due to fouling. The 2012 plan required the installation of wells and pumps to intercept leachate flows and direct them into the leachate collection system. This system requires improvements as discussed in detail in the leachate section of this report.

The 2012 DOCP also estimated that 1,000 tonnes of methane would be produced by the landfill in 2012, thereby initiating the design and installation of a landfill gas collection system. Follow-up landfill gas assessments have estimated that this volume is under the 1,000 tonnes limit and this has deferred the requirement for installing a landfill gas collection system.

The 2012 plan also included the acquisition of ownership or long-term tenure of the AVL property. The ACRD has been working with the Province over the intervening eight years to acquire security of the property. This is ongoing but it is not yet clear if this process will be successful and what form of land use agreement may be established. The ACRD and Province have made progress in 2019 towards a decision that may be finalized in 2020.

Conformance to SWMP

The most recently adopted Solid Waste Management Plan (SWMP) from 2008, listed several initiatives to meet the first two targets in the report; reduce per capita waste generation to 400 kg/person; and increase diversion to 50%. Most of these initiatives have been implemented with one major outstanding action item being the implementation of an organics diversion program. Progress has been made on this in 2019, following the award of a \$6 million grant from the Consolidated Strategic Landfill Diversion Program, the ACRD completed an Organic Waste Diversion Service Options Report that provided detailed options for implementing organics diversion. However, due to the insecurities of land tenure, the ACRD has had to alter the original project scope from design and construction of a facility adjacent

to the AVL to utilizing available local private processing facility options. This change has delayed progress as the grant committee is evaluating the change in scope.

Compliance Resolutions

The AVL has not had a compliance issue from the Ministry of Environment since 2018 where the submission of the annual reporting was submitted late and was cited as a compliance issue. The AVL has not received a site inspection from the Ministry since 2009.

Complaints

The ACRD received four complaints in 2019 related to the operation of the landfill. While the AVL is located away from residential communities, the ACRD and its operator still work hard at minimizing nuisances, such as odor, noise and litter. The feedback of landfill visitors is also important. However, a more formal complaint tracking system is needed to ensure that all complaints are documented and followed up on appropriately.

Inspections

The AVL did not have a regular inspection program for AVL operations in place in 2019. Regular site inspections and reporting requirements are being incorporated in the updated operations contract for 2020. ACRD staff will also be performing oversight inspections to ensure compliance with the contract, operations certificate and ministry requirements.

Overview of work for upcoming year

There are several projects planned for 2020. These include the updating of the DOCP, an expansion of the environmental monitoring, leachate wells rehabilitation, an expansion of the landfill gas monitoring programs and other items as detailed in the Projects Upcoming section.

Finances

Operating Expenses

In 2019, the operating expenses for the AVLF were:

Table 2 Operating Expenses

	2019
LANDFILL OPERATING COSTS	\$ 1,220,152
ADMIN & EDUCATION COSTS	\$ 197,862
RECYCLING	\$ 371,253
TOTAL COSTS	\$ 1,789,267
RECOVERIES	\$ 589,973
NET COST	\$ 1,199,294
RESERVE FUNDS ALLOCATION	\$ 770,000

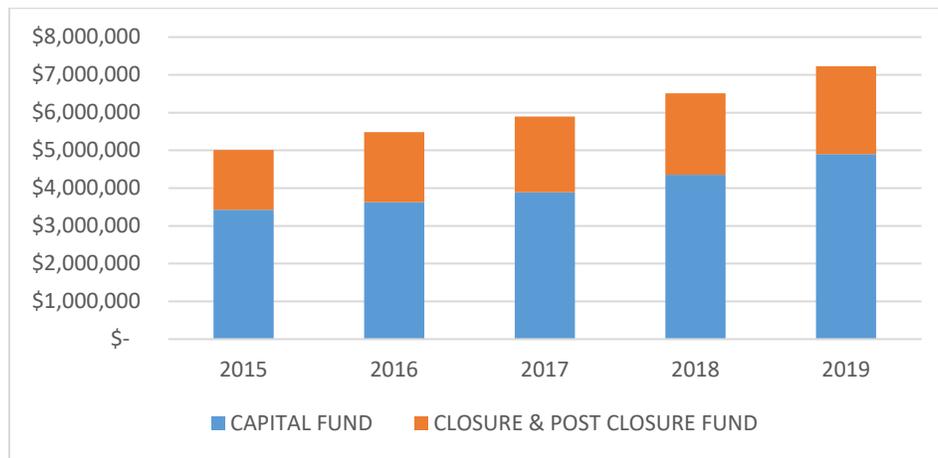
Capital and Closure Funding

The 2012 DOCP identified the need for \$11,500,000 for closure and post-closure activities and recommended that the ACRD contribute approximately \$115,000 annually to this fund. In the past five years, contributions have been \$120,000 annually to the Closure Reserve and over \$450,000 to the Capital Reserve. The growth of these funds are shown on Chart 5.

Target 4 – Annual Capital Contributions meet Funding Requirements

With an anticipated closure date of 2082, there are 62 years remaining before the end of the landfill life. At the end of 2019, the Closure and Post-Closure reserve has approximately \$2,326,43, therefore contributions should be approximately \$150,000 each year to the closure and post-closure reserve. However, with increased diversion and improved airspace use, the landfill life is expected to be extended an additional 40 years, reducing the implied annual contributions to \$90,000. The updated DOCP will review capital requirements and closure costs to provide an updated estimate of reserve fund requirements.

Chart 5 - Capital Reserve Funds



Operational Efficiency

Chart 6 below shows the total operating costs including contracts, administration and support to manage solid waste in the Alberni Valley. It covers the operation of the AVL, 3rd Avenue Recycling Depot and curbside recycling collection but excludes costs related to the Bamfield Transfer Station. The costs are influenced by inflation and the volume of material landfilled.

Chart 6 - Annual Costs and Tonnages



2016 saw a five year low in costs due to staffing shortages resulting in work not being completed. 2017 and 2018 started to see an increase in costs as landfill operations changed including a different method of managing wood waste, a diversion spotter pilot program, and the start of drywall diversion. 2019 saw a reduction in operating costs as some of those programs were reviewed and efficiencies realized. A thorough review of material management and recovery efficiencies are likely to result in reduced costs and increased revenues.

Environmental Monitoring

Leachate Monitoring

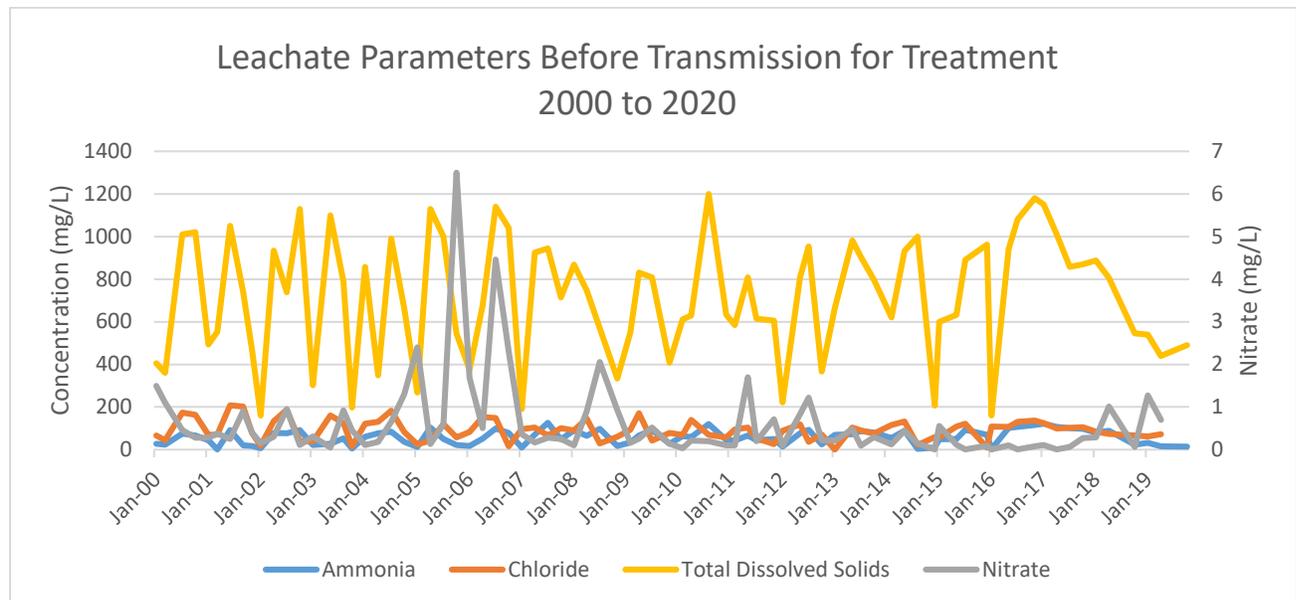
The ACRD measures water quality parameters at many locations in and around the AVL. These include two leachate drains, eighteen monitoring well sites, two leachate interception wells and six surface water monitoring points. Samples are collected quarterly and analyzed by an independent laboratory for metals, VOCs, inorganic compounds, pH levels, conductivity and other water quality parameters. All monitoring data are provided directly to our environmental consultants, Piteau Associates Consulting, for their review and reporting to the Ministry of Environment.

Target 5 – Confirm all leachate is treated to meet the FWAL criteria

The design of the landfill includes a leachate collection system comprised of internal drains, pumping systems, collection trenches, aeration lagoon and a flow equalization pond. Once collected leachate is piped directly to the City of Port Alberni’s (CPA) wastewater facility for treatment.

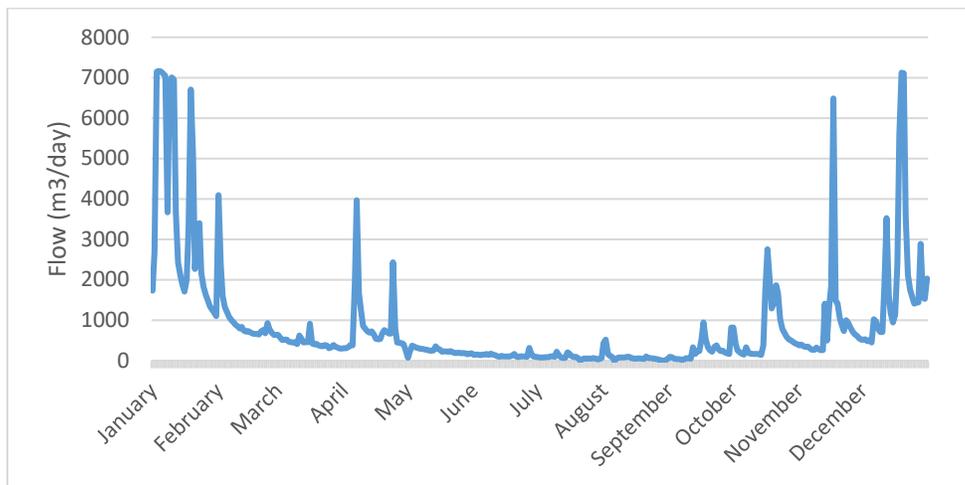
Water quality parameters of the leachate leaving the landfill have been monitored since 1990. Chart 7 below illustrates the recorded levels of ammonia, chloride, nitrate and total dissolved solids for the past 20 years. Note the seasonal variations in key parameters reflecting the lower flow conditions in the summer months.

Chart 7 - Leachate Parameters



Leachate is transferred by a dedicated pipeline to be treated by the CPA. The ACRD does not monitor the quality of treated effluent leaving the CPA’s lagoon but receives treatment results from the CPA. While the discharges from the CPA facility meet the relevant criteria, their data do not include dissolved and total metal concentrations which are key parameters for landfill leachate. The graph below shows the 2019 leachate flows into the CPA sewage lagoon with a total volume of 315,043 cubic meters, down from the volume in 2018 of 481,500 cubic meters. Currently, there is no diversion of clean runoff water so the graph below is indicative of the amount of contact water at the landfill. Future works, including capping, will be able to divert clean runoff from entering the leachate flow.

Chart 8 - 2019 Leachate Discharge Flows



Water Quality of Surrounding Environment

Most of the groundwater and creek monitoring sites met the targets for chloride (Cl) and total dissolved solids (TDS) in 2019 except in two groundwater wells. As can be seen on the graphs below, the concentrations of both chloride and total dissolved solids has been steadily increasing at these locations with exceedances of the targets in 2019.

Chart 9 - East Boundary Deep Seepage

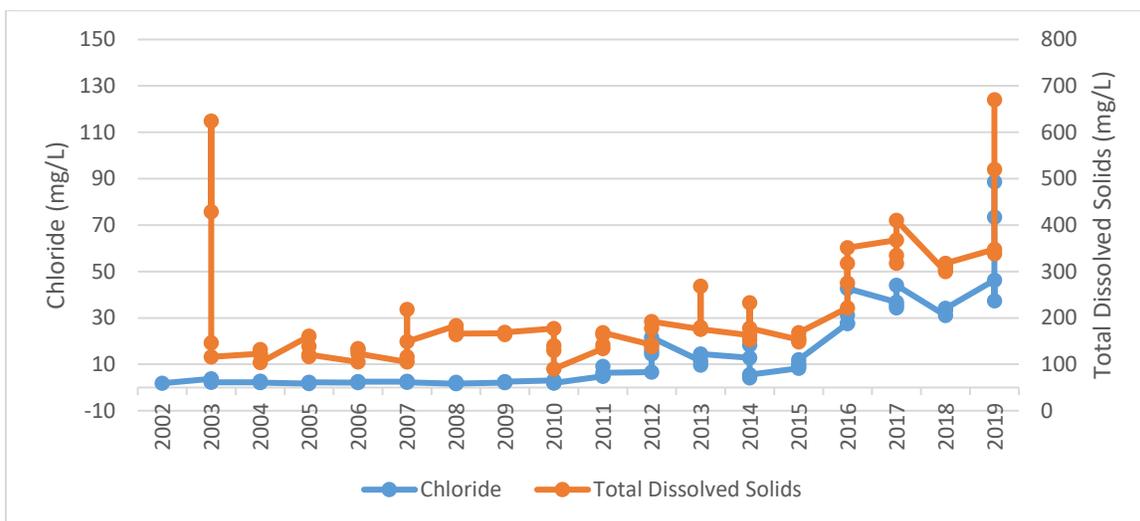
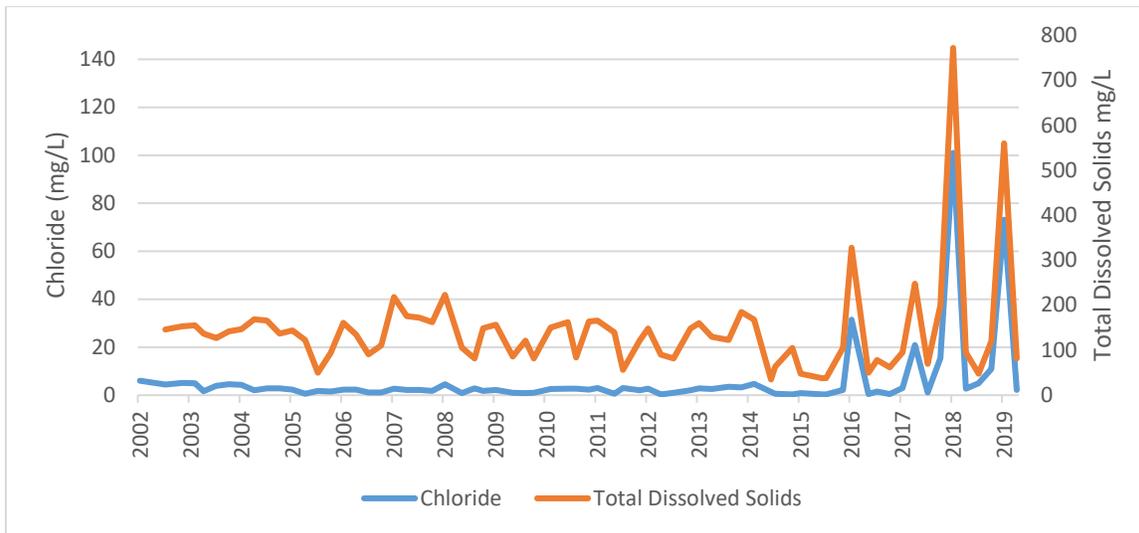


Chart 10 - East Boundary Shallow Seepage



During the SCADA installation and commissioning in 2019, it was discovered that the two upstream interception well pumps were no longer operating properly due to fouling. This meant affected groundwater was able to reach the boundary. These results are shown in detail in the AVL Annual Monitoring Report completed by Piteau and Associates. A significant rehabilitation project was then undertaken. These pumps will be operational in 2020 and are expected to address the exceedances in Cl and TDS concentrations.

Landfill Gas Monitoring

Target 6 - Landfill Gas Generation Less than 1,000 tonnes/year of methane

The engineering firm McGill and Associates completed a Landfill Gas Assessment Report in 2018, that estimated the AVL to be producing 1,000 tonnes of methane in 2019. In the absence of the actual waste composition data from the AVL, this report used the average rural waste characterization data in the Landfill Gas Assessment Tool to calculate these volumes. A waste characterization study completed in the spring of 2019 showed that the AVL waste composition has a lower organic content than was assumed in the previous gas calculations. With a smaller fraction of putrescible wastes there is correspondingly less landfill gas produced. Using the actual waste composition data, the Landfill Gas Assessment Tool showed that the AVL generated 676 tonnes of methane in 2019. This reduction in landfill gas calculation will be updated and confirmed in the next Landfill Gas Assessment Report.

Other Greenhouse Gas Emissions

Landfilling operations require the use of motorized equipment including small machinery such as power washers, small utility vehicles (ATVs), and pickup trucks, as well as heavy duty machinery such as compactors, graders and excavators. The fuel used for this equipment is primarily gasoline or diesel. In 2019, the contractor burned approximately 40,440 liters of diesel in the operation of the landfill which is estimated to produce 106.7 metric tonnes of CO₂. This is the equivalent of 5.1 tonnes of methane and therefore a very small volume in comparison to the landfill gas generation. The ACRD will work with the

contractor to reduce the greenhouse gas emissions from the use of equipment for the landfill operations. This can be improved with the use of newer equipment with emission controls and ensuring the equipment is running efficiently. Other options to explore would be to switch the types of other power sources or fuels. Smaller utility vehicles could be electric and larger vehicles could be powered by natural gas.

Illegal Dumping

The Alberni Valley has experienced illegal dumping including yard waste such as leaves and branches as well as household waste sometimes found on logging roads surrounding the community. The frequency of illegal dumping is not currently measured but is addressed in a complaint driven process. There has been a trend of reduced complaints over the past few years but there was a spike in concerns following the increase in bag fees that was implemented in November 2019.

The ACRD has paid for cleanup in the past where measurable amounts of waste had been dumped. The ACRD has also waived tipping fees for approved community groups wanting to clean up illegal dumping sites. Traditionally, illegal dumping has occurred on private forestlands. Local forest companies have recently started locking gates accessing forestry lands to reduce dumping and for fire concerns.

Projects Completed 2019

Waste Characterization Study - Dillon Consulting Limited was retained by the Alberni-Clayoquot Regional District to complete a baseline garbage composition study at the Alberni Valley Landfill. The study showed that the municipal waste stream has an average of 28.6% organics compared to the 2018 Landfill Gas Generation Supplementary Assessment Report that estimated 28.4% moderately decomposable and 33.7% decomposable. This new information has allowed the gas generation at the landfill to be recalculated and provide more accurate information to direct the waste reduction education campaign.

Onsite Landfill Gas Monitoring - In 2019, the ACRD began monitoring landfill gas emissions using a handheld monitor from April to August. The landfill was monitored for methane and hydrogen sulfide (H₂S) at twenty sites. Field data for current weather and barometric pressure information was also recorded. After five months of testing, the results determined that the handheld method of gas detection did not provide enough resolution to provide accurate measurements of gas production. One location was found to be emitting significant landfill gas concentrations and a landfill gas flare has been ordered to be installed there.

Field Monitoring Program Audit - The ACRD's contracted environmental engineering consultants (Piteau Associates Consulting) were on site to review the environmental monitoring program. Piteau interprets the data collected on site and so their objectives were to assess the sampling procedures, tour monitoring equipment, verify sampling locations and verify the condition of sampling sites. This review was done to ensure that data that was being collected from the field work was representative of the reporting of the monitoring program. There were a few items that were found that needed attention such as using a different method of calibration of the pH probe but overall, the field execution of the program met their expectations.

SCADA Installation - A supervisory control and data acquisition (SCADA) system was installed in 2019. The SCADA connects the instrumentation and controls for the leachate wells and water system to a main control and monitoring system. This system now can monitor real-time activity of the pumping systems, flow rate and water levels. The complex pumping system is imperative to ensure the landfill leachate is contained within the landfill site in either the groundwater or surface water.

Well Maintenance and Rehabilitation – Monitoring well maintenance was undertaken including painting and identification label installation. Following the identification of interception well operation failure, Fyfe Well & Water Services was hired to review the condition of the wells and remediate the pumping system. They determined that significant well fouling had worn out the pumps and did a rehabilitation of the wells which removed most of the fouling and brought the wells back to their original installation operational effectiveness. Follow-up work is continuing in 2020.

Waste Reduction Education Program – The development of a waste reduction education program was completed in 2019 that outlined a detailed plan to improve diversion rates in the Alberni Valley. The program laid out the key messaging and objectives and recommended an implementation strategy including school education, website updates, community group engagement, door-to-door surveys, booths at community events, news and web articles and advertising. Program implementation began in the Fall.

Landfill Review - In the spring of 2019, the ACRD hired an independent solid waste engineer to perform a landfill review of the AVL and determine how well the landfill was operating in respect to both good practice and the BC Landfill Criteria (2016). The result was a long list of improvement opportunities which drove much of the efforts undertaken in 2019 to improve landfill operations including updating the DOCP, onsite landfill gas monitoring, operations contract improvements, interception well operation improvement, and utilizing UAV for airspace surveying.

Scale Shack Upgrades – The ACRD added an office building to the scale area in order to accommodate the new SCADA system and improve landfill monitoring operations. The building was a professional customization of a steel shipping container that could drop in place.

New Scale Software – A new Paradigm landfill software system came online in July 2019. The previous software was an older MS-DOS based platform that was limited in its capacity and created network integration challenges. Paradigm has allowed for more detailed data tracking of all waste and resource recovery streams at the facility that has enabled improved planning and reporting of solid waste in the region. Paradigm also provides improved billing capacity and being centrally located on the main server allows for automatic updating.

Landfill Cover Sourcing – In 2019, the AVL exhausted its supply of onsite stockpiled cover material. A review of available options and negotiations with the province has identified spoil pile materials located at the AVRA to be the most cost-effective source for cover material for the near future. The use of cover material has also been flagged as significantly higher than necessary and efforts to reduce the rate of cover usage are underway. Future initiatives to increase delivery of unwanted fill materials to the landfill will need to be explored as an additional efficiency measure.

Bylaw updates – In November 2020, the AVL tipping fee rate BYLAW NO. R1029-1 was updated by replacing Schedule “A”. The significant change was to increase the Tipping Fee to \$130 per tonne to better reflect other area landfill fees and to reduce out of town solid waste being brought into AVL.

Mattress recycling - A new mattress recycling facility has started up in Port Alberni (Recycling Matters) and accepts all mattresses and box springs for \$15 each. To support this program, the AVL will be diverting and transporting all mattresses received to this facility. The ACRD has been charging \$20 per unit to cover the facility and transport costs.

Projects Upcoming

Design Operation and Closure Plan Update – The current DOCP was created in 2012 and requires updating as the detailed development phases set out in the plan have been completed. As well, the Province has created new landfill criteria and there are several areas identified with the landfill operation that need to be improved to meet the new criteria. The ACRD recently awarded the DOCP Updates for the Alberni Valley Landfill to Sperling Hansen.

Leachate Treatment Monitoring – The AVL sends leachate directly to the CPA wastewater treatment system. In 2020, the quality of the leachate entering that system will be reviewed in addition to the other streams. Additional testing will be done when the treated effluent is to be discharged. This will be done to confirm specific leachate parameters are also at acceptable levels.

VIU Gas Monitoring Partnership - The next step in determining the landfill gas generation will be to partner with the Vancouver Island University (VIU) to utilize more sensitive equipment to accurately measure the gas generation on-site. VIU has a mobile gas monitoring lab that can detect gases at smaller concentrations than the handheld monitoring device. In addition to the VIU mobile gas monitoring program, the ACRD is planning on installing permanent sensors to be included in the real time monitoring of the landfill (SCADA system).

Flare Installation – In 2019, one existing monitoring water well was found producing high levels of gas and a landfill gas flare has been ordered to be installed.

Organics Diversion - The ACRD will begin implementing organics diversion in 2020, including public engagement and education on the new system as well as the acquisition of green bins for collection. Upgrades to the landfill tipping area will be required to accommodate this additional diversion stream and establishment of curbside organics collection in the electoral areas as well as implementing organics bans is anticipated.

Landfill Operations Contract Update and Renewal – The AVL Operations Contract is currently being reviewed and updated to address several issues including airspace usage and safety and fire prevention requirements. The contract update will also add language to address a number of changes to operations over the past five years including collection of stewardship products and managing other new diversion streams and controlled waste on the site, as well as the SCADA system and additional tipping wall monitoring.

Alberni Valley Collections Contract – The AV Curbside collection contract will be up for renewal in November 2020. With the addition of organics diversion, the scope of the collection program needs to be reviewed and potentially expanded prior to issuing for competitive bids.

Monitoring Program Improvements – The field review recommended a number of improvements including; using dedicated bailers, increased calibration, immediate sample collection after purging and retention of field notes. The annual report also recommended using an updated procedure for dissolved copper requiring an increase in sampling.

Leachate Interception Back-up Wells - There are two pump wells that are responsible for intercepting leachate from leaving the site that have been malfunctioning. These two wells are being rehabilitated and due to the importance of constant operation, our environmental monitoring consultants have recommended that back-up pumps be installed in two nearby wells that were drilled for this purpose. This will be completed in 2020

Replacement of the Leachate Monitoring Well – The well previously allowed sampling of leachate from within the landfill and requires replacement. The location of this new sampling well will be incorporated in the updated DOCP and installed in 2020. There is also some repair work needed at another location that will be repaired at the same time.

SCADA for North Boundary and Stevens Creek sites – In order to better monitor the north boundary pumping station we will be installing level sensors at two monitoring wells and connecting them to the SCADA system, which will provide continuous monitoring of the water level in the two wells and ensure that the pumps are achieving adequate drawdown to keep water from leaving the site in that location.

Appendix 1

2019 AVL Orthophotograph

