



2019

# COMPLIANCE AUDIT REPORT

*ENVIRONMENTAL MANAGEMENT ACT*

## DAIRY PRODUCTS SECTOR



## EXECUTIVE SUMMARY

The B.C. Ministry of Environment and Climate Change Strategy (ENV) conducted a sector-wide compliance audit between April 1, 2019 to July 31, 2019 on select dairy products facilities within the province of British Columbia (B.C.) to determine their level of compliance with the *Environmental Management Act* administered by the Ministry of Environment and Climate Change Strategy (ENV). Findings of the Dairy Products Industry Audit (DPI Audit) will serve to identify compliance rates across the sector, guide strategies to improve compliance with legislative requirements, and inform regulatory improvement initiatives to ensure the protection of human health and the environment.

According to the *Environmental Management Act* (EMA) and the Waste Discharge Regulation (WDR), the dairy products industry is a prescribed activity/operation; therefore, facilities require a site-specific authorization/permit to discharge waste into the environment.

The sample population for the DPI Audit consists of 24 dairy product facilities: seven facilities with site-specific permits issued by ENV authorizing discharge of operational waste in B.C., and another 17 facilities that do not have waste discharge authorizations with ENV. Inspections consisted of evaluating whether the facility was compliant with Section 6(2) of EMA and/or their discharge permit on a section-by-section basis.

Eleven out of the total 24 dairy products facilities (46%) included in the DPI Audit were found to be compliant with EMA 6(2) and issued notices of compliance. Overall, ENV issued six advisories and seven warnings for non-compliances that were administrative deficiencies or considered to pose, at most, minor temporary impacts to environment, human health, or safety.

Eleven out of 17 facilities (65%) without waste discharge authorizations under ENV were in compliance with EMA 6(2); one facility reported incorporating process waste into cattle feed rather than discharging it to the environment, while ten facilities were permitted under local municipal or regional authority to discharge effluent into ENV-authorized municipal sewage systems. The remaining six facilities were found to be discharging effluent into the environment (ground) without a permit, which is out of compliance with EMA 6(2).

All seven facilities with site-specific permits were found to be out of compliance with one or more of their permit requirements.

All seven site-specific permits included in this Audit contain requirements limiting discharge quantities for air, effluent, and/or manure, and requirements for quality of air and effluent discharge. Evaluations indicated either compliance could not be determined due to lack of records or monitoring, or the clause was not applicable, due to lack of discharge during the inspection period into the environment. One out of the five facilities with permits requiring discharge quantity monitoring and one out of the three facilities with permits requiring discharge quality monitoring were determined to be compliant with conducting the required monitoring.

All site-specific permits included in this Audit specify the locations of discharge origin and endpoint for each site; the sole facility evaluated for discharge locations was found to be out of compliance due to the transfer of effluent to other unauthorized locations.

All site-specific permits included in this Audit describe the details and locations of authorized works and processes on the site. 64% of evaluated facilities were found to be compliant with these requirements. The non-compliances at two facilities arose from the usage of unauthorized treatment infrastructure. Unauthorized treatment

infrastructure also resulted in the sole non-compliance in the evaluation of clauses on whether authorized works were complete and in operation at the time of the inspection.

All permitted facilities evaluated for compliance with the requirements to maintain and inspect authorized works were found to be complying. 83% of evaluated facilities were compliant with the requirement prohibiting bypasses without prior ENV approval.

All permits included in this Audit require notification to ENV on any deviation from authorized activities. Evaluations indicated 33% of facilities were out of compliance with these requirements by modifying their processes or utilized unauthorized treatment works without notification to ENV, while the remainder did not encounter changes that required a notification.

Two permits in this Audit set requirements for a process to ensure facility staff are knowledgeable with the permit requirements and best management practices as well as emergency/contingency planning. One of the permitted facilities was out of compliance with all their operational and emergency planning and education requirements, while the other facility was only in compliance with their emergency planning requirements.

Four permits in this Audit contain requirements associated with nutrient management, such as proper practices for effluent land application and application conditions. Evaluations indicated that 8% of facilities were compliant with these requirements, 5% were out of compliance, compliance could not be determined for 62% of facilities, and the requirements were not applicable for 25% of the facilities. The sole instance of non-compliance resulted from the permittee's failure to produce a required nutrient management plan. The instances of undeterminable compliance and inapplicable clauses resulted from the lack of land application activities at the time of the inspection.

Three permits in this Audit required permittees to maintain monitoring records and/or submit annual reports to the Director. All facilities evaluated against these requirements were determined to be non-compliant; reports were either not submitted, or not submitted on time.

Findings from the 2018/2019 DPI Audit conducted on 24 dairy production facilities in B.C. have highlighted opportunities of improvement for the dairy products sector. Facility owner/operators are reminded to ensure that discharge quantity and quality monitoring is conducted as required and that records and annual reports are retained for timely submission. Only authorized works and processes specified in their site-specific permits may be utilized for waste discharge, and facility owner/operators must ensure that ENV is notified in advance of any modifications to discharge processes and infrastructure. Facility owner/operators are also recommended to ensure facility staff are knowledgeable with the permit requirements and best management practices as well as emergency/contingency planning.

ENV is recommended to consider ensuring requirements for discharge quality monitoring (e.g. sample collection and analysis) is included in all future permits for dairy product facilities and expanding promotional messaging on the necessity of obtaining waste discharge authorizations to include qualified professionals who may be hired to design tile fields, lagoons, and sumps for this sector in addition to facility operators. ENV is also recommended to ensure that internal guidance is developed to clarify when operations loosely related to the agricultural sector (such as dairy products) must be authorized under a site-specific permit as opposed to the Code of Practice for Agricultural Environmental Management.

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## LIST OF ABBREVIATIONS USED

Acronym	Definition
EMA	<i>Environmental Management Act</i>
ENV	B.C. Ministry of Environment and Climate Change Strategy
DPI	Dairy Products Industry
WDR	Waste Discharge Regulation

## INTRODUCTION

### PURPOSE OF THIS REPORT

This report presents the findings of a sector-wide compliance audit conducted between April 1, 2019 to July 31, 2019 on select dairy products facilities within the province of British Columbia (B.C.) to determine their level of compliance with the *Environmental Management Act* (EMA) administered by the Ministry of Environment and Climate Change Strategy (ENV).

Findings of the Dairy Products Industry Audit (DPI Audit) will serve to identify compliance rates across the sector, guide strategies to improve compliance with legislative requirements, and inform regulatory improvement initiatives to ensure the protection of human health and the environment. ENV expects that the dairy products industry sector will use the report to identify and address compliance areas of improvement for not only individual operations, but also across the overall sector.

### ABOUT THE INDUSTRY SECTOR

#### SELECTION

Industry sectors targeted by the ENV's annual audit program are selected based on their inclusion in the WDR, as well as existing policy and direction such as the Environmental Protection Division Inspection Policy and the 2018 B.C. Service Plan.

#### DESCRIPTION

Dairy processors convert raw milk into finished dairy products such as buttermilk, flavoured milk, eggnog, cream, cheese, butter, yogurt, ice cream, dairy powder, canned and evaporated milk, and cottage cheese, etc. Examples of mechanical operations include pasteurization, clarification, homogenization, vitamin fortification, fermentation, brining, canning, freezing, storing, handling and packaging, etc.<sup>1</sup> According to the Dairy Processors Association of Canada, dairy processors are the second-largest agri-food sector in Canada, purchasing close to 9 billion litres of milk from Canadian dairy farmers in 2017.<sup>2</sup>

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<sup>1</sup> Cornell University: College of Agriculture and Life Sciences: Department of Food Science: The Milk Quality Improvement Program. Milk Processing. Accessed at <<http://milkfacts.info/Milk%20Processing/Milk%20Processing%20Page.htm>>.

<sup>2</sup> Dairy Processors Association of Canada. 2019. Facts and Figures. Accessed at <<http://www.dpac-atlc.ca/what-is-dairy-processing/facts-and-figures/>>

## REGULATORY OVERSIGHT

The *Environmental Management Act* (EMA) and the Waste Discharge Regulation (WDR) are the principal pieces of legislation that protect soil, air and water quality in British Columbia. Under this legislation, the introduction of waste into the environment from identified “prescribed” industries, trades, businesses, operations, and activities requires authorization from ENV. **Dairy Products Industry** is a prescribed activity/operation listed under Schedule 1 of the WDR and included in Section 6(2) of EMA. Therefore, dairy processing facilities require a site-specific authorization/permit to discharge waste into the environment.

The dairy products industry as defined under WDR are:

“establishments, except home-based businesses, educational facilities and establishments of hobbyists or artisans, engaged in processing fluid milk or manufacturing other dairy products”.

Examples do not include agricultural operations, beverage industries, and soil enhancement as defined in Schedule 2 of the WDR, wholesale or retail sale of dairy products, farming activities associated with milk production, and home-based business, educational facilities, hobbyists, or artisans as defined in the Waste Discharge Regulation Implementation Guide (Version Date: September 10, 2007).

Artisan	a trained or skilled person who creates an object or performs a task that has aesthetic value and who, generally in a small business, produces arts and crafts for retail or wholesale trade
Home-based Business	a small business that operates from a (residential) home base including a family farm
Hobbyist	a person who conducts a pursuit outside of their regular occupation for recreation without expectation of commercial benefit
Educational Facility	a facility where teachers provide academic or practical education to students

## DESCRIPTION OF THE AUDITED PREMISES

The sample population for the DPI Audit consists of 24 dairy product facilities: seven facilities with ENV authorization to discharge operational waste in B.C., and another 17 facilities that do not have waste discharge authorizations with ENV.

The dairy processing facilities included in this Audit, their Audit inspection record numbers, their respective waste discharge authorization numbers, and their locations are as listed below in Table 1.



**Table 1. Dairy Product Facilities Inspected for the DPI Audit**

ENV Permit	DPI Inspection Record	Dairy Products Facility	Location
-	UA130129	Agropur Dairy Cooperative	Burnaby
-	UA130165	Agropur Dairy Cooperative	Delta
-	UA130161	Avalon Dairy Ltd.	Burnaby
104997	122619	Bakerview Ecodairy Ltd.	Abbotsford
-	UA128451	Birchwood Dairy	Abbotsford
-	UA130172	Blackwell Dairy Farm	Kamloops
5172	122641, UA129222	"D" Dutchmen Dairy Ltd.	Sicamous
7035	122640	Grass Roots Dairies (formerly Pambeni Farm)	Salmon Arm
14258	122576	Happy Days Dairies Ltd.	Salmon Arm
16564	122575	Happy Days Dairies Ltd.	Chilliwack
-	UA129248	Himalaya Dairy	Surrey
-	UA127963	Jerseyland Organics	Grand Forks
-	UA126679	Little Qualicum Cheeseworks	Parksville
-	UA130119	Meadowfresh Dairy	Port Coquitlam
-	UA127935	Mountain Valley Dairy Ltd doing business as Kootenay Meadows Farm	Creston
-	UA126619	Natural Pastures Cheese Company	Courtenay
-	UA129199	Punjab Milk Foods	Surrey
-	UA128452	Ridgecrest Dairy Ltd.	Mission
-	UA130120	Saputo Dairy Products Canada G.P.	Burnaby
4608	122578	Saputo Foods Ltd. as managing partner for Saputo Dairy Products Canada	Abbotsford
-	UA126560	Tree Island Yogurt	Courtenay
-	UA128363	The Farm House Natural Cheeses	Agassiz
16563	122639	The Village Cheese Company (formerly The Olde Cheese Factory Inc.)	Armstrong
-	UA128382	Vitalus Nutrition Inc.	Abbotsford

## POTENTIAL ENVIRONMENTAL ISSUES AND KEY METHODS OF POLLUTION CONTROL

Dairy products facility operations and processes typically discharge effluent such as wash water, cooling water, condensate, membrane filtration permeates, and whey; ancillary operations may also contribute other solid/air discharges such as manure from on-site cattle farming or air discharges from waste treatment processes.

Effluent from dairy product operations include both organic and inorganic substances which may result in a variety of impacts based on the receiving environment. If the effluent is discharged into surface water, the organic components largely consisting of proteins, lactose, and fat, as well as inorganic compounds such as nitrogen (and associated forms ammonia, ammonium, nitrite, nitrate) and phosphates may encourage bacterial and algal blooms. Excessive bacterial and algal growth place high demands on dissolved oxygen, therefore reducing the amount available for other aquatic organisms' needs. Ingestion of dissolved nitrogen compounds may also pose risks to human and animal health;



cleaning agents in effluent may pose additional toxicity concerns. Aquatic ecosystems are also typically sensitive to changes in pH and temperature from effluent inputs, while elevated turbidity and suspended solids may impact the fitness of aquatic life. Excessive colouration may degrade the aesthetic value of the receiving waters. If the effluent is discharged to land (infiltration into the ground via unlined lagoon, sump, pit, etc.) prior to adequate treatment, nitrate contamination of groundwater (and related risk to human and animal health) may occur. Manufacturing equipment such as boiler stacks, powder driers, etc., may discharge emissions to air such as carbon dioxide, sulphur oxides, nitrogen oxides, particulates, and possibly objectional odours. Methane may be released from anaerobic waste treatment systems.

Mitigation of environmental impacts can be achieved through pollution control processes and infrastructure. All options should promote minimizing water usage, optimizing water and by-product/waste reuse and recycling where possible, and treating remaining discharge prior to release such that it meets discharge quality standards established to protect the environment and human health. For example, whey may be re-used via animal feed, fertilization, incorporation into other foods, etc. Reuse Clean In Place (CIP) systems and membrane technologies may be implemented to increase reuse and recovery of cleaning agents. Effluent treatment may be achieved through aerobic and anaerobic engineered wastewater treatment systems and land application with nutrient management planning. The use of cyclones, baghouse filters, electrostatic precipitators, wet scrubbers, etc., may be employed to reduce air emissions from dairy product facilities.<sup>3</sup>

## DPI AUDIT METHODOLOGY

### PRE-AUDIT ACTIVITIES

ENV regional compliance officers were responsible for scheduling and coordinating on-site inspections.

### INSPECTIONS

Inspections included office reviews and on-site visits.

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<sup>3</sup> Barnett, J.W., S. L. Robertson, and Russell, J.M. Environment Portfolio, New Zealand Dairy Research Institute. Environmental Issues in Dairy Processing. Accessed at <<https://nzic.org.nz/app/uploads/2017/10/3J.pdf>>.

## OFFICE REVIEW / DESKTOP INSPECTION

ENV reviewed office records required for each facility that was inspected in the DPI Audit. The office review included authorization information within ENV's Authorization Management System (AMS) database and any other required documents, reports, or data submissions.

## ON-SITE INSPECTION

ENV conducted on-site inspections on all facilities inspected in the DPI Audit. During each on-site inspection, ENV conducted a walkthrough of the site to verify facility and operational details and review monitoring records and maintenance logs. Site personnel were questioned on site history and operation details as necessary. Photographs of the authorized works and discharges were taken as necessary.

## INSPECTION RESULTS REPORTING

Inspections consisted of evaluating whether the authorization holder was compliant with Section 6(2) of the *Environmental Management Act* and their discharge permit on a section-by-section basis. All facilities that did not have a waste discharge authorization with ENV were assessed against EMA 6(2). Compliance findings for each section were one of four outcomes:

In	ENV determined that the authorization holder was 'in compliance' or compliant with the regulatory requirement at the time of the inspection
Out	ENV determined that the authorization holder was out of compliance with the regulatory requirement at the time of the inspection
Not determined	There was not enough information for ENV to determine whether the authorization holder was compliant with the regulatory requirement at the time of the inspection
Not applicable	The regulatory requirement did not apply to the authorization holder at the time of the inspection

If a single non-compliance was found during an inspection, the whole inspection was marked out of compliance, regardless of how many items were checked or how minor the non-compliance.

ENV determined the appropriate administrative response based on the compliance verification findings of the site inspection. A detailed description of some common administrative responses is included below:

Notice	A notice of compliance is a written confirmation that ENV determined that the authorization holder was 'in compliance' or compliant with all the regulatory requirements evaluated at the time of the inspection
Advisory	An advisory notifies the non-compliant party in writing that they are not in compliance with a specific regulatory requirement and often recommends a course of action that is expected to achieve compliance. An advisory is often the first enforcement response taken in cases of minor to moderate non-compliance when there is a high likelihood of achieving compliance.

#### Warning

Similar, to an advisory, a warning notifies the non-compliant party in writing that they are not in compliance with a specific regulatory requirement; however, the warning differs from an advisory in that it warns of the possibility of an escalating response should non-compliance continue. Warnings are generally used when it is determined that an exchange of information alone would not be sufficient in achieving compliance.

Both advisories and warnings serve as a formal record of the alleged non-compliance and form an important element of the compliance history of the party in question. Other responses such as orders, administrative monetary penalties, etc., within ENV's enforcement toolkit can be found in ENV's Compliance and Enforcement Policy and Procedure.<sup>4</sup>

The results of each inspection, along with the administrative responses, were summarized in an inspection record, a copy of which was provided to the authorization holder.

## DATA ANALYSIS

ENV compiled the results of the inspections for each of the 24 facilities included in the DPI Audit to determine compliance rates with EMA 6(2) and/or the requirements of their site-specific permits and identify opportunities for improvement.

Data analysis was performed separately for facilities without ENV authorization, which were assessed against EMA Section 6(2)), and for facilities assessed against their site-specific ENV permits.

For facilities with ENV permits, compliance evaluation findings for each individual permit clause were tallied and aggregated to obtain statistics on sector performance in different compliance categories (such as compliance with discharge quantity and quality requirements, compliance with maintaining authorized works, etc). Each facility was given equal weight when tallying sector performance results for a compliance category; therefore, if more than one clause evaluation for a compliance category was conducted for a facility, the weights given to each of those facility's multiple evaluations summed up to one for that compliance category. This is to ensure that the sector performance is reflective of all facilities and not disproportionately impacted by facilities with multiple requirements. For example, if a facility had a permit with four requirements related to discharge quantity, the compliance findings on each requirement will be given a fractional weight (one-quarter) when the results are tallied to evaluate sector performance for the compliance category of discharge quantity. Results are therefore often presented as equivalent percentages of facilities.

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<sup>4</sup> B.C. Ministry of Environment and Climate Change Strategy. May 2014. Compliance and Enforcement Policy and Procedure, Version 3. Accessed at < [https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/reporting-documents/environmental-enforcement-docs/ce\\_policy\\_and\\_procedure.pdf](https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/reporting-documents/environmental-enforcement-docs/ce_policy_and_procedure.pdf)>.

## SUMMARY OF FINDINGS

25 inspection records were generated following inspections of the 24 facilities included in the DPI Audit; an additional inspection record was created for an unauthorized waste discharge identified during inspection of a facility permitted under ENV. For the purposes of sector-wide compliance performance analysis for the DPI Audit, data from the two inspections for that facility were combined into one result.

Table 2 details the compliance outcomes of the inspections conducted for the DPI Audit.

**Table 2. Tally of Compliance Outcomes for DPI Audit Inspections**

<b>Compliance Response</b>	<b>Facility had ENV waste discharge authorization</b>	<b>Facility did not have ENV waste discharge authorization</b>	<b>Total</b>
Notice of Compliance	0	11	11
Advisory	5	1	6
Warning	2	5	7
<b>Total</b>	<b>7</b>	<b>17</b>	<b>24</b>

46% of all dairy products facilities included in the DPI Audit were found to be compliant with EMA 6(2) and their permits and were issued notices of compliance. All seven facilities with site-specific permits were found to be out of compliance with one or more of their permit requirements.

In total, ENV issued six advisories and seven warnings for non-compliances that were administrative deficiencies or considered to pose, at most, minor temporary impacts to environment, human health, or safety (Levels 1 or 2 ratings of impact based on ENV's Compliance Decision Making Matrix in ENV's Compliance and Enforcement Policy and Procedure<sup>5</sup>).

## FACILITIES WITHOUT ENV WASTE DISCHARGE AUTHORIZATIONS

Facilities without authorization under ENV to discharge waste from dairy product operations were assessed against EMA 6(2).

65% (11 out of 17) of unauthorized facilities were found to be compliant with EMA 6(2); one facility reported incorporating process effluent and whey into cattle feed instead of discharging it, while ten facilities were permitted under local municipal or regional authority to discharge effluent into municipal sewage systems. These sewage systems have waste discharge authorizations with ENV, and included the Comox Valley Water Pollution Control Centre, Joint Abbotsford Mission Environmental Systems Wastewater Treatment Plant, and the Annacis Island Wastewater Treatment Plant.

<sup>5</sup>BC Ministry of Environment and Climate Change Strategy. How Compliance Is Assessed. Accessed at < <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-law-enforcement/environmental-compliance/how-compliance-is-assessed> >

The remaining six facilities were found to be discharging operational waste into the environment without a permit, which is out of compliance with EMA 6(2). All six facilities were discharging effluent into the ground; four were storing process effluent in sumps and/or lagoons for nutrient land application purposes, while the other two facilities utilized an unlined lagoon or tile field for infiltration.

#### **FACILITIES WITH ENV WASTE DISCHARGE AUTHORIZATIONS (PERMITS)**

The following sections present inspection results based on each area of compliance for facilities assessed against their ENV waste discharge authorizations. Note that not every clause of each permit was necessarily evaluated during every inspection of the seven facilities with ENV waste discharge authorizations, usually due to lack of applicability/relevance of the clause. Thus, the data analysis excludes the statistics on clauses that were not evaluated.

#### **PERMITTED DISCHARGE QUANTITY, QUALITY, TIMING, AND LOCATION**

All site-specific permits included in this Audit set requirements limiting discharge quantities for air, effluent, and manure, depending on site operations. The weighted aggregated compliance findings of all the discharge quantity requirements inspected for the seven permitted dairy product facilities in this Audit indicated that in 71% of evaluated facilities, ENV could not determine whether facilities were keeping within discharge quantity limits due to the failure of the permittee to provide records on discharge amounts; these records were required in all but one permit. The clause was not applicable to the remaining 29% of evaluated facilities due to lack of discharge during the inspection period, or authorized transfer of discharge into municipal sewage treatment systems instead.

All site-specific permits included in this Audit set requirements for quality of air and effluent discharge. Evaluations of compliance with discharge quality requirements for three permitted facilities indicated similar findings to above; either compliance could not be determined or that the clause was not applicable due to lack of monitoring records or lack of discharge into the environment during the inspection period.

All site-specific permits included in this Audit specify the locations of discharge origin and endpoint for each site. The sole site evaluated for these requirements was found to be out of compliance due to the transfer of effluent to other unauthorized locations.

Of the two facilities evaluated for discharge timing requirements, one facility's requirements were not applicable due to lack of discharge during the inspection period, while the other facility was compliant.

Table 3 illustrates the aggregated and weighted compliance findings for discharge quantity, quality, timing and location requirements evaluated for permitted facilities in this Audit.

**Table 3. Compliance Findings for Discharge Quantity, Quality, Timing, and Location Requirements**

Permitted Site	Discharge Quantity Clauses				Discharge Quality Clauses				Discharge Timing Clauses				Discharge Location Clauses			
	In	Out	ND	NA	In	Out	ND	NA	In	Out	ND	NA	In	Out	ND	NA
Tally of Findings																
4608	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-
5172	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
7035	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
14258	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
16563	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-
16564	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-
104997	-	-	-	2	-	-	-	1	-	-	-	1	-	-	-	-
Weighted Tally of Findings																
4608	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-
5172	-	-	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-
7035	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
14258	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
16563	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-
16564	-	-	0.5	0.5	-	-	-	-	1	-	-	-	-	-	-	-
104997	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-
Weighted Total	0	0	5	2	0	0	2	1	1	0	0	1	0	1	0	0
Weighted Percentage [%]	0	0	71	29	0	0	67	33	50	0	0	50	0	100	0	0
In	In Compliance															
Out	Out of Compliance															
ND	Compliance Not Determinable															
NA	Clause Not Applicable															

## AUTHORIZED WORKS

All site-specific permits included in this Audit describe the details and locations of authorized works and processes on the site. To summarize the aggregated compliance findings of all the authorized works clauses inspected for dairy products facilities in this Audit:

- 64% of facilities were assigned “In Compliance” findings for authorized works clause evaluations
- 21% of facilities were assigned “Out of Compliance” findings for authorized works clause evaluations
- 7% of facilities were assigned “Compliance Not Determined” findings for authorized works clause evaluations
- 7% of facilities were assigned “Clause Not Applicable” findings for authorized works clause evaluations

The non-compliances at two facilities arose from the usage of unauthorized treatment infrastructure, while the sole non-applicability was due to the decommissioning of the authorized works due to discharge being routed to an authorized municipal treatment system. Unauthorized treatment infrastructure also resulted in the sole non-compliance in the evaluation of clauses on whether authorized works were complete and in operation at the time of the inspection.

All facilities evaluated for compliance with the requirements to maintain and inspect authorized works were found to be complying. 83% of facilities evaluated for compliance with the requirement forbidding bypasses without prior ENV approval were found to be compliant.

Table 4 illustrates the aggregated and weighted compliance findings for authorized works verification, operation, and maintenance, and bypass requirements evaluated for permitted facilities in this Audit.

**Table 4. Compliance Findings for Authorized Works Verification, Operation and Maintenance, and Bypass Requirements**

Permitted Site	Authorized Works Verification Clauses				Authorized Works Operational Clauses				Authorized Works Maintenance Clauses				Bypasses Clauses			
	In	Out	ND	NA	In	Out	ND	NA	In	Out	ND	NA	In	Out	ND	NA
Tally of Findings																
4608	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-
5172	1	-	-	1	1	-	-	-	1	-	-	-	1	-	-	-
7035	-	1	-	-	-	1	-	-	-	-	-	-	-	1	-	-
14258	1	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
16563	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-
16564	1	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
104997	3	-	-	-	1	-	-	2	1	-	-	-	1	-	-	-
Tally of Findings Weighted for Site Equivalence																
4608	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-
5172	0.5	-	-	0.5	1	-	-	-	1	-	-	-	1	-	-	-
7035	-	1	-	-	-	1	-	-	-	-	-	-	-	1	-	-
14258	1	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
16563	-	0.5	0.5	-	-	-	-	-	1	-	-	-	-	-	-	-
16564	1	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
104997	1	-	-	-	0.33	-	-	0.67	1	-	-	-	1	-	-	-
Total Weighted for Equivalence	4.5	1.5	0.5	0.5	2.33	1	0	0.67	6	0	0	0	5	1	0	0
Equivalent Percentage [%] of Facilities	64	21	7	7	58	25	0	17	100	0	0	0	83	17	0	0
In Out ND NA	In Compliance Out of Compliance Compliance Not Determinable Clause Not Applicable															

## NOTIFICATION TO ENV

All permits included in this Audit require notification to ENV on any deviation from authorized activities, whether it be prior notification of process modifications that may result in adverse environmental effects or notification of non-compliance with permit requirements.

33% of facilities were found to be out of compliance with notification clause requirements; the two facilities had modified their processes or utilized unauthorized treatment works without notification to ENV. The remaining 67% of facilities were assigned “Clause Not Applicable” findings as there were no facility changes that required a notification.



## **OPERATIONAL AND EMERGENCY PLANNING AND EDUCATION**

Two permits in this Audit set requirements for a process to ensure facility staff are knowledgeable with the permit requirements and best management practices (such as the design and upkeep of an operation plan and manual, or a regular review with contractors) as well as emergency/contingency planning. One of the permitted facilities was out of compliance with all their operational and emergency planning and education requirements, while the other facility was only in compliance with their emergency planning requirements.

## **MONITORING OF DISCHARGE QUANTITY AND QUALITY**

Five permits in this Audit require discharge quantity monitoring, whether it be via a flow measuring device, spray irrigation records, or whey delivery records. Only one permittee (20% of facilities) was compliant with their requirement to monitoring the discharge quantity rates; the rest were unable to provide records of measurements.

Three permits in this Audit stipulate discharge quality monitoring. One out of the three permittees were compliant with their discharge quality monitoring requirement. Another permittee's requirements to install groundwater wells to the satisfaction of the Director could not be determined due to lack of clarity around direction from ENV, and the remaining permittee was out of compliance for not collecting or analyzing effluent grab samples as required by their permit.

## **NUTRIENT MANAGEMENT**

Four permits in this Audit contain requirements associated with nutrient management, such as proper practices for effluent land application and application conditions.

To summarize the aggregated compliance findings of all the nutrient management clauses inspected for dairy products facilities in this Audit:

- 8% of facilities were assigned "In Compliance findings" for nutrient management clause evaluations
- 5% of facilities were assigned "Out of Compliance" findings for nutrient management clause evaluations
- 62% of facilities were assigned "Compliance Not Determined" findings for nutrient management clause evaluations
- 25% of facilities were assigned "Clause Not Applicable" findings for nutrient management clause evaluations

The sole instance of non-compliance resulted from the permittee's failure to produce a required nutrient management plan. The instances of undeterminable compliance and inapplicable clauses resulted from the lack of land application activities at the time of the inspection.

## RECORDS MANAGEMENT AND REPORT SUBMISSION

Three permits in this Audit required permittees to maintain monitoring records and/or submit annual reports to the Director. All facilities evaluated against records management and report submission requirements were out of compliance with these requirements; reports were either not submitted, or not submitted on time.

## CONCLUSIONS AND RECOMMENDATIONS

Findings from the 2018/2019 DPI Audit conducted on 24 dairy production facilities in B.C. have highlighted opportunities of improvement for the dairy products sector and ENV.

Facility owner/operators are reminded of the following:

- Ensure that discharge quantity and quality monitoring is conducted as required and that records are retained.
- Ensure that required records and annual reports are submitted on time.
- Ensure that only authorized works and processes specified in their site-specific permits are utilized for waste discharge.
- Ensure that ENV must be notified in advance of any modifications to discharge processes and infrastructure.
- Ensure facility staff are knowledgeable with the permit requirements and best management practices as well as emergency/contingency planning.

ENV is also recommended to ensure that internal guidance is developed to clarify when operations loosely related to the agricultural sector (such as dairy products) must be authorized under a site-specific permit as opposed to the Code of Practice for Agricultural Environmental Management.

ENV is recommended to consider ensuring requirements for discharge quality monitoring (e.g. sample collection and analysis) is included in all future permits for dairy product facilities and expanding promotional messaging on the necessity of obtaining waste discharge authorizations to include qualified professionals who may be hired to design treatment and disposal works for this sector in addition to facility operators.