



REGIONAL DISTRICT NORTH OKANAGAN

2021 Annual Report: Lumby Diversion and Disposal Facility

Ministry of Environment and Climate Change Strategy
Operational Certificate No. PR 15282

SUBMITTED TO:

Ministry of Environment and Climate Change Strategy, On-line Portal

PREPARED BY:

Dale Danallanko, Diversion and Disposal Facilities Operations Manager
Jim Schubert, P.Eng., Manager, Environmental Services
Nicolas Schulz, Solid Waste Technician

Reviewed and endorsed by:

A handwritten signature in blue ink that reads "Jim Schubert". The signature is written in a cursive style.

*Jim Schubert, P.Eng.
Manager, Environmental Services*

DATE:

March 2022

TABLE OF CONTENTS

| | | |
|----------|--|----------|
| 1 | INTRODUCTION | 3 |
| 2 | BACKGROUND..... | 3 |
| 3 | FACILITY OPERATIONS: 2021 | 4 |
| 3.1 | DISPOSAL METHOD AND QUANTITIES..... | 4 |
| 3.2 | RECYCLING..... | 4 |
| 3.3 | QUANTITIES AND SITE LIFE..... | 5 |
| 3.4 | OPERATION AND MAINTENANCE EXPENDITURES | 5 |
| 4 | OPERATIONAL MONITORING/INSPECTIONS | 5 |
| 5 | ENVIRONMENTAL MONITORING..... | 6 |
| 5.1 | 2021 ANNUAL ENVIRONMENTAL MONITORING REPORT | 6 |
| 5.2 | ENVIRONMENTAL MONITORING REPORT RECOMMENDATIONS..... | 6 |
| 5.3 | LANDFILL GAS | 6 |
| 5.4 | EROSION..... | 6 |
| 5.5 | LITTER, DUST AND VECTOR CONTROL | 6 |
| 5.6 | TOPOGRAPHICAL SURVEY | 7 |
| 5.7 | STORMWATER MANAGEMENT..... | 7 |
| 6 | FINANCIAL | 7 |
| 7 | DESIGN, OPERATIONS AND CLOSURE PLAN | 7 |

1 INTRODUCTION

The Lumby Diversion and Disposal Facility (LDDF) is located within Electoral Area D in the Regional District of North Okanagan (RDNO) at 221 Trinity Valley Road, approximately 5.5 km north of the center of the Village of Lumby.

The legal description of the property on which the LDDF is situated is the southeast ¼ of Section 13, Township 2, Osoyoos Division of Yale District. The site, owned by the RDNO, is approximately 4.2 hectares and serves the Village of Lumby and the surrounding Electoral Area (D). The location plan is presented as part of the 2021 Environmental Monitoring Report, Attachment A.

The LDDF was operated by GFL Environmental Inc. under a contract with the RDNO during 2021. The Scale Attendant position at the LDDF was filled by RDNO staff.

The LDDF has a maximum permitted filling rate of 5,000 tonnes per year. The works authorized are a modified sanitary landfill and related appurtenances.

2 BACKGROUND

The LDDF was open Thursday to Sunday from 9:00 a.m. to 4:00 p.m. throughout 2021. The LDDF includes a lockable entrance gate, scale house, a single vehicle scale (for both inbound and outbound traffic) and electronic weighing and reporting software (Auto Scale 2000). The facility is bordered by an electric bear fence. Customers using the facility, with the exception of customers dropping off old corrugated cardboard (OCC) only, are required to stop at the scale house and pay the specified disposal fee based on the type and weight of material disposed.

The Regional District of North Okanagan Municipal Solid Waste Management Bylaw No. 2832, 2019, establishes fees and sets standards for the use of diversion and disposal facilities owned and operated by the regional district. The Bylaw was originally adopted in April 2010 and took effect July 5, 2010. The bylaw has been amended on a number of occasions since 2010. A copy of the version of the Bylaw that took effect in 2021 is provided as Attachment B.

Prior to 2012, the RDNO solid waste management program operated on a 100 percent user pay system, with no financial contribution from taxation. However, in 2012 the RDNO implemented a region wide tax levy in the amount of \$420,000 to provide additional funding for solid waste management.

3 FACILITY OPERATIONS: 2021

This section describes on-site activities during 2021 including disposal methods and recycling initiatives.

3.1 DISPOSAL METHOD AND QUANTITIES

The filling method used at the LDDF is area fill as described in the current Operating and Closure Plan. The facility has a single face for use by both residential self-haulers and commercial haulers. All customers are required to dump their refuse at the single tipping face as directed by the Landfill Operator. The Landfill Operator uses a loader and compactor to push and compact the refuse on a daily basis.

Since mid-January 2012, the DDF Operations Contractor (GFL Environmental Inc.) has used an alternate daily cover system at the LDDF. At the end of each operating day, the day's refuse is compacted and large steel plates are placed over the active face. The steel plates take the place of daily cover. The steel plate system, known as the 'Revelstoke Iron Grizzly', has significantly decreased the need for cover soil at the LDDF, also decreased the rate at which airspace is being consumed and has increased operational efficiency.

3.2 RECYCLING

The following commodities are segregated at the LDDF and shipped off-site for recycling or used on-site:

- Tires: Recycled under the Provincial Tire Recycling Program.
- Yard and Garden Waste: Yard and garden waste was stockpiled and chipped by the RDNO's grinding contractor on a regular basis. Yard and Garden Waste is accepted free of charge. Chipped Yard and Garden Waste was placed in static piles for composting and used on-site.
- Wood Waste: Dimensional wood waste (clean and dirty) was stockpiled at the site and chipped by RDNO's grinding contractor on a regular basis prior to being used on-site for cover, biofiltration and aesthetics on finished slopes.
- Propane Tanks: Removed by a contractor to be refurbished or recycled.
- White Goods and Other Metals: Refrigeration units were decommissioned and refrigerant removed by a qualified contractor under contract. Metal sold to a recycling contractor.
- Old corrugated cardboard (OCC): Was collected in a 40 cubic yard lidded container and transported to a processing facility.
- Glass Jars and Bottles: Glass jars and bottles were collected in a small roll off container situated near the Recyclable Materials Drop Center. This material was added to the crushable material pile, crushed and used onsite for roads and tipping pads.

3.3 QUANTITIES AND SITE LIFE

The quantity of Municipal Solid Waste disposed at the LDDF in 2021 was 1,905 tonnes. This was a slight decrease from 2020.

According to 2016 census data the population in Lumby and Rural Lumby (Electoral Area D) is 4,505. The per capita disposal rate in 2020 was 0.42 tonnes, a small decrease from 2020. The per capita disposal rate in this area has been relatively stable for a number of years.

In 1990, the province of British Columbia implemented a 10-year strategy with the goal of reducing that amount municipal solid waste disposed per capita by 50% by the year 2000. When compared to the 1991 regional filling rate of 0.61 tonnes per capita per, this goal was achieved at the LDDF, indicating that waste reduction programs have been effective in the Lumby area have been effective.

The province of British Columbia has recently set a provincial waste disposal target to lower the municipal solid waste disposal rate to 350 kg per capita. This target was included in the most recent RDNO Solid Waste Management Plan and the RDNO is working to meet this target on a region wide basis.

The most recent estimate of the remaining capacity (airspace) at the LDDF contained in the 2017 Design, Operations and Closure Plan (DOCP) prepared by XCG Consultants Ltd. was 257,621 m³ (excluding final cover) as of May, 2017. Based on the anticipated population increase, the per capita filling estimates, and the airspace consumption data the site is projected to reach design capacity in 2071.

3.4 OPERATION AND MAINTENANCE EXPENDITURES

Total operation and maintenance expenditures at the LDDF during 2020 were \$220,866.

4 OPERATIONAL MONITORING/INSPECTIONS

RDNO staff closely monitored all aspects of LDDF operations during 2021 to ensure that operations were carried out in compliance with all Ministry of Environment and Climate Change Strategy and RDNO requirements. Any operational issues noted were addressed as necessary.

5 ENVIRONMENTAL MONITORING

5.1 2021 ANNUAL ENVIRONMENTAL MONITORING REPORT

The Lumby Diversion and Disposal Facility, 2021 Environmental Monitoring Report, dated February 2022, prepared by Regional District of North Okanagan staff, is provided as Attachment A. The monitoring program is described and monitoring results are provided including the status of sampling points and recommendations for monitoring program improvements, where necessary.

5.2 ENVIRONMENTAL MONITORING REPORT RECOMMENDATIONS

- a) Continue with currently established sampling program and assess trends of exceedances.
- b) Evaluate potential trends in cadmium, calcium, chloride, chromium, conductivity, iron, manganese, pH, selenium, sulphate, toluene, Total Organic Carbon, and uranium at the on-site wells to determine whether or not a landfill leachate plume may be developing down-gradient of the landfill footprint, and whether or not the down-gradient domestic well users may be impacted at some point in the future.

5.3 LANDFILL GAS

Landfill gases were not monitored in 2021 nor were any odour complaints received. The filling area has not yet reached a capacity of 100,000 tonnes and the Operational Certificate and Landfill Gas Regulation does not require landfill gas monitoring.

5.4 EROSION

No erosion was detected on-site in 2021.

5.5 LITTER, DUST AND VECTOR CONTROL

Litter was picked by the LDDF operator when necessary, especially after wind events. The operator is required to collect litter on a regular basis.

Dust was not a significant issue at the LDDF in 2021, nor were there bears or other vectors.

5.6 TOPOGRAPHICAL SURVEY

The RDNO did not carry out any aerial or ground surveys in 2021 to monitor the amount of airspace consumed during the year. Based on prior years airspace consumption, it is estimated that approximately 1,500 m³ of airspace was consumed at the LDDF in 2020. The RDNO began carrying out in-house ground surveys on a regular basis in 2021 to monitor airspace consumption and to obtain more accurate data on compaction density.

5.7 STORMWATER MANAGEMENT

Refer to the Stormwater Management section of the updated 2017 Design, Operations and Closure Plan submitted as Attachment C to the 2017 Annual Report for approval.

6 FINANCIAL

Approximately \$3,212 was spent on environmental monitoring at the Lumby Diversion and Disposal Facility in 2020. RDNO staff estimates that a comparable amount was spent in 2021.

A Statutory Closure Reserve was established in 2010 for closure and post closure costs at all RDNO Diversion and Disposal Facilities. The balance in the Statutory Closure Reserve at the end of 2021 was approximately \$12,954,000. It is projected that the annual contribution to the Statutory Closure Reserve for 2022 will be approximately \$1,579,000.

7 DESIGN, OPERATIONS AND CLOSURE PLAN

The Design, Operations and Closure Plan was updated by XCG Consultants in 2017 and was submitted as Attachment C to the 2017 Annual Report for approval. The new BC Landfill Criteria was used to update the Plan.