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# Regional District of Nanaimo

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## 2020 Biosolids Management Summary and Compliance Report

February 2021

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## 1 PROGRAM OVERVIEW

The Regional District of Nanaimo (RDN) operates two wastewater treatment plants that produce municipal biosolids:

1. French Creek Pollution Control Centre (FCPCC) - Class A biosolids
2. Greater Nanaimo Pollution Control Centre (GNPCC) - Class B biosolids

In 2020, RDN biosolids were managed by SYLVIS Environmental (SYLVIS) in a forest fertilization program on private forest lands managed by Mosaic Forest Management on Weigles Road in Nanaimo, BC (the “TimberWest Properties”). RDN biosolids have been managed at this site since 2003. The objectives of biosolids forest fertilization at the TimberWest Properties are to increase soil quality and tree growth.

In 2020, RDN biosolids were also managed in soil fabrication projects at the Nanaimo Forest Products Harmac Mill in Nanaimo, BC (Harmac). The Harmac site can serve as a contingency site for management of RDN biosolids during periods of inclement weather when management at the TimberWest Properties is not possible. Biosolids managed at Harmac were used to fabricate residuals growing medium (RGM) for use in landfill closure and biosolids growing medium (BGM) for distribution.

A total of 5,623 wet tonnes (wt) of RDN biosolids were produced in 2020: 4,351 wt from the GNPCC and 1,272 wt from the FCPCC. Of the 5,623 wt produced, 3,773 wt (67% of annual production in 2020) were delivered to the TimberWest Properties and 1,850 wt (33%) were delivered to Harmac.

## 2 REGULATORY AUTHORIZATION

RDN biosolids were managed at the TimberWest Properties under the *2020 TimberWest Properties (Weigles Road) Forest Fertilization Land Application Plan* (SYLVIS Document # 1258-19, Authorization #110207). Biosolids used to fabricate RGM at Harmac were managed under the *Nanaimo Forest Products – Harmac Mill Residuals Growing Medium Land Application Plan* (SYLVIS Document # 1311-20, Authorization #110360). BGM production was managed according to regulatory requirements in the *Organic Matter Recycling Regulation* (OMRR) and do not require a land application plan (LAP).

## 3 REPORT OBJECTIVES

This report summarizes the RDN’s biosolids management program. It also contains a qualified professional certification of compliance for the 2020 biosolids LAP for the TimberWest Properties as required under *Organic Matter Recycling Regulation* (OMRR) section 5 (3).

While a summary of management of RDN biosolids at Harmac is provided in this report, a detailed discussion of the regulatory details of the RGM LAP is not included here. A separate certification of compliance for this project (*Nanaimo Forest Products – Harmac Mill Residuals Growing Medium Land Application Plan 2020 (Authorization #110360) Qualified Professional Certification*

of Compliance, SYLVIS Document #1379-21) has been provided to Harmac (Harmac Compliance Report).

No certification of compliance is required for BGM production.

## **4 2020 BIOSOLIDS MANAGEMENT**

This document contains information on 2020 RDN biosolids management including a summary of contractual requirements for the forest fertilization program (Table 1), a biosolids program management summary (Table 2, Figure 1 and Figure 2), a biosolids quality summary (Table 3), a biosolids management program greenhouse gas emissions estimate (Table 4), a summary of historical management (Table 5), a map of application areas at the TimberWest Properties (Figure 3), and photographs from the management program (Photographs 1 to 3).

### **4.1 BIOSOLIDS MANAGEMENT SUMMARY**

In 2020, the majority of RDN biosolids were managed at the TimberWest Properties on Weigles Road in Nanaimo, BC. All contractual tasks relating to biosolids quality monitoring, biosolids delivery coordination, biosolids beneficial use, site safety, environmental monitoring, public engagement, reporting, coordination with the Nanaimo Mountain Bike Club (i.e., provision of fertilization area maps for ride planning), and adherence to the conditions of site use under the RDN land-use agreement with TimberWest were completed for 2020 (Table 1).

RDN biosolids delivered to Harmac were managed under contract by Harmac, with SYLVIS providing qualified professional oversight for production of reclamation growing medium (RGM) for use in landfill reclamation and biosolids growing medium (BGM) for distribution.

### **4.2 BIOSOLIDS PROGRAM TRANSPORTATION SUMMARY**

In 2020, 3,773 wt of RDN biosolids (120 wt from FCPCC; 3,653 wt from GNPCC) were transported by DBL Disposal to the TimberWest Properties (Table 2). Monthly tonnage delivered to this site in 2020 is shown in Figure 1.

In 2020, 1,850 wt of RDN biosolids (1,152 wt from FCPCC; 698 wt from GNPCC) were transported by DBL Disposal to Harmac (Table 2). Monthly tonnage delivered to this site in 2020 is shown in Figure 2.

Total RDN biosolids production in 2020 (5,623 wt) was above the five-year average annual production of 5,006 wt.

### **4.3 BIOSOLIDS STORAGE**

Four storage areas exist at the TimberWest Properties (A, B, C, and D), each consisting of an asphalt base with lock blocks delineating three sides of the facility (Photograph 1). All four storage areas were utilized for biosolids stockpiling in 2020. Biosolids storage conformed to OMRR requirements for Vancouver Island where biosolids are required to be covered from October 1<sup>st</sup> to March 31<sup>st</sup> of every year.

Harmac does not cover the stored biosolids as biosolids are typically quickly incorporated into a fabricated soil medium (BGM or RGM). Details of RGM storage are discussed in the Harmac Compliance Report.

BGM is not subject to regulatory storage requirements in the OMRR.

#### **4.4 2020 PRE-APPLICATION MEASURES**

At the TimberWest Properties, site inspections were carried out by a SYLVIS Qualified Professional or designate prior to biosolids fertilization. During site inspections, water features and other sensitive site features were identified, mapped, and appropriate setback distances were determined. Pre-application soil samples were collected in order to determine an appropriate agronomic rate of biosolids application. Groundwater depth was assessed using a soil auger or visually in road cuts and was confirmed to be in excess of 1 m prior to commencing biosolids applications.

At Harmac, a site inspection was carried out prior to initiating soil fabrication operations to confirm the suitability of the storage facility, mixing methodology, and soil storage area. Landfill areas to be reclaimed using RGM were assessed prior to applications to ensure suitability for applications. Details of site inspections for the RGM project are detailed in the Harmac Compliance Report.

At Harmac, all BGM produced to date is stored onsite and no distribution has occurred as of the date of this report.

#### **4.5 BIOSOLIDS LAND APPLICATION**

In 2020, 3,769 wt of RDN biosolids (157 wt from FCPCC; 3,612 wt from GNPCC) were applied as a fertilizer and soil amendment to the TimberWest Properties (Table 2 and Photograph 2). Biosolids were land-applied to 76 hectares (ha) of forested lands at the TimberWest Properties at application rates specific to the individual fertilization units based on their history of previous biosolids land applications. Across the site, the biosolids application rate was an average of 90% of agronomic rates. No individual application rate exceeded the application rate specified in the LAP (25 dry tonnes per ha). At the end of 2020, 166 wt (0 wt from FCPCC; 166 wt from GNPCC) remained in storage facilities at the TimberWest Properties (Table 2).

Biosolids were land-applied using a side-discharge spreader equipped with a hydraulic fan which propels the biosolids up to 30 m into forest stands. All biosolids applications adhered to a 30-m setback distance from permanent water features and identified ephemeral water features. Biosolids land applications were completed every 2-4 weeks throughout 2020 except during periods of extreme weather (i.e., snowfall, heavy rainfall) or when the ground was snow-covered; land application operations were suspended during these times. For example, biosolids land applications did not occur in January and February of 2020 when periods of snowfall or snow cover occurred.

Biosolids incorporated into a RGM will be land-applied at the Harmac landfill as a topsoil cover during landfill closure operations. Volumes of RGM produced and land-applied at Harmac are detailed in the Harmac Compliance Report.

BGM containing RDN Class A biosolids is intended to be distributed offsite, although in 2020 no BGM was distributed.

#### **4.6 BIOSOLIDS QUALITY**

Biosolids quality was characterized throughout 2020 to ensure that it met quality requirements for trace element concentrations and pathogen reduction set forth in the OMRR. A total of six composite samples, each composed of eight equal-volume subsamples, were collected by SYLVIS from the FCPC and the GNPC. The biosolids were analyzed for physical parameters, nutrients, and trace elements (Table 3). All RDN biosolids samples collected in 2020 met OMRR Class A and B criteria for trace elements.

The OMRR requires that a set of seven discrete samples be collected for fecal coliform analysis for every 1,000 dry tonnes of biosolids or annually, whichever comes first.

In 2020, 426 dry tonnes (dt) of biosolids were produced by the FCPC. For Class A biosolids each individual sample must meet the Class A criterion of 1,000 most probable number per gram (MPN/g). The highest fecal coliform density of the seven samples collected by SYLVIS was 22 MPN/g (Table 3).

In 2020, 1,033 dt of biosolids were produced by the GNPC, requiring two sets of fecal coliforms samples. For Class B biosolids the geometric mean of each set must meet the Class B criterion of 2,000,000 MPN/g. SYLVIS collected seven samples and the RDN collected eight samples, with the geometric means of the sampling sets at 50,700 MPN/g and 374,100 MPN/g, respectively (Table 3).

As deliveries of FCPC and GNPC biosolids co-occur in the same storage area at the TimberWest Properties and the biosolids are mixed prior to land application, both are managed as a Class B product at this site. RDN Class A and B biosolids are managed separately at Harmac.

#### **4.7 SOIL MONITORING**

Ongoing soil monitoring was carried out at the TimberWest Properties throughout 2020. Soil samples, each composed of 10 sub-samples from the top 0-15 cm at random varying distances from the roadside, were collected by SYLVIS. On average, soil trace element concentrations remain below 75% of applicable OMRR soil criteria for this site. Further details on soil sampling and nutrient concentrations can be found in the LAP.

RGM quality at Harmac is discussed in the Harmac Compliance Report.

#### **4.8 REGULATORY COMPLIANCE**

Biosolids management activities at the TimberWest Properties were carried out under Authorization #109802 and in accordance with the 2020 LAP (SYLVIS Document #1258-19). All regulatory requirements of the OMRR and specifications of the LAP were met including the requirements for rainy season storage, agronomic application rate, groundwater level during application, water feature buffers, biosolids quality, pre-application and predicted post-application soil concentration limits, and signage. A Declaration of Land Application Compliance of biosolids applications at the TimberWest Properties along Weigles Road is provided in Appendix Four.

Details of regulatory compliance of biosolids land applications as part of RGM at Harmac are detailed in the Harmac Compliance Report.

## **5 SUMMARY AND INTERPRETATION OF THE EFFECTS OF BIOSOLIDS DISCHARGES ON THE RECEIVING ENVIRONMENT**

The objectives of biosolids forest fertilization at the TimberWest Properties are to increase soil quality and tree growth while remaining compliant with the OMRR. Biosolids fertilization has generally increased surface horizon organic matter content and available nutrients (e.g., phosphorus). These enriched soils store more carbon and enable accelerated tree growth, which has been documented at this site and other biosolids forest fertilization sites. Trace element concentrations in the soil have increased as a result of additions from biosolids. It has been observed<sup>1</sup> at this site that deer browse of trees is increased in biosolids-fertilized areas, underlining a finding from many biosolids sites that increases in vegetation biomass can lead to increases in animal populations that consume or inhabit the vegetation.

The fabrication of growing media (BGM and RGM) at Harmac produces a material that can be used for landfill closure (RGM) or in projects on and off site that require topsoil (BGM). These growing media provide a fertile substrate upon which vegetation can grow to achieve site objectives such as protection of underlying landfill layers or site restoration. Like other organic amendments, their use sequesters carbon in the soil and eliminates the need to import soil from other sites.

## **6 BIOSOLIDS PROGRAM GREENHOUSE GAS EMISSIONS ESTIMATE**

Greenhouse gas (GHG) emission accounting is a requirement for every local government which has signed on to the BC Climate Action Charter, including the RDN. In 2010, SYLVIS produced the Biosolids Emissions Assessment Model (BEAM) for the Canadian Council of Ministers of the Environment. While the BEAM focuses largely on emissions from biosolids production at the wastewater treatment plant, it also addresses the transport and land application of biosolids. Based on the latter aspects of the BEAM, SYLVIS has produced an estimate of GHG emissions from the RDN's 2020 biosolids management programs at the TimberWest Properties and Harmac. While transportation of biosolids and operation of equipment for fertilization activities generated emissions, land application of biosolids and biomass growth at the TimberWest properties offset emissions through emissions removal. In 2020, the RDN's biosolids management program accounted for an emissions removal of 143 tonnes of carbon dioxide equivalents (CO<sub>2</sub>eq) (Table 4).

It should be noted that this emissions estimate is not a validated estimate and cannot be used to generate carbon offsets.

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<sup>1</sup> Danjou, B. 2014. Effect of Biosolid on Vegetation Development Within Two Douglas-fir Plantations: Third Year Progress Report - DRAFT. Vancouver Island University, Nanaimo, B.C.



## 7 CONCLUSION

RDN biosolids were managed at the Weigles Road TimberWest Properties and at Harmac in 2020. 3,773 wt (67% of annual production in 2020) were delivered to the TimberWest Properties and 1,850 wt (33%) were delivered to Harmac.

All biosolids land application activities at the TimberWest Properties occurred as specified in the current LAP and according to management requirements under the OMRR. On average, soil quality data remain below 75% of applicable OMRR soil criteria for this site.

The TimberWest Properties have accepted over 45,000 wt of biosolids since 2007 (Table 5). SYLVIS looks forward to continuing this productive relationship and providing biosolids management services and support to the RDN throughout 2021 and beyond.

## APPENDIX ONE – TABLES

**Table 1:** Summary of SYLVIS 2020 deliverables as outlined in the RDN-SYLVIS 2017-2021 contract for biosolids management at the TimberWest Properties.

<b>Task or Activity</b>	<b>Description</b>
<b>Biosolids Quality</b>	RDN biosolids quality was monitored throughout 2020 through the collection of six full suite samples and 22 fecal coliform samples.
<b>Biosolids Quantity</b>	3,773 wt of RDN biosolids were transported to the TimberWest Properties by DBL Disposal in 2020. 3,769 wt of biosolids were land-applied in 2020. 166 wt remained stockpiled at the end of 2020.
	1,850 wt of RDN biosolids were transported to the Harmac site by DBL Disposal in 2020. 965 wt of biosolids were land-applied in 2020. At the end of 2020, 1,558 wt remained stockpiled as a component of RGM and 1,007 wt remained stockpiled as a component of BGM.
<b>Biosolids Transportation and Delivery Coordination</b>	SYLVIS coordinated biosolids deliveries to the TimberWest Properties with DBL Disposal throughout 2020.
<b>Access Maintenance</b>	SYLVIS conducted road maintenance on internal roads at the TimberWest Properties in 2020.
<b>Contingency</b>	1,850 wt of RDN biosolids were sent to the Harmac contingency site in 2020.
<b>Storage of Biosolids</b>	Biosolids were stored in four storage facilities at the TimberWest Properties and covered with tarps from October 1 <sup>st</sup> to March 31 <sup>st</sup> as per OMRR requirements.
<b>Invoicing</b>	Biosolids were invoiced on a monthly basis.
<b>Environmental Incidents</b>	No environmental incidents occurred in 2020.
<b>Site Safety</b>	No near-miss or safety incidents occurred at the TimberWest Properties in 2020. SYLVIS maintained COR and BC Forest SAFE safety accreditations in 2020.
<b>Public and Media Relations</b>	No open houses were held in 2020 due to COVID-19.
<b>Complaints Management</b>	There were no complaints received about the biosolids forest fertilization program at the TimberWest Properties in 2020.
<b>Annual Reporting</b>	This summary report fulfills the regulatory requirement for written certification under OMRR Section 5(3).
<b>Storage Facility Management</b>	SYLVIS managed storage facilities throughout 2020. Containment walls at the storage facilities were enhanced in 2020.
<b>Application Planning</b>	SYLVIS mapped, planned, and notified all fertilized areas in 2020.

**Table 1 (continued):** Summary of SYLVIS 2020 deliverables as outlined in the RDN-SYLVIS 2017-2021 contract for biosolids management at the TimberWest Properties.

<b>Task or Activity</b>	<b>Description</b>
<b>Nanaimo Mountain Bike Club Land Use Coordination</b>	An application map for use by site recreational users was produced in 2020.
<b>Biosolids Beneficial Use</b>	Biosolids were managed under the 2020 Land Application Plan (SYLVIS Document #1258-19) and ENV Authorization #110207. 3,769 wt of biosolids were land-applied to 76 ha of forest under this authorization in 2020.
<b>Record-Keeping</b>	SYLVIS kept detailed records of all fertilization activities and environmental monitoring in 2020.
<b>Environmental Monitoring</b>	Scope for environmental monitoring, including water sampling, was removed in consultation with the RDN due to the reduced tonnage managed at the TimberWest Properties.
<b>TimberWest Rules</b>	SYLVIS maintained its BC Forest SAFE accreditation in 2020.
<b>Construction</b>	No works were constructed by SYLVIS at the TimberWest Properties in 2020.
<b>Fires</b>	SYLVIS followed a fire prevention protocol throughout 2020.
<b>Hazardous Substance</b>	No hazardous substances were introduced by SYLVIS to the TimberWest Properties in 2020.
<b>Condition of TimberWest Lands</b>	SYLVIS maintained the condition of the TimberWest Properties in 2020.
<b>Equipment Storage</b>	Except for temporary storage of heavy equipment during fertilization activities, SYLVIS did not store any equipment at the TimberWest Properties in 2020.

**Table 2:** Regional District of Nanaimo biosolids management summary - 2020.

Site	TimberWest Properties			Harmac BGM <sup>a</sup>			Harmac RGM <sup>b</sup>			Total
	GNPCC	FCPCC	Subtotal	GNPCC	FCPCC	Subtotal	GNPCC	FCPCC	Subtotal	
	Class	B		A	B		A	B		
<b>Carry-over from 2019</b>	125	37	<b>162</b>	0	0	<b>0</b>	1,239	441	<b>1,680</b>	<b>1,842</b>
<b>Delivered</b>	3,653	120	<b>3,773</b>	0	1,007	<b>1,007</b>	698	145	<b>843</b>	<b>5,623</b>
<b>Applied or removed from site</b>	3,612	157	<b>3,769</b>	0	0	<b>0</b>	748	217	<b>965</b>	<b>4,734</b>
<b>Carry-over to 2021</b>	166	0	<b>166</b>	0	1,007	<b>1,007<sup>c</sup></b>	1,189	369	<b>1,558<sup>d</sup></b>	<b>2,731</b>

**Note:** All values in units of wet tonnes

a FCPCC biosolids are used at the Nanaimo Forest Products Harmac Mill as a feedstock in the production of a biosolids growing medium (BGM).

b GNPCC and FCPCC biosolids are used at the Nanaimo Forest Products Harmac Mill as a feedstock in the production of a reclamation growing medium (RGM) used for landfill closure.

c FCPCC Class A biosolids as a component of BGM remained stored at the Harmac site at the end of 2020.

d FCPCC Class A and GNPCC Class B biosolids as a component of RGM remained stored at the Harmac site at the end of 2020. This value represents biosolids which have been incorporated into the RGM but which have not yet been land-applied.

**Table 3: Regional District of Nanaimo biosolids quality summary - 2020.**

Parameter	FCPCC	GNPCC	Weighted Average <sup>a</sup>	Regulatory Criteria		Units
	Class A	Class B		Class A <sup>b</sup>	Class B <sup>c</sup>	
# of samples	3	3	6	-	-	
<b>Available Nutrients, Physical Properties, Acidity</b>						
Total Nitrogen - TKN	45,133	55,300	53,000	-	-	µg/g
Ammonia + Ammonium- N (available)	2,617	5,367	4,745	-	-	µg/g
Nitrate - N	8	6	7	-	-	µg/g
Phosphorus (available)	1,013	1,517	1,403	-	-	µg/g
Potassium (available)	715	809	788	-	-	µg/g
Organic Matter	67.2	64.3	65.0	-	-	%
Total Solids	34.1	25.5	27.4	-	-	%
pH	7.3	7.1	7.1	-	-	pH
Electrical Conductivity	6.1	4.5	4.8	-	-	dS/m
<b>Trace Elements</b>						
Arsenic	1.6	2.7	2.4	75	75	µg/g
Cadmium	1.2	1.6	1.5	20	20	µg/g
Chromium	28	33	32	-	1,060	µg/g
Cobalt	1.4	2.2	2.0	150	150	µg/g
Copper	410	503	482	-	2,200	µg/g
Lead	11	20	18	500	500	µg/g
Mercury	1.1	1.0	1.0	5	15	µg/g
Molybdenum	4.0	6.4	5.9	20	20	µg/g
Nickel	10	13	12	180	180	µg/g
Selenium	2.5	4.5	4.1	14	14	µg/g
Zinc	767	850	831	1,850	1,850	µg/g
<b>Microbiological Analysis - Fecal Coliforms</b>						
Set 1 – 7 samples	22 <sup>d</sup>	50,700 <sup>e</sup>	114,000	1,000	2,000,000	MPN/g
Set 2 – 8 samples	N/A	374,100 <sup>f</sup>				

**Note:** All analyses based on dry weight.

- a Weighted average is based on GNPCC production of 77% and FCPCC production of 23% of total 2020 biosolids production.
- b Class A trace element criteria specified in Trade Memorandum T-4-93, Standards for Metals in Fertilizers and Supplements as of August 2017, and microbiological criteria specified in Schedule 3 of the BC *Organic Matter Recycling Regulation*.
- c Class B trace element criteria specified in Schedule 4 and microbiological criteria in Schedule 3 of the BC *Organic Matter Recycling Regulation*.
- d Value is the maximum of seven samples collected by SYLVIS.
- e Value is the geometric mean of seven samples collected by SYLVIS.
- f Value is the geometric mean of eight samples collected by the RDN.

**Table 4:** Regional District of Nanaimo biosolids management program greenhouse gas emissions estimate, 2020.

Process	TimberWest Properties		Harmac Landfill			Total
	SYLVIS	Transporter	SYLVIS	Harmac	Transporter	
Transportation	0.4	16.3	0.04	-	22.5	39.2
Land Application <sup>a</sup>	-115.2	-	-	-32.0	-	-147.2
Biomass <sup>b</sup>	-35.0	-	-	-	-	-35.0
<b>Total</b>	<b>-149.9</b>	<b>16.3</b>	<b>0.04</b>	<b>-32.0</b>	<b>22.5</b>	<b>-143.0</b>

**Note:** All estimates in tonnes of carbon dioxide equivalents per year (CO<sub>2eq</sub>/yr).

a Includes land application of biosolids at the RDN Woodlot and placement of reclamation growing medium (RGM) on the Harmac landfill.

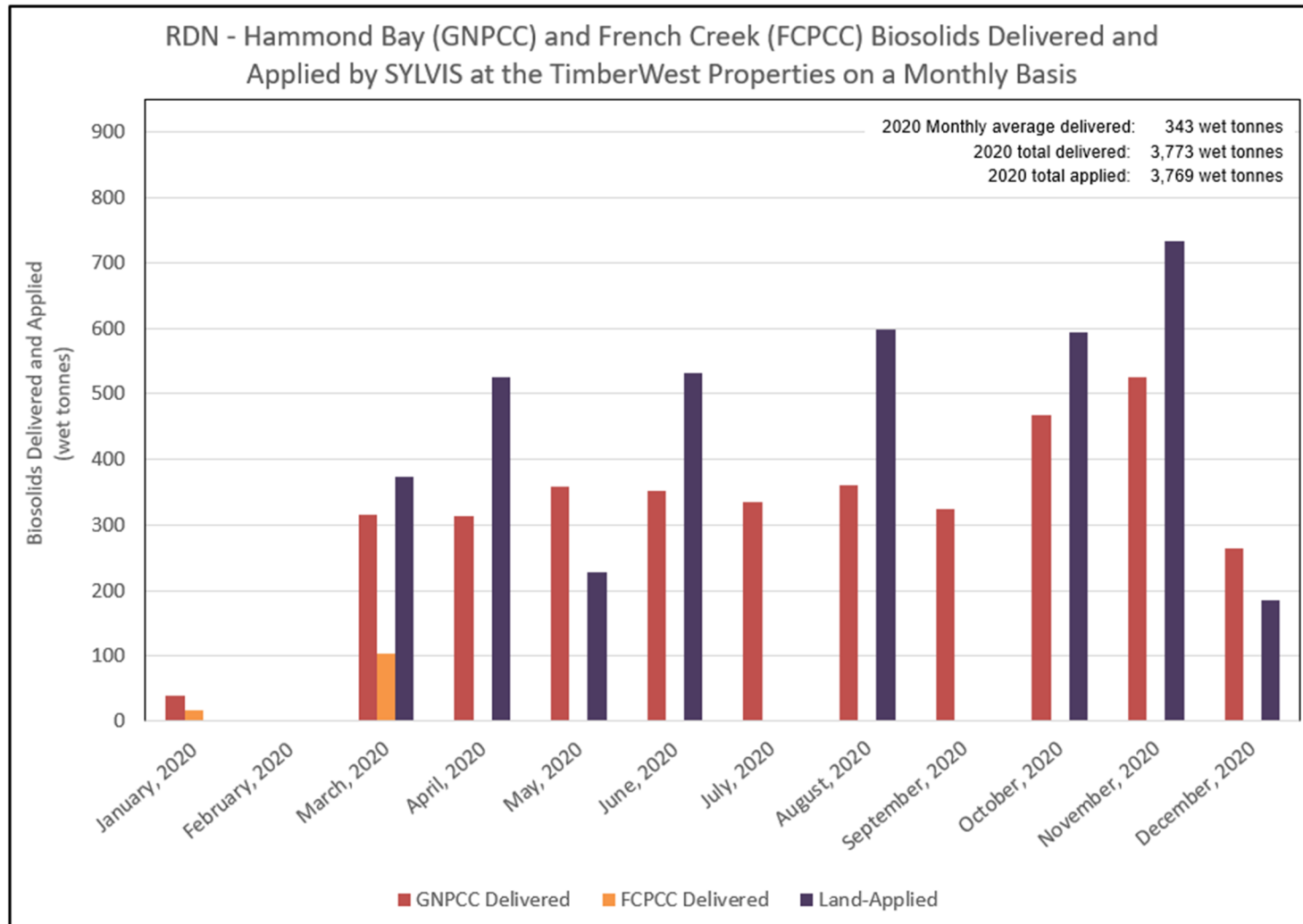
b Conservative estimate of additional carbon storage due to fertilization during 2020.

**Table 5:** Historical management of Regional District of Nanaimo biosolids at the TimberWest Properties and the Harmac Landfill, 2007-2020.

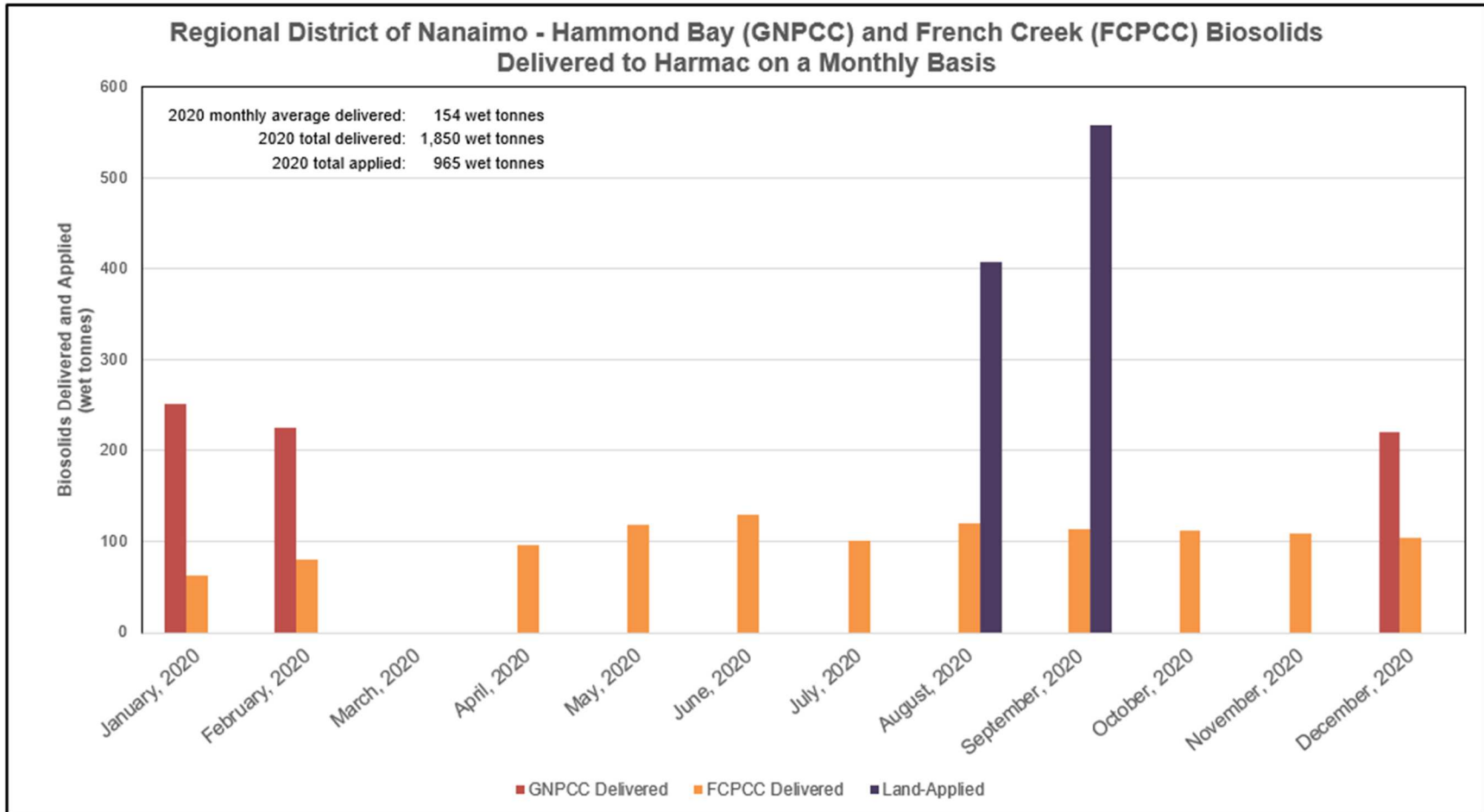
Year	TimberWest Properties	Harmac
2007	1,150 wt	-
2008	3,350 wt	-
2009	3,000 wt	-
2010	1,560 wt	-
2011	1,350 wt	-
2012	1,280 wt	-
2013	3,930 wt	-
2014	4,812 wt	-
2015	4,383 wt	-
2016	4,263 wt	-
2017	3,662 wt	797 wt
2018	4,802 wt	164 wt
2019	4,871 wt	719 wt
2020	3,773 wt	1,850 wt
<b>Total</b>	<b>46,186 wt</b>	<b>3,530 wt</b>

**APPENDIX TWO – FIGURES**

**Figure 1:** Tonnage of Regional District of Nanaimo – Greater Nanaimo Pollution Control Centre (GNPCC) and French Creek Pollution Control Centre (FCPCC) dewatered biosolids delivered and applied at the TimberWest Properties by month in 2020.

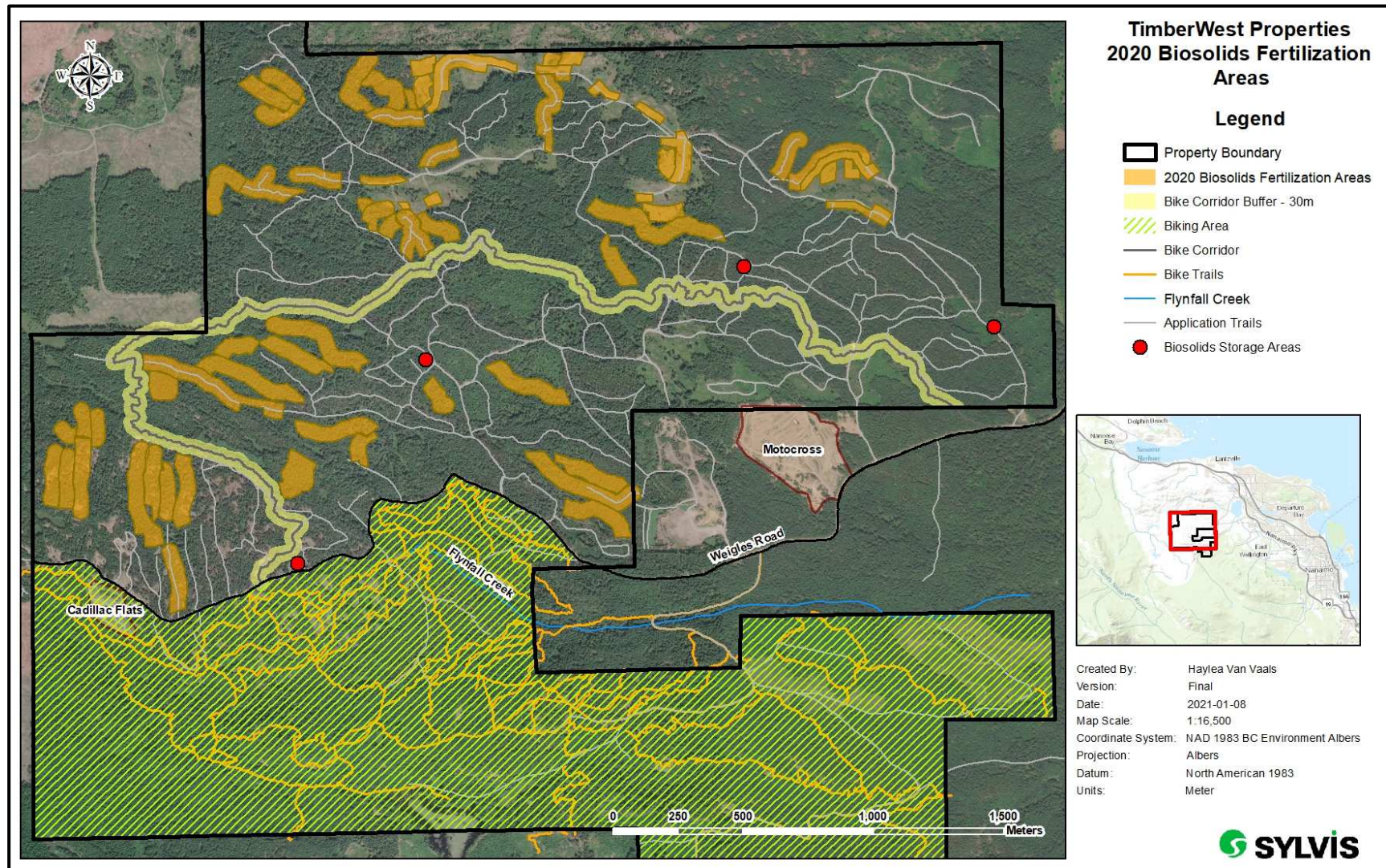


**Figure 2:** Tonnage of Regional District of Nanaimo – Greater Nanaimo Pollution Control Centre (GNPCC) and French Creek Pollution Control Centre (FCPCC) dewatered biosolids delivered to Harmac by month in 2020.





**Figure 3:** TimberWest Properties application areas fertilized with Regional District of Nanaimo biosolids in 2020.



### APPENDIX THREE – PHOTOGRAPHS



**Photograph 1:** RDN biosolids are stockpiled in storage areas.  
(September 2020)



**Photograph 2:** RDN biosolids are land-applied to forest stands along application trails throughout the TimberWest Properties.  
(September 2020)



**Photograph 3:** Soil sampling of areas which had been applied with biosolids.  
(October 2020)

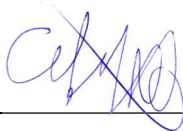
## APPENDIX FOUR – DECLARATION OF LAND APPLICATION COMPLIANCE

### DECLARATION OF LAND APPLICATION COMPLIANCE AT THE TIMBERWEST PROPERTIES

I, Christian Evans, P.Ag, confirm by signature and seal below that, to the best of my knowledge, biosolids were land applied at the TimberWest properties according to the information contained in the *2020 TimberWest Properties (Weigles Road) Forest Fertilization Land Application Plan*, (SYLVIS Document #1258-19, Authorization #110207). These applications are considered a beneficial use of the resource and to the best of my knowledge were completed in accordance with the *Organic Matter Recycling Regulation*.

This certification is valid only if it bears the original signature and seal of the author.

Signature:



Date:

February 18<sup>th</sup>, 2021

Professional Seal

