

NPDES Inspection Report – Industrial User

Name of industry and location:	Control authority / Permit No. / Facility ID:	
Nature Soy, LLC 6123 Arapahoe Rd Boulder, CO 80303	City of Boulder Permit No. SIU 2024-1 NPDES ID: COPU00175 Inspection ID: 202412_COPU00175 NAICS Code: 311991 – Perishable Prepared Food Manufacturing Latitude: 40.0151145 °N, Longitude: -105.210832°W	
Date of visit:	Time of visit:	
December 19, 2024	9:00 a.m. – 11:15 a.m.	
Name(s) / Affiliation of inspector(s):		
Jennifer Ferrando / U.S. Environmental Protection Agency, Region 8 (Lead) Monica Crosby / U.S. Environmental Protection Agency, Region 8 Stephanie Passarelli / U.S. Environmental Protection Agency, Region 8 Sheri Duren / Industrial Pretreatment Supervisor / City of Boulder James Werther / Water Quality Compliance Program Manager / City of Boulder		
Name / Title / Affiliation:		
Jorge Saenz / Facility Manager / Nature Soy, LLC Carl Gothmann / Corporate QA Manager / Nature Soy, LLC		
Report Review and Signature		
Drafter Name	Address/Phone Number	Date
	U.S. EPA Region 8 1595 Wynkoop Street 8ECA-W-NW Denver, Colorado 80202	2/3/2025
Monica Crosby	303-312-6196	
Reviewer Name	Address/Phone Number	Date
Jennifer Ferrando	U.S. EPA Region 8 1595 Wynkoop Street 8ECA-W-NW Denver, Colorado 80202	2/5/2025
	303-312-6601	
Supervisor Signature/Name	Address/Phone Number	Date
	U.S. EPA Region 8 1595 Wynkoop Street 8ECA-W-NW Denver, Colorado 80202	2/10/2025
Emilio Llamozas	303-312-6407	

Inspection Description:

On December 19, 2024, U.S. Environmental Protection Agency (EPA) inspectors Jennifer Ferrando, Monica Crosby, and Stephanie Passarelli (jointly referred to as EPA inspectors) and the City of Boulder (City) inspectors Sheri Duren and James Werther, conducted an industrial user inspection of Nature Soy, LLC, dba Keystone Natural Holdings (“Nature Soy” or “Facility”), in Boulder, Colorado, as part of a pretreatment compliance inspection (PCI) of the City. The City had identified Nature Soy as a Significant Industrial User (SIU) permitted to discharge to the City’s sanitary sewer system under Permit Number 2024-01 (Permit). The inspection was unannounced. The inspection was conducted to evaluate the City’s inspection procedures as part of the PCI. Mr. Werther was the facility lead for the walk-through inspection of the Facility, and the EPA inspectors observed and asked clarifying questions as necessary.

Upon arriving to the Facility at approximately 9:00 a.m., the City introduced the inspectors to Nature Soy’s Facility Manager, Jorge Saenz, as well as their Corporate QA Manager, Carl Gothmann. The EPA inspectors began the opening conference by presenting their credentials. The inspectors then explained the general purpose and procedures of the inspection. During the opening conference, Mr. Gothmann provided an overview of the Facility’s operations, focusing on the processes that generate wastewater and the recent changes to the Facility’s production.

Following the opening conference, Mr. Gothmann and Mr. Saenz accompanied the group of inspectors on a facility walk-through, beginning with the outside storage areas for materials and used chemical containers and the Facility’s mobile steam plant. The interior walkthrough focused on the processing of tempeh, plant-based tuna, and seitan products; chemical and waste storage areas; wastewater treatment; and the sampling point. To document and record the conversation and inspection observations, the inspectors took notes using bound checklists with questions applicable to the permitted industrial user. Photographs taken during the inspection are included in the attached photo log.

The inspectors conducted a closing conference with Mr. Gothmann and Mr. Saenz and provided general observations and preliminary findings from the inspection. The EPA and City representatives left the Facility at approximately 11:15 a.m.

1. What does this industry produce?

Nature Soy is a manufacturer and co-packer of vegan and vegetarian soy products, including tempeh, plant-based tuna, and seitan. The Facility used to manufacture tofu products, but recently stopped that production line.

2. How is the industry classified by the POTW?

The City classified Nature Soy as an SIU because the Facility discharges an average of 25,000 gallons per day or more of process wastewater to the POTW, which is in accordance with 40 C.F.R. 403.3(v).

3. Have there been any significant changes in processes or flow?

Within the past year, the Facility stopped their production of tofu and baked tofu products. The Facility recently added a plant-based tuna line, but this did not appear to create a significant change in process or flow.

4. What raw materials are used?

The Facility uses the following materials:

- Soybeans
- Grains, wheat dough
- Flavorings (oils, garlic and onion powder, and soy sauce)
- Vinegar
- Flours (soy, wheat, garbanzo)
- Sanitation Chemicals

5. What processes are used to make the product(s)? Indicate any wastes generated and destination of wastes.

Tempeh is made by culturing and controlling the fermentation process of soybeans. Soybeans are pressure cooked with spices and flavorings. Starter culture is then added and allowed to incubate for 24 hours. After that, the tempeh product is heated enough to kill growth and is sent to the Facility's packaging line. Seitan is a vegan meat substitute made entirely out of hydrated gluten. Various gluten doughs are used for this product and are mixed, marinated, steamed, and then packaged. The Facility had recently added the plant-based tuna line, and the EPA inspectors did not request details on this process. Wastewater is generated from soybean soaking, wasted soy whey, and cooling water. Any wastes generated from these processes are discharged to the floor drains which are plumbed to the Facility's wastewater treatment system.

The third shift is dedicated to cleaning all process rooms, including all equipment. The sanitization chemicals are loaded onto a mobile cart. All wastewater is discharged to the floor drains which are plumbed to the wastewater treatment system.

6. Where is water used and what is the source of the water (city, well, river, etc.)?

The Facility uses City water in its operations, specifically for soybean soaking, pressure cooking, wasted soy whey, and cooling water. Additionally, water is used daily for the cleaning of tanks and rinsing of equipment.

7. Describe the processes which discharge wastewater.

Please refer to Sections 5 and 9 of the inspection report for a description of the processes that discharge wastewater.

8. Describe the sample location. Are the CA and industry using the same location?

Nature Soy has one outfall, Outfall 01, that discharges to the City's collection system. This outfall receives Nature Soy's process wastewater which consists of all wastewaters generated through the manufacturing of vegan and vegetarian soy-based products. Facility staff use a time proportional sampler to collect composite samples from the Facility's pH neutralization tank ("Tank 3") (Photo 22). The City collects time proportional composite samples at the same sample location, using the City's sampling equipment.

9. Describe the treatment system in place.

Floor drains in the production area capture all cleaning water and process wastewater and send it to a solids settling tank ("Tank 1") in the Facility's wastewater treatment room (Photos 9 and 21). Solids are transferred to a truck for disposal off-site. Supernatant from the solids settling tank is pumped into a decanting tank ("Tank 2"), where solids further settle out (Photo 19). Like Tank 1, any solids collected from Tank 2 are

transferred to a truck for off-site disposal. Solids are pumped from Tanks 1 and 2 every 2-3 months. The clarified water is then gravity-fed into Tank 3 (Photo 22). Tank 3 is used for pH neutralization, where it is treated with [REDACTED] and [REDACTED] (Photos 17 – 20). Treated wastewater passes a flow meter and discharges to the City's collection system (Photo 23).

10. What chemicals are maintained at the facility? How are they stored? Is adequate spill prevention in place?

The Facility maintains 55-gallon drums of cleaning chemicals ([REDACTED] and [REDACTED]) and 5-gallon buckets of cleaning chemicals ([REDACTED] and [REDACTED]), and 55-gallon drums of [REDACTED] and [REDACTED] for pH adjustment. At the time of the inspection, the cleaning chemicals were all stored on secondary containment in the chemical storage area (Photos 15 and 16). The pH adjustment chemicals were stored within the wastewater treatment room, as well as the room adjacent to the wastewater treatment room, both with and without secondary containment (Photos 17 – 20). Empty drums and buckets are rinsed and stored outside (Photos 4 and 5). The Facility does not have a stormwater permit. No storm drains were observed in the outdoor rinsing area. The inspectors observed a storm drain on the other side of the Facility's building, in the southeast corner (Photo 6).

The Facility also stores soy sauce, canola oil, and vinegar. Soy sauce is kept in 250-gallon totes, while the canola oil and vinegar are kept in 55-gallon drums. These products are all housed in the Facility's production area and were observed to be both with and without secondary containment (Photos 10-14). Empty soy sauce totes are stored outside in the northeast corner of the paved parking area (Photo 2). Facility representatives communicated that no totes of soy sauce are rinsed or washed onsite. The totes that were seen in the parking area were scheduled to be removed.

11. Are any hazardous wastes stored or discharged?

No hazardous wastes are stored or discharged from the Facility.

FINDINGS AND CORRECTIVE ACTIONS

The following findings were identified during the inspection. The EPA has requested the City work directly with Nature Soy to oversee correction of these deficiencies. No response from Nature Soy to the EPA is requested at this time.

Finding 1 – Rinsing of Containers

Finding

At the time of the inspection, the Facility was rinsing empty drums and buckets of cleaning supplies outside prior to storage (Photos 4 and 5).

Permit Requirement

Part C.1 of the Permit states, "No user or other person, shall discharge any sanitary sewage, industrial wastes, other polluted waters or other deleterious substance into or upon any public highway, street, sidewalk, alley, land, public or private property, stream, ditch or other watercourse or into any cesspool, stormwater sewer or private sewer or natural water outlet, within the city or in an area under the jurisdiction of the city, except where suitable treatment has been provided in accordance with provisions of applicable federal, state, and local laws."

Recommendation

Ensure that practices are in place to prevent contaminated stormwater (from rinsing empty drums and buckets of cleaning supplies outside) from leaving the property or entering waterways.

Finding 2 – Condensate entering stormwater drain

The inspectors observed condensate from the mobile steam plant, located at the southeast corner of the building, dripping onto a metal plate below the steam plant before flowing northeast across the paved parking area and entering a storm drain (Photo 6).

Permit Requirement

Part C.1 of the Permit states, “No user or other person, shall discharge any sanitary sewage, industrial wastes, other polluted waters or other deleterious substance into or upon any public highway, street, sidewalk, alley, land, public or private property, stream, ditch or other watercourse or into any cesspool, stormwater sewer or private sewer or natural water outlet, within the city or in an area under the jurisdiction of the city, except where suitable treatment has been provided in accordance with provisions of applicable federal, state, and local laws.”

Recommendation

To prevent stormwater contamination, it is recommended that the Facility evaluate the water quality of the mobile steam plant condensate that enters the storm drain or avoid discharging condensate to the storm drain.

Finding 3 – Improper storage for hazardous materials

At the time of the inspection, a battery was stored outside without cover or secondary containment (Photo 7).

Permit Requirement

Part C.1 of the Permit states, “No user or other person, shall discharge any sanitary sewage, industrial wastes, other polluted waters or other deleterious substance into or upon any public highway, street, sidewalk, alley, land, public or private property, stream, ditch or other watercourse or into any cesspool, stormwater sewer or private sewer or natural water outlet, within the city or in an area under the jurisdiction of the city, except where suitable treatment has been provided in accordance with provisions of applicable federal, state, and local laws.”

Recommendation

To prevent stormwater contamination, it is recommended that all batteries stored outside be stored under cover.

Finding 4– Inadequate spill protection

At the time of the inspection, totes of soy sauce, and drums of [REDACTED] and canola oil were observed to be without secondary containment (Photos 11, 12, 14, and 17-20). The drums of [REDACTED] that were observed in the pretreatment room were near sewer drains (Photo 23). The totes of soy sauce and drums of canola oil that were in the production area were located near floor drains.

Permit Requirement

Part C.5 of the Permit requires the Facility to develop a Slug Discharge Control Plan that includes:

- a. Description of discharge practices, including nonroutine batch discharges
- b. Description of stored chemicals
- c. Procedures for immediately notifying the City of Boulder Industrial Pretreatment Program of slug discharges, including any discharge that would violate a prohibition under 40 CFR 403.5(b), with procedures for follow-up, written notification within five (5) days.
- d. Procedures to prevent adverse impact from accidental spills, including inspection and maintenance of

storage areas; handling and transfer of materials; loading and unloading operations; control of plant site runoff; worker training; building of containment structures or equipment; measures for containing toxic organic pollutants; and measures and equipment for emergency response.

Corrective Action

Ensure that the Facility's slug discharge control plan includes all chemicals and ingredients that are stored and handled at the Facility and that the City and Facility have determined what should have secondary containment to avoid contamination from spills and/or leaks.



Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 2 taken by Jennifer Ferrando on 12/19/2024.*

The direction of the photo is North.

Description:

Empty soy sauce totes stored in the northeast corner of the paved parking area.



*All photos taken during the inspection are included; photo numbers in the photo log correspond with the image numbers assigned by the camera.



Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 3 taken by Jennifer Ferrando on 12/19/2024.

The direction of the photo is East.

Description:

Pallets, disused equipment, and other debris were stored outdoors in the northeast corner of the lot. The area pictured is immediately east of the area shown in Photo 2.





Photographs for Boulder PCI: Nature Soy IU Inspection

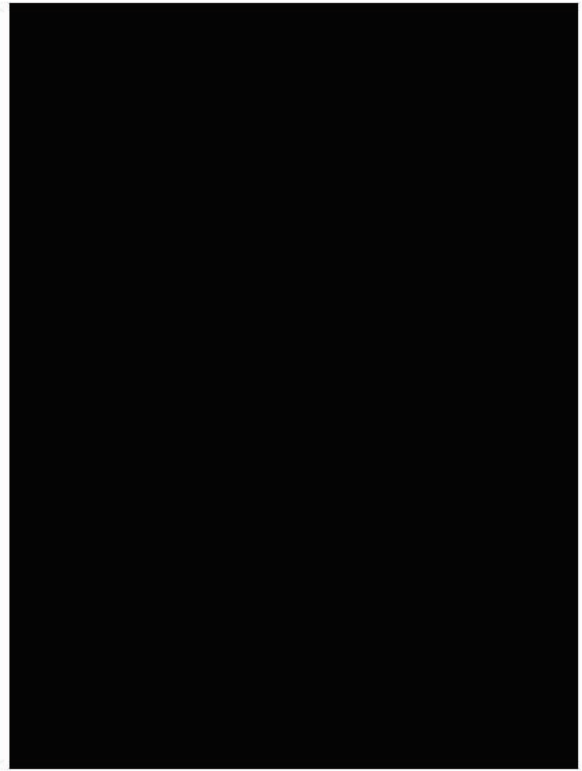
Inspection Type: PCI

Photo number 4 taken by Jennifer Ferrando on 12/19/2024.

The direction of the photo is East.

Description:

Empty cleaning chemical drums and buckets were stored outdoors without cover or secondary containment on the west side of the building. Facility representatives stated that drums are rinsed in this location prior to storage.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 5 taken by Jennifer Ferrando on 12/19/2024.

The direction of the photo is North.

Description:

Additional empty buckets in the storage area pictured in Photo 4. The drums and buckets were empty containers of cleaning chemicals including [REDACTED] (a liquid acid cleaner).





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 6 taken by Jennifer Ferrando on 12/19/2024.

The direction of the photo is Southwest.

Description:

Condensate from the mobile steam plant, located at the southeast corner of the building, was observed dripping onto a metal plate below the steam plant before flowing northeast across the paved parking area and entering the drain shown in the foreground of the photo.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 7 taken by Jennifer Ferrando on 12/19/2024.

The direction of the photo is North.

Description:

A battery was stored without cover or secondary containment at the south end of the maintenance/storage barn, located at the northeast corner of the site.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 8 taken by Jennifer Ferrando on 12/19/2024.

The direction of the photo is Northeast.

Description:

A hazardous chemicals locker located at the southwest corner of the maintenance/storage barn contained small containers of propane and flammable gas.



Photo number 9 taken by Jennifer Ferrando on 12/19/2024.

Description:

A floor drain located near the grain processing area for the seitan line. According to the facility and City representatives, all floor drains in the process building drain to the pretreatment system.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 10 taken by Jennifer Ferrando on 12/19/2024.

Description:

A soy sauce tote in use in the seitan line included a tray to catch drips or leaks.



Photo number 11 taken by Jennifer Ferrando on 12/19/2024.

Description:

Additional full soy sauce totes (against the wall in the background of the photo) did not have secondary containment. Photo taken from approximately the same location as Photo 10.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 12 taken by Jennifer Ferrando on 12/19/2024.

Description:

An empty canola oil drum stored without secondary containment near a floor drain.



Photo number 13 taken by Jennifer Ferrando on 12/19/2024.

Description:

Canola oil and vinegar drums in active use were stored on a secondary containment pallet.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 14 taken by Jennifer Ferrando on 12/19/2024.

Description:

Full canola oil drums were stored without secondary containment; Mr. Gothmann stated that these drums were subsequently placed on a secondary pallet during the site visit.



Photo number 15 taken by Jennifer Ferrando on 12/19/2024.

Description:

Cleaning chemicals in the chemical storage area, including [REDACTED] and [REDACTED] were stored on secondary containment; however, the filling device in one of the drums appeared to be dripping onto the concrete near a floor drain.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 16 taken by Jennifer Ferrando on 12/19/2024.

Description:

Buckets of cleaning chemicals, including [REDACTED] and [REDACTED], were stored on secondary containment pallets in the chemical storage area.



Photo number 17 taken by Jennifer Ferrando on 12/19/2024.

Description:

Drums of [REDACTED] (white drums) used for pH adjustment in the pretreatment system were stored on secondary containment pallets. However, the [REDACTED] (blue drum) used for pH adjustment was not stored on secondary containment.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 18 taken by Jennifer Ferrando on 12/19/2024.

Description:

Additional full drums of [REDACTED] (blue drum) and [REDACTED] (black drum) stored in the pretreatment area without secondary containment.

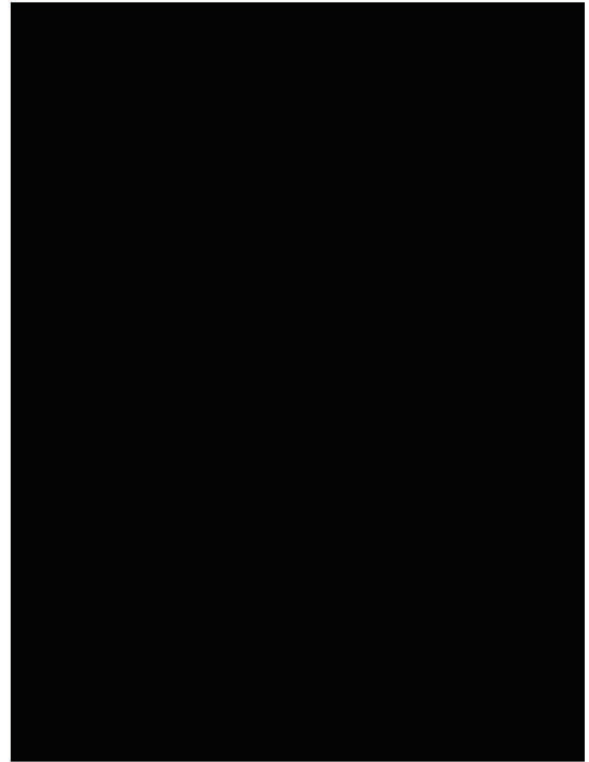
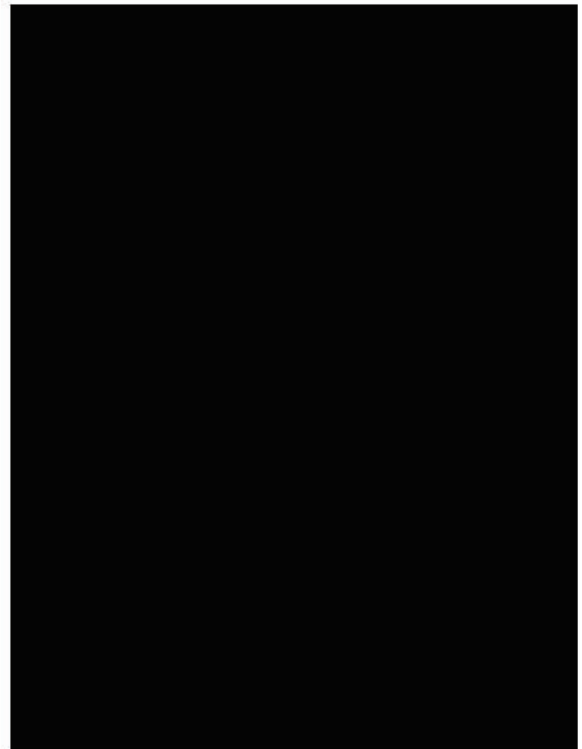


Photo number 19 taken by Jennifer Ferrando on 12/19/2024.

Description:

Alternative view of the pH neutralization chemicals in the pretreatment area. The brown "decanting tank" in the back receives wastewater from the solids settling tank.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 20 taken by Jennifer Ferrando on 12/19/2024.

Description:

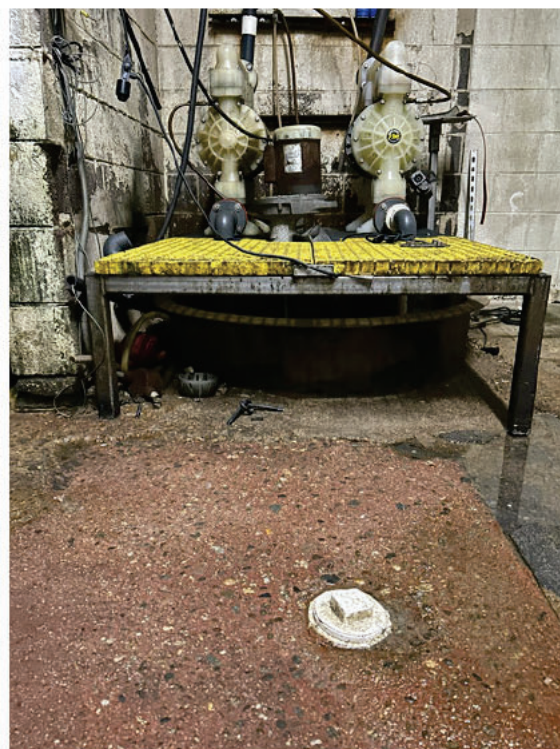
Additional drums of pretreatment chemicals were stored without secondary containment in a room next to the pretreatment area. A drum of oil (left side of photo) was stored on a secondary containment pallet.



Photo number 21 taken by Jennifer Ferrando on 12/19/2024.

Description:

The solids settling tank (below the platform in the center of the photo) receives process flows from drains throughout the building. Wastewater is pumped from this tank to the decanting tank shown in Photo 19.





Photographs for Boulder PCI: Nature Soy IU Inspection

Inspection Type: PCI

Photo number 22 taken by Jennifer Ferrando on 12/19/2024.

Description:

The pH neutralization tank and the sample collection point used by the City and the facility (samplers are placed in the metal enclosure on the rim of the neutralization tank). Wastewater enters the neutralization tank from the decanting tank via the white pipe in the lower right corner of the photo.

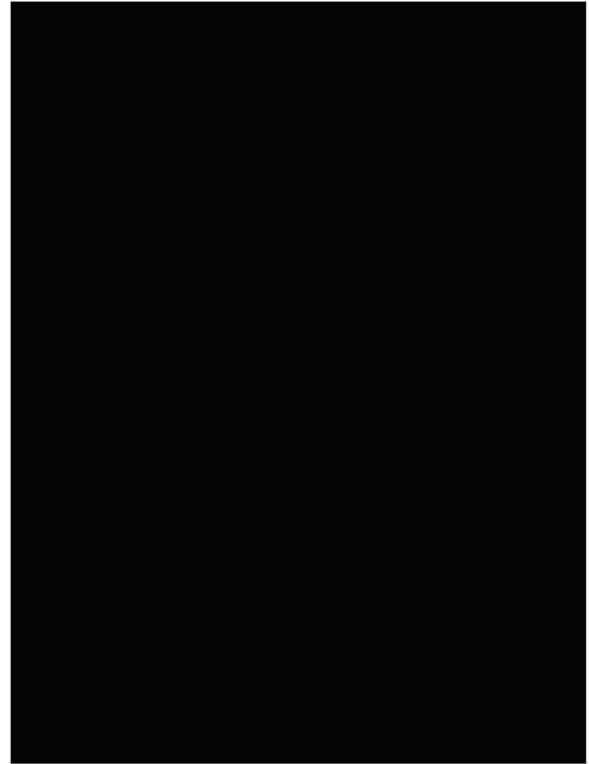


Photo number 23 taken by Jennifer Ferrando on 12/19/2024.

Description:

The flow meter and discharge point, located behind the pH neutralization tank.

