State of Washington Department of Ecology

WASTEWATER TREATMENT PLANT COMPLIANCE INSPECTION REPORT

Northwest Regional Office
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(rev. 5-28-21)

Section A: General Information

Report Version	PERMIT #	mm/dd/yy	Inspection Type	Inspector Code	Facility Type
☒ New ☐ Changed ☐ Deleted	**ST0501341**	**10/13/2022**	**I**	**S**	☒ 2 Industrial

Remarks

Inspection work days	Facility Self-Monitoring	Photos Taken	Samples Taken	BI	QA
1.0	**N/A**	☒ Yes ☐ No	☐ Yes ☒ No	**N**	**N**

Lead Ecology Inspector(s)
Maia Hoffman

Section B: Facility Data

Name, Location, and Phone of Facility Inspected	Entry Time	Permit Effective Date
Real Greek LLC dba Ellenos 34114 21st Ave S Federal Way, WA 98003	8:55 am	N/A
	Exit Time	Permit Expiration Date
	11:05 am	N/A

Name(s)/Title(s) of On-Site Representative(s)	Ecology Staff On-Site
Brian Bright, Facilities Maintenance Manager Elias Kasem, Plant Manager	Monika Kannadaguli
Name and Titlle of Responsible Official John Tucker, CEO Contacted? ☒ **Yes** ☐ **No**	Other Facility Data Temporary permit issued on September 1, 2022 and effective on September 13, 2022

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

☒	Permit	☒	Flow Measurement	☐	Operations & Maintenance	☐	CSO/SSO (Sewer Overflow)
☐	Records/Reports	☐	Effluent ○ Receiving Water	☐	Sludge Handling/Disposal	☐	Pollution Prevention
☒	Facility Site Review	☐	Compliance Schedules	☒	Pretreatment	☐	Multimedia
☒	Self-Monitoring Program	☐	Laboratory	☒	Storm Water	☐	Other

Section D: Summary of Findings/Comments

I. INTRODUCTION

Maia Hoffman and Monika Kannadaguli, Ecology inspectors, conducted a site visit at Real Greek LLC dba Ellenos (Ellenos). Craig Hanson and Joel Castanza, pretreatment specialists with Lakehaven Water and Sewer District (Lakehaven), joined for the site visit. The site visit was announced to Brian Bright and Elias Kasem via email.

Ecology is drafting a new industrial user wastewater discharge permit to Ellenos. The purpose of the site visit was for Ecology inspectors to have an orientation to the facility operations and wastewater pretreatment system for permit drafting purposes. Ellenos is working with Aspect Consulting through the permit application and issuance process to assist with compliance activities and preparation. Consulting staff were unable to join for this site visit but are readily available by phone or email to answer questions as necessary.

Ellenos discharges process wastewater to the Lakehaven sewer system and ultimately to the Lakota wastewater treatment plant (WWTP).

II. RESULTS AND DISCUSSION

Ellenos started operation in this Federal Way facility in 2017. Ellenos operates 17 hours per day, 6 days per week. Maintenance staff are on site at all times that production or sanitation are occurring. The facility is staffed nearly 24 hours per day, 7 days per week except for a few hours on the weekends when no production, sanitation, or maintenance is occurring.

Industrial Processes and Wastewater Pretreatment:

Ellenos produces dairy yogurt. Ellenos estimates they produce about 7.5 million lbs of yogurt per year. The facility receives dairy ingredients including dairy solids and milk in liquid form, as well as yogurt inclusions such as fruit puree and grain. The dairy ingredients are pasteurized, cultured, and dosed into 35lb pails. The pails are fermented for 3 days and then rapidly cooled. The pails of yogurt are then transferred into a mixer, where any flavorings are added. Mixed yogurt is then packaged in various size containers with fruit puree, depending on the flavor. Containers are packaged in boxes and stored in the cold warehouse for shipping across the country.

All equipment and materials, including pails, buckets, and utensils, must be cleaned, sanitized and disinfected. All wastewater generated from cleaning processes is routed to the wastewater pretreatment system. The entire production facility has floor drains and/or trenches to capture wastewater and any spills. All interior production floor drains are routed to the wastewater pretreatment system. All domestic wastewater from bathrooms and the employee break rooms have separate sewer lines and discharge to the Lakehaven sewer system at a different point than the pretreatment system.

The pasteurization and mixing vats, along with all piping that carries milk or yogurt, is cleaned several times throughout the day with a clean-in-pace (CIP) system. The CIP tanks have a 100 gallon volume. The CIP system uses 160 °F water. The first flush is with a caustic cleaner, followed by a rinse, and then an acid wash. The first flush of the systems will carry any residual yogurt product to the sewer. All pails, buckets, utensils, or smaller equipment used in the yogurt making process is cleaned after use in a large dishwasher. The dishwasher uses 160 °F. There is no flow meter on the dishwasher, so the exact volume of water used per day in this system is unknown. Finally, every night, the entire facility is washed down and cleaned, including walls and floors. Sanitizing and disinfecting chemicals are used in this process along with high pressure hoses. B. Bright stated that 4-6 people will be running high pressure hoses during the nightly facility cleaning. The majority of the water is generated during the night sanitation shift.

Buckets of diluted santizers are staged throughout the facility during production for cleaning utensils and smaller equipment. These buckets are disposed of to floor drains. There are foam sprayers that spray sanitizer around doors in the production area so employees walk through this prior to entering the production rooms. Additionally, a powdered microbial disinfectant is spread on the production room floors to ensure no bacterial growth. All this chemical is ultimately washed to the drains during the night sanitation shift.

Cleaning, sanitizing, and disinfection chemicals are primarily purchased and staged in the concentrated form. In-use chemicals are staged on containment pallets. Chemicals are primarily set up with automated dilution systems to ensure food safety requirements are met. Photo 2 shows a good example of the dilution system for some of the chemicals. M. Hoffman noted that a containment pallet with smaller containers of in-use chemicals was overfull with some containers leaning off the side, see Photo 1. Additionally, larger totes of chemicals were staged near an outside door with no containment. Although the in-use totes were on pallets, the unopened containers were very close to a door with fork lift traffic, see Photo 3.

Ellenos provided a chemical list including the quantity stored, purpose of chemical, and if it will be in the wastewater. Most chemicals used are acidic or caustic cleaners/sanitizers. Ellenos does use a sanitizer with quaternary ammonium compounds, sometimes called quats. Quats are widely used throughout the food industry for their powerful sanitizing abilities. Quats have been known to cause wastewater treatment plant upsets if not used carefully. A best management practice is to follow proper dilution protocols for all sanitizing and disinfecting chemicals and do not dispose of any concentrated material to the drain.

Ellenos has a boiler and a cooling tower. The cooling tower is shown in Photo 13. Both processes are periodically maintained with various chemicals to prevent biological or scale build up. Ellenos stated in the permit application that these chemicals are not discharged to the sewer system. Boiler and cooling tower blowdown to the system would be comprised of city water only.

All process wastewater, including facility and equipment cleaning and boiler and cooling tower blowdown, is routed to the wastewater pretreatment system. The pretreatment system involves grease separation and pH neutralization. The entire pretreatment system was installed in 2017 with upgrades in early 2022.

Incoming wastewater is split between two parallel trains of two grease interceptors in series. The grease interceptors installed at Ellenos are Schrier Great Basin GB-250. C. Hanson and J. Castanza are familiar with the grease interceptor product and operation of the system. B. Bright stated that they have started pumping the grease interceptors on a 90-day frequency. Previously, Ellenos was pumping out the interceptors on a >100 day frequency, but the solids build up was greater than expected. C. Hanson mentioned that grease interceptors are not ideal for solids separation and Schrier sells a solids separator basin that can be installed before the grease interceptors. B. Bright stated that seeds from fruit puree and small amounts of paper often end up in the wastewater causing solids build up. C. Hanson also discussed the temperature of the wastewater entering the grease interceptors. Since Ellenos uses very hot water (160 °F) in several of the cleaning operations, hot water may be entering the interceptors. Hot water >140 °F can dissolve grease, moving it through a system, and will

eventually resolidify somewhere else. Additionally, according to the tech sheet for Schrier GB-250, the maximum operating temperature is 150 °F. B. Bright stated that the wastewater coming into the interceptors could easily be monitored to see if temperature was a problem.

After the grease interceptors, wastewater is combined in a sump, see Photo 5. At the time of inspection, the wastewater in the sump was a milky white color with a rancid dairy odor. Wastewater is pumped from the sump and into a 1,400 gallon pH neutralization tank. The inflow pipe is towards the top of the tank. The water level in the tank is maintained around 700 gallons to allow for buffering capacity. Wastewater is constantly recirculated through a recirculation pipe, see Photos 6 and 7. The recirculation pipe is equipped with a continuous pH meter which controls the caustic or acid dosing. The recirculation pipe is also equipped with a filter which is changed out up to four times per day. B. Bright mentioned that they started pumping out the bottom of the pH tank at the same frequency of the grease interceptors due to solids accumulation (mostly fruit seeds). The recirculation pipe pulls from nearly the bottom of the tank so is likely pulling in solids all the time, hence the frequent filter change out. When the water level in the tank reaches about 1,000 gallons, as long as the pH is within range, the system will open the discharge valve until the water is back at 700 gallons. The tank is equipped with an overflow pipe near the top of the tank in case of failure. Currently, there is no way for employees to know if an overflow is occurring unless they witness it. The outfall pipe is located in the bottom quarter of the tank around the 200 gallon level. Photos 10 and 11 show the piping orientation. In early 2022, Ellenos upgraded the pH neutralization system with an updated controller and changing the operation to maintain 700 gallons in the tank at all times. The final discharge line of the pH tank is equipped with a continuous pH meter (records a reading every 15 minutes) and a sample port, see Photo 8. The entire pretreatment system is located outdoors without any containment or roof, but it is surrounded by tall wood plank fencing and within the facility fence line. There is a storm drain downhill from the pretreatment system, see Photo 12. The caustic and acid for the pretreatment system are staged indoors on containment, see Photo 4. B. Bright marked the chemical tanks with a sharpie line the day before the inspection so inspectors could see approximately how much treatment chemical is used in a typical day. Ellenos uses substantially more acid in the pretreatment system due to the largely caustic cleaners that are used in the facility.

pH is the primary pollutant of concern from Ellenos due to the cleaners used. The general toxicity of these chemicals alone and combined is more difficult to measure. However, since Ellenos follows proper dilution protocols, this should not be an issue downstream at the Lakota WWTP. Additionally, as is typical with food processors, the BOD loading of the wastewater may be considerable. At this time, there are no concerns with the current BOD loading to the Lakota WWTP from Ellenos. Except for minimal product loss in equipment during cleaning, Ellenos does not intentionally discharge any food product to the sewer. However, dairy products have an extremely high BOD value, so even a small amount of dairy product in the wastewater will contribute to higher BOD loadings.

Solids Management:
Ellenos disposes of off-spec product and ingredients at the Edaleen Dairy anaerobic digester. In limited circumstances, off-spec packaged yogurt may be disposed of in the municipal solid waste dumpsters. Dumpsters are picked up daily by the waste hauler. Cardboard is recycled.

Flow Measurement:
Ellenos has an incoming potable water meter. Since no water is used in the product, all water used in the facility will eventually end up in the sewer. Ellenos estimates the process wastewater discharge volume by subtracting domestic water usage (bathrooms and breakrooms) from the incoming water meter. There is no effluent flow meter.

Sampling:
Ellenos has a sample port on the final discharge line. When Ellenos uses the port, some wastewater will spill on the ground.

Records Review:
Ellenos does not have a final permit issued at this time. Therefore, no records were reviewed.

Stormwater:
E. Kasem confirmed that an Ecology stormwater inspector had visited the site during the summer.

There are several storm drains located on the facility grounds. B. Bright stated they all drain to a wetland area directly to the east of the facility.

III. CONCLUSION

Upon the first site visit, Ellenos appears to be a very well run and efficient company. B. Bright and E. Kasem provided a great facility tour and answered all questions asked. Additionally, B. Bright was very receptive to any opportunities for improvement to ensure compliance and for opportunities to improve operation and maintenance of the pretreatment system. The following were some areas for improvement discussed during the site visit,

1. The temperature of the wastewater entering the grease interceptors is unknown. High temperatures may dissolve grease allowing it to pass through the system and/or may impact the integrity of the interceptor tank itself. Monitoring the temperature during times when high temperature sources are discharging would be beneficial.
2. In-use chemicals should be fully on the containment pallets to ensure concentrated chemicals are not unintentionally drained to the sewer. Additionally, Ellenos should be cautious of uncontained chemical storage near outside doors with close access to storm drains.
3. Fine mesh screening or a solids separation unit could improve solids capture and reduce maintenance for the grease interceptors and pH tank.
4. Currently there is no way for Ellenos employees to know if a bypass is occurring (i.e. wastewater going through overflow pipe). The draft proposed permit includes standard language which prohibits bypasses of the treatment system and, if they do occur, requires representative sampling. Ellenos should explore opportunities to alarm the overflow line so corrective actions can be taken quickly to minimize or prevent bypasses.
5. The pretreatment system is outdoors and uncontained. Ellenos should take precautionary measures to contain any wastewater that is released when servicing the system and/or taking samples. A simple solution of putting a tray or bucket under portions of the system when maintenance is occurring would be sufficient, the wastewater collected can then be dumped into the sump for reprocessing.
6. Ellenos may consider opportunities to install stormwater management around the outdoor pretreatment system. Discharge of process wastewater to surface waters is not authorized under the proposed industrial user wastewater to sewer permit. The City of Federal Way and/or King County may have relevant required stormwater management practices.

Ecology expects to have the draft permit ready for entity review within the next several weeks. Entity review typically lasts up to 30 days. Ecology then moves the permit into the public notice period prior to final issuance. The current estimated timeline for final permit issuance is 90-120 days. The wastewater discharge from Ellenos is covered by a temporary discharge authorization issued on 9/1/22 until a time the final permit can be issued.

Name(s) and Signatures of Inspector(s)	Agency/Office/Telephone	Date
Maia Hoffman 	WA Dept. of Ecology, NWRO, (425) 507-5681	October 18, 2022
Name and Signature of Management QA Reviewer	**Agency/Office/Telephone**	**Date**
Monika Kannadaguli 	WA Dept. of Ecology, NWRO, (206) 594-0000	October 18, 2022

ANNOUNCED Inspection

INSTRUCTIONS

Section A: General Information

Report Version: N for 1st version, **C** for Changed or amended, or **D** for Delete

NPDES Permit No.: Enter the facility's NPDES or State permit number.

Inspection Date: Insert the date entry was made into the facility. Use the month/day/year format (e.g.,06/30/04 = June 30, 2004).

Inspection Type: Use one of the codes listed below to describe the type of inspection:

A Performance Audit	L Enforcement Case Support	2 IU Sampling Inspection
B Compliance Biomonitoring	M Multimedia	3 IU Non-Sampling Inspection
C Compliance Evaluation (non-sampling)	P Pretreatment Compliance Inspection	4 IU Toxics Inspection
D Diagnostic	R Reconnaissance	5 IU Sampling Inspection with Pretreatment
E Corps of Engineers Inspection	S Compliance Sampling	6 IU Non-Sampling Inspection with pretreatment
F Pretreatment Follow-up	U IU Inspection with Pretreatment Audit	7 IU Toxics with Pretreatment
G Pretreatment Audit	X Toxics Inspection	
I Industrial User (IU) Inspection	Z Sludge	

Inspector Code: Use one of the codes listed below to describe the *lead agency* in the inspection:

C - Contractor or Other Inspectors (Specify in Remarks Columns)	N - NEIC Inspectors
E - Corps of Engineers	R - EPA Regional Inspector
J - Joint EPA/State Inspectors - EPA Lead	S - State Inspector
	T - Joint State/EPA Inspectors - State Lead

Facility Type: Use of one of the choices below to describe the facility.
1 - Municipal. Publicly Owned Treatment Works (POTWs) with 1987 Standard Industrial Code (SIC) 4952.
2 - Industrial. Other than municipal, agricultural, and Federal facilities.
3 - Agricultural. Facilities classified with 1987 SIC 0111 to 0971.
4 - Federal. Facilities identified as Federal by the EPA Regional Office

Remarks: These columns are reserved for remarks.

Inspection Work Days.: Estimate the total work effort (to the nearest 0.1 work day), up to 99.9 days, that were used to complete the inspection. This estimate includes the accumulative effort of all participating inspectors; any effort for laboratory analyses, testing, travel time and preparation time. This estimate does not require detailed documentation.

Facility Evaluation Rating: Use information gathered during the inspection (regardless of inspection type) to evaluate the quality of the facility self-monitoring program. Grade the program using a scale of 1 to 5 with a score of 5 being used for very reliable self-monitoring programs, 3 being satisfactory, and 1 being used for very unreliable programs.

Biomonitoring Information. Enter D for static testing. Enter F for flow through testing. Enter N for no biomonitoring.

Quality Assurance Data Inspection. Enter Q if the inspection was conducted as follow-up on quality assurance sample results. Enter N otherwise.

Photos Taken: Yes or No

Samples Taken: Yes or No

Lead Ecology Inspector: Enter lead inspector's name

Section B: Facility Data

This section is self-explanatory except for: "Other Facility Data," which may include new information not in the permit or PCS (e.g., new outfalls, names of receiving waters, new ownership, and other updates to the record), e-mail addresses…; and "Ecology Staff On-Site", which may include staff names, titles, phone numbers, or e-mail addresses.

Section C: Areas Evaluated During Inspection

Check only those areas evaluated by marking the appropriate box. Use Section D and additional sheets as necessary.

Section D: Summary of Findings/Comments

Support the findings, as necessary, in a narrative report. Use the headings given on the report form (staffing, back-up power) as appropriate. Reference a list of attachments, such as completed checklists, photos, lab reports, etc. Use extra sheets as necessary.

Inspection Photos

Photo 1: In-use sanitizer chemicals on containment pallet. Floor drain to the left of the containment pallet.

Photo 2: In-use cleaning chemicals staging in dishwasher room.

Photo 3: In-use and extra cleaning chemical staging near roll-up door. In-use totes are on containment pallets.

Photo 4: pH control chemical staging area on containment. Black line indicates level of chemical at the start of the previous day (10/12/22). Product on left is caustic, product on right is acid.

Photo 5: Wastewater sump after grease interceptors. Wastewater is pumped from this sump to the pH neutralization tank.

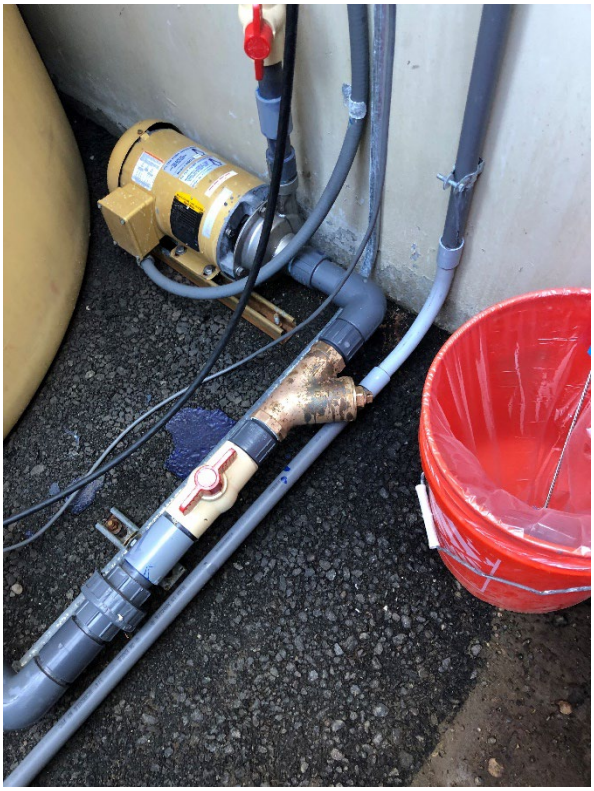

Photo 6: pH neutralization tank recirculation piping. The brass fitting contains a filter which is changed 4x per day.

Photo 7: pH system Walchem controller.

Photo 8: Effluent pH meter and sample port of discharge line.

Photo 9: Larger perspective photo of recirculation line, controller, and pH neutralization tank.

Photo 10: Piping orientation of pH neutralization tank (inflow, outfall, and bypass noted).

Photo 11: Different perspective of piping orientation.

Photo 12: Storm drain behind building.

Photo 13: Cooling tower system. The smaller green tank is an overflow tank for the system that collects city water.

Photo 14: Covered dumpsters outside facility.

Photo 15: Cardboard compacter.

Blank

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