UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION 2
CARIBBEAN ENVIRONMENTAL PROTECTION DIVISION
MULTIMEDIA PERMITS AND COMPLIANCE BRANCH

NPDES Inspection
Animal Feeding Operation

Owner

Q DEVELOPMENT, INC.
P.O. Box 429, Garrochales Ward
Arecibo, Puerto Rico 00652-0429
Phone Number: (787) 820-0429

Facility

FINCA BETANIA DAIRY FARM
PR-682 Road, Km 0.4, Factor Ward
Arecibo, Puerto Rico 00612
Coordinates: Lat. 18° 27' 35.95" N, Long. 66° 37' 12.44" W

Statute and Regulations

Section 301 and 308(b) of the Clean Water Act

NPDES Regulations: 40 C.F.R. Parts 122.23 and 412

NPDES Tracking Number PRU201809

Inspection Date: January 8, 2025

Participating Personnel:

U.S. EPA:

Jaime López
Senior Physical Scientist
Clean Water Act Team

Q Development, Inc.:

Víctor Vélez, Administrator
Telephone Number: (787) 820-0429

Inspection Report Prepared by:

Jaime Lopez 2-26-2025

Jaime López
Senior Physical Scientist
Clean Water Act Team
Tel. (787) 977-5851; Email: lopez.jaime@epa.gov

Inspection Report Approving Officer:

JOSE RIVERA
Digitally signed by JOSE RIVERA
Date: 2025.02.26 15:36:02 -04'00'

José A. Rivera, BSCE
Lead Environmental Engineer
Clean Water Act Team
Multimedia Permits and Compliance Branch
Tel. (787) 977-5842; Email: rivera.jose@epa.gov

I. INTRODUCTION

On January 8, 2025, Mr. Jaime López, Senior Physical Scientist (the "EPA Inspector"), from the United States Environmental Protection Agency ("EPA"), Region 2, Caribbean Environmental Protection Division ("CEPD"), conducted a National Pollutant Discharge Elimination System ("NPDES") Inspection ("RI" or the "Inspection") at Finca Betania Dairy Farm ("Facility") located in Arecibo, Puerto Rico.

The purpose of the Inspection was to determine Q Development, Inc.'s ("Q Development") compliance with Section 301 of the Clean Water Act, 33 U.S.C. § 1311, and to determine compliance with the requirements and limitations found in EPA regulations at 40 C.F.R. Part 412, Subpart C, which concern "Dairy Cows and Cattle other than Veal Calves."

Upon showing of credentials to Mr. Víctor Vélez, Facility Administrator, the Inspection was performed pursuant to the inspection authority under Section 308(b) of the Federal Water Pollution Control Act ("CWA" or the "Act"), as amended. The Inspection consisted of an entry meeting to discuss the purpose of the Inspection; a walkthrough to evaluate the operation and maintenance of the production areas, specifically, the Manure Storage Lagoon ("Lagoon") and its manure irrigation system conditions; and a closing meeting to discuss preliminary observations, findings and areas of concern resulting from the Inspection.

This Inspection Report includes findings, observations and areas of concern resulting from the Inspection.

II. GENERAL INFORMATION CONCERNING THE OWNWER

Q Development is a for-profit corporation organized under the laws of the Commonwealth of Puerto Rico ("PR"). Q Development was established on June 28, 1995, and is registered in the Puerto Rico Department of State ("DOS") under registration number 92670. Q Development's President is Mr. José A. López Cáceres.

III. GENERAL INFORMATION CONCERNING DAIRY FARM

The Facility and associated farmland are located in Garrochales Ward, Arecibo, Puerto Rico, North of PR-682 Road (the "Site"). The Arecibo Municipal Solid Waste Landfill ("Landfill") is located northwest of the Site. The Caño Tiburones lies to the north of the Landfill and the Site. A west-flowing ditch/channel separates the Site from the Landfill and Caño Tiburones.

Elevations across the farmland range from approximately 2 meters above mean sea level near the northern boundary of the farmland to approximately 15 meters above mean sea level adjacent to PR-682 Road south of the milking and feeding barns of the Facility.

The primary structures at the Facility are: two feeding barns, each approximately 195 meters in length and 14 meters wide; and a building which contains the farm office and a milking parlor, located south of the feeding barns, with dimensions of approximately 80 meters by 25 meters.

The Nutrients Management Plan developed for the Facility, dated April 13, 2012, describes and includes the following:

- The Site is composed of 230 acres.

- The farmland is divided into an irrigation sector and a pasture sector.

- The pasture sector is divided into two pastures situated north and south of the feeding barns. The north pasture area is approximately 24.3 acres, and the south pasture is divided into an 8-acre section west of the Facility entrance and milking parlor and a 10.7-acre section to the east. The pasture area is used for grazing but is also used for maintaining animals excluded from milking due to use of antibiotics, injuries, or other causes.

- The pasture areas are fenced to keep cattle from accessing both lagoons, the wastewater irrigation fields, or surface water.

- The Site has a two-lagoon waste collection and treatment system, consisting of a primary manure storage lagoon 110 meters long by 20 meters wide, and a secondary anaerobic treatment lagoon 110 meters long by 45 meters wide.

- The irrigation area encompasses a total of 163.6 acres including six irrigation areas ranging in size from 15.9 acres to 29.1 acres and totaling 135.8 acres.

Image 1 (next page) depicts an aerial imagery of the Site and its surroundings.

IV. GENERAL DESCRIPTION OF THE NEARBY SURFACE WATER BODY

The Caño Tiburones is classified as SD water in the Puerto Rico Water Quality Standards Regulation ("PRWQSR") promulgated by the Puerto Rico Department of Natural and Environmental Resources ("DNER") on November 23, 2022.

Image 2 (next page) depicts the hydrographic area surrounding the Site, including Caño Tiburones.

Image 1[1]

Image 2[2]

[1] The source of the aerial image is Google Earth Pro™, and the image is dated April 27, 2023.
[2] PR Planning Board MIPR database.

V. WITH RESPECT TO THE MANURE WASTE STORAGE LAGOON MANAGEMENT

Based on the Nutrients Management Plan mentioned above, the waste storage and treatment for certain operation at the Facility consists of a two-lagoon system. The lagoons are 15 feet deep from the crest of the lagoon berm to the base of the lagoon and are constructed with a 2:1 slope. There is no plastic liner.

Based on measurements from a Site Plan prepared for the Facility, the horizontal dimensions of the smaller lagoon are 370 feet long by 75 feet wide. The horizontal dimensions of the larger lagoon are 370 feet long by 160 feet wide. Because the sides of the lagoon slope toward the center of the lagoon with a 2:1 slope, the volume of waste stored in the lagoon's changes with every foot of change in waste level in the lagoons. The retention time for the lagoon is 45 days.

The smaller lagoon receives all liquid and solid waste generated at the milking parlor and the feeding barns. Wastes in the feeding barns are first scraped, and then pressure washed, directing wastes into the lagoon system. Similarly, animal waste and cleaning water generated in the milking parlor is discharged into the lagoon system. Wastes are fed by gravity flow into the first (smaller) lagoon. The majority of manure and other solids (spilled feed, etc.) collect in the first lagoon, and as such, this lagoon functions as a manure slurry storage structure (manure storage).

VI. NPDES Regulations concerning Animal Feeding Operations

An "Animal Feeding Operation" ("AFO") is a Concentrated Animal Feeding Operation ("CAFO") if it meets the regulatory definition of a Large or Medium CAFO under NPDES regulations at 40 C.F.R. §§ 122.23 (b)(4) or (b)(6), or has been designated as a CAFO pursuant to 40 C.F.R. § 122.23(c), by the NPDES permitting authority or by EPA.

The NPDES regulations at 40 C.F.R. § 122.23 (b)(1) defines an AFO as a lot or facility (other than an aquatic animal production facility) where the following conditions are met: (1) animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period; and (2) crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

Pursuant to the NPDES regulations, Q Development's Facility is considered to be a large AFO, as it falls under the large dairy AFO threshold of 700 mature dairy cows, but it is not considered a CAFO because it does not meet the regulatory definition of large CAFO, where animals have been, are or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period.

VII. ARRIVAL AT THE FACILITY

At approximately 11:20 a.m., the EPA Inspector arrived at an area of the Facility where an administrative office is located. Thereafter, the EPA Inspector met with Mr. Vélez and showed his EPA credentials.

VIII. ENTRY MEETING AND REVIEW OF RECORDS

Approximately between 11:25 a.m. and 11:40 a.m., the EPA Inspector and Mr. Vélez met and discussed the purpose of the Inspection and the areas where the EPA Inspector will conduct a walkthrough at the Site. Mr. Vélez indicated that the Facility has an Operation Permit with an approved Nutrient Management Plan issued by the Puerto Rico Department of Natural and Environmental Resources. The EPA Inspector requested Mr. Vélez the Nutrient Management Plan developed for the Facility, which he provided. The EPA Inspector proceeded to review the Plan in order to gather information about the operations at the Site and the management of manure and other wastewater generated at the Facility, including manure storage lagoons and the irrigation system.

IX. WALKTHROUGH OF THE SITE

After the Entry Meeting, Mr. Vélez accompanied the EPA Inspector to perform a walkthrough. The walkthrough began at approximately 11:40 a.m. and ended at approximately 12:20 p.m. Dry weather and sunny skies prevailed during the walkthrough.

The following includes the EPA Inspector's observations:

a. There is an approximately 1-foot-wide manmade concrete channel and an aboveground and underground 4-inch PVC pipe that drains all manure and production areas wastewaters into the storage lagoon.

b. All clean rainwater that drains from roofs and other production areas from contaminated run off is diverted to prevent from reaching the storage lagoon; thus, limiting the lagoon storage capacity.

c. Based on the field observations about the topography of the Site where the Facility is located, the distance from the Facility's manure storage lagoon to a unnamed stream situated at the north boundary of the Site, the slope and condition of the land across that distance, the level of the liquid manure storage lagoon, and wastewater containing pollutants gathered from open staging areas at the Facility, wastewater leaving the lagoon will flow towards the field pasture to an unnamed stream tributary of Caño Tiburones, as a result of precipitation events during the rainy season and lack of storage capacity.

d. The EPA Inspector observed that the liquid manure storage lagoon did not have a free board, and it was overflowing at the time of the Inspection. The wastewater discharge flows pathway through the pastures were also observed and reached an unnamed stream tributary of Caño Tiburones.

e. The EPA Inspector observed evidence of actual liquids manure flows running through the adjoining field, which is used as pasture, where there was a channel which meandered through the pasture and a cattle loafing area that eventually led to unnamed stream or drainage channel tributary of the Caño Tiburones.

f. During the walkthrough, Mr. Vélez indicated that manure land application at the Site has not been performed because precipitation events had been continuous, and soils are saturated. He also stated that as a result of the precipitation events, manure is not pump from the liquid manure storage lagoon to the application areas.

g. Feed is stored in a commodity shelter. Mr. Vélez stated that there is no spoiled silage or feed to dispose of, as feed does not spoil. The kind of feed that they store is basically 18% protein grain concentrate for milking cows.

h. Mortalities are handled through onsite burial.

The EPA Inspector included other observations in the Inspection photo-documentation in **Attachment 1** of this Inspection Report. The EPA Inspector used a personal phone camera (Model T-Mobile, TRRLY, Moto G7) to take 15 photographs to document his observations during the walkthrough of the Site. All 15 photographs were unaltered transferred to F:\INSNPDES\INSNPDES.25 Q Development/ inspection file, an EPA database.

VII. EXIT MEETING

After the completion of the walkthrough, the EPA Inspector had an exit meeting with Mr. Vélez between 12:20 p.m. and 12:30 p.m. The EPA Inspector provided a summary of his observations made during the walkthrough, noting that the overflow discharge from the liquid manure storage lagoon must stop, and emphasized the need to lower the lagoon level to a point that prevents future discharges into waters of the United States.

Upon conclusion of the Exit Meeting, the EPA Inspector left the premises on or about 12:35 p.m.

End of Report

Attachment: Inspection Photo-Documentation

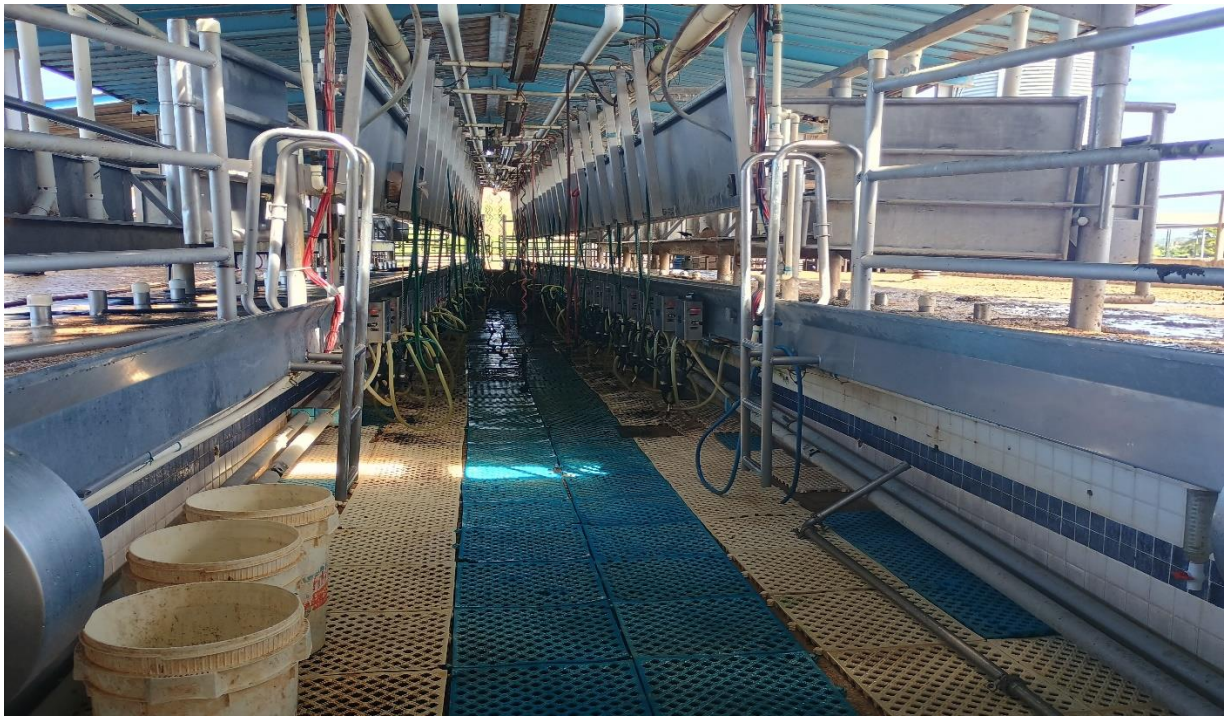
ATTACHMENT 1

Q Development, Inc.
Inspection Photo-Documentation

Picture # 1

Depicts a view of the dairy farm facility entrance. Stormwater runoff from adjacent field pasture was observed in the pavement.

Picture # 2



Depicts a view of the dairy farm milking parlor.

Picture # 3

Depicts a view of the dairy farm milking cows waiting area.

Picture # 4

Depicts a view of the manure that comes from the feeding barns drainage area that flows via gravity into the manure storage lagoons.

Picture # 5

Depicts a view of one of two dairy cattle feeding barns. Manure from the barn is collected in this area and via gravity conveyed through the concrete floor to the manure storage lagoons.

Picture # 6

Depicts a view of the receiving manure storage lagoon fill with solids and vegetation. The lagoon was observed almost with no freeboard.

Picture # 7

Depicts another view of the receiving manure storage lagoon filled with solids and vegetation growth, and the manure pump house in the background.

Picture # 8

Depicts a panoramic view of the liquid manure storage lagoon (second lagoon), which receives the overflow discharge from the receiving manure storage lagoon. The Arecibo Solid Waste Municipal Landfill is depicted in the background.

Picture # 9

Depicts a view of the liquid manure storage lagoon with no freeboard and overflowing towards the pasture. The overflow was located at the northeast side corner of the lagoon.

Picture # 10

Depicts a view of the liquid manure overflow pathway towards the field pasture.

Picture # 11

Depicts a panoramic view of the overflow drainage pathway in the pasture field.

Picture # 12

Depicts another panoramic view following the liquid manure overflow pathway meandering over the field pasture. Solids from manure were observed accumulated along the way.

Picture # 13

Depicts a closer view of the downstream liquid manure overflow pathway over the pasture field. Solids from manure were observed accumulated in this area. The flow reaching the Site fence line between the pasture field and the unnamed stream adjacent to the Arecibo Landfill was observed.

Picture # 14

Depicts a view of the liquid manure overflow pathway reaching the fence line flowing towards the unnamed stream.

Picture # 15

Depicts a view of the liquid manure overflow pathway reaching a Site fence line flowing under it into the unnamed stream.